

What Risks In Whose Risk Society?

An assessment of what effect, if any, the historic and contemporary socio-economic conditions and expectations of the community of Sands End, Fulham, London, had on the character and dynamics of the 1983-1984 debate over the decontamination and demolition of Fulham Power Station.

by

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Abstract

The thesis discusses the mediating role of socio-economic factors in risk debates through an examination of the decontamination and demolition of Fulham Power Station in 1983-1984.

The power station was built between the wars by and for the people of Fulham. Located on the Thames in the neighbourhood of Sands End, it generated electricity and provided employment until 1978, when it was sold to a property development company.

During the decontamination, a quantity of asbestos was released into the environment. A protest group was formed to secure better standards of work at the site. The group never had more than a dozen active members. All the members were middle-class.

At the time of the decontamination and demolition, Sands End was a poor neighbourhood. A majority of the local population faced many 'social' as well as environmental hazards. Amongst these were sub-standard housing, unemployment, under-employment, low wages, inadequate work and educational skills and crime.

The thesis discusses whether the neighbourhood's socio-economic problems had any bearing on the character and dynamics of the power station debate. It suggests that the social geography and economic status of Sands End had two major effects on the debate. Firstly, gentrification provided the neighbourhood with a (small) middle-class constituency receptive to issues of environmental risk, such as the long-term health implications of airborne asbestos dust. Secondly, the neighbourhood's pressing social and economic problems mitigated against a wider involvement in the campaign. Most residents were too preoccupied with meeting their social and economic needs to become actively involved. The thesis also suggests that the population's experience of Fulham Power Station as a source of 'convenient' electrical power, employment and civic pride may have made it difficult for those native to Sands End to accept the activists' construction of the power station as a source of danger.

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Chapter 1: A Sociology and Politics of Risk and Hazard p.8

- 1 Introduction
- 2 A Sociology of Risk and Hazard
 - 2.1 Beck on 'Epochal Shifts'
 - 2.1.1 Introduction
 - 2.1.2 Inclusivity and Continuity
 - 2.2 Beck's 'Reflexive Modernity'
 - 2.2.1 Introduction
 - 2.2.2 Cartesian Cannibalism
 - 2.3 Beck on the 'Unpicking' of Science
 - 2.3.1 Introduction
 - 2.3.2 Science as Discourse
 - 2.4 Beck on 'the end of the Other'
 - 2.4.1 Introduction
 - 2.4.2 Ubiquitous Hazard
 - 2.5 Beck on the Techno-Bureaucratic Control of Hazard
 - 2.5.1 Introduction
 - 2.5.2 Schizophrenic Science?
- 3 A Politics of Risk and Hazard
 - 3.1 Beck on 'Truncated Democracy'
 - 3.1.1 Introduction
 - 3.1.2 Unaccountable Power
 - 3.2 Beck on People Power
 - 3.2.1 Introduction
 - 3.2.2 The 'Revolution of the Subject'
 - 3.3 Beck on 'Scientization'
 - 3.3.1 Introduction
 - 3.3.2 Populist Science
- 4 The Discourse in Summary

Chapter 2: Needed: A Political Economy of Risk and Hazard?

- 1 Introduction
- 2 The Complete Picture?
 - 2.1 A Subjectively Constituted Kaleidoscope of Risks and Hazards
- 3 Conclusion

Chapter 3: The Study Area: The Physical, Social and Economic and Environmental History of Sands End

p.126

- 1 Introduction
- 2 A History of Sands End
 - 2.1 Physical Development
 - 2.1.1 Fulham Power Station: Catalyst of Twentieth Century Development
 - 2.2 Social and Economic Development
 - 2.3 Environmental Developments
- 3 Conclusion

Chapter 4: Formal and Informal Politics in Sands End

p.211

- 1 Introduction
- 2 Informal Political Culture
 - 2.1 Townmead Estate Residents Revolt Over Road (TERROR)
 - 2.2 The Association of Residents in Sands End
 - 2.2.1 History
 - 2.2.2 Objectives
 - 2.2.3 Interests, Campaigns and Sponsorships
 - 2.2.4 Financing
 - 2.2.5 Public Participation in, and Perception of ARISE
 - 2.2.6 Conclusion
 - 2.3 Other Groups and Initiatives
 - 2.4 Philanthropy
- 3 Formal Political Culture
 - 3.1 Parliamentary Representation
 - 3.2 The Greater London Council (GLC)
 - 3.3 The London Borough of Hammersmith and Fulham (LBHF)
 - 3.3.1 LBHF from 1980 to the Present
 - 3.3.2 News from the Town Hall
- 4 The Local Press
 - 4.1 Introduction
 - 4.2 The Agenda
- 5 Conclusion

Chapter 5: Asbestos - A Risk Issue?

p.240

- 1 Introduction
- 2 Cancer - The 'Disease of Civilisation'
 - 2.1 Characteristics of the Disease
 - 2.2 Prevalence of the Disease
 - 2.3 The Causes of Cancer
 - 2.3.1 Introduction
 - 2.3.2 The 'Establishment' View
 - 2.3.3 The 'Radical' View
 - 2.3.4 Conclusion

- 2.4 Treatment
 - 2.4.1 'The War on Cancer'
 - 2.4.2 Victory, Stalemate or Defeat?
 - 2.4.3 The Social Construction of Anti-Cancer Strategies
- 2.5 Conclusion

- 3 Asbestos
 - 3.1 Nature, History and Uses
 - 3.2 Asbestos: 'Wonder Mineral'
 - 3.3 Asbestos: 'Health Disaster'
 - 3.3.1 Introduction
 - 3.3.2 The Opposition's Case

- 4 Mesothelioma
 - 4.1 Introduction
 - 4.1.1 Michael Watson's Death
 - 4.1.2 David Standen's Death
 - 4.2 Prevalence of the Disease
 - 4.3 Characteristics of the Disease
 - 4.4 The Debate Over Causation
 - 4.4.1 Introduction
 - 4.4.2 The Optimists
 - 4.4.3 The Pessimists

- 5 Conclusion

Chapter 6: Fulham Power Station: Decontamination and Demolition

p.318

- 1 Introduction

- 2 Chronology
 - 2.1 The Decontamination and Demolition of Fulham Power Station
 - 2.2 Relevant Incidents and Developments Prior to the Fulham Power Station Debate
 - 2.3 Relevant Incidents and Developments that Occurred During the Fulham Power Station Debate

- 3 Conclusion

Chapter 7: Fulham Power Station: Activism

p.365

- 1 Introduction

- 2 Methodology
 - 2.1 Introduction
 - 2.2 Narrative Sources
 - 2.2.1 Contemporary Interviews
 - 2.2.2 Press and Periodical Reporting
 - 2.2.3 Broadcast Media

- 3 Data
 - 3.1 Interview Accounts
 - 3.1.1 Introduction
 - 3.1.2 Responses
 - 3.2 Press and Periodical Reporting

- 3.2.1 Introduction
- 3.2.2 Press Reporting of the Views of TERROR Activists
- 3.2.3 Press Reporting of the Views of the General Public
- 3.2.4 Press Reporting of the Views of Local Groups
(other than TERROR)
- 3.3 Radio Reporting
 - 3.3.1 Introduction
 - 3.3.2 Conflict On Air
- 4 Conclusion

**Chapter 8: The Fulham Power Station Debate:
Themes and Characteristics**

p.417

- 1 Introduction
- 2 Themes of the Debate
 - 2.1 The Construction of a Hazard
 - 2.1.1 Conclusion
 - 2.2 A Question of Attribution
 - 2.2.1 Conclusion
 - 2.3 Responsibility, Accountability, Trust
- 3 Characteristics of the Debate
 - 3.1 The Demonstrably Risk-Conscious
 - 3.2 The Demonstrably Risk-Conscious: Conclusion
- 4 Themes and Characteristics: Conclusion

Conclusion

p.455

- 1 Introduction
- 2 Context
 - 2.1 Socio-Economic
 - 2.1.1 Introduction
 - 2.1.2 Macro
 - 2.1.3 Micro
 - 2.1.4 Conclusion
 - 2.2 Other Environmental Issues as Context
 - 2.2.1 Introduction
 - 2.2.2 Contemporary Environmental Concerns
 - 2.2.3 Commercial Asbestos vies with Domestic Asbestos
for Public Attention
 - 2.2.4 Conclusion
- 3 A Class Act?
 - 3.1 Introduction
 - 3.2 Pedigree of the Power Station Activists
 - 3.3 Conclusion
- 4 A Climate for Protest?
- 5 The Verdict

Appendices

Introduction

In his seminal work, Risk Society, Ulrich Beck claims that, in the various 'welfare states of the West';

[T]he struggle for one's 'daily bread' has lost its urgency as a cardinal problem overshadowing everything else...

He also claims that, as a natural corollary of this development;

[T]he knowledge is spreading that the sources of wealth are 'polluted' by growing 'hazardous side effects' (p.20).

These complementary developments are two of the chief characteristics of the 'Risk Society'.

The Risk Society is a society in which the general public, freed from the shackles of economic need, are at liberty to ponder the multiplying risks and hazards of unbridled 'techno-scientific' development.

Beck acknowledges, however, that even in the most prosperous European country, Germany, the Risk Society has not yet been fully realised. Germany is in a period of transition from the old to the new:

We do not yet live in a Risk Society, but we also no longer live only within the distribution conflicts of scarcity societies (p.20).

Through the medium of the Risk Society concept, Beck has given us a powerful heuristic: a new and imaginative way of comprehending our kaleidoscopic and rapidly

transforming fin-de-siecle world. To this extent, the concept could be said to constitute a 'grand narrative' on 'late Modernity'.

Beck's 'grand narrative', however, is written from the perspective of one of the richest countries in Europe. Of course, Beck is careful to point out that even Germany has not yet achieved the Nirvana of a completely reflexive, self-aware Risk Society, in which "the logic of wealth distribution in a society of scarcity" is superseded by "the logic of risk distribution in late modernity" (p.19). Not even in Germany have "problems of overweight take[n] the place of hunger" in all cases (p.20).

Accepting Beck's view that we live in a time of 'multiplying techno-scientific risks and hazards', it should not be forgotten that such novel risks and hazards are perceived and evaluated in specific social, economic and political contexts - contexts often rich in such familiar and potentially debilitating socio-economic risks and hazards as low pay, casualised labour, underemployment, unemployment, drug abuse, crime and sub-standard housing. Such problems affect different countries in different degrees. Indeed, they can affect different regions or even different neighbourhoods in different degrees. Such 'unevenness' would seem to sound a note of caution with respect to 'grand narrative'.

The persistence (at least in Britain) of socio-economic risks and hazards, raises a rather interesting question, namely; To what extent do such 'social' risks mediate

the public's perception of, and reaction to the 'multiplying techno-scientific risks and hazards' of late Modernity?

X This question is grounded in some very interesting and revealing research, much of which originates in the United States. For example, in the 1987 publication, Neighbourhood and Community Environments (Plenum, US), Michael Edelstein and Abraham Wandersman investigated the reaction of Niagara's chemical workers to the Love Canal chemical contamination scare. What they discovered seemed to suggest that socio-economic factors may influence risk perceptions:

At Love Canal, many men worked in the chemical industry. They were more likely to engage in denial over the potential ill effects of chemical exposure. They may also have felt loyal to their employers and/or feared that the toxic issue might cause them to lose their jobs [My emphasis] (p.85).

A journalistic piece written about the workers of 'Chemical Valley' in West Virginia (one of the poorest states in the Union) shortly after the Bhopal chemical disaster in India revealed a similar mentality. As one chemical worker put it;

What are you going to do? I worry all the time about the stuff I smell and about some of the things I've seen over there. But I'm making \$11 an hour doing inside work. In West Virginia, you don't walk away from top dollar like that (Chaze, W.L., 'Grim Cloud Of Worry Reaches U.S.', U.S. News and World Report, December 17, 1984, p.27).

Thus it can be seen that, at least on the basis of this

trans-Atlantic evidence, socio-economic factors may at least influence - if not determine - attitudes to techno-scientific risks and hazards.

Of course, the question may be posed in a number of ways. In the cases quoted above, the interviewees' perceptions of techno-scientific risks and hazards were mediated by economic considerations. Fear of unemployment, and of its consequences in economically depressed communities, appeared to 'de-sensitise' the Chemical Valley and Niagara workers to risk. At the other end of the spectrum, it is worth asking whether material wealth and physical comfort can serve to heighten a person's sensitivity to techno-scientific risks and hazards. (Perhaps this is what Beck is seeing in Germany).

Both these questions are addressed in the study which lies at the heart of this thesis, namely a detailed review of the events surrounding the decontamination and demolition of a redundant power station in Sands End, Fulham, West London, between 1983 and 1984.

Fulham Power Station was sold by the Central Electricity Generating Board in 1983 to a property development company, on the understanding that it would be safely stripped of asbestos, the major contaminant at the station, and then demolished. Unfortunately, due to the inexperience of the decontamination and demolition contractors engaged by the property company, and alleged incompetence of the responsible supervisory authorities, asbestos dust was released into the environment. A

protest group was formed, which, after determined lobbying, forced the agencies and companies involved to improve their performance, and the government of the day to reverse its power station sales policy.

The group that ran the power station campaign numbered no more than a dozen residents. It was led by a cabal of three. All the campaigners were middle-class. Most were newcomers to Sands End. Although the group held a couple of well attended public meetings, most residents played no active part in the campaign.

Sands End was, at the time of the decontamination and demolition of Fulham Power Station, a neighbourhood with numerous deep-seated social and economic problems, many of which had been around, in one form or another, since the early Nineteenth Century.

At the same time, gentrification was beginning to change the neighbourhood's social complexion.

Thus the question arises as to what bearing - if any - the neighbourhood's social and economic milieu had on the 'character and dynamics of the debate over the decontamination and demolition of Fulham Power Station'.

The question is addressed here in a number of stages: Given the focus of the research - namely a community's reaction to an issue of environmental risk - Chapter 1 offers a detailed analysis of Beck's 'Risk Society' thesis, couched in a more general analysis of the conditions of late Modernity as they are seen to apply in Britain. To this end, the work of people like Anthony

Giddens and the New Times contributing authors is quoted at some length. The resulting sociological analysis of Britain in the 1980s and 1990s allows the events of 1983-1984 to be placed in some sort of macro socio-economic context.

Having explored the 'Risk Society' thesis at some length, Chapter 2 discusses whether socio-economic factors may, under certain circumstances, influence risk perception and behaviour. To this end, a number of journalistic investigations (as well as formal academic studies) are quoted. The intention, as elsewhere in this thesis, is to let the workers and public speak for themselves on the matter of techno-scientific risk.

Having examined the national social, economic and political context to the power station debate in Chapter 1, Chapter 3 describes the social and economic conditions that obtained specifically in Sands End at the time of the debate. (For completeness, the neighbourhood's environmental and physical conditions are also described).

The emphasis on context is continued into Chapter 4, which describes the local political scene at the time of the power station debate. (The chapter covers both formal and informal political activity).

Chapter 5 is something of a diversion (albeit a necessary one) in that it focuses not on Sands End and the power station campaign per se, but rather on the contaminant at the heart of the risk debate - asbestos. Disagreements over the mineral's carcinogenic status

(its propensity to cause cancer) are described in detail. The intention is to show what information the public could have expected to be given on asbestos - and on the 'cancer epidemic' in general - at the time of the debate.

Chapter 6 refocuses on the events of 1983-1984 with a detailed history of the decontamination and demolition of Fulham Power Station. This is a factual history. The activists' subjective views are examined in Chapter 7.

Chapter 7 lets the activists 'speak for themselves' on the decontamination and demolition. The activists' own views, and those they ascribed to the general public, are reproduced at length.

Chapter 8 lists the major themes and characteristics of the protest. The themes are distilled from the various narratives reproduced in Chapter 7. The characteristics are synthesised from both the history of the protest and the activists' narratives.

The Conclusion addresses the question at the heart of the thesis directly, namely, did the historic and contemporary socio-economic conditions of Sands End have any bearing on the campaign over the decontamination and demolition of Fulham Power Station?

A Sociology and Politics of Risk and Hazard.

1 Introduction.

This chapter has two main objectives. Firstly, to develop a general theory of the techno-scientific risks and hazards and changing social dynamics of our fin-de-siecle world. And secondly, to provide a viable sociological 'tool kit' for an analysis of the labyrinthine social, economic and techno-scientific dynamics of the Fulham Power Station debate. To these ends, the chapter focuses on the work of Ulrich Beck, whose book, Risk Society, has been widely praised for its contribution to our understanding of 'late Modernity'. Risk Society (originally published in Germany in 1986 but not published in Britain until 1992), has been called a "Remarkable book" that "Gives one cause to think again about whether a new model might not be becoming available for thinking about our times" (Rustin, M., 'Incomplete Modernity: Ulrich Beck's Risk Society', *Radical Philosophy* 67, Summer, 1994, Britain, p.3). While there has been some adverse comment, one reviewer stating, for example, that Risk Society contains "More assertion than evidence" (Hall, J.R., 'Risk Society: Towards A New Modernity', *Sociological Review*, Volume 42, Number 2, May 1994, Britain, p.345), the consensus has been that the work provides a promising stepping-off point for an exploration of the condition of late Modernity - and especially of contemporary techno-scientific risks and hazards. The

interest shown by Anthony Giddens, and numerous other sociologists and political scientists in Beck's work further attests to its importance.

Despite being well received, it has been said that Beck's work is too culturally specific to be generally applied. As Rustin puts it, "[Risk Society] is informed theoretically by Habermas...and by the anti-productionist concerns of the Greens, who have acquired in West Germany a unique degree of representation and influence; and by a well-grounded sociology of German society..." (Op Cit, p.3). British Greens enjoy significantly less power than their German counterparts. Indeed, the British green movement is in something of a crisis, as evinced by the 1994 attempt at political retrenchment (Schoon, N., 'Green Leaders Seek Charity Allies', The Independent, June 2, 1994). To counter the criticism that Beck's work is culturally myopic, the chapter 'triangulates' Beck's analysis with that of Giddens and the authors of New Times (who include such luminaries as Stuart Hall, Beatrix Campbell, Geoff Mulgan, Fred Steward and Martin Jacques).

It is noteworthy that Ulrich Beck wrote Risk Society at about the same time as the Fulham Power Station debate (which raged during the early 1980s). The fact that the book is a contemporary of the debate provides a further justification - if one were needed - for its prominence in this study.

2 A Sociology of Risk and Hazard.

2.1 Beck on 'Epochal Shifts'.

2.1.1 Introduction.

Beck's view that epochs interpenetrate and overlap helps us to understand the complex (and sometimes confused) social, economic and political dynamics of Fulham at the time of the power station debate. (The development of Fulham, and particularly of Sands End, will be traced in detail in Chapter 3).

2.1.2 Inclusivity and Continuity.

While it is fashionable in some quarters to talk of a transition from industrial to 'post-industrial' society, or, rather more esoterically, from 'Modernity' to 'late' or 'post-Modernity', Beck asserts that industrial production, albeit in modified form, is still a cornerstone of even the most advanced Northern economies. While he concedes that "Industrial society is a permanently revolutionary society", he is adamant that "After each industrial revolution what remains is an industrial society". Indeed, the 'new' industrial society may be "Perhaps that bit more industrial" than the old (Beck, U., Risk Society, Sage, Britain, 1992, p.11).

Beck is careful not to overstate the importance of apparently 'revolutionary' developments in manufacture. Much has been made, for example, of new systems of 'flexible production', where the characteristics of a

product can be quickly changed to meet new market conditions. However, as Beck points out, innovations like flexible production are underpinned by classic 'Fordist' production methods. Such methods were pioneered by Henry Ford at his River Rouge automobile plant in the United States in the first half of the Twentieth Century. Ford, determined to beat his competitors on both price and quality, developed a system of manufacture known as 'mass production'. While his competitors were content to produce small numbers of cars largely by hand, Henry Ford developed the highly mechanised 'flowline' system of production, whereby vehicles were built on a moving 'assembly line' by workers who performed a small number of highly specified tasks, often with the aid of single function machines. Mechanisation, in concert with the close direction of human effort, enabled large numbers of cars to be produced at relatively low cost. The 'economies of scale' achieved at River Rouge and other Ford plants like the Dagenham works in East London, enabled the Ford Corporation to dominate the car market for many years. 'Fordism' was an outstanding success for its inventor and his customers, and later for his competitors.

The hegemony of Fordist production methods lasted until the 1973 Yom Kippur War, when oil prices rose dramatically as a consequence of the Arab-Israeli conflict (Hutton, W., *The State We're In*, Cape, Britain, 1995, p.59). The changed market conditions that followed the war prompted firms to seek to reduce wage costs to restore profit margins and market share. The panacea

seemed to lie partly in new systems of 'flexible production' (Murray, R., 'Fordism and Post-Fordism' in Hall, S., and Jacques, M., (Eds) *New Times*, Lawrence and Wishart, Britain, 1989, p.42). Using programmable machine tools and other forms of 'flexibilised manufacture', firms were able to produce a much wider range of designs. This allowed them to both create and respond to 'niche' markets. The era of 'customisation' had arrived. Such developments led economists and sociologists to talk of a new age of 'post-Fordism', where rapidly multiplying tastes and preferences could be satisfied by increasingly differentiated product ranges.

However, following Beck's analysis, talk of an 'epochal shift' from Fordism to post-Fordism, or from Modernity to late or post-Modernity, is decidedly premature (Rustin, M., 'The Trouble With 'New Times'', in *New Times*, Op Cit, p.308). As mentioned above, flexible production systems are underwritten by Fordist production methods: The car industry prides itself on the greatly expanded range of models and 'trim levels' now offered. But closer examination reveals that while the cars are superficially different, the basic engineering is remarkably consistent across all models. Because of the very high development costs of basic engineering, the same chassis and running gear will be used for a range of ostensibly 'individual' automobiles. Even 'innovatory' customisation processes depend ultimately on old-style Fordist production methods, with smaller components being mass produced by subsidiary or

sub-contracting firms. The production runs may be shorter, but components are still produced in numbers sufficient to achieve the all-important economies of scale that keep costs low and help maintain profit margins. In this way, Fordism (albeit in modified form) survives in a 'Post-Fordist' world. As Beck puts it, today's 'flexibilised', niche-marketed products are "New types of hybrids, mass-produced and individualised" (Ibid, p.220). What Beck is trying to say is that 'epochal shifts' are never as clean and final as some totalising theorists would have us believe. Yes, the 1970s saw the development of new modes of production, but these were (necessarily) underwritten by Fordist production techniques.

Society is 'messy': In Beck's words, "The future...is just beginning to take shape against the still predominant past" (Ibid, p.9). This is quite obviously the case in Sands End, where elegant glass and marble condominiums built to house the rich stand cheek by jowl with decaying Victorian and Edwardian terraced houses, and where Internet-linked air conditioned offices overlook car breaking yards and waste transfer stations where the workers sleep in poky caravans. Such a complex reality is not amenable to simplistic analyses. Different modes of economic production and of social organisation interpenetrate and overlap. To say that we live in a 'post-Fordist' epoch is plainly wrong, not least because the economic development of the southern hemisphere rests firmly on Fordist industries exported by the north. Witness, for example, the export of low

value-added chemical production processes to the Third World (The Financial Times, October 20, 1994), or the export of consumer durable assembly lines to Mexico from North America (The Observer, December 12, 1993). Talk of a 'post-Fordist', 'post-industrial' or even 'post-modern' economic and social order may sell newspaper copy, but reality is rather more complex. And for newspaper or magazine editors, perhaps rather less exciting.

The consensus amongst many of Beck's contemporaries is very much that the periodization of social and economic history into distinct, mutually exclusive epochs, is inappropriate. The categorisation of the 1980s and 1990s as 'post-Fordist' hides a richer economic and social tableau. As Michael Rustin writes in New Times:

Post-Fordism is better seen as one ideal-typical model or strategy of production and regulation, co-present with others in a complex historical ensemble, than as a valid totalising description of an emerging social formation here and now [My emphasis] (p.308).

New Times authors challenge Benedict Anderson's assertion that history consists of 'empty, homogeneous time'. Rather, history consists of "Processes with different time-scales and trajectories [that] may be convened in the same conjuncture" (Ibid, p.126). While New Times contributors admit to the advent of post-Fordist forms of economic and social organisation, they are convinced that "We are not debating an epochal shift, of the order of the famous transition from feudalism to capitalism" (Ibid, p.127). While post-

Fordist or flexibilised production systems constitute the vanguard of economic development, they are supported by more 'traditional' forms of economic organisation. This is why Hall and Jacques qualify the statement "Post-Fordism is at the leading-edge of change, increasingly setting the tone of society..." with the admission that "Fordism is still alive and well in many places" (Ibid, p.12). Indeed, if Robin Murray is correct in his assertion that "In many sectors...industry [is] frozen in Fordism" (Ibid, p.51), then British society is much less changed than Hall and Jacques acknowledge. And where changes have taken place, they have not always followed the post-Fordist stereotype of intense automation and de-manning. At IBM's Greenock circuit board factory, for example, the intelligent robots introduced during the 1980s have been replaced by humans. This 'regressive modernisation' resulted from the discovery that even the most intelligent and 'open' machines were not as efficient as humans on flexibilised production lines. As an IBM Human Relations specialist explains:

We don't use [robots] now...our customers began to want their computers more customised - tailored to individual needs. We looked at the robots, compared the cost of reprogramming them with the performance of the average human worker...and went back to humans. Much cheaper and more efficient (Kane, P., 'The Man Machines', The Guardian, Weekend Magazine, August 7, 1993).

It is therefore important to recognise that while post-Fordist forms of economic organisation are (slowly) emerging, such new forms are underpinned by Fordist

structures and practices. These structures do not constitute a 'reverse salient', but are an essential prerequisite to whatever post-Fordist innovation might take place. Social and economic development arises out of a messy and chaotic melange of 'old' and 'new' forms of organisation. (This is especially true of Sands End). Consequently, the easy periodizations of contemporary society offered by the post-Fordists, post-industrialists and post-Modernists are largely irrelevant. As Charlie Leadbeater has put it;

When I conjure images of the old ideal of progress I see a fleet of combine harvesters sweeping relentlessly, blindly, through a field of corn. When I imagine the new ideal of progress I see an agitated metronome clicking erratically backwards and forwards. For the new ideal of progress is not about linear, straight, predictable lines. It is about a series of dualities and tensions. Tensions between modernisation and history, uncertainty and security, strategy and flexibility...The metronome is constantly moving between these poles...Indeed sometimes it appears to move in both directions at once [My emphasis] (Hall, S., and Jacques, M., Op Cit, p.409).

As mentioned earlier, the uneven quality of contemporary economic development can be observed in Sands End where shopping malls and corporate headquarters operate cheek-by-jowl with waste transfer stations, car breakers and small workshops.

Social change, too, is inherently uneven. For example, while, according to 'The UK's First Report to the UN Committee on the Rights of the Child', "Real disposable income of all types of families is now on average appreciably higher than in 1979" [My emphasis], the

number of British children living in poverty trebled between 1979 and 1992. Further, the real income of the poorest 10% of British families fell by 14% over the same period (Lansdown, G., 'Seen But Not Heard', The Guardian, March 23, 1994). It is therefore clear that the statement 'real disposable income...is now on average appreciably higher than in 1979' hides a more complex, 'messy' reality. Such totalising narratives (expediently) gloss over a much more confused and unsatisfactory picture. It will be shown later that uneven socio-economic development is very much a characteristic of the history of Sands End.

The same sort of unevenness is to be found in urban development, where much lauded renewal schemes like London Docklands, or the Leeds canal basin scheme with its Taylor Woodrow apartments, Royal Armouries Museum and £600,000 foot-bridge (Binney, M., 'Building A Future On The Waterfront', The Times, February 5, 1994), lie alongside large tracts of inner city decay and dereliction. As Geoff Mulgan puts it, "The cities of the future divide between gleaming skyscrapers housing the core workers in the ministries and transnational corporations, and a brutalised, impoverished...periphery, set in the blackened remains of the industrial age" (Hall, S., and Jacques, M., *Op Cit*, p.263). For Beatrix Campbell, 'impoverished peripheries' are now commonplace: "These neighbourhoods exist everywhere. They are often the size of a small town, not exotic exceptions...They shape the character of the national landscape no less than chimneys, the

post office...or motorways" (Campbell, B., Goliath, Methuen, Britain, 1993, p.xi). Anyone who has walked the bleak, under-invested estates of Canning Town in East London, and has drawn a comparison with the marble and aluminium-clad monoliths of Canary Wharf cannot doubt the veracity of such observations. Again, these conditions may be observed in Sands End, where gleaming, concierge-served private residential towers hover over a decaying tableau of Victorian and Edwardian dwellings and under-invested high rise council blocks.

2.2 Beck's 'Reflexive Modernity'.

2.2.1 Introduction.

Beck's discourse on 'reflexivity' suggests why some of the residents of Sands End objected so strongly to the demolition of their power station: A general reflexivity served to heighten the activists environmental and risk consciousness, while a personal reflexivity provided the motivation and confidence for action. (Beck's discourse on the increased personal reflexivity, expectation and confidence of women in late-modernity may be of some relevance to the social dynamics of the Fulham Power Station debate, in which a number of previously politically inactive local women played a prominent part). In his assertion that reflexivity is chiefly the prerogative of the better off Beck also provides an explanation for the inactivity (or distraction?) of the majority of the residents of Sands End during the debate.

2.2.2 Cartesian Cannibalism.

Early in Risk Society, Beck asserts that "...We are witnessing not the end but the beginning of modernity" (Beck, U., Op Cit, p.10). This contemporary modernity is a 'reflexive' modernity. It is a modernity "Beyond its classical industrial design" (Ibid, p.10). It is a modernity that displays both continuity and discontinuity with past forms. While reflexive modernity is no less industrial than its Nineteenth Century antecedent (see 2.1.2, above), its core philosophy of progress through science and technology is subjected to an intense critique. Therefore, while 'reflexive modernity' is still very much an industrial modernity, it is fundamentally a questioning, or doubting modernity. As Beck explains:

[W]hile in classical industrial society the 'logic' of wealth production dominates the 'logic' of risk production, in the risk society this relationship is reversed...The productive forces have lost their innocence...The gain in power from techno-economic 'progress' is being increasingly overshadowed by the production of risks (Ibid, p.12).

Thus reflexive modernity produces a 'Risk Society'. The term 'reflexivity' is used by Beck to represent two quite different, but interrelated processes. The first process is that of a planet, transformed by industry and neglect, 'turning against itself'. In this first sense, industrial poisoning threatens both the health of the planet and its animal and human inhabitants. This is the 'boomerang effect', where man is undone by his own

arrogance and complacency. The second meaning of the term 'reflexivity' is a heightened awareness of the environmental disamenities resulting from unbridled wealth production. The Cartesian ideal of 'Homo Faber' - man the inventor - man the master of nature - is called into question by an increasingly reflexive population. This scepticism is a phenomenon peculiar, according to Beck, to the rich, sated societies of the Northern hemisphere. Here, the 'triumph of technology', in concert with sophisticated welfare systems, has banished need (although wants are seldom satisfied). As Beck puts it, in the First World "The commonality of anxiety takes the place of the commonality of need" (Ibid, p.49).

The relative prosperity of First World countries is quite startling. While per-capita gross national product (GNP) in China, for example, a country undergoing a 'dramatic' economic transformation, is \$350 per annum, per-capita GNP in Britain is \$14,610 per annum. While per-capita GNP in Indonesia, a country often criticised for 'over exploiting' its natural resources (chiefly forests), is \$500 per annum, per-capita GNP in the United States (a country often critical of those who 'over exploit' their resources) is \$20,910 per annum. At the top of the league table of wealth is Switzerland, with a per-capita GNP of \$29,880 per annum ('Number Crunching The World', The New Internationalist, No.232/June 1992). Such relative prosperity encourages - or at least makes possible - a heightened 'risk consciousness' amongst Northern peoples:

In the welfare states of the West a double

process is taking place...On the one hand, the struggle for one's 'daily bread' has lost its urgency...compared to material subsistence in the first half of this century and to a Third World menaced by hunger...

Parallel to that, the knowledge is spreading that the sources of wealth are 'polluted' by growing 'hazardous side effects'. This...has remained unnoticed for a long time in the efforts to overcome poverty. This dark side is...gaining importance through the over-development of productive forces...

Both sources feed a growing critique of modernisation, which loudly...determines public discussions (Beck, U., Risk Society, p.20).

While Beck makes a major contribution to our understanding of the socio-political dynamics of late modernity, his economic analysis is perhaps a little crude. Thus Beck pays little attention to the effect inequalities within countries might have on the propensity and capacity of its people to reflect upon and improve their physical environment. As contemporary research shows, many British people are still 'struggling for their daily bread'. Thus, according to one commentator, "[T]he Conservatives' social policy has created more poor people and cemented them in" (Toynbee, P., 'Ways Without Means' in Search, Joseph Rowntree Foundation, Summer, 1996, p.25). (The applicability of Beck's economic analysis to the British experience will be explored in detail later).

Beck's assertion that the 'hazardous side effects' of industry have remained 'unnoticed for a long time' will also be debated, in light of evidence that working people have a long-standing consciousness of industrial risk and hazard - a consciousness that, on occasion, has

translated into action. (Consider, for example, the 1888 'matchgirls' strike' over working conditions at the Bryant and May factory in Bow, East London. The strike, partly a protest over "'Phossy jaw' - the loss of teeth and gums through breathing phosphorous when making matches" ('Social Change, Geography and Policy', Open University, 1982, p.64), brought all of Bryant and May's 672 women workers out in a successful action).

Beck's reflexive modernity heralds other novel developments besides a heightened sensitivity to environmental disamenity and physical hazard. Foremost amongst these is a 'personal reflexivity', or questioning of established patterns of life and social mores. While we still live in an industrial society (See 2.1.2, above), the nuclear family, foundation stone of that form of social organisation, is fragmenting. Within the family, the 'embedded standard biographies' are being re-written in the context of wider social and economic changes, such as increased female employment (in the future some 80% of new jobs will be for women), equality of educational opportunity, free and convenient birth control and easier divorce. According to Beck, these liberations herald a higher form of modernity, even a mature modernity. In the latter half of the Twentieth Century, not only is industry reaching its zenith, but citizens of the new modernity are achieving new heights of liberation and self-expression. Today, because people "Are set free from the apparently naturally ordained ways of life" (Beck, U., Op Cit, p.153), the myth that Nineteenth Century industrial

society was a truly 'modern' society is exploded.

A defining characteristic of this 'new modernity' is what Beck calls 'individualisation', by which he means the development of a powerful and radical 'politics of individual identity'. (It will be shown later that 'individualisation' was also a defining characteristic of the Fulham Power Station debate). As he explains, individualisation relates to "The demand for control of one's own money, time, living space and body" (Ibid, p.92). Individualisation is about women and men (but especially women) rejecting established forms of social structuration, such as the nuclear family, gender roles or religious practice, and defining a life and identity from within. Beck's observations are supported by market research on contemporary attitudes to families, jobs and partners. As Mintel's Family Lifestyles 1993 report put it, 90s parents "Do not see themselves solely as 'Mum' or 'Dad', but are aware of the need to keep in touch with the person they were before they became parents". The report goes on;

Clearly parents need the opportunity to express themselves as people in their own right rather than as simply mothers or fathers: this is especially true of mothers, who are still in the greatest danger of losing their identity amid the demands of motherhood.

The report concludes that the trend towards smaller families is as much a product of 'growing individualism' as of economic pressures (Family Lifestyles 1993 in The Independent, July 28, 1993, p.5). However, while processes of individuation and self actualisation can be

hugely rewarding, there are, as Beck reminds us, significant obstacles to liberation. These countervailing forces are particularly acute for women. For example, while it is true that there are now more educational opportunities for women, employment choices are limited. The chances of a woman finding a job commensurate with her qualifications and intellectual skills are comparatively low. While the number of jobs for women is increasing, the jobs are often low paid, low-skilled, part-time, non-pensioned and insecure (Curtice, J., 'Satisfying Work - If You Can Get It' in Jowell, R., et al, International Social Attitudes: The 10th BSA Report, Dartmouth, Britain, 1993, p.107). Therefore, while women may be 'free from' traditional constraints, structural inequalities and institutionalised discrimination mean that they are not 'free to' realise their potential.

Women who successfully liberate themselves from (potentially oppressive) traditional networks become, to use Beck's phrase, 'wage dependent'. When such wages are inadequate, a new, gendered underclass can begin to emerge. Inevitably, male dominated industrial, bureaucratic and political elites seek to maintain their hegemony by closing down opportunities to women. The resulting disjuncture between consciousness and conditions creates conflict. 'Sex War' results:

This...mixture of new consciousness and old conditions is explosive...Through more equal educational opportunities and an increased awareness of their position, young women have built up expectations of more equality...which encounter contrary developments in the labour

market and in male behaviour... [M]en have practised a rhetoric of equality, without matching their words with deeds. On both sides the ice of illusion has grown thin... There is much to be said for the prognosis of a long conflict; the opposition of the sexes will determine the coming years (Beck, U., Op Cit, p.103).

Current social research confirms Beck's observations on the position of women in society. As a report from the Economic and Social Research Council (ESRC) has pointed out, the nuclear family "Does not represent reality" (Mc Gourty, C., 'Dream Of Equality Turns To Dust For Most Women', The Daily Telegraph, August 31, 1993) for the majority of young people. Out of a large sample of women born in 1958, eighteen percent had been divorced by the age of 33 (Ibid). Because of the poor quality of the jobs available to most women, marital breakdowns "Were creating a new underclass of women trapped in an 'economic ghetto' from which they might never escape" (Ibid). As a consequence of structural inequalities and institutionalised discrimination, women had become "Disillusioned with work and politics". Indeed, such were the odds against them achieving their potential through work that "Less than half thought that having a job was better than being unemployed" (Ibid).

The ESRC report confirms Beck's view that a gendered poverty trap has been created. As one of the authors of the ESRC study puts it;

Women tend to leave the labour market when they have children, thereby losing their earning power. If they split up with their partner, they are no longer in a position to earn a living wage for themselves and their children. They become highly dependent on

state benefits or earning low wages (Ibid).

It should be noted, however, that while the ESRC report provides a useful empirical view of contemporary behaviour, it lacks the scope and vision of Beck's more holistic analysis. Thus while Beck recognises marital breakdown, he also emphasises that women and men continually remake their lives. Only a 'longitudinal' (as Beck would have it) analysis can reveal the 'reflexive', often experimental character of personal biography:

Each person lives through several family lives as well as non-familial forms of life, depending on the life phase, and for that very reason lives more and more his/her own biography...This biographical pluralism of forms of life i.e. the alternation between families, mixed with...other forms of living together or alone, is becoming the...'norm'...(Beck, Op Cit, p.115).

One of the consequences of 'individualisation' is that class distinctions are less important: Behaviour is less 'determined' by class. A better educated, more assertive proletariat is less willing to acquiesce to prescribed behaviour patterns.

People no longer define themselves through class membership. Rather, they define themselves through personal politics, modes of living (often a considered articulation of personal politics), and patterns of consumption. It is 'lifestyle', not class, that underpins the contemporary social mosaic. Issues of class conflict no longer constitute the political motor of society. Rather, the atomised, individualised

citizens of the 1990s unite around issues of, for example, gender, race, sexuality, risk or environmental degradation. The multiplication of issues and accompanying lobbies generates a complex tapestry of interests, loyalties and agitprop. As Beck explains;

It is possible to cheerfully embrace seemingly contradictory causes, for example, to join forces with local residents in protests against noise pollution by air traffic, to belong to the Metalworkers' Union, and yet - in the face of impending economic crisis - to vote conservative. Such coalitions represent pragmatic alliances in the individual struggle for existence (Beck, U., Op Cit, p.101).

Society has become highly complex. It is no longer possible to simply 'read off' attitudes from crude indicators like a subject's parentage, place of birth, schooling, occupation, place of residence or socio-economic status. The easy categorisations of class-based analyses are rendered useless by the 'messiness' of contemporary society.

The dysfunctional 'boomerang effects' of contemporary technologies noted by Beck attract comment from both Giddens and the New Times authors. Giddens, for example, talks of 'techno-epidemics' - "Illnesses generated by technological influences, such as those producing pollution of air, water or food" (Giddens, A., Beyond Left and Right: The Future of Radical Politics, Polity Press, Britain, 1994, p.78). For Giddens, modern technologies, such as nuclear and genetic technologies, expose us to 'high consequence risks'. Such novel risks "Are...particularly worrying, because we have little or

no way of 'testing them out'. We cannot learn from them and move on, because if things go wrong the results are likely to be cataclysmic" (Ibid p.79).

The New Times authors make the point that such risks serve to heighten suspicion of the meta-narratives of science and technology. According to Charlie Leadbeater, for example, people today are less convinced of the need to dominate nature through science. In the 1990s, the view is very much that needs should be met not by bending nature to our own anthropocentric ends, but rather by acting with nature, creating a powerful synergy of human and natural effort. As Leadbeater puts it, there is "A mounting doubt that progress is rationality's conquest of the irrational". Such doubt "Has contributed to the demise of planners and experts as special guardians of progress" (Hall, S., and Jacques, M., Op Cit, p.405). Progress, in short, no longer means 'the liquidation of unruliness', but rather the recognition that salvation lies in a symbiotic relationship between man and nature. This is a world not of Darwinian competition and conquest, but of cooperation and mutuality. (For Giddens, the changing relationship between mankind and nature heralds a 'new medievalism'. This is an epoch in which "[T]he Promethean outlook which so influenced Marx [is] more or less abandoned"; an epoch in which the resulting "Drawing-back from the ambitions of the Enlightenment" brings about a more sympathetic relationship with Mother Nature (Op Cit, p.79)).

On the question of risk awareness as a characteristic of

reflexive modernity, there seems to be a consensus that the Nineties person is more concerned about the 'negative externalities' of growth than her/his ancestors. As Giddens puts it, "Defending the environment, rescuing nature, advocating green values - these notions have become commonplace" (Op Cit, p.203). According to Fred Steward, such heightened environmental consciousness has given rise to demands for "A positive commitment to pre-empting indirect and subtle [environmental] threats" (Steward in Hall, S., and Jacques, M., Op Cit, p.68), rather than the post-hoc approach of so much contemporary legislation.

There is also some evidence that capital itself is becoming more risk-conscious and environmentally conscientious. Witness, for example, the 'Responsible Care' programme of the petrochemicals sector, which aims "To reverse the chemical industry's worsening image by a combination of continuously improving environmental performance and a new responsiveness to public concerns" (Chemical Week (International Edition), July 7-14, 1993, p.16). Ironically, one of the best examples of 'reflexive capital' is given by the US asbestos industry which, after years of indifference towards its workers, has finally made the connection between worker health and safety, and productivity (helped, no doubt, by tougher Federal legislation and a snowstorm of litigation against the industry). As one 'enlightened' asbestos industry executive put it:

[P]eople rarely do their best work for an employer who neglects their welfare...Labour

relations, productivity, dust abatement, profitability, health and safety - it struck me that at some level these were all the same issue...

I realised that key operating indicators like downtime, material usage, quality and productivity were as much a function of attitudes as they were of mechanics. I remembered what I'd been told about recalcitrant unions, and I suddenly saw that we had the labour relations we deserved...

As dust counts fell, so did our costs. We had probably made not a single change that someone hadn't thought of years earlier; the difference was that now we were actually making them. The plant's productivity rose. People seemed to care more than they did before (Sells, B., 'What Asbestos Taught Me About Managing Risk', Harvard Business Review, March-April, 1994, p.79 and p.82).

In Britain, the New Times authors see the new environmental consciousness articulated in the Green movement, whose policies set the tone of the 'new medievalism':

[For the Greens] the wholesomeness of air, food and water are more central than the size of the pay packet. The beauty of the environment overrides the growth in GNP. Job satisfaction and the fulfilment of mixing work and leisure to personal taste are considered more important than...full employment (Steward, F., 'Green Times' in Hall, S., and Jacques, M., Op Cit, p.69).

For the New Times authors, a sense of 'imbalance' - of things being out of kilter - feeds support for the Green movement. People are concerned that a ruthless exploitation has knocked nature 'off centre', and that the economic prosperity of the Northern minority has been achieved at the expense of the Southern majority. (Greens refer to Southern peoples as living in the First World, in recognition of their numerical superiority over the wealthy minority in the North). The 'new

medievalism' "Is reflected in disillusion with the dominant political philosophies, and in the various green and new age movements where there is a heavy emphasis on...the whole rather than the parts" (Mulgan, G., 'Uncertainty, Reversibility and Variety' in Hall, S., and Jacques, M., Op Cit, p.381). According to Giddens, the new movements reflect a suspicion that "Modernity...has become experimental - a grand experiment with all our lives caught up in it..." (Op Cit, p.215).

Interest in ideas of balance and sustainable development is fostered by the media and in schools:

[A]ll the media - movies, television, music, radio - participate endlessly in this largely unorganised, subversive education in aesthetic awareness. So do the schools, in art and biology classes, in student outings, in films and recordings, which release young minds from an exclusive training in abstract...theories into the realm of concrete nature, complete and whole and mysterious (Goldsmith, E., and Hildyard, N., (Eds) The Earth Report, Mitchell Beazley Publishers, Britain, 1988 p.19).

According to 'green academics', the consequence of this increased aesthetic awareness is that Greens "Have changed the course of political discourse not only in their own countries but across the planet" (Goldsmith, E., and Hildyard, N., Op Cit, p.20). Across the planet, people have lost faith in 'the bulwarks of modernity' - science and technology. Indeed, "The devices that were meant as a protection against fear have become the main propagators of it". Consequently, "We are thrown into a world of anguish, a 'Risikogesellschaft'" (Achterhuis,

H., in Sejersted, F., and Moser, I., (Eds) *Humanistic Perspectives on Technology, Development and Environment*, Centre for Technology and Culture, TVM, Norway, 1992, p.176).

Concerning the proposition that class structures are being superseded by new, often transient, issue-centred social formations, Stuart Hall speaks of "Greater social fragmentation and pluralism", and "The weakening of older collective solidarities and block identities" (Hall, S., and Jacques, M., *Op Cit*, p.119). As Martin Jacques puts it:

Homogeneity and class have been supplanted by diversity and multi-identity. Look at a football crowd in the early 1950s: massive, male, working class and all wearing cloth caps. Now take a walk through any city centre, or saunter down a suburban street: we are confronted with a profusion of styles, ethnicities, identities. Society has become gloriously different. Order has given way to confusion. This is the pick-and-choose society. From food to holidays, from sport to fabrics, from sexual identity to clothes, we can choose like never before. This is the hypermarket society ('The End of Politics', *The Sunday Times*, July 18, 1993).

What Jacques overlooks here, however, is the fact that, to participate fully in the 'pick and choose' society, one needs money. Without it, one can do little more than bear witness to 'the good life'. As one impoverished citizen, a participant in a 1996 ethnographic study of the British 'underclass', put it; "When you're pushing the trolley around [the supermarket] and you see people pushing one that's almost full and yours isn't, I think 'I wish I could just put what I wanted in and not have to worry', but I can't". Another spoke not of, as

Jacques would have it, 'choosing like never before', but of just surviving; "There's absolutely nothing I spend my money on except just surviving, you know, paying bills and buying food" (Kempson, E., 'Life on a Low Income', Findings 97, Joseph Rowntree Foundation, Britain, 1996, p.2/4). (The degree to which poverty may prescribe - or proscribe - consumer and other choices will be examined in detail later).

According to Stuart Hall, such dramatic social change as that described by Martin Jacques has brought about 'the revolution of the subject':

The...individual subject has become more important, as collective social subjects - like that of class or nation or ethnic group - become more segmented and 'pluralised'... The 'self' is conceptualised as more fragmented and incomplete, composed of multiple 'selves' or identities in relation to the different social worlds we inhabit, something...'produced', in process (Hall, S., and Jacques, M., Op Cit, p.119).

(Brian Wynne makes the same point in relation to public attitudes to risk. Thus Wynne believes that one's orientation to risk at a particular time is a reflection of the social network one inhabits. Different networks may produce different orientations to risk. As he puts it; "Alternative attitudes and beliefs [about risk] may be held by the same person, as functions of alternative social identities reflecting a complex existence within different social networks" (Wynne, B., 'Risk and Social Learning: Reification to Engagement' in Krinsky, S., and Golding, D., Social Theories of Risk, Praeger, US, 1992, p.296))

In the 1990s, identities 'fall out' of different modes of living and patterns of consumption. The green-wellied, Range Rover driving urbanite family that sojourns in the country at weekends creates a certain identity for itself. The family that religiously migrates to Gran Canaria every summer to stay at Playa de las Americas where the bars show English football on satellite TV, creates a certain identity for itself. (It is also conceivable that in today's 'free form' society, the Barbour family might also holiday in Gran Canaria with its Eurosport channels and expensively imported Heinz Beans, although it is almost certain they would shun the multiplex apartments and Karaoke for a villa and pool).

Identities can also change as the individual moves between different social milieux: Witness the transformation of the besuited City commodities dealer into just another leather-jacketed 'lad' when he attends Stamford Bridge on a Saturday, or joins the Chelsea ICF (Inter City Firm) for an away tie, when football may come a poor second to violence.

To summarise, identities are no longer forged in the cauldron of shared social and/or economic interests. Today, you are what you buy. Today, you are what you do. (Or, more accurately, you are what you can afford to buy and do). As Giddens puts it:

[In late modernity] the self becomes a reflexive project...Individuals cannot rest content with an identity that is simply handed down, inherited, or built on a traditional

status. A person's identity has in large part to be discovered, constructed, actively sustained... (Op Cit p.82).

As stated above, however, it is important not to be overwhelmed by such elegant discourses on late modernity, for there remain powerful countervailing forces to personal reflexivity. These include a lack of personal confidence, imagination or ambition, inherited responsibilities, insufficient funds to indulge one's consumerist fantasies, or an oppressive social environment. As Giddens reminds us; "Traditional communities can be, and normally have been, oppressive. Community in the form of mechanical solidarity crushes individual autonomy and exerts a compelling pressure towards conformism" (Op Cit, p.126).

2.3 Beck on the 'Unpicking' of Science.

2.3.1 Introduction.

Beck's expose of the changing status and novel applications of science in late modernity is highly relevant to the Fulham Power Station debate, where a questioning of 'official' science and consequent development of an alternative scientific discourse marked a shift (at a micro level, of course) from a 'primary scientization' to a 'reflexive scientization'.

2.3.2 Science as Discourse.

The new reflexive modernity questions not only the fabric of society, or as Beck puts it, 'work, leisure,

the family and sexuality', but also its very foundation - science. As he puts it, "Modernisation within the paths of industrial society is being replaced by a modernisation of the principles of industrial society" (Op Cit, p.10). The intellectual foundation of modern science, methodical scepticism, is being turned against science itself. The resulting critique, often produced by scientists, reveals science to be merely another 'grand narrative', as contingent as any other.

According to Beck, science has passed through two distinct phases. During 'primary scientization', science, promising "Liberation from constraints not yet understood" (Beck, U., Op Cit, p.155), was applied to nature in what can only be described as an 'act of faith'. While dramatic gains, such as a hugely augmented energy supply, were achieved, as Descartes reminds us, Homo Faber knew (or cared) little about the possible negative effects on nature. During 'reflexive scientization' - the current phase - concern is focused on "The inherent foundations and external consequences of science itself". In this more mature phase, "Its claim to truth and its claim to enlightenment are demystified" (Beck, U., Op Cit, p.155).

'Reflexive scientization' has revealed science to be no less contingent, no less a social construct, than any of the other grand narratives of the modern era. A consideration of the 'scientific paradigm' serves to illustrate the hand of man in science.

In his book The Structure of Scientific Revolutions,

Thomas Kuhn illuminated the power and pervasiveness of the 'paradigm'. A paradigm is a powerful and self-sustaining set of beliefs and practices that underpins a particular scientific theory. In ancient times, for example, it was believed that the earth was at the centre of the solar system, and that the sun and all the planets revolved around it. Elaborate theories were developed to sustain this particular astronomical view. When observations began to contradict the theory, new 'evidence' was produced to sustain the original model. Eventually, the new theory, which placed the sun at the centre of the solar system, gained sufficient support to overturn the old. The Earth-as-hub paradigm had been broken under the combined weight of new observations and its own internal contradictions. The old science had been shown to be 'bad'.

The 'contingency' of science is also manifest in the way in which 'scientific standards' are established for exposure to carcinogens and other dangerous substances. According to Beck, 'hazards' are not evaluated in some objective/rational fashion by disinterested scientists. Rather, "They are defined and evaluated socially - in the mass media, in the experts' debate, in the jungle of interpretations and jurisdictions, in courts or with strategic-intellectual dodges, in a milieu and in contexts..." (Beck, U., 'From Industrial Society to the Risk Society: Questions of Survival, Social Structure and Ecological Enlightenment' in Featherstone, M., (Ed) Cultural Theory and Cultural Change, Sage, Britain, 1992, p.112). For example, while scientists may

demonstrate high levels of atmospheric lead to be injurious to health, the evidence, when presented, is socially mediated. Thus, in Germany, the body responsible for managing the lead issue, the Council of Experts on Environmental Issues, asserts that 'The exposure of the population to lead is not dangerous on average'. By putting the 'raw' science of lead poisoning into a wider statistical frame, the science has been transformed. A new 'statistical' science of lead poisoning is created that implies the population is safe. But, as Beck explains, "Perhaps there are groups and living conditions for which the levels of lead...that are 'on average harmless' constitute a mortal danger" (Beck, U., Risk Society, Sage, Britain, 1992, p.25). In other words, those who live near major roads are inevitably at greater risk from lead emissions than those who live in open countryside. Children, too, are at greater risk due to their lesser body weight and still-developing organs. Such 'socially unequal risk positions', as Beck calls them, are rendered invisible in the new, statistically mediated, 'hybrid' science of lead poisoning.

The contingency of science is especially obvious in the matter of establishing the cause of a particular hazard. For example, if the proof required to show a link between a substance and an undesirable event is that a connection must be shown to exist 'beyond all reasonable doubt', few substances will be (scientifically) recognised as hazardous. If, on the other hand, the proof required is that 'on balance of probabilities' a

link exists between a substance and an undesirable event, more substances will be scientifically recognised as hazardous. Thus, different proofs produce different levels of hazard, or, to put it another way, each toxicological proof produces a different science of toxicology.

Given the many thousands of chemicals in use today, and given that chemicals can act synergistically or antagonistically, it is very difficult to link a specific undesirable event, such as sterility, with a specific chemical. The task becomes almost impossible if the link has to be proved 'beyond all reasonable doubt'. Hazards, therefore, are not a scientific 'given'. Rather, they are constructed 'in a milieu and in contexts'. Hazards are, in one sense, ideological products. (This has been shown in the case of the general environmental threat posed by asbestos. Until the 1995 High Court judgement that those living in proximity to asbestos factories could claim compensation for asbestos-related disease, asbestos hazard did not (legally) exist outside the walls of asbestos factories. It still remains for the courts to judge that asbestos hazard can also exist outside the walls of shipyards and other premises that use significant quantities of asbestos (The Guardian, October 28, 1995, p.2)).

In Beck's view, the more rigorous the proof, the more society is endangered. Scientists build their reputations on the strength and rigour of their methodical scepticism: The more intense and uncompromising the scepticism, the greater the kudos

achieved by the scientist. But the scientist's (personal) gain is the public's loss:

By turning up the standard of scientific accuracy, the circle of recognised risks justifying action is minimised, and consequently, scientific licence implicitly granted for the multiplication of risks...[I]nsisting on the purity of the scientific analysis leads to the pollution and contamination of air, foodstuffs, water, soil, plants, animals and people (Beck, U., Risk Society, Sage, Britain, 1992, p.62).

When members of the public take issue with excessively rigorous proofs, scientists accuse them of 'irresponsibility'. When the level of 'perceived risk' exceeds the level of 'scientifically determined risk', the public is considered to be acting 'irrationally'. In short, the distance between the scientist's risk assessment and that of the public is, de facto, the measure of irrationality and social irresponsibility. But as Beck points out, the public does not have a monopoly on 'irrationality'. In science, the answer to the question 'How safe is safe enough?' is invariably 'Safe enough is what we make it': Safe enough is what can be afforded (or as the UK's Health and Safety Executive (HSE) puts it, what is 'reasonably practicable') or what current technology enables us to achieve.

Some, like Beck, argue that this 'self referential' quality of science is hardly a 'rational' approach to standard setting. Beck uses the example of the German Atomic Energy Act to demonstrate the potentially introspective and reflexive character of scientific

standard setting:

If one asks, for instance, what level of exposure to artificially produced radioactivity must be tolerated by the populace...the Atomic Energy Act gives the general answer that the necessary precautions are to correspond to 'the state of technology' (Beck, U. 'From Industrial Society to the Risk Society: Questions of Survival, Social Structure and Ecological Enlightenment' in Featherstone, M., Op Cit, p.107).

Beck, therefore, takes issue with what he sees as the technological determinism of standard setting within the German nuclear industry. But the matter can also be looked at another way: By insisting that 'the necessary precautions correspond to the state of technology', the nuclear industry is being as safety conscious as it possibly can. It is saying that safety measures should never fall behind the level of knowledge pertaining at any one time. It could be argued that this is a more demanding approach than that of the HSE, which requires only that safety precautions be 'reasonably practicable'. The economically mediated character of official industrial safety standards in the UK is enshrined in the Executive's directive that safety precautions should correspond to the 'best available technology not entailing excessive cost' (BATNEEC) ('The Health and Safety System in Great Britain', HSE/HMSO, Britain, 1992, p.12).

A good example of the contingent, socially constructed character of scientific standards is given by the manipulation of radiation exposure limits in the wake of the Chernobyl nuclear accident of 1986. Until March 1,

1987, the European Commission's upper limit for caesium contamination of foodstuffs was 600 becquerels per kilogram. In Britain, which, like a number of other European countries, had been seriously affected by Caesium fallout from the explosion, the limit was set at 1,000 becquerels per kilo. The European Commission (EC) soon realised that, in light of the degree and persistence of caesium contamination across Europe, its prescribed upper limit was economically impractical (irrational?). Quite simply, too much food was having to be discarded as unfit for human consumption. Consequently, in November 1987, the EC, anticipating another Chernobyl-type accident, increased the ban level to 1,250 becquerels per kilogram of food product (despite a request from Britain and France that this level should be set at 4,500 becquerels per kilo) (Bunyard, P., 'Nuclear Energy After Chernobyl' in Goldsmith, E., and Hildyard, N., Op Cit, p.38). (Of course, given the non-reflexivity of most science, such an assumption was never made explicit). So, the answer to the question 'How much caesium exposure is safe?' would appear to be - following Beck's somewhat cynical assessment of standard setting - 'A 'safe' level is what we can expect to achieve in the event of another Chernobyl'. (The question of reducing the risk by winding down nuclear programmes never arose due to the perceived 'technological imperative' of nuclear power).

The 'self-referential' and heterogeneous character of science means that it is remarkably resilient. This resilience is shown in the manner in which science dealt

with the ozone scare in the 1980s: Science, having given us ozone depleting gases like chloro-fluorocarbons (CFCs), then 'ate itself' by developing sensors capable of measuring the thickness of the Earth's ozone layer. A number of holes were found that were largely attributed to CFCs. As a result of this discovery, funds were made available to science for the development of 'safe' substitutes for CFC gases. In time, a heterogeneous and elastic science redeemed itself by developing 'safer' HCFC gases, and by 'comparing the risks of CFCs out of existence'. In short, scientists, by doing more science (both natural and statistical), saved themselves and their art.

The self-refutation and subsequent re-making of science can be highly profitable for those engaged in supplying its raw materials. For example, the same chemicals companies that produce the many thousands of inorganic chemicals in use today, many of which are suspected carcinogens, also produce the chemicals used, for example, in chemotherapy. The same nuclear industry that showers Europe with caesium also produces the nuclear components for radiation-measuring devices. The same companies that refine crude oil also produce the chemical dispersants used to tackle oil spills. Within this self-sustaining universe of hazard and remedy "The industrial system profits from the abuses it produces". Indeed, "The economy becomes self-referential, independent of its context of satisfying human needs" (Beck, U., Op Cit, p.56). In a world of poisoning and antidotes, consumer needs and wants are largely

irrelevant. As Beck puts it "Developed industrial society 'nourishes' itself from the hazards it produces" [My emphases] (Beck, U., Op Cit, p.57).

Like Beck, Giddens recognises late modernity's 'demystification' of science and exploration of alternative rationalities: in contemporary society, therefore, "The findings of science are interrogated, criticised, made use of in common with other reflexively available sources of knowledge" [My emphasis] (Op Cit, p.216). However, despite the birth of 'reflexive scientization', in certain situations science is still seen as an authoritative and potentially useful source of knowledge. After all, it was satellite technology that helped 'reveal' the ozone hole. Like Beck, Giddens notes the ironies implicit in a simultaneously lethal and healing science:

When risk is still seen as external risk, science may continue to offer a sense of security, even of certainty, to lay individuals (and political officials)..science and technology are the only means of bringing their own damage into view (Op Cit, p.208).

Science, then, is 'Janus-faced' (Irwin, 1995): a source of threat and security.

Unfortunately, this is where both Beck and Giddens terminate their analysis of science: Science, although it may be used for either 'good' or 'evil', is an inherently 'neutral' collection of 'facts'. Such an externalist account, however, ignores the potential 'interestedness' of science (Irwin, 1995). That is, it

ignores the fact that, as a cultural artefact, science is as much a product of social, economic and/or political interests as any other form of human knowledge; as any other 'way of knowing'. As we saw in the case of post-Chernobyl caesium contamination, science may be subject to political and economic calculation. Thus, during the crisis, different economic imperatives produced different contamination sciences. For example, Britain, heavily contaminated by fallout, considered an upper limit of 4,500 becquerels to be a 'safe' limit. The European Community, perhaps suspicious of Britain's motives, set a lower limit. Looking at Britain's caesium contamination science from a 'social interest' perspective, it could be said that it was little more than 'politics by other means'. That is, "A weapon used to further economic and political interests in a somewhat covert manner" (Irwin, A., *Citizen Science*, Routledge, Britain, 1995, p.49).

It should be noted that the 'social interest' perspective on science is not the sole prerogative of sociologists. As Irwin discovered in his research into the public perception of risk at a major hazard site in Greater Manchester, the public, too, is aware of the potential 'interestedness' of science. Thus, while 65% of interviewees considered 'local community groups' to be either a trustworthy or very trustworthy source of 'information or advice about the local chemical industry', only 27% considered the chemical companies themselves to be either a trustworthy or very trustworthy source of advice (Ibid, p.96). It was felt

that information produced by the companies might be tainted by commercial interests. i.e. that 'commercial' science would be subject to 'social negotiation'. (Of course, there is no reason to believe that the science produced by an environmental group would be any less subject to social negotiation). Science, then, far from being "Homogeneous, cleanly bounded and consensual...value-free and objective" (Irwin, Op Cit, p.47), may be rent by internal division and dissent (due to its paradigmatic organisation) and/or co-opted by those who fund or regulate it.

Doubts about the 'trustworthiness' of government and/or commercial science need to be seen in the context of an apparent crisis of public confidence in the environmentally exploitative 'Postwar Settlement'.

Focusing on the British experience of late modernity, the New Times authors contrast the modernist Postwar Settlement with the rise of the radical ecology and environmental movements of the 1970s. The Postwar Settlement consisted of a number of broad policy objectives, common to both Labour and Conservative governments, that were pursued in the aftermath of the Second World War. Amongst these various 'Butskellite' objectives was a belief in the primacy of production and wealth generation over environmental conservation. Science and technology were at the heart of this Cartesian view of England's green and pleasant land:

[During the post-war period]...the enormous development of industry, technology and modern cities rested upon an implicit, exploitative environmental settlement. It was embedded in

the industrialism of the big factory...and in the pollution from cars, power stations and chemical plants (Hall, S., and Jacques, M., Op Cit, p.27).

The exploitative 'environmental settlement' continued until the 1970s, when "The prevailing 'industrialism' of both Right and Left" (Hall, S., and Jacques, M., Op Cit, p.70) encountered a new, radical environmentalism. During this period public opinion research revealed a developing environmental consciousness amongst the British public, with events like the Chernobyl accident highlighting the 'manufactured uncertainty' and 'high consequence risk' of the essentially exploitative post-war environmental settlement. There were disparities, however, between public opinion - as revealed by polls - and behaviour. Thus, while the percentage of the British population opposed to nuclear power rose from 65% to 83% in the aftermath of Chernobyl (Bunyard, Op Cit, p.46), the British public elected pro-civil nuclear power Conservative governments throughout the 1980s and early 1990s. In March 1987, for example, only eleven months after Chernobyl, a Conservative government gave the Central Electricity Generating Board permission to order a pressurised water reactor at Sizewell. Despite this, the Conservatives were re-elected in June of the same year by 'an 83% anti-nuclear power' British public. It may well be, therefore, that the British public's fascination with Homo Faber is far from over, and that the 'socialist' view of the natural world as "An object for mankind, purely a matter of utility" (Giddens, Op Cit, p.199) prevails. (It might also be the case that

the increasing conservatism of the Labour Party meant that the public had no real choice at the general election. Unable to express an anti-nuclear vote, it merely gave up and voted on other issues, like taxation).

2.4 Beck on 'the end of the Other'.

2.4.1 Introduction.

Beck's 'end of the Other' thesis has two main strands. Firstly, Beck asserts that certain technological hazards, like DDT or global warming, affect all (more or less) equally. And secondly, he asserts that such 'democratic' risks and hazards will tend to unify 'at risk' communities.

Given the above, Beck's 'end of the Other' thesis provides an interesting way of looking at the likely socio-political consequences of an asbestos release from Fulham Power Station.

In Fulham, fugitive emissions of asbestos did, within the geographical confines of the study area, affect all more or less equally. Despite this, however, only a very small number of residents became active: the community conspicuously failed to mobilise en masse.

There may have been several reasons for the community's limited overt response. For example, the 'hazard' may have been perceived differently by different people. Some might not have seen it as a hazard at all. Others might have been preoccupied with social hazards, like

low incomes, poor housing or crime. Also, those able to spend time out of the area, either by working or weekending away, might have felt themselves to be at less risk. (The capacity for 'risk avoidance' may reflect socio-economic status).

Thus, Beck's 'end of the Other' thesis fails to engage with the possibility that different people may look at the same phenomenon in different ways. That is, he fails adequately to explore the 'subjectivity' of human perception and experience:

To try to understand the experience of another it is necessary to dismantle the world as seen from one's own place within it, and to re-assemble it as seen from his. For example, to understand a given choice another makes, one must face in imagination the lack of choices which may confront and deny him...The world has to be dismantled and reassembled in order to grasp...the experience of another [My emphasis] (Berger and Mohr in Irwin, Op Cit, p.81).

It may be that the inactivity of the majority of Sands End residents reflected, in part at least, the lack of choices they faced in their social and economic lives. As Kempson (1996) reveals, the only real choice available to the poor is "Between cutting back on essentials [food, clothing, heating etc.] or falling into debt". Today, 25% of the British population "Live in homes with less than half the average disposable income" (Op Cit). (The question of how socio-economic factors might inhibit personal choice and action is explored in detail in subsequent chapters).

To return to Beck's 'end of the Other' thesis, however,

although the risks and hazards of late-modernity may not always unite '[F]riend and foe...city and country' (Beck, U., in Featherstone, M., Op Cit, p.109), it cannot be denied that they do exist.

2.4.2 Ubiquitous Hazard.

The Risk Society, Beck explains, is a 'world risk society'. The risks inherent in modern technologies generate truly global hazards. CFC gases, for example, affect ozone levels across the globe. Every adult has traces of DDT in her/his body. Nuclear fallout from atomic tests circles the globe. Neither wealth nor position secure refuge from such ubiquitous hazards:

The 'end of the Other', the end of all our carefully cultivated opportunities for distancing ourselves, is what we have become able to experience with the advent of nuclear and chemical contamination. Misery can be marginalised, but that is no longer true of hazards in the age of nuclear, chemical and genetic technology (Ibid, p.109).

Modern hazards cross not only spatial, but temporal boundaries too. The possible hazards of genetic engineering, for example, may not become apparent for generations. Current 'safe' radiation exposure limits may cause increased rates of cancer in twenty or thirty years time. (See discussion on EU radiation exposure standards, above). Long term epidemiological analysis may, at some future date, show fluoride in drinking water to be hazardous to health. According to Beck, because of the advent of 'supra-national and non-class specific hazards', "The gain in power from techno-

economic 'progress' is being increasingly overshadowed by the production of risks" (Risk Society, p.13).

According to Beck, in the 'global risk society', personal 'risk positions' are not dependent upon 'class positions'. That is, the new environmental politics is not particular to a specific social class or stratum. The 'end of the Other' sees to that. Rather, in the Risk Society, class positions are subsumed into 'global risk positions'. The resulting environmental politics may render class politics obsolete:

[T]he risk society (in contrast to class society) develops a tendency to unify... [F]riend and foe, east and west, above and below, city and country, south and north are all exposed to the levelling pressure of the exponentially increasing risks of civilisation. Risk societies...contain within themselves a grass-roots development dynamics that destroys boundaries...(Beck, U. (1992) Risk Society (Britain: Sage) p.47).

A good example of the capacity of risk issues to unite is given by the debate surrounding the Wackersdorf reprocessing plant in Germany. As nuclear hazards are potentially 'trans-boundary' hazards, and as Wackersdorf is near the Austrian border, Austrians have crossed into Germany in their thousands to unite with their Bavarian neighbours in a common 'risk position' on Wackersdorf. Indeed, so strong have been the 'unifying tendencies' of the 'shared risk position' that the Bavarian state government has, at certain times, closed the border with Austria.

While 'the end of the Other' is an important observation

on the distribution of risks in contemporary society, Beck himself acknowledges that the theory does have certain 'blind spots'. Thus, the old 'law' that people from different classes occupy unequal 'risk positions' "Still applies today to some central dimensions of risk" (Beck, U., Risk Society, p.35). For example, those who work in close proximity to hazards, such as process workers in chemicals factories or nuclear installations, by definition occupy unequal risk positions (See, for example, Halle, D., America's Working Man, University of Chicago Press, 1984). Also, those who live in the poorer housing close to potentially hazardous installations (usually the workers themselves), occupy unequal risk positions. Such unequal risk positions can be exacerbated by class-determined inequalities such as the inequitable distribution of income or educational opportunities: Those who occupy the higher social strata will generally have sufficient income to escape city smog at weekends, or to decant to the country for vacations. Such people will also have the educational skills to understand complex 'risk avoidance' diets:

Education and attentiveness to information open up new possibilities of dealing with and avoiding risks...through sophisticated nutritional techniques so that the heavy metals in North Sea fish are...neutralised by the toxic chemicals in pork or tea (Beck, U., Risk Society, p.35).

While it could be said that Beck contradicts his theory of 'the end of the Other' with qualifications like those given above, what he is trying to say is that within the 'global Risk Society' there exist new inequalities. For

example, while every human being may indeed have traces of DDT in her/his body, in Sri Lanka, as a German development expert has reported, "They spread DDT around with bare hands...the people are powdered white" (Beck, U., Risk Society, p.42). At Villa Parisi in Brazil - 'the dirtiest chemical town in the world' - "Most of the children have asthma, bronchitis, diseases of the nose and throat, and skin rashes" (Ibid, p.43). So while people in Britain are right to be concerned about the increasing prevalence of asthma, within this 'global risk position' there are dramatic differences in rates of affliction. These differences are caused by the export of the most highly toxic industries to those countries, usually in the Third World, with the most lax environmental legislation (See, for example, Weir, D., The Bhopal Syndrome, Earthscan, Britain, 1988). Given the extreme poverty of much of the Third World, such exports are rarely questioned. As Beck puts it, "On the international scale it is emphatically true that material misery and blindness to hazards coincide" (Risk Society, p.41).

In conclusion, while risks are omnipresent, they are unevenly distributed. We may all suffer today - but some suffer more than others.

Beck's 'end of the Other' thesis is supported by the New Times authors (albeit with a slightly different interpretation of 'globalisation'). Thus, the globalisation of risk and hazard is explained in terms of the spatial diffusion of northern industries and products like aerosols and automobiles. Hazards are also

temporally diffused. Radioactive contamination, deforestation and the over-exploitation of fish stocks, for example, could have dramatic consequences for future generations. As a result of this breaching of spatial and temporal barriers to risk and hazard, "Human capacity to affect the planetary environment appears to have reached a new level" (Steward, F., in Hall, S., and Jacques, M., Op Cit, p.67). Giddens takes this view a stage further by talking of 'the end of nature':

[N]ature has been embraced only at the point of its disappearance. We live today in a remoulded nature devoid of nature...The ecological crisis is a crisis brought about by the dissolution of nature... [My emphasis] (Op Cit p.206)

For Giddens, novel 'high consequence risks' are both constitutive and symptomatic of late modernity. Such risks "Are in a category of their own...in terms of their sheer scale. Scale undeniably gives such dangers a peculiar phenomenology. Remote from everyone and apparently wholly unaffected by anything individuals may do, such risks none the less impinge on people's consciousness more universally than other threats simply because there is no escape from them" (Op Cit, p.219). While few doubt that high consequence risks exist (who could after Chernobyl?), there is some debate as to what effect - if any - they may have on the public's perception of science. While some attribute disaffection with science (partly) to such novel phenomena, others, like Hans Achterhuis, attribute it more to a loss of faith in science-as-narrative. As Achterhuis puts it:

In the contestations of the sixties, progress and growth became suspect...I think it is fair to state that this change in hopes and fears is due not so much to increased risks...as to the bankruptcy of the faith in progress by way of science and technology (Achterhuis, H., in Sejersted, F., and Moser, I., (Eds) Humanistic Perspectives on Technology, Development and Environment, Centre for Technology and Culture, TVM, Norway, 1992, p.184).

Giddens attributes the loss of faith in science to its 'fundamentalist' or 'non-dialogic' character. Thus, in an increasingly 'post-traditional' and reflexive epoch, trust no longer accrues naturally to social, economic and political institutions. Rather, the decline of deference means that trust must be produced. The resulting novel form Giddens calls 'active trust' (Op Cit, p.129). Active trust is sustained through openness, mutual respect and the 'positive appreciation of difference' (Op Cit, p.130). Because active trust "Presumes visibility and responsibility on both sides" (Op Cit, p.129), it follows that the greater the reticence of scientists and technologists, the less they will be trusted in their work.

2.5 Beck on the Techno-Bureaucratic Control of Hazard.

2.5.1 Introduction.

Beck's expose of the 'Jekyll and Hyde' character of science helps us to understand the evolving scientific discourses of the Fulham Power Station debate. The debate centred around asbestos, once considered a brilliant example of beneficent techno-scientific

progress. It was science, however, that demonstrated the hazards of 'the wonder mineral'. Unfortunately, having 'discharged us into illness', science conspicuously failed to come up with a cure for such evils as asbestosis and mesothelioma.

Beck's discourse on the bureaucratic control of hazard is also relevant to the Fulham debate - if only because the demolition contradicts Beck's assertion that such 'conventional' hazards are accommodated within existing safety and insurance legislation. Thus, at the time of the demolition there was no general environmental exposure limit for asbestos dust. (There is a case, however, for arguing that the temporal nature of asbestos hazard (asbestos-attributable disease can take decades to appear) would place it outside the scope of conventional techno-bureaucratic hazard controls from the outset).

2.5.2 Schizophrenic Science?

In the context of the Risk Society, science is a double-edged sword. On the one hand science is the villain. Science generates hazards. Consequently, science is the motor of the Risk Society.

But science can also perform an heroic role, by detecting and neutralising hazards. The ability to detect becomes increasingly important as the number of 'invisible' hazards multiplies. Only science can sense and quantify hazards invisible to man. As Beck explains, "The focus is more and more on hazards which are neither

visible nor perceptible...[H]azards...require the 'sensory organs' of science...in order to become visible or interpretable as hazards at all" (Risk Society, p.27).

While science may be the root of the 'solution' to the Risk Society, it should, says Beck, be under the direction not of scientists but of the 'general will'. Only a science thus directed will be a science primarily concerned with the detection and amelioration/elimination of hazard. Thus, moving beyond the Risk Society necessitates a new relationship between science and the general public - in which each side respects and responds to the other. Beck summarises this ideal-type relationship as follows:

[S]cientific rationality without social rationality remains empty, but social rationality without scientific rationality remains blind (Risk Society, p.30).

While science is essential for the identification of hazards, Beck points out that the ability of science to sense hazards is outstripping its ability to remedy them. In medical science, for example, there is a 'divergence of diagnostic therapy':

[I]llnesses...can be diagnosed thanks to the more acute medical and technical sensory system, without the presence or even the prospect of any effective measures to treat them (Beck, U., Risk Society, p.204).

Because of a rampant diagnostic science, ever increasing numbers of people are being 'discharged into illness' with little prospect of being cured. This has not passed

without comment. Witness, for example, the 1995 debate over appropriate levels of funding for breast cancer screening in relation to the development of better treatments. While the accepted view in Britain was that mass screening was an effective weapon in the fight against cancer, questions were raised as to whether the £27 million spent each year on screening could be better spent on developing more effective drugs and hormonal treatments. As one disaffected practitioner put it, "I want to question the cost effectiveness of the programme and to suggest that...it would be better value for money to invest in improving treatment rather than improving screening" (Hunt, L., 'Cancer Specialists Question Value of Breast Screening', The Independent, September 5, 1995). Paradoxically, by discharging us into illness, doctors may succeed in increasing public pressure for investment in medical science. After all, if you are told you have X disease, Y allergy or Z psychosis, you are likely to demand action. This may be no bad thing, provided scientists use the money to find cures. If the money is simply used to identify other diseases, science may become self-referential. That is, science, by identifying (untreatable?) illnesses, will continue to attract research monies even if no-one is cured.

In the Risk Society, hazards are not only regulated by means of technology, but also by means of bureaucratic controls. According to Beck, contemporary society is shaped not by past events, but by planning for events that have yet to happen. That is, the bureaucratic structures, policies and laws of the Risk Society are

shaped not by 'conditions transmitted from the past', but by considerations of possible future catastrophes:

In the Risk Society...something non-existent, invented, fictive [is] the 'cause' of current experience and action. We become active today in order to prevent...the problems and crises of tomorrow (Beck, U., Risk Society, p.34).

This 'terror of the future' leads to the development of a "Norm system of rules for social accountability, compensation and precautions" (Beck, U., in Featherstone, M., Op Cit, p.100). The rules reside in, and are applied by various statutory and non-statutory bodies. The resulting "Social compact against industrially produced hazards and damages" (Ibid, p.100) exists both to manage latent risks and contain the effects of an accident, when risks translate into hazards. The various management and containment mechanisms as they apply in Britain for industrially produced risks and hazards are described in Appendix 1.

It should be noted, however, that while the mechanisms shown in Appendix 1 may be adequate for the management of conventional risks/hazards, there is concern that they are ineffective where contemporary 'mega-technologies' (Beck's neologism) are concerned. Such technologies might include nuclear power and genetic engineering, where accidents may have both spatial and temporal dimensions. As Beck puts it:

If a fire breaks out, the fire brigade comes; if a traffic accident occurs, the insurance pays. This interplay between beforehand and afterwards...has been revoked in the age of nuclear, chemical and genetic

technology...[N]uclear power plants have suspended the principle of insurance... (Ibid, p.101)

In the case of a technology where the consequences of an accident exceed the containment capacity of conventional techno-bureaucratic controls, the authorities take the only avenue left open to them: They seek to convince the public that the technology is infallible. Thus is born "The dogma of technological infallibility" for which "The queen of error, science, becomes the guardian" (Ibid, p.101).

It was in the aftermath of the Chernobyl nuclear accident that the nuclear industry's 'dogma of technological infallibility' reached its apogee. Western experts, assuming the Soviet reactor not to have had a containment vessel, asserted that an accident like that at Chernobyl could not possibly occur here in the West, as all our reactors had adequate containment. The CEBG propagated this dogma with a video entitled 'It Can't Happen Here'. However, in promoting this line, the experts chose to ignore three awkward facts. Firstly, the Soviet reactor did have a containment vessel; it was simply blown apart by the force of the explosion within the reactor. Secondly, the British Magnox reactors have been "Criticised for having inadequate, or no, secondary containment". And thirdly, the ageing Magnox reactors are said to suffer 'serious' corrosion problems (Goldsmith, E., and Hildyard, N., Op Cit, p.175).

Lord Marshall, Chairman of the Central Electricity Generating Board, sought to bolster the British position

by asserting, as the Earth Report puts it, that "Such an accident was highly improbable in the West because reactor designs such as the RBMK would never receive a licence" (Bunyard, P., Op Cit, p.42). This was a desperate tactic. Marshall was ignoring the design weaknesses in his own Magnox reactor technology while highlighting the presumed weaknesses of Soviet nuclear engineering. It was eventually revealed that the Chernobyl accident was caused primarily by unrealistic work schedules that compromised procedure (Medvedev, Z.A., The Legacy of Chernobyl, Blackwell, 1990).

The diagram reproduced in Appendix 2 explains the 'dogma of technological infallibility' in more detail: In the most optimistic scenario (curve A), it would appear that, although under control for some time, the risks inherent in nuclear technology have now exceeded our 'techno-bureaucratic' controls. The 'dogma of technological infallibility' is born at the time the 'worst imaginable accident' (WIA) exceeds our capacity to control it. However, taking the most pessimistic view (line B), it is shown that the risks inherent in nuclear technology have always exceeded our controls. In this scenario, the worst imaginable accident has been beyond our control since the inception of the 'Atoms for Peace' programme.

Like Beck, Giddens also talks about the need to make science more transparent and democratic. Only through dialogue, "In which active trust is mobilised and sustained through discussion and the interchange of

views, rather than by arbitrary power of one sort or another" (Op Cit, p.16) can science hope to regain the trust of the general public.

Giddens also discusses how 'high consequence risks' give rise to 'dogmas of infallibility. Thus, "The bigger a potential disaster, the more likely governing authorities and technical specialists are to say that it 'cannot occur'" (Op Cit, p.220). And when, in due course, such latent risks are translated into life-threatening hazards, "'It cannot happen' becomes 'it cannot happen here'" (the very title of the post-Chernobyl CEEGB video tape) (Op Cit, p.221). Giddens notes, however, that excessive sensitivity to the possible negative effects of modern technologies can prove counter-productive:

When alarms turn out to be only scares, those who point to the continuing existence of major hazards are likely to find themselves branded as doomsday merchants (Op Cit, p.221).

However, even though environmentalists may lose a measure of support through 'crying wolf', it remains the case that modern technologies have the capacity to inflict serious damage across both space and time.

3 A Politics of Risk and Hazard.

3.1 Beck on 'Truncated Democracy'.

3.1.1 Introduction.

According to Beck, we live in a society where the really

important decisions lie well beyond the purview and influence of the general public. Decisions are made as if by an invisible hand. Real power - the power to innovate, produce and market, to set the political agenda and communicate events - lies with unaccountable 'sub-political' entities, ranging from government bureaucracies that commission scientific reports to venture capitalists who sponsor 'blue sky' research. (The degree to which the Fulham protesters found themselves able to control their own 'risk destinies', and the authorities' attitude towards them will be examined in detail in later chapters).

3.1.2 Unaccountable Power.

In the Risk Society, says Beck, science is beyond the control of formal democratic structures: Science represents a new (and potentially anti-democratic) 'sub-politics'. As the breadth and depth of innovation grows, so the capacity of formal political mechanisms to regulate innovation reduces.

Society is today driven by 'sub-political' innovation. Whatever our rank or wealth, we are all subjects of a "'Truncated democracy', in which questions of the technological change of society remain beyond the reach of political-parliamentary decision-making" (Beck, U., in Featherstone, M., p.118). In this 'truncated democracy' "Progress...is a blank cheque to be honoured - beyond agreement or refusal" (Ibid, p.118).

The new 'sub-politics' of innovation produces "Quasi-

governmental power positions...in the research laboratories, nuclear power plants, chemical factories...and so on..." (Ibid, p.114). This is where real power, the power to change society, now resides. The ideas that flow from these centres of innovation constitute the 'Faith' of modern life - a Faith we are all obliged to keep. Obligated, because we have no choice. As Beck puts it, to question the why or wherefore of the innovatory deluge is almost an act of heresy.

A good example of the power of the new sub-politics is given by the genetic engineering industry. (I use the term 'industry' because much of the investment in genetics is made with a view to generating the maximum return for shareholders). As the February 1994 panic over the insertion of 'cancer causing genes' into a virus "Similar to that which causes the common cold" (Hawkes, N., 'Science Must Be Safe And Seen To Be Safe', The Times, February 5, 1994) at Birmingham University showed, such innovation circumvents established control procedures. At the time of the experiments, before the (post-hoc) intervention of the Health and Safety Executive, Birmingham University occupied a 'quasi-governmental' power position; making decisions on behalf of the public without its consent...or even knowledge. One can be sure that this sub-politics is practised in laboratories across Britain. This is the Faith the public is obliged to keep.

Giddens, too, uses the term 'subpolitics' in the context of "The many expert systems that so influence our lives

today" (Op Cit, p.128). Such expert systems are 'non-dialogic'. That is, they constitute a form of social organisation largely beyond the influence of the general public. As far as Giddens is concerned, science and technology are as 'fundamentalist' as some religions, "Refusing the discursive engagements which a world of cosmopolitan communication tends to enforce" (Op Cit, p.85). Science still constitutes a form of 'traditional authority', the consequence being that "Expertise remains uninterrogated" (Op Cit, p.128). While Giddens recognises that, at present, "There is no alternative to the rule of science and expertise", he also recognises that, in our increasingly reflexive epoch, "There is no alternative to a dialogic engagement with them" (Op Cit, p.128). This puts the onus on scientists, technologists and their paymasters to respond.

3.2 Beck on People Power.

3.2.1 Introduction.

Beck's discourse on the prominence of 'self-help' groups in contemporary politics provides us with a number of analytic tools with which to understand contemporary risk debates - including that at Fulham. Especially relevant are his views on the public's fear of 'immiseration' through hazard, protesters' increasing use of 'formal' scientific discourse in environmental campaigns ('green' science), the marginalisation of orthodox norm/rule-bound politics, and the desire for a more consultative, 'fluidised' mode of government.

3.2.2 The 'Revolution of the Subject'.

'People power' is the other side of the 'sub-politics' coin. In the Risk Society, power resides not only in science and technology, but also in the new popular movements organised around issues of gender, race, age, disability and the environment. As Beck puts it, "Citizens' groups have taken the initiative thematically in this society" (Beck, U., in Featherstone, Op Cit, p.116). By 'this society' Beck is referring to the more prosperous countries of the northern hemisphere where the focus of concern (in his view) has shifted from material to environmental questions. While material immiseration may (for most) have been banished, 'immiseration through hazards' is an ever-present threat to well-being. In this context, environmental groups proliferate and grow. Such groups monitor and agitate against the 'toxic experiment' unleashed upon the world by science and technology. This toxic experiment takes place "Invisibly, without scientific checking, without surveys, without statistics...under the condition that the victims are not informed". In the toxic experiment "People serving as laboratory animals in a self-help movement have to collect and report data on their own toxic symptoms against the experts" (Beck, U., Risk Society, p.69). Thus begins the "Scientization of...protest against science" (Ibid, p.161).

The new sub-politics of issue-based protest represents the maturation of democracy. The members of sub-political groups are using rights of self expression and

free association to establish a 'new political culture' in opposition to established forms. As Beck puts it, "Political modernisation disempowers and unbinds politics and politicizes society". In Beck's view, the new sub-politics can "Codetermine and change the agenda of politics" (Ibid, p.194). Central to this process is the exploitation of the floating voter.

Society is less structured today than at any time in the past. The fragmentation of the great social blocs has caused the demise of party political loyalty and the fluidisation of politics. For example, while in Germany in the 1960s roughly ten percent of the electorate could be classified as 'swing voters', today that number stands at between twenty and forty percent (Ibid, p.190). This blurring of political loyalties has been exploited by the new sub-political movements like the Greens (although it should be noted that the Greens have been more successful on mainland Europe than in Britain).

Despite their success, such movements are sometimes criticised for being unrepresentative of the general will. They are dismissed as idiosyncratic and ephemeral 'protest votes' unworthy of serious consideration. (The Mobil campaign of the late 1970s is typical of the discourse employed by international capital against 'public interest' groups. As one newspaper ad ran; "Most ['public interest'] groups don't represent any broader interest than that of their own members - and most of them don't have all that many members. Some have no

members at all, merely a board of directors and a source of funds. They grind a private axe - and claim that it really belongs to all of us" (New York Times, November 1, 1979)). But according to Beck, this reading of the new sub-politics is seriously flawed. The new movements are symptomatic of a profound change in society. In this context the size of a group's membership, or source of funding is unimportant.

Such groups 'flag up' a loss of confidence in science and technology. As Beck notes; "Techno-economic development is losing its cultural consensus" (Beck, U., Risk Society, p.203). In this context, the demands for greater popular control over the sub-politics of science grow.

Progress has been likened to "A blank check (sic. US spelling) to be honoured beyond comment and legitimation" (Ibid). The new movements are challenging such tacit assumptions, and are insisting that in the matter of techno-economic decisions, the public be enfranchised.

The new sub-politics of participation has achieved much in Germany, where it has spawned a new political culture. In Beck's homeland, politics and 'non-politics' have become reversed. As he puts it "The political becomes non-political and the non-political political" (Ibid, p.186). The net effect of this inversion is the "Fluidisation of politics into a political process" (Ibid, p.199). In other words, politics is no longer remote, hierarchical and prescriptive, but open,

consultative and negotiative. In the new, 'networked' democratic process, consultation and negotiation between sub-political groups and 'formal' representative institutions takes place across hierarchies and fixed responsibilities. The democratic process becomes dynamic and 'connected' - in short, 'messy'.

Beck's observations are echoed by the New Times authors, who note that in Britain "The politics of the state has...been circumscribed by the growth of politics in civil society" (Hall, S., and Jacques, M., Op Cit, p.408). As Martin Jacques explains:

The formal boundaries of politics are dissolving. The political world of parties and state has been invaded by a vast range of institutions from civil society, from charities to women's groups, from cultural bodies to environmental organisations, many of which can boast far higher levels of membership and participation and which are almost invariably far more modern in their forms of organisation and activity (Jacques, M., 'The End of Politics', Op Cit).

The new politics occupies the ground between the old power blocs (government, political parties, trades unions, professional associations and other components of the establishment). It often consists of loose associations of ad-hoc, often temporary bodies that unite around a specific issue. The associations, and sometimes the groups themselves, can be short-lived.

Giddens develops this analysis by pointing out that, in a 'post-traditional' society, such groups are both proactive and highly self-reliant:

In a society of high reflexivity the regular

appropriation of expertise - in all its many forms - tends to replace the guidance of tradition. This is by definition an energetic society, not a passive one. Even where they stick by traditions, or recreate them...groups...are more or less compelled to take an active stance towards the conditions of their existence (Op Cit, p.87).

The new sub-political groups exemplify a major theme of Reflexive Modernity: the 'escape from structure'. The groups challenge both external and internal structuration. The eschewing of the 'dead weight' of internal bureaucracy allows groups to devote maximum effort to achieving objectives. As Mulgan puts it, "Energies are directed outwards rather than inwards to sustaining and reproducing a fixed structure" (Hall, S., and Jacques, M., Op Cit, p.348).

Established political groups, like the Labour Party, have not been enthusiastic about the new phenomenon. As Beatrix Campbell explains, while the new sub-political groups are often highly successful in achieving specific objectives, they are often scorned by the old guard for their particularism and lack of 'politics':

[In Livingston] [t]he old pillars of politics have crumbled. Yet the place is full of activists. Their activism is local and practical...But, the traditional party militants complain, they're not political (Hall, S., and Jacques, M., Op Cit, p.286).

The particularism of sub-political groups has also been criticised in the media, as the following Jeremy Paxman question to a member of the Freedom Network (a matrix of civil liberties groups) demonstrates:

In the grown-up world, politics is about compromise...and it is about the lesser of two evils. In a sense, by concentrating on specific issues you avoid having to make those judgements, don't you? ('Newsnight', BBC TV, October 7, 1994).

Despite an occasional bad press, however (and the introduction of such restraining legislation as the Criminal Justice Bill (Berens, C., 'Diary of Dissent', Red Pepper, January, 1995)), there are numerous examples of the accession of sub-politics over formal politics. In Swindon, for example, the demise of old-style Labour politics due to the run-down of the town's industrial base has been paralleled by the rise of a vibrant sub-politics. As the Director of Swindon's Council for Voluntary Service has put it:

There's been a huge expansion of self-help activity, a lot related to health and women's issues...Many are controlled by the users, many aren't huge, they aren't bureaucratic, they come and go as needs change (Hall, S., and Jacques, M., Op Cit, p.293).

Such novel sub-political groups articulate the view that establishment politicians - of all hues - have failed the people. As one M11 protester put it in a TV interview:

They [politicians] are too far away from where people are at. A lot of young people are fed up with paying people to do their action for them. They want to do it themselves and they want to see that things are being done ('Newsnight', Op Cit, 1994).

In conclusion, the 1990s have witnessed the maturation of the 'movement politics' of the 1960s. While political

parties across Europe are in decline, sub-political groups and groupings are in the ascendancy. The attraction of these groups is that they break the mould of the political 'Ancien Regime'. Politics is no longer about blind, unquestioning allegiance to synonymous class and party interests. Rather politics is about uniting around specific issues that are of direct and immediate concern to the individual. Where political parties are cold and impersonal, sometimes closer to the state than the membership, sub-political movements make the personal political. While political parties (largely) reject direct action, non-violent direct action (of the type practiced by Greenpeace) is a key lever for the new sub-political groups.

In light of the new sub-politics, it is possible that in the coming years the role of the state will change from one of control to one of facilitation. The key features of an enabling state have been outlined by Mulgan:

Rather than applying uniform rational principles, [the state's] task becomes one of overseeing the balance between systems, redistributing resources, and creating the conditions for a variety of groups and institutions to organise themselves. Rather than engaging in social engineering (the old mechanistic metaphor), the state's legitimate task becomes one of creating the space for social experiment [My emphasis] (Hall, S., and Jacques, M., Op Cit, p.387).

Giddens strikes a similar note to Mulgan with his concept of 'generative politics'. Through generative politics the public is allowed both the space and resources to develop and implement solutions to social problems for themselves. Such a politics is one of the

prerequisites for the fostering of active trust - the only viable form of trust in a de-traditionalising late modern society (Giddens, Op Cit, p.93). Another prerequisite is greater openness in democratic adjudications; in Giddens' words, 'Deliberative democratisation'. Giddens is scathing of contemporary democratic practice:

Parliaments and congressional assemblies in a liberal democratic system are supposed to be the public spaces where agreement is achieved on policy-making matters. Yet how open these are, as it were, to 'inspection' by the public is quite variable. They can become either dominated by the factionalism of party politics or become essentially private debating societies. Deliberative democratisation would mean greater transparency in many areas of government... (Op Cit, p.114).

3.3 Beck on 'Scientization'.

3.3.1 Introduction.

Beck's discourse on the 'scientization' of dissent highlights the increasing willingness and capacity of protest groups to employ formal science to support their claims and objectives. During the 1995 debate over the disposal of the Brent Spar oil storage platform, for example, Greenpeace used formal scientific assessments to support its demand that the platform should not be dumped at sea. In a rather more subtle and less confrontational application of 'scientized' protest, in 1993 Greenpeace sought to highlight the environmental threat posed by refrigerators that use ozone-depleting chemicals like chloro-fluorocarbons by pioneering an

'environmentally friendly' refrigerator.

3.3.2 Populist Science.

A characteristic of Reflexive Modernity is that the 'critique of progress' is itself a scientific ('scientized') critique.

There are two reasons for the 'scientization of protest'. The first is the practical problem of identifying and measuring contemporary hazards. Many hazards, like carbon monoxide, airborne asbestos or radiation, are invisible. Such hazards can be revealed only with the aid of science:

The diagnosis of...threats...is often possible only with the aid of the entire arsenal of scientific measurement, experimental and argumentative instruments. It requires considerable special knowledge, the readiness and ability to engage in unconventional analysis, as well as technical facilities and measurement instruments that are generally quite expensive (Beck, U., Risk Society, Op Cit, p.162).

The second reason for the scientization of protest is the requirement that the protest be made 'credible' in the eyes of the political establishment. Qualitative assessments of risk and hazard are generally ignored by the agencies of the state and the media. Quantitative assessments, on the other hand, are given a fair hearing because they 'play by the rules of the game' i.e. by the rules of scientific evidence and argumentation. Where issues of risk and hazard are debated, the lingua franca is science. Alternative forms of dialogue are either

ignored or 'marked down'. Thus, 'perceived risk' is held to be inherently inferior to 'statistical probability'. The former is subjective. The latter 'scientific', and therefore objective and disinterested.

There are some, however, who believe such a distinction to be founded on a false premise; namely that science is uncontaminated by judgement. As Levidow points out, "Knowledge [including the scientific kind] is a product of social labour, which always involves a cognitive framework" ('Risk as Reification', EASST Newsletter, Volume 13 (1994), Number 1, p.18). Levidov's argument highlights the cultural dimensions of scientific knowledge (some of which were explored in the discussion on the sociology of scientific knowledge (SSK) in section 2.3.2, above). Others, like Wynne and Irwin, have commented on the potential 'interestedness' of scientific discourse. Wynne, for example, has focused on the alleged precommitments of those who produce and implement scientific and technological risk assessments in the nuclear industry. Thus, during the 1977 Windscale Public Inquiry, those opposed to the development of the thermal oxide reprocessing plant (THORP) (a facility for reprocessing spent nuclear fuel), queried the objectivity of the nuclear scientists' discourse. It was felt that the scientific arguments presented in the Inquiry in favour of the facility were unduly influenced by the nuclear industry's allegedly 'expansionist' agenda:

The opponents believed that the social institutions that managed nuclear power were committed to its indefinite expansion...[and]

were unresponsive to...alternative technological social trajectories (Wynne, Op Cit, p.277).

In such a precommitted institutional context, says Wynne, "Although the official expert framing of the risk issue was taken to be the natural rational perspective, it was just as much derived from prior social-institutional assumptions as the public framing of the issue" (Ibid, p.278). (More optimistically, however, Wynne goes on to say that the reflexive articulation of such precommitments through 'social learning' might allow "[T]he opportunity to place scientific knowledge on a more legitimate, properly conditional, and ultimately effective footing" [My emphasis] (Ibid, p.279).

The dynamics of the 1977 Windscale Public Inquiry support Beck's view that the 'scientization' of protest against science produces a kind of scientific 'arms race' in which each side tries to knock the other out with the most 'objective' and thoroughly researched claims. As he explains, "Those who find themselves in the public pillory as risk producers refute the charges as well as they can, with the aid of a 'counter-science' gradually becoming institutionalised in industry" (Risk Society, p.32).

But there is a more positive side to the 'scientization' of protest, namely the opening up of a new channel of communication between protest group and government/industry - namely the lingua franca of science itself. Before the scientization of protest, when 'mere' social rationality was pitched against

scientific rationality, "The two sides talk[ed] past each other" (Ibid, p.30). Now, because both sides use the same language, at least some form of dialogue on risk and hazard can take place - although the unequal distribution of political and economic resources may make it a rather one-sided conversation: Scientific research is costly and requires publicity and political support to influence debate.

The scientization of protest generates other difficulties too: If one accepts science as the lingua franca of protest, one also accepts the checks and balances inherent in scientific argumentation. These include, for example, establishing strict proof of causality in pollution cases.

In our complex world, with its antagonistic and synergistic interactions, proving 'beyond all reasonable doubt' that pollutant X emanates from source Y, or that a cancer is caused 'beyond all reasonable doubt' by chemical Z and not by synergistic or antagonistic reactions between other chemicals, is extremely difficult. Therefore, accepting and playing by the rules of causality can work against the environmentalist agenda. Beck's example of a lead crystal factory at Altenstadt in Germany provides a good illustration of the dangers of accepting the rules of scientific discourse. The factory, although visibly emitting "Flecks of lead and arsenic the size of a penny" (Beck, U., in Featherstone, M., p.102), avoided prosecution because it could not be proved 'beyond all reasonable

doubt' that the pollution came from this plant and not from one of three other glass factories in the area. Thus we can see from this case that if causality has to be proved 'beyond all reasonable doubt', "The more pollution is committed, the less is committed" (Ibid, p.103).

At a more basic level, of course, adopting scientific discourse as the lingua franca of environmental debate requires that one's basic science is sound. That is, one's scientific method must be thorough enough to withstand peer review. If one produces 'sloppy' science, one is instantly damned both by the scientific 'establishment', and by those who fund establishment science. This, of course, is what happened in the case of the Brent Spar, where Greenpeace were rounded on by both company executives and Ministers of the Crown for producing wildly inaccurate estimates of the amount of oil left in the platform. One junior industry minister accused Greenpeace of 'scaremongering' and of making 'wild allegations'. The fiasco culminated in the issuing of a public apology by Greenpeace to the platform's owners (The Environment Digest, 1995/8, p.13). Thus it can be seen that the 'scientization' of protest may be a double-edged sword, in that poorly planned or executed scientific investigations may detract from, rather than add to one's political and/or environmental argument.

The scientization of protest can also generate difficulties within protest groups, by alienating the leaders of a group from their membership. According to Brian Wynne, this is exactly what happened to Friends of

the Earth at the Inquiry into the proposed Thermal Oxide Reprocessing Plant at Windscale in the late 1970s, where the formal presentation of evidence, and adoption by the group of "A very moderate stance" served to distance FoE's representatives from the rank and file (Wynne, B., 'Nuclear Debate at the Crossroads', New Scientist, August 3, 1978, p.351).

4 The Discourse in Summary.

Beck's core thesis is that the developed countries have entered a new epoch - that of the Risk Society. In this new society it is realised that the ecology of the planet is under threat - chiefly from the risks and hazards of (First World) scientific innovation. The recognition that "The biosphere of man's inheritance and the technosphere of his creation are out of balance" (Zuckerman, Nature, Vol 358, July 23, 1992, p.274) generates a new consciousness, articulated through a vibrant sub-politics of environmentalism.

But the Cartesian vision of progress through science is not easily changed. Those who commission and conduct scientific research (who, through their association with science, are already powerful 'sub-political' actors) defend its reputation by challenging the activists head-on. Environmentalists are required to produce formal scientific evidence to substantiate their claims. If such evidence can be produced, it is subjected to the most rigorous proofs. Given the interconnectedness of industrial and natural systems, many of the claims made

by environmentalists are dashed on the rocks of 'causality'.

Paradoxically, science, although subject to a vigorous critique, remains at the heart of the solution to environmental degradation and technological risk/hazard. Few advocate a 'return to nature'. The utopian dream of a return to self-sustaining agricultural hamlets and craft industry is long dead. (As Beck puts it, "Little remains today among the professionalised segments of the ecology movement of that abstinence from acting on nature that was previously propagated by the movement" (Risk Society, p.163)).

The paradox of the scientization of protest against science is paralleled by other dramatic innovations, such as the Risk Society's 'revolution of the subject'. Thus, citizens of the Risk Society display a heightened consciousness of self and willingness to 're-write' their lives through social experimentation. In this Reflexive Modernity, personal biographies are re-written to reflect changed circumstances: The wife who liberates herself from marriage will, over time, substitute the attitudes and habits of the married state with those of independent living. That is, the personal biography is re-written to support and reproduce the new, preferred lifestyle. Reflexive Modernity is thus a questioning modernity, characterised by a desire to take control of one's life. The precondition of Reflexive Modernity is a thorough questioning of all traditions and prescriptions, including those implicit in the discourse and praxis of science.

Central to Beck's solution to the dysfunctionalities of late modernity is the sensitisation of the practice of science to the natural world. Ever optimistic, he argues that a science which 'acts with' rather than 'on' nature, and which is more under the control of non-scientists, may provide an antidote to the Risk Society.

Needed: A Political Economy of Risk and Hazard?

1 Introduction.

Building on Chapter One's analysis of late modernity, this chapter questions the integrity of the Risk Society thesis as advanced by (especially) Beck and Giddens.

While it is not my intention to debunk the thesis, I wish to make a case for a more holistic and textured concept of risk in late modernity.

Could it be, for example, that alongside the novel scientific and technological risks and hazards of late modernity, the 'old' enemies of "Sickness, poverty, unemployment, squalor and ignorance" (Childs, D., Britain Since 1939, Macmillan, Britain, 1995, p.59) identified by Beveridge in 1942, persist? If the old evils do indeed persist (even in modified late modern form), it is surely worth exploring how they might affect our understanding of and reaction to novel technological risks and hazards?

To paraphrase Marx, while we may indeed make our own history (and if Beck is to be believed, we are more able and willing to do this today than in the past), we do so 'under conditions transmitted from the past'. My point is that the 'past' and present interpenetrate and overlap; that the socio-economic 'bete noires' identified by Beveridge persist within late modernity - albeit in modified form; and that these socio-economic factors influence our subjective experience of late

modernity.

Given the diversity of human experience, it follows that the concept of the Risk Society will mean different things to different people. In Beck's language, the Risk Society is a kind of scientific, technological and democratic dystopia. However, to the residents of an inner city sink estate, the Risk Society is perhaps more an economic than environmental or democratic nightmare; more a crisis of systematic and institutionalised discrimination than of personal identity.

There can never be a definitive concept of the Risk Society. The best we can do, in my view, is to talk of subjective, differently constituted Risk Societies.

2 The Complete Picture?

In his major work on the changing consciousness of late modernity, Ulrich Beck conjures up a picture of a post-materialist First World in which issues of environmental disamenity come to dominate social, economic and political discourse. A world in which citizens, liberated from the constraints of tradition and cultural prescription, are free to self-actualise. A world in which we have both the time and resources to develop and indulge our environmental conscience. If modernity was characterised by personal economic turpitude, late modernity is characterised by the risks inherent in unrestrained and unaccountable scientific and technological innovation. Such risks are democratic, (generally) affecting not just a single sex, age group,

class or caste, but everyone in more or less equal measure. In short, according to Ulrich Beck, the risks of late modernity are primarily environmental, are suffered equally by all, and are the concern of all, whatever their education, history or socio-economic status.

Beck's view is echoed by other observers of the late modern condition, including, in Britain, people like Anthony Giddens.

But is this the complete picture? Have these eminent observers of the late modern scene told us the whole truth? Or have they, in seeking to establish the Risk Society thesis, been rather selective? (Beck, for example, has been accused by Rustin (Op Cit, p.10) of polemicising on behalf of the German Greens). Do we really live in a post-materialist society? Do we all possess the social skills and personal confidence to break the suffocating mould of tradition? And if we do, do we all want to? (See, for example, the August 1990 New Internationalist analysis of the re-birth of secular and religious fundamentalisms in late modernity). Do environmental questions really determine the direction of contemporary social, economic and political discourse at all levels of society and in all circumstances? In short, to what extent has the Risk Society text been promoted at the expense of consideration of the wider social, economic and political context?

2.1 A Subjectively Constituted Kaleidoscope of Risks and Hazards.

Most citizens of late modernity have no choice but to evaluate general environmental risks, such as ozone depletion, in the context of other - perhaps more pressing - physical, social and economic hazards. Some of these hazards will be encountered in a 'normal' day's work. Consider, for example, the immediate physical discomforts of the shipwright:

Mack then took me on to the half-completed ship, through No.1 hold where the scaffolding, erected to reach the seam beneath the decks, was very unstable and lurched at a disturbing angle. It should have been secured to the bulkhead but wasn't. He pointed out the hole in the deck which the welders have to climb through to get beneath the engine bed and down into the lube-oil sump for the final welds. Everywhere that steel touches steel has to be welded. The ship has two skins (double bottoms) and the welders have to crawl between them along narrow seams, wearing bulky protective clothing and dragging their masks and tools. They also pull an extractor pipe after them. Their journey is through steel hatches and over steel ribs which stick up every few feet and scrape the spine. Once inside, they work in cramped conditions, usually alone, lying on their sides in a steel box sometimes no higher than eighteen inches high, breathing fumes all the while.

Almost every welder I spoke to dreaded working in the 'lube-oil' and they all, without exception, recalled at least one occasion when they had 'thrown a wobbler' in the double bottoms. One man told me that his mate had gone permanently mad after being kept on the same job all the time, moving from ship to ship, double bottom to double bottom...

If the light fails it is pitch black, and the boom and screech from the burner and caulkers becomes terrifying... (Pickard, T., We Make Ships, Secker and Warburg, Britain, 1989, p.34)

(It should be noted that while such activities are (unfortunately, in the economic sense) no longer typical

of the industrial scene in the Northern hemisphere, they are increasingly common in the expanding economies of the South - especially, in the case of ship construction, South Korea and China).

That other 'smokestack' industry, steel, is no less hazardous than shipbuilding. As Deborah Orr recalled of her 1970s childhood in the steel town of Motherwell;

Everyone in Motherwell ha[d] terrible stories of deaths at [Ravenscraig]...The most awful story was of a man who had toppled into one of the huge ladles full of molten steel. He'd been up to his chest, the rest of his body burning away. His workmates had pushed him right in, rather than try to save him, because they knew he couldn't survive (Orr, D., The Town of Steel, The Guardian Weekend Magazine, August 3, 1996, p.15).

Such terrible incidents served to remind the community of the risks its menfolk (there were no steelwomen at Ravenscraig) ran at the steel plant. Such risks constituted an important part of the socio-economic tableau against which the people of Motherwell - men, women and children - lived their lives. Deborah Orr's own father was badly injured at work when a piece of loose trimmed steel sliced through his ankle. Although it crippled him for months, it "Barely counted as an industrial accident" (Ibid). In Motherwell, workplace accidents were just as much a part of everyday life as the 6am, 2pm and 10pm shift sirens that 'sounded across the town'.

The dangers inherent in coal mining are well documented. These range from such chronic health effects as

pneumoconiosis to the immediate hazards of roof collapse or gas explosion. Prior to its privatisation in the mid-1990s, the British coal industry was one of the safest in the world. Since privatisation, however, the industry's profile has changed, with a plethora of small companies opening up new, or re-opening old workings. It is possible that, in some of these new undertakings, working conditions may not be as satisfactory as they were before privatisation. The accident rate may rise.

Process industries, too, have their risks, as the following testimonies from chemical plant operators demonstrate:

You're breathing in all those chemicals, so you get all shrivelled up, like Joey. You know he looks like an old man. He's all hunched up, and he's only forty (Halle, D., *America's Working Man: Work, Home and Politics Among Blue-Collar Property Owners*, University of Chicago Press, 1984, p.110).

I've been here when they put in large amounts of asbestos and the place is white with fumes. Chemical workers don't live long. You're bound to pick up something (Ibid).

Thus the working conditions experienced by manual wage labour are often unpleasant and/or dangerous. Temperature extremes, noise, filth, gases and immediate physical dangers combine to make blue collar work at best unpleasant, at worst hellish. As De Angelis explains in Blue Collar Workers and Politics:

A majority of the [blue collar] interviewees say that their jobs are very tiring, difficult and/or nerve wracking. Another majority complains of excessive temperature (usually heat, but sometimes cold, for those exposed outside in the winter); the kitchens of the electric plant, the industrial laundry, the

blast furnaces and pipe-casting shop of Pont-a-Mousson and the steel-rolling sectors of Pompey are often literally "infernal". In addition, there is also noise (e.g., the whirring of turbines,...the grumbling of iron ore sorters), and dirt, and dust, and grease, and, in many cases, considerable danger. Some jobs expose workers to electric shocks, others to gas and bad air, others to burns, and almost all to unpredictable accidents...In the mine, there is the risk of cave-in, or of getting an arm or leg caught in a conveyor belt; in the steel factories, grinders accumulate very fine dust that penetrates into their lungs, while the rollers can lose a part of their body at any time (De Angelis, R.A., Ibid, Croom Helm, 1982, p.42)

Roller accidents in steel mills are not uncommon. Deborah Orr's father, for example, narrowly escaped serious injury when a red-hot steel bar came off a roller-conveyor, "Shot up in the air and seared right through his platform an inch from his foot. How he hung on to the swinging platform and didn't fall onto the rollers, he still doesn't know" (Op Cit, p.15).

Even the so-called 'clean' industries of late modernity, like electronics, present physical risks, as the workers in Mexico's high technology maquiladoras are discovering:

I was on the health and safety committee about two years ago...They tried to bribe me as they always do, but I wouldn't take the money. I complained about the fumes from lead soldering which were really bad. There were no exhaust fans and people's eyes would turn red and their voices would go hoarse. Then they would get nausea and headaches. About half the workers became ill (Ghazi, P., 'America's Deadly Border', The Observer Magazine, December 12, 1993).

Such observations are consistent with the view of Watterson (1991) that workers are often fully aware of

occupational health risks. Thus Watterson notes a sensitivity to occupational health matters on the part of "[A]sbestos workers, plastics workers, textile workers - mule spinners with cancer and byssinosis, welders and foundry workers with respiratory diseases, engineering workers with vibration-induced white finger and shipbuilders with occupational disease" (Watterson, A., in Irwin, A., *Citizen Science: A Study of People, Expertise and Sustainable Development*, Routledge, Britain, 1995, p.131). Such manifestations of late-modern reflexivity, however, must be viewed in context. Thus, bearing in mind the economic necessity of work, it does not necessarily follow that such risk consciousness will act to change, or even modify, behaviour.

Besides having to come to terms with the immediate physical hazards of paid employment, workers (and their families) also face the economic risks attendant upon the loss of that employment - however arduous, dangerous or badly paid it might be. The paradox of workers exposed to danger fighting tooth and nail to keep their jobs - and therefore a measure of economic security - is well illustrated in the following testimony from an American chemical process worker:

What are you going to do? I worry all the time about the stuff I smell and about some of the things I've seen over there. But I'm making \$11 an hour doing inside work. In West Virginia, you don't walk away from top dollar like that (Chaze, W.L., 'Grim Cloud of Worry Reaches U.S.', *U.S. News and World Report*, December 17, 1984, p.27).

In the Kanawha Valley, West Virginia - otherwise known

as "Chemical Valley" - industrial and general environmental hazards are tolerated out of economic necessity:

[O]n Institute's main street, chemical workers swig beer and tell each other what they know of the accident in India and of Union Carbide's plans [UC have operated in Chemical Valley since the 1920s]. Some say that they, too, are worried about the potential for an accident but have no prospect of finding other work in an impoverished state with one of the highest jobless rates in the country (Ibid).

Such job insecurity is not a new phenomenon, however. Thus in 1975, "25 percent of all Americans [were] afraid of losing their jobs" (Sierra Club Bulletin, Vol 60, 1975, p.25). Even allowing for 'interview bias' - one might expect even some of those with secure jobs to answer in the affirmative - this figure indicates a very real public fear. And these were the days before the birth of the 'New Right' and Reganomics.

The 'economic imperative' is also very much in evidence in Britain, where an insecure and fearful workforce has developed a pragmatic tolerance of job-related risks and hazards. As one stacker-driver in a chemical company put it in a 1995 job condition survey:

I work in the outside storage department...I don't think anybody would take the outside job, with it being the dangerous chemical side. It's like a mile away from the main complex. Because it was permanent, I jumped at the chance...there's a lot of responsibility, with the chemicals, dangerous chemicals (Workers' Voices - Accounts of Working Life in Britain in the Nineties, Greater Manchester Low Pay Unit (GMLPU), Britain, October 1995, p.20).

Of course, job insecurity has a long history in Britain (as in other industrialised countries). But, as in the States, things seemed to deteriorate from the mid 1970s, with the financial cut-backs of the Callaghan administration - cut-backs accelerated under Margaret Thatcher. Given the consequent further erosion of job security it was unsurprising that the miners, despite the dangers inherent in deep mining, fought so hard in 1984/1985 and 1993/1994 to preserve their industry.

Unemployment, and its attendant fears, loom large in the public psyche. As another GMLPU survey interviewee put it, "My experience is that a lot of people are scared. They're scared of losing their job. They're scared of being left with nothing. No house, no food to put in their children's mouth. They're scared of it" (Ibid, p.22). Fear of unemployment can be a powerful influence on behaviour, as evinced by the decision of the Ravenscraig men to continue working even during the miners strike of 1984/1985. Suspecting that the plant would be shut for good if they joined their brothers in arms, the employees kept the plant working. Given the importance of the 'Triple Alliance' to the miners' cause, this was not an easy decision. But economic necessity dictated that solidarity be sacrificed for jobs. Inevitably, the steelworkers' motives were twisted by the government:

When the [miners strike] was over, Thatcher appeared on television, congratulating the men of Ravenscraig for not giving in to the miners. The town, as one, was affronted (Orr, Op Cit, p.16)

Fear of unemployment continues into the 1990s. Today in South Wales, for example, people are so fearful of the consequences of unemployment that some are willing to work for £1.70 an hour (even though the TUC in September 1996 recommended a minimum hourly rate of £4.26 (The Sunday Times, September 15, 1996)). Such meagre remuneration means that many are "Having to work in excess of 70 hours a week to make ends meet". In the 'dog eat dog', laissez-faire economic environment of the 1990s, abuses of workers' rights are commonplace:

The [Neath and Port Talbot Citizens Advice Bureau] has...discovered that many employers are not paying holiday pay or allowing meal breaks, and in some cases overtime is compulsory with no extra pay on the hourly rate. Employees often found themselves without a written contract several months after beginning employment. By law every employee is entitled to a contract of employment within 12 weeks of starting a job (Harris, F., Poor Pay Causing Families Hardship, South Wales Evening Post, September 4, 1996).

Despite such abuses, however, there is no shortage of applicants for jobs.

Fear of unemployment permeates even the previously secure middle classes. As Will Hutton explains in The State We're In, the British middle class, sandwiched between an "Arrogant officer class...favoured with education, jobs, housing and pensions" and "the new working poor", contains an ever increasing number "Who are insecure, fearful for their jobs in an age of permanent 'down sizing', 'cost-cutting' and 'casualisation' and ever more worried about their

ability to maintain a decent standard of living" (Cape, Britain, 1995, p.2/3).

The 'economic imperative' is recognised - and sometimes cynically promoted - by both politicians and employers. Consider, for example, the following assertion from a Texas state representative:

I don't need some bunch of do-gooder nuts telling me what's good to breathe...I think we are all willing to have a little bit of crud in our lungs and a full stomach rather than a whole lot of clean air and nothing to eat (Kazis, R. and Grossman, R.L., Fear at Work: Job Blackmail, Labor and the Environment, Pilgrim Press, US, 1982, p.59).

Such views may be promoted (for whatever reason) by influential commentators, as Kazis and Grossman explain:

Kraft [a nationally syndicated columnist in the US] reinforced the notion that it is not possible for the nation to be concerned with both strong industry and secure, decent jobs; with economic revitalisation of industry and environmental protection...Some day perhaps, when Big America has made the country wealthy enough, the interests of Little America can be addressed. But if the millions of people Kraft writes off as little want to see that day, they had better give Corporate America free rein (Ibid, p.64).

Not unexpectedly, employers also put the interests of 'Big America' before those of 'Little America'. As a nuclear industry representative put it on one occasion:

If the United States continues in its infinite wisdom to strangle itself on energy problems we'll have to go elsewhere. We need to look not only between states, but between countries (Ibid, p.53).

The result of this pro-industry, pro-development, pro-

risk discourse, according to Kazis and Grossman, is a general acquiescence in the industrial project:

Peoples' beliefs can be shaken when they are told repeatedly that change is impossible, that their ideas are impractical. And they can be persuaded to 'be realistic' when employers make it clear that to persist might cost them their jobs. For this reason people often accept the choices put forward by their employers as the only alternatives: we accept 'jobs versus the environment', rather than insist on 'jobs and the environment'. As one Fisher body worker told a New York Times reporter, 'If that's a guy's livelihood, and they say it's the only way to do it, what's a guy going to do?' (Ibid, p.66)

Such "Indoctrination and propaganda" (Chomsky, N., Keeping the Rabble in Line, AK Press, Britain, 1994, p.112), in concert with the basic economic needs and familial obligations of working people, is a powerful influence on behaviour. As Chomsky explains:

Anybody lives within a cultural and social framework which has certain values and certain opportunities. It assigns cost to various kinds of action and benefits to others. You just live in that. You can't help it. We live in one that assigns benefits to efforts to achieve individual gain. Any individual can ask himself or herself, let's say I'm the father or mother of a family, what do I do with my time? I've got twenty four hours a day. If I've got children to take care of, a future to worry about, what do I do? One thing you can do is try to play up to the boss and see if you can get a dollar more an hour, or maybe kick somebody in the face when you walk past them. If not do it directly, do it indirectly, by the mechanisms that are set up for you within a capitalist society. That's one way. The other way you can do it is by spending your evenings going around trying to organise other people who will then spend their evenings at meetings, go out on a picket line, carry out a long struggle...Maybe they'll finally get enough people together so they'll ultimately achieve a gain, which may or may not be greater than the gain that you tried to achieve by following the

individualist course. People have to make those choices. They make them within a framework of existing structures (Ibid).

And when people make the sorts of choices outlined by Chomsky, they do so in full knowledge of the consequences. They understand that by knuckling under they legitimate and dignify those who exploit and oppress them. They know that the pursuit of individual interest may inhibit or preclude collective action. And they well understand the immediate physical and general environmental risks and hazards to which they subject themselves, their families, neighbours and communities. But they also know they have to pull in a wage.

The 'economic imperative' is especially strong in 'company towns' - areas heavily or completely dependent upon a single firm or industry - as the examples of Sellafield in Britain and Middleport, New York State illustrate.

In the hills around the Sellafield nuclear reprocessing facility in Cumbria, sheep farmers had suspected for some time that they and their charges had been exposed to chronic caesium contamination. The Chernobyl nuclear explosion of 1986 and subsequent heavy contamination of the hills through precipitation brought government scientists, reporters and academics to the area. Although the issue of chronic contamination was raised, few farmers would openly criticise the BNFL plant. As one resident put it, "If you are a journalist and you approach a Cumbrian farmer, he'll clam up. But why? Because they're frightened that Willie will lose his

good job at Sellafield...[Y]ou don't want to cut your neighbours' throats" (Wynne, B., 'To Believe or not to Believe, is That the question? Expert Credibility and the Legitimation of Science', (paper presented to Science Museum Conference on Policies and Publics for Science, London, April, 1990), Lancaster University, p.14). The reason for the farmers' general reticence was simple: hill farming is a precarious occupation. Life is physically hard, and the financial rewards are meagre. A job at Sellafield provides a reliable income in relatively comfortable conditions. If such a desired job were held by a family member, or even family friend or neighbour, no farmer would risk that livelihood by speaking out against Sellafield - however much they feared the consequences. As Brian Wynne explains, "Underlying the farmers' fears and their mistrust of the Sellafield authorities was a deep sense of social solidarity and dependency which naturally constrained what it was possible to think" (Ibid). (Note that Wynne postulates that thoughts as well as actions are influenced by the economic imperative). Those who criticised the farmers for not speaking out failed to understand how their views and behaviour were conditioned by the social milieu in which they lived. The critics failed to understand the 'social character' of their position.

'Economic dependency' and 'social impotence' (Ibid, p.15) also characterise the discourse on chemical risk at Middleport, New York State, in the wake of the Bhopal tragedy. Following the leak of methyl isocyanate (MIC)

at Bhopal in India in 1984 (which killed several thousand people and maimed many more), America's FMC Corporation suspended its MIC operation at Middleport. The temporary loss of the facility, which employed 170 people and paid 20% of local taxes, troubled both workers and townspeople. As one store owner put it:

It's the heartbeat of the community...Without them everything comes to a dead halt. If they closed, the town would dry up and blow away (Gruson, L., 'Village's "Heartbeat", A Chemical Plant, Raises Fears', The New York Times, March 9, 1985).

A union official was equally dismayed:

The majority of this area is a paycheck away from economic disaster...We're already hurting and we certainly don't need any more economic devastation (Ibid).

An FMC shop steward starkly concurred:

This is more than our livelihood...It's our life. It's our home. We work together and then we see each other after work...It'll be like Christmas if we ever see a train car full of MIC pulling in here (Ibid).

The Vice Mayor drew the darkest picture - albeit with a sense of humour:

Without FMC...we're going to be chasing jack rabbits down Main Street (Ibid).

Of course, not every Middleport resident longed to hear the whistle of the MIC train. A local schools officer put the case for 'environmental responsibility' thus; "People are caught on the horns of a dilemma...They ask

'Should I get up and demand they stop making it, or should I trust them?' They say 'I don't know what to do, but I don't want to worry every time my child coughs'" (Ibid). Another resident was positively contemptuous of the pro-FMC lobby:

Most people don't see the danger and they don't care to see it...They feel that if they don't see it, then it doesn't exist and they're safe (Ibid).

Such statements are typical of environmental risk debates (as will be shown later): an apparently 'passive' and 'indifferent' public is accused - sometimes by relatively prosperous citizens not economically dependent on, or historically involved with the industry in question - of turning a blind eye to danger. Such assessments, however, can be peremptory, for as Halle has shown in America's Working Man, workers (and their families, and possibly also their neighbours) are often fully aware of the risks - both direct and indirect - that they run. Take chemical workers, for example. As Halle explains, "Often [the process workers]...become very angry as they talk about the damage being done to their bodies" (Op Cit, p.114). Many of the operators interviewed by Halle knew exactly the price they were paying for the opportunity to work. As one put it, "There must be something wrong. This plant has been going since 1939 and there's only seven guys of pensionable age. Take that inert gas machine...it killed three guys. There was...our first [union] president. He was a strong, healthy guy, and then he worked down there

for a few months and went out sick and never came back. And Al - he worked there. He used to be as strong as a horse, and now he's got cancer" (Op Cit, p.114). Another put it more succinctly:

Ideally I'd like to see this whole joint closed down. The company sucks. It's all unsafe - the fumes and all that (Op Cit, p.114).

Halle's findings support Irwin's (1995) thesis on 'active citizenship'. Thus in Citizen Science, Irwin posits the notion of an 'active' rather than a 'passive' public: of a public engaged with, and (using familiar metaphors and heuristics) knowledgeable about the scientific and technological world about them. As he puts it:

[T]he assumption that...people are a mere tabula rasa is not only sociologically inaccurate but it also serves as an obstacle to social learning on all sides (including, very importantly, the lessons which industry might learn from critical local scrutiny) (Op Cit, p.92).

Interestingly, Irwin's fieldwork confirmed not only the notion of an 'active', risk-conscious public, but also the public's sensitivity to the important economic role of industry:

[I]t seem[ed] nonsensical to most local people to debate the hazards of the local chemical industry without considering the consequences of closure for local jobs...This is clear in one characteristic exchange between two residents:

'I would say most people around here worry about the Aniline [a chemical plant].'

'If Clayton Aniline shut down it would be a

bloody ghost town around here.' (p.94)

It would be wrong to assume, however, that the majority within economically hard pressed communities are always so circumspect about the economic role of industry in the life of a community. In 1993, for example, "The residents of Kettleman City, Calif., most of whom are hispanic [and therefore relatively impoverished], won a court judgement that has at least temporarily blocked plans for the incinerator in their San Joaquin Valley town, which is already the site of a vast toxic-waste landfill" ('Feeling Pollution's Burden, Minorities Try Civil Rights Tack', The New York Times, January 11, 1993).

Of course, in this case, the opposition of a poor community to a new enterprise may have been influenced not just by assessments of risk, but also by a number of 'negative' economic factors pertaining to the technology in question, and by certain social practices: Firstly, incinerator plants (and landfills) employ relatively few people; Secondly, most jobs are low paid; Thirdly, most jobs are semi- or unskilled; Fourthly, due to racially discriminatory employment practices, even the few jobs available may have gone to non-Hispanic residents; And lastly, even such an economically 'useless' enterprise would affect land and property values.

The case of a protest against an MIC plant in Institute, West Virginia, provides further evidence that people evaluate risks and hazards in their social, economic and political context before 'jumping in'. In 1985, 300

residents from the mostly black town of Institute marched on the neighbouring MIC plant to demand safety assurances. While influenced by the risk presented by the plant, those who marched were no doubt also influenced by the plant's evasion of vital local taxes (this having been fixed by County officials), and the fact that it employed very few black people. And those few blacks who did find jobs at the plant were employed only in the most menial positions. Thus, given that the black community derived few economic benefits from the plant, it is unsurprising that they marched. (Bullard, R.D., *Dumping in Dixie*, Westview Press, US, 1990, p.64).

Similar dynamics can be seen to operate in environmental disputes in Britain. In Port Talbot, South Wales, for example, a 1993 plan to erect 66 wind turbines on a hill above the steel town met with strong opposition. Although people were no doubt reacting against the visual disamenity of the project, they may also have been unhappy about the fact that the development would have provided few - if any - jobs for locals (South Wales Evening Post, December 21, 1993).

There is also some evidence that, even when communities derive significant economic benefit from potentially hazardous industries, residents are willing to take both covert and overt action against polluters. As one US newspaper has observed, "The new [environmental] protesters include many from the working class in addition to more affluent people who can afford to live farther away" ('Grass Roots Groups Show Power Battling

Pollution Close To Home', The New York Times, July 2, 1989). In Galveston, Texas, for example, a local environmental group has been pleasantly surprised by the support and help it has received from oil workers. As one of the group's organisers explains:

Our proudest achievement...is that we cracked the wall between environmentalists and workers, because now workers are calling all the time to tell us what is going on inside their plants (Ibid).

Even the union local recognises a change in workers' attitudes towards environmental hazards. As one Louisiana activist put it:

There's a lot of soul-searching going on among the people who work in the petrochemical industry. There are loyalties that are becoming divided over time (Ibid).

It would be wrong, however, to read too much into such developments. As one Galveston activist put it, even in this 'enlightened' oil town, "When the air stinks, they still think its the smell of jobs and money" (Ibid). Likewise, in the Kanawha Valley many (mostly white) residents consider the MIC plant to represent the "Sight and smell of money". Without such plants, they say, the Kanawha would become a "Ghost valley" (Bullard, Op Cit, p.62).

Given the above, one might reasonably conclude that a full understanding of the social construction and negotiation of environmental risks and hazards can only be achieved if they are seen in their social, economic and political context.

There is little doubt that the political economy of a community will have at least some influence on the public's perception of risks and hazards. Economic needs and wants do have at least the potential to affect (if not determine) both risk perception and subsequent behaviour. As one social psychologist has put it;

Within the present economic system, many conclude that elimination of pollution may be accompanied by reduction of economic security, particularly job security. Such worries are particularly compelling to those of low social status who lack the financial and personal resources needed to absorb sudden shifts in industries in a particular area" (Francis, R.S., 'Attitudes Toward Industrial Pollution, Strategies for Protecting the Environment, and Environmental-Economic Trade-offs', Journal of Applied Social Psychology, US, 1983, 13, 4, p.326).

As mentioned above, the interplay of environmental and economic concerns in poorer 'working class' communities has been noted by Irwin (1995). Thus, in his study of two heavily industrialised and predominantly working class communities in the north of England, Irwin noted that;

Pollution is at least a sign of industrial activity - and there is little enthusiasm for a pollution-free, but socially devastated, local environment (Op Cit, p.94).

Such emotions were exhibited by the residents of Motherwell in relation to the Ravenscraig steel plant. As Deborah Orr recalled of the day in 1996 when the plant was demolished;

On Sunday [July 28] the towers were blown

up...People are generally fascinated by big demolitions, but it was terrible to see this one...Thousands looked on in disbelief and wonder. Men looked grim and women sobbed (Op Cit, p.12)

Motherwell was a steel town. The plant was as much a part of the community as its pubs, churches and chapels. But more than this, to some inhabitants of Motherwell the Ravenscraig steel plant was a thing of beauty:

Sometimes, turning a corner or reaching the brow of a hill, the huge industrial complex in the heart of the town would spread out before us, stretching to the horizon. That filthy, black, steam-soaked, smoke-belching sprawl should have been ugly. Instead, it was overwhelming, beautiful. In the summer, when we drove back from holidays...we'd cheer when we saw the towers from the M74 (Op Cit, p.12)

But how can a sprawling, belching steel plant inspire affection? Perhaps because, for all its unpleasantness and danger, it was the best chance the people of Motherwell had of maintaining their economic independence, and with it a degree of pride-in-self. It was, despite the toll it exacted from the people and their environment, a benefactor.

Economic security is a major theme of working class life. In his research into the mores and priorities of the French working class, De Angelis noted the preoccupation of blue collar workers with 'monetary worries' (generated by poor remuneration and inflation). Only a few were concerned about issues not of 'direct personal relevance'. Such issues included pollution. The French working class assumed an "Essentially passive, consumer role in society and politics" (Op Cit, p.146),

and looked to others, especially politicians, to problem solve. De Angelis summarised this philosophy as follows:

Their view is that of critical and passive consumers of solutions, not that of active and responsible policy makers or participants in the political process. They assume a necessary and useful division of labour; those paid to find solutions should do so, as everyone else has his own job to do (Op Cit, p.148).

The key word here is 'necessary'. Quite simply, the majority of those who had no choice but to labour long hours under physically trying conditions often did not have the energy to take up extra-mural activities. Furthermore, due to a relative lack of education and/or personal skills, they often did not have the confidence to get involved in political activity. Thus, "Life, because it [had] not been easy...made them wary, conventional, materialistic, defensive, realistic/pessimistic, proud of their capacity for endurance, and aware of their limitations (personal and social) (Op Cit, p.146).

The possibility of being overwhelmed by the complexity of modern life has been noted by Milbrath, who implies that even the educated and urbane stand little chance of understanding the modern world:

Modern society is so complicated and crowded that it is difficult for most people to achieve a satisfactory level of personal fate control...Many people have a sense of losing, or of already having lost, control of their lives. They perceive that they are buffeted and controlled by forces that they cannot understand and that they have no hope of influencing [My emphasis] (Milbrath, L.W., Environmentalists: Vanguard for a New Society, SUNY Press, US, 1984, p.11)

Assuming the above to be an accurate reflection of reality, it is unsurprising that few working class people are prepared to risk hard-won economic gains by dissipating their energies on problems that are either incomprehensible and/or are not seen to be of direct relevance. For the majority, such 'abstract' concerns would include environmental issues. While blue collar workers may have been aware of such 'esoteric' matters as ozone depletion, they chose to focus their energies on matters that were easily comprehensible and (potentially) amenable to solution - wage levels, prices, etc. Thus in the case of the blue collar workers observed by De Angelis, 'ignorance' of certain matters proved expedient. Ignorance of environmental debates enabled energies to be focused on issues that were perceived to be of more immediate concern. (It should be noted that research by Dunlap and Mertig in the United States contradicts the view that blue collar workers are relatively indifferent to environmental questions. Thus Dunlap and Mertig conclude that "The rapid increase in the number...of local grassroots organisations...[concerned with] hazards that pose a threat to health" has made it more likely that blue-collar workers will become involved in risk debates (Dunlap, R.E., and Mertig, A.G., 'The Evolution of the U.S. Environmental Movement from 1970 to 1990: An Overview', in Dunlap and Mertig (Eds) American Environmentalism, Taylor and Francis, US, 1992, p.6)).

Such 'discourses of ignorance' have been noted by Mike

Michael in relation to (British) workers' knowledge of, and concern about scientific hazards. Thus in his study of Sellafield workers, Michael noted that electricians often denied themselves knowledge of such 'extraneous' matters as radiation as a means of focusing as sharply as possible on the job in hand. As one (female) electrician put it;

People...don't have to know too much, you've got to trust someone somewhere...If people knew too much, they would panic in an emergency because they know just how dangerous it really was (Ignoring Science: Discourses of Ignorance in the Public Understanding of Science, (paper), University of Lancaster, p.18.).

Thus, 'ignorance' is not always dysfunctional. In certain circumstances, it can be both functional and productive. As Michael puts it:

In some cases scientific knowledge is bracketed, ignored, jettisoned or avoided because it is essentially peripheral to, or may even obscure, the real issue. Here, 'ignorance' is constructed as a deliberate choice (Ibid, p.19).

(Michael's paper 'Ignoring Science: Discourses of Ignorance in the Public Understanding of Science' is summarised in Irwin, A. and Wynne, B., (Eds), Misunderstanding Science? The Public Reconstruction of Science and Technology, Cambridge University Press, Britain, 1996).

Like Mike Michael's subjects, the French blue collar workers studied by De Angelis chose to remain ignorant of matters that might divert attention and energies from

their most pressing concerns. Their ignorance was a reasoned - and, in the circumstances, reasonable - choice.

There is some evidence of a negative correlation between poverty and concern for environmental risk and hazard. That is, the poorer the community, the more concerned it will become with economic security in relation to personal and general environmental hazard. As a prominent public health official in "One of the poorest and most devastated African-American neighbourhoods in the United States...[where] people hold their families and lives together with faith and a prayer", has put it;

Unemployment...is the greatest public health problem (Rosen, R., 'Who Gets Polluted?', Dissent, US, Spring 1994, p.223).

Thus there is evidence that, in the poorest communities (at least as far as the American experience goes) environmental disamenity is given a very low priority alongside the - as Schneider puts it - "More immediate public health threats [of]...AIDS, drugs, violence, sexually transmitted diseases, and infant mortality" (Schneider, D., 'Low Priorities for Black American Leaders: Environmental and Occupational Health', The Environmentalist, Volume 13 (1993), Number 1, p.44). (While Schneider does not list unemployment and/or low incomes, one may reasonably conclude that many of the social problems he does mention are at least partly rooted in economic factors). Thus the "State of prosaic meliorism" (Op Cit, p.150) noted by De Angelis amongst

the French working class would appear to characterise the outlook of the American working class. As the Sierra Club Bulletin noted in 1977:

Often, residents of the inner city regard "ecology" as too esoteric and remote a concern; they are too caught up in the daily struggle for more basic needs (Fertig, R.D., 'The Environment, the Economy and the Excluded', Sierra Club Bulletin, Summer, 1977, p.47).

As the poorest communities are often minority communities, the attitudes of black community leaders towards environmental questions are especially germane. Despite heroic efforts on the part of black (and white) environmental and occupational health advocates, black community leaders refuse to give environmental health priority over other 'more pressing' issues:

Environmental and occupational health objectives hold relatively low priorities for black American leaders...Rather than concentrating on public health objectives that they view as having little chance for improvement, black leaders are focusing on more immediate and devastating health threats to the black community. For environmental and occupational health advocates...this means that alliances with black leadership might prove difficult to forge because of competing priorities (Ibid, p.45).

The attitudes of (most) black leaderships both reflect and influence the primarily socio-economic and political concerns of black communities. Indeed, such is the preoccupation of black communities with the political and economic, that even where respected minority leaders call for community action on a proven environmental hazard, the response is often muted. In Laidlaw,

Cleveland, for example, despite widespread concern about a waste incinerator, very public expressions of concern by Cleveland's black senator, and strenuous efforts to involve blacks in the fight to close the facility, the mostly black residents of the public housing project situated 'just a few blocks away' from the plant could not be roused (Schwab, J., 'Blue-Collar Groups are Saying, 'Not in our Backyard'', Planning, October, 1991, US, p.8). In contrast, the mostly middle class residents of a suburb downwind, but some distance from the incinerator, formed their own group and were vigorous in lobbying for its closure.

At the very least, such episodes demonstrate how work hazards and general environmental threats are evaluated in a wider socio-economic context. That is, the public's position on environmental risk and hazard is a negotiated position. Social constructions of risk and hazard reflect and are accommodated within a socio-economic context. Consequently, there can be no absolute, universally applicable definition of the Risk Society. Rather, there are 'risk communities' constituted through subjective assessment of environmental and socio-economic risks and hazards.

But even this may be something of an oversimplification. Thus, taking up the tool of deconstruction yet again, it can be seen that risk communities are themselves composed of myriad, often highly individualistic - indeed, sometimes counter-intuitive - risk assessments. Take, for example, another interviewee in the GMLPU survey. In 1995, 'Barbara'

earned under £80 a week as a van driver collecting waste cellulose solvent. The drums would fall over and leak. It was "All very, very dangerous". On one occasion she suffered serious bruising when the drums were catapulted to the front of the van in an accident. Yet she stuck the job "Because I'm out, there's nobody bothering me" (Op Cit, p.24). Therefore it can be seen that within a 'risk community' there may be numerous individual reasons (or combinations of reasons) for risk acceptance (or rejection), from naked deference, to fear of unemployment, to job satisfaction, to personal friendships to brute ignorance.

However, despite the essentially subjective and locally constituted character of environmental risk assessment, 'universal environmental truths' are still enthusiastically promoted by activists, public officials, labour unions and others. In the States, the process has forged some unlikely alliances, such as that between environmentalists and the Oil, Chemical and Atomic Workers Union. Thus, in the 1980s, an alliance of environmentalists and OCAW members, pursuing the union's national "'Jobs and Environment' curriculum", forced a BASF plant in Louisiana to undertake environmental improvements and end a lockout of workers ('Jobs and the Environment, American-style', The Daily Hazard, London Hazards Centre, September 1995, p.2).

Such (not insignificant) victories should, however, be seen in the context of the massive economic (and political) power of modern corporations. Corporations so

powerful that in the September 1992 'European currency skirmish', according to one commentator, "The global corporate sector, hard-pressed to generate profits by normal trading, stole billions of pounds from the UK Treasury, by simple extortion" (Evans, R.W., Coming to Terms - Corporations and the Left, Institute for Public Policy Research, Britain, 1992, p.4).

The capacity of the modern transnational to influence both the macro economic and political agenda, and the decisions of individual workers and workers' families (see Chomsky, above), should not be underestimated. As C. Wright Mills, speaking about the American experience of corporate influence, noted as long ago as 1956:

The economy - once a great scatter of small productive units in autonomous balance - has become dominated by two or three hundred interrelated corporations, which together hold the keys to economic decisions [My emphasis] (Kazis and Grossman, Op Cit, p.54)

Some of the American corporations who 'hold the keys to economic decisions' can influence the policies not just of their own government, but also of foreign governments. In 1995, for example, the Ford Motor Corporation threatened to build the next new Jaguar model in the United States (Ford having purchased Jaguar some time previously) unless the British Government offered a major aid package. Ford were subsequently offered £80 million to keep Jaguar production in the United Kingdom. Six thousand skilled British jobs were directly at stake, not to mention thousands more in sub-contracting and support companies

(The Evening Standard, November 10, 1995). Colin Leys, Professor of Politics at Queen's University, Toronto, calls this kind of corporate leverage 'regulatory arbitrage':

The way multinational companies [MNCs] constrain national governments...is through 'regulatory arbitrage', which means shopping among countries to get the best overall package of conditions before making an investment: the lowest corporate taxes, the weakest unions, the most 'flexible' rules on working conditions, the most lax health and safety regulations. Some of what MNCs want they press for; some of it is offered them, before they even ask, by governments competing for investment (Red Pepper, June, 1996, p.5)

According to the Left, then, the power of the agglomerating transnationals is magnified through the (more or less) global acquiescence of politicians and bureaucrats in the capitalistic project ('The New Globalism: Multinationals Take Control', The New Internationalist, No.246, August, 1993). As Kazis and Grossman explain, "Government officials know there is more practical political advantage in doing favours for people with clout than for the weak, unorganised and disenfranchised" (Op Cit, p.54). Politicians, for their part, largely accept the corporate agenda, namely the husbanding of economic growth and maintenance of profit margins for the purpose of meeting dividend and 'investment' targets:

There is a core to our politics, a sort of agreement or 'hidden consensus' to which most politicians adhere. Politicians measure most issues by how they affect economic growth...

What counts now is the latest growth statistics, what the stock market is doing, whether the pound and dollar are rising or falling and what the first quarter profit

statement says ('Everything Under Control',
The New Internationalist, No.146, April, 1985,
p.9)

The economic 'core' to our politics has found recent expression in Britain in the return to economic Butskellism. Thus today, both the Conservative Party, and its electoral 'alternative', the Labour Party, lay claim to such titles as 'The party of economic growth', or 'The party of business' ('Mr Blair Feeds The Tigers', The Guardian, January 6, 1996; 'Blair Uses New Labour Approach To Woo Business', Western Mail, September 5, 1996). As a former adviser to New Labour has put it, "Labour's objectives are the economic text book troika of growth, full employment and low inflation...The leadership's basic framework is acceptance of the dominance of the economy by private capital...It assumes that the British people, to earn their crust, have no choice but to take their chance in the swirling competitive cauldron of global markets" (Red Pepper, October, 1995, p.12). According to those on the Left, 'taking a chance in the swirling competitive cauldron of global markets' means accepting "The insecurity and employer arrogance of today's workplaces", an arrogance attributable in part to the increasing antipathy of both major political parties towards the trades unions (Milne, S., 'Unions Kept Out In The Cold', The Guardian, September 4, 1996; Grice, A., Blair Runs Short Of Brotherly Love, The Sunday Times, September 15, 1996).

It should be noted, however, that it is not just the Left that accuses politicians of prostituting themselves

to international capital. Even the conservative Social Market Foundation (SMF), for example, has arrived at (more or less) the same conclusion. Thus, in The Undoing of Conservatism, John Gray talks about "[T]he desolation of communities by unchannelled market forces", and the adoption by conservative-minded politicians of "[T]he United States [as] the tacit or explicit model [where] all other values have been sacrificed for the sake of micro-economic flexibility, productivity and low labour costs" (Gray, J., The Undoing of Conservatism, SMF, Britain, 1994, p.9 and p.19).

A former U.S. Under-Secretary of State summarised the global hegemony of the market and the preeminent position of the transnationals in the following terms:

Working through great corporations that straddle the earth, men are able for the first time to utilize world resources with an efficiency dictated by the objective logic of profit (Weir, D., The Bhopal Syndrome, Earthscan, Britain, 1987, p.130).

According to this seasoned observer of the political scene, the nation-state "Is a very old-fashioned idea and badly adapted to our present complex world" (Ibid).

If business choices are indeed dictated by 'the objective logic of profit', if the large corporations 'hold the keys to economic decisions', if companies can manipulate local (and national) populations with promises of jobs or the threat of layoffs, short time working or unemployment, and if the nation state is no more than an anachronistic impediment to the 'efficient utilization of world resources', then what chance do

governments, bureaucrats or workers have of persuading companies to behave in a socially (and environmentally) responsible manner? While the 1995 decision of Royal Dutch/Shell not to dump its Brent Spar oil storage platform at sea was influenced by a sustained campaign by environmentalists ('Rubber Suits Turn The Tide For Greenpeace', Financial Times, June 21, 1995), how many other major corporate decisions have been influenced by sub-political activism? Many corporate (and supporting political) decisions are taken without the public ever hearing about them. Beck himself highlights this trend with his analysis of the sub-politics of scientific and technological innovation (see Chapter 1).

According to some, the public is further disempowered by a sensationalist, trivialising and myopic media. (While the media's frivolity may be due in large part to the money to be made out of the lowest common denominators of public taste - celebrity, Royalty, money and sex - it also reflects the tradition of non-disclosure and secrecy in British politics and public administration. Thus, "The trivialisation practised by much of our press is a direct function of its inability to tackle more serious and challenging issues in the face of a battery of legal controls upon its ability to report issues" (Taking Liberties - Civil Liberties and the Criminal Justice Act, New Statesman and Society, Britain, 1995, p.4)). The particularism of the media denies the public a clear view of the world about it. Disheartened, many simply surrender to the (presumed) benign judgement of the politician, technocrat or company board:

News and current affairs reporting deals with events in isolation. There is little attempt to give the reader/viewer a context so that he or she can identify patterns or understand the social forces behind management decisions...

The reader/viewer is presented with a kaleidoscope of isolated fragments of news 'reality' that dance beyond their understanding...The public is left bewildered - easy prey for more partisan messages that simplify reality and limit understanding ('Everything Under Control', Op Cit).

A patronised public comes to the inevitable conclusion: "The world seems too confusing - better let experts interpret it for us" ('Everything Under Control', Op Cit). This, of course, was the conclusion arrived at by De Angelis from his studies of the French working class (see above).

In addition to such powerful influences, workers and their families face other, rather more subtle, pressures. It is often difficult, for example, to face up to the possibility that a source of prosperity - and possibly, also, of personal and/or family pride - may be a threat to personal and/or family health. At Love Canal, for example, "Some [residents] felt inhibited in admitting even to themselves that chemicals, the source of their livelihood, could be causing them personal problems" (Levine, A., Love Canal: Science, Politics and People, Lexington Books, US, 1982, p.194). Public reaction was constrained and conditioned by the perception of chemical companies both as "Knowledgeable authorities" and as "Forces to be reckoned with" (Ibid). (Similar inhibitions were displayed by the inhabitants of Motherwell, for despite the immediate physical, and

general environmental threat posed by the Ravenscraig plant, most people were opposed to its closure on economic grounds).

The public perception of chemical hazard at Love Canal may have been affected by other factors. It was found, for example, that some of the 'renters' (residents of the LaSalle 'project' housing) were relatively unconcerned about the possibility of chemical contamination. This lack of concern may have reflected the absence of a personal financial stake in the home, or the fact that as temporary residents they had suffered less exposure to chemicals; It may have had something to do with their benefit-dependency: As Levine postulates in Love Canal, "Many tenants depended on public assistance and thus hesitated to complain about anything the government was involved in..." (Op Cit, p.197). (It should be noted that such 'deference', far from being 'natural', reflected a sophisticated evaluation of personal circumstance and power); It may have reflected the fact that their inadequate economic, political and/or personal resources compromised their physical mobility. This might have persuaded some that the most expedient course of action was to keep quiet for as long as possible; It may have reflected personal alienation, perhaps caused by unsympathetic authorities, or a lack of personal confidence, perhaps due to educational under-achievement. Personal confidence and a sense of belonging are vital prerequisites to participation in any campaign; Or it may have reflected their strong desire to escape the 'social' hazards of

the ghetto (the majority of the LaSalle residents were black), like drugs, violence, police harassment and disease:

Although there were drawbacks to the LaSalle project, many believed it was the best public housing project in the city, with roomy apartments, located in a suburban-like atmosphere, with good schools, and without the social hazards of many inner-city neighbourhoods (Ibid, p.197).

Generally, economic disadvantage is a powerful tool of social control where questions of environmental health and amenity are raised. As Bullard notes:

The application of economic trade-offs in...environmental conflict continues to generate a wide range of discussion. This is especially true for poor communities that are beset with rising unemployment, extreme poverty, a shrinking tax base, and decaying business infrastructure (Bullard, Op Cit, p.90).

And who can blame the poor and disadvantaged for trading a measure of environmental disamenity against the prospect of work (even poorly paid work) and the self-respect that comes with financial independence? Indeed, who can blame the poor for trading environmental disamenity against the prospect of escape from more pressing social ills, like street violence and a drug economy (as with the 'renters' of Love Canal)?

The desire for self-respect is a powerful motivator of human behaviour. As contemporary research demonstrates, British workers are prepared to take on the most menial, most de-skilled and poorly paid jobs just so they can

preserve a modicum of independence and dignity. As one of the interviewees in the GMLPU survey put it:

Last week I brought home a hundred and thirteen pounds and twenty four pence [October, 1995 wage levels apply]. I would get more on benefit, a lot more, about twenty to twenty five quid more. It's the pleasure of getting up and knowing I am going out to work for eight hours...I enjoy working actually...I'd never go back on the dole again. I found it really degrading. I don't see why you should have to beg for anything (Op Cit, p.13/15)

This GMLPU interviewee was married with four children.

The Joseph Rowntree Foundation, in its June, 1996 research project entitled Life on a Low Income, noted the same desire to work amongst Britain's citizens:

Most people view a job as the only way they can secure an adequate income. The research makes it clear that they do not want to be dependent on the state and would prefer to provide for themselves and their families through a 'living wage'. Many go to great lengths to find a job, especially if they are the main breadwinner (Findings, no.97, p.3).

Some American research has demonstrated a direct correlation between poverty and tolerance of pollution. In Houston's Northwood Manor neighbourhood, for example, only 23% of the residents of this relatively prosperous suburb agreed with the statement 'We should think of jobs first and environment second'. However, in West Dallas, "An economically impoverished neighbourhood located in the growth-driven Dallas-Fort Worth Metroplex", over 67% of the residents believed jobs to be more important than the environment (Bullard, Op Cit, p.93). There is little doubt that the economic disparity

between West Dallas residents and their hugely prosperous neighbours had at least some effect on their perception and tolerance of industrial risks and hazards.

In Britain, the jobs-environment trade-off is promoted - albeit subtly - by the trade union movement. Thus while the TUC, for example, agrees that "Pollution is no longer an acceptable by-product of industrial growth" ('Industry, Jobs and Environmental Challenge', TUC, May 1991, p.1), it is nevertheless wary of the effect environmental regulation might have on jobs and economic growth:

The labour market implications of environmental policies are a prime concern of trade unions...[T]he TUC believes that sustainable development cannot be achieved unless employment is well founded and secure. Failure to fully take on board employment and training considerations in the formation of environmental policies will not only exacerbate job losses, but spur resistance to change... (Ibid, p.18).

As far as the TUC is concerned, the economic imperative is still a powerful influence on public opinion - especially in deprived areas:

There is evidence that in areas of high unemployment...the willingness to put environmental concerns before job creation is weaker than elsewhere ('TUC Congress 1989: Towards a Charter for the Environment', TUC, August 1989, p.4).

Recognising the realpolitik of its members' opinions - if not of the British public as a whole - the TUC advocates 'improvement through growth':

The TUC believes that the low growth and no growth options offer no solution to environmental problems...Growth and technological progress are necessary if environmental problems are to be effectively tackled while sustaining full employment (Ibid, p.4/5).

The perceived divergence of economic and environmental interests have been noted in other countries. In both Germany and America, for example, "Labor and environmentalists...have...widely disagreed on pertinent employment, environmental and energy related issues" (Siegmann, H., *The Conflicts Between Labour and Environmentalism in the Federal Republic of Germany and the United States*, Gower, Aldershot, Britain, 1985, p.1). Such disagreements may be rooted in, for example, socio-economic or ideological differences. As Siegmann explains:

Given the socio-economic differences of the two movements, labor is seen as functioning as the protector of the economic underdogs seeking to gain more economic equity. Environmentalists, on the other hand, are depicted as the defenders of the economic status-quo who - being higher up on the economic ladder - are inclined and can afford to protect their environment, their "private idyll".

A second version of this explanation argues that the labor-environmentalist conflict basically is one between "old" and "new" politics. According to Inglehart (1977 and 1979), those engaging in "old" politics tend to view the world in "materialist" terms and emphasize representation-based political activities. "New" politics, on the other hand, are governed by "post-materialist" values and entail direct...political activities. Labor, in this view, perceives the employment/environment problem basically as one aligned along a socio-economic left-right dimension while environmentalism approaches it in "new politics" or lifestyle terms (Ibid, p.8).

Whatever the causes of the rift between organised labour (and, presumably to some degree, workers' families and acquaintances) and environmentalists, the divergence of interests has sometimes found dramatic expression. In Germany in the 1970s, for example, there were violent confrontations over nuclear energy policy:

In late 1976, a large demonstration...opposing the nuclear power plant to be constructed near the village of Brokdorf...received national attention...The Brokdorf protests triggered a counterdemonstration of 7,000 employees of the Kraftwerk Union (Ibid, p.16).

While the 1980s saw a 'rapprochement' (Ibid, p.20) between environmentalists and trade unionists in Germany, the new relationship may have reflected not so much an ideological reconciliation, as a practical political solution to the SPD's electoral demise and high and persistent unemployment. In this context, an electoral pact with the Greens and the prospect of new jobs being created in environmental protection may have persuaded the working population to (temporarily) abandon their distrust of middle class post-materialists (Ibid, p.21).

3 Conclusion.

A consideration of the socio-economic context of the Risk Society thesis - as advanced by Beck, Giddens and other notables - is essential to a full understanding of late-modernity.

It is difficult to believe that such a phenomenon as the Risk Society can exist - or be thought to exist - in an economic vacuum. And yet, in Risk Society, Beck avoids a detailed examination of the political economy of late modernity. Instead we are asked to believe the essentially 'post-materialist' character of (First World) late modernity, the 'democratisation' of environmental hazard, the general and growing 'reflexivity' of its inhabitants, and, despite the apparent resurgence of religious and secular fundamentalisms, the 'de-traditionalisation' of society. Such generalisations, although thought-provoking, tend to obscure the myriad compromises, rationalisations and accommodations that many people are obliged to make to get through their lives, for, as Wynne explains, "In the real world people have to reconcile or adapt to living with contradictions around them which are not necessarily within their control to dissolve" [My emphasis] (Op Cit, p.15). What the Risk Society thesis overlooks is the complex and often contradictory character of life as it is lived. But then, as Goethe explains in Faust, this is the Achilles heel of all grand theory:

All theory, dear friend, is grey, but the golden tree of actual life springs ever green.

The growth of personal and general societal reflexivity is a momentous development. Yet, one cannot help wondering what effect the perennial socio-economic imperative of having to put bread on the table has on

these novel phenomena. At the very least it can be assumed that such phenomena are experienced and lived differentially. The socio-economic climate will at least influence - if not determine - each subjective experience of the various 'liberations' and 'revelations' of late modernity. While socio-economic circumstance may not determine consciousness, our ability to indulge the new freedoms may well be subject to necessitous economic calculation. While unglamorous, the holistic view at least reflects the realpolitik of a significant portion of the population of the First World, and certainly the experience of the populations of the Second and Third Worlds.

As our opinions and actions are at least influenced - if not in certain circumstances determined - by economic and/or social circumstance, it would appear prudent to introduce a socio-economic dimension to any analysis of our 'Risk Society'.

To ask the question 'What risks in whose risk society?' is not to debunk the contribution made by Beck, Giddens and others to our understanding of late modernity. Rather it is to provide for a more textured understanding of contemporary preoccupations, actions and inactions.

Chapter 3

The Study Area: The Physical, Social and Economic, and Environmental History of Sands End.

1 Introduction.

The study area, the Fulham neighbourhood (and electoral ward) of Sands End, is located in the London Borough of Hammersmith and Fulham, in West London.

Fulham, which from 1899 until 1965, was a Metropolitan Borough in its own right, is bounded to the south and west by the Thames, to the east by 'Chelsea Creek', and to the north by Hammersmith. Fulham's largely Thames-defined topography has significantly affected its development, as will be shown.

Much of what is said of Fulham in general is applicable to Sands End. The exception is heavy industry, which, as the Nineteenth and early Twentieth Centuries unfolded, tended to accumulate in Sands End.

Apart from this industrial gradient, however, all Fulham neighbourhoods display a similar topography. The houses, mostly constructed during the Nineteenth Century, and usually terraced, were built for "Labourers, carpenters, railway workers and market gardeners" (Mooney, B., 'When Fashion Moves In, Brown Paint and Memories Go', The Telegraph Magazine, January 7, 1972, p.19).

It will be shown below that the social and economic complexion of Fulham has changed significantly over the

years.

The history of Sands End will be traced under three headings; Firstly, the neighbourhood's physical growth will be described; Secondly, Sands End's social and economic development will be traced, and thirdly, its inhabitants' familiarity with and reaction to local environmental disamenity will be described. This approach is intended to explore how the history of Sands End may have influenced the terms of the debate over the demolition of Fulham Power Station. It is premised in the belief that a risk debate cannot be fully understood unless it is seen in its historic and current social, economic and political context.

2 A History of Sands End.

2.1 Physical Development.

The village of Sands End (meaning 'the village by the sand') became established in the southernmost tip of Fulham, near the banks of the Thames, during the mid Sixteenth Century.

The houses of Sands End were built on a bed of sand some twenty feet thick, lying on London clay. The village stood in the midst of low-lying 'meads' or meadows. The meads supported a thriving agriculture, with villagers exercising Lammas rights (the right to graze cattle) until the partitioning and fencing of land restricted access. Gradually, extensive market gardens were established on the meads, which, at their height supplied almost half of the capital's fruit and

vegetables. This thriving horticulture earned the neighbourhood the sobriquet 'The Fulham Garden'.

In 1739, the village of Sands End held a mere 35 ratepayers (Feret C.J., Fulham Old and New - Being an Exhaustive History of the Ancient Parish of Fulham. Volume 1, The Leadenhall Press, Britain, 1900, p.268). By the time of the first British census in 1801, however, Fulham as a whole had some 4,400 inhabitants (Hasker L., Hammersmith and Fulham Through 1500 Years - A Brief History, Fulham and Hammersmith Historical Society, Britain, 1992, p.35).

The Sandford Manor Estate, at the eastern edge of Sands End, played an important role in introducing industry to 'Fulham Garden'. In 1762 the manor house and grounds were turned over to the production of saltpetre. There was a change of use in 1790 when a pottery business was established. During the early Nineteenth Century the house was used for cask manufacture, employing up to 300 workers (Denny B., A History of Fulham, Historical Publications Ltd., Britain, 1990, p.87). Thus began the industrial phase of the development of Sands End. (The location of the manor house, and the topography of Sands End at the beginning of the Nineteenth Century, are shown on the map reproduced as Appendix 3).

In 1824, the pace and scale of industrial development in Sands End accelerated, when the Sandford Manor Estate was bought by the Imperial Gas Light and Coke Company. During the Nineteenth Century, "The gas works played an important part in the development of this part of

Fulham" (Ibid, p.88). At its peak, the works employed several hundred people, and was vital to Fulham's economy.

By the end of the Nineteenth Century, Sands End had a number of major industries apart from the thriving gas works. Kops Brewery, for example, built in 1890 and occupying a site of some eight acres adjacent to the river, employed 400 workers. As a contemporary historian noted:

The Brewery is a building of commodious dimensions...The various departments of this huge establishment constitute one of the sights of Fulham (Feret, Op Cit, p.265).

Further along the river, on the old 'Town Meadows', could be found a chemical factory, a tile manufacturer, a saw mill and a foundry. Away from the river there was a 'mat and basket' factory that harvested the osiers still found along the banks of the Thames, and a large laundry (on Broughton Road) faced with the locally produced glazed tiles. (It should be remembered, however, that although the many new enterprises that found a home in Sands End during the Nineteenth Century were mostly successful, the capital's industries could not escape the ravages of the various 'boom-bust' cycles of the Victorian era. Thus, "Many of the London trades, casual, sweated and economically vulnerable in an age of mounting foreign competition, were trades with a high incidence of unemployment" (Briggs A., Victorian Cities, Pelican, Britain, 1963, p.328)).

All these ventures were helped by the gradual

improvement of transportation links throughout the century. In 1859, Parliament authorised the building of the West London Extension Railway. The new track followed the eastern boundary of Sands End and crossed the river to service a new station at Wandsworth. Wandsworth Bridge, built in 1873, provided a new, fast approach to the western side of Sands End. To the north, the construction of the Metropolitan Line into Hammersmith in 1864, and the later extension of the District Line to Fulham Broadway, provided further impetus to residential and industrial development in Sands End. (The impetus given to housing by the development of both under- and over-ground railways could be seen right across the capital, with the extension of the Metropolitan Line exerting a particularly strong influence upon residential and industrial activity. As Briggs points out, "The slogan of the Metropolitan Railway - 'Live in Metroland' - showed that it was not so much satisfying existing needs as creating new residential districts" (Briggs, Op Cit, p.16)).

The accelerating industrialisation and urbanisation of the Nineteenth Century had a significant effect upon both the demography and topography of Sands End. By 1851, the population of Fulham as a whole numbered 12,000. In 1881 it was 43,000, and by the 1920s the combined population of Fulham and Hammersmith was around 300,000. After the Second World War, however, the population began to decline (Hasker, Op Cit, p.35).

These dramatic demographic changes saw the disappearance of the once thriving market gardens and vestiges of countryside that had given Sands End its unique character. In 1900, Charles Feret, 'Fulham's chronicler', mourned; "Soon it will no longer be possible to stroll out to the country" (Feret, Op Cit, p.82). Sands End had become "'A region of poverty and squalor' - this [said] of a place which only fifty years earlier had been a pretty riverside mead growing watercresses, with cows wading into the stream and no more traffic than an occasional cart" (Denny, Op Cit, p.85). Population growth and urbanisation were major themes of Nineteenth Century London life, and were much commented upon. Henry James, for example, wrote of the capital's 'horrible numerosity', while Arthur Sherwell in his 1901 work Life in West London "Talked of the pathos and remorselessness of growth: 'A city is like a great, hungry sea, which flows on and on, filling up every creek, and then overspreads its borders, flooding the plains beyond" (Sherwell A., in Briggs, Op Cit, p.313). Nevertheless, by the end of the Nineteenth Century, London was without doubt a 'world city'. Many spoke of 'the great Wen' as 'The world's metropolis'. As one (perhaps somewhat Anglophile) American writer put it in 1883:

We may talk of our Western empire and our admirable ports, of our growth and our growing wealth; but here is and will remain for generations, the centre of the commercial and political world, the focus of intellectual activity and the mint of thought. Here ferments the largest and most highly developed humanity...and here the whole world's intellect comes to pay homage (Briggs, Op Cit, p.317).

There is little doubt that the industries of Sands End made a valuable contribution to the economy of 'The world's metropolis'.

2.1.1 Fulham Power Station: Catalyst of Twentieth Century Development.

One of the last major industrial building projects in Sands End was the construction by the Metropolitan Borough of Fulham of the first Fulham Power Station. Having obtained an Electric Lighting Order in 1897, the 1,000Kw station was opened by the Borough in 1901 ('New Power Station At Fulham', The Times, September 3, 1936). (The first power station is shown on page 21 of the booklet Inauguration of the Extension to the Electricity Supply Station. See Appendix 4, where the majority of the booklet is reproduced).

The speed with which the newly formed local authority built its first power station reflected the general inadequacy of the capital's utilities at the end of the Nineteenth Century. Such shortcomings were widely attributed to the shambolic system of parish councils, vestries and lighting, paving and drainage commissions that persisted for much of the Victorian period (Fulham suffered as much from this system as any other Borough). Under this disaggregated and uncoordinated system of local government; "No fewer than 250 local Acts of Parliament had been passed relating to particular districts of London, and 10,000 commissioners were

exercising varying functions and degrees of authority" (Briggs, Op Cit, p.321). The system was much criticised. As the author of Ragged London wrote in 1861, "The metropolis is not managed, not cleansed, not relieved from the spectre of starvation which dances before us at our doors" (Ibid).

Although the setting up of the London County Council (LCC) in 1888 went some way towards addressing the capital's many self-inflicted problems, the establishment of 28 Metropolitan Boroughs in 1899 (including Fulham) provided a powerful local vehicle for change. Thus Fulham's first power station, built by and for the people of the borough, began its supply in 1901. (Interestingly, a few years later a House of Commons committee rejected a proposal to build a purely commercial station at Battersea "On the grounds that it would be too costly and that it would be undesirable to pollute London's atmosphere further" (Bowler C., and Brimblecombe P., 'Battersea Power Station and Environmental Issues 1929-1989', Atmospheric Environment, Vol.25B, No.1, 1991, p.146). Public opposition to Battersea Power Station continued for many years. Indeed, the station "Became the centre of environmental agitation on a scale more typical of the present day than the early 20th century" (Ibid, p.143)).

During its comparatively unproblematic lifetime, the capacity of the first Fulham Power Station, which "Supplied electricity over an area limited by the boundary of the Fulham Borough", was increased by some 2,000%. The first power station was extended in the

1920s (See Appendix 4).

The power station was used by the Borough to attract industry to the area. Thus in a 1909 publication entitled Borough of Fulham, London: Electricity Supply, the local authority talked of "The many advantages which the Borough of Fulham possesses for the establishment of Factories and Workshops". Besides plentiful quantities of vacant land, Fulham could boast "A reliable supply of cheap motive power". The publication talked in glowing terms about the first power station :

The Corporation Electricity Supply is already used very considerably by factories and workshops in the Borough for power purposes...The Generating Station is equipped with modern machinery and is thoroughly up-to-date. A cheap and reliable supply of current is therefore assured...Charges are practically the lowest in London (Ibid, Town Hall, Fulham, February, 1909).

The Borough's residents were also encouraged to capitalise on the new facility. In one publicity leaflet entitled Have You Electricity In Your Home? (See Appendix 5), the Borough of Fulham Electricity Department vigorously promoted the 'Council's Lighting Scheme'. Not only could the 'Cheap, Clean and Healthy' source of power be obtained at 'No initial cost', but under the 'Council's Apparatus Scheme', appliances could be rented at competitive rates. Another publicity booklet, Fulham Corporation Electricity Supply, produced in the 1900s, led with the advertisement; 'Metropolitan Borough of Fulham Electricity Supply...A Better Light, A Clearer Light, A Cheaper Light'. The booklet, produced

in a sumptuous art deco style with an attractive deep green cover, asked the people of Fulham "To give the following particulars their careful attention and consideration" (See Appendix 6). The booklet went on to extol the virtues of the new cheap and convenient energy supply. Printed on the final page was an application form for connection to the system. Clear and brief, the form should not have presented any obstacle to the aspirant consumer. On completion, it could be torn from the booklet along its perforated spine, thereby leaving the publication in tact as a souvenir of the enterprise. Evidently, much thought went into its design and manufacture; evidence, perhaps, of the high esteem in which the burghers of Fulham held 'their' power station.

Consumers of the new power source were helped with such guides as How to Read your Electricity Meter, produced in 1924 by the Borough (See Appendix 7).

As demand grew, so did the marketing effort. Eventually, a 10,000 sq. ft. showroom was opened by Fulham's Electricity Department ('Electricity Showrooms: Official Opening Next Week', The Fulham Chronicle, October 19, 1928).

The power station's runaway success prompted the Borough to plan an entirely new station on land adjacent to the original. Fulham Borough began work in 1932, and the new power station, the largest municipally-owned facility in Britain, was opened in 1936. This was a proud day indeed for the burghers and people of Fulham Borough. The opening ceremony, performed by the Mayor, was attended

by "A large crowd of Fulham citizens, engineers and workmen" ('Fulham Power Station: Opening By The Mayor', The Times, September 28, 1936). Those without invitations waited outside the station ('Fulham: Britain's Largest Municipally Owned Power Station', The Morning Post, September 28, 1936). The ceremony itself was an elaborate affair, the programme beginning at 2pm at the new station and concluding with 'Tea at Town Hall' at 4.30pm (See Appendix 8). During the ceremony, a memorial tablet dedicated to those who had built the new power station was unveiled. The carved inscription above the imposing main door read "Fulham Borough Council, Electricity Department" (Denny, Op Cit, p.85). (A contemporary line drawing of the station is reproduced as Appendix 9). During the celebratory tea at Fulham Town Hall, those who had sponsored the project were roundly praised. Lord Greenwood, chairman of one of the companies involved in the construction project, heaped praise upon all those involved:

I congratulate you on an achievement that will add to the well-being of millions. You have here a monument - magnificent and, I think, permanent - to the foresight and endurance of Fulham Council and Fulham citizens ('Fulham: Britain's Largest Municipally Owned Power Station', The Morning Post, September 28, 1936).

Other speakers were equally enthusiastic, the Vice-Chairman of the Electricity Commission, for example, seeing in the new power station the re-birth of a spirit of Metropolitan entrepreneurship and adventure:

We Londoners are often accused of having no real civic sense...People say we are not prepared to take an interest in London. You have signally proved the contrary. You have

erected the station not only in the interests of the burghers of Fulham, but in the interest of Greater London as a whole (Ibid).

Although not at the opening ceremony, the Chairman of the Electricity Commission commended "The enterprise of the Fulham Borough Council" (Ibid). The Borough's Electrical Engineer asked that those who built the station be remembered. As The Post recounted:

The skill of the contractors and the craftsmanship of the men, he said, were things to be acknowledged with gratitude (Ibid).

Once the new Fulham Power Station had been phased in, the original power station was shut down and the land cleared. During its lifetime, the capacity of the second power station was increased by some 300%, from 120,000kW to 360,000kW ('25 Years in the Service of Electricity Generation: Fulham Power Station, 1936-1961', Central Electricity Generating Board, UK, 1961, p.3). Due to the treacherous nature of the ground adjacent to the Thames, the new power station was built on a massive concrete raft "Requiring excavations of up to 44ft. below surface at the deepest point" (Ibid, p.8). (This impressive feat of heavy structural engineering would make the later demolition of the power station all the more difficult). As in all power stations, huge amounts of blue and brown asbestos were used at Fulham to provide adequate heat insulation. The insulation work was so thorough that "In 1948 [Fulham Power Station had] the distinction of the highest thermal efficiency of any power station in Great Britain" (Ibid, p.30). The lagging of the power station

was a huge undertaking, "The fantastic levels of heat [requiring] every piece of the structure to be insulated" (Weeden C., 'The Boys From The Blue Dust', City Limits, November 18-24, 1983, p.6). As one of those involved in the original lagging of the power station recalled:

The scaffolding went 60 foot up the side of the boiler with ladders on every platform, dropping the offcuts of Caposite asbestos slab on to the ladders below them (Ibid).

To maintain the power station's remarkable thermal efficiency, a comprehensive maintenance programme was followed, in which pipework and other components were regularly re-lagged. As one of the lagging contractors recalled:

Over the years asbestos breaks down and crumbles off. Workers may brush against it too, and damage it. Now and then we are sent in to re-lag. When we did Fulham there were no precautions kept, so the dust is everywhere inside there anyway. The pipes were lagged with asbestos cloth. This you cut to size, put it round the pipe, sewed it with a needle and asbestos cotton - five stitches to the inch, rubbed down with your thumb - and this was then stuffed with asbestos fibres. If it was too tight a fit then you would wrap the joint with asbestos rope (Ibid).

In 1948, ownership of the power station passed from the Metropolitan Borough of Fulham to the London Division of the British Electricity Authority. In other words, the first Attlee government nationalised Fulham Power Station. The power station reached its apogee during the post-war reconstruction boom of the 1950s, when it burned 5,000 tons of coal, and consumed 14,000,000

gallons of Thames water each day (Ibid). However, by the early 1960s, the availability of power supplies from other, more modern stations meant that the 'load factor' at Fulham began to fall.

In an effort to modernise the station, in 1969 plans were laid to convert to oil. The conversion was completed in 1972 - just before the first of the 1970's several 'oil crises'. The dramatic increase in the price of oil prompted a cost-benefit analysis of the country's oil burning power stations. In November, 1975, the Electricity Board's South Eastern Region announced the closure by October 31, 1976, of Hackney, Peterborough and Brimsdown power stations, and the partial closure of Fulham Power Station. It was reported that "The closure dates have been advanced because of the sharp reduction in the demand for electricity" ('Stations To Close', South Eastern Power, November 1975). Thus, at the end of 1976, Fulham Power Station was put on 'stand by'. This marked the beginning of the end for the plant. The workforce was cut from 460 to 230, and in 1978 it was closed for good.

The site remained derelict for a couple of years. Then in 1980 the CEGB asked the local authority to prepare a development brief. Despite the lack of amenities in Sands End (the neighbourhood had little open space, for example), the council recommended that the prime site be used for 'industrial and warehouse development'. The Fulham Chronicle responded "Lost is development of the land for houses or amenity uses" ('Sale A Step Nearer',

August 7, 1981). Redevelopment did not begin until May, 1983.

Despite its demise, there is little doubt that for each of the 77 years of its existence, Fulham Power Station - in both its incarnations - was a source of employment, pride and physical comfort for the local population. Apart from directly employing several hundred people, it attracted significant industry to Sands End. Eventually, the whole of the neighbourhood's extensive river frontage became colonised by industry. The local authority took great pride in the fact that it had undertaken such a complex venture as the construction and management of a power station (and associated distribution system) with such a degree of success. Thus in 1961, on the occasion of the station's silver jubilee, it was noted that "Fulham Council was extremely proud of the fact that they provided the original power station". At the celebratory luncheon, the ex-Fulham Borough Electrical Engineer noted:

We were a real team...[especially] the women who did such wonderful work during the war.

The staff of Fulham Power Station were roundly commended. As the Chronicle recorded:

Mr H.J. Bennett, S.E. Regional Director, said the staff of the power station had always been reliable, and their devotion to duty had been a hall-mark since the days when Fulham first built it ('When Fulham Owned Its Own Power Station', The Fulham Chronicle, November 24, 1961).

On the occasion of its closure in 1978, South Eastern

Power magazine noted that Fulham Power Station had provided "Long and valued service to the community".

It would be a mistake, however, to assume that the power station engendered unalloyed joy and celebration amongst the residents of Sands End. During its coal-burning years, the power station received numerous complaints about sooty deposits from the chimneys. As the West London Observer noted in 1973:

Until last year, the station had received a continuous stream of complaints from residents about the grit and smoke emitted from the four giant chimneys ('Fresh Air And Clean Water - And That's Worth A Million', February 2, 1973).

The Power Station was also an emphatic physical presence that towered over the narrow Victorian streets of Sands End:

Close up, the chimney stacks of the...power station seemed enormous. Each was three hundred feet high, crowning an already high building (Denny, Op Cit, p.85).

Having said this, however, Fulham Power Station was better received than the proximate Battersea Power Station. Built by the London Power Company (LPC) in the late 1930s, "Public reaction to plans for constructing Battersea Power Station were extremely negative" (Bowler and Brimblecombe, Op Cit, p.150). The negative reaction derived in the main from concerns over the environmental impact of the Metropolitan 'super station' (actually two units, Battersea 'A' and Battersea 'B', built some years apart):

From inception (1920s) to partial demolition (1980s) London's Battersea Power Station provoked public concern over environmental impacts. Adverse reaction during the early stages concerned siting and the effects of air pollutants on the urban surroundings. Potential air pollution problems resulted in a restrictive 'condition' being inserted in the consent for Battersea which required smoke and sulphur dioxide to be controlled. The 'condition' did not reassure either the public or special interest groups who campaigned against the construction of the station (Bowler and Brimblecombe, Op Cit, p.143).

It is interesting to ponder why the public's reaction to Battersea Power Station differed from its reaction to Fulham Power Station. After all, the two power stations had outputs that were exactly equal - 360,000kW - and both converted coal to a form of energy that was relatively cheap and convenient. Possibly the divergent attitudes were in part a reflection of the divergent patterns of ownership and control of the two stations, with Fulham Power Station, as the creation of the local authority, being seen to be more accountable to the local population and more an expression of local energy and pride than the privately built Battersea Power Station. Also, the people of Sands End were familiar with the technology of coal-burning power stations, the first plant having been opened as long ago as 1901. The same could not be said of the people of Battersea.

Generally, Sands End was an ideal location for heavy industry, which in the Nineteenth and Twentieth Centuries was coal fired. Its geography, sitting as it did in "A deep southerly loop of the Thames" (Hasker, Op Cit, p.72), rendered it accessible to coalers from

North-East England, and oilers from further afield. Both the gas works and power station consumed vast amounts of coal, while the new oil termini built along the river handled ever increasing amounts of this new energy source. Eventually, both Fulham Power Station and London Underground's Lots Road Power Station, situated on Chelsea Creek, just the other side of the Borough boundary, changed to oil.

Before a general industrial decline in the 1970s, the Sands End river frontage thrived. Between Wandsworth Bridge and Chelsea Creek (moving eastwards from the bridge), were to be found Albert Wharf, Swedish Wharf Petroleum Depot, Comley's Wharf Concrete Works, Fulham Wharf Warehouse Complex, Fulham Power Station, the Shell and Lensbury Oil Terminal (which, by the time of the power station debate, had become a BP depot), the North Thames Gas Board Vehicle Maintenance Workshops and Gas Appliance Works and Laboratories, a liquefied petroleum gas (LPG) storage depot, and finally the Nacovia Wharf Cement and Concrete Works adjacent to the West London Extension Railway. (A map showing the location of some of this industry is reproduced as Appendix 10. Fulham Power Station is shown as 'Generating Station' and 'Gen Sta'. (The map is unfortunately overwritten with a 1980s traffic management analysis)).

Inland, to the west of Chelsea Creek, was the gas works. Chelsea Basin itself had a lock system and was surrounded by goods sheds and extensive marshalling yards owned and managed by British Rail.

While it has been asserted that London's industries "Developed mainly on the eastern side of the capital" (Hasker, Op Cit, p.40), it cannot be doubted that for much of the Twentieth Century Sands End was, although located in the heart of the more 'residential' West End, heavily industrialised.

As in other parts of London, Sands End's industrial decline began in the 1960s. In London generally, the 1960s and 1970s saw a dramatic decline in manufacturing activity. Thus while the country as a whole lost 25% of jobs in manufacturing between 1971 and 1981, the capital lost 36% of its manufacturing jobs. All told, between 1973 and 1982 London lost over half a million jobs from its economy (Townsend P., Poverty and Labour in London: Interim Report of a Centenary Survey, Low Pay Unit, 1987, p.12). The shift from manufacturing to service jobs actually began in the 1950s. Thus while the number of manufacturing jobs in the capital declined from 1,523,000 in 1951 to 1,049,000 in 1971 (and to 671,000 in 1981), between 1951 and 1971, the number of banking, insurance and finance jobs increased from 187,000 to 404,000 (Ibid, p.14). The dramatic transformation of the capital's manufacturing base during the 1960s and 1970s meant that by the early 1980s, "Some boroughs [were] virtually denuded of manufacturing firms which employ more than 200 people" (Ibid, p.13). The economy of Sands End, with its almost total reliance upon heavy industry, was particularly hard hit. As one commentator put it:

Fifty years ago [Sands End] was even uglier than it is today, but thriving, with a huge gas works and power station, an oil depot,

laundry, and various other factories. But by the 1970s it had become a dead and derelict industrial wasteland, the power station unused, the gasometers either deflated or demolished, factories empty and the corner shops closed (Denny, Op Cit, p.85).

Sands End in the 1970s was very much a "Down and out corner of old Fulham" (Ibid, p.90) in need of social and economic regeneration.

Regeneration, when it came, began with an aggressive gentrification of working class terraced houses (which, in estate agents' parlance, were transformed into 'cottages'), and concluded with an expansion of the area's service sector industries (with offices, 'starter units' and a large supermarket being built) and large scale 'executive housing' developments.

Fulham's gentrification was not exceptional. Indeed, in many respects, the gentrification process was slow to take hold in SW5. Other London neighbourhoods had been undergoing gentrification since the 1960s, the process beginning in South-West Islington in about 1965. The process itself arose out of the historical conjuncture of several quite disparate social, economic and political processes. The first was the abandonment by the second Wilson government of "The blank cheque for new build of the 1967 Housing Subsidies Act" and the consequent "Switch of public resources into rehabilitation or improvement". The second was the (previously discussed) dramatic increase in the size and vigour of London's service sector, which drew many more middle class, reasonably prosperous white collar workers into the capital. And the third process was the retreat

from modernist architecture and rediscovery of the pleasures of the (rehabilitated) Victorian and Edwardian dwelling (Legg C., and Allen J., 'The Origins of Gentrification in London', History Workshop No.17, 1984, p.166). The conjuncture of these (and other) processes launched the capital on a gentrification spree that ended only with the dramatic property market crash of 1989.

In the 1970s, 'fashionable Fulham' (or 'FASH.FUL' as it appeared in Estate Agents' windows) was marketed as an affordable alternative to an overheating Chelsea 'town house' market. The resulting gentrification had a profound effect on many Fulham neighbourhoods, including (albeit to a lesser degree than elsewhere) the 'Cinderella' neighbourhood of Sands End. There appeared "Parked yellow Renaults, Victoriana and stripped pine, rooms Healised and Habitatised [and] children in flared jeans on Sunday" (Mooney, Op Cit, p.19). Those who migrated to Sands End from its fashionable environs brought a different culture to the area:

[T]he overflow from the Chelsea/King's Road of middle and upper class persons [made] much of the Sands End area an 'in' place to live with frequent mentions in 'glossy' magazines and on television (Bayliss, G., Wandsworth Bridge Road as a Social Boundary (B.A. Geography Thesis), Liverpool University, Department of Geography, 1981 (Copy sourced from LBH&F Archive)).

While there was token (often unspoken) resentment from 'native' residents, such gentrification brought

investment and spending to Sands End (although how much of this 'new money' went to local businesses is open to question). One couple, for example, invested almost as much in 'improvements' as their house cost originally. The couple, he an engineer, she a secretary, spent £7,000 buying their house, and another £6,000 on refurbishment (Mooney, *Op Cit*, p.20). It should be noted that the purchase was made more attractive by the local authority offer of a £1,000 improvement grant.

There is little doubt that the process of gentrification has the potential to alienate the newcomer from the native, the gentrifier from the merely gentrified. As one commentator has put it, "Gentrification battles bring 'society' face to face with the hideous class differences it has created" (Sleeper J., 'Neighbourhood Gentrification: More Inequity than Meets the Eye', *Dissent*, Volume 29, No.2, 1982, p.169). Others see gentrification as representing nothing less than "The class struggle in housing" (Legg and Allen, *Op Cit*, p.164). The process usually exhibits two distinct phases. First come those of a 'missionary' persuasion, who bring not only money, but understanding and empathy to a battered neighbourhood. In time, however, the process of gentrification that began "As a benign revival of shabby tenements by young urban integrationists", becomes nothing less than "An inflationary, luxury oriented juggernaut" consuming communities and capital in equal measure (Sleeper, *Op Cit*, p.171). During this phase, the gentrifiers, according to Jim Sleeper, are overwhelmed by 'commodity

fetishism'. (Mooney made much the same observation in Sands End. See above). Thus there develops "An obsession with consumption styles that insinuates itself into personality when all human relationships have been plunged into the icy waters of calculation by market forces: the trappings of dignity that money can buy, such as [home] ownership...become virtually the only substitutes for the dignity of life in more stable, supportive communities" (Ibid, p.174). The 'obsession with consumption styles' on the part of those who 'move up' in the world was noted also by Young and Willmott in their seminal work Family and Kinship in East London. The authors found that those East End families who could afford to move to the new estates on the outskirts of the capital began to value themselves and others not in terms of who they were and what they did, but rather in terms of what they owned. As the authors put it, in the new, semi-rural London County Council estates of neat, semi-detached houses, "Judgement [rested]...on the trappings of the man rather than on the man himself" (Pelican, Britain, 1962, p.162).

In Hammersmith and Fulham the gentrification process - whether influenced by 'commodity fetishism' or not - was 'kick started' in 1968 by the election of a Conservative Council. The majority of houses purchased by the outgoing Labour administration and earmarked for demolition were instead sold back to the private sector (although some Council-owned houses were demolished to create new open spaces). Traffic calming, tree planting, home improvement grants and the decanting of any

remaining Council tenants who were willing to move to the borough's new high-rise blocks completed the local authority's contribution to the gentrification process. The Council's decanting programmes caused some resentment amongst native Fulhamites. As one long-term resident explained:

I don't think it fair...the way they turn out all the working class and put them into poky flats when they have been used to a big flat with a garden. You have to sell half the furniture that's part of your life.

You see, all these people are monied people. They buy their houses then feel we ought not to be down here. But I don't suppose we will be down here for long. Those that have gone hate being away from here. My friend, a widow, used to live over the road and when she wasn't well I'd do a bit of shopping for her. Where she is now in the flats she doesn't know anybody and never sees anybody. We all used to help each other (Mooney, Op Cit, p.20)

The erosion of community spirit is a common theme amongst Fulham's long-term residents. As one of them put it:

I never meet [my new neighbours]. They never stop to give you the time of day. And quite honestly, the only improvements they've made with all their money are to their own houses; the whole outlook and feel of the street hasn't been improved. They are just not us you see (Mooney, Op Cit, p.22).

Mrs Wheeler's testimony concludes, rather sadly, with a wish for some sort of social apartheid so that her street's old community spirit can be recreated:

Its a pity they couldn't have moved all us down one end and all them up the other (Mooney, Op Cit, p.22).

Besides changing the social character of Fulham, gentrification also affected its physical appearance, with brown-framed, decrepit frontages giving way to 'tasteful' swathes of pristine white-painted brickwork. However, despite looking good, the refurbished streets, according to Bel Mooney, "Lack the texture, the variety, the evidence of time spent" (Op Cit, p.22). While a native Fulhamite might well install an out of period front door and paint it some 'vulgar' colour, such architectural faux pas at least lent the street a touch of humanity and humour.

If the seventies was the decade of creeping gentrification, the eighties was the decade of the 'big idea' in private urban development and renewal schemes. In Sands End, the 'big idea' took the form of the development by P&O and Globe of Chelsea Basin and some twenty acres of surrounding dereliction. As Denny explains, the developers promised a "'Unique world of houses, flats, offices, restaurants and shops', and a luxury hotel built around a working yacht harbour" (Denny, Op Cit, p.90). The Chelsea Harbour development is a contemporary of the London Docklands Development Corporation's (LDDC) scheme in East London (the LDDC was set up in 1981). Like its contemporary, Chelsea Harbour "Contains a mixture of classical and modernistic styles and motifs" (Ibid). It is, in other words, the apotheosis of the post-modern style in architecture. Or as one review has put it, "[Chelsea Harbour is a] bizarre postmodernist jumble which sweeps up the world's styles and periods to create 14 different buildings in

neo-classical and newer styles" (Chippindale, P., and Horrie, C., 'Up Chic Creek', New Statesman and Society, September 16, 1988, p.11). Other reviews have been equally scathing. Considering the suitability of the location for a recent Royal Society of British Sculptors exhibition, an arts writer made the following comments:

There are notable works by internationally renowned artists, yet the Lego-like architecture (the acme of post-modernism) reduces powerful pieces...to mere decoration...(Hubbard S., 'Sculpture 93 - Chelsea Harbour', Time Out, August 11-18, 1993, p.41).

The exhibition, according to the critic, had to "Fight off contamination from the surrounding tweezeness" (Ibid).

Twee though Chelsea Harbour may appear to an art critic, it is in fact an emphatic physical presence in Sands End. Its doughnut shape, creating a semi-private 'inner sanctum', and sheer exterior walls put one in mind of an impregnable contemporary barbican. As one of the power station campaigners (who also served on the local authority between 1986 and 1990) put it:

They have attempted in our area a new form of enclosure...There was an attempt at a Medieval fort to keep everybody else out and to protect the occupants...(JG: Interviewed October 23, 1993)

Chelsea Harbour, for all its pleasant shopping malls, imported mature trees and airy courtyards, is very much an island of tightly controlled space in the midst of an open (if physically decaying) patchwork of Victorian and Edwardian dwellings.

The Chelsea Harbour development was sanctioned by a Conservative led Hammersmith and Fulham Council in the mid 1980s, but on completion the Council, by then Labour controlled, attempted (unsuccessfully) to transfer it to the Royal Borough of Kensington and Chelsea by asking for the Borough boundary to be moved. At the time, sceptics suspected the ruling Labour Group of attempting to eliminate a possible electoral threat to Labour-controlled Sands End by 'dumping' potential Conservative voters in a borough of their own political colour.

The development was unattractive to the Labour authority for other reasons. At the time, local income for services was generated through the Community Charge, which bore no relation to property value. So although the new residents would generate some new income, the absence of a progressive local tax would lose the Borough many thousands of pounds in a period of increasing financial restraint. Additionally, the mainly residential development provided relatively few jobs. Those that were created were often semi or unskilled - gardeners, hotel workers, and security staff. It is quite possible that the majority of these would be recruited from itinerant (and vulnerable) workers resident in the Earls Court hotel area, across the Borough boundary. An ex-Labour councillor summed up the Chelsea Harbour development thus:

As a place to walk to see the boats it is very nice. It is a destination for some people to have some work, but not a lot, and what there is isn't highly skilled or highly paid. It is a misappropriation of a very valuable asset... (JG: Interviewed October 23, 1993).

The criticisms of the local economic potential of Chelsea Harbour were similar to those made of the LDDC scheme for the disused London docks. As one East London community representative put it, "We'll get the menial jobs - catering, car park attendants, baggage handlers, sweepers-up. They say they'll train locals later. But why should the airport train my youngster, when they can bring in skilled people from outside" (Thomas D., 'Conflict Over The New Docklands', New Society, October 20, 1983, p.99). According to native East Londoners, the LDDC 'interlopers' had little knowledge or understanding of the social fabric of the East End. While the LDDC saw East London as a more or less homogeneous community, the locals saw it differently: "The idea that there is one entity - docklands - is in fact a bit of a myth. The people and economy of one docks area aren't necessarily linked with those of another. Their common denominator is that their economies have collapsed" (Ibid). The same comment could be made of Hammersmith and Fulham in the early 1980s, with the Borough fragmenting along various axes - housing conditions, home ownership, unemployment, level of amenity, crime, quality of schooling, and access to private and public transport. (The community's heterogeneity is reviewed in more detail later).

Indifferent or oblivious to the heterogeneity of the East End community, the LDDC set about the task of, as its first chairman put it, "Introducing light and shade into a monochrome society" (Ibid). To this end, the Corporation reversed the ratio of owner-occupied to

rented accommodation in all new housing developments:

In the past local housing developments allowed... a fifth owner-occupation at most. The corporation has reversed the ratio - four fifths for owner-occupation and one fifth for rent. The result, it's claimed, is that local people can't afford the new housing (Ibid).

As in Docklands, so too in Sands End: Those involved with Chelsea Harbour had little serious intent of meeting specifically local needs. Chelsea Harbour had no low-cost rented housing - making even the LDDC's limited commitment to social housing seem positively enlightened. It had no sheltered schemes - even though these were mooted in the development's early design work, possibly with the intent of currying local political favour. It had no small industrial 'starter' units, and no purpose-built community or commercial exhibition space. At least Docklands had the (albeit financially insecure) London Arena. Despite such omissions, however, the Chelsea Harbour scheme was hailed as 'imaginative', although as one commentator has observed, "'Imaginative' is the word often used to describe plans to turn docks into yachting marinas" (Thomas, Op Cit). Unfortunately for London's deprived communities, however, it would appear that the public can prefer the asceticism of an exclusive, yet sterile, marina to the unpicturesque vigour of a working water front, as the following apocryphal tale demonstrates:

But what of St Katharine's Dock...the first to get the imaginative treatment? Now boasting an expensive hotel, a marina, an open-air chapel and high-class shopping and restaurants, it's a prime tourist attraction. [To] the strains

of eucharist in the chapel...Two portly Americans cut a stately progress through the crowds. "Gee, this is cute. What was it before?" asked one. "Oh, just some sort of dock" (Ibid).

In many respects, Chelsea Harbour bears a closer resemblance to St Katharine's Dock than to Docklands. It is exclusive, expensive, incongruous and aggressively commercial: a rich 'ghetto' in the midst of an increasingly deprived community (as will be shown later).

If the LDDC scheme set a London-wide (if not nation-wide) precedent for 1980s inner-city regeneration programmes, Chelsea Harbour set a Fulham precedent for other developments along the largely derelict Sands End river frontage. A local regeneration 'paradigm' had been established.

The perceived 'success' of Chelsea Harbour prompted British Gas, owners of much of the derelict land, to propose a number of similar schemes. For example, in 1989, British Gas PLC (North Thames) submitted an outline planning application for a major redevelopment of its vacant land along the Thames. The application proposed:

Redevelopment to provide not more than 643 dwellings and 89,272 sq.metres of commercial floorspace and 3,235 parking spaces together with 3.3 hectares of open space accessible to the public (London Borough of Hammersmith and Fulham Planning Application, Applicant; 'British Gas PLC (North Thames)', Date of Application 23.02.89, T.P.Number 00531/0014/000).

This development would have created "Up to 3,500 jobs at

a cost of about £400 million", and had been designed "By the architects responsible for trendy Chelsea Harbour" (Kennedy D., 'Des Res at the Gasworks', The Fulham Gazette, January 27, 1989). The Council rejected the application. While there is little doubt that the injection of £400 million into the economy of Sands End would have created some new employment, if the experience of the London Docklands is anything to go by, it is debatable whether 3,500 new jobs would have appeared. At one time, for example, it was predicted that the Docklands Airport alone would create up to 5,000 jobs (Thomas, Op Cit). Even today (late 1996) the airport employs no more than a few hundred.

The non-British Gas land along the river was in a similar state of dereliction. Fulham Power Station had been demolished in 1983/1984 leaving a large void that was not fully redeveloped until the late 1980s. Also in the 1980s the Shell and Lensbury Oil Terminal was demolished, and the Comley's Wharf Concrete Works abandoned. A large part of the gas works site adjacent to the old West London Extension Railway was turned over to 'yardage' (a managed site where plots were let to small businesses like car breakers and waste transfer stations), and one of the British Gas workshops on the riverside became an indoor 'go-kart' track. In many respects, Sands End in the 1980s bore a remarkable resemblance to London Docklands, an area that, like its West London counterpart, had experienced social and economic decline for some decades. Thus in Docklands, as in Sands End, "There was insufficient investment...Land

and buildings became derelict or were taken up by haulage and scrap operators who controlled large sites at low rents and employed few people" ('Briefing: The Challenge of Urban Regeneration', LDDC).

Today the majority of the Fulham Power Station site has been redeveloped. The 'executive' component of the redevelopment, sited on the waterfront, is known as 'Regent on the River'. According to the on-site sales and lettings company, the residents of Regent on the River may 'experience the best in London living'. According to the sales literature, the development features "250 luxury new apartments and penthouses designed and built to an exceptionally high standard by Bovis Homes". The development is "Situated in one of West London's most fashionable riverside areas...Knightsbridge, Sloane Square and Kings Road are all within easy reach of the development" (Cluttons London Residential Agency, 'Regent on the River, London'). In fact, both Knightsbridge and Sloane Square are some distance off. Only the unfashionable western end of the King's Road is within a reasonable walk of Regent on the River. Given that Sands End has no tube or rail stop, and only a mediocre bus service, car ownership is a precondition for 'easy access' to West London's fashionable shopping and entertainment centres.

The 'social housing' component of the development is allegedly the product of a dispute between P&O, owners of Bovis and developers of Chelsea Harbour, and Hammersmith and Fulham Council. The dispute, over the

violation of living density regulations at Chelsea Harbour, was popularly believed to have been settled by Bovis building a number of Council houses free of charge on the Regent on the River site. This 'planning gain' development is now managed directly by the local authority. Perhaps predictably, the social housing gift is sited on a busy arterial road, leaving the financially and aesthetically more valuable river frontage for the prestigious Regent development.

The business component of the development comprises several dozen 'industrial units', while the leisure requirements of Regent on the River and other residents are catered for by the 'exclusive Harbour Club', as the development's estate agents, Cluttons put it. The club has 14 tennis courts, 2 dance studios, a gym, a large swimming pool, a childrens' pool, a bar, restaurant and creche. (The club was developed by Skillion and is managed by First Leisure PLC).

A large Sainsburys supermarket has been built adjacent to Regent on the River. In a gesture of goodwill the chain donated a small area of land to the local authority for the provision of 'low rent starter business units'. The local authority seized the opportunity to promote local economic development. As the local paper explained:

Town Hall chiefs are to call in a firm of consultants to ensure maximum use is made of an empty site in Townmead Road. They hope the 0.67 acre site will...allow local people to start up local firms in a supportive low-cost environment. The site should also contain business and secretarial back-up for the new firms, and space for training courses to be

carried out ('Starter Units', The Fulham Chronicle, October 19, 1989).

(This sort of benevolence was conspicuously absent at Chelsea Harbour). Hammersmith and Fulham's speedy acceptance of the Sainsburys gift reflected a willingness on the part of local authorities in the 1980s to intervene in collapsing local economies (Townsend, Op Cit). (It should be noted, however, that while many local authorities longed to intervene in their respective local economies, few had the power or finance to do so on any meaningful scale).

The sort of 'gestural' politics practised by Sainsbury's and Bovis in Sands End could be seen elsewhere in London, and is practised to this day. Thus companies that have benefited from the LDDC's 'pump priming' of the East London economy make much of their involvement with the voluntary East London Partnership (ELP) - a charity set up by incoming businesses like News International, Grand Metropolitan and Morgan Stanley to give something back to the community. Through the ELP, professionals, according to its chairman, "Lend their expertise to a whole range of projects that are helping regenerate East London, from establishing a profit-making launderette on a Spitalfields estate to teaching local students in Newham the basics of running a business" (Tagg D., 'Smiling Face Of The East End', The Evening Standard, January 30, 1995, p.28). (The view that companies are eager to become more intimately involved in community life contradicts Townsend's opinion that big business cares little for the fate of

the capital and its people: "Internationalisation has some awkward implications for the acknowledgement of local social responsibility on the part of rich people. Swept into the high finance and quick deals of the whole world they are often uninformed about the poverty being generated in their own city" (Townsend, Op Cit, p.67). There is no equivalent to the ELP in Fulham, despite the similar social and economic problems faced by the Sands End community (albeit on a smaller scale).

Despite the lack of a 'West London Partnership', however, there is a marked similarity between Sands End and London Docklands in terms of the physical changes wrought to the two areas during the 1980s. In Docklands, the brash new-build projects of the eighties set up a physical tension with the area's Council estates and long-established Victorian and Edwardian terraces. As the Evening Standard, describing the fate of the residents of the Isle of Dogs, put it:

Most indigenous islanders live like this, in enclaves between the designer developments. In another context the council estates might be reservations (Dovkants K., 'Brave New World Built On Broken Promises', The Evening Standard, January 18, 1995).

A similar polarisation can be observed in Sands End, where both the Chelsea Harbour and Regent on the River developments with their exclusionary tariffs, niche outlets, security cameras and guards conspire to exclude those who, like many of those who live in the terraced streets and Council estates of Sands End, are deemed not to 'belong'. Thus, Chelsea Harbour is "Unashamedly

targeted at the wealthy and status conscious who want to be in London, but get well away from the increasing horror of its everyday life (Chippindale, Op Cit, p.10).

The exclusionary and exclusive character of such developments has also been noted by Geoff Mulgan. According to Mulgan, in order to be seen to be a 'legitimate' user of such amenities, one must be able to consume. If one is unable to meet this prerequisite, one may be considered a threat to 'polite society':

Those deemed unproductive as consumers, particularly the young and the homeless, are often physically excluded from the new shopping centres (Hall S., and Jacques M., New Times - The Changing Face of Politics in the 1990s, Lawrence and Wishart, Britain, 1989, p.273).

It is alleged that such an elitist philosophy informs the management of Chelsea Harbour:

The developers are anxious that public participation amid discreet security will ensure that the Harbour is not written off as a fortress for the rich...

But wherever possible the "public" which is being sought will be sanitised in just the same way as the development filters the reality of London (Chippindale, Op Cit, p.11).

Whatever the polarising effect of such developments, however, in a purely topographical sense Sands End retains much of its Victorian/Edwardian character. Indeed, its physical composition - even in the mid 1990s - brings to mind an old description of Victorian London, as consisting of "Endless streets of undistinguished houses, undistinguished industries [and] second-rate shops..." (Besant in Briggs, Op Cit, p.347).

2.2 Social and Economic Development.

At the end of the Eighteenth Century there were some four and a half thousand people resident in Fulham as a whole. By the inter-war period, the population stood at 300,000. It has been in decline ever since.

When Sands End was still an area of extensive market gardens, many Irish people, fleeing the harsh economic conditions of their homeland, settled there. These agricultural workers were accommodated in cheaply built rented housing. The tradition of minimalist, speculative housing development continued throughout the Nineteenth Century, and drew wide comment. Dickens, for example, noted in Dombey and Son the "Disorderly crop of beginnings of mean houses, rising out of the rubbish, as if they had been unskilfully sown there" (Dickens in Briggs, Op Cit, p.346).

The coming of the railways in the Nineteenth Century prompted further extensive settlement in the neighbourhoods of Fulham. The laying of tracks to service the great termini of Victorian London cleared swathes of housing from the city. This required that many thousands of people be re-housed in the 'new suburbs', which included Sands End. As a consequence "The time was...fast approaching when Hammersmith and Fulham would themselves be part of Greater London. Rural peace would be no more" (Hasker, Op Cit, p.44).

Despite the generation of new jobs in Fulham, poverty

remained a major social problem for the Borough throughout the Nineteenth and early Twentieth Centuries. Fulham was not alone in its suffering, however. In London generally, poverty, "The problem of problems" (Briggs, Op Cit, p.313), affected over 30% of the population. London's population was not indifferent to such deep-seated deprivation. As Charles Booth noted: "The problem of poverty in the midst of wealth...is troubling to the hearts and minds of...many people". Booth, using a fashionable contemporary metaphor, drew a comparison between 'darkest Africa' and "'Darkest London' with its 'submerged tenth'" (Briggs, Op Cit, p.313).

Reflecting increasing concern over poverty and unemployment, the burghers of Fulham offered up various palliatives. In December 1818, for example, the owners of Sandford Manor made the property available for the relief of poverty and distress in the area. This philanthropic venture, supported by the Bishop of London, lasted until March of the following year. In 1849, building commenced on a new Fulham Union Workhouse. However, although the premises were sufficiently large to accommodate 450 people, "This number was inadequate to meet local needs" (Hasker, Op Cit, p.47). This failure to provide adequately for local needs reflected a general reluctance on the part of London's many vestries, boards and commissions to spend public money.

There were several other reasons for the continued destitution of a significant portion of the Fulham

community. Thus, while certain industries, like the Fulham Pottery, which operated from 1672 until the 1940s, provided relatively stable employment, others, like the market gardens, provided only seasonal work. Even industries that boasted of providing 'secure' employment, like the Swan Brewery, built in 1769, could have an adverse effect on public health by paying workers in kind with cheap ale. This went on in the context of a 'moral outcry' against the 'widespread drunkenness' of the period - attributed by the middle classes to excessive numbers of public houses and unregulated opening hours.

However, while some attributed social problems solely to the 'indiscipline' of the working classes, others, like the Fulham Board's first Medical Officer of Health, Mr F.J.Burge, highlighted what they believed to be the underlying causes of misery and ill health. These were the "Wretched and most miserably constructed dwellings erected with the most utter disregard for drainage or other sanitary appliances" (Hasker, p.47). The inadequate level of housing provision in London generally drew much adverse comment from Victorian luminaries like H.G. Wells, who, "In Tono Bungay...wrote scornfully of the notion that 'it was nobody's business to see that people were well-housed under civilised conditions'" (Briggs, Op Cit, p.346).

The poor condition of the housing stock in concert with excessively high occupancy levels, poor quality drinking water and inadequate sewage systems, generated much ill

health. Consequently, despite the Poor Law Amendment Act of 1834, "During the first half of the Nineteenth Century, the general standard of health amongst the mass of the people in...Fulham deteriorated" (Hasker, Op Cit, p.47).

The social conditions of the people of Fulham were no better at the end of the century.

In 1896, the Bishop of London was reported to be "Saddened by the bad living conditions he found locally in some areas" (Hasker, Op Cit, p.61).

In 1900 Charles Feret commented that Fulham had become, apart from "Two or three streets leading towards the newly-built Wandsworth Bridge Road...a region of poverty and squalor" (Feret C.J., in Denny B., Op Cit, p.85). It would appear that the new London County Council (LCC), established in 1888 to reform and rationalise London's chaotic administration, had made little impact in Fulham - and this despite the fact that from 1889 until 1907 the LCC was in the hands of the 'collectivist' Progressives (Briggs, Op Cit, p.336).

In 1902 the coronation of Edward VII provided an opportunity for both municipal philanthropy and an assessment of the condition of the working class. A celebratory picnic was provided 'for the poor' in a park in Fulham. In 1901, the population of Fulham was put at 137,000. Around 13,000 attended the jamboree "Although this was far less than half of the estimated 34,000 residents living in poverty" (Denny, Op Cit, p.132). If the 'worst case' estimate of the number of Fulhamites

living in poverty is correct, then about 25% of the Borough's population was disadvantaged.

The situation did not greatly improve after the First World War, when "Slums were prevalent and good housing at low rents was scarce in Fulham", and, as elsewhere in 'The Land Fit for Heroes', "Unemployment was growing at an alarming rate" (Denny, Op Cit, p.147).

The housing problems of the Nineteenth Century prevailed into the 1920s and 1930s. A Labour Party manifesto of 1928, endorsed by the Bishop of London, talked of properties in Fulham where "Water streams down the walls [and] floors are so rotten that the furniture legs fall through" (Ibid).

The Second World War heaped more misery upon the people of Fulham. In one particularly heavy night raid, 52 high explosive bombs landed within the Borough. On another occasion, the power station was put out of action when hit by a stick of bombs.

But, paradoxically, such destruction created novel opportunities for the reversal of pre-war decay.

During the war, 1,000 of Fulham's houses and flats were destroyed, and a further 30,000 were damaged (Denny, Op Cit, p.148). Fulham's post-war left-wing administration seized the opportunity, and 'built housing with much energy' (Ibid, p.150). In the dynamic atmosphere of the immediate post-war years, even entrenched interests participated in plans for a better Borough. The Hurlingham Club, for example (an exclusive sports club

situated just to the west of Wandsworth Bridge Road), agreed to sell one of its polo grounds to the Council. Municipal flats were promptly built on the site.

This 'engineering' of patterns of habitation continued into the 1970s, albeit with different priorities. Thus the Conservative administration of 1968-1971 encouraged private ownership and gentrification at the expense of municipal provision. The housing market bonanza that followed was not to everyone's liking. It came in for heavy criticism from the leader of the Liberal Group who, when asked to form an electoral pact with the Tories in 1978, "Issued a warning...that there must be 'no repetition of the behaviour that occurred in 1968-1971'". In response to overtures from the Tory leadership, the Liberal leader "Spelt out that he did not want to see any more 'gentrification' of his borough, when Conservative policies in 1968-1971 led to anti-social behaviour and profiteering by property speculators" ('Strong Rule Promised From Con-Lib Council', The Fulham Chronicle, May 19, 1978). Despite such protestations, however, the die had been cast; an irresistible wave of gentrification surged across the Borough boundary from Kensington and Chelsea:

As people found Chelsea too expensive, so they...bought into Fulham. The trend throughout central London, of renovating and reselling for largish sums what were previously thought to be modest properties...swept through Fulham... (Denny, Op Cit, p.150).

This demand for affordable 'town housing' by an increasingly affluent Metropolitan elite reinforced the,

by now, Conservative-led local authority's desire to 'improve' Fulham's housing. A General Improvement Scheme (GIS) was announced, with the tenants of Council-owned Nineteenth Century properties being offered flats in the several 'modern' housing schemes under construction in the area. Houses left vacant by this means were sold to (relatively) affluent 'settlers'. The Leader of the Council, sensitive to the charge of forcing change upon contented Council tenants, was moved to declare publicly that "No one tenant has been forced to move to make these sales possible" (Mooney, Op Cit, p.19).

However, despite such assertions, many native Fulham residents, vulnerable to offers of new, 'convenient' accommodation, did move. They often regretted it. As a 'stayer' remarked of a friend who had moved:

She's gone to the flats in Lillie Road - 18 floors high they are - and is miserable; she wishes she could come back to her own place. All the families used to stick together round here: my daughter still lives just round the corner. But it's all changing. Over the bridge in Billing Road where I was born, we used to be like a little village. But gradually all the old people moved out and the houses were sold to rich people... (Mooney, Op Cit, p.20).

This 'voluntary' ~~decanting~~ gave rise to a certain resentment amongst those who chose to remain. As an unofficial spokesperson for the 'stayers' put it:

Why should I go and live in a flat so they can sell my house to the likes of them over there?... You tell them they ought to wash their bloody curtains. I'm not leaving my house so they can make it look like that - bloody toffee noses, and their dustbins full of wine bottles! (Mooney, Op Cit, p.20).

This kind of resentment was met with incomprehension from the 'settlers', who could not understand why native Fulhamites would wish to remain in 'sub-standard' accommodation. As one gentrifier, a doctor, put it:

Let's face it, they were living like pigs. No bathrooms. These are reclaimed slums - I suppose you could call it a sophisticated method of slum clearance with private money. Its a shrewd bit of business by the council. No, the older residents don't mind at all (Mooney, Op Cit, p.20).

Another settler, interviewed separately, highlighted the 'logic' of decanting Council tenants en-bloc:

Surely it is to their benefit to move into a flats' community where, not to be snobbish, they are still with their own type (Mooney, Op Cit, p.20).

The settler's partner, however, although conscious of the 'benefits' of new social housing provision, nevertheless saw an irony in the destruction of mature and stable communities:

There is sadness to me in the fact that someone who has lived here for 68 years and who is human and responsible, even though he may be from a working class background [sic], has to move because he is not able to own his own home (Mooney, Op Cit, p.20).

By the middle 1980s, the gentrification of the London Borough of Hammersmith and Fulham and the steady loss of local manufacturing jobs had produced a marked social 'polarisation' within the community: a schism in wealth, opportunity, mobility and economic and physical security between the incoming 'haves' and long-resident and long-suffering 'have-nots'.

The post-Second World War shift in employment from the manufacturing to the service sector had a dramatic effect on West London's traditional industrial communities. In West London between 1971 and 1976, for example, the manufacturing sector shrank by over 30%. Between 1978 and 1983, the sector shrank by a further 13%. The people of Fulham were kept abreast of their fate by The Fulham Chronicle's reporting of the GLC's doom-laden forecasts:

A warning that Greater London will bear the brunt of the continuing contraction of the engineering sector, with a forecast that some 53,000 jobs could be lost between now and 1990, has been given to the GLC's Industry and Employment Forum ('Unemployment Warning', February 4, 1983).

Much of industry's retreat from Greater London was attributed to the higher costs of city-based manufacture. As a GLC report put it:

Repeatedly in West London...multi-national companies...have chosen to close down production...and transfer production elsewhere in the country or world. For West London, escalating land and property values can also be seen to be reinforcing this loss of manufacturing industry and employment (GLC, West London: The Public Inquiry into Jobs and Industry, 1985, in Townsend, Op Cit, p.15).

As a consequence of such de-industrialisation and labour shake-out, London, by the mid-1980s, had "The largest concentration of unemployment of any city of the industrial world" (Townsend, Op Cit, p.12). Increased unemployment meant more poverty and inequality. As Townsend put it:

Every day [there is more evidence] of severe deprivation among the population of 6.5 millions. There are people who are homeless and even some, early in 1986, who were sleeping in the open at the end of one of the hardest winters of this century. [Ten years on, of course, this 'novel' situation is now a firmly established expression of Metropolitan decline]. There are disabled and elderly people too poor to keep the heating on during the day and too frightened to walk the surrounding streets on their own. There are unemployed people whose desperation to keep their families fed and clothed is acute. There are increasing numbers of people earning low pay in bad or thoroughly unsatisfactory working conditions (Op Cit, p.3).

Worsening social conditions were reflected in the increased take-up of discretionary state benefits. For example, between 1969 and 1983 the number of unemployed Londoners in receipt of means-tested benefits rose from 20,700 to 231,700, an eleven-fold increase. Such figures led Townsend, writing in 1987, to conclude that "The economy of London interrelates more obviously with poverty than it did 20 years ago. Unemployment, underemployment, low wages, bad conditions at work and a pervasive insecurity more obviously characterise the social relationships of London than they did in the 1960s" (Townsend, p.9). The worsening economic conditions of the early 1980s affected not only the unemployed, but also, due to an increasing fear of unemployment, those still in work:

Opinion polls demonstrate the growth in numbers of people expressing anxiety about their own and their children's future. Unemployment affects a much wider group of people than those who are unemployed at any one time. Large scale unemployment harms many of those people who are still in work by undermining their dependence upon job security (Townsend, p.13).

Worsening levels of crime served to increase the level of fear and uncertainty felt by many Londoners in the early 1980s. Thus between 1980 and 1984, the number of notifiable offences known to the Metropolitan Police rose from 567,000 to 687,000. The fear generated by crime affected the community's ability to come to terms with London's sickly economy:

[Crime] makes poverty worse because it isolates people and stultifies community support and the readiness of others to offer comfort and tangible gifts and services to mitigate or compensate for the privations which old people and unemployed people experience. As it becomes more and more extensive poverty multiplies material and also social forms of deprivation (Townsend, p.52).

Given their obvious news appeal, escalating crime rates were reported in detail in Hammersmith and Fulham's newspapers. For example, on March 25, 1983, under the garish headline 'Thugs In Estate Campaign Of Terror', The Chronicle reported that "Heartless thugs have mounted a campaign of terror on old people living on a large Fulham estate...", the level of crime, fear of crime, and intimidation being so bad that the streets and walkways of the estate were all but deserted after dark. Crimes against identifiable victims were also heavily reported, as in The Chronicle's leading crime story of January 28, 1983, headlined 'Mugger Puts 80 Year Old In Hospital'.

According to Townsend, the situation of the unemployed and underprivileged was made worse during the 1980s by a general 'disengagement' of the prosperous and powerful

from the fate of the ordinary Londoner:

In the London population there are substantial numbers who are well placed in today's conditions. However, what is interesting from our interviews with some of them is the level of recognition of their good fortune, combined with a kind of fatalism or what some would call 'disengagement' suggesting there is nothing they can really do about the poor.

These fatalistic rich people are members of the professions and/or of powerful organisations, including trans-national corporations. They give an impression of shrugging their shoulders about their own relative affluence in the midst of so much squalor and desperation. What can I do? - each of them seems to be saying. The decisions are being taken out there by people and by organisations so much more powerful than myself. I am just a small cog in a large machine. I just get on with my immediate professional, or administrative or scientific expertise. It is not for me to descend to mere politics (Townsend, *Op Cit*, p.64).

Allowing for some exaggeration on Townsend's part, it can be seen that whatever 'disengagement' does exist presents society with a serious problem, for if the powerful - including those in formal politics - abandon the poor, who is there left to help them? It could be said that in Sands End, the social disengagement of the 1980s has found expression in the Chelsea Harbour and Regent on the River developments, where high property prices, expensive shops and restaurants, security guards and cameras tend to exclude the less well off and reproduce and reinforce social privilege and associated elitist sentiments. Indeed, such exclusive developments may be seen as reifying both social disengagement and economic privilege.

The consequences for Hammersmith and Fulham of the

disappearance of labour-intensive heavy industry from West London during the 1970s and 1980s were serious. While in 1978, unemployment in the Borough stood at 5.5%, by 1984, the year in which the power station was demolished, it was 13%. (Whitting G., Implementing an Inner City Policy - A Case Study of the London Borough of Hammersmith and Fulham Inner Area Programme, The School for Advanced Urban Studies (SAUS), University of Bristol, 1985, p.8). Partly as a result of such labour shake-out, by 1985 Hammersmith and Fulham found itself "One of London's most deprived Boroughs" (Ibid, p.7).

The steady loss of employment in the Borough throughout the 1970s prompted the government to launch the Hammersmith and Fulham Inner Area Programme (HFIAP) in April, 1979. In March, 1982, the local authority explained the programme's rationale:

Inner Area Programmes are part of a system of joint funding by local authorities and Central Government, aimed at reducing the problems of unemployment, poverty and urban decay in Britain's inner cities (Civic News, LBH&F, p.3).

Fewer job opportunities coincided with a number of other damaging trends. Between 1975 and 1985, the Borough's population declined by 20% (Whitting, Op Cit, p.12). The remaining population was increasingly polarised between the young and the old, tenants and owner-occupiers. Between 1971 and 1981, while the proportion of elderly residents rose from 17.5% to 18.8%, the proportion of children fell from 19.5% to 16.4%. However, despite this fall in the number of young people, youth unemployment

remained a significant problem (Whitting, Op Cit, p.7). Polarisation also occurred within this age group, with young black people (an increasing proportion of the age group) suffering greater discrimination in the jobs market than their white counterparts. The experience of Hammersmith and Fulham's ethnic minorities was repeated across London. Thus the 1986 GLC London Labour Plan (based on the Labour Force Survey) showed that in 1981 "Unemployment rates among Asian groups were about half as much again as, and among West Indian groups about twice, the average" (Townsend, Op Cit, p.22). The research also revealed an "Exceptionally large increase in unemployment in London wards known to have a high proportion of the population who are black". Within the ethnic community there was an "Exceptionally high rate of unemployment among young people and especially young people of West Indian descent" (Ibid).

Adding to the misery of the unemployed during the 1980s was the decline in the real value of benefits. The reduction in the value of state benefits reflected the Thatcher government's determination that the unemployed should not 'price themselves out of the jobs market' (Townsend, Op Cit, p.27). Such monetarist policies, however, served only to impoverish the poor. Thus between 1983 and 1985 the income of the poorest decile of the population of Greater London fell from £60.66 per week to £46.60 per week (at 1985 prices) - a fall of 23.2% (Townsend, Op Cit, Appendix 3). At the same time, the incomes of the wealthy rose dramatically. Thus while the real take-home pay of the bottom fifth of earners

fell by 2.9% between 1979 and 1985, that of the top fifth rose by 11.6% (Townsend, Op Cit, p.49). Obviously, such figures would apply equally to the population of Hammersmith and Fulham.

The squeeze on the public purse affected not only benefit levels but also the level of local services. In Hammersmith and Fulham, the Social Services and Housing departments found it increasingly difficult to discharge their statutory duties: In March, 1983, for example, The Fulham Chronicle reported that:

The area teams of social workers were working under such pressure that some of the cases the council by law had to investigate and look after were not being done ('Needy Are Target For Latest Cuts', March 18).

The following month the same paper, under the headline 'Residents Vow To Fight On', reported the "Shelving of vitally needed and long-overdue improvements" on two Fulham Council estates (April 8, 1983).

As mentioned above, the property boom of the 1980s saw much gentrifying and 'trading up' activity in the Borough. This dynamism caused "A division within the Borough's population between the high income owner-occupiers and the low income or state supported tenants of public or private housing" (Whitting, Op Cit, p.12). The decline in the value of benefits, increasing unemployment among the unskilled and semi-skilled, lack of opportunity and the downward pressure on wages conspired together to exacerbate the social chasm opened up by gentrification. The polarisation seen in

Hammersmith and Fulham in the 1980s reflected a general Metropolitan trend in which "Differences in style and standards of living in London - between rich and poor income groups and between prosperous and deprived areas - [became] very wide" (Townsend, Op Cit, p.42).

In Hammersmith and Fulham, deprivation was deep seated and chronic. Housing condition surveys done in the 1980s echoed some of the comments made by the Church in the Nineteenth Century on the squalor of Fulham's terraced housing. As one 1980s report put it, "The condition of the housing stock...in terms of amenities remains the worst in the country" (Whitting, Op Cit, p.12). The persistence of sub-standard housing in Sands End led to the setting up of no fewer than three Housing Action Areas (HAAs). The HAAs, set up in 1976, 1978 and 1979, embraced some 20% of the housing in Sands End. According to the General Report, Sands End Housing Action Areas, 1980, these areas "Represent[ed] some of the very worst housing problems in the Borough" (Quoted in Bayliss, G., Op Cit). In one of the Sands End HAAs, 63% of households lacked a bath, 57% had no inside toilet and 40% either shared or lacked hot water (Ibid). It is reasonable to assume that some of these problems were present at the time of the power station debate. Certainly, the Borough's general housing problems coloured the early 80s debate over the future of Chelsea Harbour.

Thus in a 1983 radio interview, Tony Powell, one of Sands End's two Labour councillors, made the following appeal:

We need in Fulham...some housing for people who are in need...

[T]he young people in Hammersmith and Fulham just aren't being allowed to live in their own Borough and that, I think, is quite scandalous (LBC 'AM' programme, broadcast April 26, 1983 (transcript obtained from LBH&F Archive)).

In 1982, there were 9,000 people on the Borough's council house waiting list.

Hammersmith and Fulham's inadequate housing contributed to the problem of poor health amongst the less fortunate. The public were kept informed of the Borough's housing problem by the local press which (perhaps understandably for a tabloid medium) lighted on stories of mildew and maggots in neglected housing estates. In its March 11, 1983 edition, for example, under the headline 'Rising Damp Slum Horror', The Fulham Chronicle reported on a structurally unsound Council flat:

Two years old Lesley Grant puts on her wellies when she plays in the lounge. And her favourite game is splashing in the puddles - on the carpet! The tiny toddler's home...is a dripping wet slum.

It is worth comparing this contemporary description of housing decay in Fulham with that made by the Bishop of London in 1928, where he talked of 'water streaming down the walls' (See Denny, above).

The GLC linked such deprivations to the contraction of state funding of local government. Again, its deliberations were reported in detail by The Fulham Chronicle. In April, 1983, for example, the paper

reproduced the following indictment of government 'indifference' by the Chair of the GLC's Finance and General Purposes Committee:

So much of London's basic infrastructure is deteriorating fast. A quarter of sewer pipes and water mains are more than 100 years old. Much of the railway and Tube systems are over 70 years old. Nearly a third of London homes were built in Victorian or Edwardian times ('Rebuild Crumbling London - GLC', April 8, 1983).

The Chronicle went on to report that many of the capital's homes "Are unfit, in disrepair and lack basic amenities. The cost of meeting the backlog of repairs to London's total housing stock is put at £7,500 million".

During the 1980s, health inequalities became an increasingly prominent feature of the sociology of the capital. Thus there were "Boroughs where the expectation of life [was] relatively low. These include[d] Hammersmith and Fulham..." (Townsend, *Op Cit*, p.35). Such findings were consistent with the large number of Londoners - some 1.8 million people - who, in the early 1980s, lived "In poverty or on the margins of poverty" (Ibid, p.47). The deterioration in the condition of London's social capital - much of it dating from the Victorian and Edwardian eras - since the 1970s reflected in part a dramatic reduction in government subsidies to local authorities. Thus, despite the fact that "Between 1979/80 and 1983/84 inner London gained £261m. through the urban programme, [it] lost over £2,000m. through cuts in the Rate Support Grant, reductions in the Housing Investment Programme and cuts in housing

subsidies" (GLC, Inner City Policy for London, in Townsend, Op Cit, p.71).

What is clear from the above statistics is that Hammersmith and Fulham, during the time of the Fulham Power Station debate, conformed very closely to Townsend's analysis of an increasingly polarised Metropolitan society. Witness, for example, the increasing gulf between Hammersmith and Fulham's 'haves' and 'have nots': There were the home owners who could gain from playing the property market, and the non-home owners who could not. There were those with relatively secure service sector jobs, perhaps in the office complexes of Hammersmith Broadway, and those who had no choice but to rely on a shrinking and unstable manufacturing sector. There were the young, who could migrate to more prosperous boroughs or cities, and the old who were relatively immobile. There was the white majority, treated with reasonable equanimity, and the growing black minority who were subject to continued discrimination. There were those with marketable skills and/or qualifications, and those - often from underprivileged backgrounds - who possessed only limited skills and/or qualifications. The former were generally the first to be re-employed:

In conditions of high unemployment it is workers with no recognised skills who become most vulnerable to loss of jobs and who find it hardest, especially in competition with the increased numbers of skilled workers to be made redundant, to obtain the few alternative jobs around (Townsend, Op Cit, p.13).

There were those whose comfortable and secure lifestyles endowed them with above-average life expectancy, and those whose poverty consigned them to a lifetime of ill health and a premature death. There were those who could afford home insurance, and those - often living on the most crime-prone estates - who could not. (Whitting, Op Cit, p.12, Townsend, Op Cit, p.15 and p.35).

Furthermore, the early 1980s saw the beginning of a marked 'ghettoisation' of social problems and inequalities within the Borough. In Fulham, for example, there were marked inequalities between the four riverside wards, Crabtree, Palace, Sullivan and Sands End (traversing the Thames from west to east, with Crabtree adjacent to Hammersmith Bridge). Thus in 1981, the percentage of economically active persons who were unemployed was 7.5 in Crabtree, 8.21 in Palace, 8.69 in Sullivan and 11.95 in Sands End. The wards also displayed marked inequalities in the numbers of semi- or unskilled workers resident. Thus while the working populations of Crabtree, Palace and Sullivan contained, respectively, 14.92, 7.19 and 13.95% semi- or unskilled workers, 24.01% of Sands End's working population was semi- or unskilled. Finally, while the percentage of households with dependent children that were single parent households stood at 19.85, 22.8 and 26.19% in Crabtree, Palace and Sullivan, in Sands End, 34.14% of households with children were single parent. Working on the assumption that semi- or unskilled workers and single-parent households suffer greater deprivation than other social groups, it can be seen that the early 1980s saw a

concentration of structural social inequality in Sands End.

This multi-layered polarisation found expression in, and was exacerbated by such developments as Chelsea Harbour, Regent on the River and the complementary Harbour Club, and in new-build Council estates that, due to indifferent architecture, design, build quality, management and maintenance, all too rapidly became 'sink estates' - or, as in Docklands, 'reservations' for the area's poor. (See Harrison P., Inside the Inner City - Life Under the Cutting Edge, Pelican, Britain, 1983, for an analysis of the social, economic and political aetiology of the 1980s inner-city 'sink estate').

The difference between the Metropolitan 'sink estate' and such grandiose schemes as P&O's Chelsea Harbour development could not be more stark. Chelsea Harbour "Is Thatcher's dream: luxury flats with river views, restaurants and shopping malls that exude the self-congratulatory odour of Yuppiedom" (Hubbard, Op Cit). Perhaps even more so than Docklands, Chelsea Harbour reflects the property-oriented individualism of the 1980s. At least the LDDC, unlike the developers of Chelsea Harbour, took a stake in the wider community by, for example, investing significant sums of money in social housing refurbishment programmes. (In 1994/1995, for example, over £3 million was set aside by the LDDC for the rehabilitation of approximately 1,000 council homes ('Housing in London Docklands', LDDC, August, 1994, p.5)). While the remit of the LDDC was very much wider than that of the developers of Chelsea Harbour,

covering as it did the economic and social regeneration of docklands with a view to "Knitting together...old and new communities" ('Briefing: Case Study, Surrey Docks', LDDC), it is nevertheless the case that Chelsea Harbour's developers made no concessions whatsoever to the community in which the development was sited. This is unsurprising. During the early 1980s, Hammersmith and Fulham's then Conservative-controlled Council made little effort to affect the social composition of the development. Although the Council, according to the local paper, could have insisted that at least 50% of the new homes on the then British Rail-owned site should be low-cost, affordable homes, they adopted a determinedly laissez-faire approach. As the Conservative Chairman of the Planning Committee put it:

At the moment...it [is] sufficient to recommend there should be low cost homes without having to say how many actual units there should be ('Locals Lose Chance To Own Riverside Homes', The Fulham Chronicle, September 2, 1983).

According to the opposition Labour group, this 'wait and see' approach proved that "The administration's sympathy was with 'London's Wealthy'". The Fulham Chronicle relayed the fears of the opposition in detail:

Labour councillors say there is a real danger that high cost luxury riverside homes will be built on the 19 acre Chelsea Basin site with only a handful of low cost homes (The Fulham Chronicle, September 2, 1983).

Today, the development boasts not a single Council or low-cost home. Even the mooted sheltered housing failed

to materialise. While the general public is allowed (in principle) to walk around the development, the shopping malls and restaurants are aimed squarely at the tourists who stay at the development's exclusive hotel, the Conrad Hilton, and residents of the apartments. The underground car park may be reached by lifts within the complex, allowing residents access to their cars without any potentially distasteful or even dangerous engagement with the outside world. The shops within the complex deliver to the door, as do the 'security guards' if summoned by a worried resident. The boast is that any resident can be reached "Within 59 seconds (sic)" (Moore D., 'Joining The Jetty Set', The Evening Standard, July 21, 1993).

While some might consider this style of Metropolitan living alienating, interviews with residents reveal a different perspective: as one 'celebrity resident' told the Evening Standard newspaper:

It's very similar to Primrose Hill...in that it's extremely sociable...I often get asked to dinner (Ibid).

However, while Chelsea Harbour's sociability makes it an attractive retreat from the cut and thrust of city life, high property prices make it something of an exclusive club. In 1993, according to the Standard, a two bedroomed flat there would have cost £230,000 and a three bedroomed flat almost £300,000.

Similar prices apply to the slightly later Regent on the River development, completed in 1989 (although one block

was left in a 'skeleton' condition when the London property market collapsed in mid-1989). Here, in 1993, prices ranged from £168,000 for a two bedrooomed apartment to £375,000 for one with three bedrooms. A car parking space cost between £10,000 and £15,000 (Cluttons London Residential Agency, Price List, March, 1993). To put these prices in context, in 1993 average house prices ranged from £40,777 in Northern Ireland to £86,818 in Greater London (The Guardian, August 7, 1993).

Regent on the River, like Chelsea Harbour, boasts underground car parking, security guards and video surveillance. Car owners wishing to explore the Kings Road and points east need never tread the streets of Fulham.

Adjacent to Regent on the River is the Harbour Club. When developers Skillion were attempting to obtain planning permission they were conscious of the Council's wish to secure general community access to the facilities. There is no purpose-built leisure centre, public bath or sizeable park in Sands End. There is a youth club in an old chapel on Townmead Road, and a 'community centre' in Broughton Road (actually a converted laundry), but neither has adequate facilities. The Broughton Road centre is conspicuously under-utilised, despite it being the headquarters of the neighbourhood's main community group, the Association of Residents in Sands End (ARISE).

As a result of the Council's 'tough' negotiations, First

Leisure PLC, the club's managing agents, gave "Assurances that community sessions would be set up to make the facilities more accessible to families on low incomes" ('Sport For All at Station', The Fulham Chronicle, January 18, 1990). According to the Fulham Gazette, First Leisure "Agreed to make four of the tennis courts available to a community sports scheme in off-peak hours during the week" ('Developers Plan Leisure Centre for Power Station Site', The Fulham Gazette, January 12, 1990).

To date, however, no concessions have been offered. The Harbour Club is open only to those who can afford the annual membership fee of several thousand pounds. The Princess of Wales is one such person. Presumably she is attracted by the Harbour Club's exclusivity. Across the road from the club is the 'planning gain' Council housing 'donated' by the Regent on the River developers. A high, solid perimeter fence separates the club from this and other housing. (The perimeter fence is violated only by the paparazzi, who follow and photograph the Princess. They stand on ladders).

It is possible that the rejection of another Regent on the River type development, this one nearer Hammersmith on Fulham Reach, marked a turning point in public opinion. The plan to build an 'exclusive housing estate' of 268 flats met with significant local opposition, despite robust support for the scheme from the architectural fraternity. As one local firm put it, the scheme "Includes the elegant inevitability of near

perfection" (sic) (Rodell M., 'We Don't Want It! - Locals Cheer As Riverside Development Is Thrown Out', The Fulham Gazette, June 30, 1989).

Despite such 'near perfection', however, the development was refused planning permission. The Fulham Society, a voluntary heritage group, was 'delighted'.

It would appear that the 1990s marked a change of attitude amongst the Fulham public towards 'prestige' developments. Initially acquiescent Fulhamites began to reject these most visible and permanent icons of Late Modernity. Perhaps Fulham in the 1990s was no longer, as some had predicted in the 1980s, "The territory of tomorrow" (Hasker, Op Cit, p.85).

2.3 Environmental Developments.

The transformation of Fulham from market garden to industrial suburb was gradual. Fresh, locally grown watercresses could be bought as late as the 1920s, despite the urbanisation of the Nineteenth and Twentieth Centuries. Indeed, for the Fulhamites of the 1940s "There was still the recent memory of green fields where the power station now shadows the street" (Mooney, Op Cit, p.19).

Despite the gradual transformation, however, the adverse environmental effects of industrialisation were noted in the early Nineteenth Century. In and around the new gas works "Foul fumes made life unpleasant and unhealthy" (Denny, Op Cit, p.131). By the 1870s the environmental effects of industry were reflected even in housing

decor:

Most things would have been painted brown or black to hide, as much as possible, the coating of grime coming from the chimneys of houses or factories (Ibid).

Despite the Victorians' awareness of the drawbacks of industrialisation and urbanisation, however, concern for the environment was tempered by a desire for economic growth and social improvement. The pragmatic mood of the period was perhaps best summarised by the Mayor of Chicago who, speaking of a city with an economy similar to that of London and drawing on the popular consensus of the late Nineteenth Century, made the following 1879 appeal to 'common sense':

A good sanitary condition is indispensable to the prosperity of the city. But sweet scents may not be its necessary concomitant...Too many are alarmed at an unpleasant but innocuous odour, and inhale with pleasure a sweet perfume laden with disease. I shall endeavour to foster healthfulness, yet not to destroy our great commercial interests (Briggs, Op Cit, p.384).

Despite such pragmatism, however, the growing environmental disamenity of the late Victorian and Edwardian eras gave rise to significant public disquiet. Concerns over the adverse environmental effects of Metropolitan power stations, for example, surfaced with especial vigour in the 1920s. Outside Fulham, "Complaints were made in 1924 by residents near Regent's Park...of the pollution from two newer, larger stations (Marylebone and Grove Road) which were destroying vegetation in the neighbourhood" (Bowler and

Brimblecombe, Op Cit, p.143). Nearer Sands End, Chelsea's Lots Road Power Station, built to supply electricity to the new underground rail network, came in for vigorous criticism. Thus, "Emissions from the Lots Road Power Station were alleged to have damaged the stonework of the Houses of Parliament" (Ibid, p.144). There is little doubt that such criticism was deserved:

The earliest power stations (late 19th century), despite their small size, caused considerable smoke nuisance. Generating power for London's electric railways produced much brown smoke in Chelsea (Ibid, p.143)

Interestingly, while the Lots Road Power Station attracted much criticism, the municipally funded, owned and managed Fulham Power Station caused little upset - at this time (Ibid, p.147).

In Fulham itself, general atmospheric conditions, which had never been particularly good, were significantly improved with the introduction of the 1956 Clean Air Act, when the burning of non-smokeless coal on open fires was prohibited. The Act was taken up enthusiastically by the Council:

The southern part of Fulham suffered from poor atmospheric conditions for a number of reasons, and the Council pressed ahead vigorously with the implementation of the new law. Fulham [consequently] became the first...to complete its responsibilities under the Clean Air Act (Hasker, Op Cit, p.79).

The Clean Air Act had little bearing on Fulham Power Station, however, whose sulphurous emissions began to attract unfavourable comment. Indeed, some west London residents began writing letters of complaint to the

press. As the London Evening News reported in 1970:

Fulham Power Station and the light industry based around that area have been the subject of complaints from a number of Evening News readers...

What is Hammersmith doing about air pollution? The spokesman pointed out that Hammersmith was the first Borough in London to implement the Clean Air Act ('Fumes Check On Power Station', July 14, 1970).

With the accelerating decline of manufacturing industry in the 1970s, the conversion of the gas works from coal to methane by North Thames Gas, the ending of coal burning at Lots Road Power Station, the closure of Battersea 'A' in 1975 and of Battersea 'B' in March, 1983, and the closure of Fulham Power Station in 1978, Fulham's atmospheric pollution levels declined.

Unfortunately, Fulham, and especially Sands End, still suffered from an ugly general dereliction. Some of the land along the river had simply fallen into disuse. Some land had been turned over to ad-hoc 'yardage', where cars might be scrapped, waste transferred or building materials sold wholesale. Some buildings had acquired temporary occupants who had little commitment to their maintenance or the appearance of the grounds in which they stood.

The cumulative result was that Sands End presented a rather unattractive face to the world. As a researcher wrote of Fulham, there was "A poor environment in some areas deterring investment and interest in the Borough as a place to work and live" (Whitting, Op Cit, p.13). In many respects the dereliction of Sands End in the

early 1980s matched that of London Docklands. However, while both riverside locations suffered from the "Decline of traditional industries and distribution services...inadequate roads and public transport access [and] deteriorating housing" ('Briefing: The Challenge of Urban Regeneration', LDDC), only the docklands communities benefited from the Conservative government's chosen instrument of economic intervention and community regeneration, the Urban Development Corporation (UDC). (Of course, the area affected in Docklands was much larger than that in Sands End).

In addition to Fulham's poor general environment in the early 1980s, there were specific environmental risks and hazards - some generally applicable and some unique to Fulham - to contend with. Thus at the time of the power station debate in 1983/1984, lead pollution received significant attention in the local press. While lead pollution affected all urban communities, concerns were heightened in Fulham with the discovery of lead deposits in local schools. As a consequence of public concern, the Inner London Education Authority (ILEA) promised to remove all "Dangerous old lead paint" ('Lead Paint Battle Won', The Fulham Chronicle, January 28, 1983). The lead issue received further publicity with the publication of the results of a study conducted in the neighbouring boroughs of Hammersmith and Fulham and Kensington and Chelsea into the effects of lead pollution on child development. The study, conducted by the Institute of Child Health and Southampton University, prompted ILEA to "Issue a pamphlet warning

parents about the danger of lead pollution" ('Warning of Lead Pollution', The Fulham Chronicle, January 28, 1983). The fact that Fulham's Member of Parliament, Martin Stevens, chaired the Parliamentary panel of the Campaign for Lead Free Air (CLEAR) served only to heighten local awareness of the lead issue. When the government eventually committed itself to the phasing out of leaded petrol, Martin Stevens was quick to point out the benefits to child health:

The acceptance of the recommendation that we should go lead-free marks the victory of our campaign and will bring relief to parents of young children throughout the land ('Stevens Joy At Lead Ban', The Fulham Chronicle, April 29, 1983).

Local interest in the lead issue persisted throughout the year. In October, for example, The Fulham Chronicle printed a letter from a concerned resident under the headline 'Harm Lead Pollution Does To Our Children' (October 28, 1983).

The nuclear issue also figured in local environmental politics, due to the CEGB's use of the West London Extension Railway line to transport nuclear material. The issue was brought to the attention of the public through the activities of the GLC's Public Services and Fire Brigades Committee, whose proceedings were reported in detail by The Fulham Chronicle. Thus in November, 1983, under the headline 'Fuel Transport Checks Made', the paper reported that the CEGB had "At last...begun to recognise the 'real and proper' concern of Londoners over the transportation of spent nuclear fuel through

the capital" (November 25, 1983). As a consequence of this recognition, it had commenced withdrawal of 'unsatisfactory' transportation flasks. The nuclear issue was kept in the public eye by the enquiry into the proposal to build a second reactor at Sizewell in Suffolk. As part of its submission to the Sizewell 'B' enquiry, the GLC constructed a doomsday scenario for the capital should a major accident occur at the proposed new reactor. The GLC's submission was reported in detail in the Chronicle:

A scientific report commissioned by the GLC has confirmed that 24,000 Londoners could die of cancer if a catastrophic accident at the proposed Sizewell B nuclear power station in Suffolk happened during certain weather conditions ('Londoners Could Die Of Cancer', The Fulham Chronicle, June 24, 1983).

The report went on to explain that a major accident at Sizewell would necessitate the evacuation of half a million people within two days, and a further three million people within a month of a major release. It would not be safe for the evacuees to return for seventeen years. (Only fleeting mention was made in the report of the fact that such casualties would only occur if a major release coincided with atmospheric conditions that, on average, prevailed in the South East for just one hour in every month).

The issue of noise nuisance also featured locally. Such issues often centred on builders' yards or waste stations. In one Fulham neighbourhood, for example, "Residents had complained that their lives were being

made hell because of the dirt, dust and noise coming from [a builder's] yard" ('Residents In Row Over A Builders Yard', The Fulham Chronicle, May 13, 1983). The proximity of such yards to housing also raised health issues. Thus, some residents had complained about a "Plague of flies buzzing around the [waste] compactor" of a local yard ('Living Hell For Tenants', The Fulham Chronicle, July 1, 1983). During the 1970s, there were many complaints about the GLC's refuse incineration plant adjacent to the power station, which often belched 'thick, black smoke'. In comparison, "The smoke from the [by now oil-fired] power station was hardly noticeable" ('Fresh Air And Clean Water-And That's Worth A Million', The West London Observer, February 2, 1973).

The roads issue, a long-running theme in the environmental politics of Sands End, brought together several environmental preoccupations, including road safety, noise and atmospheric lead pollution. In Sands End, concerns were heightened in 1983 with the announcement that the scheme to widen Townmead Road, which had run for 34 years only to be 'finally' abandoned by the GLC in 1981, had been revived. According to local residents, the proposed road widening, which "Had put a blight on the district in the past" ('Sands End Row', The Fulham Chronicle, November 4, 1983), would cause Sands End to "Die a slow death". It was alleged that up to 80 homes would have to be demolished. The proposed road widening aroused strong emotions in Sands End. As The Fulham Chronicle put it:

Angry Sands End residents have vowed they will

fight Council plans to demolish homes and build a four-lane highway bordering the district ('Residents Unite To Fight Road Plan', December 9, 1983).

The 'angry residents' were supported by Fulham's GLC member:

Sands End will die a slow death if the plan goes ahead...property will remain unimproved (The Fulham Chronicle, December 9, 1983).

The scheme aroused the anger even of the power station activists, whose leadership, although busy with their campaign, made sure their views were known ('Residents Unite To Fight Road Plan', The Fulham Chronicle, December 9, 1983). (While local opposition to the road widening scheme was no doubt well intentioned, there was a certain irony in a community desperate for economic regeneration opposing a potentially highly productive addition to the transport infrastructure of Sands End. After all, it was commonly acknowledged that the neighbourhood's transport links were in urgent need of improvement. Of course, if those opposing the scheme were already in employment, such opposition would appear less incongruous).

Fulham's MP kept the roads issue alive by voicing his concerns over local traffic levels should a fifth terminal be built at Heathrow. According to Martin Stevens, a fifth terminal would make traffic levels in Fulham "intolerable" for his constituents ('MP Joins Heathrow Terminal Battle', The Fulham Chronicle, July 1, 1983).

Some weeks before the announcement of the sale of Fulham Power Station, the local press covered the GLC's initiative on what it called the 'asbestos issue'. The GLC was in no doubt as to the risks and hazards presented by the mineral. As the chairwoman of the Council's Environmental Panel put it:

Asbestos is dangerous. We must stop producing it where we can find suitable alternatives. There are licensed sites where asbestos can be disposed of properly and specialised contractors who can remove it safely ('GLC Calls For Phasing Out Of Asbestos', The Fulham Chronicle, April 8, 1983).

The Environmental Panel, which estimated that the capital produced some 50,000 tonnes of asbestos waste annually, announced its intention to produce a leaflet on the subject of asbestos hazard. The Panel also put forward an 'action plan' to combat asbestos risks and hazards. The plan called for a complete ban on imports, the production of safe alternatives to the mineral, the licensing of asbestos removal contractors, and the setting up of a 'hardship fund' to aid those who lacked the required financial resources to remedy the problem. The Fulham Chronicle, which historically had covered the GLC's deliberations in some depth, took the opportunity presented by the Environmental Panel's lobbying of central government to make the public aware of the origins and risks of airborne asbestos dust in the urban environment:

Mesothelioma...may result from exposure to very low levels of airborne asbestos...It has proved difficult to establish definitely where background asbestos in the air comes

from...but it is likely to arise from abrasion of vehicles' brake linings, demolition of buildings containing asbestos, and poor disposal methods (April 8, 1983).

For its part, the GLC was convinced that asbestos presented at least as great a risk to the health of the people of London as did atmospheric lead. As the Chairwoman of the Environmental Panel put it:

While we congratulate the government for agreeing to take steps against lead pollution, we would expect the same action on asbestos, which we know kills people. Our next major battle is to get the government to rapidly phase out asbestos production and imports ('Report On Lead Pollution Welcomed', The Fulham Chronicle, April 29, 1983).

In the May 13 edition of The Fulham Chronicle, with the sale of Fulham Power Station just announced, the public's attention was drawn to another local asbestos-related drama - not a stone's throw from the power station's riverside site. This time the media focus was on an asbestos-contaminated tower block:

A major investigation to check council tower blocks for killer asbestos dust is being carried out by housing officials. This follows the discovery of the lethal substance in Jepson House, Pearscroft Road. The [brown] asbestos in Jepson House was discovered when workmen were called to repair ceilings damaged by vandals...

Workmen wearing protective suits will be ripping the asbestos out of the 16 storey block...four floors at a time...Families will be accommodated in the Sands End Community Centre from 8am to 7pm ('Asbestos Dust Investigation At Tower Block', The Fulham Chronicle, May 13, 1983).

The incident attracted the attention of the prospective Labour Party general election candidate for Fulham, Tony

Powell, who professed his 'concern', although he insisted; "There is no immediate cause for panic" (The Fulham Chronicle, May 13, 1983). The same edition of The Fulham Chronicle that broke the Jepson House story covered the sale of Fulham Power Station on its front page, under the headline 'Furious Residents Up In Arms'.

Such environmental alarms occurred against a backcloth of inexorable physical decline. Thus, Sands End, throughout the 1980s, presented a crumbling, decaying face to the world (not least due to the blighting of the area for so long by the plan to transform Townmead Road into a major arterial route). The physical dereliction reflected and reinforced a general social, economic and political decay. In 1983, for example, despite a 4,000 signature petition from Fulham residents, the local authority cut its leisure and recreation budget by over £1 million (The Fulham Chronicle, February 18, 1983). This meant no new park in Sands End. Later in the year, despite the local authority's estimate of a total spend for 1984/1985 of £61.6 million, the government set a target of £57.5 million (The Fulham Chronicle, October 21, 1983). As transport subsidies were cut, Sands End became even more isolated. In February, 1983, for example, The Fulham Chronicle highlighted the infrequency of one of the area's main bus services. According to the paper, "Waiting for a number 11 bus is like fishing for a salmon in the Sahara" ('A Rare Catch In Fulham', February 11, 1983).

The neighbourhood's drabness and mounting sense of

abandonment was made more acute by a general lack of open space. In comparison with the neighbourhood to the west of the Wandsworth Bridge Road which could boast the extensive greenery of Hurlingham Park and South Park, Sands End had only Langford Gardens, with its concrete football pitch and playground. This, according to one observer, was indicative of "An extremely one-sided distribution of amenities" (Bayliss, G., Op Cit).

The lack of green open space in Sands End in comparison with other parts of the Borough was (belatedly) recognised by the local authority in its 'Unitary Development Plan' (UDP) drafted in the early 1990s. Regarding the future of the riverside land owned by British Gas, the planners called for "A park, accessible to the public...of at least 1.8 hectares (4.45) acres" ('Site 32 British Gas Riverside Site', London Borough of Hammersmith and Fulham, Urgency Committee Minute, March 11, 1993). Neither Chelsea Harbour's nor Regent on the River's developers saw fit to provide more than the absolute minimum of public open space. (And what little space was made available was not truly public, but private property policed by security firms). In contrast, the contemporary LDDC (although working to a much wider remit) pursued a vigorous amenity policy:

Over 100,000 trees [were] planted, new parks and gardens created, existing parks refurbished and extensive river and dock-side walkways constructed ('Ecology in London Docklands', LDDC, November, 1994, p.2).

Sands End also displayed the various other forms of urban environmental stress. There was noise pollution

from aircraft that descend over Fulham to land at Heathrow (Fulham is on a major flight path), from the heliport on the Wandsworth bank of the Thames directly opposite Sands End, and from traffic on the busy approach road to Wandsworth Bridge. Exhaust emissions from both aircraft and road traffic were another source of pollution.

Fulham is especially affected by aircraft landing at Heathrow. The airport is now the busiest in the world, handling over 40 million passengers annually. This translates into an aircraft descending over the Borough to land at Heathrow every 90 seconds at peak periods (Parkinson M., 'Green Campaign to Fight Another Airport Terminal', The Fulham Gazette, April 30, 1993).

As a local Friends of the Earth spokesperson has pointed out, apart from the noise nuisance, "High levels of nitrogen oxide emitted by aircraft...pose a health risk" (Ibid). It is feared that if a fifth terminal is built at Heathrow, such hazards will become more acute. However, while the British Airports Authority, responsible for managing the airport, admits that traffic levels will increase by 10%, it denies this will produce an equivalent increase in noise and air pollution:

Our computer modelling indicates residents would be unable to detect extra noise levels. As for pollutants, we believe there will be no significant impact on neighbouring communities (Parkinson M., 'Green Campaign to Fight Another Airport Terminal', The Fulham Gazette, April 30, 1993).

(At the time of the Fulham Power Station debate, noise levels may well have been greater due to the use of turbo-jet rather than quieter, modern turbofan engines). Helicopters using the heliport on the Wandsworth bank of the Thames add to the area's noise problems. While local opposition to 'helicopter nuisance' has never been great, the February, 1993, proposal by Thames Heliport PLC to moor a landing platform at Chelsea Harbour, thereby increasing helicopter traffic into the area, caused much comment in the press, and some reaction from community leaders. (Such platforms are exempt from local authority planning controls. They are subject only to Port of London and Civil Aviation Authority regulations). The chairperson of ARISE, for example, asserted:

The whole idea is diabolical. Nobody has bothered to ask what we think...Our stress levels will rise because of the noise and traffic (Hodges L., 'Heliport Flies Into Storm', The Fulham Chronicle, February 24, 1993).

In addition, the chairperson of the Noise Abatement Society warned:

If even one machine were to crash on a busy London street the carnage would be horrific (Hodges).

While Thames Heliport PLC had not met with the local authority to discuss their proposed flight operations, newspaper enquiries revealed that the helipad would operate from 8am to 5pm, five days a week. Up to five flights per hour were planned ('Don't Let Helipad Get Off The Ground', The Fulham Chronicle, April 28, 1993).

As a result of media attention and local activism, Hammersmith and Fulham Council decided in April, 1993, to seek legal advice on how the plan could be challenged.

One of the enduring concerns of Sands End residents is the amount of noise and atmospheric pollution caused by traffic. In the early 1980s (as mentioned above), the proposed 'Western Environmental Improvement Route' (WEIR), which would have driven a major highway through Sands End from Chelsea Harbour to Wandsworth Bridge, requiring the demolition of many homes, met with significant opposition from both the local authority and residents. The Transport Minister's decision to abandon WEIR (after spending £2.5 million studying motor traffic patterns in West London) 'delighted' local activists. The local authority, too, was pleased. As the Council's planning chief put it:

WEIR would have been an utter disaster, blighting hundreds of homes and ruining our environment (Davies P., 'End Of The Road - Delight as Minister Ditches WEIR Scheme', The Fulham Chronicle, March 29, 1990).

After the decision, a community leader, demanding that "Levels of pollution and noxious gases from transport... be kept to a minimum" (Hanley T., 'A Cure for our Traffic Chaos', The Fulham Gazette, January 11, 1991), called for significant new investment in public transport, especially local buses. As a result, community groups concerned with urban congestion and pollution declared 1991 'The Year of the Bus'.

Besides that produced by aircraft and motor traffic, the 'yardage' adjacent to Chelsea Harbour also causes (local) noise and atmospheric pollution. The new waste transfer stations, which are a prime source of noise and dust during loading and unloading operations, continue the area's long-standing relationship with (what would now be called) 'nuisance' industries.

A recently discovered major environmental problem in Sands End is that of contaminated land. During the 1990s, the issue has received significant press attention. For example, in a March, 1993 issue, The Fulham Chronicle devoted most of its front page to a story headlined 'Toxic Site Not Fit To Live In'. The story derived from a recent report, commissioned by British Gas, on the condition of its derelict land in Sands End. The report, by the consulting engineers Ove Arup and Partners, detailed the results of extensive soil tests on two British Gas (North Thames) sites. The first, known as 'Site 32' in the Borough's Unitary Development Plan, lies on the river to the south of the West London Extension Railway, directly opposite Chelsea Harbour. The second, 'Site 47', also to the south of the railway, is adjacent to the British Gas (North Thames) gasometers. While a proportion of Site 32 is derelict, Site 47 is used as 'yardage'.

Ove Arup's investigations revealed "Significant chemical contamination of both Made Ground and perched groundwater" (Ove Arup and Partners, 'Imperial Wharf, Fulham, Ground Contamination and its Impact on Redevelopment, Volume 1, Text 45980/RHO/rp22/sp1002',

January, 1993, p.3). The chemical contaminants identified at Site 32, for example, were sulphate, sulphide, mineral oils and "Localised extremely high concentrations of chlorides" (Ove Arup and Partners, Op Cit, p.4). Also found were "Very high concentrations of methane beneath the whole of the...site" (Ibid, p.6).

The report summarises the level of chemical contamination at both sites as follows:

With reference to published guidelines (Kelly, 1980...) the degree of chemical contamination was found to be "heavy" or "unusually heavy" for at least one contaminant at most of the investigation locations (Ibid, p.4).

Public reaction to the report was swift and emphatic. There was a consensus amongst community activists that the polluter, British Gas PLC, should pay for the contamination to be removed. (The cost of removal was estimated at £8-£12 million (Ove Arup and Partners, Op Cit, p.13)). As a written testimony to the Inspector at the UDP Inquiry put it:

The cost of cleansing the land at £8-£12 million is a large sum but is relatively small [in relation to] the long period from which it has produced industrial profits, mainly gas related. It should be realised as a civic duty to clean the land (sic) (Association of Residents in Sands End, 'Precis of Matter Delivered Verbally to Inquiry Inspector at U.D.P. Hearing, 4th March, 1993').

(Despite the strong reaction to Arup's report, however, it should be remembered that at the time of the power station debate, there was very little, if any, awareness of the problem of contaminated land - at least judging from the level of press (non-) reporting of the issue

and quietude of the Association of Residents In Sands End). At an earlier meeting between community representatives, the local authority, British Gas PLC and prospective developers P&O, it had been explained that "Residents were concerned that the contamination should be cleared and prevented from spreading into the local community" (Sands End Planning Consultative Group, 'Notes of Meeting Held on Wednesday, 16 September, 1992, Sands End Community Centre, 59 Broughton Road, SW6', Paragraph 2.3).

There was also consensus on the future use of the land. As the chairperson of the Association of Residents in Sands End (ARISE), put it:

The land needs rest and recuperation after 150 years of heavy industrial use. It would benefit from trees and open space (Hodges L., 'Toxic Site Not Fit To Live In', The Fulham Chronicle, March 10, 1993).

This view was echoed by the chairperson of the Council's Environment Committee:

We want to see an area of open space or parkland to boost the local environment for residents (Ibid).

As may be gathered from such statements, the cause of environmentally-sensitive regeneration is promoted by both local authority councillors and officers, and Sands End community leaders. While interested residents have sought to promote it through associations like ARISE, the Council has established it as one of the cornerstones of its Unitary Development Plan:

Sands End riverside was for many years the home of public utilities and bulk handling industries serving the needs of Inner London and using the river and rail for transport. These industries provided much local employment but blocked the river from public use and detracted from the local environment... The Council's policy is to retain [Sands End] as an employment zone source of local jobs. However, in recognition of the unique opportunity of both large areas of land and a riverside location...the Council wishes to include a mix of other uses which will open up the riverside as a place where activity occurs both day and night, and where a sense of place can be achieved and a unique character brought to the area ('Hammersmith and Fulham UDP 1992', Part 2, Employment, Paragraphs 7.68 and 7.70).

In short, it is hoped that with sensitive planning, Sands End can be redeveloped to provide for both the employment and recreational needs of its residents, while maintaining a pleasant living environment.

While a return to the idyllic (as Hammersmith resident William Morris might have it) pre-modern days of 'Fulham Meadows' is clearly impossible, there is a determination that the worst excesses of Nineteenth and Twentieth Century urbanisation and industrialisation can be at least ameliorated, if not undone.

3 Conclusion.

In conclusion it can be seen that the physical, social and economic and environmental complexion of 'the village by the sand' has changed quite dramatically since its founding. Such changes reflect in large part the urbanisation and industrialisation of the Nineteenth and Twentieth Centuries, demise of the post-Second World War settlement and rise of a neo-Liberal national

politics, the recent (engineered) decline of manufacturing industry, and an 'overflow' of gentrification from neighbouring Boroughs.

Such changes have, however, been paralleled by powerful continuities. Sands End, for example, has always been an economically active neighbourhood, whether engaged in the production of fruit and vegetables, beer, baskets, pottery, building materials, town gas, electricity or, today, salvage from scrap, superstore shopping and exclusive leisure opportunities.

Unfortunately, and despite such economic dynamism, Sands End has suffered from poverty, poor housing and general neglect since its establishment in the mid-Sixteenth Century. Thus the market gardens provided no more than unstable, seasonal employment. The Fulham Union Workhouse was, even on completion, inadequate to the job of accommodating the Borough's destitute. At the time of the coronation of Edward VII, approximately a quarter of the population lived in absolute poverty (how many Fulhamites lived in relative poverty at this time is unknown). Even in the early 1980s after 40 years of state welfarism, Keynesian economics and inclusive, pluralist politics, the London Borough of Hammersmith and Fulham remained "One of London's most deprived Boroughs" (Whitting, Op Cit, p.7), with a rising level of unemployment, decaying housing stock and reduced local authority education, public health, welfare and recreation services.

The employment outlook reached its nadir at about the

time of the power station debate. As LBH&F's 1991 report Poverty and Deprivation in Hammersmith and Fulham explained:

Unemployment in the Borough increased between 1983 and 1986 and reached a high point of 13,044 in April, 1986 (LBH&F Development Planning Department, December, 1991, p.31).

Sands End has also suffered chronic and severe environmental disamenity - whether in the form of 'foul fumes' from the coal-reducing gas works, ash and sulphur deposits from the power station, thick smoke from the GLC refuse incinerator, noise nuisance from waste transfer stations, builders yards, helicopters and passenger jets, lead pollution from the ever-increasing volume of traffic funnelled through the neighbourhood's arterial routes, or the general visual disamenity of a neighbourhood in slow decline.

The recent history of Sands End is one of social schism. Since the late 1970s, a divide has opened up between the 'haves' and the 'have nots' (while this has happened across the country, London exhibits the extremes of the condition. This is due firstly, to the spawning of a super rich and 'super poor' class within the capital, and secondly, to the close physical proximity of the classes within the Metropolitan landscape). Sometimes this divide is covert, as with institutionalised class or race discrimination, and sometimes overt, as in the reification of social and economic privilege through such developments as Canary Wharf in Docklands, and by Chelsea Harbour, Regent on the River and the Harbour

Club in Sands End. Such exclusive developments could be said to be an allegory on and reflection of the accelerated economic individualism of the 1980s, and on the consequent fracturing of British society. (See Gray, J., *The Undoing of Conservatism*, Social Market Foundation, Britain, 1994, for an account of the aggressive re-ordering of British society under the Conservative governments of the 1980s).

The perceived demise of social cohesion has been a prominent feature of recent intellectual discourse. According to Therborn, for example, society is fracturing along three increasingly distinct 'fault lines'. Occupying the bottom level of the 'British Beehive' are the 'permanently unemployed and marginally employed', who occupy "A position of supported marginality". In the middle are the 'stably employed' who are "Making a fairly decent living, no more..." (Hall and Jacques, p.111), and at the top are the 'capitalists and top business managers'. In the context of Sands End, it could be said that the first two groups are to be found living (although not necessarily interacting) amidst the terraces, while the 'captains of manufacturing and knowledge-based industries' rent or buy a Chelsea Harbour or Regent on the River pied-a-terre, and work-out at the Harbour Club. As to the relative size of each class within Sands End, despite the gentrifying effect of such developments as Chelsea Harbour, most residents are either unemployed, marginally employed or, although in full-time employment, vulnerable to the uncertainties of the

short-term contract. (Such uncertainty and instability is not new, of course. The same chill economic winds were felt by the residents of Sands End in Victorian and Edwardian times. See Briggs, Op Cit, p.328, above). Therborn is not alone in postulating a 'two thirds, one third' contemporary social vista. Mulgan, for example, in his analysis of Metropolitan conditions, notes "The division between a relatively prosperous majority and a pauperised minority (particularly in the South East, the most unequal part of Britain)...and the familiar coexistence of private affluence and public squalor" (Hall and Jacques, Op Cit, p.263).

While such dramatic analyses can over-simplify complex social trends, they do reflect the transformation of the socio-economic complexion of Sands End during the 1980s. While the community had always been under stress, the demise of the post-war settlement in the 1970s, followed in the 1980s by the demise of corporatist and consensus politics, promotion of the interests of capital over those of labour, and erosion of the Welfare State (see Gray and Hall and Jacques on all these points), put the majority of Sands End residents under great economic and social pressure. The fact that the community accommodated this pressure with stoicism (ignoring the occasional violent protests seen elsewhere in London), does not mean that it played any less of a part in influencing residents' attitudes and behaviour. Socio-economic change is the tableau against which all individual and community activity - including environmental protest - must be measured and understood.

Chapter 4

Formal and Informal Politics in Sands End

1 Introduction.

This chapter outlines the formal and informal politics of Sands End, from the power station debate of 1983/1984 to the present day.

One of the most interesting features of the politics of Sands End is the existence of what could be described as a pseudo-Parish Council - namely the Association of Residents in Sands End (ARISE). ARISE was formed in 1974 as an offshoot of the roads protest group Townmead Estate Residents Revolt Over Road (TERROR). (More will be said about TERROR in the next section).

The birth of ARISE meant that at the time of the power station debate, the inhabitants of Sands End could secure representation through two local democratic mechanisms: Firstly through the Association's sixteen strong committee, and secondly through the two councillors who represented Sands End on the local authority.

While the Association may not have been able to do as much as a formally-constituted Parish Council, its procedures and interests were remarkably similar. For example, a Parish Council usually meets monthly: ARISE met ten times a year; Parish Councils are re-elected once every four years: The ARISE committee was re-elected annually (although only by those locals who had paid to join the Association); Parish Councils may raise

monies by hiring out halls or organising specific fund-raising events: ARISE was responsible for managing a large hall (at its headquarters in the Broughton Road Centre) and some office accommodation, and organised social events throughout the Sands End area; Parish Councils are invited to comment on Planning Applications submitted to District or County Councils: ARISE routinely saw all Applications pertaining to Sands End. Additionally, the Sands End Planning Consultative Group provided a platform for local people to express views on major plans for the area; Parish Councils can fund local groups like youth football teams: ARISE funded several local groups, a favourite being play schemes.

The Association's leadership has never doubted its status. As the Chairman remarked at the 1993 Annual General Meeting (AGM), "ARISE is acting like an old Parish Council".

Thus it could be said that since 1974, Sands End has enjoyed a two-tier system of local government, one formal (the local authority), the other ad-hoc (ARISE).

It should also be remembered that at the time of the power station debate, London had its own metropolitan government, in the form of the (threatened) Greater London Council (GLC), and that, as today, Fulham was a parliamentary constituency in its own right. Consequently, at the time of the demolition, Sands End residents were able to express themselves through either the two local councillors, ARISE, their GLC representative or the sitting MP.

2 Informal Political Culture.

2.1 Townmead Estate Residents Revolt Over Road (TERROR).

TERROR came into being to oppose plans to turn one of the main residential roads in Sands End, Townmead Road (incidentally the road on which the power station was sited), into a 'semi-motorway'. Such plans had been mooted for many years, and were vigorously opposed by the organisation whenever they appeared on the formal political agenda.

Confusingly, both TERROR and ARISE acted to mobilise opposition to road schemes in Sands End. Sometimes the memberships of the organisations overlapped. Quite why this happened is unclear, although there is some evidence of disagreement over tactics. To some people, ARISE represented a rather pedestrian, establishment form of pressure group politics. As one member of TERROR put it, "[ARISE members] are literally a comfortable load of people who sit around a table...they are not really campaigners as such" (CD: Interviewed September 17, 1993). TERROR, on the other hand, seemed to offer a more vigorous form of 'protest politics' (or, as Ulrich Beck might have it, 'sub-politics').

The shared interest of TERROR and ARISE caused confusion in the press. Thus, when the scheme to widen Townmead Road was resurrected in December 1983 (having been 'finally' scrapped by the GLC in 1981), both

organisations sought to speak for the residents of Sands End. Indeed, at one point, the Chairman of ARISE was said to be speaking on behalf of both groups.

As far as the debate over the decontamination and demolition of Fulham Power Station was concerned, it is clear that TERROR provided the focus for community protest. There were a number of reasons for this. Firstly, when the plan to demolish the power station was announced, the community's initial concern focused on a possible influx of heavy lorries and other plant into the area. Given TERROR's concern with road traffic levels, the demolition seemed a natural issue for the group. The second reason lay in TERROR's campaigning style. When it dawned on people that the main health threat posed by the demolition lay not in extra road traffic, but in the possibility of asbestos contamination, it seemed that TERROR, with its more aggressive campaigning style, would serve the community best in any confrontation with contractors, local and/or central government. The third reason lay in TERROR's independence from local government. Unlike ARISE, it received no income from the local authority. This financial independence attracted those who suspected that council monies always came with strings attached. The final reason was TERROR's informality and absence of bureaucracy. Activists felt that this lent the group a flexibility and responsiveness that would serve the community well in a rapidly developing situation. (This is apparent from the interview responses recounted in Chapter 7).

Although the members of TERROR devoted an enormous amount of energy to the power station debate, they never abandoned their interest in the roads issue. Thus, when the Townmead Road widening scheme reappeared on the political agenda in December, 1983, TERROR, despite its heavy involvement with the demolition issue, took the lead in opposing the scheme. A meeting, attracting 150 residents, was held at a local community hall, and a 1,500 signature petition opposing the road scheme was raised. TERROR's leader - also one of the three women most active in the power station campaign - found time to put alternative traffic plans to the local authority. One of the main themes of the protest concerned the adverse effect the scheme would have on property values. As a local newspaper put it:

Broughton Road community hall was packed for the consultative meeting...Bitter residents complained at the meeting that if the scheme got the go-ahead, 80 homes would be bulldozed, the value of many more homes would sink...and Sands End would "die a slow death" ('Residents Unite To Fight Road Plan', The Fulham Chronicle, December 9, 1983).

Fulham's other local paper concurred with this analysis of the residents' motives:

The residents are angry because it will...mean the return of a blight on the area which they finally persuaded the GLC to lift only 15 months ago ('Road Plans Kicked Out', West London Observer, December 8, 1983).

It is apparent from the above that both TERROR's members and the general public were as concerned about the adverse personal economic effects of the road scheme as

they were about its environmental effect.

2.2 The Association of Residents in Sands End.

2.2.1 History.

ARISE was formed in 1974 as an offshoot of the south Fulham anti-road (and power station protest) group TERROR. While ARISE retained an interest in road and other transport issues, its brief expanded to include anything that might affect the lives of Sands End residents. The Association's comprehensive brief was summarised in 1992:

ARISE is a non-political association intended to benefit and serve all sections of the community in their local activities and needs (ARISE Newsletter, Autumn, 1992).

Thus, at the time of the power station debate, the Association's constitution did not preclude it from acting as an advocate for local health campaigners. In practice, however, it was TERROR that 'carried the fight' to the contractors, CEGB, local and central government. (The ARISE view is that the Association played a key role in the campaign. As a newsletter has stated; "We were influential when the Fulham Power Station was knocked down about 1984..." (ARISE Newsletter, Autumn, 1992)).

2.2.2 Objectives.

ARISE exists both to represent the interests of local residents in negotiations with outside agencies, and to

maintain and enhance community spirit within Sands End. This latter objective is a key theme in all ARISE activities. As the Association's publicity puts it:

This part of Fulham has a unique sense of community and the main concern of ARISE is to protect and encourage this spirit in every way possible (ARISE Membership Pamphlet).

Sands End is often referred to in ARISE publicity as 'Sands End Village'. Indeed, the Association organises the annual 'Sands End Village Festival'. The philosophy is therefore one of building community spirit and maintaining the area's distinct character. These tasks are made easier by the relative isolation of Sands End within the Borough. As explained in the previous chapter, Sands End is located in a pocket in the southern half of Fulham, and is bounded by the Thames, a railway line and two very busy roads. Such clear demarcation, in concert with a general lack of through communication links (there are no rail or tube stations in, or even near, Sands End), serve to build a distinct village atmosphere. (This process can be seen in other, equally isolated parts of Hammersmith and Fulham. There is, for example, the area known as 'Brackenbury Village' in Hammersmith itself. Brackenbury Village bears a close resemblance to Sands End in that it is relatively isolated and free from through public transport links. As in Sands End, there are some very pleasant, quiet roads. Unlike Sands End, however, this facility has been profitably exploited by the stylish bars and bistros that litter the area).

ARISE considers itself - perhaps somewhat immodestly - to be the focal point for the concerns of individual residents and of other groups in Sands End. It considers itself an 'umbrella organisation' for various disparate interests. As the Association's publicity material puts it:

ARISE has been recognised by council administrations (both red and blue) as the umbrella group for consultations (ARISE Newsletter (Autumn, 1992)).

Lastly, ARISE is determinedly non-political. For this reason, sitting councillors have not been allowed to join the 16-strong Committee (although aspirants are permitted membership). As the Chairman said at a meeting on July 12, 1993, his 'instinct' was against such a development.

2.2.3 Interests, Campaigns and Sponsorships.

While TERROR focused only on road issues, ARISE has a much wider portfolio of interests, a sample of which are given below:

Planning Issues.

ARISE focuses both on general planning issues, such as those raised by the Borough's 1993 Unitary Development Plan (UDP), and on individual proposals, such as those made in Planning Applications. ARISE has made a written and oral submission on the most recent UDP (March 4, 1993), and has considered such Planning Applications as the one to build 219 flats, an Exhibition Centre and a

cinema on a semi-derelict site adjacent to the Thames (considered by the Chairman at a meeting on May 24, 1993). All Planning Applications relevant to Sands End are vetted by ARISE (although quite what would happen if ARISE objected to a scheme is open to conjecture).

Local Authority Services.

ARISE has successfully campaigned for a loss-making local authority launderette to remain open, and for the retention of the small Sands End Library.

Transport Services.

ARISE has lobbied successfully for two bus services to be routed through Sands End. Although one of the services is under-used, the Association is lobbying London Transport and the local authority for the retention of both.

Noise Pollution.

ARISE is concerned about both aircraft and helicopter noise. In its 'networking' role, ARISE has urged people to join with Friends of the Earth in their campaign against a fifth terminal at Heathrow.

General Environmental Improvement.

ARISE is concerned about the lack of open space in the area. It is also concerned to improve the street environment through tree planting/protection, the provision of litter bins and better drainage.

Roads.

ARISE networked with ALARM (All London Against Roads Menace) in opposing the Western Environmental

Improvement Road proposal (WEIR) and other road development schemes in the capital. Its prominence reflects the fact that "West London...has one of the highest levels of pollution from vehicle exhaust gases in Britain, well in excess of EC and World Health Org. limits" (ARISE Newsletter, February, 1990).

As mentioned above, ARISE is concerned to build on the community spirit of Sands End. In light of this it sponsors various local initiatives, one such being the Sands End Building Co-operative (SEBCO). SEBCO, formed by seven local people "After meeting up at their residents' association" ('We've Worked It Out Together', The Fulham Chronicle, September 30, 1993), carries out building work at cut-price rates, the intention being to get as many unemployed Sands End tradespeople as possible back to work. SEBCO's philosophy is very much one of local people meeting local needs. As the Co-operative's electrician-founder has put it:

It was bad enough being unemployed for six months, but to look at work going on in your area by out-of-town contractors was like having your nose rubbed in it ('We've Worked It Out Together', The Fulham Chronicle, September 30, 1993).

ARISE has provided SEBCO with office accommodation at the Broughton Road Centre. Like the roads issue, economic development is a major theme in Sands End politics.

ARISE is interested not only in economic, but also in amenity development. It is determined that a park and riverside walk should be provided, and that derelict

land should be brought back into (socially productive) use. To this end, all development proposals for the riverside are earnestly reviewed by ARISE. In 1993, for example, two entrepreneurs submitted a proposal to erect a temporary shops, restaurants and entertainments complex on the heavily contaminated land adjacent to the Regent on the River development. One of the entrepreneurs was invited to explain the scheme to the ARISE AGM. Prior to this the Chairman and several Committee members met with the developers at the proposed site. (At the meeting ARISE insisted that whatever development was approved, it should be safe for the public - even if this meant a full and very costly decontamination of the site).

2.2.4 Financing.

During the 1980s, the financing of the Association was reasonably secure.

During the 1990s, however, the financing of the Association entered an uncertain phase. While in 1992/1993 the council grant stood at £12,500 (ARISE 1992. Receipts and Payments Account for the Year Ended 31 March, 1993), in 1993/1994 this was reduced to around £8,000. As the grant is the main source of income for the Association (other sources totalling only £397 in 1992) this was a major blow.

In 1992/1993, over £1,200 was paid by ARISE to local groups, while £1,100 was spent on the newsletter which is distributed throughout the area. Other monies go

towards providing such services as luncheon clubs at the Broughton Road Centre.

2.2.5 Public Participation in, and Perception of ARISE.

While open meetings are generally well attended (out of a membership of about 100, over 50 attended the 1993 AGM), Committee meetings are not. For example, at the Committee meeting of May 10, 1993, only six out of sixteen Committee members were present. The feeling is very much that while people want action, few are prepared to get down to the necessary work.

ARISE is used by the Council as a sounding board for ideas. To this end, a council official visits ARISE each month.

The attitude of the general public towards the Association is difficult to gauge. The local press is certainly prepared to pursue allegations of misconduct within ARISE with vigour: When an ARISE member (also a Conservative Party member) alleged that there were irregularities in the annual accounts, The Fulham Chronicle ran a detailed report (July 8, 1993 edition).

2.2.6 Conclusion.

In their book on urban power, Structures and Processes of Urban Life, Pahl, Flynn and Buck assert that the degree of success enjoyed by a sub-political group such as ARISE will depend upon three factors. Firstly, "The ability to incur costs in time, money and energy in

mounting [a] campaign". Secondly, "Not appearing as a challenge to the legitimacy of the council's authority", and thirdly, making demands that accord with the council's agenda (Ibid, Longman, Britain, 1983, p.137). ARISE meets all three requirements: It has adequate resources (most provided (ironically) by the council itself), 'plays by the rules of the game', and sets objectives that are broadly in line with the council's aspirations.

ARISE, by playing the game, has secured some notable successes: During the 1980s, ARISE, in concert with TERROR and All London Against Roads Menace (ALARM), defeated several attempts to drive a major new road through Sands End. In 1993, after much lobbying by the Association, the local authority announced a major new investment in Sands End: A new area housing office, better library and more sports facilities were to be provided despite 'A £20 million shortfall in government funding'. (As so often happens, however, the hard work done by local campaigners received little acknowledgement, as evinced by this headline in The Fulham Chronicle: "Jubilant Labour Councillors today revealed a package of improvements to give 'a new lease of life' to a politically crucial Fulham neighbourhood" (My emphasis) (Meikle, P., 'Crucial Ward Gets New Life', The Fulham Chronicle, June 16, 1993).

2.3 Other Groups and Initiatives.

Hammersmith and Fulham, like any other London Borough, has numerous voluntary groups and associations. Many are

coordinated by the Council-funded Hammersmith and Fulham Association of Community Organisations.

Before the £50 million reduction in spending forced on the Council between 1991 and 1994 (Meikle, P., 'We Have Lost Control Of Our Money', The Fulham Chronicle, September 9, 1993), Hammersmith and Fulham funded over 100 groups, ranging from ARISE, to Womens' Action for Mental Health, to Hammersmith and Fulham Urban Studies Centre (HFUSC).

HFUSC was initially an integral part of the local authority's Planning Department. Set up in 1981, it had a full-time co-ordinator and a teacher seconded from one of the Borough's schools. Due to its success, HFUSC was 'hived off' in 1983 to become a fully independent (but still local authority funded) resource centre. It is both a registered charity and a registered company. The USC's main objectives are environmental education and improvement. As a recent HFUSC publication explained;

The Centre works with schools and community groups on urban environmental education projects and provides a resource base for researching and learning about local issues.

Despite its comprehensive brief, however, HFUSC played no part in the power station debate. This may have reflected its predominantly passive information gathering and advisory role. (It did, however, open a file on the demolition of Fulham Power Station) (Interview with HFUSC Director, July 7, 1993; 'Hammersmith and Fulham Urban Studies Centre' publicity

sheet).

Within Sands End, ARISE consults with numerous smaller groups and associations. These include the Chelsea Harbour Residents' Association, Lots Road Residents' Association (covering an area adjacent to Chelsea Harbour) and Townmead Youth Club. It is fair to say that such groups do not have the organisational or financial strength of ARISE.

Nationally organised groups like Friends of the Earth (FoE) are also represented in the Borough. (There is a Hammersmith and Fulham branch of FoE). The concerns of the local branch are wide-ranging. The July, 1993 Newsletter, for example, contained items on tropical rainforest, Oxleas Wood and the local authority's environmental strategy. During the various road disputes of the 1980s, FoE acted alongside TERROR and ARISE in opposing WEIR and other schemes. But FoE played no part in the Fulham Power Station debate.

2.4 Philanthropy.

Again, as with other Boroughs, major corporations can give generously to the community, especially where a public relations benefit may accrue.

The redevelopment of Hammersmith Broadway was for many years a source of heated debate within the Borough. Despite calls for a sensitive and socially - as well as economically - useful development, the final scheme was a shops, offices and public transport development of massive proportion. To assuage the resulting criticism

and garner some good publicity, Bredero, the developers, gave the local authority £500,000 to build a new headquarters for two community groups ('Bredero's Gift To Community', The Fulham Chronicle, May 19, 1993).

3 Formal Political Culture.

3.1 Parliamentary Representation.

The Borough has two parliamentary constituencies, Fulham and Hammersmith. In the General Election of June 9th, 1983, Hammersmith elected Clive Soley for Labour with 41.5% of the vote (Hammersmith Reference Library Archives). Soley increased his vote in the 1987 General Election.

In the 1983 General Election, Fulham elected Martin Stevens for the Conservatives with 46.2% of the vote. Stevens doubled his majority from the 1979 General Election, beating his closest rival, the Labour Party's Tony Powell, by almost 5,000 votes (The Fulham Chronicle, June 17, 1983). The increased majority may have reflected, in part, the galloping gentrification of the early 1980s. Powell secured 34% of the vote, and the Liberal candidate 18.2%. At the by-election of April 1986 (occasioned by the death of the sitting MP), Nick Raynsford was elected for Labour with 44.4% of the vote. The Conservative candidate got 34.9%. At the 1987 General Election, however, the seat went back to the Conservatives who secured a hefty 51.8% of the vote (Hammersmith Reference Library Archives).

After being a Labour constituency for many years, Fulham turned Tory in 1979, and with the exception of the period April 1986 to June 1987, has remained Tory. This probably reflects Fulham's social revolution of the 1970s and 1980s (see previous chapter), and the national slump in Labour's fortunes. A month after the announcement that Fulham Power Station was to be demolished, the Labour Party, led by an aged Michael Foot, reached its nadir: In the June 1983 General Election, "Labour, gaining less than twenty-eight percent of the votes cast, put up its worst performance in elections since it began serious operations in 1918" (Morgan, K.O., Labour People, OUP, Britain, 1987, p.277). Mrs Thatcher secured a parliamentary majority of 140.

3.2 The Greater London Council (GLC).

The Greater London Council was still in existence at the time of the power station debate, Fulham having its own GLC Councillor. Labour-controlled during the 1980s, the GLC provided certain technical assistance to those residents involved in the debate. It should be noted, however, that at the time of the debate the GLC was facing abolition. This caused significant disturbance within the organisation (as experienced staff left key posts) which must have affected its response to the asbestos issue. (During 1984 local and national newspapers were full of advertisements for high-powered but temporary jobs at the Council).

Nevertheless, despite its travails, the GLC continued to

challenge inequalities and publicise social issues right up until its abolition. It published challenging research on unemployment, economic decline, housing and pollution. In 1982, for example, the GLC raised the issue of atmospheric pollution in the capital. The GLC report, entitled "Sulphur Dioxide and Smoke in London - a Progress Report", was reviewed in the local press:

The government is being urged by the GLC to tighten controls on the burning of coal and fuel oil which currently releases 180,000 tonnes of sulphur dioxide into the capital's air every year, and which, experts say, will increase ('Clean London's Air Urges GLC', The Fulham Chronicle, July 23, 1982).

Ironically, this report was published in the context of the closure of many of London's older coal-burning power stations, including Fulham Power Station.

3.3 The London Borough of Hammersmith and Fulham (LBHF).

3.3.1 LBHF From 1980 to the Present.

The London Borough of Hammersmith and Fulham has 50 seats spread over 23 wards. Most wards have two seats, while a few have three. Sands End itself has two.

At the May, 1978 local elections, the Labour Party and the Conservative Party won 24 seats each. This left the Liberal Party, which won two seats, with the balance of power. After much politicking, the Liberals formed an alliance with the Conservatives, in exchange for several positions of influence within the Council. The

Conservative/Liberal alliance promised to undo years of Labour 'misrule' in Hammersmith and Fulham. As The Fulham Chronicle reported;

Councillor Knott [leader of the Liberal Group] said it was one of his main demands that the rates should not go up next year...('Strong Rule Promised From Con-Lib Council', May 19, 1978).

The Chronicle considered the deposed Labour Group's housing policy to be especially vulnerable:

First for the axe is certain to be compulsory purchase and municipalisation of private homes and flats which the Labour Party say are desperately needed to help people on the long council house waiting list (Ibid).

At the council elections of May 1982, 25 Labour, 23 Conservative and 2 Alliance councillors were returned. In a virtual re-run of the previous election, a Conservative/Alliance administration was formed. (Thus it was a Conservative/Alliance administration that presided over the power station debate of 1983 - 1984).

Sands End proved to be solidly Labour. The two Labour candidates polled about 1,000 votes each, and were duly elected. The two Conservatives each polled about 600 votes (Hammersmith Reference Library Archives).

At the council elections of May, 1986, 40 Labour and 9 Conservative councillors were returned. In Sands End the two successful Labour candidates polled over 1,000 votes each, while the two Conservatives polled about 550 votes each ('This Is Where The Votes Went', The Fulham Chronicle, May 15, 1986). The 'third party' vote was

split between the Liberals and the SDP.

In the May 1990 local elections the Labour vote slumped somewhat. Labour won 28 seats, while the Conservatives recovered to win 22 seats ('How The Votes Were Cast In Each Ward', The Fulham Chronicle, May 10, 1990). The Labour vote in Sands End, however, actually increased. Yet again, two Labour councillors were returned.

3.3.2 News from the Town Hall.

During the early 1980s, the local authority distributed a free newspaper across the borough. Each month some 95,000 copies of Civic News were produced. The items featured in Civic News give a good indication of the authority's chief concerns prior to - and during - the power station debate.

The January, 1982 edition, for example, majored on aid packages for local businesses, the future of Fulham's river frontage and the redevelopment of Fulham Broadway, Fulham's main commercial centre. Under the heading 'Better Working Conditions for Fulham Centre', it was announced that the Broadway had been designated a 'Commercial Improvement Area' (CIA).

The February, 1982 edition noted that the CIA programme had commenced. Much space was given over to the issue of local unemployment. Under the headline 'Action on Unemployment', it was pointed out that "Unemployment now affects more than 9,000 borough residents". To tackle this growing problem the local authority had made Inner

Area Programme monies available to local voluntary groups engaged in job training and employment schemes. (Hammersmith and Fulham's IAP scheme had commenced in 1979).

The March, 1982 edition carried a detailed summary of the local authority's main activities. The IAP featured prominently, as did the issue of sub-standard housing. It was reported that, according to The Greater London House Condition Survey (1979), around 38% of the borough's housing was in an 'unsatisfactory' condition, and that 16% of the council's own housing was 'unfit for human habitation'. The pressure on budgets was noted in a report on cut-backs in the social services department:

The year was not an easy one for Social Services. A number of difficult decisions had to be taken to contribute to the financial savings forced on the Council at a time of increasing unemployment and an unfavourable economic climate (p.5).

The Council's concerns, however, were not all the result of economic pressures. Thus it was reported that as a result of "A great deal of national and local publicity over the hazard of lead poisoning" (p.10), the council had appointed a Temporary Scientific Officer to monitor local atmospheric lead levels.

The March, 1982 edition was the last Civic News published by Hammersmith and Fulham. Its demise may have reflected the cut backs forced on the council by central government, and/or the changed priorities of the new Conservative/Alliance majority in the Town Hall, following the local election of May 1982.

The concept of a civic newspaper was not revived until December, 1986, when the newly elected Labour-controlled authority published the first edition of Street Life. Like its predecessor, it majored on the local authority's priorities, activities and achievements. Once again, issues of social justice featured prominently. Issue number one noted that "Unemployment in Hammersmith and Fulham [is] running at an alarming 15%" (p.6). In the context of a council house waiting list of 8,500, the news sheet criticised the previous administration's development plans for the Fulham river frontage. Under the headline 'Anger at Multi-Million Pound Scheme', the Chair of Housing attacked the proposed Chelsea Harbour development:

Building luxury homes...is all very well...But not when it means that hundreds of local people will be deprived of the low cost housing they need. The council is struggling at the moment to provide for the homeless - it is rubbing salt into the wounds to see a valuable piece of building land swallowed up by developers who are uninterested in local problems (Ibid).

4 The Local Press.

4.1 Introduction.

Given that the press can, from time to time, reflect popular concerns, and may even describe a political agenda (see, for example, Schoenfeld, A.C., Meier, R.F., and Griffin, R.J., 'Constructing a Social Problem: The Press and the Environment', *Social Problems*, US, Volume 27, No.1, p.39), it is interesting to note the concerns

of Fulham's local newspapers at the time of the power station debate.

4.2 The Agenda.

In the gap between the demise of Civic News and the publication of Street Life, the West London Observer and The Fulham Chronicle were the community's chief sources of local news. As tabloids, the front page lead story with its attention-grabbing banner headline, often written in a lurid style, had the potential to make an impact on both the reader and passer-by. It is of some interest, therefore, to note the stories that made the front pages of the newspapers during the height of the power station debate. As both papers tended to follow the same stories, the headlines from only one, The Fulham Chronicle, are recounted.

The May 13, 1983 front page headline was, not unsurprisingly, **'Furious Residents Up In Arms'**. The accompanying story focused on the unexpected sale of Fulham Power Station, announced on May 3rd in The Times.

On May 20, the headline was **'Asbestos Fear Quelled By Blast Expert'**.

On May 27, **'Council Flat Horror For Disabled Man'**.

On June 3, **'Big Guns Open Up On Jobs Row'**. This story focused on the claim by the area's Conservative MP that 'unemployment was not a serious issue in west London'.

On June 10, **'Election Tight Rope'**.

On June 17, 'Killer Dust Protest'. This marked a return to front page coverage of the power station.

On June 24, 'Damp-Ridden Council Flat Accusation'.

On July 1, 'Living Hell For Tenants'. The story recounted a community's protest against a rubbish compactor.

On July 8, 'Disabled Queenie Won't Pay'. The story described how a pensioner planned to defy a council demand that she pay towards the cost of her home help.

On July 15, ''Beanfeast' Luxury For Cuts Meeting'. The story criticised the cost of a meeting to discuss budget cuts.

On July 22, 'Social Services At 'Crisis Point''. The lead story described how, according to a Labour councillor, "The Borough's Social Services Department is in danger of collapsing, and staff morale is at an all time low...".

On July 29, 'Mercy For Rape Trio'.

On August 5, 'Residents To Maintain Asbestos Alert At Station'.

On August 12, 'Tower 'Open House' For Crime'.

On August 19, 'Home Help Charges Could Be Illegal'.

On August 26, 'Food Filth Penalties Too Low'.

On September 2, 'Locals Lose Chance To Own Riverside Homes'.

On September 9, 'Girl Was Victim Of A Sex Monster'.

On September 16, '13 Years Old Schoolgirl Is Molested By Sex Attacker'.

On September 23, '£30,000 Damage as Fire Raisers Attack'.

On September 30, 'NHS Cuts Will Slash Patient Care - Nurses'.

On October 7, 'Residents 'At End Of Tether' Over LT Work'. Residents were protesting about noisy repair work on the underground.

On October 14, 'Double Attack Sparks Fury On Flat Safety'.

On October 21, 'Homes Strike Threat To Children And Aged'.

On October 28, 'The Hurlingham Watch Scheme Is Winning Out'.

On November 4, 'Widow Victim Of Housing Blunder'.

On November 11, 'Target For Sex Attacks'.

On November 18, 'Knott Must Go Call By Labour'. The Labour group on the council was demanding the resignation of a Conservative member over budgetary matters.

On November 25, 'Fulham Court Tenants War On Council'. In the absence of the £9 million needed for repairs, the Council planned to sell off a dilapidated council estate

to a private property developer.

On December 2, 'Outcry Erupts Over Library Cuts Plan'.

On December 9, 'Residents Unite To Fight Road Plan'.
(See 2.1, above).

On December 16, 'Playcuts Protest At The Town Hall'.

On December 23, 'Family At War'. A story about the aftermath of an IRA bomb in London.

On December 30, ''Jump To It', Teenagers Are Told'. A story about the slow take-up of places on a job training scheme.

While not exactly a 'scientific' analysis, the above survey shows that even at the height of the campaign, the debate over the demolition and decontamination of the power station hardly monopolised the front page of the newspaper. While there were frequent reports on the inside pages, these were often lost amongst acres of lurid advertisements (the stock-in-trade of local tabloids). Of course, a local newspaper must appeal to as wide an audience as possible. To do this, coverage will range across a whole spectrum of issues. Coverage can also pander to the lowest common denominators of public taste. Hence the front page reporting of sex crimes.

However 'unscientific' the above analysis, it is nevertheless of some interest to note firstly, that the power station debate was seldom given the front page leader, and secondly, that other 'social' issues

received as much, if not more, publicity.

From the point at which the power station was sold until the end of the year, the Chronicle carried four front page reports on the debate over its decontamination and demolition. In the same period, the paper carried thirteen front page reports on issues related to housing need, social services, health, unemployment and/or budget cuts i.e. issues that could be said to be broadly 'social'. There were seven sex and property crime stories.

5 Conclusion.

At the time of the power station debate of 1983/1984, Sands End residents were represented through four tiers of government - three formal, and one informal. The Member of Parliament, GLC Councillor and local authority councillors provided formal representation, while the ARISE Committee provided informal representation.

Interests could also be indulged and expressed through a plethora of other, smaller groups, from predominantly single-issue organisations like TERROR to resource groups like the Nottingdale Technology Centre and the Hammersmith and Fulham Urban Studies Centre.

Thus a complex web of potential support was available to the power station campaigners at the time of the debate. The depth and breadth of potential support would have been greater in 1983/1984 than today, given the cuts in local authority funding implemented throughout the 1980s

(see 'ARISE 1992. Receipts and Payments Account for the Year Ended 31 March 1993'; Meikle, P., 'We Have Lost Control Of Our Money'; and the relevant Fulham Chronicle front pages, above).

Having said this, however, it should be remembered that the major sub-political group, ARISE, was very much a part of the Hammersmith and Fulham political establishment. Given the resulting congruence of interests and philosophy between ARISE and the local authority, and bearing in mind that almost all of the Association's funding came from the Council, ARISE was not about to engage in 'unacceptable' forms of political discourse on anyone's behalf (see 2.1, above; interview with power station activist).

This left those unhappy about the demolition in the position of having to look for a more independent, less constrained organisational vehicle for their protest. This the activists found in TERROR.

The success of sub-politics in Sands End, in the guise of groups like TERROR, stands in sharp contrast to a growing pessimism about, and antipathy towards formally constituted local democratic processes. As described in Chapter 1, there is a growing belief that the traditional forms of politics have failed, and that the public is, as a result, disempowered and disenfranchised:

It has come to seem as if all the important decisions that touch our lives are made elsewhere, by someone else, someone distant and unidentified...The effect of this has been to create a widespread feeling of impotence,

especially on the part of those who have the roughest deal in society - 'What can you do about it?' 'What's the point?' 'Whose going to take any notice of us?' This in turn leads to a total disbelief in those who claim that they can do anything about it - and that means, for the most part, politicians (My emphases) (Seabrook, J., The Idea of Neighbourhood, Pluto, Britain, 1984, p.3).

Asbestos - A Risk Issue?

1 Introduction.

The arguments over the decontamination and demolition of Fulham Power Station centred on the degree of risk presented by the asbestos used at Fulham for heat insulation.

All coal-burning power stations contain large amounts of asbestos - especially blue and brown asbestos which are able to resist the acidic fumes produced during combustion.

Any debate over the health risks of asbestos inevitably takes place against a background of scientific uncertainty. Certainly at the time of the demolition there was debate over the degree of carcinogenicity of asbestos dust (especially concerning its role in the development of mesothelioma, a painful cancer that kills in months).

This chapter examines that debate in detail. The objective is to describe the general scientific backcloth to the events and risk/hazard discourses of 1983-1984. (There is no attempt in this Chapter to describe the power station debate in detail. That is done in the Chapters that follow). For the sake of completeness, the scientific arguments over asbestos have been traced to the present day.

Obviously, should asbestos dust be accidentally

discharged into the environment, the propensity of the mineral to cause cancer will have a bearing on the terms of any subsequent debate on public health. Thus, if it is agreed that all forms of asbestos are carcinogenic in any quantity, any debate over the consequences of environmental contamination will start from an unambiguous scientific base. However, if there are questions as to the degree of carcinogenicity of the mineral, with, perhaps, different scientific authorities presenting different conclusions, the potential exists for great confusion and/or complexity in any debate that might follow. The debate may polarise, with different parties expressing mutually antagonistic interests through contradictory scientific interpretations. Alternatively, a disinterested or preoccupied public, reassured by a conservative view of asbestos hazard, may show little or no interest in the matter. (Of course, the same result might obtain even if asbestos was shown to be unambiguously carcinogenic, with the same disinterested or preoccupied public simply ignoring a proven hazard). Lastly, scientific uncertainty may cause people to lose faith in 'expert' knowledge. This may produce any one of a number of outcomes; anger, panic, disengagement or apathy. (See, for example, Irwin's (1995) analysis of the public's loss of faith in the Ministry of Agriculture, Fisheries and Food over their perceived mishandling of the BSE crisis (Citizen Science, Op Cit)).

Scientific uncertainty over the link between asbestos and cancer is reflected in the wider debate over the

role of environmental factors in general in the aetiology of cancer. At the time of the argument over the demolition of Fulham Power Station, this debate had polarised around the views of two opposing scientific camps, with one emphasising 'life-style' factors (like smoking) as the main cause of the 'cancer epidemic', and the other emphasising 'environmental' factors (like synthetic organic chemicals and airborne asbestos).

Disagreement over the carcinogenicity of asbestos was of potential importance to the terms of the debate in Sands End for a number of reasons. Firstly, because it offered each side the chance to use a complementary scientific interpretation to justify its actions (or inactions). Secondly, because it offered those who played no part in the debate (the vast majority of the residents) a justification for their inaction: if cancer was caused mainly by 'life-style' factors, why worry about a little asbestos in the air? And lastly, because it raised the possibility of securing some sort of 'insurance' against claims for compensation in later years; Even if cancers did subsequently occur in the population, it would be difficult to prove 'beyond all reasonable doubt' that they were due to the actions of the parties responsible for the decontamination and demolition.

It should be noted, however, that even if one assumes asbestos to be only marginally carcinogenic, the very fact that it may cause cancer might have been sufficient to trigger concern (although not, necessarily, political action). This is because cancer is very much a 'dread' disease. As one report has put it, there is "A dread of

the death sentence so often associated with it. Cancer lays bare the comfortable fiction that we will live forever" (The New Internationalist, August, 1989, p.4). And in the early 1980s, the 'unspeakable' disease would have generated even more dread than today, given the more limited treatments available then.

The Fulham Power Station debate should therefore be seen in three health contexts. Firstly, the scientific argument over the carcinogenicity of asbestos. Secondly, the more general debate over the role of 'life-style' against 'environmental' factors in carcinogenesis. And thirdly, the pronounced fear of cancer amongst the general population.

As these health contexts form a vital dynamic to the debate, it is important that they are, like the social, economic and political contexts described in Chapters 1, 2, 3 and 4, noted and understood. Without a comprehensive understanding of the background to the debate we cannot begin to understand why, for example, a demolition company believed they could safely decontaminate a power station; why the CEGB sold the power station to such a company; why the local authority was initially indifferent to public concern over the power station; why the majority of the population played no part in the protests; and why some locals publicly criticised the protesters.

2 Cancer - The 'Disease of Civilisation'.

2.1 Characteristics of the Disease.

Cancer, "A disease caused by a breakdown in the mechanisms governing cell division" (Goldsmith, E., and Hildyard, N., The Earth Report, Mitchell Beazley Publishers, Britain, 1988, p.111), has a number of characteristics, one of which (certainly in the context of the debate surrounding possible asbestos contamination in Sands End) is its latency (i.e. the length of time that can elapse between initial exposure to a carcinogen and the onset of disease). The latency period for leukaemia, for example, is six to seven years (Ibid, p.115), while that for mesothelioma may be up to forty years (Asbestos Killer Dust, BSSRS Publications Ltd., Britain, 1979, p.20).

Another important aspect of the disease is its perception by the general public. As mentioned above, cancer is very much a 'dread disease'. Indeed, it may be the 'most dread' disease:

[C]ancer is now the disease that people fear most. Just as tuberculosis appeared to symbolise the wretched conditions of nineteenth-century towns, so cancer has come to be seen as an epidemic that is somehow characteristic of the 'affluent society' of the post-war period [My emphasis] (Doyal, L., Epstein, S., Gee, D., Green, K., Irwin, A., Russell, D., Steward, F., and Williams, R., Cancer in Britain, Pluto Press, Britain, 1983, p.1).

Fear of cancer is heightened by the knowledge that, despite massive investment in research and treatments, "Survival rates for most of the common cancers have

improved very little over the past 30 years" (Ibid, p.1). In the United States, for example, the survival rates for lung, stomach, colon and breast cancer - some of the most common carcinomas - are much the same now as they were in the 1970s (Proctor, R.N., 'The Politics of Cancer', Dissent, Spring, 1994, p.216). Indeed, what little improvement there has been (in the USA, for example, 51% of cancer patients now live five years or more after diagnosis compared with 49% in the 1970s (Ibid)) may be attributable to a 'statistical sleight of hand'. Thus, "People who used to die four years after diagnosis may now die after five, the 'improvement' due to the discovery of their cancer a year earlier than used to be the case" (Ibid).

So marked is the fear of cancer that even incremental advances in diagnostic techniques and/or treatments receive enormous publicity. A case in point was the press reaction in the 1970s to the possibility of using interferon, a protein manufactured in the body to inhibit infection, to combat cancer. In the mid 1970s, advances in genetic science raised the possibility of using the protein to develop a 'cure for cancer'. The press was ecstatic. In America, the Detroit Free Press talked of a 'magic potion' while The Readers Digest waxed lyrical about the 'wonder therapy'. Newsweek talked of new 'cancer weapons' while Time discussed the "Staggering implications of research" (Nelkin, D., Selling Science, W.H.Freeman, USA, 1987, p.5). As Dorothy Nelkin explains in her analysis of the role of the press in the interferon episode;

The popular press...was consistently enthusiastic, and interferon quickly developed the public aura of a 'magic bullet'...(Ibid, p.4)

No mention was made, however, of the toxic side effects of the 'magic bullet' - side effects that killed four French cancer patients treated with interferon. Such is the terror of cancer, and such was the hope raised by the new treatment, that the potentially lethal qualities of interferon were either played down or ignored. (A contemporary parallel exists in the alleged toxic side-effects of the anti-AIDS treatment, AZT).

While no-one would dispute the need to evaluate the side effects of cancer treatments like radio or chemotherapy against the lethality of the disease itself, it is nevertheless the case that treatment for cancer can be a highly unpleasant - if not fatal - experience for the patient.

It should also be noted that some treatments, besides having unpleasant side-effects, may themselves be carcinogenic. A 1984 study in the New England Journal of Medicine, for example, "Found that chemotherapy actually increased the risk of leukaemia" (Proctor, R.N., Op Cit, p.216). Even preventive procedures may prove carcinogenic. In the case of mammography, for example, "For women under the age of forty...there are probably as many tumours caused by the procedure as are detected as a result of it". As a consequence, "The X-ray levels used in standard mammography have declined in recent

years" (Proctor, R.N., Op Cit, p.216). (Of course, the use of treatments that have unpleasant and/or injurious effects is a matter of balancing the risks of such treatments with a prognosis of how the disease might develop if left untreated).

2.2 Prevalence of the Disease.

Cancer has been called 'the disease of civilisation'. There is strong evidence to suggest that the more technologically advanced a society becomes, the greater becomes the risk of dying from cancer (which presumably is partly a function of the reduced risk of dying from other causes, like cold, malnourishment and treatable disease). For example, according to the World Health Organisation (WHO), while economies in the early stages of industrialisation have 'crude cancer rates' ranging from 94 to 151, North America has a rate of 638 while Europe suffers a rate of over 1,000 (Goldsmith, E., and Hildyard, N., Op Cit, p.112).

Cancer is a major killer in all advanced industrial societies. In Britain today, 20% of deaths are attributable to cancer (Doyal, L., et al, Op Cit, p.1). Despite massive investment in research and treatment (see 2.4, below), even those born in the 1980s run a significant risk of dying from the disease:

For white males born in 1985, the probability of developing cancer is 36 per cent, and of dying from it, 23 per cent (Goldsmith, E., and Hildyard, N., Op Cit, p.112).

World-wide in 1985, the number of recorded cases stood

at 5,900,000, while the number of deaths was 4,300,000 (Ibid).

What is perhaps most disturbing is that the disease is becoming more common. In 1900, less than 5% of deaths were attributed to cancer. Today, this figure stands at 20%. (Of course, part of this 'increase' could be due to the more accurate diagnosis of the cause of death). Between 1951 and 1975 "Crude cancer death rates among men rose by about 1 per cent a year" (Tucker, A., 'Work Can Kill You. Especially During A Recession', The Guardian, October 27, 1983). Despite falling prior to the 1970s, death rates amongst women are now rising at the same rate. If present trends continue, cancer, "Second only to heart disease as a cause of death in most industrial nations...will become the First World's leading cause of death sometime in the twenty-first century. It is already the number one cause of death in Japan" (Proctor, R.N., Op Cit, p.215).

Another epidemiological characteristic of cancer is that, far from being simply a 'disease of old age', all age groups are affected: It is the most common cause of death in the age group 35-54 (although only because the death rate in this demographic range is quite low anyway), and the second most common cause of death in the age groups 5-34 and 55-75 (Ibid, p.216). The ubiquity of the disease generates conditions under which 'cancerphobia' can flourish.

A final point is that cancer rates are also increasing within the animal kingdom. Fish species have been

particularly affected:

[R]ecent research shows that 40% of the flat fish in certain parts of the North Sea now have cancer...

Studies have [also] shown that the incidence of cancer among tomcods more than two years old in the highly polluted Hudson River is 80-90 per cent, whereas among tomcods living in a clean environment it is no higher than 2.5 per cent (Goldsmith, E., and Hildyard, N., Op Cit, p.112).

2.3 The Causes of Cancer.

2.3.1 Introduction.

There is a long-standing debate surrounding the causes of cancer. Put simply, the debate divides between two opposed views. The 'establishment' (Doyal, L., et al, Op Cit, p.2) view is that the majority of cancers are caused by 'unhealthy living'. The 'lifestyle factors' responsible would include smoking, diet, sexual behaviour and other aspects of personal choice. The 'radical' (Ibid) view is that 'environmental factors' account for a significant proportion of cancers. Such factors would include environmental pollution (including, for example, airborne asbestos) and other aspects of late twentieth century life not under the control of the subject. Put crudely, the 'establishment' view blames the victim for her/his cancer, while the 'radical' view includes factors over which the victim has no control.

In one respect, the argument over cancer causation lies at the very heart of the Fulham Power Station debate. If

environmental factors, such as ambient levels of airborne asbestos dust, were considered by the residents to pose no more than a minor threat to health, the public may well have accepted the demolition of the power station without question - even if the demolition caused dust levels to increase. However, if, on the other hand, the public subscribed to the 'environmental factors' argument, then both background levels and fugitive emissions of asbestos dust from the power station would, in theory, have given cause for concern.

2.3.2 The 'Establishment' View.

The establishment view, championed by Richard Doll and Richard Peto in their book The Causes of Cancer (1982), asserts that the vast majority of cancers can be attributed to such lifestyle factors as smoking, diet and sexual habits. In the opinion of Doll and Peto, smoking alone accounts for approximately 30% of cancers, while diet accounts for 35% (Doyal, L., et al, Op Cit, p.3). Adding in percentages for a number of other miscellaneous lifestyle factors, Doll and Peto are left with an unaccounted-for residue of some 5%. They attribute this 'surplus' of cancers to the effects of environmental carcinogens. In short, the thesis put forward by these 'influential cancer epidemiologists' "Assigns industry only a small role in the nation's cancer" (Ibid). This tacit defence of industrial practice has been seized upon by such bodies as the Chemical Industries Association (CIA) in its efforts to resist, on the part of companies like ICI, the more

stringent control of industrial processes, products and emissions.

The establishment view attributes a proportion of the increase in cancer deaths to greater longevity. That is, chance dictates that the longer a person lives, the more likely s/he is to die of cancer. Therefore, according to the theory, a child of ten is less likely to die of cancer than her/his grandparent.

Despite Doll and Peto's conservative estimate of deaths attributable to environmental causes, it should be noted that even a figure of 5% generates some 6,000 avoidable cancer deaths in Britain each year. (Large though this number is, however, it could be argued, in light of the many benefits, such as employment, quality-of-life enhancing products, and taxable wealth and income that flow from industrial activity, that it represents 'an acceptable level of death' . Although morally dubious, it is just possible that such thinking might inform certain economic decisions).

2.3.3 The 'Radical' View.

The radical view, which pre-dates that of Doll and Peto, has been championed by the American epidemiologist Samuel Epstein. This view elevates the role of environmental factors in the aetiology of cancer. Thus while Doll and Peto attribute only 5% of cancers to environmental factors, Epstein proposes that up to 40% (Ibid, p.4) of cancers may be caused by environmental factors. (It should be noted that other experts put this

figure at up to 80% (Goldsmith, E., and Hildyard, N., Op Cit, p.112)).

Like Doll and Peto, Epstein acknowledges the growing menace of cancer. Today, for example, the chances of a man getting cancer by the age of 85 are 27%. In 1950 they were 19%.

However, unlike Doll and Peto, Epstein goes on to put such statistics in a wider industrial and economic context. Such increases have occurred in the context of a dramatic growth in industrial activity throughout the Twentieth Century. During this period, certain novel industries, like petrochemicals, have grown by leaps and bounds. Thus, while the production of synthetic organic compounds stood at just 1 billion tons in 1935, by 1950 it had reached 30 billion tons, and by 1975, 300 billion tons (Doyal, L., et al, Op Cit, p.173). In the United States, many of these chemicals have been released onto the market without being tested for ecological, toxic or carcinogenic effects. Testing for such undesirable outcomes only became compulsory in the United States with the passing of the 1976 Toxic Substances Act. There are today some 9,000 synthetic organic chemicals in circulation (Goldsmith, E., and Hildyard, N., Op Cit, p.112).

As mentioned above, Doll and Peto attribute a significant number of cancers to smoking and diet. Epstein's response to this argument is to ask why, out of some 100,000 lung cancer deaths in the US each year, over 20% occur in non-smokers? He also ponders why "Lung

cancer death rates in non-smokers approximately doubled from 1958 to 1969, an increase maintained since" (Doyal, L., et al, Op Cit, p.175).

On the role of diet in the development of cancer, Epstein points out that Doll and Peto's conclusions are based largely on correlations between fat intake and breast and colonic cancer in the developed world. As Epstein explains, such correlations do not prove a direct causal connection between fat intake and cancer. One could say with equal plausibility that, as correlations also exist between GNP and cancer, or the production of synthetic organic chemicals and cancer, high rates of cancer are due primarily to environmental factors. Alternatively, cancer could have a multifactoral aetiology, with the disease triggered by numerous, apparently unconnected, factors. Such arguments over causation generate uncertainty - if not anxiety within populations. They also generate more research.

Epstein's theories have been tested in several field studies. For example, an investigation by the US Public Health Service attributed 'as much as 20% or more' of cancers in workers to just six carcinogens present in the environment, one of which was asbestos (Ibid, p.180). This and other research has led the American Industrial Health Council to describe asbestos exposure as "A major public health disaster" (Ibid, p.181).

Epstein's theories have also been tested in studies of clusters of cancer deaths. In Chesapeake Bay, for

example, where cancer death rates are several times the US average, "The per capita level of toxic waste generated is 46 times greater than the national average" (Goldsmith, E., and Hildyard, N., Op Cit, p.112). Also, "On the Chicago south side, a highly polluted area containing 22 chemical plants in addition to 31 operating or closed chemical waste dumps [the cancer rate] was found by the Illinois Environmental Protection Agency [IEPA] in 1984 to be 20 per cent higher than in the rest of Chicago" (Ibid). These and other cases have prompted some to query the 'establishment' view that environmental factors account for no more than 5% of excess cancer deaths. The point is made that even if the predominantly working class inhabitants of these regions ate less healthily and smoked more than their middle class neighbours, this would surely not account for all but 5% of the 20% excess noted by IEPA. (There is evidence that the working classes know as much about healthy eating as the middle classes, as the following report suggests: "The subjects...are obviously aware of what 'healthy eating' entails. This is a general finding in research on low-income households and eating patterns, and explodes the myth that poor people don't eat healthily because they are ignorant of nutritional requirements" (Stitt, S., 'The Real Cost Of Living On £10', The Big Issue, March 1-7, 1994).

The patterns revealed in the studies at Chesapeake Bay and Chicago are repeated in other developed countries such as Britain: "In the UK the incidence of cancer of the lung and stomach is particularly high in northern

industrial [locales] such as Liverpool, Southport, Manchester and Jarrow" (Goldsmith, E., and Hildyard, N., Op Cit, p.112).

Although Epstein concedes that increased longevity has made cancer more prevalent, he points out that not only are more old people dying of cancer, but more children too.

While Epstein in no way dismisses such lifestyle factors as smoking as playing an important part in cancer deaths, he insists that the role of environmental factors like air or water-borne pollution has been under-estimated - and for less than honourable reasons. As he puts it:

The role of lifestyle factors has been exaggerated, by those with an economic...investment in this theory, by largely excluding involuntary exposures to carcinogens and minimising the role of occupational carcinogens (Doyal, L., et al, Op Cit, p.182).

(While he pulls no punches in his accusations of bias and statistical gerrymandering, it should be remembered that Epstein himself stands to gain much from outmanoeuvring Doll and Peto: An enhanced personal reputation, public admiration, book contracts, research monies and potentially lucrative lecture tours, for example, could all flow from the victory of his 'environmental factors' over Doll and Peto's 'personal factors' theory).

2.3.4 Conclusion.

The views of Doll and Peto and of Epstein represent the two polarities in the debate over cancer causation. In risk debates, the different views may be enrolled by the protagonists to lend an argument scientific credibility. The Doll and Peto thesis would appeal more to governments, corporations and representative bodies like the CIA. The Epstein thesis would appeal to environmental groups and unions. Each side generates evidence to support its preferred view. As one observer of the social construction of scientific knowledge has put it:

All use science as a form of public relations: all prove the verity of Gibson's Law - I refer of course to the principle that 'For every Ph.D. there's an equal and opposite Ph.D.' (Proctor, R.N., Op Cit, p.220).

The protagonists in a risk debate may go to extraordinary lengths to maintain a politically helpful scientific theory. In the debate over the health effects of radon gas in the US, for example, the Regan administration, which had invested much time and effort in persuading the American public that radon gas in the domestic environment caused cancer, was determined that scientific research should continue to support this view. As a consequence, government scientists, when asked "What if epidemiological studies continue to show no relationship between cancer and radon in homes?" responded that 'the studies will surely show a relationship'. And if current studies could not

demonstrate a link, then 'more studies would be necessary' (Cole, L.A., Element of Risk: The Politics of Radon, AAAS Press, US, 1993, p.203). That is, government scientists would continue their investigations until they produced politically acceptable findings: a link between domestic radon gas and cancer. Here, then, is evidence of the potential contingency of scientific knowledge.

No doubt those environmental health advocates who subscribe to Epstein's 'environmental' theory would be as vigorous as the Regan Administration was over radon gas in producing evidence for such a politically helpful thesis. It must be said, however, that such studies as those of Chesapeake Bay and Chicago south side would seem to suggest (however tentatively) that more than 5% of cancers are due to environmental factors. There are a number of reasons for this view:

Firstly, many thousands of chemical compounds have been released into the environment without being tested for either unique, synergistic or antagonistic carcinogenic properties. This presents at least a potential threat to public health.

Secondly, despite much research, relatively little is known about the aetiology of cancer. As the exact mechanisms of causation have yet to be established, how can anyone say definitively that 30% of cancers are due just to smoking? If the debate over cancer causation may be summed up in a single word, that word is uncertainty:

Theories of what causes cancer have included

virtually every known vice and every known virtue. A very short list would include humoral imbalances, hereditary predispositions, sunshine, obesity, syphilis, female sex hormones, radiation, tomatoes, tarred roads, grief and anxiety, drinking from iron pipes, arsenic, affluence, poverty, sexual abstinence, sexual promiscuity, and water derived from streams in which trout are abundant (Proctor, R.N., Op Cit, p.215).

Thirdly, there is evidence that environmental factors can play an important part in the aetiology of certain cancers in specific occupational groups. Uranium miners are a good example. Thus the incidence of lung cancer amongst non-smoking miners is as great as that amongst miners who smoke (Doyal, L., et al, Op Cit, p.176). Doll and Peto's response would no doubt be that, as this evidence is based on a highly specific case involving a virulent carcinogen, it is inadmissible. Epstein, however, can also produce more general evidence of the role of environmental factors in the aetiology of cancer. For example: "[T]here are...data showing associations between levels of atmospheric carcinogens and lung cancer mortality rates...[which show that] the correlation coefficient between lung cancer and smoking internationally explains only one-third as much of the variation as does the correlation between lung cancer and solid fuel consumption" (Ibid).

To conclude, if one assumes cancer to have a multifactoral aetiology (as Epstein does), then it is possible that more than 5% of cancers are due to environmental factors. At the very least, such factors might act synergistically or antagonistically with lifestyle factors to play a part in more than 5% of

cancer deaths (after all, the reverse can happen: it is believed that lung cancer in uranium miners attributable to dust inhalation is accelerated by smoking). But to put the radical view in perspective, while it is possible that environmental factors account for more than 5% of cancer deaths, it seems unlikely that they could account for 80% of deaths, as some argue (see Goldsmith et al, above).

2.4 Treatment.

2.4.1 'The War on Cancer'.

In the days before the 1973 oil crisis and resulting economic 'stagflation', in the West everything seemed possible. Men had walked on the moon and had returned safely to Earth. A practical passenger transport aircraft had flown at twice the speed of sound, and public protest had forced a fundamental reappraisal of America's (and Britain's) foreign policy in South East Asia. So why not pursue that most glittering of prizes? Why not find a cure for cancer, the 'most dread' of all diseases?

And so it was. In 1971, Richard Nixon, by Act of Congress, declared war on cancer. In response, researchers asked for \$1,000 million a year for ten years, and by 1977 were receiving almost that amount (\$815 million). These were massive sums in the 1970s. At its peak, the programme employed 7,000 scientists (Goldsmith, E., and Hildyard, N., Op Cit, p.112).

Although cancer research continues today in the United States, the contraction of public expenditure programmes brought about by the various oil crises of the 1970s, the humiliating retreat from South East Asia and the gradual loss of industrial competitiveness has proscribed further 'grand adventures' in the field of cancer science. Consequently, contemporary programmes like the US Army's initiative on breast cancer, are on a rather more modest scale than Nixon's all-out 'War on Cancer'. (The Army has been given \$210 million to develop a better understanding of and treatment for breast cancer (Proctor, R.N., Op Cit, p.222)).

2.4.2 Victory, Stalemate or Defeat?

"[D]espite 25 years of research, only moderate progress has been made either in understanding carcinogenesis or in the treatment of cancer. Meanwhile, the incidence of the disease...has continued to increase" (Goldsmith, E., and Hildyard, N., Op Cit, p.112).

While the picture is not entirely gloomy - with certain cancers, such as those of the cervix and stomach, being less deadly today than in the past - it must be noted that "The outlook is not so sanguine for the really big killers" (Proctor, R.N., Op Cit, p.216). In the United States, for example, 95% of lung cancers (one of the most common carcinomas) prove fatal "Regardless of what form of treatment one chooses" (Ibid). In Britain, the Office of Population Censuses and Surveys (OPCS) has noted "The stubborn resistance of lung cancer to all forms of treatment for more than 30 years". Even today,

the five year survival rate remains below 10% ('Cancer Statistics: Registrations', Office of Population Censuses and Surveys, UK, 1994, p.9). Not only are most of the major cancers still as lethal as ever, but the number of new cases appears to be increasing: While in 1981 in the US there were 815,000 new cancer cases annually, by 1988 the number of new cases annually had increased to 985,000. Although the bulk of this increase can be attributed to population growth, lifestyle factors, better diagnostic techniques and more extensive screening programmes, at least some of the increase may reasonably be attributed to environmental factors, such as greater exposure to harmful ultra violet rays through ozone depletion (The Environment Digest, EPL, Britain, 1995/11-12, p.12), the increase in the volume of potentially harmful inorganic chemicals in the environment, and the increase in vehicle emissions. As Proctor explains, cancer is both a product of 'the lifestyles we lead' and 'of the substances to which we are exposed' (Op Cit, p.215). This is certainly the case with regard to vehicle emissions, which produce not only adverse cardiovascular and lung function effects, but cancers. As The Environment Digest has noted, "Up to 10,000 people in Britain die every year from breathing in particulates, microscopic specks of soot and chemicals, which penetrate deep into the lungs and cause breathing problems, lung cancer and heart attacks" (1995/2, p.12). It has been noted both that the gains from cleaner automotive technologies may be cancelled out by the net increase year on year in the number of vehicles on Britain's roads (The Independent, April 25,

1995), and that "There is no safe level for public exposure to particulates". Thus, "Any amount in the atmosphere causes illness and premature deaths" (The Environment Digest, 1995/10, p.14). Such assertions reflect "An accumulation of information pointing to environmental and occupational causes of cancers" (Albury, D., and Schwartz, J., Partial Progress: The Politics of Science and Technology, Pluto Press, UK, 1982, p.104).

The number of people dying from cancer per head of population is also on the increase. For example, in the United States between 1950 and 1980, for those aged between 45 and 54, the number of cancer deaths per 100,000 population increased from 175 to 179, and for those aged 55 to 64, the number of deaths increased from 393 to 443 (Hadden, S.G., A Citizen's Right to Know: Risk Communication and Public Policy, Westview Press, USA, 1989, p.9/10). (Again, while much of this increase may be due to the more accurate diagnosis of the cause of death, it is possible that some of the increase may be due to an increase in the prevalence of cancer amongst the general population).

Worryingly, some cancer treatments are themselves potential cancer promoters. Chemotherapy, for example, besides reducing the patient's quality of (remaining) life, "Can increase the subsequent risk of developing a second cancer by up to 100 times" (Goldsmith, E., and Hildyard, N., Op Cit, p.112). While the treatment of cancer is very much a matter of striking the right

balance between the eradication of the carcinoma and termination of the patient, it is nevertheless a fact that treatments can be unpleasant. Indeed, the 'three legs of the therapeutic triad' - chemotherapy, surgery, radiation - have been described by one commentator as, respectively, "Poison, slash and burn". Treatments can also cause death. Chemotherapy, for example, causes an increased risk of leukaemia (Proctor, R.N., Op Cit, p.216).

Governments are keen to point out that cancer survival rates have improved. In the US the current 'cure' rate is that around 50% of patients survive for 5 years or more. (While not wishing to diminish the scale of this achievement, it would be interesting to know how many people survive for 10, 15 or 20 years. It should also be remembered that such statistics hide striking social inequalities in rates of cure. Thus while a white cancer sufferer has a 50% chance of surviving for five years, a black person has only a 38% chance (Goldsmith, E., and Hildyard, N., Op Cit, p.112)). On a global analysis, the mortality rate for stomach cancer for 28 industrial countries fell between 1960 and 1980 by 45% in men and 58% in women. Over the same period, deaths from cervical cancer "Dropped by 30% mostly due to widespread screening through the use of cervical smear tests" (The New Internationalist, August, 1989, p.17).

In Britain, the fight against cancer has been given expression in the government's 'Health of the Nation' cancer strategy. The strategy has a number of components, including the reorganisation of cancer

treatment services and the setting of target reductions in cancer mortality. The policy is informed by the principle of "Equity of access to the highest standard of treatment for all cancer patients" ('Cancer Statistics: Registrations', OPCS, Op Cit, p.8). There have been successes, some attributable to improved diagnostic techniques and others to treatments. Thus, "The most convincing example of success in screening...is provided by cervical cancer. The incidence of invasive carcinoma of the cervix has fallen by up to 75% over the last 15 years in countries where efficient and widespread screening programmes have been implemented" (Ibid, p.11). Improved treatments have dramatically improved the mortality rates for leukaemia, especially in children: The survival rate for acute lymphocytic leukaemia "In the first five years of life...has risen from less than 5% in the 1960s to around 70% in the late 1980s" (Ibid). The decline in mortality from testicular cancer reflects both improved diagnostic techniques and improved treatments. Such promising statistics can, however, give a false impression: The incidence and mortality rates for several common carcinomas are rising (some, quite alarmingly). Thus, between about 1970 and 1990, "The death rate for malignant neoplasm of the prostate rose by over a third, from 202 [per million population] in 1971-75 to 274 in 1986-90". Over the same period, while the death rate for malignant neoplasm of the trachea, bronchus and lung decreased in males from 1,088 per million to 921, the death rate for females increased

from 201 to 299 ('Mortality Statistics: Serial Tables', OPCS, 1992, p.xi). (It is likely that much of this increase reflects the targeting of women by tobacco firms). Melanoma, despite improved diagnostic techniques and treatments, shows "Only a small deceleration in the rate of increase in mortality". The incidence of the disease is growing exponentially ('Cancer Statistics: Registrations', OPCS, Op Cit, p.11).

Of course, while the exponential growth of cancers like melanoma may be attributable both to environmental factors (ozone depletion), and lifestyle factors (the fashion for sun tans), others, like lung cancer, are attributable mainly to lifestyle factors (cigarette smoking).

Smoking, a major cause of lung cancer, illustrates the importance of taking a global view of the 'War on Cancer'. Thus, while Britain showed a 26% fall in cigarette smoking per person between 1975 and 1984, Spain showed an increase of 50%, China, the most populous nation on earth, showed an increase of 85%, and Egypt an increase of 138%. Such figures reflect the fact that while "Tobacco consumption in the developed world is falling by about 1.1% annually, in the Third World it is rising by about 2.1% annually" (The New Internationalist, Op Cit, p.17).

To conclude, as overall cancer rates are increasing, it would appear that the 'War on Cancer' is not delivering the desired result. Even those health professionals who could be said to have a vested interest in 'talking up'

the project (with a view to securing more monies for curative research) are disappointed in the results:

It has become hard to deny that the war against cancer is being lost. This was the conclusion of an article published in the 1986 New England Journal of Medicine by John Bilar and Elaine Smith. Stanford University president Donald Kennedy expressed a somewhat stronger view when he called America's cancer campaign "a medical Vietnam". James Watson, co-discoverer of the DNA double-helix and one of the nation's most widely respected scientists, simply called it "a bunch of shit" (Proctor, R.N., Op Cit, p.216).

Quite what Watson meant by his outburst is not explained in Proctor's text (which is determinedly set against the predominantly curative strategies pursued by the US medical establishment). And anyway, such an analysis would seem a little harsh. Firstly, because diagnostic techniques and treatments have improved. And secondly, because without Nixon's well intentioned (but only partially successful) initiative, the actual position today could well be much worse. While cancer specialists may indeed be losing the war, individual battles are being won - as with the more effective treatment of leukaemia in children. Also, it is important that the increased prevalence of cancer is seen in the context of the defeat of many other life-threatening diseases. Thus, while it is true that "Absolute cancer rates have increased in recent years", this increase should be seen in the context of the demise of such diseases as TB and the fact that cancer is predominantly a disease of the old. Thus, the older a population becomes, the more likely are its members to die from cancer (The New Internationalist, Op Cit, p.24). Also, as Beck has

noted, rapidly improving diagnostic techniques, by 'discharging people into illness', may well give the impression of a 'cancer epidemic'.

Nevertheless, the fact remains that, certainly at the time of the Fulham Power Station debate, the 'War on Cancer' was not going at all well. As a 1982 review put it;

Despite 'advances' in chemotherapy (drug treatment), radiation treatment and surgical techniques, the survival periods and rates for cancer sufferers have not markedly improved (Aldbury, D., and Schwartz, J., Op Cit, p.104).

Indeed, in the thirty years prior to the decontamination and demolition of the power station, "There [had] been a steadily growing epidemic of various cancers" (Ibid).

Such a determinedly bleak prognosis, if known to the power station activists, may well have influenced their reaction towards those who, either through ignorance, negligence or calculation, risked contaminating their neighbourhood with a potential carcinogen.

2.4.3 The Social Construction of Anti-Cancer Strategies.

There are a number of strategies for fighting cancer, the most elegant being to prevent the disease from developing in the first place. This tactic, advocated by Epstein and others, "Depends largely, if not exclusively, on political action" (Proctor, R.N., Op Cit, p.217). Thus, the preventive approach requires that politicians commit themselves to effective programmes of

health screening, to public education, and to the elimination of environmental carcinogens. This form of preventive medicine is the very antithesis of the approach favoured by the medical establishment.

In the UK some progress has been made on implementing preventive strategies. The more extensive use of smear tests and mammographs, for example, has helped in the diagnosis and more timely treatment of cervical and breast cancer. More generally, members of the public are now encouraged to adopt 'healthier lifestyles'. To this end, information is made available on healthy eating (although to what degree the poor can afford 'healthy foods' in the required quantity is open to question) and health centres run 'well women' and 'well men' clinics where such problems as obesity, smoking and stress are addressed.

However, despite the promise held out by such strategies, a number of factors can be seen to militate against the adoption of a comprehensive programme of preventive medicine. The first consideration is that heroic medicine carries greater kudos than preventive medicine: Few Nobel Prizes are awarded to those who manage cancer prevention programmes. As a consequence, curative medicine has the potential to attract both the most talented researchers and doctors and the largest sums of money.

The second consideration is, quite simply, that curative medicine "Leads to the development of marketable products - such as anti-cancer drugs. Prevention does

not" (Goldsmith, E., and Hildyard, N., Op Cit, p.113). These 'marketable products' perform a host of useful social and economic functions: They generate employment in the chemicals and pharmaceuticals sectors; they generate profits and dividends; they sustain and promote both the companies' and country's reputation for scientific and technological innovation; and last, but not least, profitable chemicals and drugs companies generate taxable wealth for the Exchequer. This is an important political consideration, for the greater the wealth generated by industry, the less the burden of general taxation on the public (at least, potentially). And the smaller the burden of general taxation, the greater the potential for a 'feel good' factor amongst the electorate.

But surely this is far too cynical an analysis? Not so, if Albury and Schwartz are to be believed:

Much has been written on the political economy of health, and a standard critique of capitalist medicine has been the emphasis it places on curative approaches almost to the exclusion of preventative measures...The case of cancer illustrates the argument well...

Billions of pounds and dollars have been, and continue to be, spent on the search for a cure...Alongside this massive allocation of resources has been an accumulation of information pointing to environmental and occupational causes of cancers. Far from prompting a diversion of funding into prevention...the search for a cure...continues and intensifies...

But an assault on the causes of cancer, a prevention programme, would place under the microscope not the cells of the cancer victim, but a production process which manufactures both conditions at work and products which harm the health of the majority of people. And all this without producing an extended market for industry. A curative approach holds out the promise of super profits for the firm(s)

which market the breakthroughs in cancer treatments (Op Cit, p.104).

Knowing where the money is, scientists invest their intellectual capital in the curative paradigm, hoping to attract lucrative research grants:

Researchers write grant applications stressing what is very often the most tentative link to an understanding of carcinogenesis in order to secure funding. The cumulative result is that many areas of the biological sciences are under-developed, whilst areas centrally and marginally concerned with the biochemistry of cancerous cells have been swamped with money. It is not the radical critics of medicine who are exploiting the genuine suffering of cancer victims...but the drug companies, the medical equipment manufacturers and the scientific managers of the research funds (Op Cit, p.104).

(What Albury and Schwartz forget, however, is that even if preventive medicine were given pre-eminence in cancer strategies, the same amount might still be spent on cures for those, perhaps with a genetic propensity to carcinogenesis, who 'slipped through the preventive net'. It would be a brave government indeed that abandoned the search for the 'Holy Grail' - a cure for cancer).

There is evidence to support the view that preventive medicine consistently loses out to its more glamorous rival. For example, "The Canadian Cancer Society...one of the few in the world to devote funds to public advocacy work...spends only 17.3% of its funds on public education and prevention and more than 50% on research to find a cancer cure" (The New Internationalist, Op Cit, p.16).

Sometimes, due to the labyrinthine structure of international capital, the same horizontally integrated multinationals produce both cancer cures and carcinogens. It could be said, therefore, that industry and government stand to gain much more from a curative than from a preventive strategy - with the release of carcinogenic by-products into the environment by industry generating a demand for cancer cures, and the government sharing in the not inconsiderable profits resulting from their manufacture. (Such a 'conspiracy theory' is, however, tested by the fact that the high cost of curative medicine may well exceed (by some considerable margin) the contribution to national wealth made by the petrochemicals and pharmaceuticals sectors).

A final consideration is that a full-blown preventive strategy, requiring the pre-market testing of all chemical compounds (where testing is actually possible), may well place an impossible financial burden on industry, stifle innovation and cause lay-offs and/or redundancies. Also, the withdrawal of compounds that are shown to be carcinogenic would both reduce gross income, and threaten a torrent of compensation claims from affected publics. (There are currently 2,000 claims for bodily injury due to asbestos contamination received each month on the London insurance market (Springett, P., 'Toxins Could Be Lloyd's Death Knell', The Guardian, January 1, 1994).

Given the above considerations, it can be seen that anti-cancer strategies are - potentially - as much a

product of economic, as of medical efficiency.

Such considerations have the potential to stymie cancer prevention programmes. Cigarette smoking provides a good example of the conflict that can arise between health and economic objectives. Cigarettes are a major source of illness in the general population (one doctor has estimated, perhaps somewhat wildly, that around 70% of all illness is attributable to cigarette smoking. Globally, "Tobacco kills approximately 2.5 million people a year, making it the largest single preventable cause of death" (The New Internationalist, Op Cit, p.17)). But cigarettes are also a source of employment, balance of payments success, user enjoyment and revenue for the Exchequer. Such considerations certainly have the potential to moderate the development of preventive strategies on smoking. It may well be the case, for example, that the Government's May, 1994 refusal to introduce a blanket ban on tobacco advertising had something to do with the interplay of the aforementioned social and economic considerations with health factors (although health considerations were recognised in a ban on tobacco advertising within 200 metres of schools, and the printing of health warnings on cigarette-branded beer mats and ashtrays (Mihill, C., 'Poster Exclusion Zone For Schools', The Guardian, May 14, 1994). But again, it is important to take a global view of the problem. Thus, as soon as a developed country such as Britain decides to campaign against smoking, the tobacco firms turn their attention to countries with less developed preventive strategies, sometimes using

'ferocious' promotional campaigns (The New Internationalist, Op Cit, p.25).

2.5 Conclusion.

Cancer is becoming more prevalent. That is, the number of cases per head of population is increasing year on year (although some of the 'increase' may be attributable to improved diagnostic techniques). At the same time, investments made in cancer research and treatment/preventive programmes are yielding only limited benefits. As a leading cancer researcher has put it:

After decades of effort most cancers are treated no more successfully today than in the past (The New Internationalist, Op Cit, p.25).

Consequently, cancer's potential to cause alarm is undiminished. (The above summation dates from the late 1980s. Presumably, the outlook would have been even more gloomy at the time of the power station debate).

The argument over causation polarises around the theories of Epstein (environmental factors) and Doll and Peto (lifestyle factors). Although the argument may seem somewhat arcane, it has important implications for risk and hazard debates involving suspected environmental carcinogens like asbestos. Thus, if the public were to subscribe to the lifestyle theory of causation, then the role of environmental carcinogens would be seen to be relatively unimportant. But if, on the other hand, the environmental theory held sway, such suspected

environmental carcinogens as asbestos would have at least the potential to cause alarm amongst the general public (as cancer is still very much a 'dread' disease). The degree to which this potential was realised would depend upon two factors: Firstly, whether or not asbestos was considered carcinogenic by the public; And secondly, whether asbestos was considered to be a more immediate threat to health than such 'social' hazards as poverty, poor housing, unemployment, underemployment, low wages, reduced benefits, drug abuse, crime, or institutionalised discrimination.

3 Asbestos.

3.1 Nature, History and Uses.

Asbestos is a chemically neutral mineral rock. Processed asbestos rock produces either blue, brown or white asbestos fibres (although after prolonged use the material loses its colour). These minute fibres, although soft to the touch, are very strong, and may be woven and pressed into light, durable shapes, like wall panels, water pipes or corrugated roofing sheets. Finished products have excellent heat resisting and sound deadening properties.

While white asbestos is susceptible to acid attack, blue and brown asbestos are not. This makes blue and brown asbestos suitable for use in coal-burning power stations, where the combustion process generates sulphur dioxide which, when mixed with water vapour, produces sulphuric acid.

While the mineral has many admirable properties, it does have one major drawback, namely that asbestos fibres are extremely small - much smaller in diameter than a human hair, for example - and are consequently difficult to suppress in both the mining and asbestos manufacturing environments.

In Britain, the asbestos story began in the late nineteenth century when Samuel Turner of Rochdale first used the material to lag steam boilers. From his efforts grew the biggest company in the UK asbestos industry, Turner and Newall (now known simply as 'T&N'). Asbestos production accelerated dramatically during and after the Second World War. Between 1960 and 1975, for example, production more than doubled from 2,210 million kilos in 1960 to 4,560 million kilos in 1975. In 1979 it was estimated that there were still 20-30 years supply left in the earth (Asbestos Killer Dust, Op Cit, p.17).

Asbestos is everywhere. Every foot of the London Underground has been coated with sprayed limpet asbestos (SLA). Schools and hospitals contain large amounts of asbestos in wall panels and lagging (60% of the asbestos imported into the UK has been used in the construction industry ('NALGO [Unison] Magsheet', No.20, February 1984)). Asbestos has been extensively used as a roofing material: By 1994, over one billion tons of corrugated asbestos sheeting had been used by the UK roofing industry ('Asbestos Cement Roof Cleaning and Surface Preparation', Asbestos Removal Contractors Association (ARCA) News, January, 1994, p.8). Electric and gas

cookers contain asbestos. Plastics, coating agents, textiles, talcum powder and even paper can contain asbestos. In fact, asbestos is now present in more than 3,000 products. It is fair to say, therefore, that asbestos is a ubiquitous, if not a familiar, product.

3.2 Asbestos: 'Wonder Mineral'.

While it is tempting to condemn the widespread use of asbestos on health grounds, it should be remembered that - certainly at the turn of the century - the material provided a convenient and cost-effective solution to the problem of lagging steam boilers. The 'asbestos mattress', pioneered by Samuel Turner (of Rochdale), was a boon to the engineer. Later in the century, asbestos proved immensely valuable to the naval architect as a means of fireproofing warships. Indeed, the failure to exploit the material in the design of American warships compounded the disaster at Pearl Harbour, where many warships were needlessly lost to fire. After the Second World War use of the material spread to building design, where the wet spraying of asbestos provided architects with an excellent fire retardant and acoustic baffle. (Sprayed limpet asbestos (SLA) realised huge profits for Turner and Newall, the company that pioneered the technique). The material was also put to more homely uses. Asbestos mittens provided safety in the kitchen, while theatre audiences benefited from asbestos safety curtains. Garages made of asbestos panels were durable, relatively cheap and easy to erect. All in all, therefore, the sobriquet 'wonder mineral' was aptly

applied to asbestos...that is until questions about its health effects were raised in detailed epidemiologic studies.

3.3 Asbestos: 'Health Disaster'.

3.3.1 Introduction.

The intention in this section is to describe the events and discoveries that led some people to question the safety of asbestos. (Arguments between those for and against the mineral (i.e. the 'risk discourses') are reviewed in later sections).

3.3.2 The Opposition's Case.

The adverse health effects of asbestos were first noted in Britain in the last century: In his 1898 Annual Report, the Chief Inspector of Factories and Workshops commented, for the first time, on 'The evil effects of asbestos dust':

The evil effects of asbestos dust have also attracted my attention, a microscopic examination of this mineral dust which was made by H.M. Medical Inspector clearly revealed the sharp, glass-like, jagged nature of the particles, and where they are allowed to rise and remain suspended in the air of a room, in any quantity, the effects have been found to be injurious, as might have been expected [My emphasis] ('NALGO [Unison] Magsheet', Op Cit).

The suspected adverse health effects of the mineral were again noted in a 1906 Home Office report. However, only the general respiratory implications of working in a

dust-laden environment were considered: cancer was not an issue. The Home Office report, like the earlier Chief Inspector's report, was not acted upon.

Then in 1928, government research revealed 80% of asbestos workers to be suffering significant respiratory impairment (Doyal, L., et al, Op Cit, p.53). The condition, which became known as 'asbestosis', resulted from the scarring of delicate lung tissue by inhaled asbestos fibres. Asbestosis is a progressive disease. In severe cases, the degree of scarification is such that asphyxiation results. Once inside the lung the fibres cannot be removed. There are no remedial treatments. The 1928 findings led to the drafting of regulations in 1932 which covered dust levels in a limited range of asbestos-manufacturing concerns. The regulations were never strictly enforced: in 40 years there were only two prosecutions (Doyal, L., et al, Op Cit, p.54). There is a view that the general lack of action following the introduction of the regulations reflected the role of the asbestos industry in their formulation and application:

Industry representatives played a crucial role in determining the scope and limits of future regulations for the British asbestos industry. Trade unions were brought into the negotiations at a much later date and were, more or less, met by a fait accompli. Wikeley concludes that the main reason the...Asbestos Regulations proved inadequate was that "the emphasis throughout the negotiations was on meeting a proven hazard by minimal interference with existing industrial processes, rather than on dealing with the potentially much wider dangers of asbestos exposure" ('The Asbestos Regulations 1931', ARCA News, April, 1993, p.9).

It is unsurprising that the regulations were so lax, given the prevailing 'laissez faire' philosophies of pre-war governments, and the growing economic value of the asbestos industry. As The Guardian has put it:

The fireproof mineral was so commercially valuable...that effective action was not taken until after the second world war (Dyer, C., and Wainwright, M., 'Dying Asbestos Victim Wins £65,000 From Firm That Ignored Health Risks', Op Cit, October 28, 1995).

Until the mid-1930s asbestos was not thought to play any part in cancer causation. Instead, health experts 'constructed' asbestos only as a general threat to efficient respiration - much like coal dust. Then in 1935, the possibility of a link between the mineral and lung cancer was raised - although the observations of Lynch and Smith were complicated by the fact that "Almost all the victims in their study also smoked" (Foster, K.R., Bernstein, D.E., and Huber, P.W., (Eds) Phantom Risk: Scientific Inference and the Law, Massachusetts Institute of Technology Press, US, 1993, p.187). By 1955, however, Richard Doll had gathered the necessary objective epidemiological evidence to confirm the hypothesis. (Doll's was, in fact, "The first good epidemiologic study" of the link between cancer of the lung and asbestos dust (Ibid)).

The possibility of a link between asbestos and mesothelioma, an always-fatal cancer of the lining of the chest and/or abdominal cavity, was not raised until the mid-1950s, when Wagner's studies of South African gold miners suggested a link between the cancer and

asbestos dust inhalation (Foster, K.R., et al, Op Cit, p.187).

Claims for asbestos-related disease (and for contaminated real estate) began to appear at Lloyds of London in the early 1980s. By 1985, 500 claims per month were being processed. By 1988, the number had risen to 2,000 claims per month (Springett, P., Op Cit).

In 1995 an important precedent was set when a judge awarded significant sums of money to a litigant who claimed that her health had been damaged through non-workplace exposure to asbestos dust. The claimant, who had lived in the vicinity of the J.W.Roberts asbestos factory in Leeds (eventually owned by T&N) and who was dying from mesothelioma, was awarded £65,000 compensation against T&N. T&N were ordered to pay a second claimant £50,000 compensation for the death of her husband (Dyer, C., Op Cit). The couple had lived in the vicinity of the J.W.Roberts factory prior to its closure in 1958. Although T&N said it would appeal against the ruling, the awards were a body blow to the industry:

Nineteen similar cases have already been filed and the ruling against T&N is expected to lead to a torrent of others - from those who lived in the Armley district of Leeds, where the factory was located, and relations of those who died from mesothelioma... (Carlton, E., 'T&N To Pay Over Asbestos Cases', The Evening Standard, October 27, 1995).

Business analysts were in no doubt that the 1995 judgement had serious implications for the asbestos

industry:

Sandy Morris, engineering analyst at Nat West Markets, [said]: "The decision sets a worrying precedent. The decision appears to significantly widen the scope for litigation just when T&N's asbestos costs were about to come under control" (Carlton, E., Op Cit).

The cost to the financial markets of asbestos-related disease is already significant: At the end of 1993 some 225,000 claims had been received by Lloyds from all over the world. Of this number about 100,000 had been settled at a cost to market investors and asbestos companies of £2 billion. Some sixteen asbestos companies have been bankrupted (Springett, P., Op Cit). At the end of 1995, T&N was facing a damages claim of £117 million from New York's Chase Manhattan Bank for asbestos contamination in its headquarters building. T&N has set aside £150 million to meet claims in US and British courts (Dyer, C., Op Cit).

The United States, where 12,000 die each year from suspected asbestos-related cancers, presents a similarly bleak picture for the asbestos industry. In the 1980s, for example, one of the biggest-ever asbestos companies, Johns-Manville, filed for bankruptcy under the weight of 100,000 law suits (Goldsmith, E., and Hildyard, N., Op Cit, p.111).

The demise of the Johns-Manville Corporation is an allegory on the sickly state of the asbestos industry. In the early 1960s, the company was the largest producer of asbestos fibre in the world. It had 33 factories and mines in North America, and was on the 'Fortune 500'

list of 'blue chip' companies. Indeed, it was known to some as "The bluest of the blue" (Sells, B., 'What Asbestos Taught Me About Managing Risk', Harvard Business Review, March-April, 1994, p.77). By 1982, however, the company, faced with a snowstorm of compensation claims, had no choice but to file for bankruptcy. By the time Johns-Manville had been reorganised and refinanced in 1988, its shareholders (many of whom were either current or ex-employees) had lost up to 98% of their investment in the company (Ibid).

The 1982 collapse was hastened by a landmark legal judgement in the New Jersey Supreme Court (Manville was registered in New Jersey). The ruling, that "Not even 'unknowability' - the absence of any scientific evidence that a product may be harmful - is an adequate defence" (Ibid), opened the floodgates for litigation against the company. More significantly for future generations of workers and users, the judgement changed the industry's whole attitude to product safety:

To protect employees, customers, stockholders, society, and the business itself from product an production hazards, [asbestos industry] managers must [now] go well beyond appearances, union demands, and the letter of the law. They must anticipate and lead the drive to head off environmental hazards and risks. They must study, analyse, assess, communicate and prevent the damage their methods and products might cause (Ibid).

Unfortunately, this change of heart amongst asbestos industry executives has done little to staunch the flow of claims. Thus, by the mid-1990s, "[American] schools,

hospitals and state and federal governments [had]...\$15 billion to \$16 billion in claims pending against asbestos manufacturers" ('Court Finds Limits on Insurance Held by Asbestos Firms', ARCA News, July, 1994, p.15). Such massive claims indicate the extent to which asbestos is thought to have affected public health. As one of those convinced of the link between asbestos and ill health has opined, "There are far more cancer deaths being caused by asbestos now than by all other known occupational carcinogens put together" (Peto, J., interviewed in 'An Acceptable Level of Death', 'Taking Liberties', BBC TV, 1994).

4 Mesothelioma.

4.1 Introduction.

If cancer is a 'dread disease', then mesothelioma must be a contender for the title 'most dread' cancer. The following first and second-hand accounts of the pain and suffering characteristic of mesothelioma may shock. That, however, is not the intention. Rather, the accounts are intended to show what a fully risk conscious public might learn, or be told, about mesothelioma. That is, the accounts are a means to understanding the nature of mesothelioma. (What a public familiar with the disease might choose to do about asbestos contamination is not a question addressed in this Chapter).

4.1.1 Michael Watson's Death.

"He always had this feeling that he would never live to an old age because of his job, and he didn't live. He thought he would die before he was 45 and he was right, he did...

He knew he didn't have long left because he just wanted to sit up and he was trying to call my name so I could help him up, and I was trying to lift him...

When I was lifting him up there was fluid - I think it must have been his stomach - his insides were just breaking up. It was just coming out of his mouth and his nose all of the time and obviously he was panicking. It was choking him. It was right up into his throat, and there wasn't a thing I could do about it, and he knew. He just wanted to cling on as long as he could. And he did, for that last year..." ('An Acceptable Level of Death').

This statement, made by the widow of an asbestos lagger to a BBC TV reporter, bears testimony to the pain and indignity suffered by those who die from mesothelioma. Mesothelioma is always fatal. Even in 1996, there is no cure for the disease (Dyer, C., Op Cit). Moira Watson's husband, Michael, started work as a lagger with Swann Hunters on the Tyne in 1964. He was diagnosed with mesothelioma in 1991 and died a short time later aged 42 - as he predicted he would.

4.1.2 David Standen's Death.

"He was only skin and bone, and he was completely black...

And the pain, that was just, even with all he'd got for the pain, was just killing..."

This statement, made on the same BBC programme by Else

Standen, concerns the death of her husband David from mesothelioma. David Standen worked as an asbestos lagger for Newalls. His two brothers also died prematurely. Like David Standen, they too were asbestos ladders at Newalls.

As such testimony demonstrates, mesothelioma deaths are painful and undignified. Of course, mesothelioma has no monopoly on physical pain and indignity. Other terminal illnesses may be equally distressing. But mesothelioma may be qualitatively different because of its status as a carcinoma. Consequently, because of the 'dread' nature of the disease, mesothelioma has the potential to cause alarm amongst an 'at risk' population.

4.2 Prevalence of the Disease.

To those convinced of a link between asbestos dust and mesothelioma, "Asbestos cancer is a bigger killer than the AIDS virus" (Harris, F., 'Lawyer's Call To Victims Of Asbestos', South Wales Evening Post, February 24, 1994). A more studied assessment, however, is that the number of deaths attributable to mesothelioma is set to treble within thirty years. Professor Julian Peto, for example, has estimated that by the year 2025, the number of mesothelioma deaths in the UK will have risen from the present 1,000 a year, to 2,500 to 3,000 a year (Peto, J., interviewed in 'An Acceptable Level of Death', Op Cit). Worryingly, the under-reporting of mesothelioma deaths implies that such figures may underestimate the size of the problem. For example, "A detailed study at one asbestos factory noted 19 cases of

mesothelioma, yet only four had been 'officially' reported" (Asbestos Killer Dust, Op Cit, p.31). (Of course, as the aetiology of mesothelioma is not 100% certain, these deaths could legitimately have been attributed to a cause other than asbestos dust exposure).

While steps have been taken to protect workers involved in asbestos removal (with the introduction of the Asbestos (Licensing) Regulations in 1983), "A license is not required to cover work with asbestos insulating board". Consequently, building workers may still be subject to a 'substantial exposure on a daily basis' (ARCA News, April 1995, p.1). Even maintenance workers are at risk, either because they may be required to work directly on asbestos building components, or because vibration from hammering or drilling may disturb asbestos dust. Such concerns have prompted the HSE to mount a national asbestos safety campaign (ARCA News, April 1995, p.1).

4.3 Characteristics of the Disease.

Mesothelioma is a cancer of the lining of the chest and abdominal cavities - the mesothelium. The membrane lubricates the walls of the chest and abdomen, allowing the lungs and intestines to move without friction. If the mesothelium in the chest cavity becomes cancerous, lubrication is inhibited and breathing becomes painful. Tumours may develop in other organs. In severe cases tumours burst through the chest wall and become visible

on the outside of the patient's body. The lungs thicken, making breathing increasingly difficult. The patient may asphyxiate. If the mesothelium in the abdominal cavity becomes cancerous, pain results. Secondary cancers may cause the intestines to disintegrate.

The latency period for mesothelioma can be up to 40 years, although 20 is more usual (Asbestos Killer Dust, Op Cit, p.28). It always kills, often very quickly (Dyer, C., Op Cit). As one 1978 study revealed, "The average time of death from first diagnosis [of mesothelioma] was six months" (Asbestos Killer Dust, Op Cit, p.28). The same study also reported that "There is no convincing evidence that any form of treatment prolongs life" (Asbestos Killer Dust, Op Cit, p.28).

4.4 The Debate Over Causation.

4.4.1 Introduction.

As the following views illustrate, the debate over the health effects of asbestos is highly charged:

"This booklet is dedicated to the many working class people who have been murdered by the asbestos industry" (Asbestos Killer Dust, Op Cit, p.6).

"Health concerns about low-level exposure to asbestos are...very speculative. Some monitoring of environmental asbestos might be appropriate, but drastic changes or a complete ban can be deferred without risk of disaster" (Foster, K.R., et al, Op Cit, p.205).

The dedication is taken from the book Asbestos Killer Dust, published in 1979 by the British Society for

Social Responsibility in Science (BSSRS). The book talks of "A real epidemic of asbestos-related diseases", which, according to the BSSRS, "Could have been prevented" (Op Cit, p.7). The second quotation, taken from the appropriately named revisionist book Phantom Risk, represents the opposite polarity of the asbestos debate.

Each camp can muster detailed scientific and epidemiologic evidence to support its preferred view of asbestos hazard. The views of each camp are outlined below.

Before embarking on a summary of the arguments, however, it is helpful to consider Beck's comments on on the socially situated and highly contingent nature of risk/hazard assessment:

Hazards...are defined and evaluated socially - in the mass media, in the experts' debate, in the jungle of interpretations and jurisdictions, in courts or with strategic-intellectual dodges, in a milieu and in contexts...We are dealing with 'scientific battles' waged over the heads of the workers, and fought out instead by intellectual strategies in intellectual milieux (Beck, U., 'From Industrial Society to the Risk Society: Questions of Survival, Social Structure and Ecological Enlightenment', in Featherstone, M., Cultural Theory and Cultural Change, Sage, USA, 1992, p.112).

The arguments over asbestos hazard confirm Beck's view that hazards are evaluated 'in a milieu and in contexts'. Each camp successfully (in its own terms) defines the hazardousness of the mineral in a manner contingent with its own scientific and/or parochial economic interests.

4.4.2 The Optimists.

Those doctors and researchers who argue against the depiction of asbestos as a 'health disaster' are careful to discriminate between the various types of the mineral; crocidolite (blue), amosite (brown) and chrysotile (white) asbestos. Large amounts of chrysotile asbestos have been used in industrial and consumer goods, like water pipes and ironing mats. However, despite its generic associations and ubiquity, chrysotile is considered by some to pose a negligible threat to public health. This is because chrysotile fibres are thought to be too small to damage the human lung. Put simply, the lungs use special white cells called macrophage cells to protect themselves from potentially harmful particles. Any foreign bodies, such as soot particles or viruses, that reach the lungs are digested by the macrophage cells using a complex cocktail of secretions - provided, that is, they are less than about 8 microns in length. Particles over 8 microns, however, being too long to be completely ingested by the macrophage cell, pierce the cell wall, allowing the powerful digestive chemicals to escape. It is believed that these chemicals may, in time, produce cancers, including mesothelioma. This mechanism would seem to imply that white asbestos fibres, which are curly, are more easily ingested by macrophage cells than blue and brown asbestos fibres, which are straight and sharp. Another consideration is that the secretions of the macrophage cell only work on alkaline substances,

like chrysotile asbestos. This means that substances with an acid base, like amosite and crocidolite, are largely unaffected by the secretions of the macrophage cell. While this acid-resisting property may render blue and brown asbestos especially useful in the sulphurous atmosphere of a coal-burning power station, it bodes ill for the health of any individual who ingests either material. However, despite the increased health risk posed by blue and brown asbestos, one doctor (a former medical advisor to Cape Asbestos) is convinced that "The minimum exposure [to amosite and crocidolite] required before a person is put at risk...is still considerable" [My emphasis] (Browne, K., 'Health Check: Fibres in the Lungs', ARCA News, April, 1993, p.6).

The same doctor is even more sanguine about the prospects for white asbestos, commenting that "Most chrysotile fibres do not persist in the lungs for more than a few weeks" (Browne, K., Op Cit, p.6). This analysis is justified by reference to chrysotile's alkaline composition, short fibre length and geometry. Some people are so convinced of the essentially benign nature of white asbestos that they have been moved to comment that there is no real evidence of a link between this variety of the mineral and mesothelioma. As the former advisor to Cape Asbestos, now a member of the Colt Fiber Research Foundation (based at the Institute of Occupational Medicine in Edinburgh) has put it, "Mesothelioma is virtually unknown in manufacturing and construction industries which only use asbestos in the form of chrysotile" (Browne, K., Op Cit, p.6). Others

have commented that "The risks of chrysotile asbestos are almost certainly lower than for other forms", and that "Mesothelioma has never been definitely linked to chrysotile asbestos" (Foster, K.R., et al, Op Cit, p.203).

There is talk in the United States today about a 'Third Wave' (Foster, K.R., et al, Op Cit, p.187) of asbestos disease. While the first and second waves affected, respectively, asbestos workers and asbestos ladders, it is said that a third wave of disease is set to affect ordinary members of the public - people like office workers, school children, teachers or maintenance staff who may work in environments polluted by asbestos fibres. The optimists, however, despite intense speculation about the extent and seriousness of the problem, are convinced that asbestos has no case to answer:

Although this is still a fertile source of litigation in the US, there has only been one published case in the medical literature suggesting that a mesothelioma was linked to mere occupancy of an asbestos-containing building, and it has been wholly discredited. As far as I am aware, there have been no court actions in the UK on behalf of occupants, and on the basis of recent evidence it can be said that the prospects of success would be nil (Browne, K., Op Cit, p.6).

The optimists are able to marshal considerable hard evidence to support the view that "Levels of airborne fibre concentration, even in rooms with damaged and crumbling asbestos, are little different from those in buildings containing none" (Browne, K., Op Cit, p.6).

Such evidence has led to a serious challenge to the 'third wave' theory in the United States, as evinced by the following comment taken from the book Phantom Risk, a recently published critique of contemporary social constructions of technological hazard:

The possibility that occupants of buildings might have adverse effects from asbestos therein has been called by some 'the third wave of asbestos disease'...However...no firm evidence exists for any adverse effect with the possible exception of custodians and maintenance workers...Moreover, the measurements of asbestos concentrations, particularly the more recent ones, make this very unlikely...It is the concern about this 'third wave' that makes the asbestos risk a 'phantom risk' (Foster, K.R., et al, Op Cit, p.187).

Generally, therefore, the optimists have been able, through scientific and/or epidemiologic studies, to mount a strong defence of chrysotile. Several research projects have testified to the relatively benign characteristics of white asbestos. As Foster, Bernstein and Huber explain:

The number of mesotheliomas in the chrysotile mine studied by McDonald is much less than the number among insulation workers exposed to crocidolite. In a study of asbestos workers in Rochdale, Peto et al (1985) found few mesotheliomas, consistent with a small amount of crocidolite present. A critical analysis of the epidemiologic data by Langer and Nolan (1988) confirms the difference between chrysotile and other types of asbestos (Phantom Risk, Op Cit, p.197).

Encouraged by such results, Cape's former medical advisor, Doctor Kevin Browne (also a former chairman of the Research Committee of the Asbestosis Research Council) has called for the 'rehabilitation' of

chrysotile, whose reputation he believes to have been unfairly tainted through its association with crocidolite and amosite:

This decade has seen great advances in our understanding of how disease may result from inhaling fibres such as asbestos. While there is a good reason for a total ban on the use of blue or brown asbestos in the construction industry, chrysotile could still play a valuable part without risk to health. Its use continues on a large scale in the East, where it has an essential role in the supply of drinking water in underdeveloped countries. But it is unlikely to increase in the West in the face of popular prejudice [My emphasis] (Browne, K., Op Cit, p.6).

A recurring theme in the arguments of the rehabilitators is that prosperous Western countries have taken precipitate action against a potentially highly useful material. In contrast, poorer countries have had to make a realistic assessment of the costs and benefits of abandoning chrysotile. Such assessments have evaluated not just the health, but also the economic aspects of the asbestos debate. As a consequence, "The use of chrysotile for asbestos cement products continues at a high level in Russia and Asia" (Browne, K., Op Cit, p.6). Furthermore, even in Britain, where the supply of asbestos products has been curtailed, certain occupational groups like farmers continue to use asbestos on grounds of cost and efficiency:

Chrysotile...continues to be used in this country, although on a greatly reduced scale. Asbestos-cement products - corrugated sheet, rainwater goods and pipes - are still in demand, particularly for agricultural purposes, farmers valuing the cheapness and reliability of corrugated sheet and having more to worry about than asbestosis in their

livestock (sic) (Browne, K., Op Cit, p.7).

The continued use of asbestos products by farmers suggests that the risks associated with asbestos may be evaluated in a wider social and economic context: British farmers, although aware of the health risks associated with the product, continue to use it on grounds of economic efficiency. Obviously, to the farmer, the financial risk of abandoning what is seen as a useful and cost-effective material outweighs whatever health risks might be shown to emanate from it.

The irony of 'asbestos abatement' campaigns, according to the mineral's champions, is that remedial action can multiply rather than lessen the risks and hazards resulting from its use. It has been shown, for example, that removing asbestos can release more asbestos dust into the environment than simply maintaining the material in situ:

It has been shown that where asbestos is removed from buildings, airborne fibres are present for months in higher concentration than before. In one remarkable investigation carried out by the H&SE in a school where asbestos removal took place in accordance with best safety practice, it was found that the children would inhale as much asbestos in the year after its bulk removal as they would have done in the whole of their school careers if it had been left in place. The moral is clear; asbestos in place is harmless and gives negligible amounts of airborne dust unless it is subjected to major disturbance (Browne, K., Op Cit, p.6).

As a consequence of such findings, many agencies, including the World Health Organisation (WHO), America's Environmental Protection Agency (EPA) and Britain's

Health and Safety Executive (HSE), now recommend that where asbestos is not "Subject to frequent and unavoidable disturbance" (Browne, K., Op Cit, p.6), it should be left in place and maintained. (Although such findings as those outlined above would seem to argue against removal, two points need to be borne in mind: Firstly, asbestos in schools may well be subject to 'frequent and unavoidable disturbance' due to the natural exuberance of the young. And secondly, while those attending the school at the time of the removal may well suffer a relatively high dust exposure, subsequent generations will experience little or no exposure due to the eradication of the material from the premises).

Such considerations, however, have had little effect on the rehabilitation of asbestos - even in situations where the material might be subject to serious wear and tear. In the United States, for example, various state legislatures have passed laws requiring that, unless absolutely necessary, asbestos building components should be left in place. The Michigan Asbestos Management Act, for example, stipulates that;

Schools and state-owned or operated buildings now may only remove asbestos if 1) removal is less costly than in-place management, 2) removal is incidental to normal maintenance or repair, 3) the level of asbestos fibres in building air exceeds 0.01 fibres per cubic centimetre of air, 4) break-up of asbestos during renovation or demolition requires removal, or 5) removal is required because the asbestos is significantly damaged ('Michigan Establishes Procedures for Managing Asbestos in Schools and State Government Buildings', ARCA News, October, 1993, p.2).

Therefore, in the States, the presumption is that asbestos should be left in place.

While there has been much debate about the hazards posed by white asbestos, there has (apparently) been little argument over the undesirable effects of blue and brown asbestos. Both crocidolite and amosite have been assumed for some years to pose an urgent threat to health. Both have been heavily implicated in the aetiology of mesothelioma. However, there is some evidence to suggest that blue and brown asbestos are far from the major killers of popular belief, and that other substances may be causing many of the illnesses attributed to them:

In one study, erionite particles...induced 27 mesotheliomas in 28 laboratory rats; all the other asbestos varieties combined induced only 11 mesotheliomas in 668 rats (Wagner 1985) (Foster, K.R., et al, Op Cit, p.197).

The capacity of erionite (a fibrous material used in building materials in countries like Turkey, where it is suspected to have contributed to or caused at least one mesothelioma 'cluster') to induce mesothelioma introduces a further confounding variable into the debate over the aetiology of mesothelioma; namely that any fibre of appropriate geometry may be capable of causing mesothelioma. As Cape's ex-medical advisor has put it, "There is no magic in the word asbestos...any fibre of the right dimensions which is sufficiently durable and is inhaled in sufficient dose, may cause the diseases associated with asbestos" (Browne, K., Op Cit, p.6). There is a suspicion, for example, that glass wool

(fibre glass), if inhaled in sufficient quantity, can cause lung cancer. In 1995 this suspicion prompted the HSE to fund a three year research project "To develop new ways of measuring the effects of non-asbestos fibres on the lungs" (The Academy: Journal of the Thermal Insulation Contractors' Association (TICA), October 1995, p.4). The Doctor in charge of the research, however, was confident that casual users of the mineral were not at serious risk:

It's not a hazard to people in their home. If you just unroll the stuff to insulate your loft, it may irritate your skin and eyes, but that's all (Ibid).

However, in the October, 1994 issue of The American Journal of Industrial Medicine, it was announced that "Fibrous glass materials are carcinogenic" and that "Glass fibres may be...even more potent than asbestos" (Infante, P.F., et al, 'Fibrous Glass and Cancer', quoted in ARCA News, April 1995, p.9). Furthermore, ceramic fibre, used for high temperature insulation, "Has been shown to cause tumours in animals when inhaled" (Browne, K., Op Cit, p.6).

Such concerns are not new, as may be judged from the following 1984 commentary from the National Association of Local Government Officers:

Many of the common substitutes are synthetic mineral fibres such as glass and rock fibre, rock and slag wool and calcium silicate. It has been known for some time that exposure to such fibres can cause dermatitis and eye irritation. But questions are now being raised about respiratory problems and a link with cancer. This has led the GMBTU to lay down

strict rules for any members working with these fibres ('NALGO [Unison] Health and Safety Briefing', No.4, March, 1984, p.11).

Therefore, what is becoming clear, say the optimists, is that we would be ill-advised to adopt asbestos substitutes too quickly; firstly, because such 'safe substitutes' may themselves be carcinogenic; and secondly, because evidence is being produced to contradict the accepted wisdom that asbestos is always lethal. In light of such developments, they say, "Any new fibre must be regarded as hazardous until shown to be safe" (Browne, K., Op Cit, p.6).

The rehabilitation of asbestos is based not only on a re-evaluation of its 'inherent' carcinogenic properties, but also on a critique of exposure standards, which, say the mineral's defenders, may have been needlessly conservative. Because little or no data exist for non-workplace exposure to asbestos, those regulatory agencies that have set general environmental standards for asbestos dust exposure have simply extrapolated workplace data to the general population using a linear dose-response model. This model, although the most protective of public health, is also the most conservative, and may well over-estimate the risk to the public (Foster, K.R., et al, Op Cit, p.199).

Thus, say the optimists, whenever the 'issue' of asbestos is discussed, the temptation is always to err on the side of caution, and set the most conservative standard possible. After all, they say, who wants to be seen to be taking a gamble with the health of the public

- and more specifically, with the health of vulnerable (and newsworthy) groups like hospital patients and schoolchildren? Such concerns are manifest, say the optimists, in Nicholson's 1985, EPA-sponsored, 'ultra-conservative' assessment of asbestos in schools, where he assumed, firstly, that children attend school 365 whole-days a year, and secondly, that they would be exposed only to the most dangerous asbestos types - crocidolite and amosite. In reality, say Nicholson's critics, not only is the majority of asbestos exposure in schools to chrysotile asbestos - the 'least dangerous' form of the mineral - but children attend school for only 150 quarter-days a year (allowing for the actual length of the school day (barely six hours) and holidays). Consequently, say his detractors, the Nicholson/EPA standards over-estimate school exposure by a factor of 10 (Foster, K.R., et al, Op Cit, p.203).

In commercial contexts, risks and hazards may be exaggerated (or played down) to secure some financial advantage. (As Beck reminds us, 'Hazards are defined and evaluated socially'). In the case of asbestos, for example, there is a suspicion that those who manufacture asbestos substitutes go out of their way to discredit the mineral, either by sponsoring critical research or by urging restrictive legislation:

Anxieties over asbestos are exploited by the removal contractors and manufacturers of substitutes. Within the EC, Germany, always quick to exploit safety fears to secure a commercial advantage, has initiated a move to change the present regulations permitting the controlled use of chrysotile to a ban with exemptions. And in the horse-trading involved

behind the EEC facade there is a possibility that the move will succeed (Browne, K., Op Cit, p.6).

In the context of such efforts to discredit asbestos and promote 'safe' substitutes, the rehabilitators warn that "There is no substitute for chrysotile asbestos that, if properly applied, is known to be as safe" (Foster, K.R., et al, Op Cit, p.206). The rehabilitators' case has been strengthened by recent suspicions that airborne fibres other than those produced by asbestos may cause mesothelioma, and by a suggestion that the disease may be caused by a virus, acting either as a carcinogen in its own right, or as a co-carcinogen with asbestos:

A report in the May 21, 1994 issue of The New Scientist presents findings from research undertaken in the USA and Italy which suggests that a link may exist between an unknown virus and mesothelioma. Although the virus remains unidentified, there is speculation that it may be SV40, a monkey virus which contaminated supplies of polio vaccine between 1954 - 1963. Scientists speculate that the 'SV40-like virus may act independently or as a co-carcinogen with asbestos' ('Virus Linked to Mesothelioma', ARCA News, July 1994, p.7).

These and other uncertainties over the aetiology of mesothelioma have served to cast doubt on the view that white asbestos should suffer the same regulatory fate as blue and brown asbestos, which have been banned in the UK, and which are tightly controlled on the continent. It should also be noted that some now believe that blue and brown asbestos are themselves only dangerous if ingested in large quantities. As Foster, Bernstein and Huber explain, it is the "General belief of scientists that low-level exposure to fibres longer than 5 microns

leads to negligible risk of mesothelioma or lung cancer" (Op Cit, p.199). This implies that blue and brown asbestos fibres, which are often longer than 5 microns, are only a threat to health if inhaled in large quantities (that is, if a sufficiently large dose is received during exposure). This would seem to imply that the periodically elevated levels of blue and brown asbestos recorded in the vicinity of Fulham Power Station would not have posed a significant threat to the health of the people of Sands End. As Foster, Bernstein and Huber put it, "Health concerns about low-level exposure to asbestos are...very speculative. Some monitoring of environmental asbestos might be appropriate, but drastic changes or a complete ban can be deferred without risk of disaster" (Foster, K.R., et al, Op Cit, p.205).

4.4.3 The Pessimists.

As far as the mineral's detractors are concerned, the rise in the number of mesotheliomas is directly attributable to the increased use of asbestos since the Second World War. As the cancer epidemiologist, Irving Selikoff, has put it:

[T]he sudden rise in incidence [of mesothelioma] in the last forty years strongly suggests the operation of a new agent and, on the generality of the evidence, asbestos qualifies for the doubtful distinction (Selikoff, I.J., and Lee, D.H.K., Asbestos and Disease, Academic Press, USA, 1978, p.28).

At the time of the Fulham Power Station debate,

approximately eighty-five percent of mesotheliomas were thought to be directly attributable to either first or second-hand exposure to asbestos dust (Asbestos Killer Dust, Op Cit, p.27). In light of such statistics, mesothelioma earned the sobriquet 'the asbestos cancer'.

The link between asbestos dust inhalation and mesothelioma was first suggested in the 1950s and confirmed in studies of asbestos workers between 1960 and 1964 (Doyal, L., et al, Op Cit, p.54). A common theme amongst the mineral's critics - and one reflected in early government advice on the use and management of asbestos - was that there is no safe level of exposure to asbestos dust. The following exhortations reflect the hard line taken by some of those with an interest in the issue of asbestos contamination in the 1970s and early 1980s:

Evaluation of all available human data provides no evidence for a threshold or 'safe' level of asbestos exposure...only a ban can ensure against carcinogenic...effects of asbestos (Asbestos Killer Dust, Op Cit, p.14).

We must therefore assume that a single fibre (of asbestos) could do real damage which may not be seen for about 20 years or more ('NALGO [Unison] Magsheet', Op Cit, p.5).

We are really past the point of medical doubts of the need to reduce asbestos levels as low as possible (Ibid, p.2).

Many trades unions expressed views similar to those given above, the General, Municipal, Boilermakers and Allied Trades Union (GMB or GMBATU), for example, summarising the Asbestos Advisory Committee's 1979

finding that 'We have failed to identify a threshold below which there is no evidence of adverse effects' in the stark assertion; "There is no safe limit" ('Asbestos in the Community', General, Municipal, Boilermakers and Allied Trades Union).

In July 1982 (just after the debate over Fulham Power Station began) the issue of asbestos-induced mesotheliomas hit the national headlines when Yorkshire TV broadcast the programme 'Alice - A Fight For Life'. The two hour documentary, which took twenty four months to research and make, suggested that "Mrs Alice Jefferson, 47, of West Yorkshire...had lung cancer [actually mesothelioma] because she worked for nine months in an asbestos factory when she was 17". The General and Municipal Workers Union (GMWU) suggested that a Parliamentary Select Committee be set up to investigate the "asbestos tragedy". The Union also noted that "More lives are lost each year from asbestos effects than during the Falklands conflict" (Becket, M., 'TV Asbestos Film Wipes Millions Off Shares', The Daily Telegraph, July 22, 1982). The documentary caused walk outs both in asbestos factories and at workplaces where asbestos had been used in buildings. Both Yorkshire TV and the Asbestos Information Centre (an asbestos industry-funded body) "Were inundated with calls from anxious people" (Wainwright, B., 'Furious Walkouts Over Asbestosis', The Morning Star, July 22, 1982). The story ran in the national press for some considerable time, with recrimination piled on recrimination.

Gradually, however, the furore over 'Alice' died away.

So much so, that by the 1990s the UK authorities were able to adopt a more conciliatory stance on asbestos exposure. (This may have reflected the maturation of 'Thatcherism', with its emphasis on self reliance, self regulation and the development of health and safety policy according to the principle of 'reasonable practicability' - the most obvious manifestation of which being the principle that health and safety measures should not entail excessive cost (The Health and Safety System in Great Britain, HMSO, Britain, 1992, p.2)). Thus the HSE guidance note Asbestos and You, published in April, 1994, was determinedly ambivalent:

Asbestos...can sometimes cause fatal diseases...

Asbestos diseases usually occur only as a result of prolonged exposure to asbestos dust at levels well above those now found in British industry. An isolated accidental exposure to asbestos dust of short duration is therefore unlikely to result in the development of an asbestos-related disease ('Asbestos and You', Health and Safety Executive, 1994, p.2/3).

It should be remembered, however, that the consensus in the early 1980s was very much that even the briefest exposure to asbestos dust could cause cancer. Alice Jefferson's case was far from a one off. Numerous mesothelioma deaths were attributed to exposures so brief as to be almost forgotten by the victims and their families. Thus, one man died from mesothelioma after working with asbestos for no longer than a month during his retirement - as far as he knew his only lifetime exposure to the material (Asbestos Killer Dust, Op Cit, p.32). Another man who, at the age of 35, had been

employed for nine weeks stacking asbestos, died of mesothelioma at 48 (Ibid, p.11).

Mesothelioma can also result from second-hand exposure to asbestos dust. The mineral's fibres are extremely small and fine. This makes dust suppression extremely difficult. Consequently, even the most rigorously controlled environments may leak asbestos fibres into the atmosphere. Additionally, asbestos fibres may be transported outside the workplace on clothing, on the skin or in the hair. The mobility of asbestos fibres has caused the mineral to be implicated in mesothelioma deaths far removed from the workplace. Thus one mesothelioma victim is suspected to have contracted the disease by living 1/2 mile from a shipyard for 30 years. Another is suspected to have contracted mesothelioma from the dust brought home on a family member's overalls over a period of three years (Ibid, p.28). The migratability of asbestos has been recognised by representative bodies like the GMB:

Many cases have occurred in friends, relatives or neighbours of asbestos workers, who were exposed to very low dust levels ('Asbestos in the Community', General, Municipal, Boilermakers and Allied Trades Union).

For those who work in proximity to asbestos, its friability is alleged to lead to health problems. Even asbestos stabilised in wall panels, floor tiles or roofing sheets can give cause for concern: One person allegedly developed mesothelioma after working for four years with poultry housed in asbestos cement out-

buildings (Asbestos Killer Dust, Op Cit, p.28). (It has been estimated that, in the case of asbestos roofing sheets, "Problems of erosion caused by natural and industrial pollution [sic]...result in up to 30% loss of sheet thickness" ('Asbestos Cement Roof Cleaning and Surface Preparation', ARCA News, January, 1994, p.8)). Schools can contain large amounts of asbestos; in wall panels, in laboratory fume cupboards, and in kitchens. In light of this, the recent death of a home economics teacher at a London comprehensive school was attributed by the investigating coroner to asbestos dust inhalation. The teacher had worked at the school full-time for eight years. The school, Plumstead Manor in Greenwich, was subsequently decontaminated amidst a welter of protest and press comment (Cooling, V., 'Asbestos School Cancer Scare', Eltham and Greenwich Times, October 7, 1993).

Such cases reinforce the view that levels of asbestos dust in buildings with asbestos components are often higher than ambient levels. Even where asbestos is locked into a product, problems may result from normal wear and tear and/or accident, as illustrated in the following case:

Measurements in the offices of an engineering company in Paris that contained asbestos reinforced vinyl flooring under normal 'wear and tear' conditions showed white asbestos levels in the air up to 50 times what they were in the air outside the building. As a result of these measurements the company intended to cover the asbestos floor with another flooring material ('NALGO [Unison] Health and Safety Briefing', No.4, March, 1984, p.5).

Even where asbestos components are safe from accidental damage and are treated with sealant, no allowance can be made for catastrophe; As in Salford in October, 1982, where "An explosion in a warehouse which had an asbestos roof resulted in asbestos debris covering the surrounding area" (Ibid).

A characteristic of the argument made against asbestos is that little distinction is made between blue, brown and white asbestos in terms of hazard. That is, all three forms of the mineral are deemed to pose roughly the same risk to human health. This view is most strongly held and promoted by the trades unions. As the GMB puts it in one of its health information leaflets, "There are three main types of asbestos...ALL TYPES CAN CAUSE CANCER" ('Asbestos in the Community', Op Cit). The public sector union Unison is equally adamant:

Is white asbestos safe? NO. Blue, brown and white asbestos can each cause asbestosis, lung cancer and mesothelioma, but blue and brown seem to cause more MESOTHELIOMA in workers exposed to the dust than white does. This has led to the dangerous myth that white is 'safe'. The most common asbestos disease amongst asbestos workers is lung cancer. ALL THREE TYPES OF ASBESTOS ARE DANGEROUS ('NALGO [Unison] Health and Safety Briefing', Op Cit, p.3).

In a veiled criticism of the HSE's current position that white asbestos poses less of a health risk than blue or brown asbestos, Unison points out that "Other countries including the USA, Germany, France and Italy do not distinguish between different types of asbestos, considering them equally dangerous to health" (Ibid).

(To be fair to the British authorities, however, it should be pointed out that while some blue and brown asbestos is still used on the continent, the UK's Asbestos (Prohibitions) Regulations of 1985 forbid the importation of both blue and brown asbestos and of any product that might contain them).

Another feature of the trade unions' argument is that asbestos should be removed from the work and home environment as quickly as possible. The National Union of Teachers (NUT) is particularly adamant on this point:

In the Union's view only the complete removal of all asbestos-containing substances will ensure health and safety in schools ('Health and Safety in Schools. No.4: Asbestos', National Union of Teachers, 1989).

In the early 1980s such doctrinaire attitudes caused some concern amongst those responsible for school budgets. The Inner London Education Authority (ILEA), for example, in light of "300 cases in which teachers, parents or governors had demanded that asbestos be removed from school buildings", estimated that it would cost £50 million to neutralise the hazard. According to the Chairperson of ILEA's Development Committee, this would be "An enormous drain on our expenditure" (£50 million was an enormous sum ten years ago) ('NALGO [Unison] Magsheet', No.20, February 1984, p.5). As a consequence of such financial concerns, the Department of Education and Science (DES), whilst recognising the hazard posed by asbestos and the legitimate concerns of parents, teachers and governors, urged local education authorities to show prudence and restraint in dealing

with the problem. Thus in 1986, the DES, while recognising that "It is for the authority or other responsible body to organise a suitable strategy for identifying, assessing and dealing with the problem", advised that this should be done "Within the total resources, capital and current, available to them" ('Asbestos in Schools', Professional Association of Teachers, p.5). Such language is evocative of the Health and Safety Executive's maxim that measures to deal with industrial hazard should at all times be 'reasonably practicable'. Or, to put it another way, such measures should use the 'best available technology not entailing excessive cost' (BATNEEC) (The Health and Safety System in Great Britain, Op Cit).

Despite calls for moderation, however, some public authorities launched ambitious programmes of asbestos eradication. To this end, the London Borough of Lambeth established an Asbestos Register to document the location and condition of all the asbestos under its jurisdiction, with a view to its eventual removal from all council premises. Lambeth also organised an Asbestos Conference in 1982.

Interestingly, not all representative organisations have been as dogmatic as, say, the NUT on the matter of asbestos removal. Unison, for example, while subscribing to the view that all forms of asbestos are equally dangerous and that there is no 'safe level' of asbestos exposure, nevertheless recognises the argument that, due to budget limitations, employers may have no option but

to deal with the hazard in situ ('NALGO [Unison] Health and Safety Briefing', Op Cit, p.8).

However, despite its conciliatory line on asbestos removal, Unison is as convinced as any other union of the general environmental threat posed by the mineral. As its advice to members puts it, "Many people have died through living within miles of an asbestos works or in asbestos-clad housing" (Ibid, p.3). UNISON is also convinced that even the smallest amounts of asbestos dust can cause health problems:

[M]any people have died from asbestos diseases after a minimal exposure to asbestos dust (Ibid).

This position is recognised - albeit tacitly - in the HSE's recommendation that employers should not treat statutory control limits as necessarily acceptable levels, and should strive to reduce the amount of airborne asbestos to the lowest reasonably practicable level. Thus under the Control of Asbestos at Work Regulations, 1987, and the Control of Asbestos at Work (Amendment) Regulations, 1992, employers are required to "Take steps to prevent...exposure or reduce it to the lowest level reasonably practicable" ('Asbestos and You', Op Cit, p.2/3). Interestingly, HSE guidance on the Regulations also hints that processors or end-users of asbestos should be mindful of its possible effect on the health of the general public:

Employers have an obligation to protect their employees; this is extended by the Asbestos Regulations to anyone else who may be affected...e.g. factory visitors, and people

living in the neighbourhood. The regulations also impose a duty on the employer to prevent or reduce, to the lowest level reasonably practicable, the spread of asbestos dust from the area where asbestos work is carried out. [My emphasis] ('Asbestos and You', Op Cit, p.2/3)

The exhortation that users of asbestos should take steps to protect those living close by had not been made prior to the Fulham Power Station debate. In the early 1980s, the HSE's (official) interest ended at the works or site perimeter. Clearly, the 1987 Act facilitated a more holistic view of the potential problem of asbestos contamination.

Finally, it would appear that even the asbestos industry itself has begun to recognise - albeit implicitly - the effect its raw material may have had on public health. Thus in 1993, Cape Plc, manufacturers of asbestos products, paid a 42 year old East London mesothelioma victim who had lived close to, but never worked at, their Barking factory, £45,000 in an out of court settlement. Perhaps predictably, the payment was made without acceptance of liability ('Award for Asbestos Victim', ARCA News, October, 1993, p.8). In the same year, the maximum award payable under the relevant legislation, the 1979 Pneumoconiosis (Workers Compensation) Act, was increased to £49,000 ('Up to £49,000 for Dust Victims', ARCA News, October, 1993, p.8).

In conclusion, the 'anti' lobby are convinced that there is a direct link between exposure to asbestos dust, whether from blue, brown or white asbestos, and

mesothelioma. Furthermore, they are sure that, through sleight of hand, the real magnitude of the problem has been deliberately concealed from the general public: In 1972, for example, a reputable medical journal found only one attributable death among 802 deaths looked into at several US asbestos cement factories. A follow-up study, however, found 72 cases of asbestos-related mesothelioma at just one of the investigated sites (Asbestos Killer Dust, Op Cit, p.30).

UK figures for asbestos-related mesotheliomas appear equally confused: Between 1957 and 1975, there were 1,952 officially recorded mesothelioma deaths - an average of around 110 per annum (Doyal, L., et al, Op Cit, p.52). Of this number, assuming 85% of mesothelioma deaths to be attributable to asbestos dust exposure, 93 would have been caused by asbestos. Today, however, Professor Julian Peto estimates that the UK has around 1,000 mesothelioma deaths per annum (Peto, J., Op Cit), of which some 850 would be attributable to asbestos dust inhalation (based on the conservative assumption that 85% are asbestos-related). This dramatic increase in the number of mesotheliomas may be due to a number of factors. It may be, for example, that high dust exposures experienced by workers in the 1950s and 1960s are beginning to feed through into increased rates of morbidity and mortality. Or it may be that in decades past, the medical profession under-reported the number of mesotheliomas by either disingenuously attributing death to a related complaint, or by accidentally misdiagnosing the condition. As the BSSRS points out,

"Typical asbestos deaths [have been] recorded as: 'exhaustion', and 'cancer of the pancreas'" (Asbestos Killer Dust, Op Cit, p.30). More recently, the SV40 virus has been associated with the dramatic increase in mesothelioma deaths (see above). SV40, a monkey virus, has been transmitted to humans in contaminated polio vaccines. It is estimated that in the United States alone, between ten and thirty million children and adults have been infected (Brown, P., 'Mystery Virus Linked to Asbestos Cancer', New Scientist, May 21, 1994, p.4). It would appear, however, that scientists do not (as yet) believe SV40 to be the major cause of the mesothelioma epidemic:

Whether or not SV40 or its human relative is guilty of triggering mesothelioma, its effect is in any case dwarfed by the major villain, asbestos...

Mesothelioma is now epidemic among men who worked in the construction industry...

Men are six times more likely to be affected than women, suggesting the main risk is occupational. If the virus played a major part in the disease, this imbalance would probably be less pronounced [My emphasis] (Brown, P., Op Cit, p.4).

However, whatever the aetiology of mesothelioma, it is clear from the attitude of regulatory agencies like the HSE, and from recent court judgements, that in some quarters the issue of asbestos contamination is taken more seriously today than in the past. In a recent decision, for example, a court fined Rolls Royce Nuclear Engineering £15,000 - a large penalty in this context - for contaminating the environment around their Wolverhampton factory with brown asbestos. Rolls Royce

allowed the asbestos, which had been stripped out by unlicensed contractors, to be transported forty miles in an open skip to a disposal site. This is said to have caused "widespread contamination" ('Rolls-Royce Asbestos Fine', Red Pepper, March, 1995, p.9). For their part, the HSE, who brought the prosecution, welcomed the stiff penalty:

Malcolm Wright of the HSE welcomed the size of the fine. "This shows that courts are taking the issue of asbestos seriously", he said (Ibid).

On the negative side, however - as the Rolls Royce case demonstrates - it is still possible for 'cowboy' contractors to be hired (by reputable companies) to remove asbestos. So, despite all the legislation and well intentioned directives from the HSE, has anything really changed since the argument over the decontamination of Fulham Power Station? The following case would seem to suggest that there are still large holes in the asbestos regulations:

A 65-year-old site owner was fined £8,000 at Wolverhampton Magistrates Court after he shot-blasted asbestos fibres into the air at an empty factory in Bilston.

A specialist firm had quoted the man more than £23,000 to remove 14 tonnes of asbestos cement sheets...He could not afford their price. Instead, he paid £200 for someone from Telford who did not have a licence to remove the sheets. A lot of it ended up for sale (ARCA News, April 1995, p.11).

5 Conclusion.

As can be seen from the arguments presented in this chapter, the debate over the role of asbestos in the

aetiology of cancer is far from resolved. Taking an 'optimistic' line, it is quite possible to construct asbestos as posing no more than a minimum and incidental risk to health. Thus, if lifestyle factors are a more important cause of cancer than environmental factors, and if white asbestos is relatively harmless in the sort of quantities found in the general environment, why worry? There is even evidence to suggest that the demonised and banned blue and brown varieties of the mineral are relatively harmless. And what about the co-carcinogenic (or carcinogenic) properties of viruses like SV40? In light of such new evidence, surely the case against the 'wonder mineral' has been unfairly exaggerated? While cancer may well be on the increase, there is, say the optimists, reason to assume that asbestos plays no more than a minor role in the disease. On this reckoning, public health can best be protected by concentrating on the real killers, like smoking, stress, diet, viruses and inherited characteristics.

Given the above, it can be seen that at the time of the Fulham Power Station debate, the possibility existed of constructing the fugitive emissions of asbestos as posing little or no threat to public health. This construction was available both to the authorities and contractors, and to the general public.

Of course, the possibility also existed of constructing the emissions as presenting a very real, long term threat to the health of the community: specifically, as the cause of future mesotheliomas.

Given the potential ambiguity of the situation, it is important to remember that such events are evaluated not in an ideological vacuum, but in value-laden social, economic and political contexts. Risks and hazards, in other words, are not givens. They are social constructs. In light of this fact, it is important to note the context of the sale, decontamination and demolition of Fulham Power Station in 1983/1984. Thus the social milieu of the day juxtaposed a potential environmental threat to health - airborne asbestos liberated from the power station - with familiar social and economic hazards, like unemployment, underemployment and sub-standard housing (see Chapters 3 and 4). Given this complex soup of disparate risks and hazards, one should guard against the easy assumption that the release of even large quantities of the most deadly varieties of asbestos into the community would cause panic, or even mild concern.

Ulrich Beck observes that "Hazards...are defined and evaluated socially - in the mass media, in the experts' debate, in the jungle of interpretations and jurisdictions...in a milieu and in contexts...(Beck, U., 'From Industrial Society to the Risk Society: Questions of Survival, Social Structure and Ecological Enlightenment', Op Cit, p.112). Although Beck's insight concerns the construction and evaluation of risks and hazards in formal institutional settings, it is important to remember that their construction and evaluation by the general public can have a major bearing on the nature, extent and outcome of a risk

debate.

Fulham Power Station: Decontamination and
Demolition.

1 Introduction.

This section deals mainly with the 'facts' of the decontamination and demolition as reported in the local and national press (although other contemporaneous events relevant to the general debate over asbestos are also recounted). There is no attempt to recount the construction of events offered by the power station activists. This is covered in the next chapter.

It should be noted that the majority of political agitation over the power station issue was organised by TERROR. During the campaign the group organised itself around a three-strong core. These 'core activists' were all young women with families.

2 Chronology.

2.1 The Decontamination and Demolition of Fulham Power Station.

The local authority became aware of the sale of Fulham Power Station to London and York Property Investment Company Ltd. when the MP for Fulham, Mr. Martin Stevens, telephoned the authority's Director of Environmental Services, Mr. Bruce Cova. The public became aware of the sale when a 24-line article appeared in The Times on May 3rd, 1983. The story was picked up by the West London Observer on May 5th. The Times reported that "Great care

is to be taken in demolishing the power station..." (The Times, May 3, 1983). Despite the difficult nature of the project, the CEGB received no fewer than 271 offers for the redundant power station. It was eventually sold for just under £1.6 million ('London Warning on Blue Asbestos', Construction News, July 7, 1983).

For its part, London and York, a "Small-time London property [company] mortgaged to the hilt" (Wallace, M., and Raw, C., 'Scandal Of The Poison Power Stations', The Sunday Times, June 26, 1983), had bought a huge edifice located in the midst of "The tight-knit Sands End community" (Cova, B., 'Asbestos - The Experience of Fulham Power Station', The Municipal Journal, September 2, 1983). The power station - some 318ft. high and containing over 9 million bricks - contained not only valuable ferrous metals, but also large quantities of blue and brown asbestos - in places nine inches thick. As one Fulham logger put it; "Blue on the flues and girders, brown everywhere else" (Weeden, C., 'The Boys from the Blue Dust', City Limits, November 18-24, 1983).

Within a week of the announcement of the sale, TERROR began voicing its concerns over the demolition of the power station. As one protest group member explained, "The group is worried about the health hazards surrounding the demolition - particularly the huge amount of...asbestos in the building" ('Families Fight Bulldozing Of Power Station', West London Observer, May 12, 1983).

After representations by TERROR to both the Greater

London Council (GLC) and the local authority, the Health and Safety Executive (HSE), the government agency responsible for ensuring the safe removal of asbestos, agreed to call a public meeting. The meeting, held at Townmead Youth Club opposite the power station, was addressed by TERROR, London and York, the local authority, the GLC, the Asbestos Removal Contractors' Association (ARCA) and the HSE. Some 150 residents turned up. The meeting was stormy: London and York's four-man team, which had originally "Oozed reassurance" (Wallace, M., and Raw, C., Op Cit), walked out after two hours saying they could not be heard. Afterwards, Anthony Marriott, one of the Directors of London and York (and a solicitor by profession), passed the following judgement:

We tried to give them our reassurances but they were not accepted...We maintain we have the interests of the local residents at heart and we will continue to do so, even though at times the atmosphere of the meeting was not always pleasant ('Owners Walk Out Of Public Meeting', West London Observer, June 2, 1983).

Marriott's analysis was confirmed by Bruce Cova, who commented that "It proved impossible to answer the constant barrage of questions over the incessant din". Cova, however, attributed a measure of the unruly behaviour to "The companies' refusal to comment on their previous experience". This reticence, according to the Director of Environmental Services, "Aggravated the position considerably [and served to] strengthen substantially the local movement, and generate considerable activity in all quarters" (Cova, B., Op

Cit).

The dissatisfaction of the audience was heightened by the perceived inadequacy of the performance of the HSE's representative, Daniel Mallon, who "Conceded that he did not know how much asbestos there was on the site, that he would be advised of random sampling only by the company, and to underline just how ineffective his authority was, agreed that he could only act if health and safety regulations were breached". The mood of the audience did not improve when "An officer from the GLC toxic disposal unit told the meeting that he had no power to dictate the manner in which the packaging of the asbestos was done, no authority to direct the route the trucks would take through London to the dumping ground, and could only act if a bag broke loose". The local authority also contributed to the unsatisfactory and unhappy outcome of the meeting; specifically when "The environmental health officer from Hammersmith and Fulham Council [told the audience he] had no statutory right to interfere in the demolition" ('Power Politics', Private Eye, June 3, 1983). (This statement was, in fact, erroneous. The council could have acted against the owners of the site under the Public Health Act of 1936 - although its powers would not have been particularly great).

Before walking out, and despite the 'unruly' behaviour of its audience, London and York made three concessions to the residents. Firstly, they agreed to allow residents to visit the twelve and a half acre site

during asbestos removal and general demolition work. Secondly, they offered the residents £1,000 towards the cost of hiring independent experts on asbestos removal. (In the event, local residents never received any money from London and York for this purpose ('Power Politics (3)', Private Eye, July 18, 1983)). And thirdly, they agreed to the request that residents should be allowed to examine the 'revolutionary' new vacuum extraction and bagging system for asbestos dust and fragments. (The residents never saw the much vaunted vacuum system).

London and York's demolition company, Barlborough Metals Ltd., also tried hard to reassure the public of its good intentions. To this end, a consultant to Barlborough, Mr. Donald Crawley (who was also a director of London and York), was pictured at the power station site holding a large fragment of asbestos (John, D., 'Scheme To Level A Landmark', West London Observer, May 26, 1983). Crawley was also reported as saying that "Nobody has more experience than us in the country [at removing asbestos]", and that the amount of asbestos in the power station was "Noticeable by its absence" (John, D., 'Alert Over Killer Dust', West London Observer, May 19, 1983). (Quite how he reconciled this assessment with the fact that he had appeared in several local papers handling asbestos at the power station is something of a mystery). Later, despite their 'experience', Barlborough forgot to notify the HSE before commencing work on May 16th, 1983 (Weeden, C., Op Cit). This did not impress the Executive or the public.

Later in the month, different accounts of the magnitude

of the potential asbestos hazard at the power station began to emerge. There was Barlborough's account, for example. This put the amount of asbestos to be removed at a low 300 tons (John, D., 'Scheme To Level A Landmark', Op Cit). Other estimates put the amount of asbestos at up to 3,000 tons (John, D., 'Alert Over Killer Dust', Op Cit). The CEGB, for its part, was "Unable to confirm any figure" - even though it had owned the station since the 1940s and possessed detailed plans of the equipment and layout (Ibid). Later, the company brought in to remove the material, UK Asbestos Plant and Machinery Ltd., estimated the amount of asbestos at 500 tons ('Owners Walk Out Of Public Meeting', West London Observer, June 2, 1983).

The use of a specialist asbestos removal contractor added a confusing twist to the saga. Originally, Barlborough had presented itself as the firm responsible for all stages of decommissioning and demolition, including the highly skilled task of asbestos removal. As Crawley of Barlborough Metals had put it on one occasion:

I've been dealing with the removal of asbestos for donkey's years. We are an experienced firm and the residents' fears are totally unfounded and unjustified (Bresler, K., 'I Know This Business, Says Demolition Don: Asbestos Fear Quelled By Blasts Expert', Fulham Chronicle, May 20, 1983).

It was subsequently asserted, however, that Don Crawley's expertise lay not in asbestos stripping, but in the speedy and profitable removal of scrap metal. As

one journalist put it at the time:

Crawley is renowned for cable stripping and smelting, to get at the lead and the copper. He has a mobile chine furnace for the task of smelting, which he operates around London and the south east (Weeden, C., Op Cit).

Later the public was surprised to learn - in light of Crawley's glowing appraisal of his own company's expertise in asbestos removal - that a 'specialist' contractor, UK Asbestos, was to be engaged to remove the material. The public's anxiety was heightened when the company refused to reveal details of its novel vacuum device for removing and bagging the asbestos. The company's explanation was that if the device was seen by other contractors, it would be copied, thereby denying UK Asbestos a competitive edge. It was rumoured in the press, however, that the company's reticence over the vacuum device was due not to concerns over industrial espionage, but to its failure in tests to deal adequately with the sort of heavy duty stripping that would be required at Fulham Power Station. Thus, when the prototype was tested at a gas works in Birmingham "It failed: there was not enough power to carry the asbestos away". Thus the "Rather special equipment" which UK Asbestos had developed "Under the auspices of the Health and Safety Executive" (Wallace, M., and Raw, C., Op Cit) appeared to be something of a flop. (The asbestos stripping machine was, in fact, revealed at a UK Asbestos public relations seminar on October 26, 1983, at the Post House Hotel in Wakefield. Although no one from Sands End was invited, the community was

featured (without its knowledge) in a promotional video shown by the seminar's sponsors, Yorkshire Productivity Ltd. (Weeden, C., Op Cit). Worries about UK Asbestos were heightened when it was revealed that the company had been formed only 12 weeks prior to the purchase of the power station ('Under The Hammer: A Dusty Business', City Limits, July 1-7, 1983), and was of "Uncertain financial standing" (Wallace, M., and Raw, C., Op Cit).

The public's concern over UK Asbestos was symptomatic of a more general unease over the track record of the various other participants in the decontamination and demolition of the power station. Don Crawley, for example, who was both a London and York director and a consultant to Barlborough Metals, had been prosecuted by the HSE in the late 1970s when, as the owner of a company called Davidol, "He was caught red-handed piling tar-papered cable on a bonfire of oil-soaked wooden pallets, polluting the atmosphere" (Weeden, C., Op Cit). The habits and associations of Kenneth Hunt, who, like Crawley, was involved with both London and York and Barlborough, also worried the Sands End public. As the owner of a country mansion called Park Hall near Sheffield, Kenneth Hunt had enjoyed at least a passing acquaintance with Leslie Vickers, a tenant of Park Hall. Leslie Vickers owned the shipbreaking firm H.Kitson Vickers, which had been implicated in the 'irresponsible' breaking of the aircraft carrier Ark Royal at the Cairn Ryan yard near Stranraer, on the west coast of Scotland, in the early 1980s. (It is worth noting that in one uncorroborated report it was stated

that Kenneth Hunt himself had purchased the carrier ('Under The Hammer: A Dusty Business', Op Cit)). In truth, no-one ever satisfactorily explained the relationship between Hunt and Vickers, although City Limits went so far as to describe the two as "Friends and business associates" ('Breaking Up is Hard to Do', City Limits, November 11-17, 1983). There were approximately 2,000 tons of valuable non-ferrous metal left in the carrier, a huge prize for the breakers, who went after the spoil with reckless enthusiasm;

Kitson Vickers set about the task with a vengeance. Instead of using the standard shipbreaking technique of removing a deck at a time, its men cut straight down through six decks to the engine rooms, where most of the non-ferrous metal lay. To do so, they burned through what a marine surveyor described as "a snake's honeymoon" of asbestos-coated pipes (Wallace, M., 'A Floating Bomb Of Half-Full Fuel Tanks And Blue Asbestos', The Sunday Times, July 17, 1983).

The shambolic breaking of the ship caused a major health hazard, with blue asbestos being strewn across the yard. As a result, in September, 1981, the Factory Inspectorate issued a prohibition notice. This was ignored. Eventually, H.Kitson Vickers sold on the responsibility for breaking the ship to the Northern Shipbreaking Company. Northern Shipbreaking were staggered at what they found. As a senior employee commented:

It was obvious the ship was being broken in a very haphazard and unsafe way (Ibid).

A marine surveyor was similarly concerned:

When I went on board and saw the way those cowboys had dealt with it, I was amazed (Ibid).

Another salvage consultant commented:

The ship was a total mess. Someone had gone over it to remove the more valuable stuff, with total disregard for the long-term breaking of the ship (Ibid).

The possibility and implications of an association between Kenneth Hunt and the man responsible for the debacle at Cairn Ryan would not have been lost on the Sands End activists.

The reputation of UK Asbestos, already tarnished by what was seen as its excessive secrecy and lack of experience, finally disintegrated when it was revealed that Mr. John Pitman, the company's owner, had been fined £2,200 by Huddersfield Magistrates in 1982 for breaking the 1969 Asbestos Regulations ('Power Politics (2)', Private Eye, June 17, 1983). Pitman's company, Belcox Building Ltd., had been found guilty of endangering the health of its own employees. As one journalist explained:

[T]wo of Pitman's employees...were at considerable risk from dust and fibres from asbestos lagging, strewn all over the floor of a shed in the process of demolition (Ibid).

The two employees had not been provided with adequate protection against asbestos dust. The fine of £2,200 was extremely high for its day - in 1981 the average fine under the Asbestos Regulations was £109 (Ibid). Despite

this sizeable penalty, however, Pitman continued his lax regime at Fulham Power Station where, despite Daniel Mallon's exhortation that asbestos should be carried from the site in double thickness bags, UK Asbestos only ever used single thickness bags ('Power Politics (3)', Op Cit). Public unease increased when it was revealed that neither Barlborough nor London and York had any history of involvement in major redevelopment projects: As City Limits put it, "All were magicked like rabbits out of a hat". According to the records at Companies House, "London and York Property Investment [had] spent all its three year life without trading at all", while Barlborough Metals was created only seven weeks before the purchase of Fulham Power Station. In light of this abject lack of experience, City Limits concluded that "It was not the corporate reputations of civil engineering excellence that attracted the CEGB to these particular companies" ('Under The Hammer: A Dusty Business', Op Cit). (Confusingly, the CEGB sold Kingston Power Station to a subsidiary of the major and reputable conglomerate Trafalgar House. Whether this was accidental or by design - given the significant adverse publicity suffered by the CEGB over the sale of Fulham Power Station to 'magicked' companies - is an interesting question).

These and other revelations led to a crisis of confidence in the various parties involved in the decontamination and demolition. The HSE responded by installing asbestos dust monitors at the power station on May 25th. The local authority installed their own

monitors (four sampling pumps supplied by the GLC's scientific branch) in the vicinity of the power station at the same time. An environmental health officer subsequently visited the site several times a day, including weekends (Wombwell, G., 'Settling The Dust' [Letter], The Sunday Times, July 3, 1983).

In early June, despite calls for a special council meeting to discuss the demolition, the Council Leader, Kim Howe, insisted that the work at the power station was 'risk free':

We are assured that the demolition is risk free. We have put all the pressure we are capable of putting on the necessary authorities. There is nothing more the council can do ('Crisis Meeting Demanded On Demolition', Fulham Chronicle, June 3, 1983).

Howe later put Labour's calls for an extraordinary council meeting down to 'electioneering'. (Quite what Kim Howe meant by this is unclear, as the next local government election was not due to be held until mid-1986. The Labour request for an extraordinary council meeting was made in mid-1983).

By mid-June, however, after a series of revelations concerning UK Asbestos, and the presentation to the council of a 700-signature residents' petition demanding a more interventionist approach by the local authority, Kim Howe capitulated: a special council meeting was called. Fifty residents attended the June 15th meeting at the civic centre in Hammersmith. Press reporting of the event was somewhat lurid - even allowing for the

tabloid style of the local papers. It also tended towards hyperbole; According to the Fulham Chronicle, for example, on the evening of the meeting;

Worried South Fulham residents converged on Hammersmith Town Hall...for the special council meeting called to discuss the asbestos scare at Sands End Power Station.

The paper went on;

Special coaches were booked to ferry families to the meeting (Caffrey, N., 'Killer Dust Protest', The Fulham Chronicle, June 17, 1983).

As noted above, no more than fifty people attended the meeting. Also, the petition, at 700 names, was less than half the size of the one raised over the road widening scheme (see Chapter 4). Both petitions were organised by TERROR.

The meeting debated a special motion put by Mr. Tony Powell, Labour councillor and prospective Parliamentary candidate. The motion read:

That this Council note the real concern and anxiety of the people of Sands End Ward in particular, and of South Fulham in general, about the way in which the demolition of Fulham Power Station is proceeding. It calls on London and York Property Company Limited to cease demolition work until full consultation has been carried out with local residents. It requires the Health and Safety Executive to use all their powers to this end. It resolves to take all necessary steps including court action if necessary to ensure the safety and peace of mind of the residents of the Borough (Ibid).

The special council meeting produced two positive

outcomes for Sands End residents. Firstly, "Councillors at the meeting voted unanimously to instruct the company...to stop work until residents and councillors are satisfied about safety aspects of the operation". And secondly, a liaison group consisting of "Local residents, councillors and experts" ('Asbestos Firm In Court Shock', West London Observer, June 23, 1983) was set up "To open formal channels of communication with the residents" (Cova, B., Op Cit).

Ironically, the very next day, contractors Drinkwater and Sabey were observed transporting asbestos from the power station site to a dump in West Drayton, Hillingdon, in a poorly secured skip. As a journalist noted at the time:

The tarpaulin cover flaps in the breeze and unties as the lorry drives through the streets (Weeden, C., Op Cit).

The same journalist also commented on lax on-site working practices:

An asbestos stripper in his protective gear is seen walking from the 'dirty' into the 'clean' area (Ibid).

In June the pace of the debate accelerated and its scope widened. TERROR, attempting to raise awareness of the asbestos issue, sent a letter to all families and schools in Sands End outlining what it saw as the dangers inherent in a badly executed demolition:

Dear Parent, you may be aware that Fulham Power Station is being stripped of asbestos prior to it being demolished. Asbestos fibres

are a grave danger to health and children are especially susceptible to the cancers it causes. Therefore it is essential that it is stripped with great care. A number of local residents who have been asking for health and safety reassurances have become increasingly more concerned. Their checks into the companies carrying out this work have shown that they have all been set up for this venture and their directors will give no information about their past experience (Caffrey, N., Op Cit).

In line with the motion passed at the extraordinary council meeting, LBH&F's Chief Executive asked the contractors at Fulham Power Station to stop work "Until local residents were satisfied that it was being carried out properly" ('Safety Plea Is Ignored', Fulham Chronicle, June 24, 1983). The contractors refused. This left the council having to consider some form of legal action. In the early 1980s, this could have taken a number of forms; Firstly, action could have been taken under the Public Health Act of 1936, which allows either an individual or legally constituted body to obtain a court order "To deal with premises that are 'in such a state as to be injurious or a nuisance'" ('Asbestos in the Community', General, Municipal, Boilermakers and Allied Trades Union). (If the local authority refuses to act, the public can take action through the magistrates court against the errant council under Section 99 of the Public Health Act). Secondly, action could have been taken under the Health and Safety at Work Act of 1974 which provides for the safety of both workers and the general public living in the immediate vicinity of a site.

Despite the council's exhortations, not only did the

contractors refuse to stop work, they countered with a public relations offensive. John Pitman, for example, head of UK Asbestos, was quoted in The Sunday Times as saying;

You can sit on the beach at Blackpool and you won't be breathing air quite as good as we've got inside Fulham power station (Wallace, M., and Raw, C., Op Cit).

This sort of proclamation, however, served only to attract more attention to the debate about conditions inside the power station. The unions became involved, not least because there were reports that the demolition contractors were using non-unionised labour. The major unions cast themselves in the role of public advocate by insisting that, as one reporter put it, "The CEGB has 'a moral responsibility' to demolish and clear Britain's 40 old and asbestos-ridden power stations..." (Charman, P., 'More Asbestos Fears', Time Out, June 24-30, 1983). At their meetings with the Electricity Council, the industry's own unions pressed the point that in their view the CEGB, as the power station's erstwhile owner, was morally bound to dispose of potentially harmful materials itself. That is, the unions sought to impress upon their own management the importance - as they saw it - of the 'polluter pays' principle, which dictates that those who pollute should 'clear up their own mess' (or at least pay someone else to do so).

As the debate rolled on, attention shifted to levels of atmospheric asbestos contamination outside the power station. Three agencies were involved in monitoring

airborne asbestos in Sands End: The London School of Hygiene and Tropical Medicine (LSHTM), hired by UK Asbestos to meet its statutory reporting duties to the HSE, the Health and Safety Executive, and the London Borough of Hammersmith and Fulham (with the assistance of the GLC). The sampling regime exhibited a number of weaknesses, the most glaring of which was the fact that UK Asbestos began its decontamination work before installing its on-site dust monitors. Also, while the HSE required the LSHTM to monitor constantly for the first two weeks of decontamination work, "After this it reverted to occasional sampling on a random basis three times a week" (Cova, B., Op Cit). The HSE's sampling was even less rigorous, being largely ad-hoc and unplanned. This regime, according to Bruce Cova, was "Totally inadequate...for any day-to-day control purpose" (Ibid). In an effort to compensate for such perceived inefficiencies, the local authority decided to increase its own monitoring. As Bruce Cova explained;

After reconsidering the council's pattern of sampling and the lack of constant monitoring by other agencies, it was decided to extend our sampling to cover two four-hour periods and so monitor the majority of the working day from 8am until 4pm, seven days a week. It was later decided to extend this until 10pm to allay local fears of late-night working (Ibid).

A second perceived weakness concerned the time it took for all those involved in environmental monitoring to get their samples analysed. Originally, delays of up to two days between sampling and analysis were not uncommon (Wallace, M., and Raw, C., Op Cit). Given that, as Bruce

Cova put it, "The speed of laboratory response was an essential element of control", the local authority decided to press its own laboratory for a more rapid analysis of samples. As a result, samples taken in the morning were eventually being analysed by the end of the working day. This, according to Cova, "Placed the asbestos removal under a degree of scrutiny which has never...previously been experienced by an asbestos-removal contractor" (Cova, B., Op Cit).

While none of those involved in monitoring ambient levels of asbestos dust ever achieved an instantaneous analysis of samples, the 'same day' results service secured by the local authority, in conjunction with its coverage of the whole working day, permitted a reasonable level of control. Given the relative 'success' of his own regime, Bruce Cova was scathing of the performance of the other parties:

I believe that the speed of analytical response and total cover of the working day are essential elements of environmental asbestos monitoring and the time delay and random methods accepted by other agencies are unacceptable and completely useless for environmental control purposes. They will only give an historic picture, three or four days after the event. The speed of decay experienced after an emission is such that it will not even show a trend let alone pick up an emission of short duration (Ibid).

It should be noted, however, that the local authority's more rigorous approach to sampling did not extend to the use of electron microscopy, which, unlike conventional light microscopy, can detect even the smallest asbestos particles. As electron microscopy is more expensive than

light microscopy, it may well be that the former method was rejected on cost grounds. (While there is often a presumption in favour of electron microscopy, it should be remembered that some experts consider light microscopy to be more than adequate to the task of picking up the larger particles of asbestos that are thought to pose the greatest risk to health - certainly in the aetiology of mesothelioma. As one industry commentator has put it: "The far greater magnification possible with [an electron microscope] will undoubtedly show up more of the smaller-sized fibres. But do such small fibres present a significant enough risk to health to justify the extra cost? According to [the] head of the Environment Branch of the Institute of Occupational Medicine, the answer to this is probably not. Tests indicate that the fibres picked up by the optical method are the ones that do the most harm" (Building, July 15, 1983, p.29)).

The improved responsiveness of asbestos monitoring allowed the (presumed) first major environmental contamination incident to be effectively managed. On the morning of Monday, July 4th, 1983, although the monitors used by UK Asbestos and the HSE were not sampling, those used by LBH&F detected elevated levels of asbestos dust outside the power station: specifically, the workplace Threshold Limit Value (TLV) for blue asbestos (of 0.2 fibres per millilitre of air) had been breached in the general atmosphere. (There were no TLVs for general, non-workplace exposures to asbestos dust). The test results, received by the local authority in the

afternoon, prompted Bruce Cova to ask the contractors to stop work. This they did. The following day, Cova and the HSE traced the leak to unsealed air ducts deep inside the power station. Work re-started on July 7th after the ducts had been sealed (Davies, N., 'Asbestos Risk Halts Work On Station', The Guardian, July 6, 1983). The press reported the incident in detail. City Limits, for example, highlighted the possible health effects of the release (in what, it must be said, was a somewhat hysterical fashion):

On Monday workers and residents of Fulham were subjected to a massive dose of asbestos dust that rushed from the turbine hall along the cable tunnels and into the air. The environmental health officer immediately stopped all work until the holes were sealed...This remedial work will not help those already affected (Weeden, C., 'Asbestos - What The Eye Doesn't See', City Limits, July 8-14, 1983).

The West London Observer, one of Fulham's local papers, talked of "A huge release of asbestos into the atmosphere", as a consequence of which "Alarmed council officials" applied themselves vigorously to the "Major Scare" (John, D., 'New Alert Over Dust', West London Observer, July 14, 1983). The Fulham Chronicle talked of "Monday's dramatic stop" ('Asbestos Alert', The Fulham Chronicle, July 15, 1983) at the power station. Even The Guardian talked of "Dangerously high levels of asbestos in areas around the site" (Davies, N., Op Cit).

It must be said, however, that the elevated levels of asbestos dust recorded in the general environment on July 4th, although a cause for concern, were far from

'catastrophic'. At the time of the July 4th contamination incident, the (perhaps somewhat liberal) workplace control limits for white, brown and blue asbestos were, respectively, 1.0, 0.5 and 0.2 fibres per millilitre of air averaged over a four hour period. (These limits were adjusted down on August 1, 1984). Prior to the July 4th incident, the worst sampling result stood at .006 fibres per millilitre "With a large number of results showing zero or .002 fibres per millilitre" (Cova, B., Op Cit). Therefore, prior to July 4th, the local authority's comprehensive and responsive monitoring and analysis of ambient asbestos levels had revealed concentrations well below the most rigorous standard - the 0.2 fibres per millilitre limit for blue asbestos. Thus, even if we assume that all emissions were of blue asbestos (an unlikely scenario given the volume of brown asbestos used at the power station), prior to July 4th, the most rigorous workplace TLV was never approached. And even when, on July 4th, the workplace TLV of 0.2 fibres of blue asbestos per millilitre of air was exceeded, the maximum recorded concentration in the immediate vicinity of the site was only 0.23 fibres per millilitre (Cova, B., Op Cit). Furthermore, when the peaks of July 4th were averaged across an eight hour period (the assumed length of the working day), a level of less than 0.2 fibres of asbestos per millilitre was achieved. (Of course, as Beck points out in Risk Society, while those in authority may seek to camouflage pollution peaks in time-weighted averages, such peaks, however transient,

can trigger illnesses - especially amongst vulnerable groups. Beck illustrates this point by talking about lead exposure: Thus, while the German Council of Experts on Environmental Issues insists that "The exposure of the population to lead is not dangerous on average" [my emphasis] (Beck, U., Risk Society, p.25), such 'acceptable' lead levels may well pose a danger to the young, whose un-average bodies may be unable to deal with the toxin. Equally, such generalised statements do not take into account the 'unequal risk position' of those who live near major roads). While it can reasonably be argued that "Occupational levels have no relevance in environmental terms...a degree of risk being accepted in the occupational situation when working with hazardous materials" (Cova, B., Op Cit), it is nevertheless a fact that throughout most of the decontamination and demolition period, levels of general environmental asbestos were significantly below workplace TLVs. It could be said that this was something of an achievement, given the complex and difficult nature of asbestos removal and dust control in unfamiliar heavy industrial surroundings:

The challenge facing those stripping asbestos from a power station is a severe one: the safe removal of hundreds of tons of lethal material, within tight limits laid down by the Health and Safety Executive...

What the contractor has to do is to ensure that the fibre levels during stripping, which can be as high as 200 fibres per millilitre, are kept to not more than 1 fibre per millilitre at most outside the controlled environment in which the job is carried out (Building, Op Cit, p.29).

Obviously, it is theoretically easier to control

emissions in a fixed and familiar situation like an asbestos mill, than in the chaotic and unfamiliar surroundings of a decommissioned power station.

The usually adequate performance of the decontamination contractors attracted favourable comment from the Chairman of Hammersmith and Fulham's Engineering and Environmental Policies Committee. As Councillor Wombwell pointed out in a letter to the Sunday Times:

The environmental monitoring results obtained by the Council, the Health and Safety Executive and the London School of Hygiene and Tropical Medicine (consultants) have all been made available to local resident groups and all have been satisfactory, showing levels of less than .01 fibres per millilitre (Wombwell, G., 'Settling The Dust' [Letter], The Sunday Times, July 3, 1983).

(Councillor Wombwell did, however, express some concern over the manner of the CEGB's disposal of the redundant power station: "I do not believe that the CEGB will change what they must see as good commercial practice, but I would urge them to liaise with the Health and Safety Executive and the local authority concerned at exchange-of-contract stage so that these bodies can move into operation immediately and ensure effective control" (Wombwell, G., Op Cit). The HSE's principle inspector for the site, Paul Taylor, also commented favourably on the contractors' performance:

It has been a nightmare but its quite safe now. Over 2,500 air samples have been taken and very few have been over the legal limit (Yarde, R., 'A Clean Sweep', The West London Observer, June 21, 1984).

Despite such official reassurances, however, there is little doubt that asbestos release incidents, of which there had been three by the October of 1983, occasioned significant and continuing unease amongst the power station activists. These incidents continued into 1984, right up to the commencement of demolition work.

It must be said, however, that criticism of those involved in the decontamination and demolition was not always particularly well-informed, as may be gathered from the following statement from one of the core activists:

The environmental limit is 0.01, but we have been told that [over August Bank Holiday] the levels at the boundary were elevated to between 0.09 and 0.15 (The West London Observer, August 17, 1984).

There were, of course, no general environmental limits at this time. Indeed, there are none today. Furthermore, while the elevated levels recorded on August Bank Holiday, 1984, were over ten times the recommended workplace TLV for white asbestos, the pattern in other releases had been that such elevated levels quickly reduced. During the first recorded release incident, for example, the elevated levels of .23 fibres per millilitre noted on July 4th, 1983, had decayed to .002 fibres per millilitre by 6am on July 5th (Cova, B., Op Cit).

There were also stoppages for reasons other than asbestos release. For example, work was halted by the HSE on July 20th, 1983, because the contractors had

failed to submit a Method Statement, specifying demolition timescales and strategies, to the Factory Inspectorate. For his part, Tony Marriott of London and York appeared unperturbed by the intervention. As a local newspaper reported:

London and York director Tony Marriott told the Chronicle on Tuesday: "We are meeting tomorrow and I think work will be able to restart later on the same day. There are a few changes asked for in the work scheme that we submitted to the Health and Safety Executive last Friday. But these changes are only on cosmetic issues. They are nothing fundamental to the job. Our work methods have always been above the standards required" ('Asbestos Row Continues', The Fulham Chronicle, July 29, 1983).

The demolition contractors were equally optimistic on their ability to satisfy the HSE's requirements - and were very keen to point out that the reason for the stoppage was definitely not another release of asbestos dust:

We have stopped asbestos removal as instructed by the factory inspector, but there is definitely no leakage whatsoever of any asbestos. The Health and Safety Executive has asked for written details of our methods of operation and we shall be supplying this as soon as possible. We are completely confident about our methods of removal ('Health Fears Halt Power Station Work', The Evening Standard, July 21, 1983).

In all, work was halted three times in July, 1983 ('Asbestos Scare Causes Rethink On Power Station Sales', New Scientist, July 28, 1983).

Towards the end of July, the government and CEGB found themselves under increasing pressure to re-think their

policy on the sale of power stations and the transfer of responsibility for asbestos removal. The CEEGB responded by stating it was planning a "Careful review" of its sales policy (Wallace, M., Op Cit). The CEEGB had earlier been put under pressure to re-think its policy by the GLC (King, M., 'Experts To Check Asbestos Danger', Evening Standard, July 25, 1983).

Then, dramatically, on July 28th 1983, John Gummer, the Under-Secretary of State for Employment, announced to the Commons that from July 29th the CEEGB would (again) be responsible for asbestos removal at decommissioned power stations. Sir Walter Marshall, head of the CEEGB, attributed the government's volte-face to the public's expressed preference for the CEEGB itself to strip asbestos from redundant power stations:

We on the board were impressed that the public put a great deal of weight on our responsibility as a public body, and I am very pleased that we are taking full control of asbestos in our stations (Bennett, H., 'Residents Win Campaign Against Asbestos Danger', The Morning Star, July 29, 1983).

When questioned about the extra cost to the country of using the CEEGB to remove asbestos, Marshall justified the £1 million per station decontamination cost by saying "We have to balance that financial disadvantage against the understandable concern of the general public" (Chorlton, P., 'Asbestos Pledge On Disused Power Stations', The Guardian, July 29, 1983).

The 'new' policy, which affected the sale of up to 33 stations nationally (20 of which, containing up to

20,000 tonnes of asbestos, were located in Greater London (Charman, P., 'Asbestos Fears In Fulham', Time Out, June 10-16, 1983; and 'Ban All White Asbestos Too', The Londoner, September, 1983)), simply re-introduced what had been accepted practice up until 1982 - namely that the CEGB, as the polluter, would pay for the removal and neutralisation of whatever hazards had been generated during the life of a plant. Therefore, it could be said that in the case of its policy on power station decontamination, the Conservative Government bowed to public pressure and reversed a privatisation policy. (Such policy reversals are not entirely unheard of, however, as evinced by the Major administration's 1994 decision not to press ahead with Post Office privatisation in the face of concerted public opposition to the plan (especially from service consumers and industry unions)).

The debate, besides forcing this change of heart, also brought asbestos hazard to the top of the political agenda, with John Gummer telling the Commons that, in his view, there was no safe level for asbestos dust:

It is not a substance for which one can set a level below which there is no risk...We must, therefore, assume that a single fibre could do real damage which may not be seen for 20 years or more (John Gummer in Cova, B., Op Cit, p.1312).

This pronouncement very publicly allied the government with the view of the Asbestos Advisory Committee, put some three years earlier in 1979, that "There was no proven safe level of exposure to asbestos fibres in air"

(Reynolds, P., 'Asbestos: Local Authorities' Policy', London Environmental Bulletin, Autumn 1983, Volume 1, Number 2).

As the year progressed the relationship between Barlborough Metals and UK Asbestos deteriorated. Eventually, UK Asbestos walked off the job, to be replaced on November 1st, 1983, by a Sheffield based company called Linfact (Industrial Services) Ltd. Like UK Asbestos, Linfact was not a member of either of the industry's trade associations, the Asbestos Removal Contractors' Association (ARCA), or the Thermal Insulation Contractors' Association (TICA). (At this time, ARCA, which existed "To improve working conditions and safety for the industry" ('ARCA - The Trade Association' [Publicity Material], ARCA, Britain), was turning down 50% of membership applications because of concerns over applicants' experience and integrity (Bailey, M., 'Easy Rules For Asbestos Strippers', The Observer)). Linfact's non-membership of either of the asbestos removal industry's trade associations was of some concern to the HSE, whose site inspector commented:

I would be happier if Linfact was a member of either association but membership is not obligatory ('New Firm To Strip Killer Dust At Station', West London Observer, October 27, 1983).

Also of concern was Linfact's previous work record - the company had only ever undertaken small-scale asbestos removal jobs. However, "Despite Linfact's lack of experience the HSE [gave] it the go-ahead after carrying

out intensive checks on its record" (Ibid). (Given the HSE's lack of resources, it is doubtful that these checks would have been particularly intensive). To its credit, however, Linfact's standard of work was somewhat higher than that of its predecessor. For example, it was Linfact that saw to the removal of the "Hundreds of forgotten broken bags of asbestos stored in the turbine hall by its predecessor" (Weeden, C., 'The Boys from the Blue Dust', Op Cit).

In May 1984, Barlborough and Linfact, realising they had under-estimated the time it would take to dismantle the station's four huge chimneys, and fearing they could well lose the sale of the site to an understandably impatient supermarket chain ('Power News', Private Eye, May 4, 1984), hatched a plan to 'drop' them instead. This would have meant knocking the chimneys down instead of dismantling them in controlled stages. The chimneys contained some 60 tons of concrete (Ibid). The HSE's representative, Mr. Paul Taylor, who had replaced the "Incompetent" ('Power Games', Private Eye, September 23, 1983) and "Heavily-lampooned" (City Limits, October 4, 1983) Mr. Daniel Mallon, objected, saying that falling debris might liberate asbestos and other dangerous materials such as soot and silicates ('Power News', Op Cit). He also feared there might be loss of life should a chimney fall onto nearby housing. (The danger posed by falling debris in such a built-up and densely populated neighbourhood was one of the first issues to be addressed by local residents - before, that is, they lighted on the asbestos issue).

Later in the same month the contractors had to be stopped from breaking through the exterior walls of the power station amidst fears that this could allow asbestos dust to escape (Private Eye, May 18, 1984).

By June, 1984, the HSE's Taylor was satisfied that the bulk of the asbestos had been removed, although he was concerned that "Some asbestos could remain trapped under machinery" ('Lethal Dust Is Cleared', West London Observer, June 14, 1984).

Perhaps somewhat ironically in the context of events at Fulham Power Station, on August 1st, 1984, the government's new Licensing Regulations for asbestos removal contractors came into force. The Regulations were drafted "To prevent employers or self employed persons carrying out work which involves significant disturbance of asbestos insulation or asbestos coating unless they have been issued with a licence by the Executive" ('Asbestos Removal to be Brought Under Stricter Control', Health and Safety Commission Newsletter, No.34, February, 1984). As far as the HSE's inspectors were concerned, the regulations existed to "Help the Executive to target their inspection effort in order to monitor closely the work of certain contractors" (Ibid). Asked in Parliament to clarify what was meant by the 'better targeting of inspection effort', John Gummer, the Minister responsible, made the following statement:

The Factory Inspectorate...will be responsible for most inspections of licensed contractors and their inspection of work activities is

based on a system of priorities which takes account of factors such as the conditions found at previous visits, the risk to employees and the general public, the track record of the firm and the inspector's professional judgement of the organisation [My emphasis] ('Parliamentary Questions', Health and Safety Commission Newsletter, No.34, February, 1984).

The government's commitment to a better targeting of inspection effort and protection of the public was met with some skepticism by the power station activists of Sands End, who gave no more than "A guarded welcome" ('Mixed Welcome For New Asbestos Rules', The Fulham Chronicle, September 2, 1983) to the new arrangements. Trade union reaction was equally ambivalent. The GMB's Health and Safety Officer, David Gee, was particularly critical:

David Gee believes the scheme could undermine much of what has already been done by the unions themselves to protect workers, by allowing "anyone who has read the laws and codes on asbestos to legally operate knowing that the chance of being caught in breach of the safety procedures is less than it was a few years ago, before the public expenditure cuts had reduced the number of HSE Inspectors" (Building, Op Cit, p.29).

It had taken approximately twelve months to decontaminate the power station. The original estimate had been that asbestos stripping would take five months (The Times, May 3, 1983). During this period, two companies, neither members of either ARCA or TICA, had been involved in the work. At one stage, because of its difficulties with UK Asbestos, Barlborough Metals (referred to by Private Eye as a "muck and brass" demolition company ('Power Politics', Op Cit)) had

threatened to strip the asbestos themselves. This possibility caused enormous consternation amongst the activists in Sands End. Barlborough's lax working practices had been repeatedly highlighted in the press. Private Eye, for example, had pointed out that "The lack of discipline by Barlborough staff was causing doors and windows to be left open". The same report concluded that "Don Crawley, who heads Barlborough, wants the brass and copper out quickly and doesn't care much for safety regulations" ('Power Games', Op Cit). Surprisingly, the HSE's first site inspector, Daniel Mallon, had no reservations about Barlborough undertaking the asbestos stripping, even though "They had no training or expertise" (Ibid).

Barlborough's questionable working practices eventually proved fatal for two of its employees: In July 1984, two men died when they were buried under 400 tons of rubble at the power station site (Doughty, S., 'The Rescuers Who Worked In Vain', Evening Standard, July 10, 1984). According to newspaper reports, "The method of demolition work...was wrong, dangerous and went ahead without the knowledge of the Health and Safety Executive..." ('Demolition Work At Power Station 'Entirely Wrong'', Fulham Chronicle, January 4, 1985).

This incident seemed to confirm the incompetence of the various parties to the power station's sale, decontamination and demolition. However, while the deaths may well have been avoidable, it would be wrong to assume that those who laboured for Barlborough

Metals, UK Asbestos and Linfact were entirely above reproach. Indeed, there is some evidence to support the view that those who work in the asbestos removal industry cooperate with, and profit from dubious and/or inadequate decontamination and demolition practices. At the time of the scandal over the breaking of the Ark Royal, for example, it was revealed that the labourers involved in the contract were quite prepared to work without the appropriate personal protective equipment - so long as they were adequately compensated. As one of the foremen on the Ark Royal contract put it:

I have worked for ten years on navy boats and I have never used masks or protective clothing. My experience is that it was common practice to get extra payments for stripping asbestos (Wallace, M., Op Cit).

This Ark Royal worker was quite prepared to risk his health for a bonus payment. As the journalist who interviewed him put it:

Instead of waiting for the masks and protective clothing which were on order, he took a crowbar and hacked the blue asbestos away from the plates (Ibid).

Indeed, so determined were the workers at Cairn Ryan to get their bonus payments that "Some of the men...said that if they did not receive some cash, they would call in the factory inspector". (The yard was, at this time, heavily contaminated with blue asbestos). To his credit, the site manager stood firm: "I would not be blackmailed" he said (Ibid).

In its 1993 report into the working practices of the

asbestos industry, the HSE's Asbestos Working Group uncovered further evidence of what it saw as the complicity of workers in bad management practices:

In spite of relentless publicity about the dangers of the material, many workers were found by a team of researchers to show scant regard for precautions. Protective clothing was not worn by some workers, and not worn properly or cleaned at regular intervals by others (Wainright, M., 'Asbestos Workers Shun Safety, Says Report', The Guardian, November 10, 1993).

(It should be noted that protective clothing may not be worn for a number of reasons besides laziness. Sometimes, protective clothing may not be worn because it is too cumbersome, or because insufficient time is allowed for putting on and taking off the suits and apparatus. As Irwin explains in Citizen Science, practices and procedures that appear feasible under laboratory conditions, may not be practicable under field conditions (Ibid, Routledge, Britain, 1995, p.112-113)).

The apparent inclination of some workers to take 'short cuts' (for whatever reason) has been noted by a number of people directly involved with the asbestos removal industry:

Barry Lake, a partner in asbestos surveying firm Lake and Dunn, believes that the experienced worker can be his own worst enemy. Familiarity with the job can lead to contempt for the very real dangers it entails. Lake believes that although training is essential, so is the need to reiterate the dangers of the job at frequent intervals...

[In the] general demolition industry...getting workers even to wear a hard-hat...is a constant battle (Building, Op

While it is possibly true that 'the experienced worker can be his own worst enemy', as explained in Chapter 2, a complete and inclusive understanding of any human activity requires that it be viewed in its social, economic and political context. Thus, asbestos workers' alleged 'scant regard for precautions' may be attributable - in some measure, at least - to management pressure to 'get on with the job'. In today's fevered economic climate, with companies under pressure to produce ever bigger profits, and workers in a relatively weak bargaining position (Hall, S., and Jacques, M., (Eds), The Politics of Thatcherism, Lawrence and Wishart, Britain, 1983, p.53), it is quite possible that employees might acquiesce in unsafe working practices just so they can keep their job - however unsafe and insecure it might be.

To be completely fair to employers, however, it should be remembered that there will always be some workers who, however well-paid, will shun safe working practices in return for a bonus.

Despite such evidence of corner-cutting in the asbestos removal and general demolition industries, however, it is important to remember that the working practices at Fulham attracted only limited adverse comment from the factory inspectors.

The final confrontation between the local authority and the contractors came in November, 1984, when Hammersmith

and Fulham obtained a High Court order restricting demolition work to 8am to 6pm on weekdays and 8am to 1pm on Saturdays. The noise of the demolition outside these hours had been disturbing residents. Don Crawley of Barlborough had "No comment to make" on the decision ('Demolition Firm Blasted Away By Furious Council', Hammersmith and Fulham Guardian, November, 1984).

The end of 1984 witnessed a period of recrimination between the various agencies involved in monitoring the decommissioning and demolition of Fulham Power Station. Councillor Wombwell, Chairman of LBH&F's Engineering and Environmental Services Committee, started the name-calling as early as July when he stated; "There have been times when we have had very considerable concern about the health executive" (Workman, M., 'Two Buried In The Rubble', West London Observer, July 12, 1984). As a local paper put it, Wombwell was of the opinion that the HSE had "Not been vigilant enough in monitoring the removal of asbestos" (Ibid). Then in October, Bruce Cova himself rounded on the HSE:

In the past 18 months my council and its residents have been exposed to rudeness, abuse, threats of legal proceedings, misinformation, total about-turns, the salient points of our letters are ignored and lip-service paid to co-operation ('Asbestos 'Arrogance'', Evening Standard, October 18, 1984).

Cova made a number of specific criticisms of the HSE. He accused the Executive of encouraging the contractors to "Throw open doors when asbestos levels inside the station exceeded occupational levels". He asserted that

contract labour working in asbestos-contaminated areas "Wore no respiratory protection", and that HSE staff themselves failed to set an example by visiting the site in business suits. He even alleged that the HSE had told council staff they would not be admitted onto the site if they were wearing respirators (presumably because the factory inspectors responsible for the site feared this would alarm members of the public and provide photo opportunities and good copy for the press). Cova "Found this stance, which occurred on two separate occasions, quite unbelievable" ('Asbestos 'Arrogance'', Op Cit). Lastly, Cova pointed out that the HSE refused to use data on airborne asbestos supplied by the local authority, preferring to rely solely on readings provided by the London School of Hygiene and Tropical Medicine on behalf of UK Asbestos.

In response, the HSE, while acknowledging "A history of contention between ourselves and the local authority over the power station" (Ibid), stoutly defended its conduct and integrity. As a spokesperson put it:

[W]e absolutely deny any charge of neglect, arrogance or any action which would have endangered local people (Ibid).

Regarding the emissions of asbestos dust, the HSE was happy that public health had at no time been endangered:

It has never been proved that there was a danger to people living near the station. Without wishing to play the danger from asbestos down, the only thing the council managed to prove was that after a spill into the outside atmosphere, levels matched the occupational limit set by us ('Watchdogs Hit Back At Asbestos Attack', Hammersmith and

Fulham Guardian, November, 1984).

(This statement is only accurate if incidents such as the July 4th release of 0.23 fibres per millilitre are averaged over a fixed time period. Strictly speaking, the peak of the emission of July 4th broke the workplace TLV for blue asbestos, which some considered quite liberal at 0.2 fibres per millilitre).

Thus the twelve month decontamination saga ended in back-biting, recrimination and acrimony. In the local authority's construction of events, the villains were Barlborough Metals, UK Asbestos, Linfact and (especially) the HSE. In that offered by the HSE, the Executive, despite dwindling resources and an ever-growing London caseload, made a heroic effort to monitor companies whose knowledge, resources and resolution were often inadequate. The HSE, with only 500 factory inspectors to cover the whole of Britain (Weeden, C., Op Cit), knew that it faced an uphill task in mounting an effective supervision at Fulham. Hence the somewhat hesitant tone of the commitment to public safety given by the HSE's Deputy Chief Inspector of Factories at the commencement of the decontamination and demolition:

Within the resources we have available to us, we will do our level best to ensure that Fulham Power Station comes down without risk to the people who live around it (Ibid).

Indeed, such were the resource constraints on the HSE that on July 7th, just three days after the first major recorded emission, the HSE's first site inspector,

Daniel Mallon, announced that he had to reduce the time he spent at Fulham due to the pressure of other work (Ibid). (During this period, the public expenditure cuts of the first determinedly disinflationary Thatcher administration were beginning to have a serious effect on the work of the Executive. Thus, even though six million more workers had been made subject to the Health and Safety at Work Act since its inception in 1974, between 1979 and 1983 the HSE lost 100 factory inspectors (Wallace, M., and Raw, C., Op Cit)). Mallon's untimely announcement did little to calm the fears of the activists, who had been alarmed by the July 4th incident. The HSE, however, were rather more circumspect; As one HSE spokesperson put it, "Residents will never be satisfied..." ('Watchdogs Hit Back At Asbestos Attack', Op Cit).

2.2 Relevant Incidents and Developments Prior to the Fulham Power Station Debate.

A number of events that occurred prior to May, 1983, (the start of the decontamination and demolition saga) had a bearing on the subsequent debate over such issues as CEGB power station sales policy, asbestos exposure standards, working practices, and the accreditation and competence of asbestos removal contractors.

In June 1980, the Ministry of Defence (MoD) decided to scrap the Ark Royal, Britain's last major fixed wing aircraft carrier. The carrier had been popularised in the BBC TV serial 'Sailor'. Unfortunately, due to the incompetence of the first company to break the ship, a

major asbestos hazard was created in and around the Cairn Ryan yard at Stranraer. However, what was most interesting about the Ark Royal breaking saga was the remarkable similarity between the MoD's view of its responsibilities and that of the CEGB: The MoD's unabashed intention was to get the maximum possible return on the disposal, regardless of the ship's final destination. The ship was consequently sold to the highest bidder, a consortium that included H.Kitson Vickers, "Without any attempt to ascertain the purchaser's competence to handle [the] hazardous materials she was known to contain" (Wallace, M., Op Cit). The Sunday Times noted the remarkably similar philosophy of both the MoD and CEGB towards the disposal of hazardous wastes:

As echoed two months ago by the Central Electricity Generating Board, when it sold Fulham power station complete with thousands of tons of asbestos to an untried firm, the Ministry of Defence refuses to accept moral responsibility for any consequent hazards (Ibid).

Indeed, if anything, the attitude of the MoD was even more cavalier than that of the CEGB. When it was confirmed that the Navy had left 160 tons of bunker oil in the ship, the admirals, who had originally denied the oversight, explained that the handing over of a major fire risk to untried civilian contractors was justified on cost grounds:

We regarded it as more economical to pay money to the salvage contractors (at that time H.Kitson Vickers) in order to do it. If we had done it ourselves, we would have had to hire a

bunker cleaner ship and it would have cost us more (Ibid).

The MoD wholeheartedly backed its admirals:

It's up to the scrap merchant to comply with the law. We simply get the best price we can (Ibid).

As mentioned above, this argument bears an uncanny resemblance to that of the CEGB and Government at the commencement of the Fulham Power Station debate.

The importance of the Ark Royal saga to the Fulham Power Station debate lay in its timing and reporting. Although the majority of the events at Cairn Ryan occurred before May, 1983, the Sunday Times Insight journalist who reported on Fulham Power Station, Marjorie Wallace, saw an interesting parallel between asbestos-related events in a busy London suburb and those in a remote Scottish village. As far as Wallace was concerned, while the social contexts were very different, the potential risk - namely that posed by asbestos - was the same. As a consequence, Wallace ran stories on the Fulham demolition and Cairn Ryan breaking almost back to back. (The Insight team ran a major report on Fulham Power Station on June 26, 1983. This was followed by a similarly detailed report on the Ark Royal on July 17, 1983). It is possible that a number of the Fulham Power Station activists (and non-activists) would have read the July 17 report on the Ark Royal debacle, and extrapolated the Cairn Ryan experience to Sands End (although one can only speculate on the conclusions they

might have drawn).

In 1982, Yorkshire Television broadcast a documentary entitled 'Alice: A Fight for Life'. The programme, which gave rise to significant press and public comment, detailed the slow death from mesothelioma of Alice, a 47 year old who, at the age of 17, had worked for nine months at Cape Asbestos in Yorkshire. Alice had been exposed to significant quantities of asbestos dust. As the ex-farm girl put it, "It was just like haymaking - only indoors. There was white, thick dust all over". When she died, Alice's 65 year old husband was left with the task of raising her teenage son and five year old daughter.

In October, 1982, the respected cancer epidemiologist Richard Peto, Reader in Cancer Studies at Oxford, very publicly drew attention to the level of morbidity and mortality attributable (in his opinion) to asbestos dust exposure:

There will be a total of about 50,000 asbestos-induced deaths in Britain in the next 30 years or so. 50,000 deaths is a number so enormous that it is difficult to comprehend - for example, it greatly exceeds the likely number of murders during the same period...Because it is so widespread asbestos may well be the worst occupational carcinogen (cancer-causing substance) ever ('NALGO [Unison] Magsheet', No.20, February 1984).

In the same month as Richard Peto made his prediction, a warehouse explosion at Salford showered the surrounding area with asbestos debris (see above). As the HSE reported at the time, "Residential property near the warehouse was damaged and residents were temporarily

evacuated" ('Salford Company Fined Following 1982 Fire and Explosions', Health and Safety Commission Newsletter, No.30, June, 1983). Interestingly, the HSE's construction of events was that the evacuation was undertaken because quantities of sodium chlorate and other dangerous chemicals had been stored on site. Also in October 1982, the contractor involved in the decontamination of a power station in Rotherham was fined £700 for violating the asbestos regulations (Wallace, M., and Raw, C., Op Cit). This incident received some media attention.

In November, 1982, in the context of the GLC's concern about asbestos, the London Borough of Lambeth hosted a conference on asbestos hazard (see above).

In January, 1983, the government introduced new exposure standards for blue, brown and white asbestos (see above).

2.3 Relevant Incidents and Developments that Occurred During The Fulham Power Station Debate.

In March, 1983, Medway Insulations of Maidstone commenced a large asbestos removal contract at the CEGB-owned Tilbury-A power station in Essex. Medway Insulations were to remove "Huge areas of asbestos, 150 feet high and hundreds of feet long". At the end of May, 1983, however, Medway were told to stop work by the CEGB for breaking asbestos removal regulations. Apparently, the company's workers had been stripping the asbestos without adequate protection. The company, both an ARCA

member and CEGB-approved contractor, was eventually thrown off the job. This incident seemed to illustrate two points. Firstly, that even CEGB-approved contractors working under CEGB supervision at functioning power stations could behave irresponsibly. And secondly, that even the (apparently) strict membership regime applied by the industry's trade association, ARCA, could not guarantee good practice on the part of its members. (At this time, ARCA membership involved "Visits by members of the committee, questionnaires, references and two years' experience of removal"). This failure of control led one construction industry correspondent to call ARCA a "Paper tiger". He went on;

Despite the complaints procedure having been used several times, there has never been a dismissal of an ARCA member to date. The Association is, to some extent, hamstrung by its own constitution... (Building, Op Cit, p.29).

As the demolition saga in Fulham progressed, it became clear that the CEGB's programme of metropolitan closures extended well beyond SW6. As City Limits explained in July, 1983;

Nearly every old power station in London, together with many others nationally, are going to close. Hackney, Blackwall Point, Bankside, Fulham, Kingston, Croydon and Barking are already closed. More will formally be closed this October [1983] at Acton Lane, Battersea, Deptford, and West Ham. Once shut down with the workforce removed, the CEGB intends to sell each one and the land it occupies. All will be knocked down, bar Battersea which will be gutted ('Under The Hammer: A Dusty Business', Op Cit).

This vast closure and sales programme left London's power supply with the nuclear-powered station at Dungeness, and the large oil-powered stations at the Isle of Grain, Littlebrook and King's North.

Of all the London power stations to be closed, perhaps the best known was Battersea in Wandsworth. Battersea was closed in October, 1983, leaving a CEGB-appointed 'panel of assessors' with the task of finding a suitable use for the asbestos-laden listed building. Where Fulham had simply been sold to the highest bidder, it was determined that Battersea (at least) should be sold to a developer "Of suitable financial standing and ability". In another innovation, the CEGB canvassed local opinion on the question of the building's future use - although the Board allowed just four weeks for the consultation. Despite the short timescale, however, several community schemes were proposed. The results were exhibited to the general public. The Board's new-found 'glasnost' also elicited academic contributions. The Polytechnic of the South Bank, for example, conducted a survey across Battersea on community preferences for the use of the site should the power station be demolished. The community expressed a strong preference for housing, leisure and community facilities ('The Power, The Glory And Mickey Mouse', City Limits, May 4-10, 1984). (Similar preferences were expressed by some of the residents of Sands End with regard to the Fulham site, although, of course, no-one officially canvassed these views). In another break with the past, the CEGB organised conducted tours of the power station over a

three week period in late 1983 (even though, at this time, none of the asbestos had been removed). It is possible that the CEGB's candour and openness with the public over the future of Battersea Power Station reflected in some measure the adverse publicity it had received over the covert sale of Fulham Power Station.

3 Conclusion.

The decontamination and demolition of Fulham Power Station lent itself to a number of constructions. These ranged from the HSE's view that those involved in the project behaved, for the most part, correctly, to TERROR's view that all those who had a hand in the decontamination and demolition were guilty of negligence in some degree: even Bruce Cova, popular hero during the latter stages of the project, drew criticism at the commencement of the debate due to his perceived reluctance to get involved.

The decontamination and demolition generated a heady mixture of events and personalities. Amongst these were the spectacle of a public utility - the CEGB - treating a loyal community with apparent disdain; A 'factory of modernity and light' funded, built and run by the people of Fulham in the interests of the community abandoned (by the CEGB) to a humiliating fate; A potentially dangerous demolition in the heart of a densely populated community; (Mostly) out-of-town 'muck and brass' demolition contractors determined to get the maximum return on their investment in the shortest possible time for the minimum outlay; And authorities that appeared,

for the most part, dismissive of campaigners' concerns.

Fulham Power Station: Activism.

1 Introduction.

This chapter describes, in the main part, the activities and views of those residents of Sands End who contested the mode of decontamination and demolition of Fulham Power Station in 1983/1984.

The activists' views are recounted verbatim and 'unabridged'. No interpretation is offered. A discourse on the themes of the debate and characteristics of the campaign is offered in the following chapter.

As mentioned in Chapter 4, TERROR provided the vehicle for all active community opposition to the mode of decontamination and demolition of Fulham Power Station. TERROR had no formal structure, and was open to any resident who wanted to join. Its membership, however, was very small.

Bearing in mind that, at the time of the power station debate, TERROR had no more than a dozen self appointed, middle class members, the opinions recounted below do not necessarily reflect those of the wider community. TERROR was, in essence, a cabal within the community - albeit a cabal open to new members. Indeed, TERROR's active members would have welcomed more help from the community. (This is a prominent theme of the activists' discourse, as will be shown later).

2 Methodology.

2.1 Introduction.

This chapter examines the motives and nature of active community opposition to the mode of decontamination and demolition of Fulham Power Station.

Three devices were used to produce an activists' narrative of events: Firstly, interviews with those members of TERROR most active in the power station campaign (Section 3.1) Secondly, the reproduction of any views expressed by campaigners in newspapers and periodicals (Section 3.2). And thirdly, the recounting of any views expressed by campaigners in the broadcast media (as far as the limited availability of material allowed) (Section 3.3).

While TERROR was the mouthpiece of the vast majority of active community opposition to the decontamination and demolition of Fulham Power Station, statements were inevitably made by members of the general public, often in the form of letters to local newspapers. Although few in number, these have been reproduced here as a further insight into the community's discourse on the power station, asbestos and authority.

2.2 Narrative Sources.

2.2.1 Contemporary Interviews.

All those members of TERROR who were closely involved with the power station debate agreed to be interviewed,

with one exception - the husband of one of the key female activists. Nevertheless, the interview programme produced nine lengthy 'scripts'.

The interview format was formal but flexible. That is, while all interviewees were asked the same questions, different subsidiary questions would be asked depending on responses given. This flexibility allowed a wide range of views, experiences and issues to be covered.

The interview questions were as follows:

1 Why did you decide to live in Fulham?

2 Was there anything you especially liked about the area?

3 Was there anything you especially disliked about the area?

4 Did you live at the same address throughout the power station debate?

5 At the start of the debate, were you responsible for anybody else's welfare where you lived? (If no, did you become responsible for anybody else's welfare as the debate progressed?)

6 Where did you work and what was your job?

7 Did you belong to any local/national groups? (If yes, which ones? What were their concerns?)

8 How did you first become aware there might be a problem with the demolition?

- 9 How did you feel when you first heard there might be a problem?
- 10 What did you want done about the problem?
- 11 What actions did you take, either on your own or as a member of the group?
- 12 Did the group have access to technical resources?
- 13 Did you ever disagree with the arguments made by the group? (If yes, why?)
- 14 Were there any joint actions with other groups? (If yes, what were they? If yes, were there any disagreements over aims?)
- 15 What were the results of your actions?
- 16 How did you feel at the end of the campaign?
- 17 Had your feelings about where you lived changed? (If yes, why?)
- 18 Do you think the situation could have been avoided? (If yes, how? If no, why not?)
- 19 Have you been involved in any industrial hazard debates since? (If yes, which ones, and in what ways?)
- 20 What are your feelings now about living near major industrial plants?
- 21 Are there any industrial sites in Sands End, between Wandsworth Bridge Road and the railway line, up to the King's Road, that give you cause for concern?

(Note that Question 5 was intended to reveal which activists either were or became responsible for children during the debate).

Four of the questions were slightly changed between the first and second interviews. Question 9 initially read 'What did you feel when you first heard there might be a problem?' Question 10 initially read 'What did you resolve to do?' Question 11 initially read 'What actions did you and/or the group become involved in?' And Question 20 initially read 'How do you feel about living in old industrial neighbourhoods like Sands End?' The changes were made because questions 9, 10, 11 and 20 had caused (mild) confusion in the first of the nine interviews. Question 20, for example, was intended to probe what people felt about living in proximity to industry after their experiences of Fulham Power Station in the early 1980s. But in its original format - 'How do you feel about living in old industrial neighbourhoods like Sands End?' - it was interpreted as a question about living in de-industrialised neighbourhoods.

All interviews were arranged by telephone and were conducted by myself. Most interviews took place at the home of the interviewee. Interviewees had no prior knowledge of the questions they were to be asked (although some would no doubt have contacted friends to find out the general thrust of my interest). The questions were asked verbally. The list of questions was not left with the interviewee. All interviews were completed, with the shortest taking an hour and the

longest four hours.

Responses were tape recorded then typed up. Particularly relevant responses were typed verbatim. Interviewees did not ask to see the completed scripts, although a few expressed an interest in seeing the completed thesis.

2.2.2 Press and Periodical Reporting.

During the second half of 1983, when the debate over the decontamination raged most fiercely, a number of reports appeared in local newspapers. (There were two local weekly newspapers, the West London Observer and The Fulham Chronicle). Reports were also published in national newspapers and periodicals. These included The Guardian, The Times, Private Eye, Building and New Scientist. The majority of these reports were collected by TERROR's chronicler of events at Fulham Power Station and pasted into three large scrap books (which were lent to me for my research). Articles were entered by date of publication. TERROR also kept a photographic record of the power station's demolition. Some news reports contained quotations from TERROR activists. These reports provide a useful supplement to the accounts obtained through interview.

2.2.3 Broadcast Media.

The only broadcast media account obtained was a recording of a (substantial) radio magazine item put out at the height of the debate. This juxtaposed the views of the activists with those of the HSE and John Gummer.

3 Data.

3.1 Interview Accounts.

3.1.1 Introduction.

Responses to questions will be recounted here in two stages. Common or majority themes will be highlighted first, followed by more unique insights. This approach is based on the premise that uncorroborated accounts are as valuable as commonly held views in understanding the terms and construction of the debate.

3.1.2 Responses.

Question 1. Why did you decide to live in Fulham?

Most of the activists who were not native to Sands End moved into the area to take advantage of its cheap rented and for-sale housing. The majority of 'newcomer activists' moved in before 1980 when the pace of gentrification was relatively slow. (Sands End was the last part of Fulham to be gentrified). As one interviewee put it, in the 1970s "Sands End was still a low-cost and working class area of London. Since then it has been gentrified out of all recognition" (JG: Interviewed October 23, 1993). In the early 1970s "...[I]t was just a gentle 'moving in' of people who were very often Londoners with a working class background who had benefited from education and who had gone into the professions or other skilled work and who were moving into private housing in parts of London

which they found comfortable, which related to their own background and spirit..." (Ibid).

Those activists who had been born in Sands End chose to remain there because they liked the neighbourhood's community spirit. One moved away when she got married, but moved back when she began to feel 'homesick' (TR: Interviewed September 28, 1993) Another chose to buy her mother's house, which she secured in 1971 for £4,000.

It is noteworthy that all those TERROR members involved in the power station debate had lived in Sands End for some years prior to the events of 1983/1984. The campaign was not run by people recently arrived in Sands End or by people living outside the neighbourhood.

Question 2. Was there anything you especially liked about the area?

A number of non-native activists said they were attracted by the community spirit within Sands End. As one put it, when he moved into the area, Sands End "...[W]as a good community. It was still working class then. It was still thriving...There were a lot of shops on Stephendale Road" (DN: Interviewed November 24, 1993). (The shops on Stephendale Road, located at the heart of Sands End, were undermined in the late 1980s by local superstore developments). An activist born in Sands End commented that "[I]t was always a very cosy area because a lot of the families worked in the power station" (TR: Op Cit). Another native stated that in Sands End "Everybody was related", and that "The doors

were left open" (CD: Interviewed September 17, 1993). Several commented that they were attracted by the 'uniqueness' of the area. Such uniqueness reflected the neighbourhood's isolation. As one activist explained:

Derek Jarman, who was making 'Jubilee', showed me this area...I said 'What a weird, bizarre area to live in...What a strange place, like it is a real backwater...How would you get here? There are no tubes, no buses. What a weird place'. It was actually the Jubilee year, so everyone had their bunting out, and at one level, it seemed very old-fashioned, like a Welsh mining village, an anachronism...It was an odd place then, and it still is (VW: Interviewed October 5, 1993).

This same person was also drawn to the 'grubbiness' and cosmopolitanism of the neighbourhood. As she put it, Sands End "[H]ad a realistic mixture of people...[it was] a kind of eccentric place...full of 'one off' people..." (Ibid).

According to another, the neighbourhood, at least in the 1970s, displayed a marked social harmony and sense of equality - especially in the area's large private-rented estates:

Everybody was sort of equal. Everybody paid thirty shillings a week rent. You all shared a garden. You all shared the coal cellars, and what is my kitchen was a communal scullery...There was a very great feeling of equality. OK, someone might have had nicer curtains or a bigger car, but there was a feeling that you belonged (TR: Op Cit).

Despite the accelerating gentrification of the 1980s, the area's social heterogeneity persisted. As one activist explained:

It wasn't always rich people who moved in. You also had lots of flats and houses being shared by upcoming students who also created life in clubs and cafes...They had a desire to go out where previously there wasn't that market in the area (JG: Op Cit).

This continually refreshed social heterogeneity proved attractive to many long-term and new residents.

A number of activists also said they were attracted by the area's centralness and 'convenience for town'. Presumably, given the almost complete lack of public transport in the area (see above), these people had access to private transport. (The need for improved public transport in the area became a major preoccupation of ARISE. A long campaign met with some success; two small capacity 'Hoppa' bus services were introduced).

Question 3. Was there anything you especially disliked about the area?

Most activists mentioned the high levels of atmospheric pollution that existed before the power station's closure in 1978. As one put it, "There was filth in the air". Consequently, "Various people were worried about health" (JT: Interviewed October 11, 1993). Another highlighted the practical drawbacks of heavy and sustained atmospheric pollution:

Your washing would get covered if the wind was in the wrong direction..It was very dusty...You would sweep the front and it was like someone had thrown dust (TR: Op Cit).

According to one activist, the consequence of such heavy and chronic pollution was that Sands End became known as "The arsehole of Fulham" (CD: Op Cit). The proliferation of small yard-based industries along the river exacerbated the pollution problem, as did high levels of commuter traffic:

It was quite dirty then, both from the power station [and] lots of yard industries along there...There was a lot of traffic to the refuse site at the bottom here. There was fast through traffic in the rat-runs...A couple of children got killed (DN: Op Cit).

Several activists commented on the grubbiness and ugliness of the area - both past and present. As one put it, "The sheer ugliness took some getting used to. I saw nothing that rejoiced me [sic]" (MP: Op Cit). According to another, "Wandsworth Bridge Road was depressing and run-down" (JT: Op Cit). And speaking of contemporary Sands End, a third commented; "There's a bit of a grunge aspect to it that I don't like" (VW: Op Cit).

Most activists criticised Sands End for its lack of open space. One, who had moved into the area from a spacious social housing scheme in Dagenham, described Sands End as claustrophobic and 'compressed'. Another commented "It was dirty. It is very enclosed" (TR: Op Cit), while a third put the issue in a wider political context:

It is not open enough. There is still too much turn of the century back-to-back. I think planning is to blame here, because of people trying to keep fairly low-quality housing streets in aspic, in a sense, and I don't see the point of that...(JG: Op Cit).

One activist, who had moved to Sands End from Greenwich, a more prosperous and certainly greener area of London (the suburb is dominated by the park, a large, elegantly modelled open space on the Thames), said she "...felt that Sands End was socially rather neglected" (MP: Op Cit). According to this relative newcomer, moving to Sands End from Greenwich "...was almost from the sublime to the ridiculous" (Ibid).

Another activist was critical of the passivity of the major community association, ARISE. As he put it, "ARISE...is a very gentle, low-key, not very angry type organisation, when in reality there are a lot of things to be angry about" (JG: Op Cit). According to this activist, such passivity allowed the construction of a "Jerry-built pile" - Chelsea Harbour - in the late 1980s. The creation of this "Monument to Thatcherism" (Ibid) resulted from a combination of a 'kowtowing' local authority and an ideas vacuum amongst the residents of Sands End. There was "...a sickening level of quietude from the whole population and local politicians about what should be/could be done..." (JG: Op Cit).

Views on the beauty or otherwise of the power station building itself were mixed. One (non-native) activist had looked forward to its demolition:

I wasn't unhappy about the prospect of it coming down. I was rather anxious for significant urban renewal to take place in the area. I was anxious that the river could be accessed by local people...The power station blocked the river off totally from local people (JG: Op Cit).

Another, however, noted its close association with the people of Fulham, who had financed its construction, stoked its boilers and benefited directly from the cheap electricity it had produced:

I think they resented [its demolition]. It was their power station. It is written across that part of the building that remains; 'Fulham Power Station'...I think they felt things went over their heads...when it had originally been given to them and they helped build it (MP: Op Cit).

This same person also found the edifice attractive to look at. As she put it:

I rather missed my power station. I'd got used to seeing it...I missed it visually...the sun shining on one side of it...It was magical in the moonlight...I just found it so, but I don't suppose many others did (MP: Op Cit).

Question 4. Did you live at the same address throughout the power station debate?

With one exception, all the power station activists lived in Sands End.

All those activists resident in the neighbourhood lived at the same Sands End address throughout the debate. None moved during or after the debate. Indeed, all were still resident at the properties they occupied during the power station debate when they were interviewed by myself in the latter part of 1993.

The only person involved in the debate who did not live

in Sands End was the Community Development Worker (CDW). The CDW, who was involved only at the periphery of the campaign, worked for LBH&F's Community Development Unit and helped channel Inner Area Programme monies through ARISE to the local community. She lived in north London.

Question 5. At the start of the debate, were you responsible for anybody else's welfare where you lived?

Most activists had children. The three most prominent activists - all women - had young children. One had a son aged two and a half. Another had a son aged three and a daughter aged nine, while another had a daughter aged eight (and a son aged seventeen).

(These women were the leaders of the power station group. They were the 'core activists').

Question 6. Where did you work and what was your job?

None of the activists worked in industry at the time of the power station debate. Most had jobs in non-technical areas. For example, one was an artist, another a part-time journalist, another a youth club leader and another a local authority manager. Only one of the activists - at the time of the debate a lecturer at a London polytechnic - had a formal scientific training (a BSc and PhD in chemistry).

Two of the three 'core' activists had jobs in the arts. The third classified herself as a "domestic appliance" (CD: Op Cit), by which she meant a full-time housewife.

Question 7. Did you belong to any local/national groups?

By definition, all the activists were members of TERROR, with the exception of the CDW who was not allowed by her employers to join local groups.

At the time of the power station debate about half the activists were also either fully paid up or lapsed members of ARISE. A few belonged to the Labour Party, while one had been a Liberal Party national delegate. One activist, who belonged to ARISE, Greenpeace and possibly also the Labour Party (she couldn't remember), commented "I am not actually a joiner" (TR: Op Cit).

Although being a somewhat "anarchic" group (VW: Op Cit) with no formal structure, TERROR proved an ideal vehicle for the power station campaign. As one activist explained, "TERROR went into a period of quietness because we had had a favourable decision from the GLC [on a major road scheme]. When the power station came up that network was able to organise and agitate on the power station" (JG: Op Cit).

Question 8. How did you first become aware there might be a problem with the demolition?

Most activists heard by word of mouth. Initial information on the demolition was received by a prominent member of TERROR (from a journalist), who then visited several other members. From this point onwards the information spread quickly throughout the organisation and wider community.

Some of the comments on the style in which the news was disseminated are interesting. One - the polytechnic lecturer - described his initial visit from the prominent TERROR activist contacted by the press as follows:

[Name deleted] came in and had a tantrum. She is good at tantrums. She went off at the deep end, really, which I thought was a bit over the top (DN: Op Cit).

The wider community realised that something unusual and unanticipated was happening at the power station from 'strange goings on':

Sylvia Bayliss, who ran the local newsagents, said that one man had gone in and bought her entire stock of Sellotape to put plastic bags up at the windows to save the dust coming out...There were men going in the pub [presumably men not known to the community] (AF: Interviewed October 21, 1993).

Question 9. How did you feel when you first heard there might be a problem?

All the activists said they felt angry about the method of decontamination and demolition. The three core activists were respectively 'angry', 'furious' and 'concerned for the community'. As one put it, she felt "Furious and frightened...The fear was 'Christ, what's going to happen?' and the anger was 'How dare they - it's right on my back door'. Every time I tried to forget about it I would look out of the window and think 'If I put that child out there, how far does the...'" (at this point her narrative tailed off into a silent

reverie) (VW: Op Cit). Another felt angry "Because I know how dangerous asbestos is...I knew about it from my father who was a doctor" (JT: Op Cit). This anger was heightened by the apparent indifference of the contractors;

What angered me was the thought that the people in there were not responsible and couldn't give a shit (Ibid).

The third core activist (the one born in Sands End) was concerned for the health of the general community:

I never for once thought of it as being a personal issue - like my children might be affected or I might be affected - because I don't tend to think of it that way. But I felt it was unfair (CD: Op Cit).

Another activist, also concerned at the apparent incompetence of the decontamination and demolition contractors, felt "Absolute outrage...As soon as we realised that the group of developers were going to pull one down and had never pulled one down before - and with the valuable help of Private Eye it was revealed that this very group had been fined in Yorkshire - it was just sheer outrage that this could happen under our very noses...That we could be laid open to the effects of asbestos dust" (MP: Op Cit).

Another was angry that it had been left to the general public to agitate for a safe demolition:

[I felt] anger that it had to be a community group that was raising the issue, and about the fact that the people who should have been addressing the issues didn't know what was

going on (AF: Op Cit).

According to this activist, the two Labour ward councillors "...were useless, as on every issue". Furthermore, "There was nobody from the Council really interested, from Environmental Health, or any department". (The view that the local authority's Environmental Health department was (initially) slow to act on information received was commonly held amongst the activists). Finally, "The HSE were slow off the mark. It was almost as if there had to be a disaster before they could prioritise it" (AF: Op Cit).

It is interesting that some of the activists put asbestos hazard in a wider historical perspective. One activist, who commented "We had never been worried before this. In my generation we had all used it", went on:

One was horrified...And also at the same time I came from a generation when we all had our plaques of asbestos that we put underneath the saucepans to keep the flame down...It used to get a bit powdery, then you'd chuck it out...And the ironing board also had a plaque. And I remember a very nice ironmonger - he'd been here for years and years - whose basement was all lined with asbestos...He was not a bit worried...Of course, he'd read all the stuff in the local paper about what was going on...but it wasn't worrying him...because he'd always had it (MP: Op Cit).

Another explained: "You had asbestos on your ironing board, for God's sake, and it used to crumble, and you never thought any more about it" (TR: Op Cit).

A third related asbestos hazard to the hazards

encountered in his job as a research chemist:

As I was handling chemicals that were lethal at the time, I wasn't particularly bothered...It did frighten me...in terms of if they screwed it up it could be quite nasty, but, you know, it is not like a nuclear spill...It is fairly innocuous...It is going to kill tens of people at most (DN: Op Cit).

It should be noted, however, that even those who relativised asbestos hazard alongside other risks were, like those who (apparently) did not, still angry that they were being 'needlessly' exposed to an involuntary risk.

Question 10. What did you want done about the problem?

Given the perception that the existing contractors were using unsafe working practices, there was a consensus that TERROR should agitate for the safest possible decontamination and demolition. As one of the key activists put it, "I wanted it to be done in the most responsible manner" (JT: Op Cit). The demand for the 'safest possible' job reflected the realisation that while TERROR could not, on its own, halt the demolition, it might be able to secure better standards of work. In short, TERROR members wanted "...to get as safe a job as possible, because we could not stop it" (CD: Op Cit).

There was also a view that those who were perceived to have compromised public safety should be made to pay for their behaviour. These included the local authority, ward councillors, the HSE and especially the decontamination and demolition contractors. As one

activist, speaking about the contractors, put it:

My initial response...was that I didn't want the buggers to get away with it. That sums it up in a nutshell, really. If they were going to make a large profit out of what was basically a bum deal, I didn't want them making a profit by cutting corners, and us being the recipients of the pollution (DN: Op Cit).

The two local councillors were criticised for their 'tardiness' and 'disinterest'. As one female activist put it:

We felt the ward councillors were much too weak. They should have known about it before it was all brought up by a bunch of women (MP: Op Cit).

Question 11. What actions did you take, either on your own, or as a member of the group?

Most actions were taken under the aegis of TERROR, whose members displayed a remarkable coherence and unity of purpose throughout the power station debate. Group actions included public meetings, mail shots to residents, a visit to see work in progress, lobbying of MPs, GLC and local councillors, and a presentation of a statement of concerns to Sir Walter Marshall, Chairman of the CEGB, at the Board's headquarters in London.

However, although the group displayed a remarkable unity during the campaign, two points need to be made about its structure and dynamics.

The first is that the group itself functioned at two

levels - core and periphery. The core of the group consisted of three highly motivated women activists who energised the other members and drove the debate forwards. These women put a huge amount of effort into the campaign. As one of them explained; "We spent three months of our lives working from eight in the morning until two at night" (CD: Op Cit). All three women had young children and husbands who went out to work. The periphery of the group consisted of some seven or eight activists who, although busy throughout the campaign, were very much 'back room' workers.

The second point is that within the group, certain specialisms developed - especially amongst the three core members. Thus, one devoted her time to generating campaigning ideas. As she put it, "I am basically an ideas person" (VW: Op Cit). Another managed public relations, arranging visits for television crews from BBC Nationwide and a Scandinavian network. The third core member acted as the group's secretary and archivist. Her organisational skills were much respected by other (less organised) group members. As one put it, she "...Was excellent to work with, in that she was competent, she delivered...she was effective...". This made her "The ideal person to work with" (DN: Op Cit).

Peripheral group members also specialised. For example, the husband of one of the core activists spent considerable time researching the background of the various companies involved in the decontamination and demolition work at the power station. Much of the research was done at Companies House in London.

The group's only member with a formal scientific training, the chemistry lecturer/researcher, sought expert help from the University of Southampton and from an Oxford Professor.

The youth club leader took it upon herself to run an 'asbestos hazard awareness programme' for her charges.

Such individual and spontaneous actions were, however, the exception. Most actions were agreed by group members, reviewed by a local Law Centre, then pursued under the aegis of TERROR. This gave activists a measure of peer support, personal anonymity and legal assurance.

Question 12. Did the group have access to technical resources?

The group's only 'in-house' scientific resource was a chemistry lecturer/researcher working in higher education. He had a BSc and PhD in chemistry and was both lecturing and researching at the time.

The lecturer contacted Professor Richard Peto, then Reader in Cancer Studies at Oxford, who had done extensive research into the carcinogenic properties of asbestos dust: "I rang him up a few times. He had even got the [carcinogenic] mechanism [of mesothelioma] out..." (that is, he had discovered how asbestos caused mesothelioma) (DN: Op Cit). The lecturer also met with Peto in Oxford. The meeting, which lasted several hours, was productive. Professor Peto - described by the lecturer as a 'world authority' on asbestos disease -

was keen to help and "...could not have been more obliging" (Ibid):

[H]e was interested. We could do a deal, basically, in that this was the first power station [not to be demolished by the CEGB]. He was interested in it being stopped if it was incompetent and done badly, with all the safety laws being flouted (Ibid).

The Professor also provided the lecturer with a collection of academic papers on the aetiology of asbestos disease.

At the same time the lecturer contacted Southampton University with a view to assessing the micro-climate of Sands End so an attempt could be made to model the distribution of any dust released from the power station. Unfortunately, however, "[C]omputers then were much slower than they are now, and they couldn't do it quickly and easily" (Ibid). But despite the weaknesses of the computer technology of the day, "We did manage to get an order of magnitude...So we did get around .7 of a death out of the emissions" (Ibid).

The activists also looked to advocacy and special interest groups for advice, especially trades unions like the Union of Construction, Allied Trades and Technicians (UCATT) who had done work on asbestos hazard. UCATT were also interested in the Fulham site because of a suspicion that the companies involved were using non-unionised labour. The General, Municipal, Boilermakers and Allied Trades Union (GMBATU) also provided advice through its National Health and Safety

Officer, David Gee. The fact that one of the activists had a knowledge of trades union interests and practices helped the group gain access to union expertise. (Some time before the Fulham Power Station debate, this same activist had been involved in a dispute over asbestos at a London factory).

The group received advice from the Society for Prevention of Asbestosis and Industrial Disease (SPAID), an organisation founded by the widow of a victim of asbestos disease. As one activist put it, "There was this wonderful woman, who was a kind of asbestos expert" (VW: Op Cit).

However, although support was received from UCATT, SPAID, the GMBATU and several other groups, this was passive advice, not assessment and active scientific analysis of the hazard. Consequently, the group had to rely on other parties, most notably the local authority, GLC and HSE, for technical data on possible environmental contamination.

Question 13. Did you ever disagree with the arguments made by the group?

The group maintained a consensus on most issues and enjoyed the support of most of its members for most of the time. That is not to say, however, that there were never differences of opinion or personality clashes. This is what one activist - the polytechnic lecturer - said about another:

[Name deleted] goes over the top totally...You

have to play the political game...She was useless at that, really. She would be useful for a photocall. She was no good at getting a coherent strategy (DN: Op Cit).

Another activist said she became nervous when there were calls for direct action:

There was a lot of feeling around which was emotive, direct action type feeling - amongst some people. People got hyped up by things without checking that it was actually fact (TR: Op Cit).

Emotive reactions were, however, usually quashed by the group - often on advice from the Law Centre, as the following testimony reveals:

[One woman claimed] 'If one fibre escaped from there, somebody's son would breathe it in', which I thought was being over-reactive...So the message came back from the legal side, "Keep her mouth shut" (CD: Op Cit).

This 'quality control' ensured that there were only relatively minor disagreements between group members. Such disagreements boiled down to "...wordings of leaflets and communications...[and] what one should say to the press and television" (JG: Op Cit).

There were certainly personality clashes between the three core members. But as one of them pointed out, no more than could be expected when three very motivated and strong-willed people were obliged to work together under great pressure over a prolonged period.

There were also personality clashes amongst activists in the periphery of the group. For example, as one female

member said of an ambitious male colleague, "I'm sure part of his interest was to do with his own personal politics [i.e. personal political ambition]" (AF: Op Cit). (The man concerned later became a local councillor).

Question 14. Were there any joint actions with other groups?

The power station campaigners acted more or less independently. While there were some contacts with other groups - like Friends of the Earth, a group in south west London focusing on the proposed sale of Kingston Power Station, and some trades unionists at an electrical components factory in Battersea (Morgan Crucibles) - the Fulham group never held any major joint actions with any of them. Those groups that were contacted never had any major input into the campaign in Fulham. Friends of the Earth, for example, whom one might have expected to have played a more prominent role in the campaign, provided, according to one of the core activists, no more than 'a bit of back-up'. In fact, the Sands End group probably had more help from Fulham-based peers of the realm than from Friends of the Earth. As one activist explained, "Living in Hurlingham [just to the west of the Wandsworth Bridge Road] are something like twenty members of the House of Lords, and they got us a lot of information about the government" (DN: Op Cit). (Hurlingham is, in large part, a middle and upper-middle class neighbourhood).

Question 15. What were the results of your actions?

On the question of the safety of the decontamination, the consensus was that the job had been done more safely than if no protest had been made. As one of the core activists put it; "We had a safer job done - I'm not saying that it was a safe job - than if we hadn't campaigned...It could only have been worse" (CD: Op Cit). Another said of the campaign:

It was very successful, because the power station was stripped relatively cleanly and no other power stations were done the same way. They were all done by the CEGB internally (DN: Op Cit).

A third, although confident that the job had been done "...more safely than it might have been", emphasised the reactive nature of the protest; "[T]hey were already in there. We could never get ahead of them" (VW: Op Cit).

While the activists were confident that their efforts had ensured a 'safer' job, a couple were unsure as to exactly how safe it had been. The uncertainty was heightened by the lack of any standard for non-workplace exposure to asbestos dust. (Some considered the refusal of the government to set such a standard to be one of the few failures of an otherwise highly successful campaign).

Question 16. How did you feel at the end of the campaign?

There was a general feeling of relief amongst the activists that the episode was over. The core activists

had been under great stress during the campaign. One said she felt 'exhausted' at the end of it. Another, "[M]aking sure we did not give in first" (CD: Op Cit), pushed herself to the limit of her endurance. This person was keeping house for two children and a husband at the time.

The campaign also featured prominently in the lives of activists at the periphery of the group. Few in number, they had to work very hard to keep up with events at the power station, in local and in national politics. Consequently, when the campaign ended, some said they felt a sense of loss:

[I felt] slightly bereft, because when anything comes to an end, you have to get back to reality. Some people wanted it to continue. They'd found a purpose, a voice (TR: Op Cit).

Only one activist said that she had felt intimidated by the forces ranged against the group during the campaign. This person, one of the three core members, had received a hate letter (the only one received by a group member), and suspected that her telephone had been tapped at various times. At the end of the campaign she and her husband, who had also been very active, considered moving out of the area. (Both, in fact, remained).

Question 17. Had your feelings about where you lived changed?

Only a couple of activists said they felt differently about Sands End after the power station debate. One

husband and wife pair did consider leaving Sands End for 'greener pastures'. As an activist who was very close to them explained:

[Names deleted] got a phobia about this area...I don't think this area is any worse than any other...Where is this mythical place where you are not going to have any kind of pollution? (JT: Op Cit).

But most activists felt the same about the neighbourhood at the conclusion of the campaign as they did before its commencement - they liked it and wanted to remain. One stated that the tennis club subsequently built on part of the old power station site (the Harbour Club) had endeared her even more to Sands End. (The Harbour Club, however, is hardly a community facility. Despite promising 'community sessions' in the early 1980s, the club is, today, one of the most exclusive (and security-conscious) in London. The Princess of Wales is a member (see Chapter 3)).

Question 18. Do you think the situation could have been avoided?

There was a very strong feeling that the Central Electricity Generating Board should have 'cleared up its own mess' and should not - as the activists saw it - have abrogated its responsibilities by handing over decontamination and demolition work to 'cowboys'. As one activist put it:

I was annoyed with the CEGB for not clearing their own crap out of there before selling it off...They were just interested in making a profit (CD: Op Cit).

Another activist who commented "The CEGB should have made the building safe with the clearance of any contaminated waste", added; "My experience of them doesn't give me much faith for the demolition of nuclear power stations" (TR: Op Cit). (The partner of this activist, 'PR', expressed concern about rail shipments of nuclear waste through Sands End).

It was commonly held amongst the activists that the CEGB had acted 'irresponsibly':

[The CEGB] were culpable...They knew what was in the building, and, whether it was for cheapness or whatever...became unaware of these considerations once they had climbed out of it...and showed no regard for the local community and those who might be working on the building (JG: Op Cit).

In this person's view, potential polluters like the CEGB should budget for the cost of decontaminating worked-out industrial capital:

All quality businesses should cover all of their costs...whatever they may be...There is no entitlement to profit unless all proper costs are covered...and that is to do with staff safety, the reputation of the organisation and certainly the safety of innocents in the wider immediate community (Ibid).

Despite its failure to 'clean up' after itself in Fulham, the CEGB was still considered by the activists to be the 'most competent' party to decontaminate a disused power station. As one activist put it, "I rely on them to carry out a proper job" (CD: Op Cit). It was

felt that those who had put the power station together were best placed to take it apart again. Another made an association between the general engineering competence of the Board and its competence to decontaminate a difficult site:

[A]s far as I understand it, the CEGB are most responsible...They tend to over-engineer...To build things too well...a bit like the railways...Things last for a hundred years. But on the other hand I see nothing against that, really (DN: Op Cit).

While most activists blamed the CEGB for events in Sands End, a few put the Board's actions in a wider political and economic context. As one explained:

The CEGB had been leaned on in the new commercial environment to take a very hard commercial decision. So basically it was all down to the government, and when it got too hot for them they backed off...It was a balls up, really (Ibid).

The same activist went on; "They [the CEGB] didn't want to sell it, as far as we understood. The government leaned on them to make a bit of money and also as a P.R. thing to show that private firms could behave more efficiently than these incompetent old monoliths...which is pure ideological rubbish".

A couple of activists put the view that all those involved in events at Sands End were culpable in some degree. As one explained, "It was all a kind of interdependence of responsibilities starting at the government, going through the council, to the people who were doing the demolition" (MP: Op Cit).

Some activists picked out agencies other than the CEEB as contributing to the hazard. The Health and Safety Executive came in for especially strong criticism. As one activist explained; "The HSE were in their own little world, and it was very difficult to penetrate it - even for Environmental Health Officers" (JT: Op Cit). At the regular meetings between the local authority, community representatives and HSE, the Executive gave little away. As one activist put it, "The HSE were dragged there...They answered the questions but they didn't offer any more...I don't think they were there to share information" (AF: Op Cit). However, another activist put the HSE's perceived shortcomings in a wider context:

[O]ver a period of time, certainly in the last fourteen years...the HSE has been a much reduced organisation. They are extremely thin on the ground. They cannot run any more to regular programmes of examination (JG: Op Cit).

But despite such circumspection, even this activist was critical of the HSE's performance - especially what he perceived to be its 'lack of accountability':

They have always needed shaking up in terms of accountability...They are too prepared always to go down the middle, whereas I think an accountable organisation should be able to assess and then take the side of one party or another, and then develop a case for that party, rather than always say that 'There are five fingers on one hand, and five fingers on the other hand'...And as part of their philosophy it is not the norm for them to take people to task...They are always trying 'Could you do this, could you do that?' (Ibid).

The same theme was picked up by another, who said; "They were very difficult to deal with...because they were not answerable...They were a sort of quango" (JT: Op Cit). This person - one of the three core activists - went on to say that in her view, the HSE "...were basically lying all over the place...It would have been nice to have got at the throat of the HSE...because they need to make sure things are OK...and I don't think people are answerable" (Ibid). Another activist compared the HSE's apparent insularity and lack of accountability to the more participative ethos of other government agencies:

One thing the HSE doesn't have is a lay committee. You can be a governor of a school or visit prisons, but I can't find any way that I can have a way in to the HSE, just to be informed about what the HSE are doing (AF: Op Cit).

Asked whether she would be able to understand the 'technical' aspects of the HSE's work, were she to be allowed on site visits, she responded; "It is up to me to ask questions. There is nothing that exotic...I know that I'm not scientific, but I'd be interested...I'd learn" (Ibid). She was sure that the wider dissemination of information on site visits would strengthen confidence in the HSE's hazard management activities and would ensure greater compliance from companies; "Maybe if some of this information was more public some of the people being checked would feel a lot more concerned about it..." (Ibid).

The local authority, too, came in for a certain amount of criticism. This criticism focused especially on its

perceived poor public relations performance during the early stages of the power station debate. One activist compared LBH&F's 'tardy' response to public anxiety over the demolition with the 'exemplary' behaviour of a drinks company facing a poisoning scare:

I was thinking about Perrier where they discovered Benzene in it. That was put forward as a model P.R. thing. First they admitted it. They gave clear information, they recalled everything, they did a little campaign to say that we are watching your interests. Everybody took to that, and in fact there was an increase in the damn sales...They did it competently. To catch public confidence you have to catch it quick, and if you do that, no problem. People detect bullshit very quickly [My emphasis] (Op Cit).

Others insisted that the local authority should have played a more pivotal - even interventionist - role in the power station debate; "They should have been the key orchestrator...as it was on their patch" (AF: Op Cit). Ironically, this point was made by the Community Development Worker - herself an employee of the errant local authority. (The council eventually recognised its poor public relations performance, and began publishing a 'Demolition Bulletin'. The third Bulletin is reproduced as Appendix 11).

A couple of activists made the point that where a major industry, like the CEGB, has profitably 'milked' an installation for many years, that industry should be obliged to 'put something back into the community'. This should include the full repair of any environmental damage suffered by the locale during the period of the plant's operation:

It was a dirty job which needed doing...and which they [the CEGB] could well afford to pay for in that they had got the benefit out of the power station many hundreds of times over and the actual pollution clean-up is very small, really...(DN: Op Cit).

Interestingly, the theme of 'putting something back in' underpinned the 1993/1994 debate over the future use of gas-contaminated land in Sands End - as may be gathered from this statement made by the Chairman of ARISE to Hammersmith and Fulham Council in 1993:

The cost of cleansing the land at £8-12 million is a large sum but is relatively small [in relation to] the long period from which it has produced industrial profits...It should be realised as a civic duty to clean the land (sic) ('Precis Of Matter Delivered Verbally To Inquiry Inspector at U.D.P. Hearing, 4th March, 1993').

The reaction to my suggestion that a Local Emergency Planning Committee (LEPC) might help avoid similar difficulties in the future, was mixed. (LEPCs originated in the United States as a means of involving vulnerable communities in risk and hazard management decisions. (See, for example, Hadden, S.G., A Citizen's Right To Know, Westview Press, US, 1989. Also, Musselman, V.C., Emergency Planning and Community Right To Know, VNB, US, 1989)). The most enthusiastic reaction was; "...[S]uch an [emergency planning] environment produces checks, balances and controls from the outset, and people operate according to that criteria...The situation we have here is galloping backwards instead of forwards (sic)" (JG: Op Cit). The least enthusiastic reaction - which came in response to the question 'Would you be

interested in participating in an LEPC for Hammersmith and Fulham? - was; "...Not unless I was paid and it was down the road...But to do one for the whole Borough, forget it!" (DN: Op Cit).

Interestingly, no one responded to the question 'Do you think the situation could have been avoided?' by saying that a major works like the power station should not have been sited in a densely populated neighbourhood like Sands End in the first place. The view was expressed that even in the supposedly environmentally conscious Nineties, industrial developments - even in the heart of a city - should be considered on their merits. As one activist put it; "The risk has to be evaluated on each one" (Ibid). Another said; "It depends on the industry and it depends on the needs of the community" (CD: Op Cit). Even hazardous industries could be tolerated - so long as they were well managed and adequately policed. As one activist put it, such an industry would be acceptable "If it is safe...If they can prove there is a good external monitoring, and regular health checks on workers, and the workforce is enlightened about the risks they may be taking..." (TR: Op Cit). The need for good management practices in potentially hazardous situations was emphasised by another activist:

It is just a question of having good legislation and thinking it out carefully, and then things don't go wrong. Things go wrong, not when there is a lot of nasty stuff around, because you are bloody careful then, things go wrong when you are doing a routine job in something bog standard (DN: Op Cit).

But even for this activist, certain types of plant were inappropriate in urban settings; "But there shouldn't be anything near housing that when it goes bang it takes the housing out..." (Ibid).

Question 19. Have you been involved in any industrial hazard debates since?

The majority of those active in the power station debate played no part in subsequent local hazard campaigns. As one power station activist put it, "I've tended to be a bit of a tortoise" (TR: Op Cit). Another said, rather more acerbically, "Other people can do their bit" (JT: Op Cit). A couple of activists did visit other groups involved in similar asbestos hazard debates, although this missionary zeal evaporated after about a year - the time and cost burdens of travelling the country to advise other groups proving too great for unfunded activists with family responsibilities.

One of the people involved in this follow-up activity did, however, find an outlet for her acquired expertise at the London Hazards Centre, where she served for a time on the Board.

Another activist was asked to stand for the local council, but refused on grounds of conscience. As she put it; "I'm idealistic and not enough of a pragmatist" (VW: Op Cit). This activist - one of the core members - contented herself, and placated her sponsors, by serving for a time on a land-use planning committee of the

London Borough of Hammersmith and Fulham.

While very few TERROR members continued their industrial hazard activism after the closure of the power station debate, all remained hazard conscious, especially of proximate hazards. Thus, when questioned about current concerns, some highlighted the issue of contaminated land on the old power station site; "I can't believe they haven't made tests of the ground there - one would imagine it would be fairly polluted from the power station" (MP: Op Cit). This individual also highlighted the issue of gas-contaminated land, albeit by talking about the old Wandsworth gas works site rather than the Sands End works; "Across the river there's a large acreage [Wandsworth Gas Works site] which has been declared too polluted to build on. So it occurred to me I hope they really had tested around here" (Ibid). Another commented; "Land here is so polluted...It must be because of the amount of stuff they've dumped on it...there are whole areas that are potentially very hazardous" (VW: Op Cit). Some also made reference to the transportation of nuclear waste by train through Sands End. As one explained, "I would bar atomic fuels, because it is bad enough that atomic waste goes along the railway line" (MP: Op Cit).

Question 20. What are your feelings now about living near major industrial plants?

Most activists responded by saying that they would evaluate the situation on a case by case basis. There was no knee-jerk or hysterical reaction against heavy

industry. Even the Greenpeace member and admirer of William Morris expressed the view that "...[I]f you have got to have heavy industry...you have got to put up with the aggravation of it" (PR: Interviewed October 15, 1993). Several were fatalistic about the prospect of living in close proximity to industry. As one said:

Life is one big risk anyway...You have to get on with your life wherever it is...And often people don't have a choice (TR: Op Cit).

Most activists emphasised the fact that the majority of people had little real choice as to where they lived.

The State saw to that:

Well for some people they would just have to get on with it, because if you were on benefit, and you said 'I'm not going [to work there] because I might become deaf', your benefit would be cut, so really your politics don't get a great deal of choice in that situation (AF: Op Cit).

Another related theme was the perceived ubiquity of pollution: If pollution was everywhere, then it did not matter where you lived - you could never escape. As one activist put it, "Life is dirty, and you're not safe anywhere these days" (VW: Op Cit). Another said it would be 'very difficult' to escape pollution in today's world. However, on a more optimistic note, the view was expressed that "No problems are insoluble...They have cost implications which people don't like to look at...But any of the problems relating to heavy industry can be got round..." (PR: Op Cit).

Question 21. Are there any industrial sites in Sands End, between Wandsworth Bridge Road and the railway line, up to the King's Road, that give you cause for concern?

People seemed generally unconcerned about the hazard potential of Sands End's remaining industries. Only one commented on the large British Gas low-pressure methane storage site adjacent to the railway line - and even he was relatively sanguine: "The gas [concerns me]...But I understand that if gas holders go up, they just burn..." (DN: Op Cit). This person was even prepared to accept the installation of high pressure gas storage vessels (of the type that were targeted by the IRA in Warrington in 1993) on the site: "As long as they put them in the middle of what is quite a big site, I wouldn't be too bothered about it" (DN: Op Cit). Another activist mentioned one of the waste transfer stations along the river, and another the small oil terminal adjacent to Wandsworth Bridge. But in general, people were happy with the (few) industries that remained. As one put it, "It's light stuff" (JT: Op Cit).

3.2 Press and Periodical Reporting.

3.2.1 Introduction.

Contemporary newspaper reports on the demolition of Fulham Power Station included a number of statements made by the activists involved in the debate.

Although presenting the arguments made by the activists in an unstructured format, these news reports do

nevertheless provide a useful secondary source of data on the views of those who agitated for a safe demolition.

The news reports also provide useful background data on the views of the general public and other local groups with an interest in the demolition. These views are described in Sections 3.2.3 and 3.2.4.

3.2.2 Press Reporting of the Views of TERROR Activists.

As explained in the previous chapter, the proposed demolition of Fulham Power Station was announced in The Times on May 3, 1983. The Times report prompted a number of TERROR members to focus on the potential risks and hazards of the demolition. The fears of one of the activists were quoted in a local newspaper on May 12:

However carefully it is demolished, some asbestos is bound to get into the air...It's appalling that nobody knew about this (VW in 'Families Fight Bulldozing Of Power Station', West London Observer, May 12, 1983).

The area of public concern quickly expanded to include the capabilities of those entrusted with the power station's decontamination and demolition. As one of the core activists explained to Time Out:

We started making initial calls to check that everything was being done properly...But there is now considerable local alarm over what we discovered...We are not convinced that they know what they are doing, or that they are using the right machinery. It is very worrying, particularly as most of us have young children around here (CD in Charman, P., 'Asbestos Fears In Fulham', Time Out, June 10-16, 1983).

The same activist also expressed concern over the commitment of the local authority:

Nobody at the council seems to want to admit to having any responsibility for the matter...(Ibid).

Finally, the TERROR member rounded on the CEGB:

This is the first time the CEGB has not cleared the site themselves...What is happening in Fulham could be the tip of a national scandal (Ibid).

In a later Time Out report, a TERROR spokesperson highlighted the perceived 'obstructiveness' of the property developers, London and York Property Investment Company Ltd., who had repeatedly cancelled visits to the site by residents:

Their attitude has been one of absolute non-cooperation...We were left literally standing at the factory gates...(Anon. in Charman, P., 'More Asbestos Fears', Time Out, June 24-30, 1983).

In the aftermath of the first major emission of asbestos dust from the power station, one TERROR activist, addressing a public meeting, called on residents to contact the demolition company's insurers if they felt ill:

If you were here the weekend of the asbestos leakage, and you have since felt ill, I advise you to write to the insurers of the demolishers, UK Asbestos, and tell them they may be to blame (JT in Caffrey, N., 'If You're Feeling Ill Claim Compensation', The Fulham Chronicle, July 29, 1983).

The same activist ended her address with a call for long-term vigilance:

We must not be complacent. Work will go on at the station for a long time - for two years. We must be vigilant at all times (JT in Caffrey, N., 'If You're Feeling Ill Claim Compensation', The Fulham Chronicle, July 29, 1983).

As the year wore on, attention shifted to the absence of legislation on levels of asbestos dust in the general, non-work environment:

Currently all controls and standards are for occupational matters, for employees...But we are worried for people who live in our area - for the elderly, for children; for people who live here 24 hours a day, unlike able bodied workmen who are here only eight hours daily (VW in Caffrey, N., 'Mixed Welcome For New Asbestos Rules', The Fulham Chronicle, September 2, 1983).

When the possibility of a general demolition company being used to strip asbestos was raised, TERROR was quick to voice its concerns. As one of the core activists explained in a local newspaper:

We are very concerned at what is happening at the power station. Our information is that Barlborough Metals plans to remove the asbestos next. This is a demolition firm, and they do not usually have personnel trained in the highly specialised work of asbestos removal (CD in 'More Asbestos Removals', The Fulham Chronicle, September 30, 1983).

3.2.3 Press Reporting of the Views of the General Public.

Such views were reported in the press in the form of 'letters to the editor'.

The first letter to be published focused on the fact that the residents of Sands End had no prior knowledge of the sale of the power station; that what residents needed more than jobs was access to the river; and that the demolition could present a number of health hazards:

I was surprised to read in last week's issue that Fulham Power Station is about to be, or already has been, sold.

I was also surprised to learn that the local residents' group, TERROR, mentioned in your article, knew nothing about the sale despite constant enquiries.

This bothers me. I wonder what the York and London Development Company (sic) does intend to do, and why its spokesman was reluctant to make a statement to you.

Jobs in this area would be very welcome but I think I speak for most Sands End residents in saying that we don't want just factories on this site and we don't want heavy industry.

What we do want is access to the river, some facilities for our own use and some housing. We also want to be consulted on the future development of our neighbourhood.

Most important, assuming that York and London Development intends to demolish the Fulham Power Station, how do they intend to go about it?

It could involve not just great inconvenience to residents with heavy lorries speeding around local streets but an actual serious health risk from the vast amounts of asbestos that will have to be removed and disposed of.

We must be assured before any work begins that all possible care will be taken to avoid pollution and inconvenience while the work is in progress and that if we have to suffer some inconvenience it will be worthwhile for the future of Sands End and its inhabitants (Harding, P., in 'Give Power To The People', West London Observer, May 19, 1983).

A second letter in the same newspaper expressed similar concerns:

If the power station is demolished, the air can be polluted with asbestos dust for a very long period.

I therefore feel residents of Fulham should make council politicians of all parties realise that people matter - after elections and before party policies - where their environment is concerned and they should be consulted before any actions are taken (Boswell, J., in 'Pollution Risks', West London Observer, May 19, 1983).

Other letters highlighted the need both for caution in handling asbestos and consultation with the local community over the redevelopment of the site:

If plans proceed as they now stand this site will become a purely industrial warehouse area cutting off entirely river access for the Sands End community and completely ignoring the wishes of local residents to have a say in the use of this part of Sands End.

It seems Sands End can expect imminent demolition of the power station and with this a high level of dirt and inconvenience for the community for a period of three years, the time estimated to salvage the building.

The work will apparently start this week and so residents are faced with the immediate problem of ensuring that this asbestos-packed building does not become a slow-acting time bomb over the area, leaking asbestos particles insidiously, perhaps officially undetectable during this long period.

Surely the community of Sands End has the right to consultation with planners, developers and the council on such a vital issue? (Maggs, S., in 'Sands Of Time Run Out In Sands End', The Fulham Chronicle, May 20, 1983)

[T]he generating board are hoping to sell the power station off to a demolition team...

The station is lined with asbestos and in its destruction masses of the deadly dust will be clouding the air and polluting the environment.

As most people now know, asbestos is a killer, and a nasty one, causing dreadful cancers both in the short and long term. It will affect any age group, from babies to the old. Obviously a demolition team does not know how to dismantle asbestos sheeting, as it will be simply crushed to the ground.

Within one month this could be happening in Fulham (Bligh, C., in 'Sands Of Time Run Out In Sands End', The Fulham Chronicle, May 20, 1983).

Later in the campaign one letter writer's attention shifted to the absence of legislation on the management of asbestos hazard in the general, non-work environment, and the perceived inadequacies of regulatory agencies and representative bodies:

As one unfortunate enough to live at present in the shadow of Fulham Power station the last month has been a nightmarish initiation into the realities of the demolition world and asbestos removal.

We have discovered that in this matter the laws are virtually non-existent, moral and bureaucratic responsibility is conspicuous by its near absence, and that should the owners be very naughty boys they may get a derisory fine....

If this is the way the CEGB behave in selling off coal/oil powered power stations heaven help us when it comes to the selling off of the nuclear ones.

Lastly, though many may not live near a power station, old steel works and oil refineries pose the same potential problem of asbestos removal (Anon. in 'Power Politics 2', Private Eye, June 17, 1983).

Similar concerns were echoed in other letters:

Your report (Eye 3.6.1983) on the irresponsible demolition of the asbestos - riddled Fulham Power Station is a classic example of how those making a 'fast buck' - or in this case a fast million pounds - do so by disregarding health and safety measures. But, say some, that is business.

But what are our 'protectors' - the factory inspectorate and environmental health officers doing? At the public meeting you described these 'protectors' were pathetic...

Until people who behave so criminally irresponsibly are imprisoned for their negligence our health and safety will depend, as your report indicated, on the determined and courageous action of residents/parents/workers and others. Our 'protectors' seem fit only to pass the buck (Dalton, A.J.P., in 'Power Politics 2', Private Eye, June 17, 1983).

[A]nyone can start an asbestos removal company and nobody has any power to stop them until they have polluted the air above levels recommended in law.

When the damage has already been done, only then can the Health and Safety Department stop the work.

Apparently there are a number of power stations to be demolished. I therefore feel that all residents' groups, action groups and any persons within these areas or concerned with asbestos air pollution in London or elsewhere should give practical aid and help to the group involved...TERROR...

The source may be known, but the damage to health very hard to prove, particularly when the contractor's work has been completed and they have moved on (Boswell, J., in 'Dangers Of Knocking Down A Power Station', West London Observer, June 16, 1983).

3.2.4 Press Reporting of the Views of Local Groups (other than TERROR).

ARISE made few press-reported interventions in the power station debate, although the Association's chairman was quoted at some length in a local paper shortly after news of the station's sale broke:

We look to the Council, the GLC and other statutory bodies involved, to ensure the fullest compliance with all legal protection available, and to ensure full public consultation before any demolition work commences (Proffitt, D., in Bresler, K., 'Furious Residents Up In Arms', The Fulham Chronicle, May 13, 1983).

The Chairman of the Hammersmith and Fulham Trades

Council was also quoted in the local press after a residents' meeting on the power station issue:

If asbestos gets into your or your children's lungs, it could be up to 40 years before you start to suffer. And asbestosis causes a slow and lingering death...

We are in a very serious situation. We need massive petitions with thousands of signatures; we must pack the Town Hall and demonstrate our concern. And we must consider civil disobedience. You have all been very nice - but you don't get far by being nice and gentle...

Asbestos will go where the wind blows - all over London. The people of Wandsworth, Putney, Chelsea and Hammersmith and further afield are in the same danger as yourselves and they must be vigilant too (Martin, M., in Caffrey, N., 'If You're Feeling Ill Claim Compensation', The Fulham Chronicle, July 29, 1983).

3.3 Radio Reporting.

3.3.1 Introduction.

Only one recording was kept by the group's archivist. This was a programme in the 'Inside London' series, broadcast on Radio London on July 31, 1983. The three core members of TERROR were interviewed, together with David Gee of the GMBATU, John Gummer, Health and Safety Minister, and the HSE's Deputy Chief Inspector of Factories, Victor Jordan.

3.3.2 Conflict On Air.

The three core members of TERROR put the view that they were having to do the authorities' work for them. As one put it, "We think it is very, very sad that people like us have to spend an enormous amount of time putting

pressure on them to do the job properly..." ('Inside London', Radio London, July 31, 1983). The modus operandi of the HSE came in for especially strong criticism:

[The HSE] have...said that they play a negative role, which means that they react only when something has happened - which is too late...(Ibid).

However, although critical of the Executive's working practices, the TERROR activists were conscious of various mitigating circumstances. As one core member explained:

I feel that the HSE have enormous problems...They are under-staffed and they don't have the proper resources to deal with something as complex as this, and what we have found is that because of this they are having enormous difficulties...(Ibid).

The funding theme was also picked up by David Gee, National Health and Safety Officer of the GMBATU:

The HSE is a hard pressed organisation suffering at least as much as others from government cuts...(Ibid).

Gee emphasised the need for a control limit for general, non-workplace exposure to asbestos dust:

There needs to be a new control limit designed to protect the general public...The current limits that are available have been based on the needs of people who work in asbestos factories...They are completely irrelevant to the needs of the general public...We should be protected by an environmental control limit that is, generally speaking, 1/40th the level of that which workers can be exposed to inside factories...(Ibid).

For his part, Victor Jordan, Deputy Chief Inspector of Factories, implied that he would prefer to see disused plant decontaminated by the CEGB rather than by a third party:

From our point of view it would be very much easier in the programme of demolition of power stations...if we were dealing with just one person about asbestos stripping...(Ibid).

Jordan also emphasised the HSE's difficulties in meeting its statutory responsibilities on an ever-reducing budget:

I operate on reduced resources and the amount I can put into a job such as Fulham Power Station has to be balanced against other demands on us (Ibid).

At the end of the programme, John Gummer was asked why it took, in the interviewer's words; "A protest by a group of housewives in Fulham to get a significant change in CEGB policy?" In his response, John Gummer would not accept that the 'housewives' had played any part in the volte face of the CEGB and government on power station sales:

What changed CEGB policy was the work of the elected member of parliament and the London Borough of Hammersmith and Fulham (Ibid).

John Gummer would not concede that the CEGB, as the polluter, had a moral responsibility to clear up its own mess:

The CEGB has agreed to take on further responsibilities than it need [in decontaminating power stations] either morally or in front of the law. [My emphasis] (Ibid).

This statement, although factually correct, concealed the fact that the CEGB, far from taking on a new responsibility, was simply re-adopting a responsibility it had been forced to abandon by a government determined to privatise as much of the public sector as possible. The impression given by Gummer, however, was that the CEGB, motivated by paternalistic concern and beneficence, had agreed to act outside its remit.

The radio programme also included an interview with an 'asbestos sufferer' - a retired asbestos lagger dying from asbestosis. Interestingly, no-one interviewed in the programme mentioned that the health effect most likely to be seen in Fulham was not asbestosis, but mesothelioma.

4 Conclusion.

Each of the nine members of TERROR who were interviewed imparted a large amount of information on the power station debate. Without exception, they were thoughtful and articulate in their responses, often making connections between events that the interviewer could not have foreseen (for example, the contrasting of Perrier's successful public contrition with the local authority's awkward early attempts at public reassurance on the demolition).

It must be re-emphasised, however, that this chapter

recounts the views of only a minute sample of the local population at the time of the demolition.

The Fulham Power Station Debate:

Themes and Characteristics.

1 Introduction.

This chapter focuses on the arguments developed by those Sands End residents who actively opposed the mode of decontamination and demolition of Fulham Power Station, and on the characteristics of the subsequent campaign.

The extent to which socio-economic factors mediate and influence risk perceptions will be examined in detail in the next chapter, Chapter 9, which is the conclusion to the Thesis, although the question is (unavoidably) addressed briefly below (in Section 3).

2 Themes of the Debate.

2.1 The Construction of a Hazard.

The original Fulham Power Station was essentially a local product - financed, built and run by the close-knit community of Fulham. As such, it was a source of prosperity and pride to a traditionally poor neighbourhood (see Chapter 3).

It is reasonable to assume that those native to Sands End would have had some awareness of the materials used in its construction and operation, especially as "...A lot of the families worked in the power station" (TR: Interviewed September 28, 1993). Of the two power station activists native to Sands End, one was certainly

aware that large amounts of asbestos had been used in the building. As she explained, "They played with the asbestos like it was snow when they were mixing it up" (Ibid). What is most interesting about this person's reminiscences, however, is that asbestos hazard was never an issue for her - despite the fact that her father worked at the power station (albeit not directly with asbestos). As she put it:

You know, if someone said 'cyanide', immediately alarm bells would ring...But you had asbestos on your ironing board, for God's sake, and it used to crumble, and you never thought any more about it (Ibid).

What did concern her about the coal, and later oil-burning power station, was the smoke it produced:

Your washing would get covered if the wind was in the wrong direction...It was very dusty...(Ibid).

The second 'native' activist also failed to identify asbestos hazard as a concern during the power station's operation - despite her recollection that, "In the old days, people used to come out covered in white from asbestos dust and walk through the streets" (CD: Interviewed September 17, 1993). This resident, like others, worried only about the significant smoke pollution produced by the station:

Everybody commented on the smut and the smoke. People talked about it. I was always very aware (Ibid).

Similarly, those activists newly arrived in Sands End

were unconcerned about living in close proximity to a power station. They were concerned, however, about the general neglect they saw, about the lack of open space and greenery, about dangerous 'rat runs', and about the fact that a derelict power station made access to the river impossible. Not one of the activists who moved in to Sands End saw the power station as a 'time bomb' - a potential health and ecological disaster just waiting to happen.

One cannot help but wonder, of course, just how many of the newcomers were aware that the building contained hundreds of tons of friable asbestos. After all, unlike the neighbourhood's long-term residents, they had (probably) never worked, or known someone who had worked in a power station. Had they known about the asbestos, they might either not have settled in Sands End, or might have campaigned even before the CEGB sold the building.

As it was, the power station hardly seemed to feature in the gentrifiers' 'construction' of the neighbourhood. Rather, the impressions were of a 'cosy' neighbourhood, of an 'anachronistic' locale, of a 'cosmopolitan' group of residents, or of a 'convenient' location for commuting into town. (The neighbourhood's 'convenience' for the West End was used as a selling point for the Regent on the River development. See Chapter 3). It was almost as if the power station - whose massive structure dwarfed the neighbourhood's terraced properties (see Appendix 9 and Appendix 12) - had become invisible to them. (This phenomenon has been seen elsewhere: In Port

Talbot, South Wales, for example, where residents living in the shadow of one of the largest steelworks in Europe complained about the 'visual disamenity' of a proposed hill-top wind farm (South Wales Evening Post, December 21, 1993). The steelworks, built in the 1920s and occupying a huge site in the heart of the community, is an emphatic physical presence and emits dust, soot, odours, noise and light virtually 24 hours a day).

Fulham Power Station, and the potential hazards within, only became 'visible' when the building's sale was announced in The Times on May 3rd, 1983. And even then, initial concern focused not on asbestos hazard, but on the dangers of demolishing such a large building so close to housing, and on the nuisance resulting from contractors' lorries using the neighbourhood's narrow streets. (It was the initial concern about traffic that brought TERROR, primarily a roads campaigning group, into the power station debate).

Presented with the fait accompli of the sale, what the activists strived for was the 'safest possible' decontamination and demolition. The activists' increasing alarm at what they saw as incompetence in both high and low places led to the emergence of asbestos hazard as the main focus of their concern (the activists, at least, were convinced that asbestos did pose a potential threat to health). The hazard, dormant for so many years, was in danger of being needlessly activated by what the activists saw as the cynicism and profit-seeking of the government and CEGB, incompetence

of the HSE, initial disinterest of the local authority, relative indifference of the two local councillors and inexperience, negligence and avarice of the contractors.

2.1.1 Conclusion.

Before the sale of Fulham Power Station, few of those residents who later became active in the campaign looked upon the power station as a hazard. They were more concerned with the area's socio-economic, visual, environmental and amenity problems. If they knew about the asbestos, then it was seen to represent no more than a latent hazard. The power station's sale and planned demolition changed all that. The 'wonder mineral' became, at least for the activists, the 'demon on the doorstep'.

2.2 A Question of Attribution.

There was a very strong feeling amongst the power station activists that the CEGB had a moral responsibility to 'clean up its own mess'. It was felt that the CEGB, in selling off still-contaminated power stations, had abrogated its responsibilities to the community at large. A number of activists expressed the view that those who profit from industrial activity should make good any damage or disturbance caused to the environment when those activities cease.

It was recognised, however, that the CEGB's regrettable conduct might have been influenced by other parties - specifically the government of the day. Thus it was felt

that the Thatcher government's enthusiasm for the private sector may have influenced the Board's decision to 'sell on' decontamination and demolition responsibilities to private contractors.

But whatever the circumstances of the decision, it was the CEGB that became the focus of public opprobrium, with the Board's Chairman, Sir Walter Marshall, emerging as the bete noire of the Fulham campaigners.

It should be noted, however, that despite its fall from grace over the power station issue amongst the activists, the CEGB's general reputation for engineering excellence remained untarnished. It was felt that the CEGB offered the best solution to the difficult problem of power station decontamination. And even if the work were subcontracted, the power station campaigners believed that CEGB supervision would ensure a more thorough job. In other words, despite the CEGB's conduct over the Fulham sale, the campaigners remained convinced that a public utility would be more likely to act in the public interest than a private concern.

The CEGB was not the only actor singled out for criticism. Virtually every public and private interest subsequently involved with the decontamination and demolition of Fulham Power Station was criticised.

This criticism began early in the campaign when the public first became aware of the sale and proposed redevelopment of the power station site. Residents were annoyed that they found out about the sale not through the local authority or other responsible public body,

but through the national press. The almost accidental revelation of the disposal of Fulham Power Station - for many years a source of pride and prosperity to the people of Sands End - caused great consternation. There was a feeling that those in authority, by not communicating with Sands End residents over the sale, had betrayed a trust. Consequently, the local authority became the initial focus of the activists' anxiety and anger. The London Borough of Hammersmith and Fulham was condemned for its ignorance of the sale, and for its subsequent (but relatively short-lived) equivocation. As one activist put it, "It was obvious that if you left it with the Council to go forward, I'm sure that they wouldn't have bothered" (AF: Interviewed October 21, 1993).

Politicians, too, were condemned, both for their initial lack of interest in the sale and subsequent antipathy towards the activists. Even the two local councillors - elected in May 1982 with votes significantly greater than their nearest rivals - appeared unmoved by the possibility of a major environmental disaster. Some residents wondered whether their cynicism and disinterest reflected their very comfortable position in the recent polls. (As cabinet minister Francis Pym noted (to his political cost) in the 1980s, a large majority does not necessarily produce an inclusive and attentive politics). Some activists held the Borough's councillors in very low regard. One (actually an employee of the Borough), described them as "useless" (Ibid). Another described the two Labour ward

councillors as "Much too weak" (MP: Interviewed September 27, 1993).

The decontamination and demolition contractors were condemned for their inexperience, uncooperativeness and reticence.

The HSE was criticised for its perceived lack of commitment to a difficult decontamination and demolition, for its aloofness, for its reticence in meetings with the public, and even for its basic working method - essentially the post-hoc investigation of misdemeanours and the requirement that parties take (only) 'reasonably practicable' precautions against mishap. (To be completely fair to the HSE, however, its dismissive attitude towards the general public was not untypical of government departments and quangos. As the Joseph Rowntree Foundation has noted; "Quangos [like the HSE] view accountability largely in terms of obligations to government rather than to customers or citizens" (The Governance Gap: Quangos and Accountability, 1994)).

Finally the government was criticised for not setting an airborne asbestos contamination limit for the general, non-work environment, for not having a licensing scheme for asbestos removal contractors, and for the perceived inadequacy of the 1969 Asbestos Regulations, especially the level of fines available to the courts.

However, although critical of the various parties involved in the sale, decontamination and demolition of the power station, it should be remembered that the

activists always sought to explain the often bizarre behaviour of the CEGB, HSE and others through an examination of the wider social, economic and political context in which these agencies operated. The CEGB, for example, although vilified by the protesters, was seen to be a victim of a privatisation-obsessed government (Between 1979 and 1987, the state sector was cut by a third (Childs, Op Cit, p.210)). Likewise the HSE, heavily criticised for not devoting more resources to the Fulham demolition, was also seen to be a victim of government dogma - this time concerning the reduction at all costs of the public sector borrowing requirement. (In the four years prior to the demolition of Fulham Power Station, the HSE's budget had been cut by 30% ('Inside London', Op Cit). The continuing cuts in HSE funding have been called "An attack...on the role and effectiveness of the HSE" (The Guardian, November 24, 1993)).

The activists' circumspection was also evident in their attitude to the material at the centre of the dispute - asbestos. While considered by the activists to pose a potential long term threat to health, the response to that threat was never extreme - as judged against institutionalised forms of political activity. Reactions considered by the leaders of the group to be over-emotional were filtered out with the aid of the Law Centre. As one activist put it, "We had to be careful what we said..." (JT: Interviewed October 11, 1993). Calls for direct action (a form of protest anathema to many politicians) were politely listened to, but never

heeded - even when they came from no less a figure than the Chairman of the Hammersmith and Fulham Trades Council:

[W]e must pack the Town Hall and demonstrate our concern. And we must consider civil disobedience. You have all been very nice - but you don't get far by being nice and gentle[My emphasis] (Caffrey, N., 'If You're Feeling Ill Claim Compensation', The Fulham Chronicle, July 29, 1983).

The irony of the latter part of his invocation is noteworthy, for despite their 'gentility' the activists did succeed in reversing the CEGB's sales policy.

The activists' rationality was again demonstrated in a 'health scare' some years after the demolition. One of the core activists received a letter concerning a local child who had developed a brain tumour. The letter stated that the tumour might be linked to the release of asbestos dust during the demolition of the power station. The core activist, drawing on her extensive acquired knowledge of asbestos-related disease, defused the situation by explaining politely, but firmly, that "The only [cancer] that is attributable is mesothelioma. Unless that's been diagnosed, we've got no case" (CD: Op Cit). The activist, secure in her belief that "...We fought a campaign that was realistic and was not scaremongering..." (Ibid), was determined to distance herself and the group from such ill-founded speculation.

The restraint and integrity demonstrated by the protest group allowed it to present coherent and above all practical ideas to those who would listen. Realising

that they had no chance of actually halting the decontamination and demolition, the activists attempted to ensure that those involved did the 'safest possible' job. According to one of the core activists, this approach met with some success:

We had a safer job done - I'm not saying that it was a safe job - than if we hadn't campaigned...It could only have been worse (Ibid).

(Of course, to describe the group's conduct as 'responsible', 'restrained' and 'rational', is to judge it by contemporary norms of acceptable political behaviour. Should direct action ever be considered a legitimate - and even optimal - form of political expression, then one might feasibly describe the group's conservative methods as 'irrational' and 'irresponsible').

The group's response to the asbestos issue was tempered not only by mores of 'acceptable political behaviour' (as articulated, for example, by the Law Centre and by the Borough's Environmental Health chief, Bruce Cova), but also by its members' familiarity with the material in the home, and by the scientific research done by one group member.

Several activists had used the material in the domestic environment for many years - without any apparent ill effects. Indeed, the husband of one activist had worked closely with the material over a prolonged period (in the building trade), again without any apparent ill

effects. The views of the group's 'science expert' - the chemistry lecturer/researcher - may also have exerted a moderating influence on its actions. His calculation that fugitive emissions would cause at most .7 of a death was hardly a recipe for public hysteria (although the calculation of a less-than-whole death may have caused some confusion).

To some degree activists relativised the asbestos danger within a wider hazard framework. Perhaps the least worried activist was the chemistry lecturer, whose day to day work with dangerous chemicals left him relatively unconcerned about the (in his view) very slight risk presented by airborne asbestos. As he put it, "As I was handling chemicals that were lethal at the time, I wasn't particularly bothered...If you spilled [these chemicals] on your skin, you were a gonner. You handled them in a glove box" (DN: Interviewed November 24, 1993). The chemistry lecturer was not alone in putting the asbestos danger in a wider hazard context, as this testimony demonstrates:

I didn't have any strong feelings about it in the sense that there are many other things which affect our health, and working in a hospital I was very much aware of them...Asbestos...is not a major killer in this country...As far as the power station itself was concerned, there are so many other things that affect our health - car pollution...cars themselves. I didn't live in fear of it (PR: Interviewed October 15, 1993).

Throughout the campaign, the group emphasised the need for effective risk and hazard management. Group members resented their exposure to unnecessary risks and hazards

resulting from the inefficiency of government agencies (both central and local) and of private contractors.

The group's demand for a threshold limit for general, non-workplace exposure to asbestos dust typified its pragmatic approach. Judging that the absolute elimination of the hazard would be almost impossible to achieve, the group lobbied instead for a 'safe' level of exposure. This eschewing of absolutism in favour of negotiative amelioration exemplified the activists' practical approach to the issue of asbestos hazard (an approach embarked upon in the context of the HSE's dictum of 'reasonable practicability').

(It should be noted, however, that although the activists were 'practical' and 'rational', they were far from unemotional. On the contrary, they were driven by a strong concern for the health of their respective families. (One, a native to Sands End, was also concerned about the health of the community at large). It was this emotional engagement that motivated them to work such long hours on the campaign).

The circumspection of group members was further evidenced in their views on general environmental pollution, the consensus being that the pervasiveness of pollution meant that one might as well 'stay put and make the best of it'. No one imagined there to be some remote, untarnished, latter-day Garden of Eden waiting to be colonised by the environmentally dispossessed. The ubiquity of pollution rendered the notion of an environmental lifeboat obsolete. Or as one activist put

it:

Life is dirty, and you're not safe anywhere these days (VW: Interviewed October 5, 1993).

A second activist noted the specific dangers of modern agricultural technology:

It's not only the factory that is dangerous...there are all sorts of pollutants in the countryside (AF: Op Cit).

The circumspection of group members also showed in their views on whether heavy industry should be allowed to locate in major conurbations. Most said they would weigh the costs and benefits of any proposed development before forming an opinion. Even heavy industry might be acceptable if it was responsibly managed and monitored, and if the staff were well trained and fully informed of any risks inherent in the activity (TR: Op Cit). This view is typical of the activists' concern that they should not be exposed to any unnecessary risks through either the secrecy, reticence, indifference or incompetence of 'responsible authorities'.

Despite the hostility of many of those involved in the project, the activists established and maintained meaningful relationships with several agencies, including the local authority and HSE. The campaigners even struck up a brief relationship with the Chairman of the CEGB. Thus when a delegation presented a statement of concerns at the CEGB's London headquarters, Lord Marshall himself descended to the building's foyer to accept the statement on behalf of the Board. Marshall

was quite happy to do this - and be photographed in the act of recognition (or contrition, in some peoples' eyes). The resulting impactful photograph was later printed in several London newspapers.

The face to face meeting between Marshall and the campaigners was a startling moment in the debate - very much a case of David meets Goliath:

They thought there was going to be a whole band of yobboes coming because they had police outside, which was quite ridiculous...And then we all came up...all us women...And I had this statement with this little boy...Eventually they got Marshall to come down...He obviously wondered what he was going to have to face, and all he had to face was me with this little boy... (MP: Op Cit).

Interestingly, while Marshall was willing to publicly acknowledge the role played by the Fulham group in the debate over power station sales, and while other agencies (e.g. the HSE and local authority) discussed policy and procedure with the group, John Gummer - as an MP, directly accountable to the electorate - conceded nothing to the 'Fulham housewives' in the government's volte face over power station sales policy. Indeed he seemed determined not to acknowledge their existence, as this exchange with the interviewer on the 'Inside London' special illustrates:

[Interviewer] It would seem to some people that it took a protest by a group of housewives in Fulham to get a significant change in...policy, would that be fair?

[John Gummer] What changed CEGB policy was the work of the elected member of parliament and the London Borough of Hammersmith and Fulham ('Inside London', Op Cit).

At no time during the interview did John Gummer mention the Fulham group by name, although he did proffer the innuendo-laden view that "...There has been a great deal of scaremongering..." ('Inside London', Op Cit).

2.2.1 Conclusion.

As far as the power station campaigners were concerned, the asbestos used at the plant presented a hazard to the community only because the decontamination and demolition had been grossly mismanaged by the CEGB, contractors, HSE and others. The campaigners held the view that the health threat presented by asbestos dust had been needlessly magnified by the incompetence of others. Had the HSE, local authority, contractors et al behaved competently, and had the government ensured that there were appropriate standards in place for them to work to, the residents would have been much happier about the demolition. Thus the emphasis of the protest was very much on the safe management of asbestos hazard. While the activists could come to terms with the dangers inherent in the mineral, they could not accept being exposed to unnecessary risk through the incompetent management and execution of the project. Consequently, in allocating blame for the situation, the activists focused not on those who had initially installed the asbestos at the power station, nor indeed upon subsequent CEGB managements for not replacing it with a safe (or at least less dangerous) substitute, but on those who (in the activists' belief) had mishandled the

decontamination and demolition. None of those involved with the project were considered by the activists to have behaved in a responsible or accountable manner (although the local authority did, to a certain degree, redeem itself). This led to a loss of trust, and to the construction - both literally and in the public's mind - of a hazard.

2.3 Responsibility, Accountability, Trust.

Three themes - responsibility, accountability and trust - dominated the activists' discourse on the power station sale, decontamination and demolition. None of the parties concerned with the redevelopment of Fulham Power Station were deemed by the activists to have behaved responsibly. None (except, perhaps, for the local authority), were deemed accountable. Consequently, the activists found themselves unable to trust those whose job it was to safeguard the public interest. Both the CEGB, a public utility funded from taxation and answerable to Parliament, and HSE were condemned by the activists as unaccountable and insensitive agencies indifferent to the group's concerns (although the HSE did consult with the protest group during the latter stages of the decontamination and demolition). Local councillors were felt to be indifferent to the concerns of residents, although local authority officers did eventually listen to the community. The property developers and contractors professed interest in local views, but ultimately pursued their own agendas. And the responsible Minister (John Gummer) refused even to

officially acknowledge the existence of a protest group (see 2.2, above). In such circumstances, concerned residents, feeling they were being manipulated by forces beyond their control, decided to challenge the status quo by demanding consultation. (Interestingly, in 1985, the year following the demolition of Fulham Power Station, the Health and Safety Commission urged the HSE to be more open in its transactions: "The legitimate desire by the public to know more extends not just to its own protection but to satisfaction that all that can reasonably be done to reduce risks or pollution is being done...Members of the public need to be reassured that...the relevant health and safety authorities are working efficiently and effectively to minimise the risks to them" (Discussion Document: Access to Health and Safety Information by Members of the Public, HSC, 1985). It is just possible that the HSE's bad publicity (in both the local and national press) over the demolition of Fulham Power Station may have influenced this initiative).

Activists also demanded that those entrusted with the decontamination and demolition should begin behaving 'responsibly'. While some, notably the local authority, were judged to have heeded this message, most were felt to have let the public down.

There is, of course, a certain irony in the activists' demands for greater accountability and responsibility from politicians, agencies and institutions. For the activists themselves were conspicuously unaccountable to

the people of Sands End (unlike the Association of Residents in Sands End, which, although criticised by TERROR for its 'passivity' and 'conventionalism', at least held elections to its Management Committee (see Chapter 4)). The members appointed themselves as community guardians of public health and safety. There were no elections to the protest group (or, within the group, to its three-strong 'core'). There were no invitations to non-group members to attend policy meetings. There was no publicly accessible campaign office: meetings were held in the private homes of the three core activists. There were few links with formal, democratically accountable bodies. There was open hostility within the group to any attempt to introduce a formal constitution: such 'red tape' was anathema to the campaigners, who were wary of compromising the group's 'flexibility' and 'responsiveness'. When one group member, a Labour Party activist, attempted to put the group on a more formal footing by giving it a set of (simple) procedures and a basic constitution, he met with overwhelming opposition. As one member put it:

[Name deleted] was an old-fashioned trade unionist/political animal...He tried to dominate TERROR meetings and tried to make things formal...but there wasn't time for that...it didn't really matter...But [name deleted] was on about being quorate... (AF: Op Cit).

The membership of the group remained the same throughout the long campaign. There were no new members. There were no co-optees. It could be said that the group swiftly became - albeit unconsciously - a cabal. Furthermore,

the group itself exhibited a certain factionalism, being dominated by the three 'core' members. The existence of this 'group within a group' caused some resentment amongst other group members with a longer history of political activism. As one member, a Labour Party and Trades Union activist, put it:

I might well have been prone to say 'Load of stupid bloody local housewives. What do they really know about it? They have no experience of what has been happening in Docklands [this person had worked in Tower Hamlets]. I have been scanning this for years. I know what the bastards are up to...'. But they found their own way, and didn't want the local Labour Party dominating it...

They heard what you said. They didn't always believe it...but in their own time, very often a couple of weeks down the line, people saw the point...(JG: Interviewed October 23, 1993).

Another member, however, thought it commendable that the three core members - all previously politically inactive women - were doing things their own way:

[I]t was a growing period for 'womens' lib'...and I was used, from my days in the Communist Party and Trades Union movements, to men organising campaigns...This could have underlined the way I felt that it was nice for women to get together and do something 'off their own bat' (PR: Op Cit).

Of course, the terms 'responsible' and 'accountable' are difficult for another reason: namely that they can be highly subjective concepts. That is, behaviour considered 'irresponsible' by one party, may well be considered responsible by another. Take, for example, the chemicals plant that pollutes its environs. To local residents, this behaviour may be deemed 'irresponsible'.

But to plant managers, saving money on pollution control equipment to maximise profits may, in the context of the corporate objective to maximise returns to shareholders, be considered highly responsible behaviour. Such behaviour, to the extent that it safeguards jobs, may also be considered responsible by the workforce and/or local politicians. Indeed, it may also be considered responsible by workers' families (see Francis, R.S., Journal of Applied Psychology, 1983, 13,4, p.312), opening up the possibility of a community dividing against itself on the basis of diametrically opposed subjective concepts of 'social responsibility'.

In terms of the Fulham Power Station debate, the CEGB, for example, considered it's behaviour highly responsible: by selling on its decontamination and demolition responsibilities it aimed to minimise its liabilities and maximise its returns. As a public utility, this could only be to the general public good, with the augmented returns being used either for new capital projects or given to the Treasury to fund other public services. The owners of the various decontamination and demolition companies involved in the project were, by cutting health and safety corners, merely pursuing the largest profit - the chief responsibility of any private company. As one - albeit 'left' - publication has put it:

Corporations define success in two fundamental ways: by the growth of assets and the rate of profit. These two goals take precedence over concerns of the community...in which the corporation does business (New Internationalist, August 1993, p.22).

Of course, the events surrounding the decontamination and demolition of Fulham Power Station took place against the backcloth of the most 'radical' Conservative government for decades - a government, according to the New Internationalist, obsessed with maximising private profit and personal wealth:

The underlying agenda, pushed at every turn, [was] the encouragement of self interest. The guiding principle of the New Right [was] that the greatest public good [would] be achieved by every individual looking after their own best interests. It [believed] that greed or financial self-interest [was] the very engine of progress, and that human development and technological advance [had] been achieved only by the endeavours of millions of individuals competing against each other for more wealth and status. As Ivan Boesky said: 'it's okay to be greedy now' (New Internationalist, October 1988, p.5).

Accepting this (perhaps somewhat polemical) view, it is possible that such mores legitimised the activities of the property developer, decontamination and demolition companies, and even of the CEGB.

By the end of the campaign only the local authority had (partially) redeemed itself in the activists' eyes. The other parties - the CEGB, property developers, contractors, HSE and central government - were considered by the activists to have failed the neighbourhood of Sands End and to have needlessly endangered public health.

A prominent feature of the activists' discourse on the power station decontamination and demolition was the perceived untrustworthiness of most of the public and

private parties involved. The erosion of trust in authority began at an early stage, with the activists learning of the sale of the building not from local politicians or officials, but from a national newspaper. There had been no consultation with the community by any party. The subsequent perceived 'indifference' of public and private parties, and emissions of asbestos dust confirmed to the activists (if not also the general public) that those involved with the sale, decontamination and demolition of the power station were 'untrustworthy'. Although relatively few, emissions of asbestos dust were especially harmful to the reputations of the various companies involved in the scheme. As Slovic explains, although a company may act within the law for the majority of the time, a single breach of regulation (or, perhaps even of public expectation) can have a disastrous effect on a company's public image. Negative events are magnified through "the asymmetry principle":

When it comes to winning trust, the playing field is not level. It is tilted towards distrust, for each of the following reasons: 1. Negative (trust-destroying) events are more visible or noticeable than positive (trust-building) events...Positive events...more often are fuzzy or indistinct...2. When events do come to our attention, negative (trust-destroying) events carry much greater weight than positive events (Slovic, P., Perceived Risk, Trust and Democracy, Risk Analysis, Vol 13, No.6, 1993, p.677).

Although there were a number of scientifically confirmed releases of asbestos dust from the site, for the majority of the time the decontamination and demolition

proceeded without incident. Because of 'the asymmetry principle', however, periods of safe, incident-free decontamination and demolition passed largely unnoticed. Certainly the activists focused only on incidents of contamination (as would be expected, given the group's raison d'etre).

Regarding reporting of events, it is fair to say that the local press devoted significantly more space to negative events at the power station site than to positive events.

The activists lost faith in public authorities very early on in the debate. The fact that only one agency (the local authority) was considered by the activists to have partially redeemed itself would seem to confirm Slovic's observation that "Trust is fragile...It can be destroyed in an instant - by a single mishap or mistake. [O]nce trust is lost, it may take a long time to rebuild it to its former state" (Ibid). The HSE, for example, despite modifying its 'high handed' attitude towards the public, never redeemed itself. One activist regretted the fact that the group disbanded before it had a chance "To get at the throat of the HSE" (JT: Op Cit).

Of course, it is quite possible that the various parties involved in the power station sale, decontamination and demolition had lost the confidence of the general public long before the events of 1982/1983. In his 1994 book Beyond Left and Right, Giddens asserts that institutions can no longer assume public trust. Rather, trust, in a conspicuously less deferential epoch, has to be earned.

(This new manifestation of trust he calls 'active trust' (Ibid, p.14)). Assuming the 'decline of deference' to be a social trend with some history, it is possible that the people of Sands End had lost faith in authority long before the May 3rd announcement in The Times.

3 Characteristics of the Debate.

3.1 The Demonstrably Risk Conscious.

It is noteworthy that the power station campaign was led by a group numbering no more than a dozen. Out of this number, only two activists were native to Sands End. The remainder were relative newcomers.

Although the several public meetings organised by TERROR were well attended and supportive, there was never any possibility of TERROR's campaign growing into a mass protest over the behaviour of those involved in the decontamination and demolition. Most residents were only too willing to let the dozen-strong cabal get on with it. As one activist explained:

I found people singularly apathetic in this street...That always surprised me...Some people in the street were quite apathetic to what was going on at the power station (MP: Op Cit).

(This activist, the wife of a well-known writer and historian, was comfortably off by the standards of the day).

And another said:

Environmental issues weren't 'in' at that

time...There were fads - damp was 'in' at that time [i.e. rising and penetrating damp in old and poorly maintained houses]...Asbestos wasn't really an issue...Environmental things weren't an issue in this country then (AF: Op Cit).

(The neighbourhood's Housing Action Area status (see Chapter 3, section 2.2) both articulated and re-focused public concern about sub-standard housing. That is, it reflected and propelled the local political agenda).

A third activist became quite disenchanted with what she saw as public apathy:

An awful lot of people don't want to bother...In the end we got quite fed up (JT: Op Cit).

Other publics, she felt, would not have been so apathetic:

[In Greece] when one tree falls down, they are all out putting it back up...They are all taking responsibility...We have lost that responsibility for putting it back up (Ibid).

Her conclusion was that "The British don't seem to rouse easily":

Basically, people just want to get on with their lives....It is disenchanting (Ibid).

(This activist was, at the time of the power station debate, an artist).

The activists' views on 'the great British public' were confirmed by journalists from Europe and Canada. During their visits to Sands End, a number expressed surprise

at how unconcerned the British were with issues of environmental risk compared to their own native publics. As one of the activists recalled:

[T]here was a great amount of interest from European countries. A French Canadian film crew came, and somebody else came, and they said 'You are light years behind'...Before we got English press, the Europeans were involved, because environmental things weren't an issue in this country then (AF: Op Cit).

It is worth noting that while protest meetings were always well attended, there was opposition from within the community to what the activists were saying and doing. Even one of the 'native' activists - in her own words a 'known face' - encountered hostility:

It was quite difficult using the local shops...I remember having an argument with the greengrocer about that very issue, because he had worked in the power station, and as far as he was concerned, there was nothing wrong...(CD: Op Cit).

This activist - one of the two born in Sands End - noted "A lot of aggro" towards the (mostly middle-class) newcomers involved in the campaign.

There were other manifestations of local opposition to the activists' agenda - the hate letter, for example, that was sent to one of the core activists, and the transformation of a warning painted on the power station wall that read 'Asbestos Dust Kills' into 'Fear and Lies of Asbestos Dust Kills'.

Such incidents took place in a community where many resented prosperous newcomers. As one of the three core activists put it "The old people that were here

resented...middle class people" (JT: Op Cit). (This was exactly Mooney's finding. See Chapter 3). Interestingly, the core activist native to Sands End herself exhibited some hostility towards the newcomers. In past times, most people had remained in the neighbourhood during public holidays. This, at Christmas, when the trees and lights went up, had generated a unique atmosphere. Now, however, "[Sands End] is dead at Christmas" (CD: Op Cit). This activist seemed resentful of the fact that the newcomers used the neighbourhood as a convenient dormitory during the week (which is how it was marketed by estate agents (see Chapter 3)), and then decanted to the country at weekends.

Sands End was a community divided, in part, along class lines:

It was close-knit amongst the working class...and became close-knit amongst the middle class...It's sad, isn't it? (JT: Op Cit).

Another activist noted that "There was enormous resentment about the gentrification" (AF: Op Cit). A third activist - an early gentrifier - had experienced this resentment at first hand:

We were perceived by real Fulhamites in Friston Street, which we first moved into, as being interlopers and outsiders and not part of the local tradition, notwithstanding that I am a Londoner born and bred (JG: Op Cit).

(This insight illustrates the parochialism that can exist within London itself).

Ironically, this activist had been born into a working class family that lived in a particularly unglamorous part of north-west London, and had lived most of his life in Dalston, one of the capital's most deprived neighbourhoods (See Harrison, P., Inside the Inner City, Penguin, Britain, 1983, for an account of Dalston's depressed economy and rotting infrastructure). Perhaps because of his working class roots, this activist was particularly sensitive to the deprivation he saw around him in Sands End:

[In Sands End] you have basically two types of community: those who are working and surviving reasonably well: and at the same time, there is quite a lot of poverty and multiple deprivation. You can still feel safe on the street for most of the time, but you do get problems, whether it is arising from 'Care in the Community'...God help us...within Sands End there are a fair number of severely dispossessed people, some of them disoriented, some of them alienated, some of them very angry, and some of them, probably because of those conditions, dangerous as well (Ibid).

Economic deprivation meant that locals found themselves unable to compete in an increasingly costly housing market. According to the activist born in Sands End, local people were "pushed out" of the housing market by relatively prosperous newcomers who "Didn't give a toss about the area" (CD: Op Cit).

The distortion of the housing market caused by gentrification put newcomers in the public spotlight. That is, their relative prosperity, comfortable accommodation and occupation of a property that might otherwise have gone to a local made them highly

'visible'. This made one newcomer-activist uneasy:

Of course, lots of people didn't like people like me because we're lucky enough to live comfortably... (MP: Op Cit).

The poor living conditions of some of the residents of Sands End had been compounded by two factors: Firstly, the housing blight caused by the long-standing plan to drive a major new highway through the neighbourhood. And secondly, the inability of the very poor to make the required (small) contribution towards a housing improvement grant. The fact that prosperous settlers could afford the contribution added to the tension between the two communities:

It was unfair that people with poor facilities who couldn't afford the contribution for a grant lived next to middle class newcomers who could (AF: Op Cit).

This activist held the view that those who declared the neighbourhood a Housing Action Area did so in the hope that it would change the demography of Sands End:

A Conservative as well as a Labour person would say to you that the Housing Action Area was done with the prime aim of changing the social make-up of the area (Ibid).

She went on to say that newcomers' lifestyles sometimes frustrated their ambition to fit in with local traditions. This, she felt, was very apparent in the case of two of the core activists:

[Names deleted] were like on social experiments, weren't they? [They were] proving solidarity with the working class by working

in a working class area, and then [saying]
'But I must have the house gutted' (Ibid).

A number of activists, however, saw a positive side to the gentrification: namely that the population (or at least its new middle class component) became more risk-conscious. As one of the three core activists put it:

I think people are far more [risk] conscious because there has been a change of people living in this area (CD: Op Cit).

According to this activist, while the original population was not unconscious of environmental disamenity (like the smoke, smut, odours and noise produced by the power station), they accepted it as the price of employment:

Everybody commented on the smut and the smoke. People talked about it...People complained about soot on washing, but I don't think anyone thought of it as a health issue...There wasn't the awareness then (Ibid).

The residents' pragmatic quiescence was noted by another activist:

[The power station] was a source of work...there was an acceptance of it...there wasn't that kind of problem, and that is typical of residential communities living in industrial areas close to their work...That is life...that is modern industry...there are no problems about it. Women who did the weekly washing for the last fifty or sixty years had moaned about the smuts which would appear on their washing, but they lived with it...it wasn't an issue (JG: Op Cit).

A third activist commented that local residents accepted the pollution "Because it was work. That is the price

you paid for work. You couldn't have something employing so many people and not have the problem" (the word 'work' was strongly emphasised) (AF: Op Cit).

Perhaps because of the native population's familiarity with industrial hazard, whether smoke, smells, noise or, in the case of power station workers and their families, asbestos, or perhaps because of other, more urgent, socio-economic concerns, the group's active membership never exceeded a dozen. This had important consequences for the campaigners - some negative, and some positive.

On the negative side, the group's small size meant that the considerable workload generated by the campaign put an enormous stress on individual members, the heaviest burden falling on the three core activists.

On the positive side, however, each of the three core activists 'self actualised' through participating in the campaign - as the following testimony reveals:

[Name deleted] who had worked at Ready Mix Concrete [located on the river near Wandsworth Bridge] as a secretary for a number of years...was very quiet and had to be dragged into the group...And actually became the key person... (Ibid).

Some of those at the periphery of the group also 'self actualised' through their campaigning activities:

[Name deleted] just bloomed. He was very cautiously approached with 'We know you're a scientist'...You know...anyone passing with an A-level in physics would have done...He got professional esteem because he wrote some articles for New Scientist (AF: Op Cit).

While the activists' 'risk consciousness' outlived the power station campaign, their 'risk activism' did not. Although aware of other environmental hazards in the area worthy of attention, most activists withdrew from the political limelight, content to leave the agitprop to others. This general retreat may have been a reaction against the large workload borne by the group during the power station campaign. Perhaps if the work had been more evenly spread, the activists would not have become quite so disaffected with campaigning.

The group received little practical support from those living outside the neighbourhood. The wider London public - according to press reports sympathetic to the Fulham campaigners - did not seem inclined to act 'out of area'. Interestingly, the Fulham group was not entirely selfless, there being more than a hint of 'not in my back yard-ism' (NIMBY-ism) amongst the campaigners - as may be gathered from these comments made by one of the core activists:

We fought something for ourselves...It was a selfish campaign...We fought it because we didn't want that stuff polluting our area...The fact that they took it somewhere to dispose of it - well, that's up to them to fight...Obviously one tries to do something that has a larger view as well, but these things are selfishly motivated...I don't think there is anything wrong in that...(VW: Op Cit).

Several group members attributed their activism to concern for their own children's health. Only one - a 'native' Fulhamite - attributed her participation in the campaign to concern for the community at large:

I never for once thought of it as being a personal issue, like my children might be affected or I might be affected, because I don't tend to think of it that way (CD: Op Cit).

It is possible that this person's sense of community responsibility was due - in part or in whole - to her being a native of Sands End.

3.2 The Demonstrably Risk-Conscious: Conclusion.

The power station campaign was conducted by a very small group of residents. Amongst those not involved, some people were sympathetic to the group, expressing their solidarity by attending public meetings and occasionally writing to the local papers. The vast majority, however, took no action. Some of these were openly hostile to the activists.

The Sands End protest approximates to Morrison and Dunlap's (1986) model of the dynamics of community-based environmental activism:

Voluntary social movement organisations [enjoy]...several levels of support and commitment...These levels can be conceptualised as concentric "rings" or "orbits" around the core...

The ring immediately adjacent to the core consists of people who are not, at least currently, formal dues-paying members...but who still support the causes the organisations pursue, occasionally by making concrete contributions, by signing petitions, by participating in movement-related activities, and so on.

The next ring consists of citizens who have not given concrete support to any social movement organisation, but who, when asked, express general support for, sympathy toward, and agreement with the issues pursued by some

of the social movement organisations.

Farther yet from the core is the ring of citizens who are neutral toward the movement...and, beyond this, the rings of citizens who oppose the movement in various degrees... (Morrison, D.E., and Dunlap, R.E., *Environmentalism and Elitism: A Conceptual and Empirical Analysis*, *Environmental Management*, Vol 10, No.5, p.582).

The crucial question about the Sands End group, of course, is how broad these 'concentric rings' of support, indifference and opposition were. As far as the question of mobilised support is concerned, it is clear that only a very small number played any active part in the campaign: The group had no more than a dozen members, and the few public meetings held by the group never attracted more than 150 residents (although it could be said that such a number is a good turnout to discuss a largely invisible health threat).

Of course, there may be several reasons for the non-participation of the majority of residents in the campaign: they may have resented the 'hijacking' of the campaign by relatively prosperous newcomers; they may have found it impossible to conceive of the power station ('their' power station), past provider of energy and employment, as a malevolent force; they may have considered asbestos to be relatively harmless; they may have believed the reassurances of the CEGB, HSE, decontamination and demolition contractors; they may have resented the way in which the protest slowed the demolition. Some native residents wanted the station removed as quickly as possible so economic regeneration could begin; they may have felt they lacked the personal

resources (education, self-esteem and confidence) to become involved; they may have been complacent and/or lazy; they may have lacked the time; or, as the activist employed as a youth worker pointed out, they may, unlike the relatively prosperous and successful people who became active on the issue, have had more pressing personal socio-economic problems to deal with:

A lot of them had bigger problems to deal with in their homes. It's the 'pyramid of hierarchical needs'. If you've got things worrying you about your home and your family, you don't think too much about other people (TR: Op Cit).

As another activist (who was working for the local authority in community development at the time of the demolition) pointed out, one of the many potential worries at the time were housing conditions:

The Townmead houses had been blighted, and the conditions in some of those houses were atrocious...People had lived donkeys years without decorating the front room...Those houses were going for nothing at auction (AF: Op Cit).

The Townmead houses were the ones closest to the power station (Fulham Power Station's main entrance was on Townmead Road, opposite the houses). Consequently, the people in them were the ones most at risk from emissions of asbestos dust. Yet, no one from Townmead joined the power station protest group. It is possible that the residents' inaction was due in part to a preoccupation with their squalid living conditions. (The socio-economic status of Sands End at the time of the demolition, and the area's housing problems, are

described in detail in Chapter 3, section 2.2).

4 Themes and Characteristics: Conclusion.

The activists believed the power station's asbestos to pose a latent risk to public health.

In light of this construction, the activists made two demands: Firstly, they wanted the asbestos in Fulham Power Station removed by competent contractors who would act responsibly and be accountable for their actions, and secondly, they wanted the potentially dangerous work verified by responsible and accountable public bodies.

They accepted the *fait accompli* of the sale, and the fact that they were continually trying to 'catch up with the game'. Nevertheless, they strived to secure the 'safest possible' decontamination and demolition.

Despite several dust emissions, the activists believed the campaign to have been a success. Later, the government reversed its sales policy (although, perhaps not unexpectedly, it never gave the activists any credit for this very public change of heart).

All the members of the protest group were middle class. Only one had worked with asbestos (a number of years prior to the campaign). Although the few public meetings were well attended, the campaign was never a 'mass movement' within the community, which displayed both indifference and antipathy, and occasionally open hostility, towards the campaign group.

The power station debate took place in an increasingly

polarised community with (in relation to most other London neighbourhoods) a disproportionate number of general environmental and socio-economic risks and hazards.

Conclusion

1 Introduction.

Before beginning the conclusion, it may be helpful to re-state the question addressed in the thesis, namely 'What effect, if any, did the historic and contemporary socio-economic conditions and expectations of the community of Sands End have on the character and dynamics of the 1983-1984 debate over the decontamination and demolition of Fulham Power Station?'. .

The demolition of the power station created a potential environmental hazard - airborne asbestos dust. Some residents decided to lobby the agencies and contractors involved to secure the 'safest possible' decontamination and demolition. The numbers involved, however, never exceeded a dozen. Indeed, the protest group was run by a cabal of just three people.

As shown in Chapter 2, the public's attitude to environmental hazard may be influenced by economic considerations. At Love Canal in the United States, for example, a 1970s health scare over chemical dumping produced an ambivalent response from certain sections of the community, most notably from those residents who worked in the local chemical plants;

At Love Canal, many men worked in the chemical industry. They were more likely to engage in denial over the potential ill effects of chemical exposure. They may...have felt loyal to their employers and/or feared that the toxic issue might cause them to lose their jobs (Edelstein and Wandersman, 'Community

Dynamics in Coping With Toxic Contaminants', in Altman, I., and Wandersman, A., (Eds), Neighbourhood and Community Environments, Plenum, US, 1987, p.85).

The Love Canal incident is relevant to Sands End because it demonstrates how economic factors can, under certain circumstances, influence, if not determine, risk perceptions and subsequent behaviour. Thus, as far as most Love Canal chemical workers were concerned, the need to pull in a wage proved more urgent than the need to investigate and act on a possible public health issue.

While no-one in Sands End depended on the power station for employment (with the exception, perhaps, of a few locals employed by the decontamination and demolition contractors), it is possible that the area's pressing socio-economic problems and decaying infrastructure may have convinced the majority that their limited energies should be focused not on ameliorating the (disputed) long-term health effects of the demolition, but on addressing the area's more acute socio-economic problems of poor housing, crime, unemployment, low incomes, limited opportunities and institutionalised discrimination (see Chapters 3 and 4). Certainly, these 'social risks' were more visible and immediate, and were felt more acutely, than the putative long-term health risk posed by airborne asbestos dust invisible to the naked eye.

To ask the question 'What Risks in Whose Risk Society'? is not to devalue the achievements of those few who

lobbied for a safe decontamination and demolition. Rather, it is to develop a more holistic, inclusive and textured account of the protest. In short, to evaluate what effect, if any, the micro and macro socio-economic context to the debate had on the public's behaviour during the decontamination and demolition of Fulham Power Station.

2 Context.

2.1 Socio-Economic.

2.1.1 Introduction.

The macro and micro socio-economic contexts to the debate were described in detail in Chapters 3 and 4. The following is therefore a brief aide-memoire to the previous analysis.

2.1.2 Macro.

A year after the demolition of Fulham Power Station, London had "The largest concentration of unemployment of any city in the industrialised world" (Townsend, *Op Cit*, p.12). Between 1969 and 1983, the year in which the decontamination began, the number of unemployed Londoners in receipt of means-tested benefits increased eleven-fold.

The increased number of people living either in, or on, the margins of poverty reflected, in part, the de-industrialisation of the capital. Between 1971 and 1976, for example, West London's manufacturing base shrank by

over 30%. Manufacturing firms continued to either close, 'rationalise' or migrate out of the capital throughout the late 1970s and early 1980s.

At the same time, the capital's financial services sector boomed. Unfortunately, however, many of those ejected by the contracting manufacturing sector lacked the qualifications and skills demanded by service sector industries. Unable to compete in the new jobs market, they were simply left behind. This exacerbated the capital's long-standing social and economic ghettoisation. While the poor got poorer, the Metropolitan rich got richer. For example, between 1979 and 1985, while the real take home pay of the top 20% of Londoners rose by over 11%, that of the bottom 20% fell by almost 3%.

With the accelerating socio-economic polarisation of the 1980s came an explosion of crime in the capital. Between 1980 and 1984, the number of offences notified to the Metropolitan Police rose by about 21%. The possibility of a link between poverty and crime is hotly debated. Writing about London in the early 1980s, however, Paul Harrison drew the following conclusion;

Sheer poverty...can act as a potent stimulus to crime. A growing amount of crime, in the dark days of the early eighties, was arising out of straightforward need, in an increasingly Dickensian way (Harrison, P., Inside the Inner City, Pelican, Britain, p.328).

If we accept Harrison's argument, then London's crime explosion of the early 1980s signified a marked increase

in social deprivation.

Rampant crime prompted some developers to offer those with most to lose - the new Metropolitan elite - a new, more secure style of living. In Fulham, the Chelsea Harbour scheme typified the new trend in exclusive, secured urban housing. The development might be seen as the reification of the social and economic polarisation of the early 1980s.

Comparing the London of the 1980s with the London of the 'Swinging Sixties', Townsend concluded that;

The economy of London interrelates more obviously with poverty than it did 20 years ago. Unemployment, underemployment, low wages, bad conditions at work and a pervasive insecurity more obviously characterise the social relationships of London than they did in the 1960s (Op Cit, p.9).

If, in the 1980s, there were "Unemployed people whose desperation to keep their families fed and clothed [was] acute" (Ibid, p.3), it is possible that those affected by such deprivations might have given their economic situation more thought than such nebulous environmental health problems as lead emissions or airborne asbestos.

2.1.3 Micro.

If, during the mid-1980s, London had 'The largest concentration of unemployment of any city in the industrialised world', then the London Borough of Hammersmith and Fulham had more than its fair share of 'labour shake-out'. Indeed, years of de-industrialisation and 'rationalisation' had made

Hammersmith and Fulham "One of London's most deprived Boroughs" (Whitting, G., Op Cit, p.7).

In 1978, unemployment in the Borough had stood at less than 6%. In the year in which the power station was finally demolished, 1984, it stood at 13%.

Of the four wards ranged along the banks of the Thames between Hammersmith Bridge and Chelsea Harbour, Sands End consistently suffered the highest rate of unemployment. Furthermore, Sands End had the highest percentage of semi-skilled and unskilled workers, the very people who found it most difficult to adjust to the new service-driven Metropolitan economy. In 1981, almost one quarter of Sands End's working population fell into this category.

Hammersmith and Fulham suffered other deprivations. Life expectancy, for example, was 'relatively low' in comparison with more prosperous Boroughs (Townsend, Op Cit, p.35).

Housing, too, was a problem. In 1980, Sands End had "Some of the very worst housing problems in the Borough" (Bayliss, G., Op Cit). During the late 1970s, three Housing Action Areas (HAAs) had been set up to address the neighbourhood's housing crisis. In one of Sands End's HAAs, 57% of households had no inside toilet, and 63% had no bath (Ibid). Some of the worst housing could be found on Townmead Road, adjacent to the power station. This housing had been blighted by years of uncertainty over a major road scheme.

The Borough's overall housing problem was reflected in the 9,000 people on the local authority's 1982 council house waiting list.

In Sands End, Tony Powell, one of the ward's two Labour councillors, went so far as to make an appeal on the LBC 'AM' radio programme for 'Housing for people who are in need' (Op Cit).

The local press, too, kept the housing problem in public view. Between the announcement of the sale of Fulham Power Station, in May 1983, and the end of that year, the Fulham Chronicle carried seven housing-related front page stories (out of 34 editions). Some focused on poor housing conditions, while others drew attention to the seemingly magnetic attraction between the neighbourhood's new-build high-rise estates and crime.

2.1.4 Conclusion.

All in all, the economy and infrastructure of Sands End was in poor health in the early 1980s. There were, of course, glimmers of hope, like the much vaunted Chelsea Harbour development. But Chelsea Harbour offered no affordable 'social housing' or low-rent business units. There were jobs, but these were few in number, poorly paid and semi- or unskilled. Hardly a recipe for building a dynamic, well qualified pool of labour in the neighbourhood.

Interestingly, many of the observations made by academics like Townsend, Whitting and Bayliss, national

journalists like Mooney, local journalists and politicians like Tony Powell (see above), were reflected in the narratives of several power station activists.

Thus, several interviewees drew attention to the socio-economic context of the power station campaign.

One, for example, explained the general lack of interest in the issues surrounding the decontamination and demolition in terms of the public's preoccupation with housing decay:

Environmental issues weren't 'in' at that time...damp was 'in' at that time (AF, Op Cit).

This activist, the neighbourhood's Community Development Worker, opined that the need to 'pull in a wage' can militate against environmental and health considerations. This, she felt, had happened in Sands End, where most residents had accepted the pollution produced by the power station "Because it was work" (Ibid).

A second activist concurred with this view, commenting that although many locals - especially housewives - would complain about the smut and smoke, they never made an issue of it (JG, Op Cit).

This same activist was very aware of the area's pressing social and economic problems:

[In Sands End] you have basically two types of community: those who are working and surviving reasonably well: and at the same time, there is quite a lot of poverty and multiple deprivation (Ibid).

A third activist concurred that socio-economic problems could militate against environmental activism. After all, she thought, most people would tend to their immediate socio-economic needs before thinking about the possible long-term health implications of airborne asbestos:

A lot of them had bigger problems to deal with in their homes...If you've got things worrying you about your home and your family, you don't think too much about other people (TR, Op Cit).

According to this activist - who worked at the Townmead Road Youth Club - the 'pyramid of hierarchical needs' dictates that socio-economic problems are given priority over other, less well-defined and more uncertain threats.

Of course, not every activist saw the general public's silence on the power station issue in the context of Sands End's precarious economic status. Two activists - one a 'core activist', the other on the periphery - were, respectively, 'disenchanted' and 'surprised' with the muted response of the general population to the power station issue. As one put it; "An awful lot of people didn't want to bother...In the end we got quite fed up" (JT, Op Cit). The other activist, who described herself as 'financially privileged', found people 'singularly apathetic' (MP, Op Cit).

The various foreign journalists and film crews who covered the demolition also failed to put the issue in

context. They expressed puzzlement as to why such communities were so far behind their international neighbours in lobbying for a safer environment.

At this time, however, Britain was conspicuously less prosperous than many of her international cousins. Japan and West Germany, for example, had much stronger economies than Britain - economies built around highly efficient manufacturing sectors (Childs, D., Britain Since 1939 - Progress and Decline, Macmillan, Britain, 1995, p.198).

In Britain, however, questions of industrial decline, unemployment and cuts in public services loomed large. There was a deep unease at the country's performance and prospects, an unease articulated in a widespread dissatisfaction with the Premier. As Childs explains; "The 'de-industrialisation' of Britain, which gathered pace in the early Thatcher years, brought dismay...By the end of 1981, Thatcher had become the most unpopular Prime Minister since Neville Chamberlain..." (Ibid). (Such dissatisfaction, however, appeared to evaporate on polling days: Thatcher remained Prime Minister throughout the 1980s).

In Sands End, the phenomenon of de-industrialisation, in concert with such neighbourhood-specific problems as lack of investment and opportunity, decrepit housing, escalating crime, poor health, drug abuse and social and economic polarisation, gave people much to think about besides the possible long-term health effects of asbestos.

At this time, of course, Ulrich Beck was writing about what he believed to be the developing environmental consciousness of an increasingly 'post-materialist' European society. (His seminal work, Risk Society, was published in Germany in 1986). Beck advanced the theory that environmental consciousness is partly a function of economic well-being; that is, the wealthier you are, the greater becomes your inclination to think of the environmental consequences of your decisions and actions. Such 'environmental consciousness', in concert with "[T]he knowledge...that the sources of wealth are 'polluted' by 'hazardous side effects'" (Beck, Risk Society, p.20), would, so Beck believed, generate "[A] growing critique of modernisation", which would "[L]oudly and contentiously [determine] public discussions" (Ibid).

Beck did not consider his theory to apply only to the German experience, of course. Far from it. He believed that such enlightened, 'reflexive' processes were to be found in all advanced industrial societies:

In the welfare states of the West...the struggle for one's 'daily bread' has lost its urgency as a cardinal problem overshadowing everything else...For many people problems of 'overweight' take the place of hunger (Ibid).

As we have seen, however, in Britain in general, and in Sands End in particular, at the time Beck was writing Risk Society, the 'struggle for one's daily bread' had, for many people, not 'lost its urgency'.

Thus Beck's attempt to offer a generalisable, universal account of environmental consciousness in late modernity fails to accommodate the disparate socio-economic fortunes of the various 'welfare states of the West' in the 1980s. The West Germans might well have been 'post-materialist' in their outlook. Many Britons, and certainly many of those who lived in Sands End, were not. Beck's description of the Federal Republic as an "Eldorado of bureaucratically organised care and caution" (Beck, U., in Featherstone, M., Op Cit, p.97) could hardly have been applied to the Britain of the early 1980s, much less to poor, neglected, isolated Sands End. While political discourse in West Germany may well have changed from discussions about "[T]he logic of wealth distribution in a society of scarcity to the logic of risk distribution in late modernity" (Beck, Risk Society, p.19), political discourse in Britain, and particularly in Sands End, was still largely focused on 'wealth generation in a society of need'.

However, although Beck's 'post-materialist' theory would appear somewhat parochial, if not 'nationalistic' in its formulation, it does highlight, albeit indirectly, an important aspect of human behaviour: namely the relationship between prosperity and environmental concern. Beck, of course, focused on the link between wealth and heightened environmental sensibility. This, after all, was the German experience. Had he been writing about the British experience, however, he might well have focused on the propensity of poverty, unmet needs and wants and relentless decline to inure publics

to environmental disamenity and/or scientific and technological risk and hazard. As shown in Chapter 2, this is exactly what can happen where workers are faced with the choice of either protesting against unsafe working conditions (either directly, through a union, or indirectly, by not applying for unnecessarily hazardous jobs) or 'knuckling under' to earn a wage to keep their family clothed and fed. As the fork-lift driver in the GMLPU survey put it;

I work in the outside storage department...I don't think anybody would take the outside job, with it being the dangerous chemical side...Because it was permanent, I jumped at the chance...

You get paid an allowance for working outside storage with flammables. That's my only grumble. £5.38 a week, it should be £538 a week for working with flammables. If the place goes up, I wouldn't even know about it (Op Cit).

Other workers, in other similarly depressed local economies, can make the same kind of pragmatic calculation. In America's 'Chemical Valley', for example, workers steel themselves against the obvious risks of chemical manufacture so they can pay their way:

What are you going to do? I worry all the time about the stuff I smell and about some of the things I've seen over there. But I'm making \$11 an hour doing inside work. In West Virginia, you don't walk away from top dollar like that (Chaze, Op Cit).

In a later (1987) study of US chemical workers, Edelstein and Wandersman found a similar pragmatic acceptance of industrial hazard. As they put it;

When...students questioned workers in

hazardous chemical factories, they found that many workers were aware of the dangers. They engaged in various forms of rationalisation to justify taking such risks. For example, many claimed to be trading-off personal risks for the opportunity to work at a high-paying blue-collar job that might provide the ticket for their children to go to college and escape such work [My emphasis] (Op Cit, p.86).

Thus, as Edelstein and Wandersman discovered, it is possible that a person's ambitions for his/her family may influence their attitude towards potentially hazardous employment. Here, then, is further evidence of the way in which socio-economic circumstance may affect human behaviour in the face of scientific and/or technological risks and hazards. In the case of the fork-lift driver quoted above, for example, 'John' saw his hazardous job as a way of keeping his house and saving enough money to marry his partner. 'Barbara', the van driver who collected waste cellulose solvent, and who was injured in a crash (see Chapter 2), took the job "so that she could spend some time with her two children" (Op Cit, p.24).

Therefore, it is reasonable to conclude that a person's social and economic circumstances (and ambitions for their partner and offspring) will exert at least some influence upon his/her attitude to scientific and/or technological risk and hazard. A number of power station activists alluded to this in their interview responses (see TR's statement, above, for example). The mediating influence of economic circumstance on attitudes to scientific and technological risks and hazards has also been noted by academics. Wynne, for example, attributed

the quiescence of Cumbrian hill farmers over the issue of radioactive contamination from Windscale partly to the contribution the plant made to the local economy (see Chapter 2). In light of the community's dependence on BNFL for skilled jobs, they were not about to risk whatever prosperity the plant brought by confiding their suspicions and fears to journalists or government scientists.

The pragmatism of those heavily or wholly dependent on 'risky' ventures for their livelihood has been noted by Francis:

Within the present economic system, many conclude that elimination of pollution may be accompanied by reduction of economic security, particularly job security. Such worries are particularly compelling to those of low social status who lack the financial and personal resources needed to absorb sudden shifts in industries in a particular area (Op Cit).

Within the present economic system, where good jobs are at a premium, and where employment protection rights, under the influence of 'globalisation', are fast disappearing (Childs, D., Op Cit, p.208; and Red Pepper, June, 1996, p.14/15), many choose pragmatic quiescence over protest. As Chomsky puts it:

Anybody lives within a cultural and social framework which has certain values and certain opportunities. It assigns cost to various kinds of action and benefits to others. You just live in that. You can't help it. We live in one that assigns benefits to efforts to achieve individual gain... [L]et's say I'm the father or mother of a family, what do I do with my time? I've got twenty four hours a day. If I've got children to take care of, a future to worry about, what do I do? One thing you can do is try to play up to the boss and see if you can get a dollar more an hour, or

maybe kick somebody in the face when you walk past them. If not do it directly, do it indirectly, by the mechanisms that are set up for you within a capitalist society (Op Cit).

Thus, for Chomsky, as for Wynne and Francis, socio-economic context may exert a powerful influence on human behaviour.

This is something a number of power station activists failed to understand. Speaking from a position of relative economic (and educational) security, they expressed 'disappointment' at the apparent lack of interest shown by the majority of the community in the power station issue. As one put it;

[P]eople just want to get on with their lives...it is disenchanting (JT, Op Cit).

It did not occur to this activist to ask why the majority failed to join in. Certainly, some may have spurned the campaigners out of laziness. Some may have believed asbestos to be harmless. Some may even have trusted the various public and private agencies involved in the decontamination and demolition to behave responsibly. But, as the Townmead Road Youth Club worker ('TR') pointed out, many had more pressing matters to deal with at home. In the 'pyramid of hierarchical needs' the possible long-term health effects of asbestos dust came a poor second to keeping a job (even a low paid, casualised job), looking for work, juggling bills, paying the rent or keeping their offspring on the straight and narrow.

In conclusion, scientific and technological risk and hazard debates are inherently social in character. They occur in specific temporal, social, economic and political milieux. They both affect, and are affected by these contexts. This specificity means that risk debates sit uncomfortably with such grand narratives as Beck's Risk Society thesis. We are not all 'post-materialist'. Indeed, as far as the British are concerned, it might be argued that only a small number could be classified (or would classify themselves) as having met their economic needs and wants.

Moreover, Beck's 'post-materialist' thesis also fails when applied globally; A world in which "800 million people out of 5.6 billion [are] hungry, and where one-fifth of the world's population live on less than \$1 a day", and in which, according to Reuters, "The holocaust of poverty...claims millions of victims every day" ('World Leaders Urged To End 'Holocaust'', The Guardian, October 15, 1994) could hardly be described as 'post-materialist'. As Scott puts it;

[Beck's] comment that in the West a sense of risk has replaced the urgency of the struggle for one's daily bread may be seen by some as overly optimistic. On a global scale, certainly, it makes little sense ('Risk Society: Towards A New Modernity', Sociology of Health and Illness, Volume 16, Number 1, January, 1994, p.135).

As to the prospects of a 'post-materialist' culture taking root in Britain, it might be worth considering Kenneth Tynan's 1973 premonition:

A super-rich class is being built on top of the existing structure - an international class of the business-rich drawing on the US and the Common Market - with the aim of keeping the insurgent and overweening middle class in their place, and of decisively depressing the proletariat. Only members of the super-rich (the new feudal class) will be able to keep their head above the decline in the value of money, because they are paid in perks, property, possessions and tax-exempt benefits. This is what will separate them from the rest of us, whose efforts will perforce be dedicated not to changing society, but to keeping ourselves from drowning [My emphasis] (Quoted in The Times, November 3, 1994).

Tynan's prophecy is noteworthy on several counts; It anticipated the marked social polarisation of the 1980s. Indeed, Tynan presaged Therborn's prediction of 'increasing trichotomous socio-economic division' (New Times, p.111) in Britain by over fifteen years; It also hinted at the growing indifference of - to use Will Hutton's invective - Britain's "Arrogant officer class...favoured with education, jobs, housing and pensions" (Op Cit) towards the remaining two thirds of society. In this observation, Tynan presaged Townsend's 1987 conclusion that, in London at least, the rich were becoming progressively less concerned about the mounting squalor they saw around them, and progressively more concerned about their own financial and personal security. (As mentioned previously, the Chelsea Harbour and Regent on the River developments could be interpreted as a reification of this 'neurosis' (see Chapter 3)). But most importantly, in the context of the question addressed here, it hinted at the capacity of personal economic circumstance and calculation to dominate the thoughts and behaviour of those outside the

narrow 'officer clique' - at least two-thirds of the population. As Tynan might have said in the 1970s, or Chomsky in the 1990s, 'Keeping oneself from one's financial grave, watery or not, is a full-time occupation'. Of course, neither commentator has anything to say on the priority a community might attach to action over the possible long-term health effects of airborne asbestos dust. All one can say is that both Tynan and Chomsky, like Wynne and Francis, see the 'economic imperative' as a major influence on personal priority-setting.

2.2 Other Environmental Issues as Context.

2.2.1 Introduction.

While the preceding analysis focuses on the influence of socio-economic factors on the dynamics of scientific and technological risk and hazard debates, one cannot ignore the possible mediating role of other contextual factors - specifically other environmental issues. Given the general thrust of the thesis, namely that a complete understanding of risk and hazard debates necessitates a detailed analysis of the context in which they occur, it would be remiss not to make brief mention of the several other environmental issues that contributed to the social tableau against which the power station debate was conducted.

2.2.2 Contemporary Environmental Concerns.

Briefly, there were some half dozen environmental issues

on the local political agenda at the time of the power station debate.

1. Concerns over lead emissions were a prominent feature of the political agenda, not least because Fulham's MP, Martin Stevens, chaired the parliamentary committee of CLEAR. As a result of the efforts of Martin Stevens and other local campaigners, there was "A great deal of...local publicity over the hazard of lead poisoning" (Civic News, Op Cit). The local authority responded to the clamour by appointing a Temporary Scientific Officer to investigate the problem.

2. Traffic volumes also featured on the local political agenda. Firstly, because cars contributed to such problems as lead in the atmosphere. Secondly, because they emitted other contaminants, such as PM10s (carbon particles) and minute quantities of asbestos dust from brake linings. And thirdly, because they posed an immediate physical hazard; several children had been knocked down and killed in Sands End by cars using the neighbourhood's 'rat runs'. TERROR became the focus for concerns about car safety.

3. Sands End played host to numerous small, yard-based industries, such as car-wrecking yards, waste transfer stations, small incinerators and builders merchants. While a source of much needed (albeit poorly paid, low-skilled and casualised) employment, these industries caused much local environmental disturbance, usually in the form of noise, dust and odours.

4. Much of the derelict land in Sands End had been used

by heavy industry (for example, the British Gas site where, before the advent of 'natural gas', coal had been reduced to make town gas). Consequently, there was a lot of heavily contaminated land in the neighbourhood, especially near the river, where groups like ARISE wanted to see a community park and riverside walk established.

5. Aircraft noise was also an issue. Firstly, because of Heathrow's continued expansion (a fifth terminal was being mooted even in the early 1980s), and secondly, because of the success of the heliport on the Wandsworth bank of the Thames.

6. The suspected transportation of nuclear waste along the West London Railway (which ran right beside Chelsea Harbour) was an issue for some people, including one of the power station activists ('PR').

2.2.3 Commercial Asbestos vies with Domestic Asbestos for Public Attention.

Perhaps the most interesting feature of the general environmental background to the power station debate was the discovery in 1983 of large amounts of brown asbestos at a sixteen storey block of flats in Sands End. The flats were decontaminated by the local authority, requiring the temporary relocation of four floors of tenants at each stage. The contamination was reported in the local press within two weeks of the announcement in The Times of the sale of Fulham Power Station, and in the context of determined efforts by the GLC to keep the

asbestos issue on the capital's political agenda (see Chapter 3).

2.2.4 Conclusion.

The power station debate took place in an environmental as well as a socio-economic context. While this research focuses on the mediating role of socio-economic factors in risk perceptions and behaviour, it should not be forgotten that, at the time of the decontamination and demolition of Fulham Power Station, there were a number of local environmental risk issues, as well as social and economic issues, for the public to consider. Some, of course, like the asbestos found in local flats, or the airborne asbestos dust produced by brake linings, complemented the power station campaign by keeping the asbestos issue on the political agenda. Others, however, like road hazard, lead or aircraft noise may well have served to divert attention from the asbestos issue.

As mentioned earlier, this research does not concern itself in detail with the mediating role of other environmental risks and hazards in the power station debate, although this aspect could form the basis for further study.

3 A Class Act?

3.1 Introduction.

Having established that the socio-economic conditions obtaining in Sands End in 1983/1984 had at least some

effect on the character and dynamics of the power station debate, in that the community had plenty to worry about besides small quantities of asbestos dust released from the power station, it might be valuable to develop the analysis in terms of a possible corollary between activism, antipathy and opposition and class membership.

The class dimension, of course, is implicit in the socio-economic analysis of the debate, for if the socially disadvantaged are less able and/or willing to participate in risk debates, it follows that the socially advantaged are more able and/or willing to take part.

Of course, this analysis assumes there to be a corollary between socio-economic status and class. That is, that the less well off belong to the working class, and the better off belong to the middle class. While this does not always hold (see the description of nouveau-riche 'social climbers' in Chapter 1, for example), for the sake of this broad analysis, a relationship between socio-economic status and class can be assumed.

3.2 Pedigree of the Power Station Activists.

Judging the activists on the basis of their occupations, all of those interviewed were middle class. The three 'core activists' were, respectively, a journalist, an artist and an ex-secretary. Of those outside the cabal, two were community workers, one a local authority manager, one a maintenance planner for an area health

authority, one a polytechnic lecturer and another, who did voluntary work at local hospitals, the widow of a well-known writer and mother of an actress. (This activist was probably the most candid about her comfortable status within the community, confessing at one point; "Social workers get very irritated with people like me...I don't blame them...They keep on telling me that you are doing it to compensate for the fact that you have lived in an easy position. It's probably perfectly true that I'm compensating for my wealthy American background" (MP, Op Cit)).

While all nine activists lived quite modest lives (none of them flaunted their money), it could reasonably be said that all were 'comfortably off'. That is, none were, at the time of the power station debate, preoccupied with - to paraphrase Tynan - 'keeping themselves from drowning'. Furthermore, all were educated, articulate and confident: The sort of people who would stand a good chance of finding a new job should they be made redundant. (The activists stood in sharp contrast to a significant proportion of Sands End residents whose lack of skills (see previous chapters) and education would make them difficult to place in the emerging service-oriented Metropolitan economy of the 1980s).

The middle-class composition of TERROR at the time of the power station debate confirms Lowe and Goyder's analysis of the class composition of environmental groups in general. Thus, in Environmental Groups In Politics, Lowe and Goyder observe that "Members of

environmental groups are predominantly middle class" (Allen and Unwin, Britain, 1983, p.10). In their analysis of the class composition of the memberships of Friends of the Earth and the Conservation Society, the authors conclude that;

Compared with a sample survey of the general public, they tend to have higher incomes and much higher levels of education (a majority of the members of both groups have degrees)...[The memberships] are drawn disproportionately from the personal service professions, such as teaching, social work and medicine (Ibid, p.11).

The 'compositional elitism' of British environmental groups is also characteristic of their American counterparts, where "The modal member of an environmental organisation is a college graduate, holds a professional-level job, and has an above-average income" (Morrison, D.E., and Dunlap, R.E., 'Environmentalism and Elitism', Environmental Management, Volume 10, No.5, p.582).

The fact that most of the power station activists were middle class newcomers to Sands End - albeit that some had settled there in the 1970s - raises an interesting question. How would a non-gentrified, and predominantly working class Sands End have reacted to the decontamination and demolition of Fulham Power Station? Would they have protested, or would they have asked that the building be demolished as quickly as possible so the land could be redeveloped for new industries, housing and amenity? Certainly, one of the activists - the only one native to Sands End - was firmly of the opinion that

what little environmental sensibility the area possessed had been introduced by middle class 'settlers'. As she put it;

I think people are far more [environmentally] conscious because there has been a change of people living in this area (CD, Op Cit).

This observation has certain resonances with Lowe and Goyder's view that "Higher social groups...[show] a much greater awareness of...those forms of pollution whose effects are...much less tangible than visual or noise pollution" (Op Cit, p.13). The implication is that, before gentrification, the community was more concerned about such tangible threats as road hazard, smoke, odours and traffic and aircraft noise than about the possible long-term health effects of asbestos dust - an odourless dust so fine as to be invisible in the general, non-workplace environment.

It is possible that the hostility shown by some Sands End residents to the power station activists (see, for example, the testimony of 'CD' in Chapter 7) derived, in part, from a belief that there were far more urgent threats to public health - tangible hazards that one could actually see, hear and smell - than a possibly carcinogenic dust that one could not see, and which might cause cancer in a small number of people some twenty or thirty years hence (see Chapter 5).

3.3 Conclusion.

Thus the socio-economic conditions of Sands End influenced the dynamics of the power station debate in two ways. Firstly, as shown above, the relative poverty of the majority of residents gave them plenty to think about besides the demolition. Secondly, the relative prosperity of a minority of residents provided the circumstances under which a protest group could form and flourish. Those who became active were, without exception, comfortably off (although not wealthy), well educated, articulate, confident and blessed with a certain amount of spare time. As one of the activists explained, the campaign had given them 'a purpose' ;

[I felt] slightly bereft [when the campaign finished], because when anything comes to an end, you have to get back to reality. Some people wanted it to continue. They'd found a purpose, a voice (TR, Op Cit).

The 'purpose' of the majority of Sands End residents at this time, however, was maintaining their financial viability.

4 A Climate for Protest?

The events in Sands End during 1983/1984 obviously occurred in a national, as well as a Borough-wide and Metropolitan social, economic and political context. Given the focus here on the impact of context on attitude and action, it would seem reasonable to look at trends and events outside London in the nation as a whole, some of which may well have impacted on the

community in Sands End.

Of particular interest is the degree of importance people in general - that is, the 'great British public' - attached to questions of environmental risk and disamenity. At the time of the debate, Lowe and Goyder, in their study of British environmentalism, were able to write that "The environmental movement seems to be well established as a permanent feature of the political scene" (Op Cit, p.5). In 1983, one person in ten belonged to an environmental group. This made the environmental movement of the early 1980s, according to the authors, "A major social phenomenon" (Ibid, p.1).

Extrapolating from Lowe and Goyder's research, it would appear that the majority of Sands End residents were out of step with the evolving environmental consciousness of the rest of the country.

Later research, however, has revealed a marked disjuncture between the sorts of things people sympathetic to the environment say should be done to save it, and the degree to which those people are prepared to modify their behaviour to realise their environmental aspirations. For example, in its 1994 public opinion survey, British Social Attitudes, Social and Community Planning Research (SCPR) discovered that although many people wanted to reduce the impact of the motorcar on the environment, only 18% of respondents were either 'strongly' or 'somewhat in favour' of 'putting up taxes on petrol each year for the next ten years to get people to cut back on driving'. This rather

negative response to a constructive environmental measure led the Report's authors to conclude that "Respondents tend to express much higher levels of concern at the general level than they do when asked analogous questions at the specific level" (Op Cit, Dartmouth, 1994, p.130).

Moreover, when people were asked to consider how much the government should spend on its environmental programme in relation to its social programmes, although 54% of respondents wanted the government to spend more on the environment, 78% wanted more spent on pensions, 79% wanted more spent on education and 87% wanted more spent on health (Ibid, p.7).

Clearly, in the 1990s in Britain, most citizens prioritise social risks over environmental risks - at least in terms of government spending priorities. The SCPR survey reveals quite conclusively that although many might profess concern for the environment, few are prepared to act to save it. Indeed, the survey states quite bluntly that "[M]uch of the British public's concern about the environment is (still) relatively superficial" (Op Cit, p.107).

Thus, the SCPR survey, although conducted on a national basis some ten years after the power station debate, provides some interesting background on the strength of the British public's commitment to issues of environmental risk and hazard, and on how the public prioritises issues of environmental risk in relation to issues of social risk, like health, education and old

age.

Of course, given that different communities see ('construct') the world in different ways, it is dangerous to extrapolate from the general to the specific. It is quite possible, for example, that even a community with major socio-economic problems would choose to address local environmental risks and hazards first (see, for example, the opposition of a poor community in the States to a proposed landfill site, as described in Chapter 2).

Nevertheless, it cannot be denied that the SCPR's general conclusions do have certain resonances with the behaviour of the majority of Sands End residents during the power station debate - as they do with the behaviour of certain political actors today: witness, for example, the historic and contemporary devotion of the Labour Party and TUC to economic growth as the prime objective of government (see Chapter 2).

We may well live in a version of Beck's 'reflexive modernity', in that we are more conscious today of the multiplying risks and hazards of our fin-de-siecle world, but, if the SCPR survey is correct, few Britons are prepared to express their consciousness in terms of promoting and paying for antidotes to the Risk Society - especially antidotes that threaten the current standard of living. In short, in Britain today, as in Sands End in 1983/1984, it is doubtful whether, for the majority; "The commonality of anxiety takes the place of the commonality of need" (Beck, Op Cit, p.49).

5 The Verdict.

This thesis set out to discover "What effect, if any, the historic and contemporary socio-economic conditions and expectations of the community of Sands End, Fulham, London, had on the character and dynamics of the 1983-1984 debate over the decontamination and demolition of Fulham Power Station?"

It has been shown that the neighbourhood's historic and contemporary socio-economic conditions did have an effect on the character and dynamics of the Fulham Power Station debate. Thus, many residents were too preoccupied with their own financial and social security to actively participate in the debate. As Tynan might have said, 'They were too busy keeping their heads above the rising waters of financial insolvency and social disintegration'. This meant that the campaign was led by a group of middle-class gentrifiers (albeit that some of them had moved into the neighbourhood in the 1970s).

The protest group achieved much, including a spectacular reversal of government policy on power station sales. In this respect, Beck's vision of a 'vibrant sub-politics' as a catalyst to change would appear to have some foundation.

But, as has been shown, the power station group was hardly representative of the community from which it sprung. This raises certain awkward questions. If, as Beck insists, "Citizens' groups have taken the

initiative thematically in this society" (Beck in Featherstone, Op Cit, p.116), and if these groups come from a narrow social base, and if, as in Sands End, they are profoundly undemocratic, whose interests, exactly, are they purporting to represent? The issue of airborne asbestos dust was obviously of great concern to group members. But these were people with few serious financial or social security worries. They were all comfortably off. While not wishing in any way to diminish the group's achievements, it is nevertheless a fact that they pushed the asbestos issue on to an already crowded local political agenda - an agenda that addressed some very pressing social and economic issues. It may well be that the resentment shown by some locals towards the activists, and the non-participation of the vast majority of the community in the campaign, reflected a certain unease at the amount of publicity the group was getting locally - publicity that some people felt should go to issues like economic regeneration. Perhaps this is why someone changed the legend daubed on the power station's Townmead Road boundary wall from 'Asbestos Dust Kills', to 'Fear and Lies of Asbestos Dust Kills'. It may also explain why the two local councillors skirted around the debate. The activists, of course, attributed their reticence to 'laziness' and 'indifference'. But it may be that part of the reason for their non-involvement was their preoccupation with the area's other problems - problems they might have believed to be of greater import.

Thus it could be said, in light of the Fulham Power

Station debate, that the practice of 'sub-politics' may not be an entirely healthy democratic development - especially if sub-political groups are socially unrepresentative, undemocratic, and absorb energies that might be more productively devoted to issues like sub-standard housing, low wages, poor conditions of work and unemployment - all of which have been shown to contribute to ill health and premature death. (As the JRF report 'Life on a Low Income', published in June, 1996, put it; "[I]nadequate housing, job insecurities and money worries appear to be part of the link between low income and a greater likelihood of ill health" (p.3); See, also, Chapter 3, above). To conclude, the problem with 'sub-political' groups is that they can skew the political agenda, especially if they are as good at media management and publicity as the power station group was.

The power station activists were never luddite, anti-science or anti-industry, although they did articulate, to use Beck's phrase, "A growing critique of modernisation" (Risk Society, p.20). Some activists, for example, had general concerns, such as the ubiquity of pollution, the integrity of industrial managements and the competence and commitment of industry regulators, while others had more specific worries, like nuclear safety and gas-contaminated land. While these concerns were genuinely held, it should be remembered that they were articulated by a protest group whose membership was composed entirely of middle-class gentrifiers. It is possible, of course, that such a discourse would have

developed in Sands End had there been no gentrification. However, it is equally possible that, given the neighbourhood's long and relatively harmonious and productive relationship with science and technology (see Chapter 3), such a discourse would not have developed without the gentrifiers' activism. Certainly, within the community at the time of the power station debate, there were some who refused to believe that asbestos, an essential ingredient in the undisputed success of Fulham Power Station, could endanger health. (In 1948, Fulham Power Station had the highest thermal efficiency of any coal-burning power station in Britain (CEGB, 1961, Op Cit)).

It may be the case, therefore, that 'the growing critique of modernisation' is a peculiarly middle-class preoccupation.

Certainly, Raymond Williams, writing in 1958 about the experience of the British working class - the class from which he came - would brook no criticism of 'techno-scientific development':

For one thing I knew this: at home we were glad of the Industrial Revolution, and of its consequent social and political changes. True, we lived in a very beautiful farming valley, and the valleys beyond the limestone we could all see were ugly. But there was one gift that was overriding, one gift which at any price we would take, the gift of power that is everything to men who have worked with their hands. It was slow in coming to us, in all its effects, but steam power, the petrol engine, electricity, these and their host of products in commodities and services, we took as quickly as we could get them, and were glad. I have seen all these things being used, and I have seen the things they replaced. I will not listen with patience to any acid listing of them - you know the sneer you can get into

plumbing, baby Austins, aspirin, contraceptives, canned food. But I say to these Pharisees: dirty water, an earth bucket, a four-mile walk each way to work, headaches, broken women, hunger and monotony of diet. The working people...will not listen (and I support them) to any account of our society which supposes that these things are not progress: not just mechanical, external progress either, but a real service of life...[I]n the new conditions, there was more real freedom to dispose of our lives...Any account of our culture which explicitly or implicitly denies the value of an industrial society is really irrelevant; not in a million years would you make us give up this power [My emphases] (Williams, R., Resources of Hope, Verso, Britain, 1989, p.10).

Williams' discourse is relevant to Sands End. The power station, built by and for the people of Fulham, gave a poor community heat, light and many hundreds of badly needed jobs - skilled jobs, at that - over a very long period. Consequently, the community, once indebted to, and still proud of 'their' power station, may have found it difficult to conceive of it as a source of danger. Their historical experience of the power station as a source of comfort did not gel with the activists' construction of it as a source of threat. This led to open displays of hostility towards the activists. As one campaigner recounted, "It was quite difficult using the local shops...I remember having an argument with the greengrocer about that very issue, because he had worked in the power station, and as far as he was concerned, there was nothing wrong" (CD, Op Cit).

Thus the historic and contemporary socio-economic conditions and expectations of the community of Sands End affected the character and dynamics of the power station debate in three ways:

1. The relative poverty of the majority of those native to Sands End mitigated against active involvement in environmental risk debates. People had more pressing socio-economic needs to address (although it should be remembered that each of the two public meetings organised by TERROR on the power station issue attracted 150 people).

2. Gentrification promoted a new environmental consciousness within the neighbourhood. Newcomers with the luxury of time and money were able to address Sands End's environmental problems.

3. The community's beneficial association with Fulham Power Station (and, by inference, with asbestos), may have made the activists' discourse less credible.

In 1983/1984, as far as most of the residents of Sands End were concerned, the main risks and hazards were economic and social. Limited energies were, perforce, directed to these immanent threats.

At the same time, as far as a small number of economically and educationally enfranchised gentrifiers were concerned, the main risk was thought to be airborne asbestos dust. But then, these people had no experience of Fulham Power Station as 'a real service of life', and no experience of Sands End as a social and economic dead end.

Ulrich Beck has observed that we live in a world of

"Exponentially increasing risks" (Risk Society, p.47). Such risks - the product of dysfunctional techno-scientific development - have produced, says Beck, a 'Risk Society'. I contend, however, that Beck's definition of the Risk Society is flawed, in that it fails to seriously consider the influence - even in First World countries - of persistent, unmet social and economic needs on risk debates. Beck's evocation of the 'Risk Society' is too partial - too focused on the environment. He forgets that the 'Risk Society' is both environmentally and socially constituted, and that in certain 'welfare states of the West' the Nirvana of 'post-materialism' has not yet been achieved.

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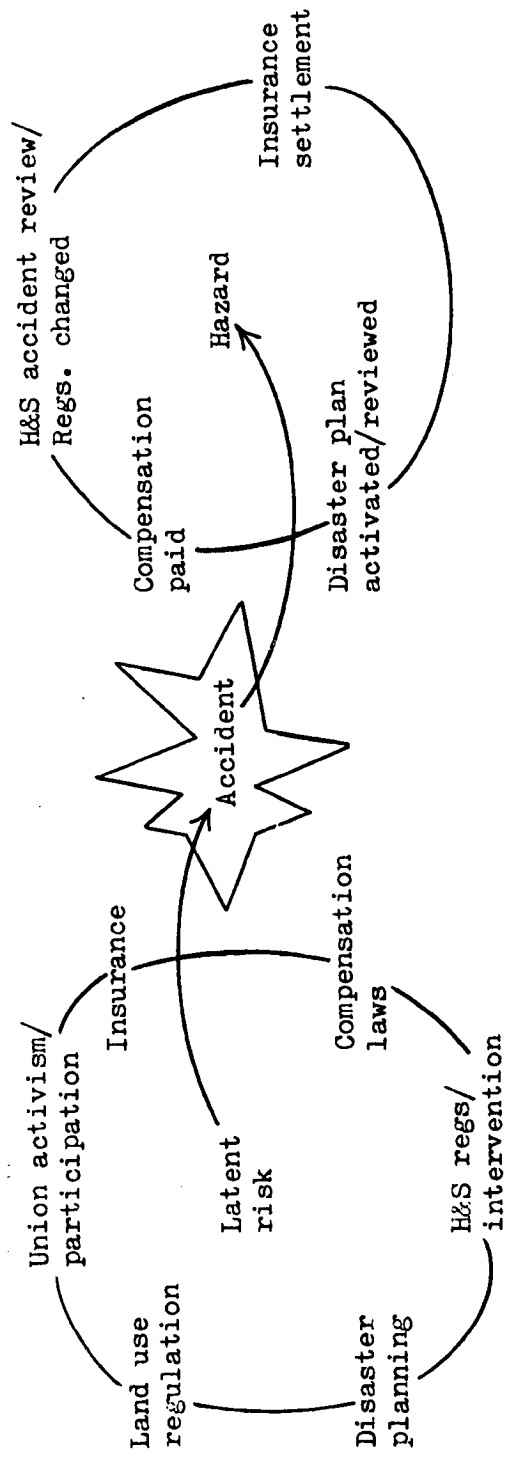
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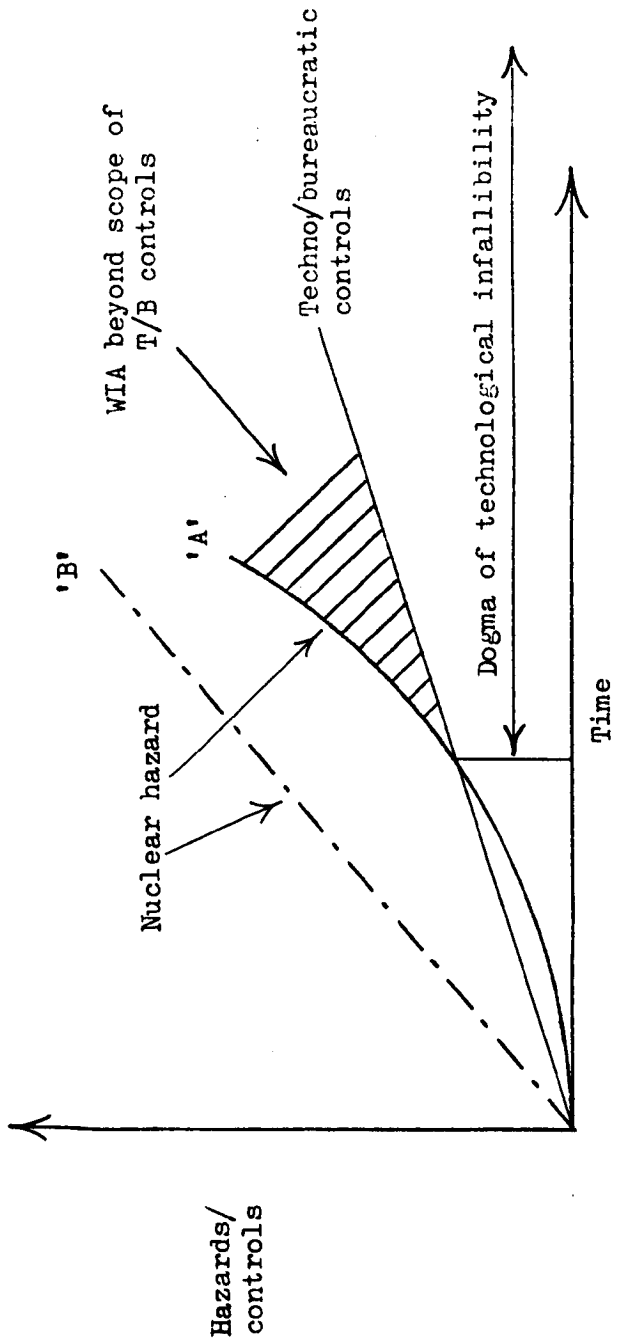
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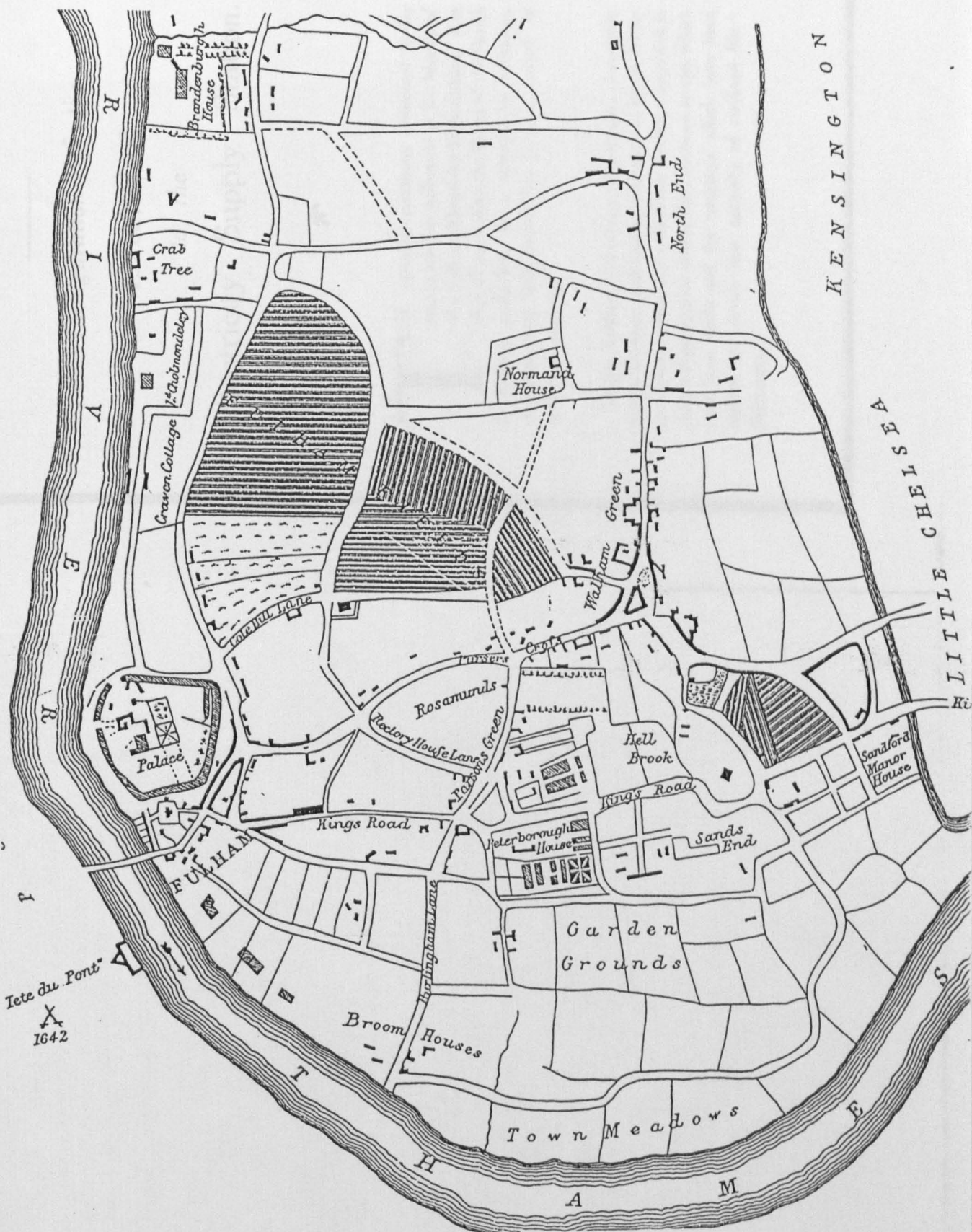
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The
Metropolitan Borough of Fulham.

*Inauguration of the
Extension
to the
Electricity Supply Station.*



THE opening ceremony witnessed to-day marks another milestone in the history of the Fulham Electricity Undertaking. It is now 27 years since the Vestry of the Parish of Fulham embarked on a scheme for providing electricity, and this period has been a period of continual progress.

To-day brilliant and artistic illumination, electrically driven trams, and heating and cooking by electricity are commonplace, but only those directly concerned in electrical production realise the enormous strides which have been made and the resources which have been utilized to provide that necessity of civilized life—Electricity.

It is safe to say that in no branch of industry has greater progress been made than in the generation of electricity, and the present achievements have brought us only to the outer fringe of the field of electrical development.

At Trowbridge Road, the Fulham Council has an Electricity Works of which Fulham may justly be proud. Efficiency and low cost of production are the chief considerations, and the plant now installed and the methods in operation are comparable with the practice adopted in the largest and best stations throughout the country.

Situated on the banks of the Thames, the Station occupies a site which is ideal from the point of view of the Station Engineer, providing as it does easy means of obtaining adequate supplies of Condenser Cooling Water, cheap water transport of Coal to the Station, and easy disposal of ashes. Moreover, since the Station is located practically in the heart of the Borough, the transmission losses through the cables from Station to consumer are ideally small.

With these natural advantages, coupled with the enterprising spirit displayed, it is not surprising that the Fulham Council were in 1923 compelled to consider the acquisition of new generating plant, nor is it surprising that the Electricity Commissioners should have favoured an extension to a Station so ideally situated.



SIR VINCENT CAHILLARD, J.P.,
Director of Fickers Limited.

The progressive policy which had in the past actuated the Fulham Council and their Electricity Committee, was further evidenced by their decision to depart from the usual practice in respect of placing contracts of this description, and early in 1924 the contract for the complete extension "from foundations to roof" was placed with Vickers Limited, one of the very few firms in this country with resources capable of undertaking a contract of this description and magnitude.

Notwithstanding the very tempting offers submitted by Foreign Competitors, the Fulham Council adhered to their traditions and decided that work for British workmen was of greater importance than the ostensible saving in initial capital expenditure which would accrue by placing the order abroad. This attitude was reflected in the policy of the Vickers Directors who, in view of their obligations to their many employees, felt that the Council should be supported in their endeavours to provide work for British labour. The result of this policy has been the means of providing employment for many workers in numerous trades who would otherwise have been unemployed, and who would therefore have had to be maintained from national or local funds.

An important condition of the contract was the supply of additional current in time for the winter of 1924-5, which condition demanded the completion of a generating plant in a period of about six months. As the completion of a generating set of this size had not previously been accomplished in such a short period

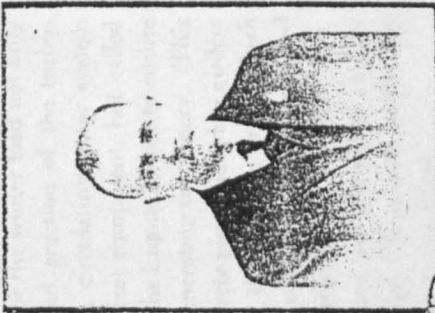
in this country, the task was obviously one of magnitude. A plan of campaign was therefore very carefully mapped out by the Contractors in conjunction with Mr. Arthur J. Fuller, the Borough Consulting and Electrical Engineer, and the resources of the Vickers organisation were concentrated on the problem, with the result that this condition was complied with and the current was available to meet the requirements of the winter load.

This constitutes a record in this country, and was only made possible by the close and understanding co-operation of Mr. Fuller. He knew exactly what he required, and spared neither himself nor his staff in giving immediate consideration to the preliminary layout drawings submitted. Nothing was allowed to hold up, even in the slightest degree, the issue of instructions to the workshops.

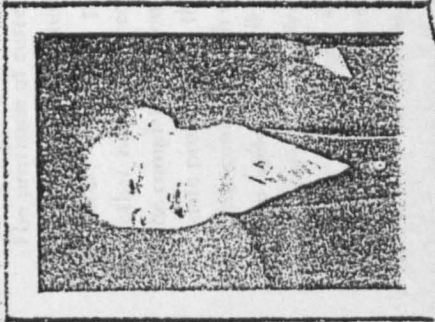
Without this understanding and keen appreciation of the difficulties facing the contractors in such a task, the accomplishment would have been impossible, and even the resources of the Vickers organisation would have been of no avail. In the successful termination of the contract, the Contractors are deeply indebted to Mr. Fuller and his staff for the helpfulness displayed and the facilities provided, which allowed the work to proceed quickly and efficiently; and also for the close collaboration on the many highly technical points involved, which has resulted in the production of a power generating Station which for compactness and efficiency in operation cannot be surpassed.



ARTHUR J. FULLER, M.I.E.E.,
Borough Consulting and Electrical Engineer.



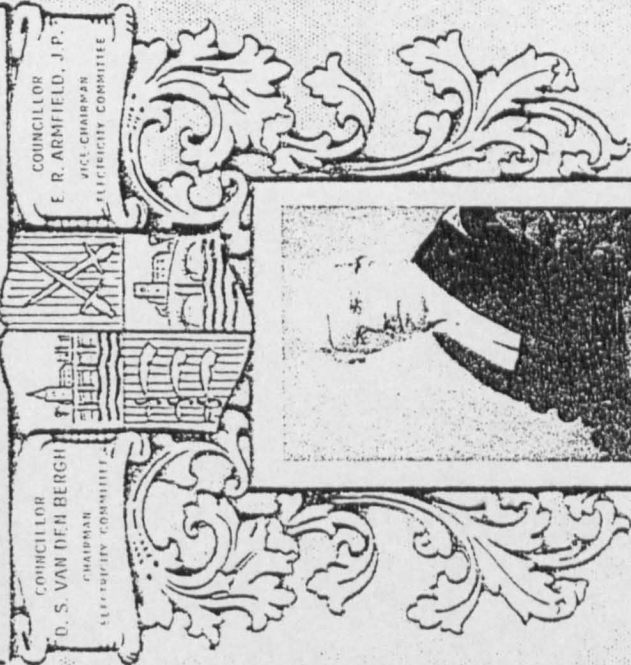
COUNCILLOR
E. R. ARMFIELD, J.P.
VICE-CHAIRMAN
ELECTRICITY COMMITTEE



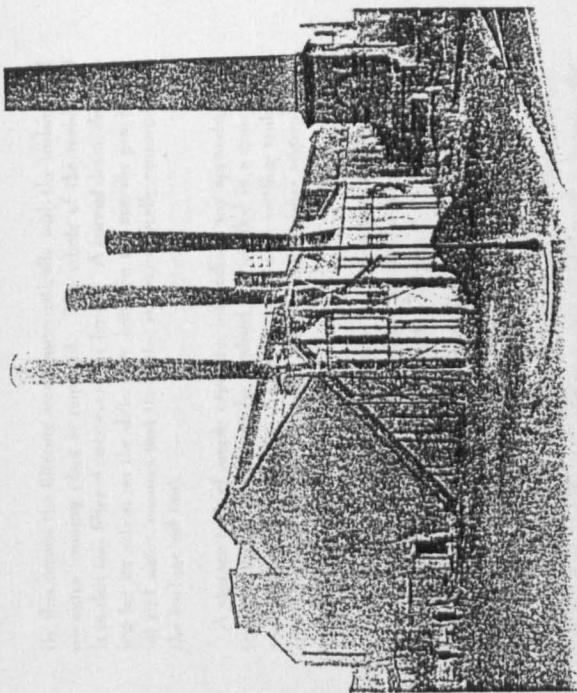
COUNCILLOR
D. S. VAN DEN BERGH
CHAIRMAN
ELECTRICITY COMMITTEE



J. PERCY SHUTER, O.B.E.
1904-1912



The provision of current for the winter load not only involved the manufacture and erection of the turbo-alternator, condensing plant, circulating water system and other necessary mechanical equipment, but called for the complete erection of the Engine House to ensure adequate protection of the generating machinery. This building, complete with concrete piers and crane girders was, in spite of a strike in the building trade which lasted seven weeks, after considerable effort completed in time. The supply and erection of a 50-ton Over-head Electric Travelling Crane was completed in time for use in the erection of the Condenser, Stator and other heavy parts of the Generating Plant.



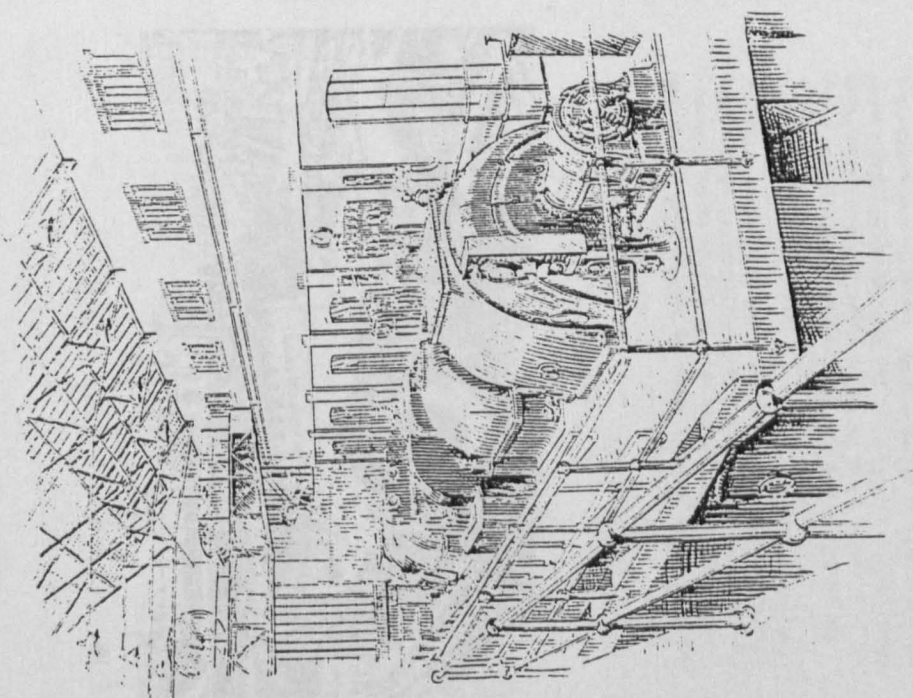
Exterior View of Station.

Those interested in the technical aspect a brief description of the plant supplied may be of interest.

Two Turbo-Alternator Sets, each rated to give 6,000 kilowatts continuously at 3,000 r.p.m., 0.8 power factor, 25% overload for two hours, are

T installed.

The turbines are of the well-known Rateau impulse type, and are fitted with multi-exhaust blading. They are designed for operating with steam at a pressure of 250 lbs. per sq. in., superheated to 700 F. The vacuum at the turbine exhaust flanges is 28.80 in. Under these conditions the thermal efficiency is 25.2% and the guaranteed steam consumption at full load 40.22 lbs. per kW. hour. The turbines are equipped with heaters, fitted integral with the low-pressure casing, for heating steam from a stage shortly before the final stage for heating the feed water. The condensate, after passing through the surface heaters of the ejectors, is passed through the turbine integral heaters, in which its temperature is raised to about 150 F. The steam consumption is by this arrangement reduced by



The Engine Room.

From a drawing by
F. MONTE PEARCE.

By this means the filtering starts automatically with the turbine and no extra running plant is required. The whole of the turbine oil is in this way filtered once every six hours. A special drain, depending for its action on the difference between the specific gravities of oil and water, ensures that the water is automatically removed from the turbine oil tank.

A storage tank of ample capacity, into which any apparatus containing lubricating oil may be drained, is installed in a convenient situation in the basement. This also acts as a settling tank from which clean oil may be pumped back into the turbine system when required.

The complete Condensing Plants were designed, manufactured and erected by the Barrow-in-Furness Branch of Vickers Limited, and are of the well-known "Contralto" Type.

The main condensers and air pumps are proportioned to give a guaranteed vacuum of 28.8 in. of mercury (barometer 30 in.) when supplied with circulating water at 60 Fahr.

The cooling surface included in each condenser is 8,500 square feet, and the design of the shell and arrangement of the tubes forming the

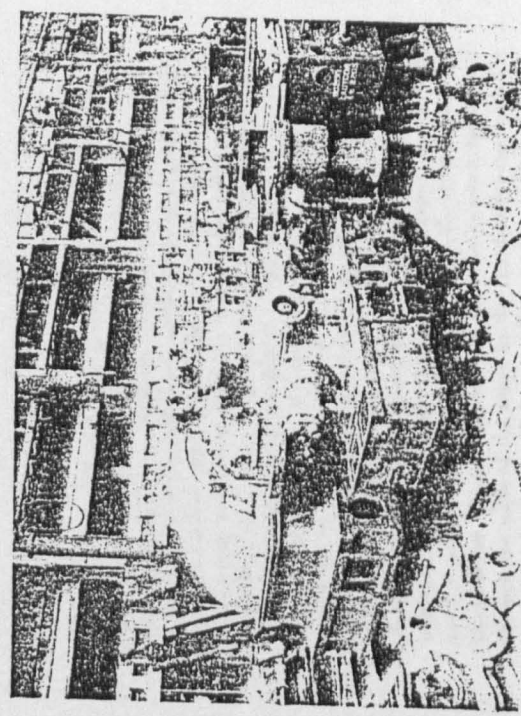


Fig. 2.

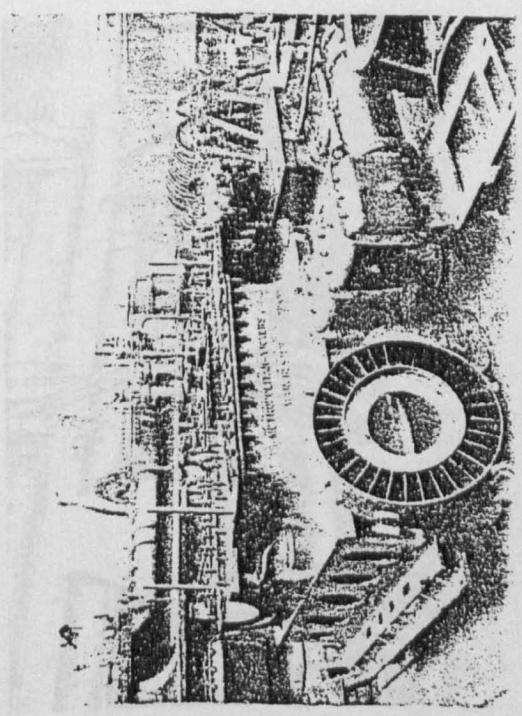


Fig. 1.

nearly 5'... Fig. 1, which shows the turbine, with its top half removed, approaching completion in the makers' works, illustrates the arrangement of the heater, and also shows one of the multi-exhaust diaphragms. Fig. 2 shows another view of the turbine in course of erection.

The rotating element is of Metropolitan-Vickers standard design having a velocity wheel, 10 Rateau stages, and two multi-exhaust stages. It is of special interest that all the diaphragm blades are of stainless steel, as are also those of the rotor in the region of the dew point.

Fig. 3 shows the spindle in course of assembly, having a wheel pressed on in the hydraulic press. A sectional view of the turbine is shown in Fig. 4.

A point of interest to station engineers is the arrangement for oil storage and filtering. The tapping is taken from the pressure side of the turbine oil system and the oil is passed through a diaphragm to the Fox filters. Thence it passes to a tank which allows it to settle for one hour, and returns by gravity to the turbine oil tank.

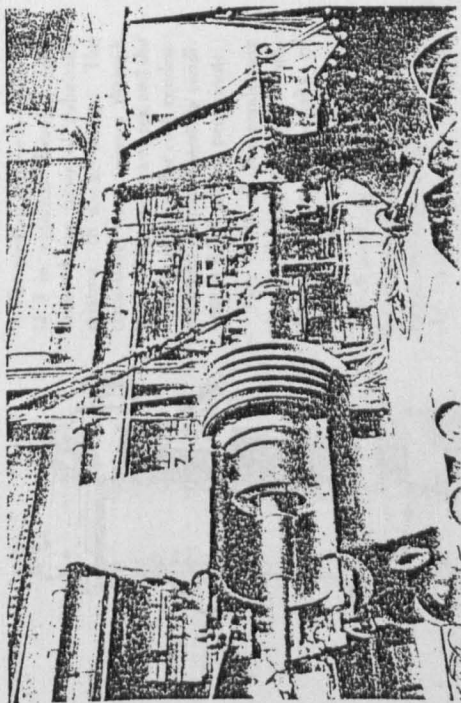


Fig. 3.

cooling surface are such that the maximum condensing efficiency is maintained with a minimum drop in pressure from the top to the bottom of the condenser.

The tube bank is divided into three separate compartments operating in parallel in the steam space, each compartment virtually forming a separate condenser (Fig. 5). These divisions are so

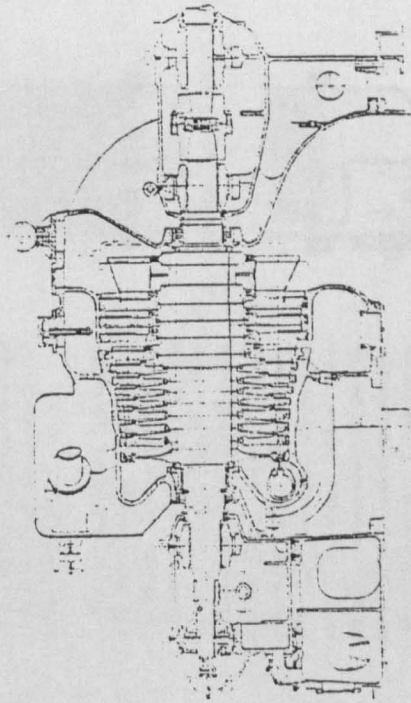


Fig. 4.

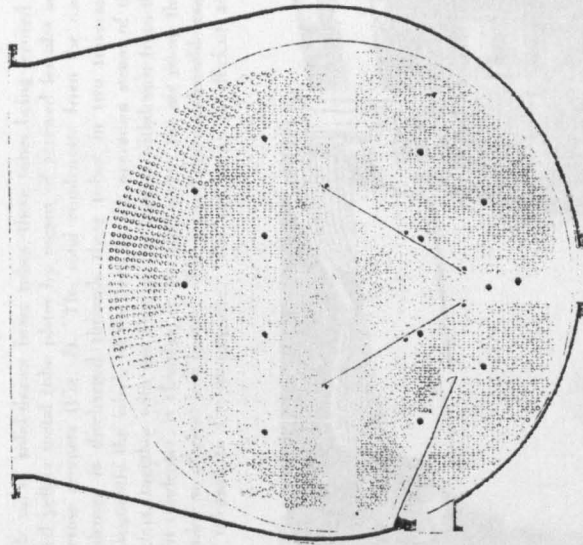


Fig. 5.

arranged that they do not interfere with the passage of the steam or cause resistance, and the effect obtained is such that air or non-condensable gases are gradually concentrated towards a narrow outlet, with the result that the air at that point is of greater weight per unit of volume than at any other part of the condenser, and is consequently in the most desirable condition for withdrawal by the air pump. The outlets, or narrow ends of these compartments meet at a point close to the condensate outlet and the de-vaporising chamber inlet. In this de-vaporising chamber the quantity of vapour still in association with the air is further reduced by condensation, and the air is cooled down to a low temperature. By this condensation of the vapour and cooling of the air, the volume of aerated vapour to be extracted from the condenser is reduced to a minimum and consequently the air region occupies an extremely small portion of the cooling surface. Further, the effect of localising the air region allows a very high heat transmission rate to be obtained through the walls of the tubes to the circulating water, with the natural result that the highest possible vacuum is obtained with a given quantity of circulating water and a given tube surface.

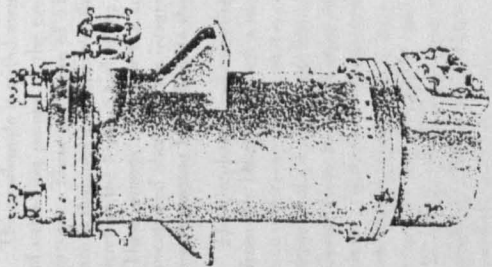


Fig. 6.

under the condenser feet, these supports providing the necessary flexibility to compensate for expansion.

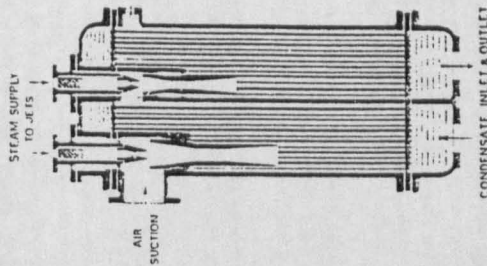
The usual atmospheric exhaust facilities are provided, and release to atmosphere is obtained through a Blakelborough atmospheric exhaust relief valve.

The air pumps in connection with these condensers are of the "Controllo" 2-stage steam ejector "Compact" type, the ejectors operating in series (Fig. 6). The pumps are arranged in single units and the ejectors form an integral part of the body. The condensation of the steam and vapour discharged by these ejectors takes place in two compartments suitably arranged to permit of the ejectors operating in series. Condensation is obtained by surface contact

The cooling surface is made up of 4 in. external diameter solid drawn brass tubes of Admiralty mixture, 18 s.w.g. thick. The circulating water passes through the tubes in two traverses, and the quantity of water for each condenser under normal operating conditions is 8,800 gallons per minute.

The shells of the condensers are of mild steel plate, this construction being a speciality of Vickers' Barrow Works.

Each condenser is arranged to bolt directly to the turbine exhaust flange, and is supported by specially designed spring supports



CONDENSATE INLET & OUTLET

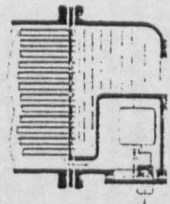


Fig. 7.

made up of solid drawn brass tubes, these tubes being secured to rolled yellow metal tube plates by means of screwed ferrules and asbestos grommets (Fig. 7). The total condensate from the main condenser is discharged through these tubes in two traverses; consequently the whole of the heat in the operating steam of the ejectors, together with the heat in the vapour withdrawn from the main condenser, is absorbed in the feed water, the air pump thus forming an efficient feed heater. The air and non-condensable gases are released to the atmosphere. The air pump is efficient and

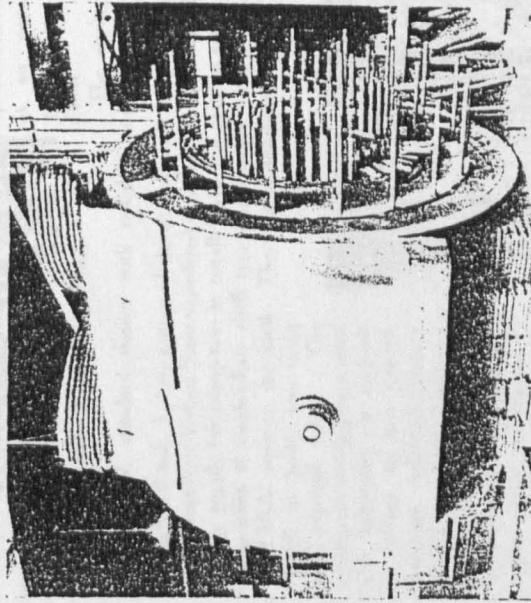


Fig. 8.

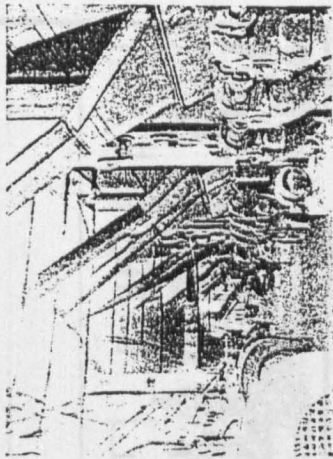
absolutely stable over any range of vacuum from atmospheric pressure to the highest possible vacuum obtainable, and the stability is obtained by means of a specially designed stabiliser fitted to the second ejector. The outstanding feature of this stabiliser is that it operates directly on the functioning characteristics of the ejector, and consequently no supplementary air is required. The steam nozzles of the ejectors are of rustless steel, and the steam supply to these nozzles passes through efficient steam strainers. The drainage from the steam compartments is returned to the main condenser through special traps arranged in the base of the pump.

The condensate is withdrawn from the main condensers by means of extraction pumps of the centrifugal type, these being electrically driven. These units are of Metropolitan-Vickers manufacture and are so designed as to operate efficiently and silently, irrespective of the load on the turbine and of the vacuum prevailing in the condenser. These pumps discharge the condensate through the air pump, as mentioned above, to the integral heater arranged on the turbine, the water passing from there to the hotwells in the boiler room.

The circulating water required for the condensing plants is drawn from the Thames through a special sump below the existing circulating water pump house, and is carried in steel pipes of 36 in. diameter through the boiler house basement to the condenser inlets, the discharge from the condensers following the same route back to the river. As the existing pump house was comparatively new, it was considered necessary to arrange the new pumping equipment in such a manner that it could be accommodated in the existing building. To supply the requisite quantity of cooling water to the two new condensing plants, an additional 21 in. Mather & Platt pump was installed, which by reason of the limited space available is of the vertical spindle type. To meet emergency conditions an additional centrifugal pump of smaller capacity is installed on the top floor of the pump house. Both pumps were supplied by Mather & Platt, and are driven by Metropolitan-Vickers two-phase slipring motors. The design and lay-out of the new circulating water system and the erection of the pumping plant was carried out by the Barrow branch of Vickers Limited, the pipe line itself being erected by John Spencer, Ltd. Wednesbury, under the direction of Vickers, Barrow-in-Furness.

The installation of the new circulating water system necessitated the complete demolition of an existing pipe line, and the whole of the work was carried out whilst the generating plant was in operation.

The alternators are designed to give their rated output at 6,600 volts, 50 periods, 0.8 power factor. Fig. 8 shows one of the stators in course of winding. It will be seen that a bar winding is used. The slot insulation, which is of mica, is hot-wrapped round the conductors by machinery, and finally pressed at high temperature, a process which results in consistent homogeneous insulation entirely free from air spaces. The rotors are solid forgings which have been subjected to the most searching metallurgical and physical tests by the Metropolitan-Vickers Research Department. The machines are not dependent on external cooling equipment, fans being mounted directly on the rotor shafts to circulate the ventilating air through the alternators and the coolers in the Metropolitan-Vickers patent closed circuit system. Alarm devices are fitted to give warning if the



Boiler Room Firing Floor.

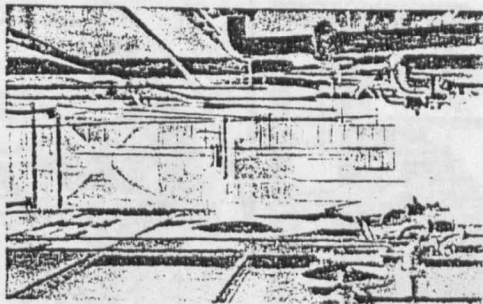
temperature of the cooling air should rise above a pre-determined value, special dampers being provided in the foundation block to give open-ventilation as an emergency contingency condition.

The exciters are of M.V. standard design with radial commutators.

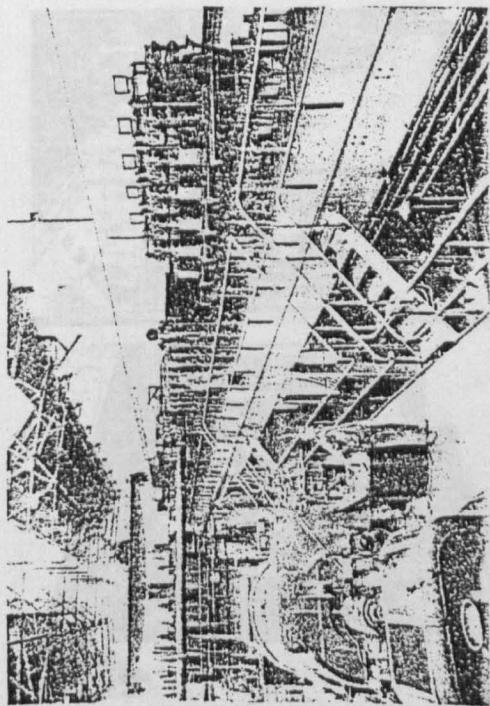
The 6,600-volt, 3-phase output of the alternators is stepped down by Metropolitan-Vickers Scott-connected transformers to 3,000-volt 2-phase supply for connection in parallel with the existing supply. Three pairs of single-phase shell type transformers, each pair of 2,000 kVA. capacity, are used. They are oil-immersed and self-cooled, in boiler iron tanks.

The transformer windings are fitted with adjustable coil supports for taking up any possible shrinkage. Adjusting tappings of $\frac{1}{4}$ and $\frac{5}{16}$ are provided on the low tension windings to regulate the I.T. output under varying H.T. voltage. This enables the alternators to be run at a sufficiently high voltage to boost supply to the adjoining Boroughs of Hammersmith and Battersea without exceeding the required voltage on the Fulham 2-phase, 3,000-volt system.

The 6,600-volt switchgear comprises five duplicate bus-bar Metropolitan-Vickers Type K3 compound-filled armour-



View between Boilers showing Base "Pat" Chimney.

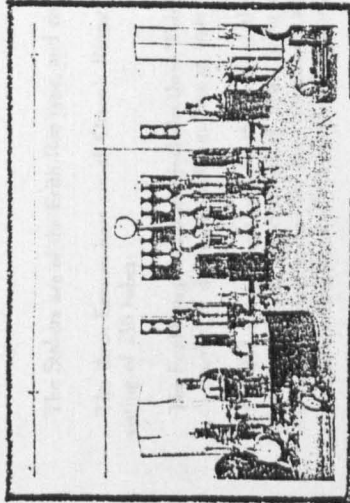


*View of Switchgear Gallery, taken from Turbine Platform.
M.V. 6,600-volt, Type K3, Armoured Switchgear
in the foreground.*

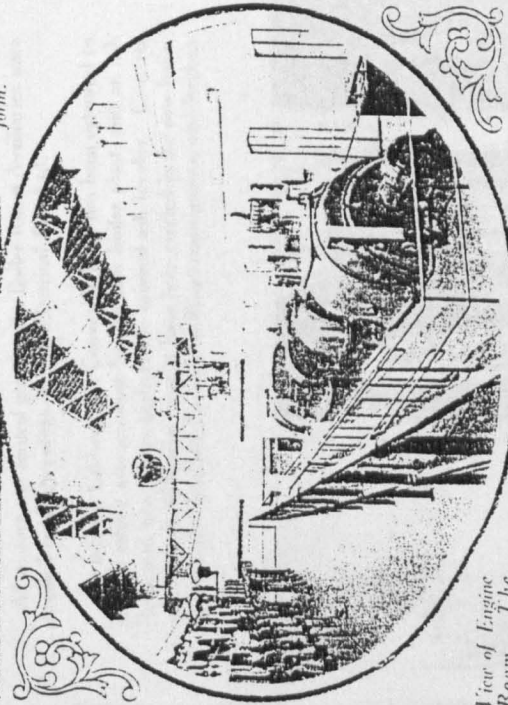
clad units, all arranged for remote electrical operation. These control the two alternators and three Scott-connected transformer groups. This class of gear represents the most modern form of totally enclosed and fully interlocked power station switchgear. The indicating instruments and control switches for the various circuits are mounted on black enamelled slate panels forming a vertical type control board.

Provision is made at the end of the busbar chamber for cables for connecting the busbars with the existing 6,600-volt truck type switchgear on the same gallery. Arrangements are made for synchronising with the incoming supplies from both the Hammersmith and Battersea undertakings by means of a special synchronising wire run in connection with the existing switchboard.

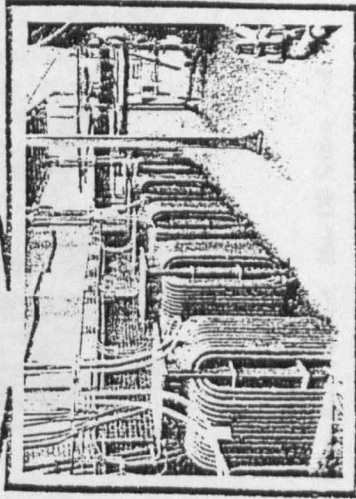
For controlling the low tension side of the three Scott-connected groups a 3-panel M.V. truck type, 2-phase board has been supplied.



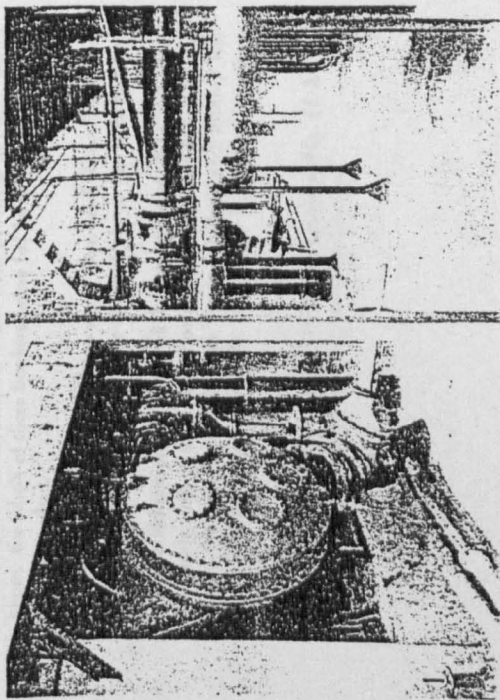
*Controls on
Turbine Plat-
form.*



*View of Engine
Room. The
pillars contain-
ing the Auto-
matic Circuit-
breakers are
shown adjacent
to the Alterna-
tors.*



*View of Engine Room Basement, showing Metropolitan-
ickers Scott-connected Transformers.*



View of Engine Room Basement showing Vickers "Controllo" Condensers.

The whole of the new 6,600-volt cables, together with the cables for the auxiliaries in the engine room and the boiler house, were manufactured by W. T. Glover & Co., Ltd., and installed by the Metropolitan-Vickers Electrical Co., Ltd.

The alternators are fitted with Merz-Price circulating current system of protection. A special arrangement is made by which the protective relay trips not only the main oil circuit-breaker but also an automatic circuit-breaker in the alternator main field, so that in the event of an internal fault, the possibility of damage is reduced to a minimum. The pillar containing this circuit-breaker may be seen adjacent to the alternator in the main view of the engine-room.

The Boiler Plant consists of three Vickers 5-Drum, Bent Tube Type Boilers, each having a heating surface of over 10,000 sq. ft., giving a normal evaporation of 40,000 lbs. per hour, at a working pressure of 275 lbs. per square inch, and a total temperature of 700° Fahr. at the turbine stop valve with a feed supply of 200 Fahr.

Each unit includes Superheater, Economiser, Forced Draught Fan and "Pat" Induced Draught Fan and Chimney. The Boilers are each equipped with Diamond Soot Blowers.

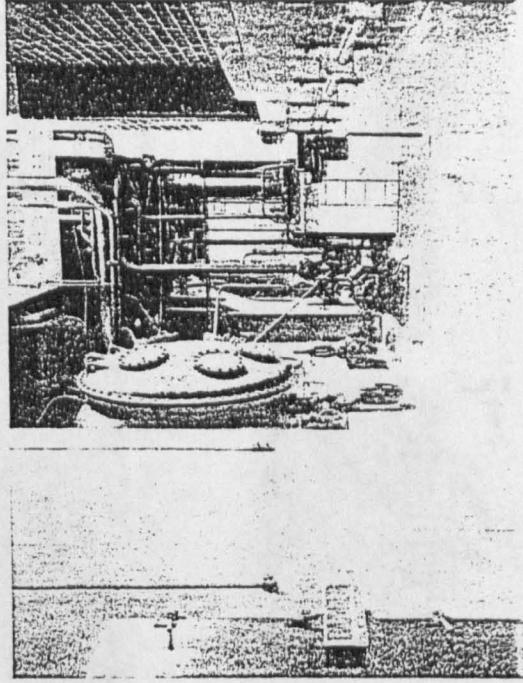
The Stokers are of the Erith-Roe type, and consist of 11 retorts. The three Economisers are of Green's Ringstay type, each consisting of 256 tubes.

The Feed Pump Equipment includes three Weir Roto Feed Pumps, each capable of delivering 6,000 gallons of water per hour.

The Boiler Equipment includes the whole of the Steam, Feed and Blow-down Pipes, the Steam and Feed being recorded by Ken measuring apparatus, and for the temperature and CO₂ recording, a complete arrangement of Cambridge instruments is installed.

All motors and control gear for the Boiler Room Auxiliaries were supplied by Metropolitan-Vickers Electrical Co., Ltd.

The existing Gibbons Ash Conveying Plant has been extended to provide ashing arrangements for the new boiler plant, and an ash elevator of new design replaces the original ash breaker. Concrete coal bunkers of 184 tons capacity have been erected in the new boiler house, and to facilitate the coal-handling arrangements, new bunkers



View of Engine Room Basement. Note Oil Settling Tank.

of slightly smaller capacity have also been provided in No. 2 boiler house, the whole of these bunkers being fed by a Mitchell belt coal conveying plant.

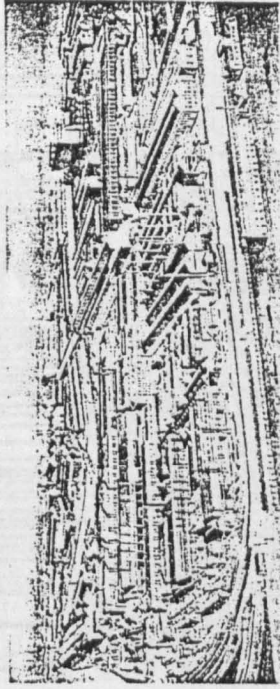
In the Engine Room a 50-ton Arrol Overhead Travelling Crane with Metropolitan-Vickers motors and control gear has been installed.

The buildings are of red brick having roofs of slate and glass. The inside walls of the Engine Room are of white and brown glazed brick; the transformer platform, basement floor and loading bay of red and blue tiles. The boiler house floor is finished in granolithic.

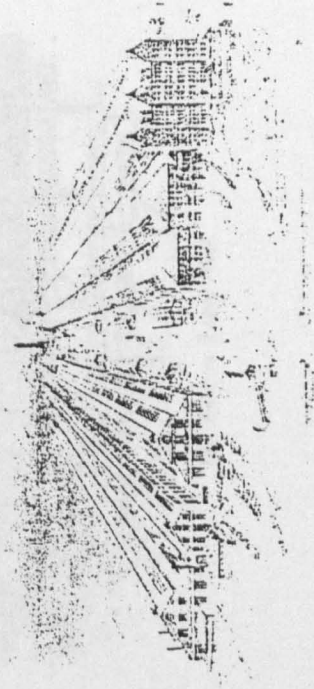
The buildings were erected under the direction of Mr. H. M. de Colleville, Architect, instructed by Vickers Limited.



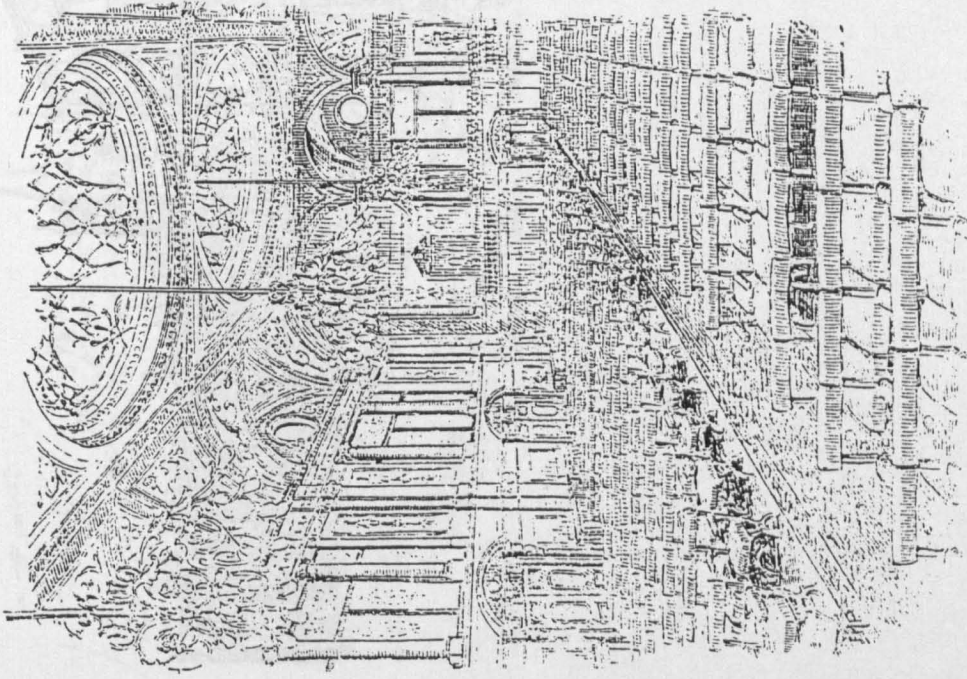
The Barrow-in-Furness Works of Vickers Limited.



The River Don Works of Vickers Limited, Sheffield.

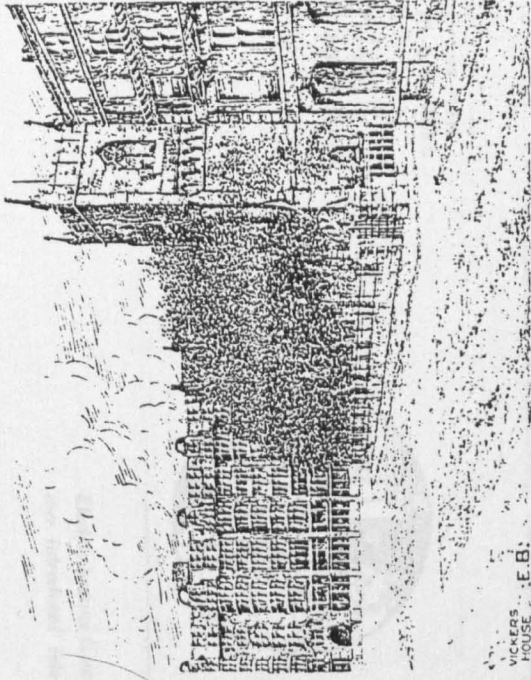


The Trafford Park Works of Metropolitan-Vickers Electrical Company, Ltd., Manchester.



The Fulham Town Hall.

From a drawing by
F. MONTG. PEARCE



VICKERS
HOUSE. E. B.

From a drawing by
ELSA BRUCKSHAW.

No dirt, fumes or smoke with an
ELECTRIC COOKER.
HIRE CHARGE 3/6 to 8/6 per quarter.

HIRE CHARGES WITH
PUBLIC LIBRARIES
56213
2178/483
LOCAL COLLECTION



With an Electric standard Lamp,
you can read in any part of the room.



Electric Fires.
Electric heating is one of the greatest labour saving devices
ever introduced into the home. No fumes, no ashes or
dirt whatever.

HIRE CHARGES 1/- to 2/- per quarter.



COUNCIL'S APPARATUS SCHEME.

On hire :- Cookers, Radiators
Kettles, Irons, Water Heaters and
Wash Boilers.
With the hiring of a Cooker, if
required we fix 2 Radiator points
in Dining Room and Drawing Room.
30 feet free run of Cable to each
point and only 1/- per foot run
above this distance.

W. Lake in

NOT AVAILABLE FOR SLOT METER
CONSUMERS.

Full particulars can be obtained
at the Showrooms

COUNCIL'S LIGHTING SCHEME

No initial cost
Cheap, Clean and Healthy.
On quarterly meter with small deposit.
10d. per point per quarter up to 5 points.
9d. over 5 .
and consumption at 3/4d. per unit.

On Slot Meter all charges inclusive
at 5³/₄d. per unit.

No other system so cheap and reliable.

Ironing with an
Electric Iron is
easy and quick, is handy and
safe.

Hire charge
6d. per quarter.

Electric Kettle
provides an early cup of Tea in
the bedroom.

Hire charge
9d. per quarter.

BOROUGH OF FULHAM. 5,000 10,000



DEPARTMENT.

ELECTRICITY

HAVE YOU
ELECTRICITY
IN YOUR HOME

IF NOT, YOU CAN HAVE IT FOR
THE ASKING
SEE OVER.

Offices & Showrooms.
587/591 Fulham Road, S.W.6.
Telephone No FULham 0041/3.

R. 668

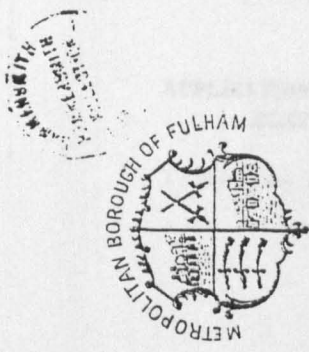


Fulham Corporation Electricity Supply.

10578

FULHAM PUBLIC LIBRARY

Metropolitan Borough of Fulham.
Electricity Supply.



BT Better light

BT clearer light

BT cheaper light

Ratepayers are asked to give the following particulars their careful attention
and consideration.

Metropolitan Borough of Fulham.

APPLICATION FOR THE SUPPLY OF ELECTRICAL ENERGY.

To the BOROUGH ELECTRICAL ENGINEER,
ELECTRIC LIGHTING STATION,
TOWNMEAD ROAD,
FULHAM, S.W.

No. of Application.	
Date Received.	
Date Installation passed.	
Date supply commenced.	

I
WE hereby request to be furnished with such supply of energy as may be required to meet the demand of the number of lamps, etc., given in the table at the foot hereof, at the rates named overleaf, and

I
WE hereby agree to conform to the Regulations, Conditions, etc., put into force by the Council from time to time in respect of supplies of energy.

I
WE shall require the supply on or about the approximate date. 190 .

SIGNATURE

ADDRESS

Date of application. 190

Description of premises to be supplied,
and address

8-c.p. Lamps.	16-c.p. Lamps.	32-c.p. Lamps.	Arc Lamps.	Motors.	Any other Consuming Device.

The name and address of the Wiring Contractor to be given here:—

MESSRS.

OF

How to Read your Electricity Meter



**Borough of Fulham Electricity
Supply.**

Our Charges are:—

	PER UNIT
Lighting - - - - -	4½d.
Power, Heating and Cooking - -	1½d.

For further particulars apply:—

**Showrooms,
603, Fulham Rd., Walham Green, S.W.6**

The Measurement of Electricity

Electricity is measured and generally sold in parcels technically known as "kilowatt hours" (k.w.h.), or "Board of Trade Units," the familiar expression being still the "unit," a clearly-defined and recognised measure of electrical energy in every country of the world.

The unit contains a definite amount of energy. It is known exactly how much light can be obtained from it for how many hours, what amount of food it will cook, how large a room it will warm, or what mechanical power it can exert when driving a machine.

A unit of electricity cannot be adulterated or diluted.

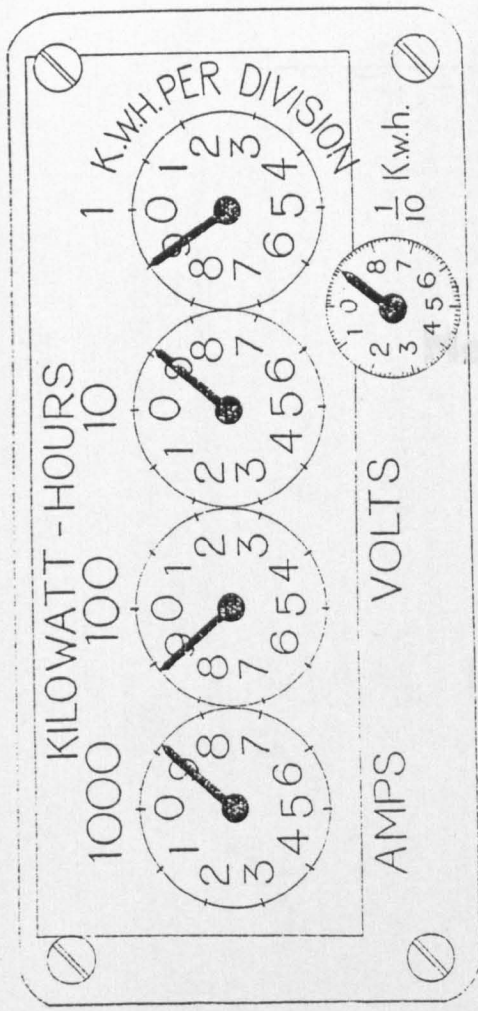
The use of electricity has become so general that few consumers bother to read their meters. It is, however, interesting and useful to know how to do so, and permits of accounts being checked from time to time.

The reading of an electricity meter is similar to that of a gas meter, and extremely easy if proceeded with in the right way. In nine cases out of ten the dial reading of a meter is quite obvious, but it occasionally happens that the hands are found in such a position as to make correct reading a little difficult.

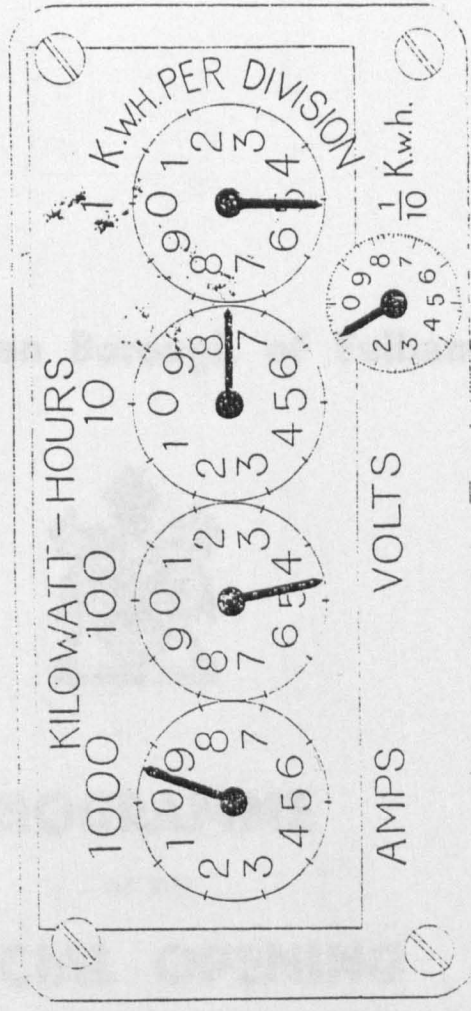
The diagrams show dial faces of electricity meters of standard pattern; there is but little variation between the leading makes; the examples picked out are difficult ones. Generally the procedure for reading a meter is as follows:

In reading the dials, start with the right-hand side, putting down the figures in order of units, tens, hundreds, thousands. A complete revolution of the dial hand in the first or right-hand circle will move the dial hand of the second circle one division. A complete revolution of the dial hand of the second circle will move the dial hand of the third circle one division, and so on. The dial hand should always be read as indicating the figure it has last passed and not the one to which it may be nearest. Thus, if a dial hand is very close to a figure, whether it has passed that figure or not must be determined from the preceding or lower dial. If the dial hand of the lower dial has just completed a revolution, the dial hand of the higher dial has not passed the figure, but if the dial hand of the lower dial has not completed a revolution the dial hand of the higher dial has not reached the figure, even though it may appear to have done so. When one dial hand is on 9, especial care must be taken that the dial hand of the next higher dial is not read too high, as it will appear to have reached the next number, but it will not have really done so until the dial hand at 9 has come to 0. The dial hands on adjacent dials revolve in opposite directions; therefore, a reading should always be checked after being written down, as it is easy to mistake the direction of rotation.

The small size dial, marked 1 to k.w.h., and sometimes coloured red, is usually for convenience in testing the meters, and in reading consumers need not regard anything below the dial divided into units or k.w.h.



Correct Reading—8889.



Correct Reading—9175.

Metropolitan Borough of Fulham.



PROGRAMME
OF THE
OFFICIAL OPENING
OF THE
FULHAM POWER STATION,
Townmead Road, S.W. 6,
BY
THE WORSHIPFUL THE MAYOR
(Councillor S. Vanderhook, J.P., M.R.S.T.)

26th September, 1936,

At 2.30 p.m.

PROGRAMME.

Saturday, 26th September, 1936.

2.00 to 2.35 The Guests will arrive, entering by the Gate House and proceeding to the Station by Entrance No. 1, No. 2, or No. 3, according to Ticket.

2.15 The Chairman and members of the Electricity and Lighting Committee and the principal Guests will assemble in the Committee Room, Entrance No. 1.

2.25 The Chairman and members of the Electricity and Lighting Committee, with the principal Officers, will proceed to the Office entrance, to receive the Mayor and Mayoress.

2.30 The Mayor and Mayoress will be welcomed by the Chairman of the Committee.

Miss Ruth Lancaster will present a bouquet to the Mayoress.

The Mayor will unveil the tablets in the Entrance Hall.

The Mayoral party will proceed to the Committee Room on the first floor and the principal Guests will be introduced.

The Mayor will unveil the memorial tablet in the corridor.

Members of the Electricity and Lighting Committee, principal Guests and Officials will proceed to platform in Turbine Room.

The Mayor, Mayoress, Chairman and Vice-Chairman of the Electricity and Lighting Committee will proceed to platform.

3.00

The Chairman of the Electricity and Lighting Committee will introduce the Mayor and invite him to give the signal for starting up No. 1 Turbo-Alternator.

3.05

The Mayor will address the gathering and then give the starting up signal. Upon the machine starting up he will declare the Station open.

3.10

A vote of thanks to the Mayor will be proposed by Councillor J. A. da Palma and seconded by Councillor S. G. Carnt.

3.20

Engineers, staff and principal workmen will proceed to the platform and be presented to the Mayor.

NOTE.—The Guests are requested to remain seated for a short time to allow of the Consulting Engineers conducting the Mayoral party and principal Guests over the Station, after which the guests may inspect the Turbine Room and the Boiler House. Guests will not be allowed on the upper floors of the Boiler House, or in the basements of the Turbine Room and the Boiler House, or in any part of the main Switch Houses or in the Control Room.

4.00

The Mayoral party and Guests will proceed to the Town Hall where tea will be served at 4.30 p.m.

Conveyances between the Power Station and the Town Hall will be provided for those Guests requiring them.

4.30

Tea at Town Hall.

Music will be provided between 2.15 p.m. and 2.50 p.m.



The Mayor, Aldermen and Councillors of the
Metropolitan Borough of Fulham

request the pleasure of the Company of

at the Opening of the First Section of the Extensions of the
Fulham Power Station, Townmead Road, S.W.6,

by His Worship the Mayor
(COUNCILLOR S. VANDERHOOK, M.R.S.T., J.P.)

on Saturday, 26th September, 1936: at 2.30 p.m.

THIS CARD WILL
NOT ADMIT

R.S.V.P. ON ENCLOSED CARD NOT LATER THAN THE
5TH SEPTEMBER TO THE TOWN CLERK,
TOWN HALL, FULHAM, S.W.6.

43

METROPOLITAN BOROUGH OF FULHAM.

OPENING of the
FULHAM POWER STATION
by the WORSHIPFUL THE MAYOR
Councillor S. Vanderhook, J.P., M.R.S.T.,
at 3 p.m. Saturday, Sept. 26th, 1936.

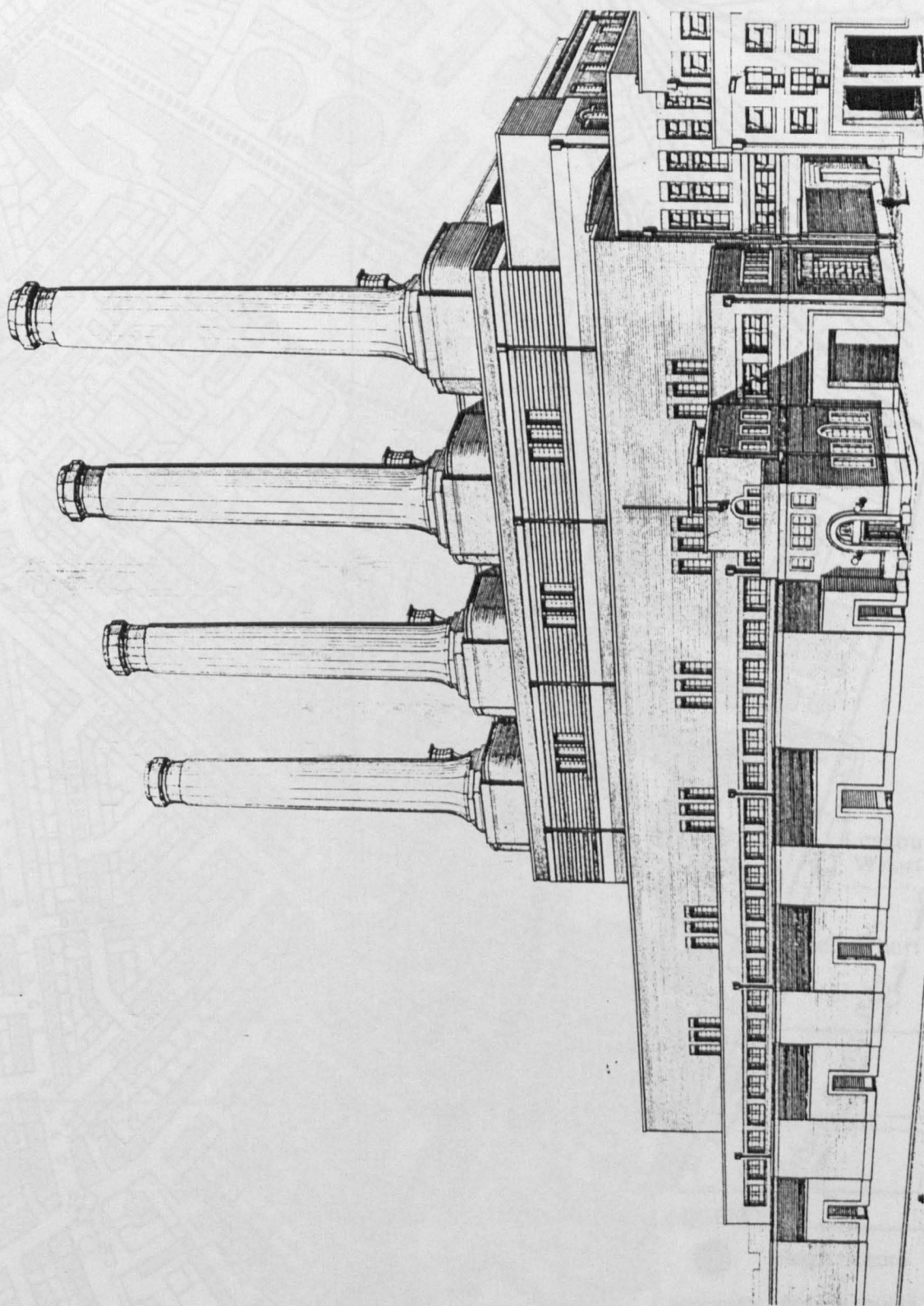
Admit.....

Ticket holders are requested to be seated not later than 2.35 p.m.

This card must be retained for subsequent production at the Town Hall

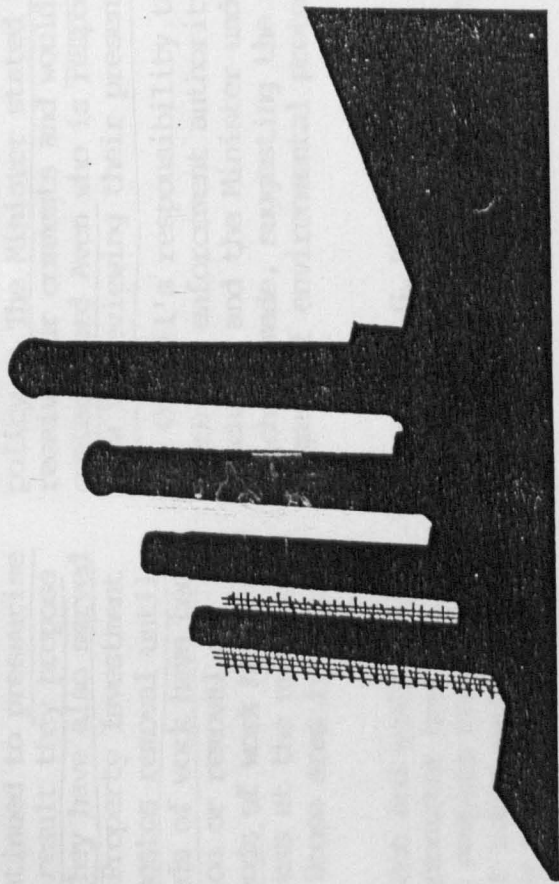
Buses 26, 28 and 91 to Wandsworth Bridge. Private cars should enter Townmead Road only from Wandsworth Bridge Road and park in the place shown on the label enclosed.

MORNING DRESS.





FULHAM POWER STATION



Demolition Bulletin No. 3

**HammerSmith
& Fulham**

28 July 1983

Environmental Services

Monitoring work at the Power Station is continuing and levels generally have remained normal. Three results have given levels rising to .02 fibres per millilitre but no reason for these have been substantiated. Seven filters have been sent to Brunel University for analysis by Transmission Electron Microscopy but the results have not yet been received.

Work on asbestos removal within the Turbine Hall has now been completed, but the Council has continued to pressurise the Health & Safety Executive and as a result they propose to increase on-site monitoring. They have also served a Prohibition Notice on London & York Property Investment Co. Ltd., requiring work to stop on asbestos removal until written details of their proposed methods of work have been submitted. No asbestos work, demolition or removal of equipment will proceed until these methods of work have been approved. The only work in progress at the present involves the sealing off of the Boiler House area from the Turbine Hall.

Scaffolding to one chimney is now in place and scaffolding has begun on a second chimney. The Contractor has been requested by the H.S.E. to provide core samples from the stack to check that no asbestos or other toxic material exist. The Employment Medical Advisory Service is being consulted concerning the results.

On behalf of the Council, I have written to the Chairman of the Central Electricity Generating Board expressing, in the strongest possible terms the views of this Council and residents in respect of their sales policy. The Council deplores the manner in which the Power Station has been sold and I propose to pursue this at the highest level.

To this end, on 27th July, a deputation from the Council met with John Selwyn Gummer, Under Secretary of State for Employment who has responsibility for the Health & Safety Executive. The deputation comprised the Leader of the Council, Cllr. Kim Howe, and myself and was led by Martin Stevens MP.

We outlined the Council's concern in respect of the Central Electricity Generating Board's unacceptable sales policy. The Minister stated that he was pleased to receive our comments and would, as a matter of urgency, contact Lord Avon who is responsible for the CEEB with a view to reviewing their present policy.

The Council's responsibility to its residents, particularly where the enforcement authority is the HSE, was also discussed and the Minister undertook to consider proposals which we made, suggesting the need for closer liaison in respect of environmental protection.

Councillor G. Wombwell,
Chairman,
Engineering & Environmental Services Policy Committee
London Borough of Hammersmith & Fulham

STOP PRESS

THE PROPOSED METHOD OF WORK IN RESPECT OF BOTH THE DEMOLITION OF STACK NO. 1 AND THE REMOVAL OF MACHINERY FROM THE TURBINE HALL HAS BEEN AGREED BY THE HEALTH AND SAFETY EXECUTIVE. THIS WORK WILL COMMENCE IN THE NEAR FUTURE.