

# Cavities

## Physical sound processing with 8 players

### **Instrumentation**

Violin  
Recorder  
Keyboard (transposable sine oscillator and volume pedal)  
El. Guitar (E-bowed and volume pedal)  
Bass Clarinet  
Trombone (+ plunger)  
Double Bass  
Resonant Instrument (Percussionist)

### **Custom Built Resonant Instrument**

Consists of a number of transducers attached to a set of resonant objects. These are driven by the signals coming from the rest of the instruments, picked up by small microphones located inside or in direct contact to each of them, and subsequently connected to a series of low voltage amplifiers (min. 7Watts).

The instruments divide into two groups. The first group (E.Guit, Tmb, BCl, Cb) is controlled by computer software which output is amplified and routed to a set of 4 speakers that are coupled to a number of hanging springs conversely attached, on the top end, to a reverse loudspeaker (speaker connected as a microphone). The signal of these 4 reverse speakers is correspondingly routed to a quadraphonic system through the front of house mixer.

The signals coming from the second instrumental group (violin, recorder and keyboard) are routed to three loudspeakers, two of them attached to a pair of aluminum planes, and the third one (corresponding to the keyboard) placed on the center. In addition, two small microphones (to be manipulated by the percussionist) are connected to the speakers corresponding to the violin and recorder.

### **General Amplification**

To amplify the resonant instrument, two microphones are to be placed on top of the aluminum planes (routed to the front speakers) and four microphones, placed near the opening of the bottom cans (diffused over the four speakers. The use of amplification is optional as it depends on the acoustic/technical conditions of the venue.

### **Distribution**

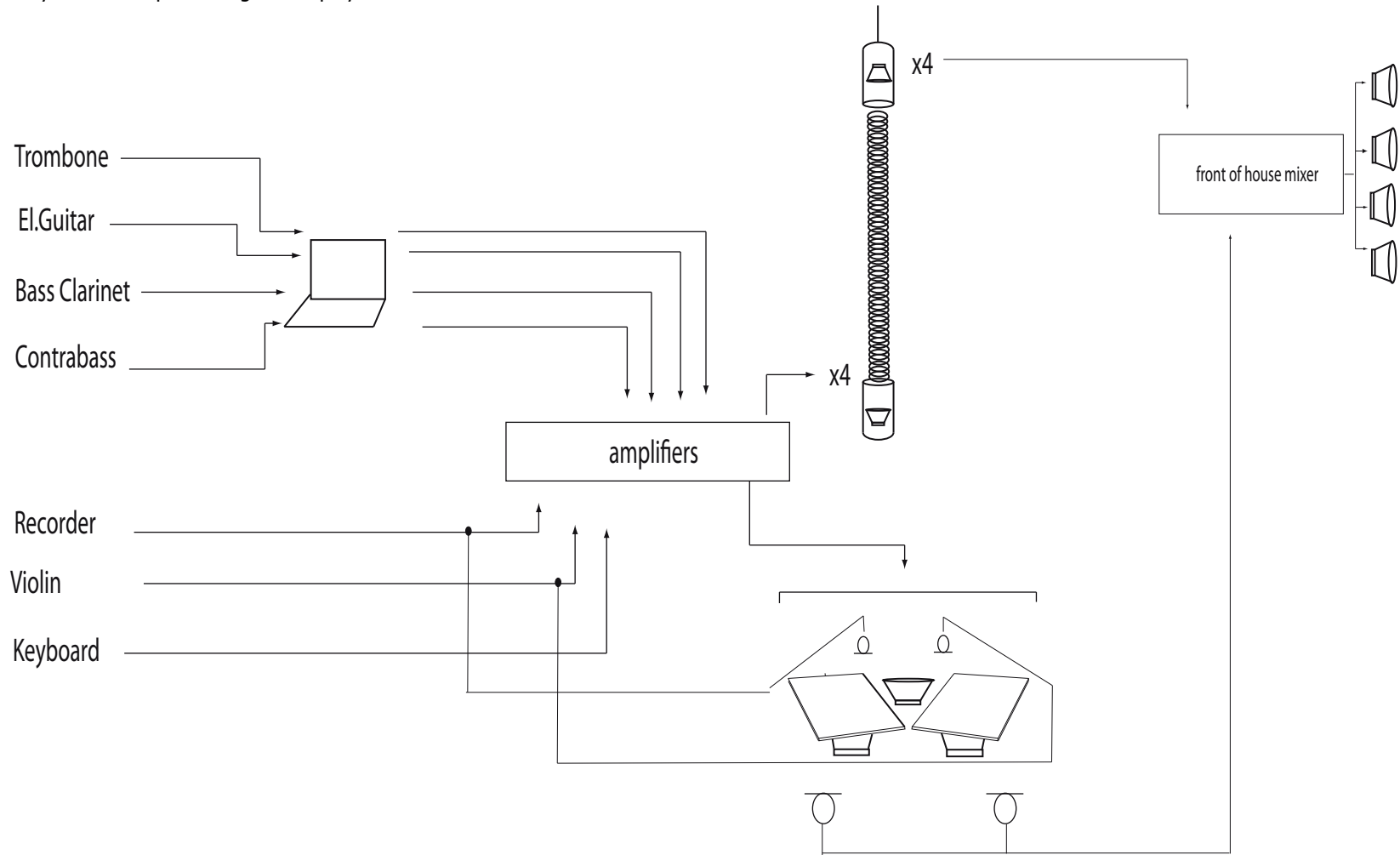
The ensemble is to sit in front and facing the instrument, which is illuminated while the rest of the hall remains dark. (*"For this reason learning the piece is essential"*)

### **Score**

The piece emerges out of the controlled interaction between the instruments. A set of predetermined constrains and blocks of sound relationships have been established, within these the performers have to listen, react, follow visual cues and decide the durations that will conform each of the segments, consequently these decisions would affect musical form and eventually final overall duration. However, the relative slots of freedom should always follow the main idea of the work, which is to create a meta-instrument, a giant physical sound processor in which the blurred and intermingled identities of each of the instruments become part of a single complex sound mass

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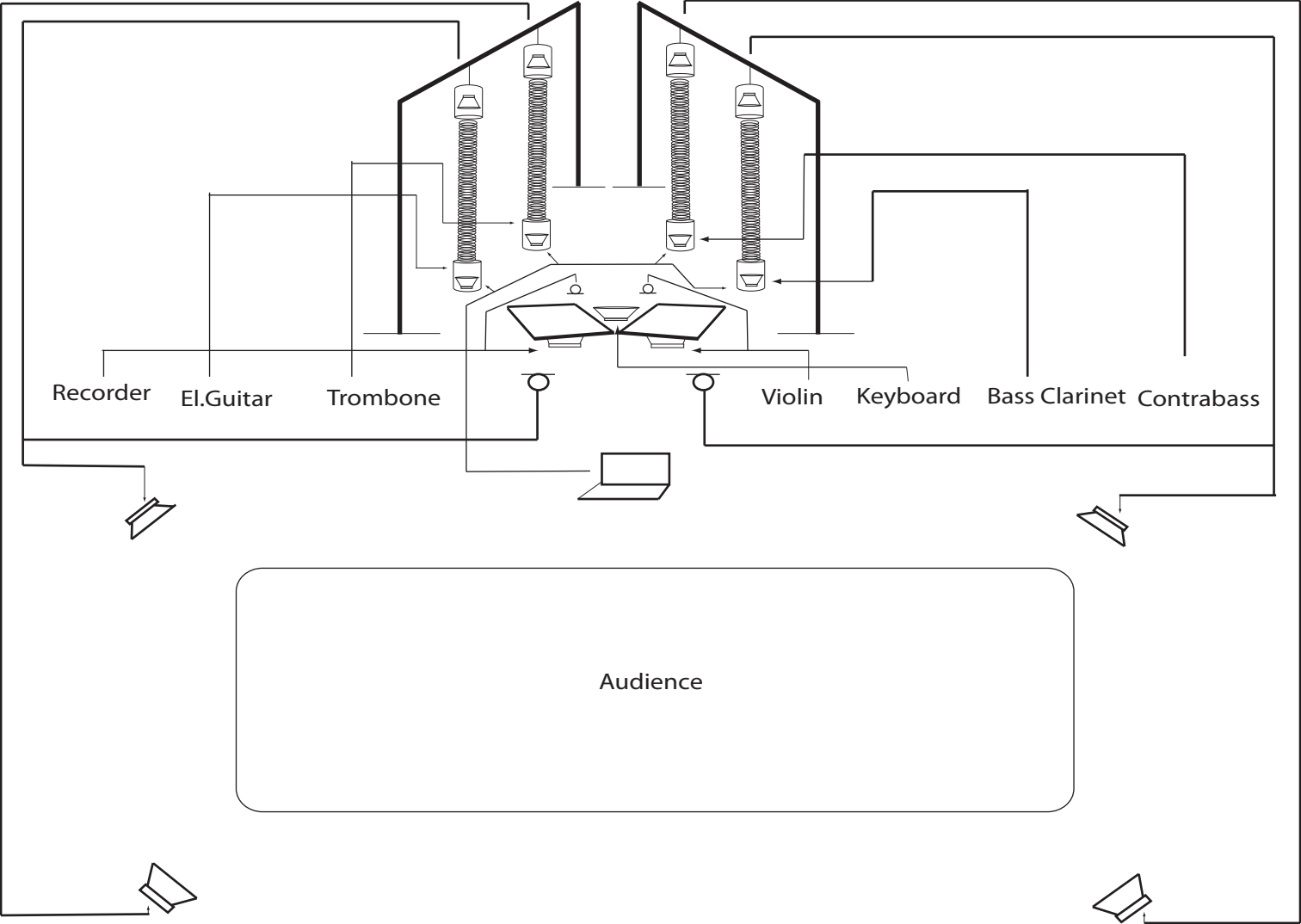
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custom built resonating instrument

Cavities

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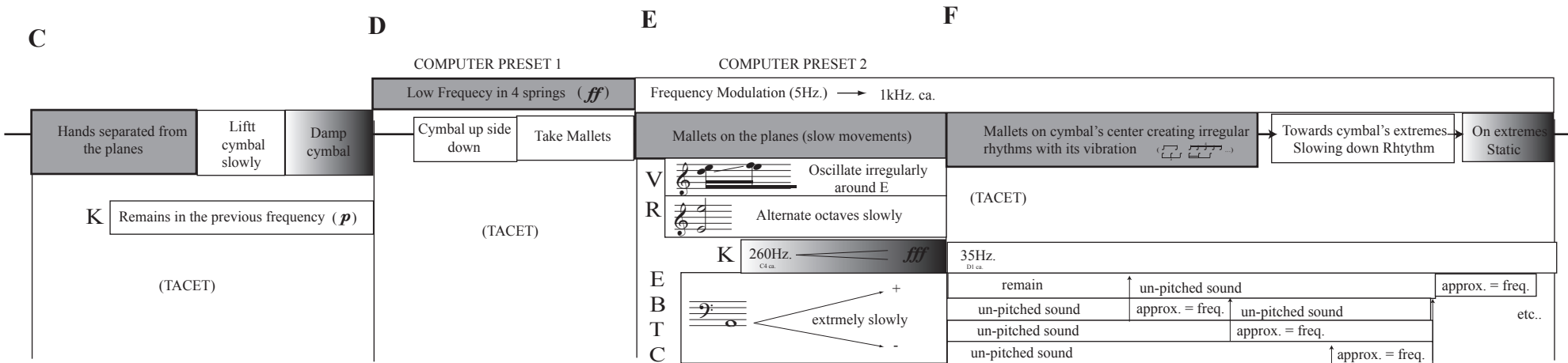
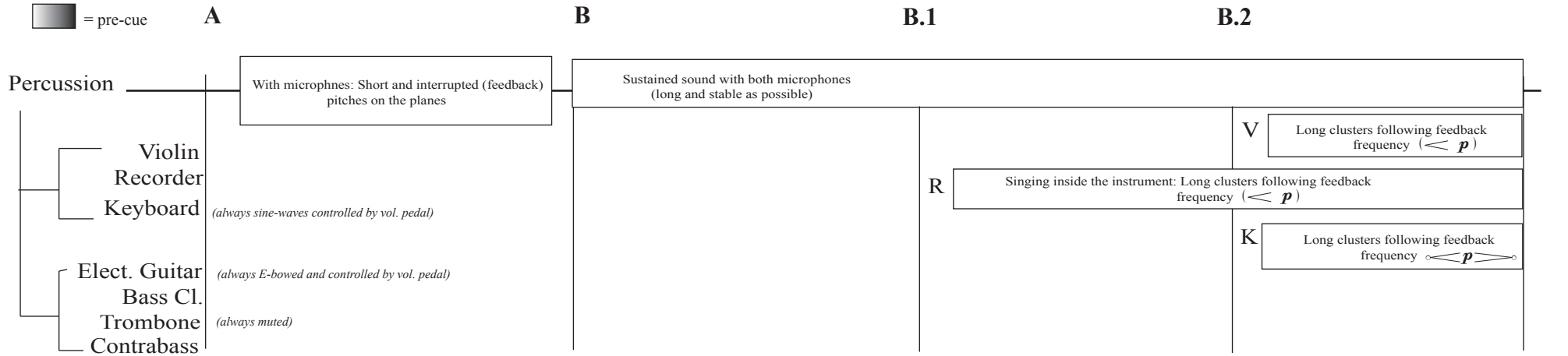


stage plan

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■ = cue  
■ = pre-cue



\* Guitar always upwards, detune "A" string.

**G H H.1 I I.1**

COMPUTER PRESET 3  
Frequency \* Noise

(Static on extremes) V or* R	Separate mallets from cymbal (abruptly)	Progressively - activate other sounds by "touching" corresponding instruments (use 4 mallets)	4 Mallets on Springs (fixed)	Release springs	V R K	Progressively - add objects on the instruments <i>(slowly and extremely quiet)</i>
(35Hz.)		12HZ OR C0 (16HZ)			Sustain a frequency (any) as long as	
(TACET)		indicated by the percussionist (otherwise remain silent)			Sustained Frequencies	
E B T C		Progressively - alternate between the same frqs. and noise (scratch or blow sound)			Any freq. < > < > <i>f</i>	

\*Second instrument joins afterwards



**J**

COMPUTER PRESET 3

Frequency \* Noise

Descend Springs (irregularly, individually or in pairs) - keep adding objects-	All Springs Closed
=	Introduce Silence progressively
Introduce sporadic Silence if your spring has been closed	Increase silence

8' min.