

Hudba a zvuk v kontextu multimédií I.

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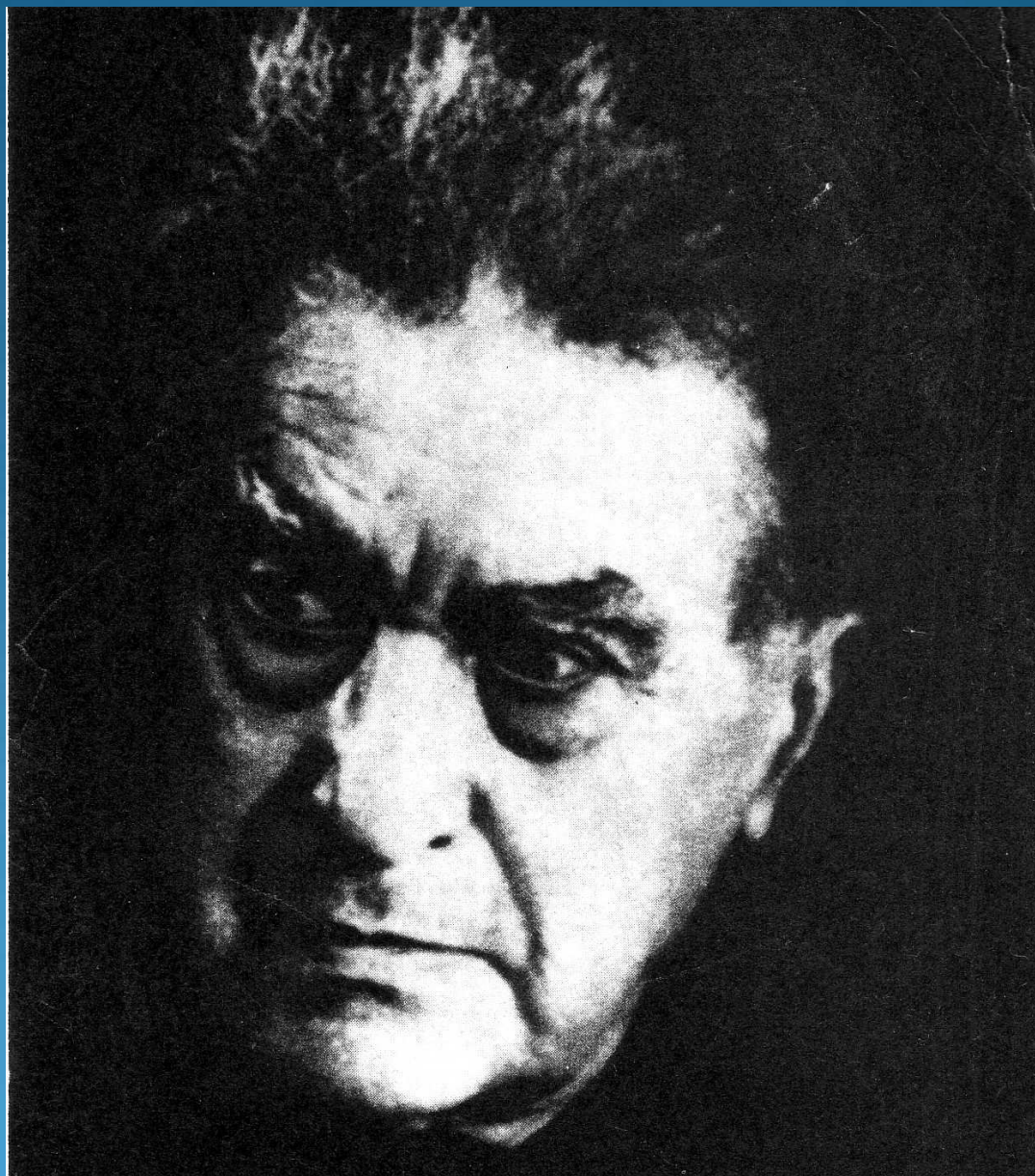




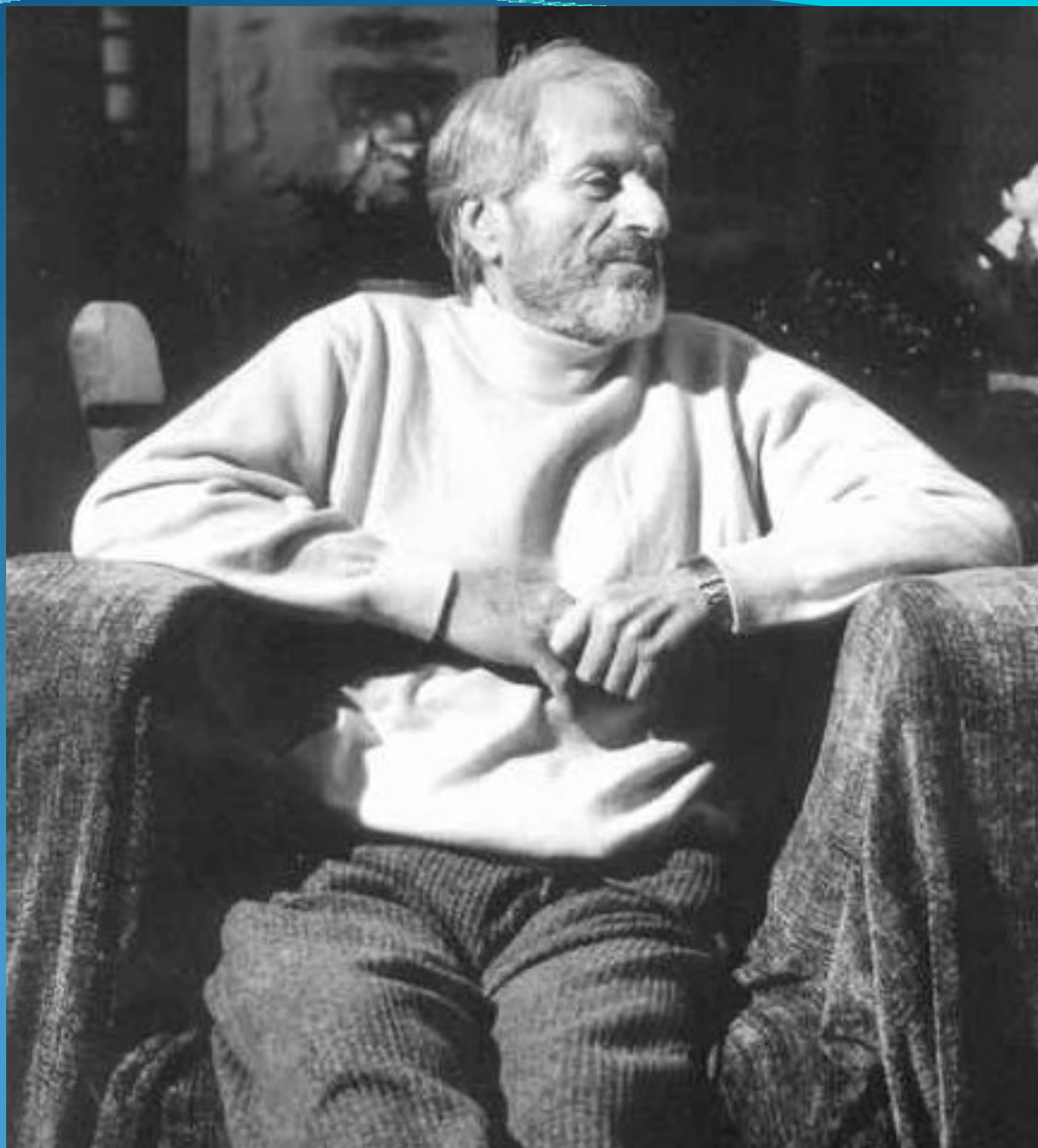
Basilica di San Marco, Venezia

Trvání	Rychlost opakování	Typický příklad
50 μ sec - 50 msec	20000 - 20 Hz	zvuky
67 msec - 10 sec	15 - 0,1 Hz	hudební data (noty, doby, rytmus, metrum)
2 - 60 sec	mnohokrát ve skladbě	hudební fráze
0,5 - 30 min	několikrát ve skladbě	forma, věta
5 - 60 min	několikrát za večer	sonáta, symfonie
více než 60 min	jednou za večer	opera

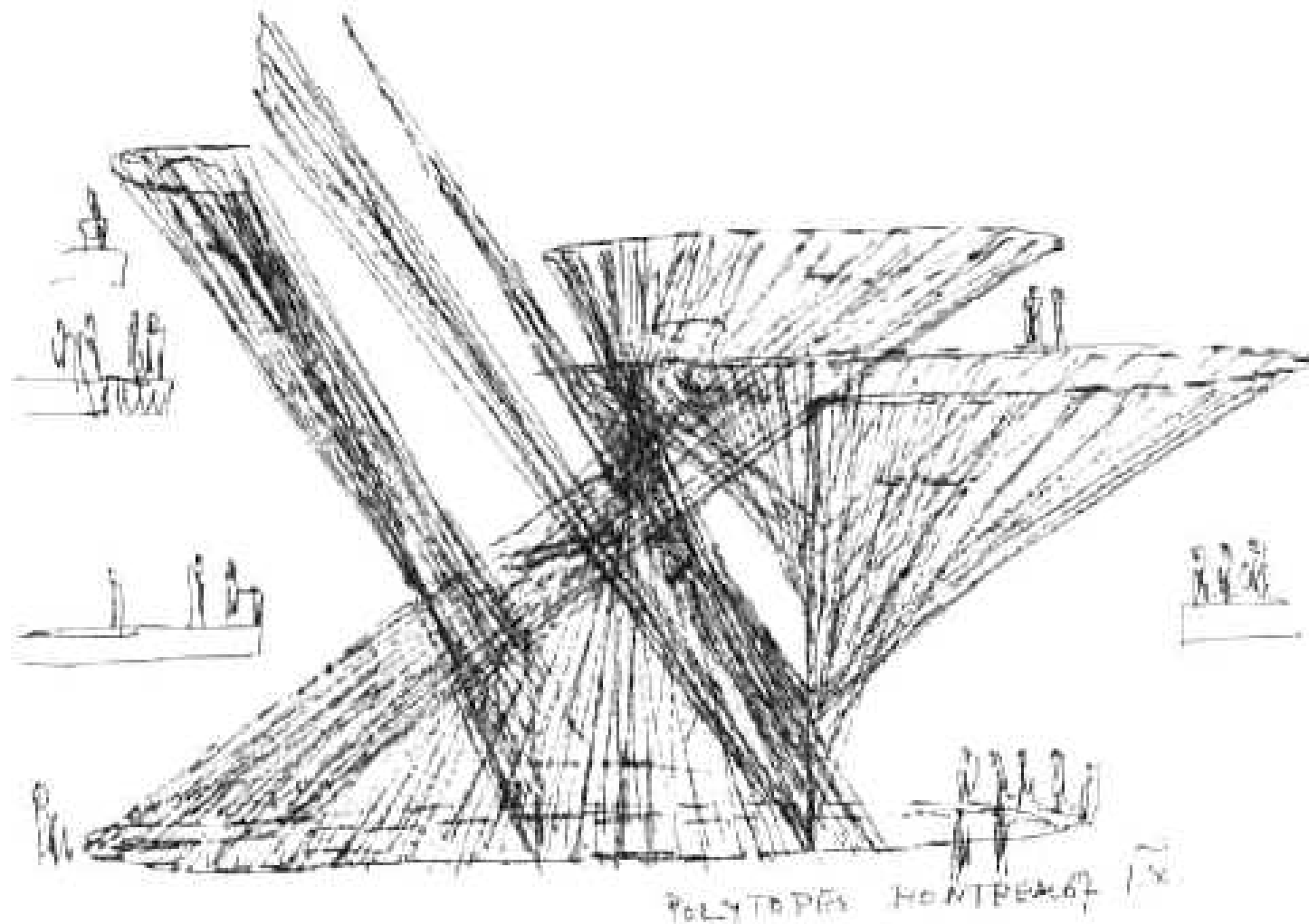
Časoprostorové vztahy v hudbě



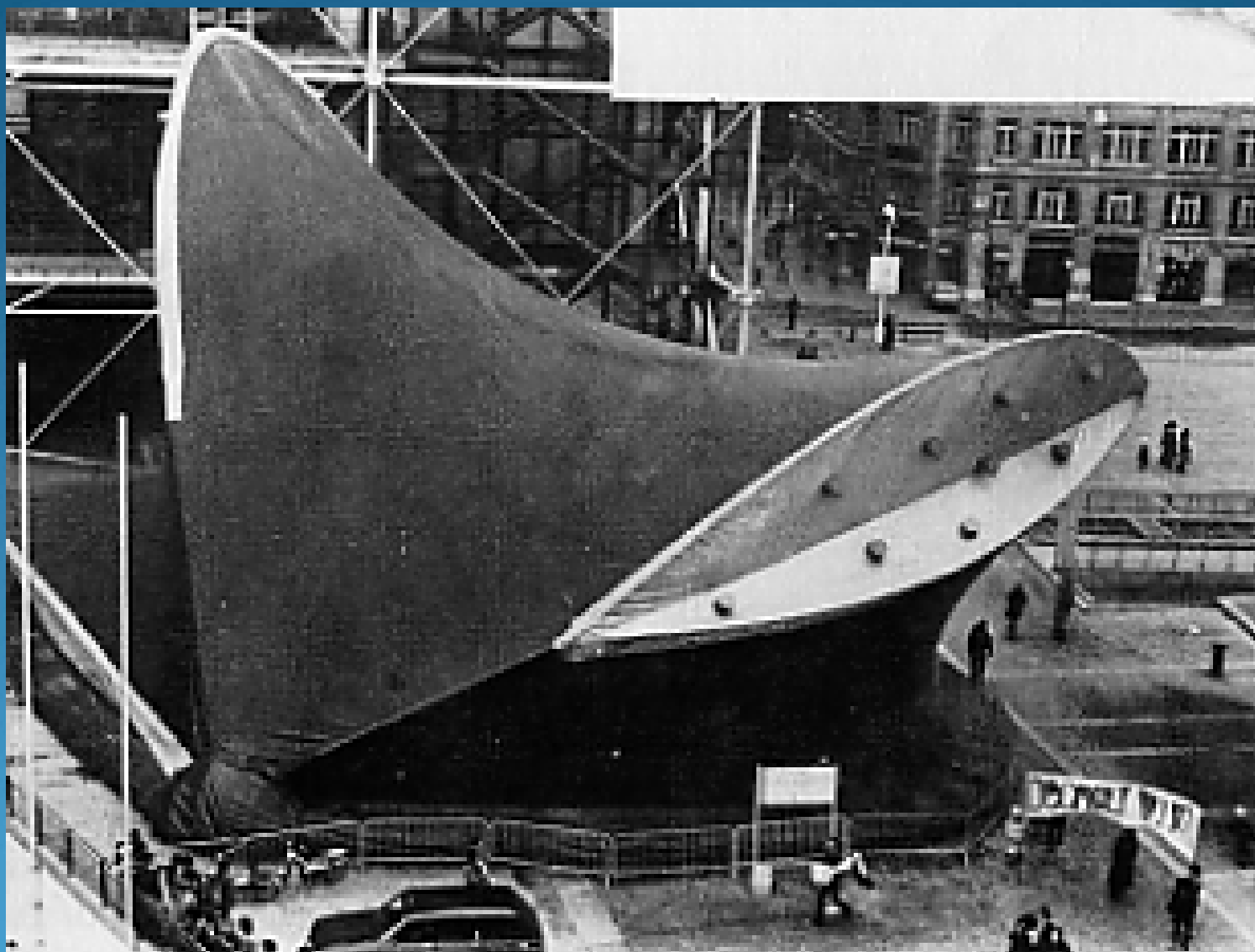
Edgard Varèse (1883-1965)



Iannis Xenakis (1922-2001)



EXAMPLE 2: *POLYTOPE DE MONTREAL*, SKETCH OF THE INSTALLATION
(SOURCE: XENAKIS ARCHIVES, PARIS)



Le Diatope, inaugurace Centre Georges Pompidou, Paříž 1978

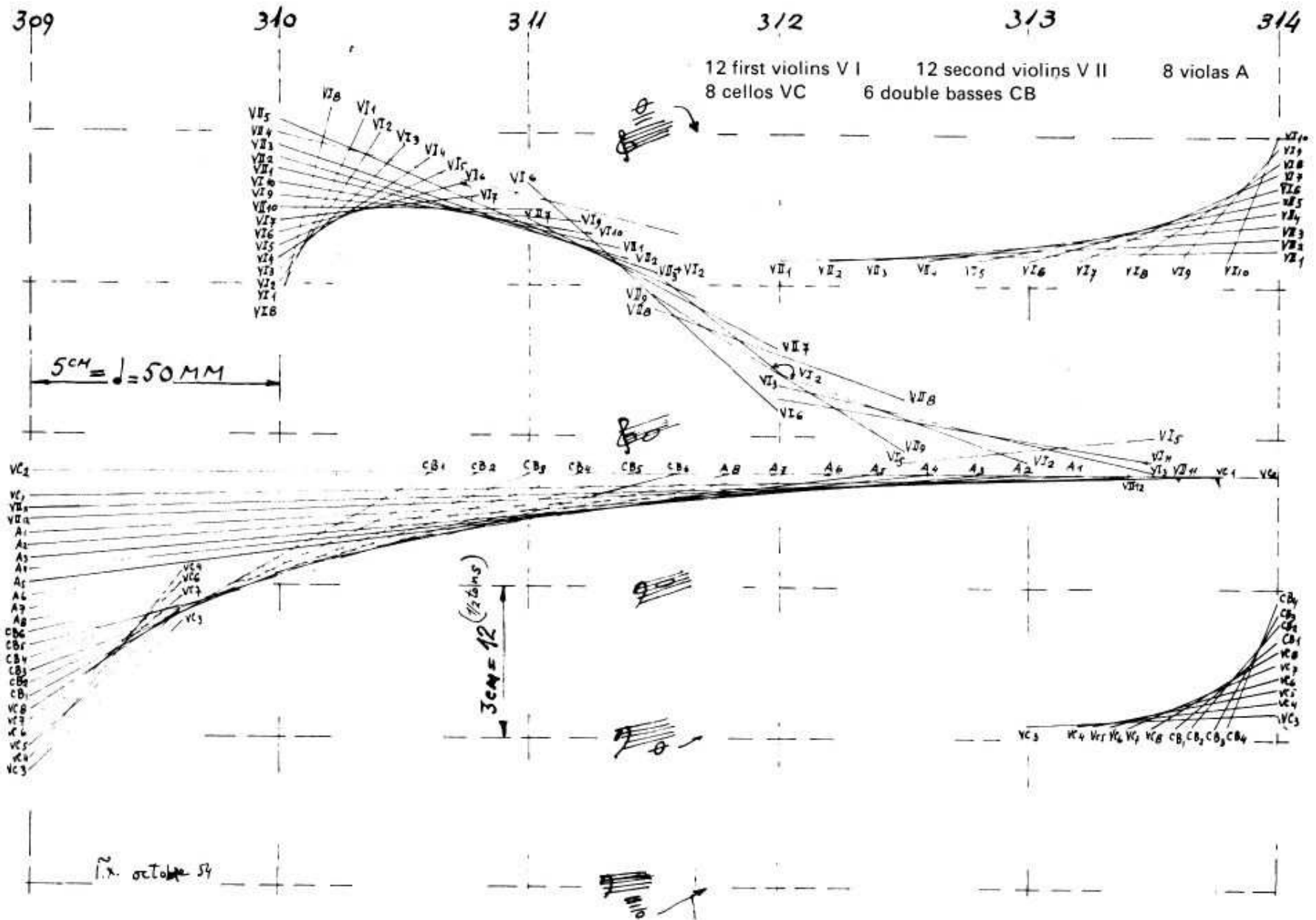
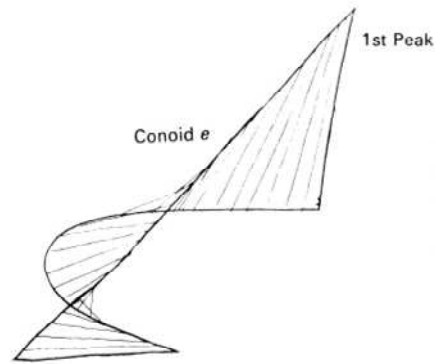
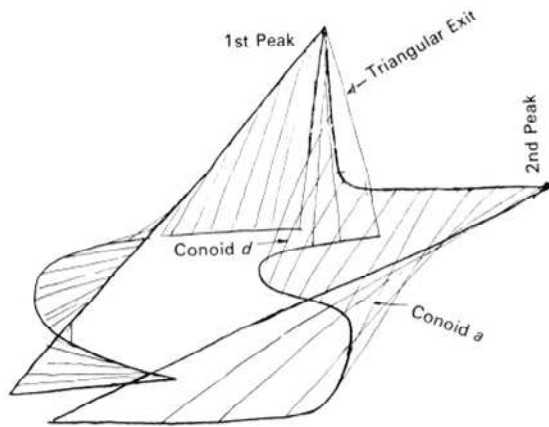


Fig. I-2. String Glissandi, Bars 309-14 of *Metastasis*

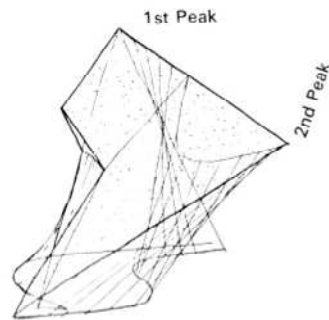


A. Ground profile of the *left half* of the "stomach." The intention was to build a shell, composed of as few ruled surfaces as possible, over the ground plan. A conoid (*e*) is constructed through the ground profile curve; this wall is bounded by two straight lines: the straight directrix (rising from the left extremity of the ground profile), and the outermost generatrix (passing through the right extremity of the ground profile). This produces the first "peak" of the pavilion.



B. A ruled surface consisting of two conoids, *a* and *d*, is laid through the curve bounding the *right half* of the "stomach." The straight directrix of *d* passes through the first peak, and the outermost generatrix at this side forms a triangular exit with the generatrix of *e*. The straight directrix of *a* passes through a second peak and is joined by an arc to the directrix of *d*.

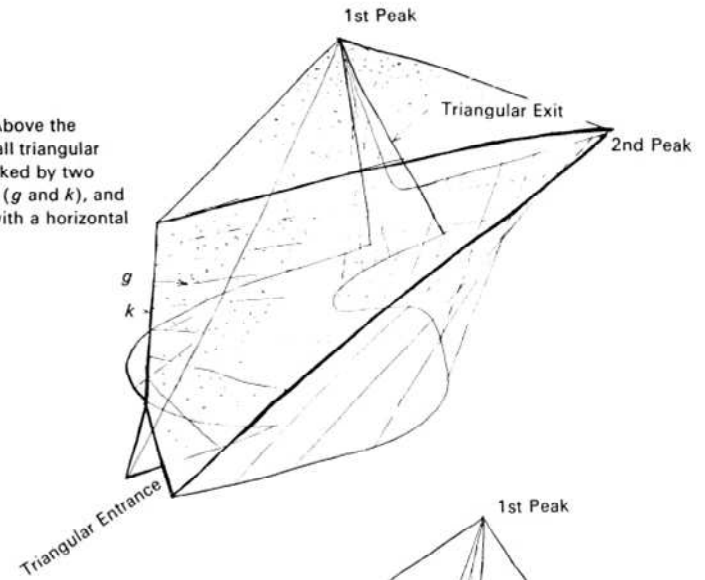
This basic form is the one used in the first design and was retained, with some modifications, in the final structure. The main problem of the design was to establish an aesthetic balance between the two peaks.



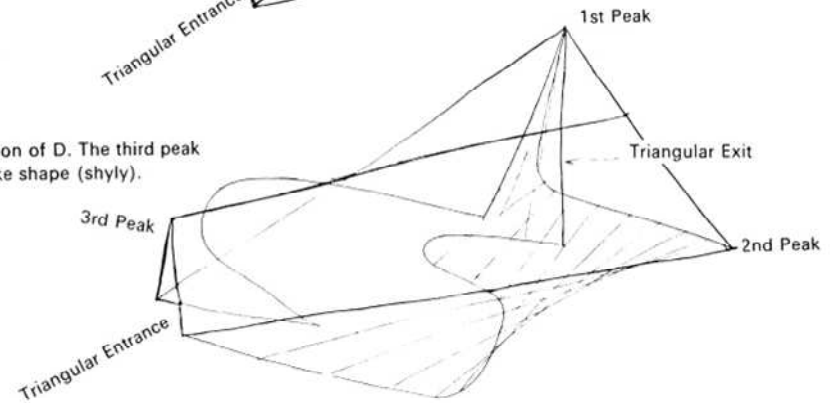
C. Attempt to close the space between the two ruled surfaces of the first design by flat surfaces (which might serve as projection walls).

Fig. 1-3. Stages in the Development of the First Design of the Philips Pavilion

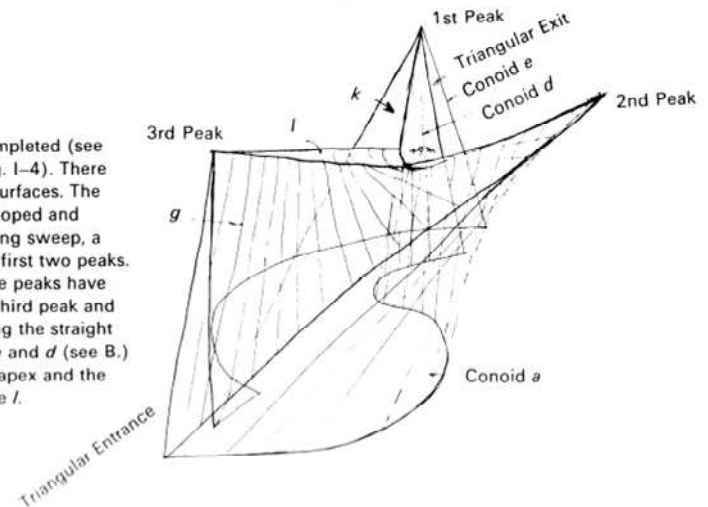
D. Another attempt. Above the entrance channel a small triangular opening is formed, flanked by two hyperbolic paraboloids (*g* and *k*), and the whole is covered with a horizontal top surface.

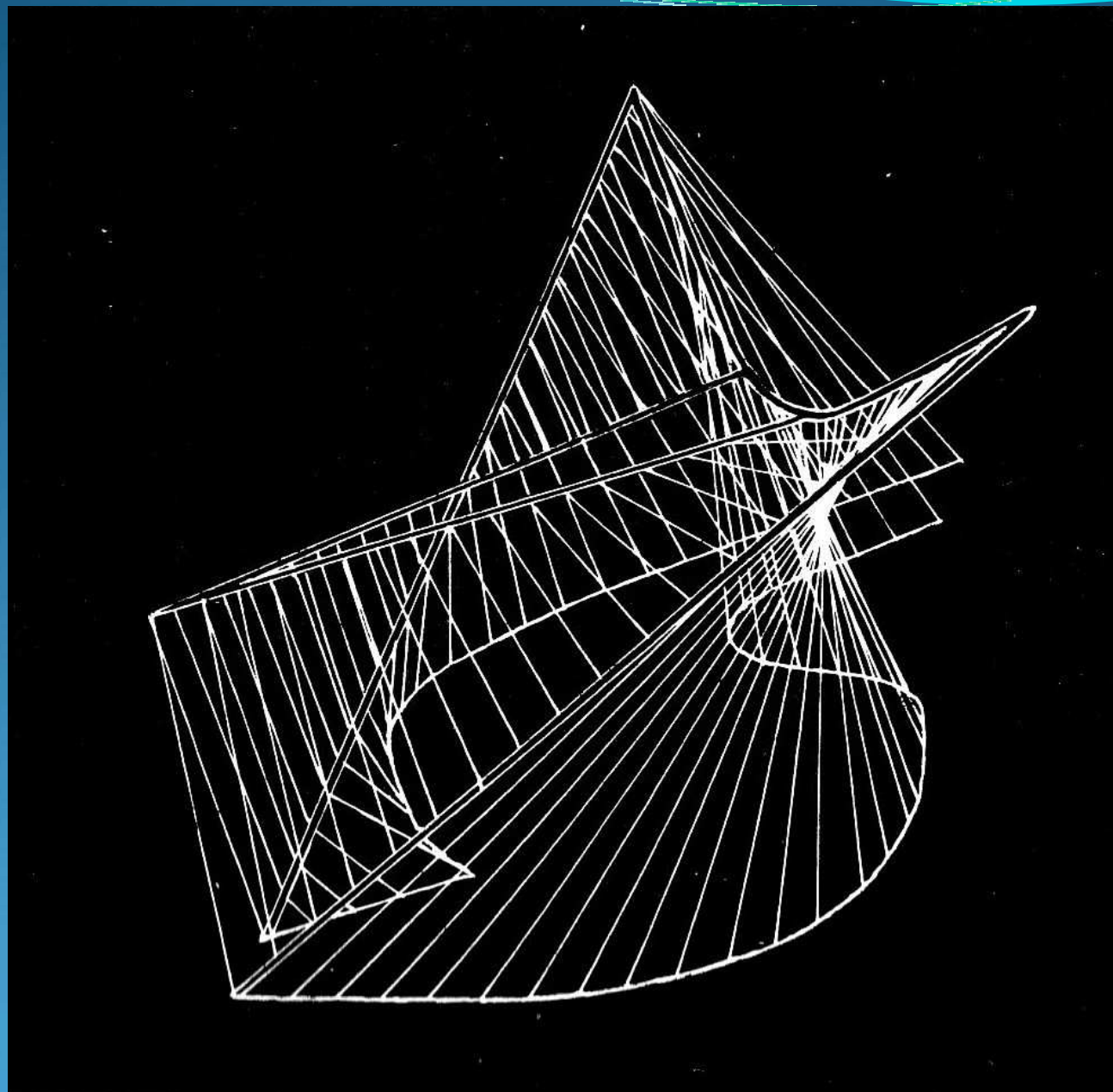


E. Elaboration of D. The third peak begins to take shape (shyly).



F. The first design completed (see also the first model, Fig. 1-4). There are no longer any flat surfaces. The third peak is fully developed and creates, with its opposing sweep, a counterbalance for the first two peaks. The heights of the three peaks have been established. The third peak and the small arc connecting the straight directrices of conoids *a* and *d* (see B.) form, respectively, the apex and the base of a part of a cone *l*.





První model pavilonu Philips, EXPO 1958



Stavba pavilonu firmy Philips, Brusel 1957

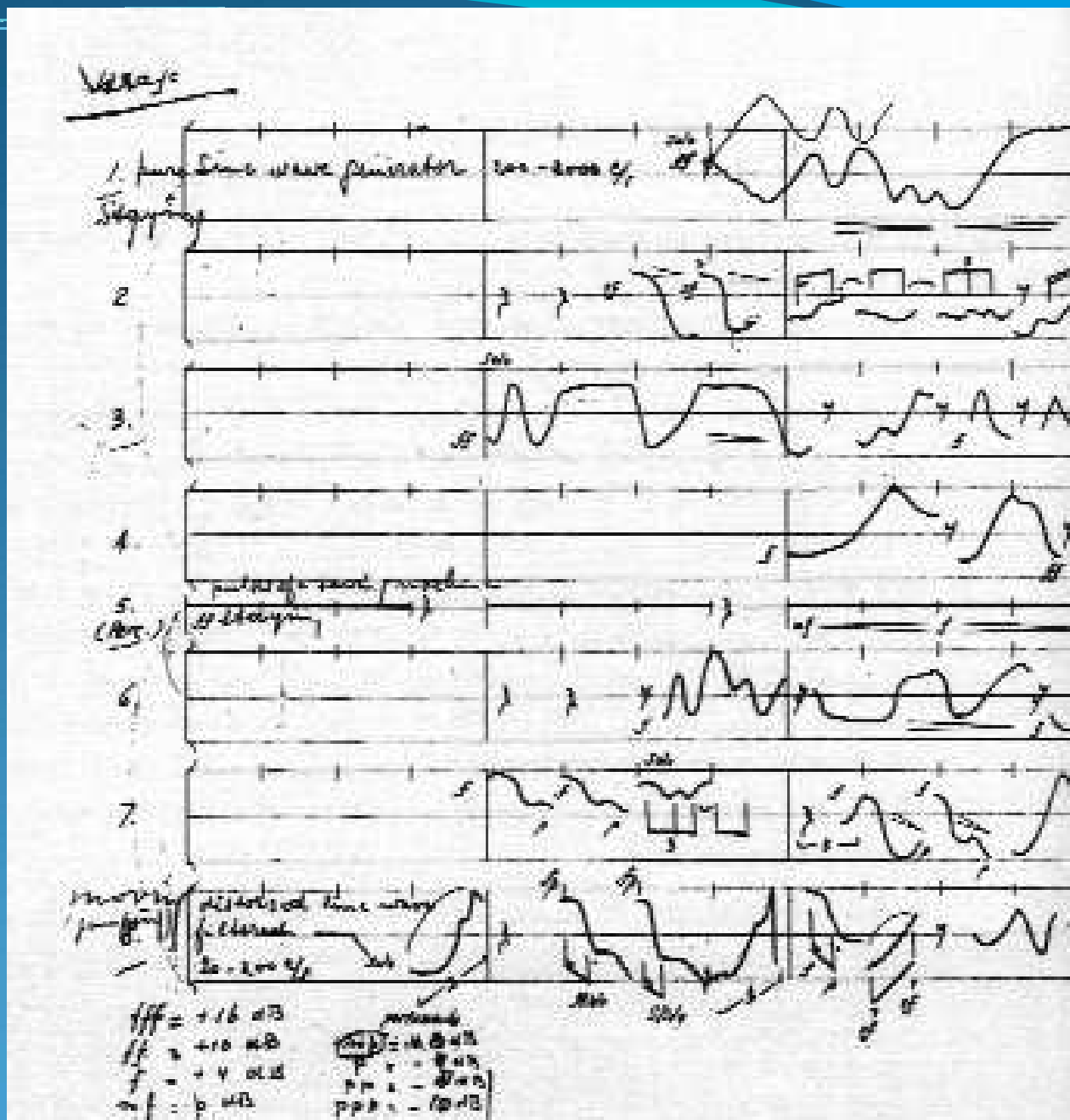


Xenakis, Le Corbusier – Pavillon Philips

Virtual Electronic Poem

<http://www.edu.vrmmp.it/vep/stage.htm>

Mezinárodní projekt Poème électronique - Make it New



Poème électronique, partitura – „seismografická notace“

Gisela Nauck: Musik im Raum – Raum in der Musik. Stuttgart: Steiner, 1997.

1. **Prostor jako médium (Schall-Raum)**
2. **Architektonický prostor (Der architektonische Raum)**
3. **Hudební prostor (Der musikalische Raum)**
4. **Místo tónu (Tonort)**
5. **Zvukový prostor (der Klangraum)**
6. **Intendovaný prostor kompozice**
7. **Komponovaný prostor**
8. **Tónový prostor**
9. **Vnitřní hudební prostor čili kompoziční prostor (Kompositionsraum)**



Karlheinz Stockhausen (*1928)

Parametry zvuku - K. Stockhausen: Musik im Raum, 1958.

1. délka (trvání) tónu/zvuku
2. výška tónu/zvuku
3. síla (dynamika, hladina hlasitosti) zvuku
4. barva
5. topos (místo) zvuku v prostoru

K. Stockhausen - Prostorové kompozice:

GRUPPEN (1955-57)

CARRÉ (1959-1960)

GESANG DER JÜNGLINGE (1955-56)

KONTAKTE (1958–1960)

MUSIK FÜR EIN HAUS (1968)

SPIRAL, POLE, EXPO (EXPO 1970)

části cyklu **LICHT (AUS DEN SIEBEN TAGE; 1977-200?)**

OKTOPHONIE (1990-91)

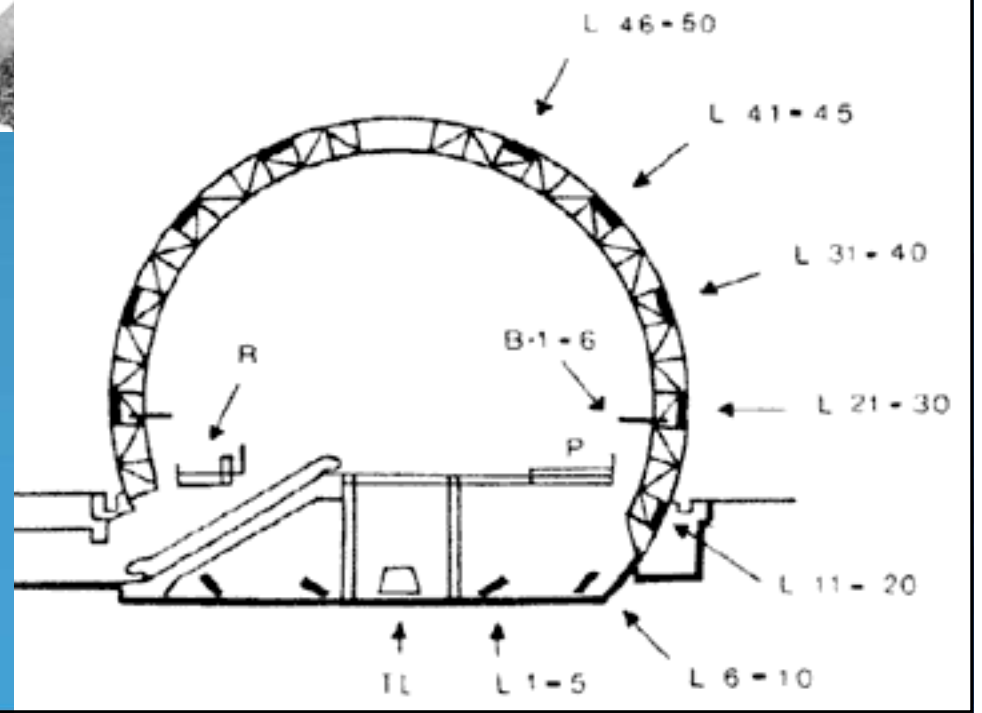
HELICOPTER QUARTET (1993)

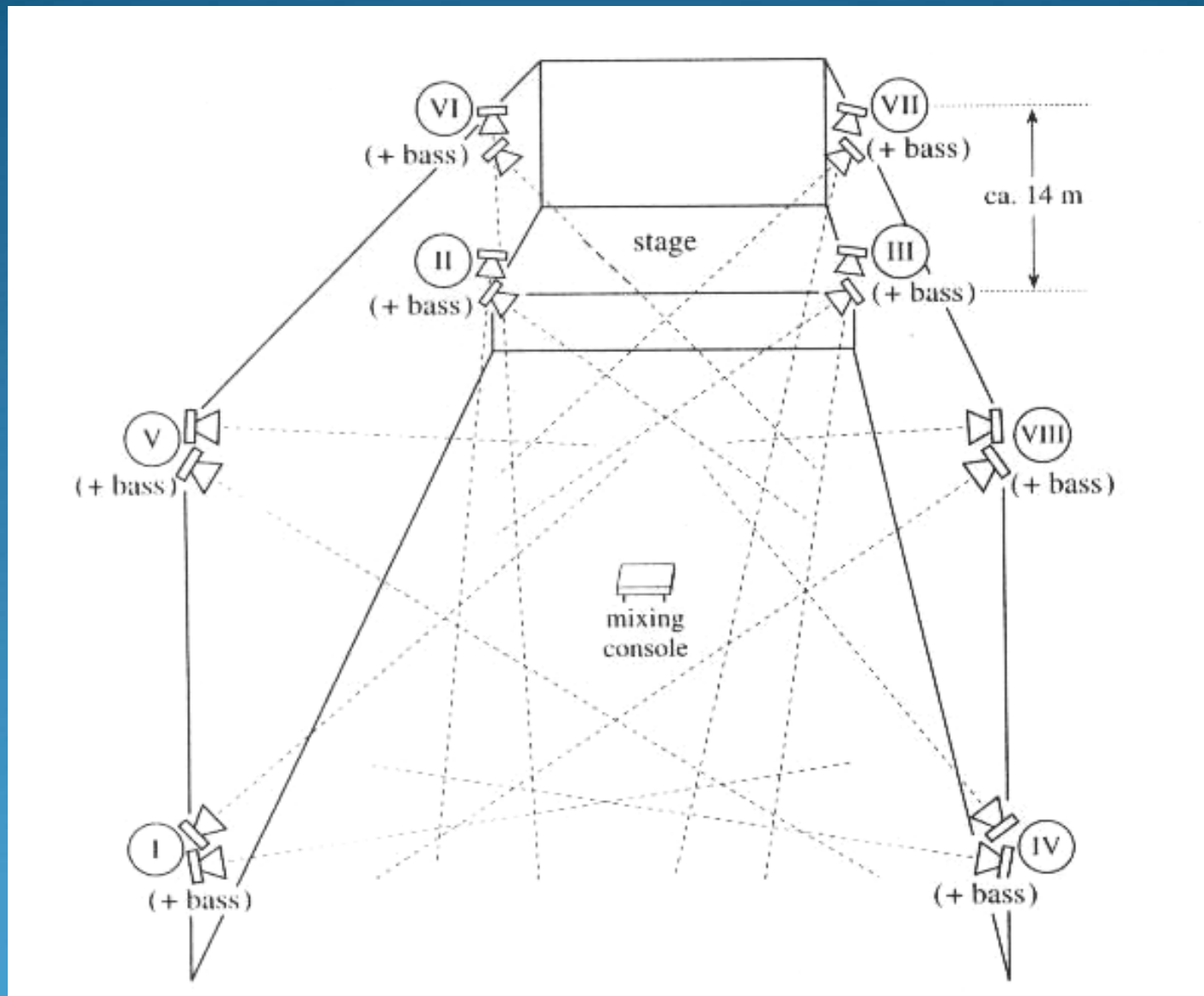


Gesang der Jünglinge, prem. 30. 5. 1956 (Velký sál WDR Köln)



Německý pavilon, EXPO Ósaka 1970





K. Stockhausen - OKTOPHONIE, schéma spacializace



Guggenheim Museum NY, Frank Lloyd Wright



THE GUGGENHEIM II

JIM M. GOLDSTEIN • JMG-GALLERIES.COM

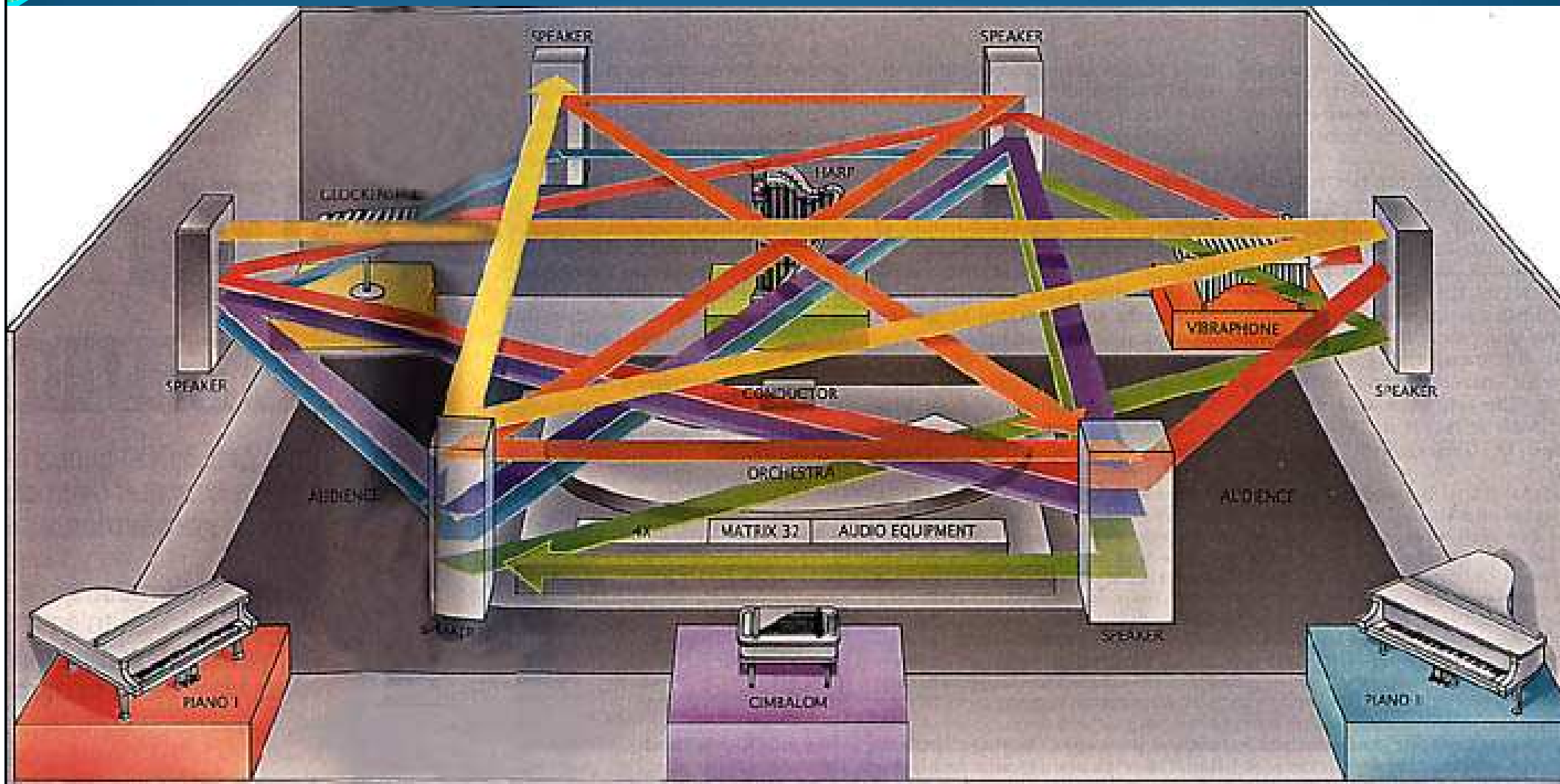
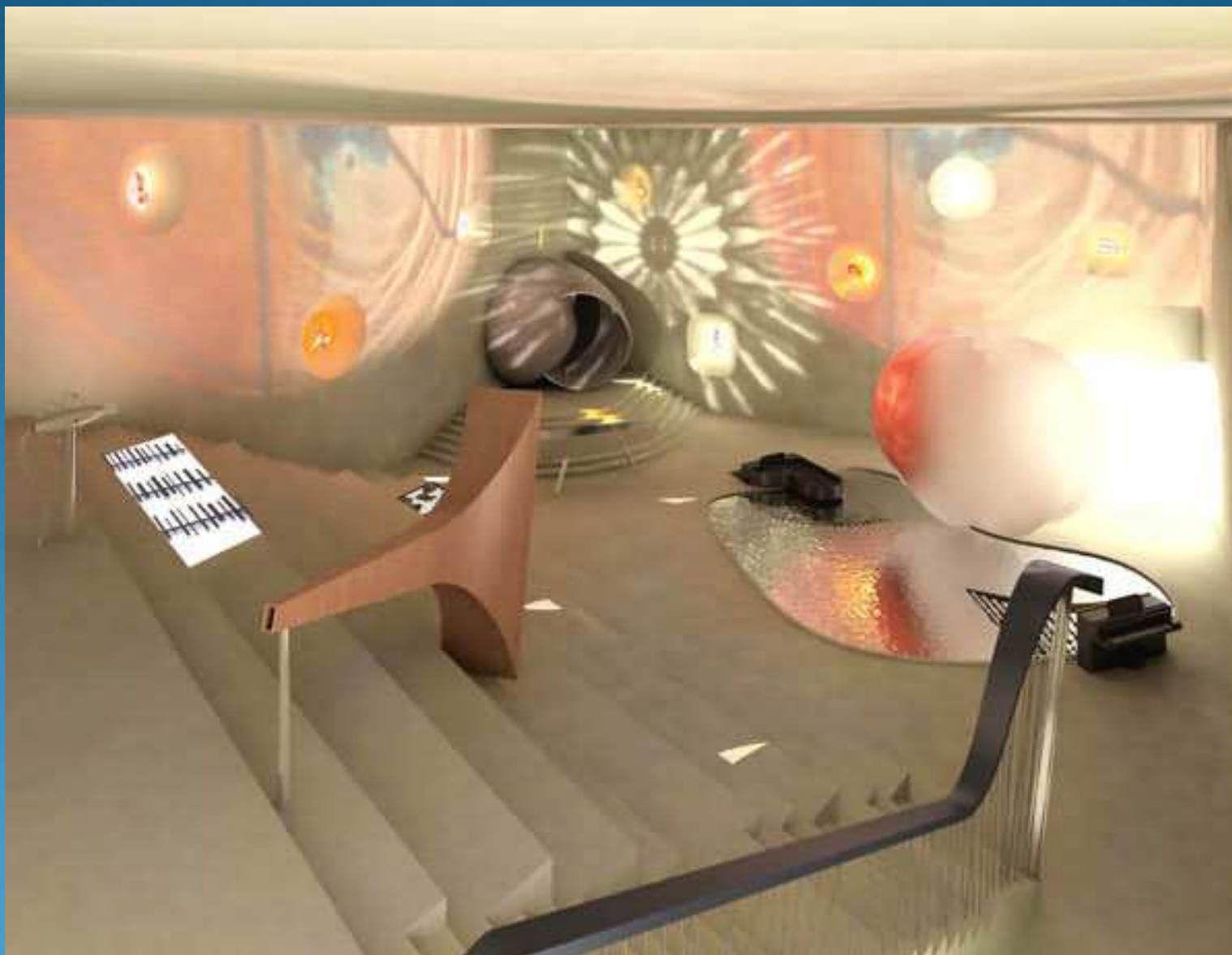


Schéma spacializace (Boulez: Répons)



Zahrada fantazie a hudby. Petr Nikl, pavilon ČR, EXPO Aiči 2005.





JON ROSE

Projekt [GREAT FENCES OF AUSTRALIA](#) mapuje rozlehlé oblasti Austrálie. Od roku 2002 houslista Jon Rose a Hollis Taylor procestovali 35 000 kilometrů, aby pořídili nahrávky unikátních zvuků stovek plotů. Mezi nimi např. *Dog Fence* a *Rabbit-Proof Fences*. Souběžně s pořizováním nahrávek byly dokumentovány i příběhy lidí a krajiny spojené s těmito ploty.



FENCES

2006

Izrael

Palestina