

TOPOLOGY:

**METAPHOR, METAMORPHOSE IN
MATH, DESIGN & ARCHITECTURE**

Michele Emmer

ASC, Troy, 2010

Biennial of Architettura

Venice 2004

Kemp text

METAMORPH

9. MOSTRA INTERNAZIONALE DI ARCHITETTURA

FOCUS

Marsilio

la Biennale di Venezia

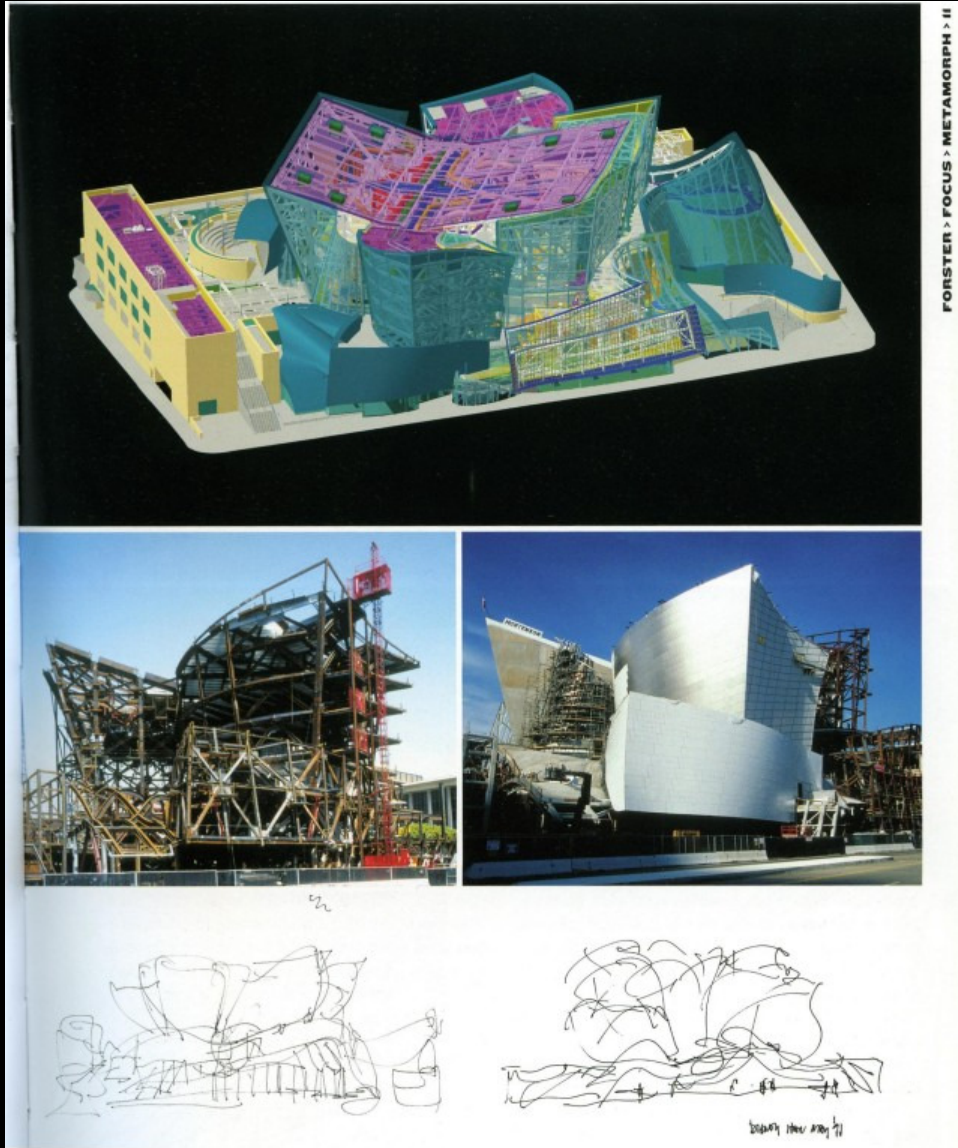


Frank O. Gehry

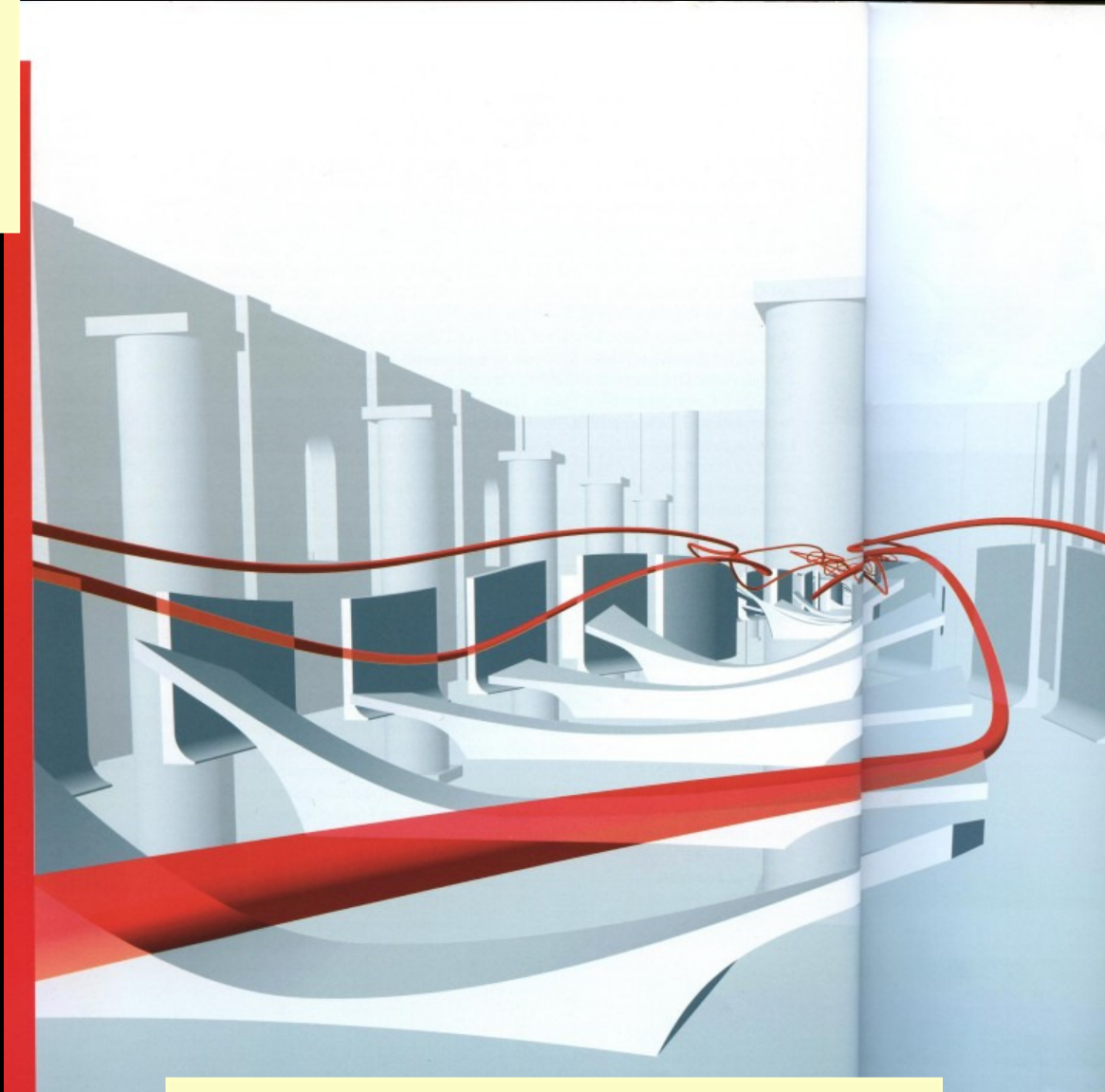
Walt Disney
Concert Hall

Biennale 2008

Forster text

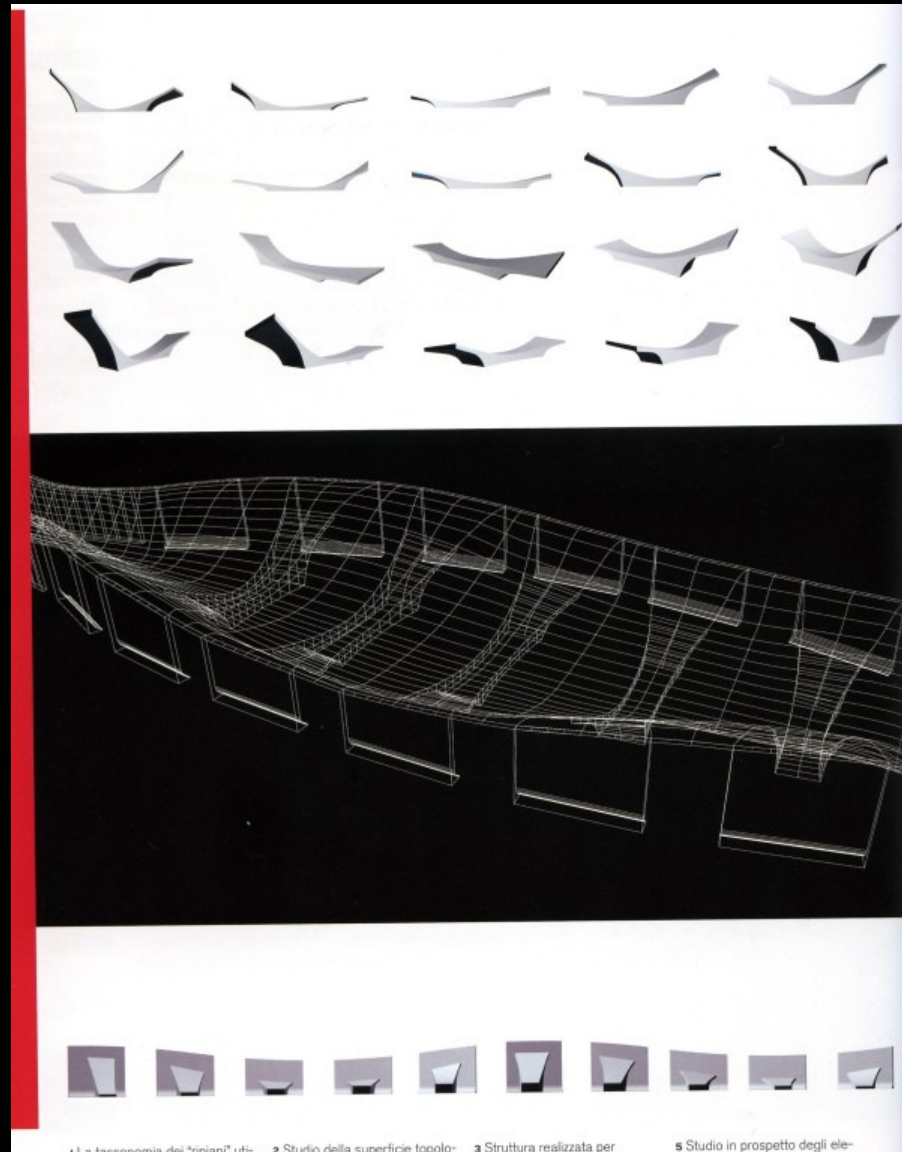


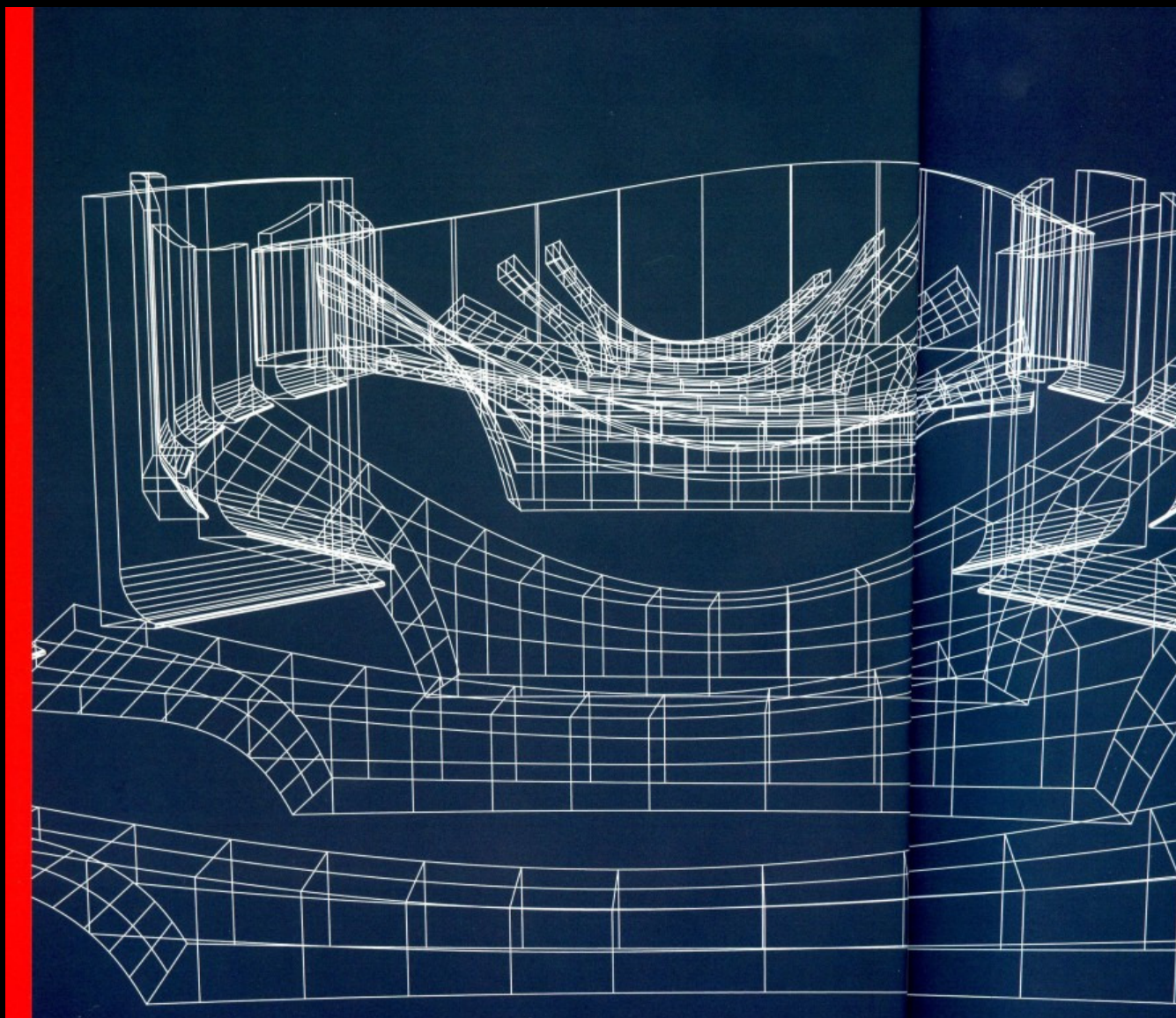
Hani Rashid &
Lise Anne
Couture
Text



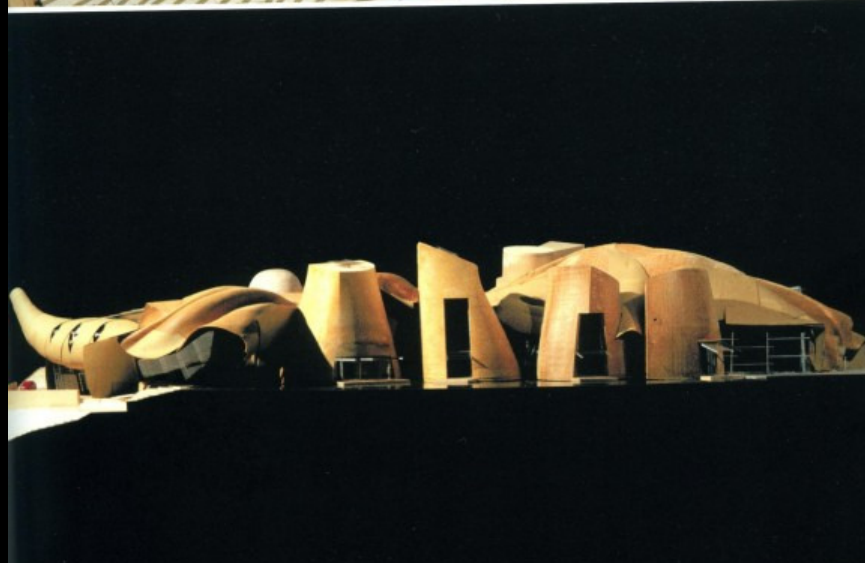
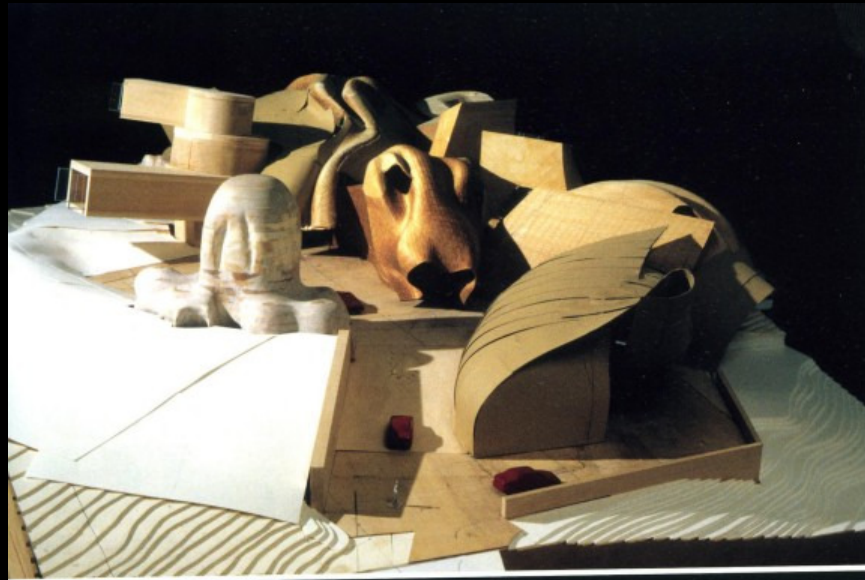
Asymptote:
architecture of Metamorph

Study of the
topological
surface of the
interior of the
“Corderie” of
the “Arsenale”





Frank O. Gehry
Lewis Residence



**M. Kemp: Intuizioni strutturali e
pensiero metamorfico nell'arte,
architettura e scienza**

METAMORPH

9. MOSTRA INTERNAZIONALE DI ARCHITETTURA

TRAJECTORIES

Marsilio

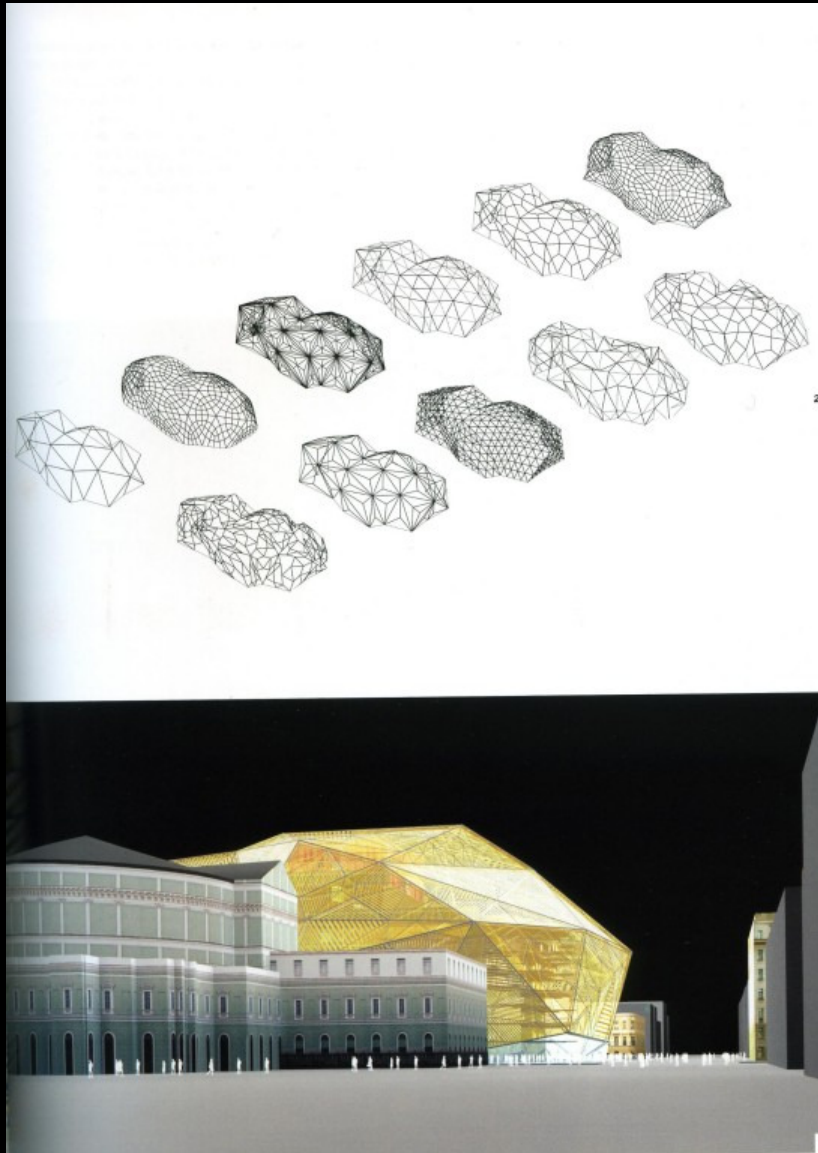
la Biennale di Venezia



Dominique
Perrault

Mariinskij Teatr

Saint
Petersburg



Acconci Studio:

*A roof like a
liquid thrown on
a square*

Memphis



Wilkinson Eyre

*The Royal
Ballet School*

London

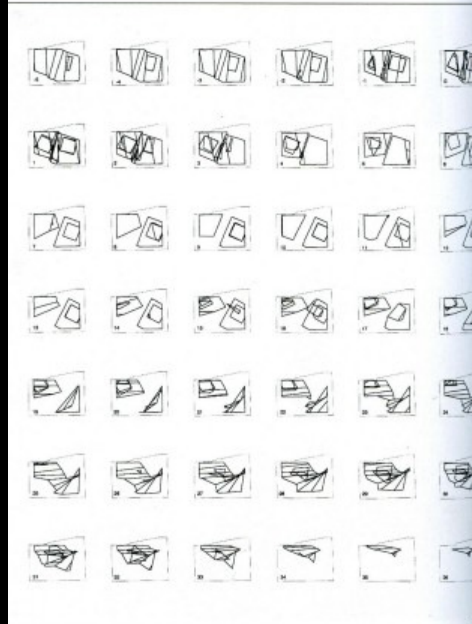
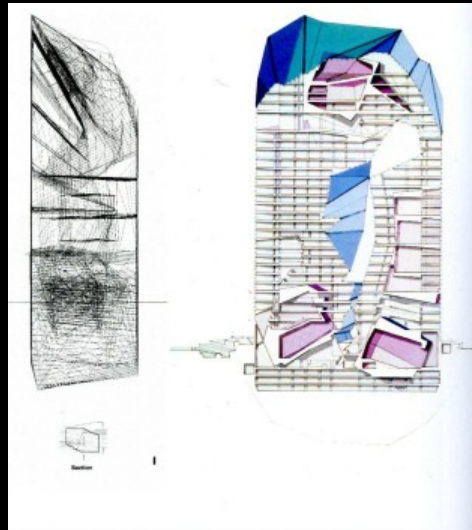


Eisenman

*Max Reinhardt
Haus*

Berlin

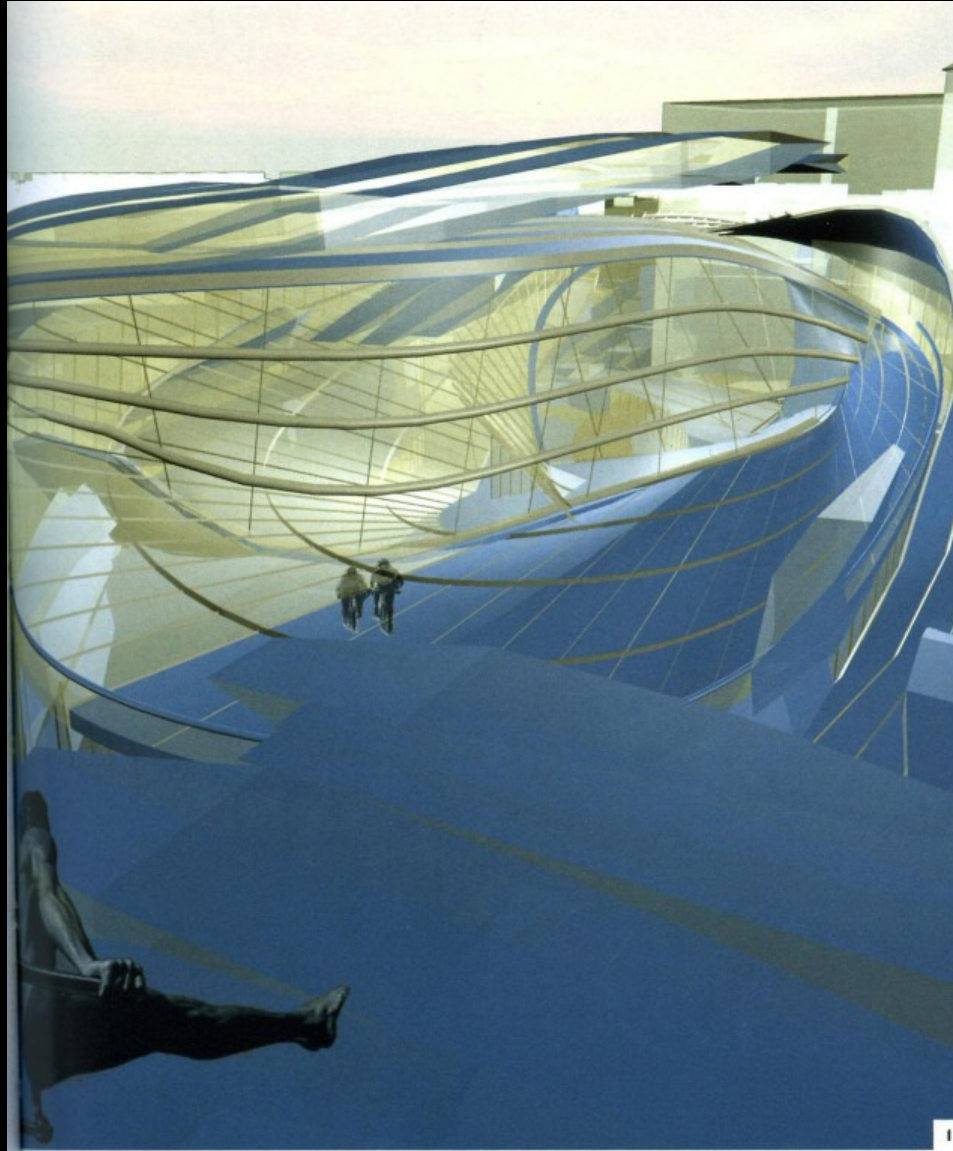




**Dagmar
Richter**

***Waterford
North Quays***

Aalborg



Biennial of Architecture

Venice 2008





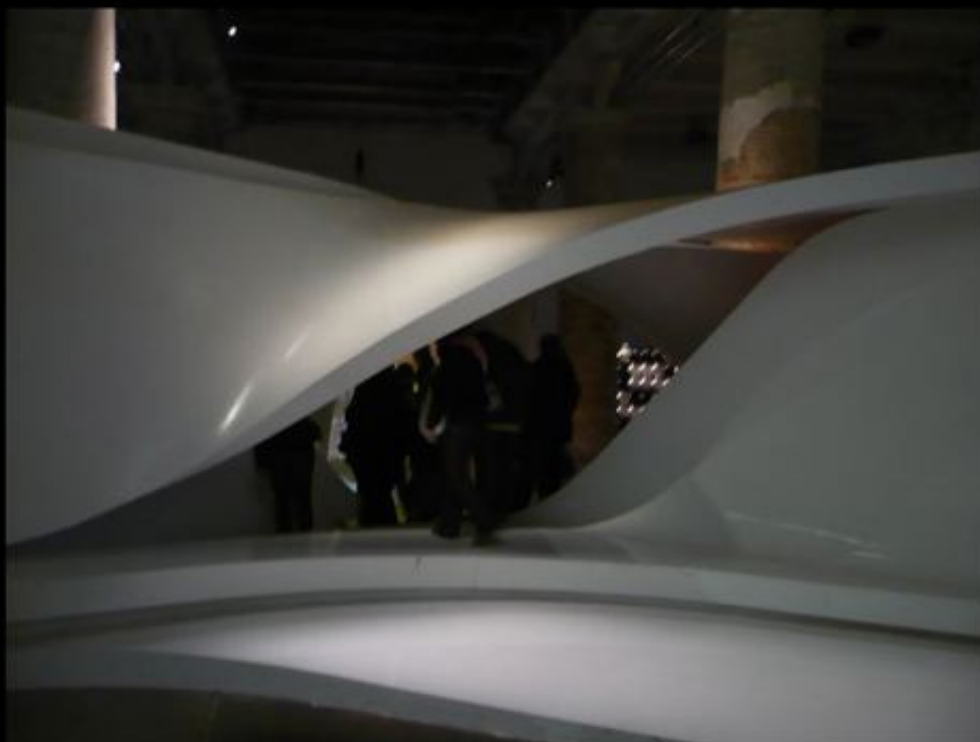












UNSTUDIO

PROGETTO / PROJECT THE CHANGING ROOM - COUTURE OF ARCHITECTURE DIRETTORE /
PRINCIPAL BEN VAN BERKEL, CAROLINE BOS WITH CHRISTIAN VEDDELER AND
HANS-PETER NUENNING, STEFFEN RIEGAS SEDE / BASED AMSTERDAM, THE
NETHERLANDS CREDITO / LIGHT DESIGN WITH MESO DIGITAL INTERIORS, FRANKFURT; ENGINEERING
AND BUILDING: P&P GMBH, FÜRTH/ODENWALD CON IL SUPPORTO AGGIUNTIVO DI / WITH THE ADDITIONAL SI
PORT OF: THE NETHERLANDS ARCHITECTURE FUND, ROTTERDAM, THE NETHERLANDS
FOUNDATION FOR VISUAL ARTS, DESIGN AND ARCHITECTURE, AMSTERDAM SPONSORED BY: ARJ
AMSTERDAM, CAPAROL GMBH, OBER-RAMSTADT, G&S, AMSTERDAM, PIETERS
BOUWTECHNIEK, AMSTERDAM, P&P GMBH, FÜRTH/ODENWALD, RENDERTAXI, AACHEN,
RESOPAL GMBH, GROSS-UMSTADT, SORBA, WINTERSWIJK

"Changing Room" è un oggetto discreto senza principio né
fine. UNStudio, condotto da Ben van Berkel e Caroline
Bos, ha coltivato a lungo l'interesse per un'architettura che
non sia statica, ma che consista in un continuo evolversi
di parti che possiamo occupare con fluidità. Questo

"The Changing Room" is a discreet object without begin
ning or end. UNStudio, led by Ben van Berkel and Carol
Bos, has long been interested in architecture that is not
static, but a continuous unfolding of planes we can occ
upy in a fluid manner. This













ZAHA HADID ARCHITECTS

PROGETTO / PROJECT LOTUS DIRETTORE / PRINCIPAL ZAHA HADID, PATRIK SCHUMACHER
BASED LONDON, UK CON IL SUPPORTO AGGIUNTIVO DI / WITH THE ADDITIONAL SUPPORT OF: JULIAN
AND KENNY SCHACHTER/ROVE

"Lotus" è sia un mobile che si dispiega, sia una casa. Gli architetti lo concepiscono come una forma singola, ma anche complessa, che risolve il riposo, il sedersi, l'intrattenimento e il curiosare. Ciò che di solito è separato nel nostro ambiente domestico diviene con-

"Lotus" is both a piece of unfolding furniture. The architects conceived of it as a simple shape that would accommodate sitting, and browsing. What is usually separated in our domestic environment now be-

Zaha Hadid & Patrik Schumacher

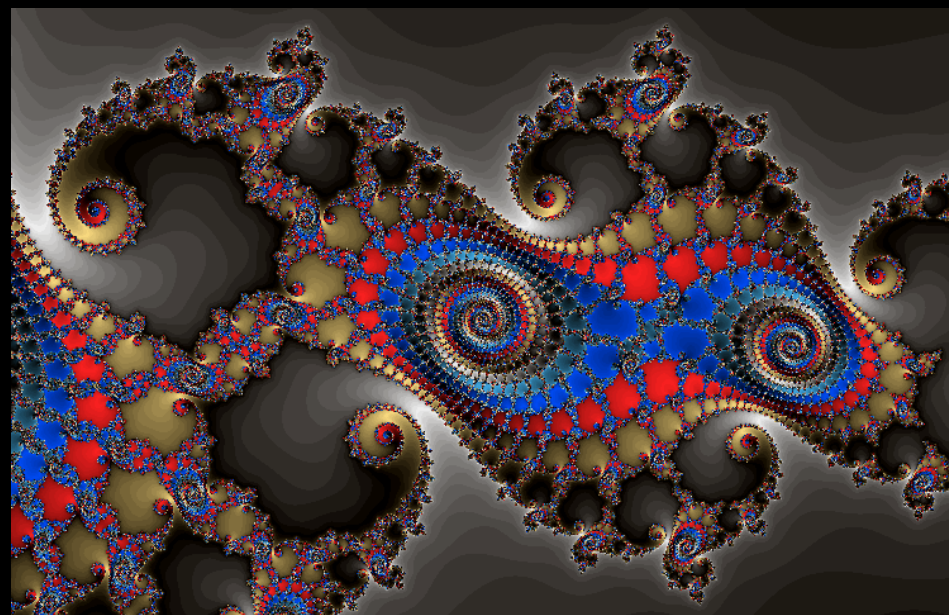
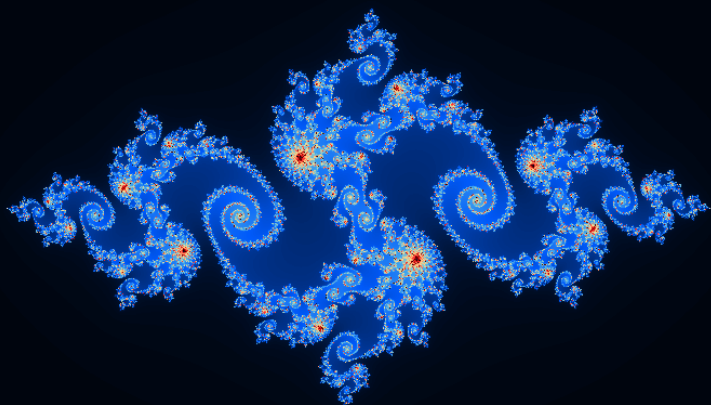
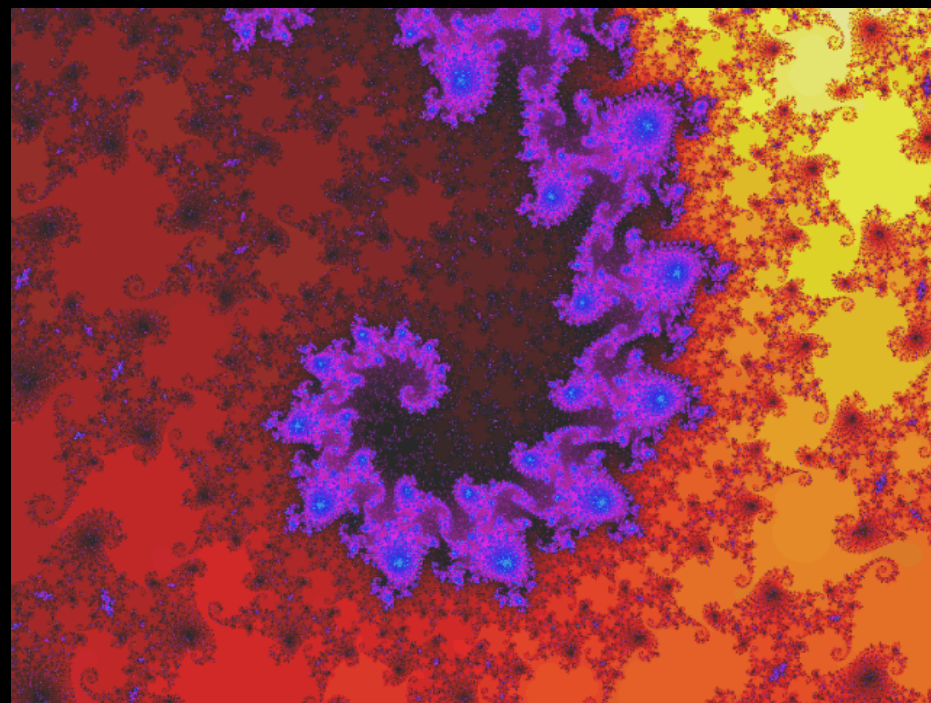
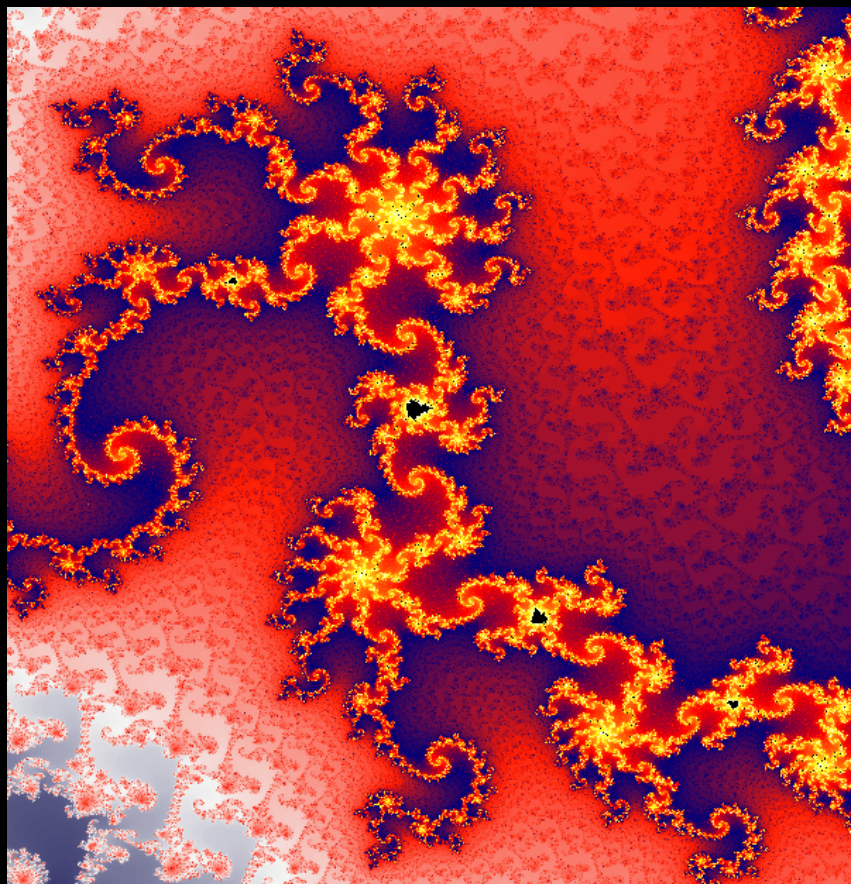
Palladio
&
Contemporary Architects

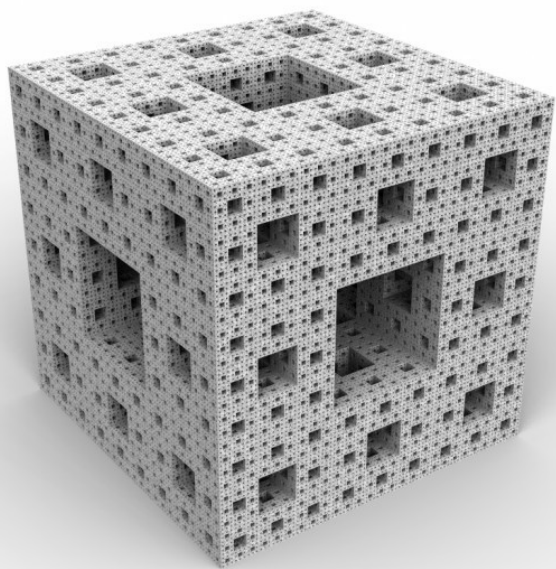
WWW.LAMALCONTENTA.COM



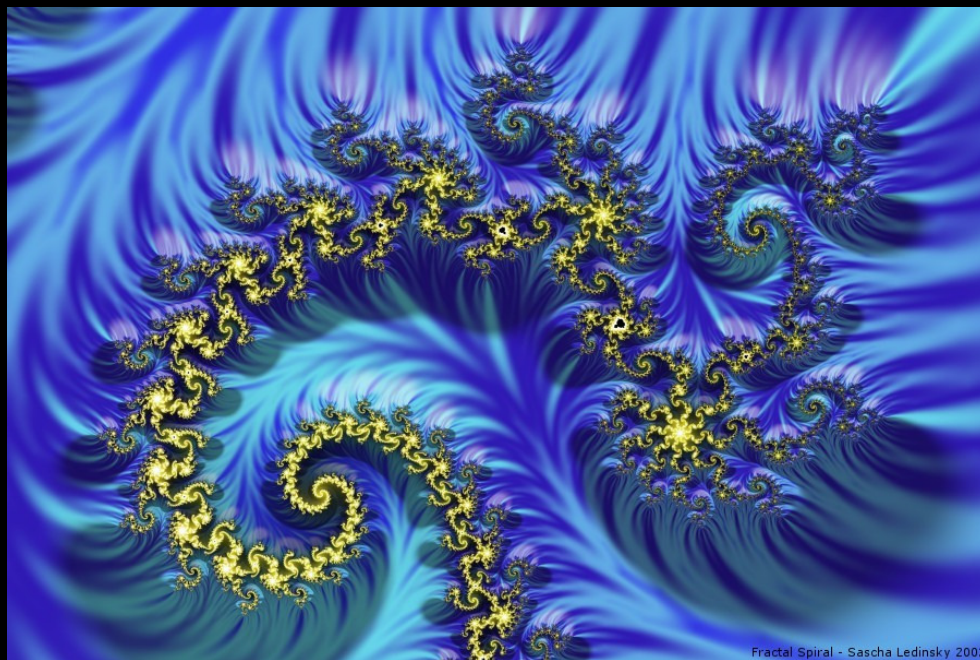


THE IDEA OF SPACE





Fractal Cube II - Sascha Ledinsky 2002

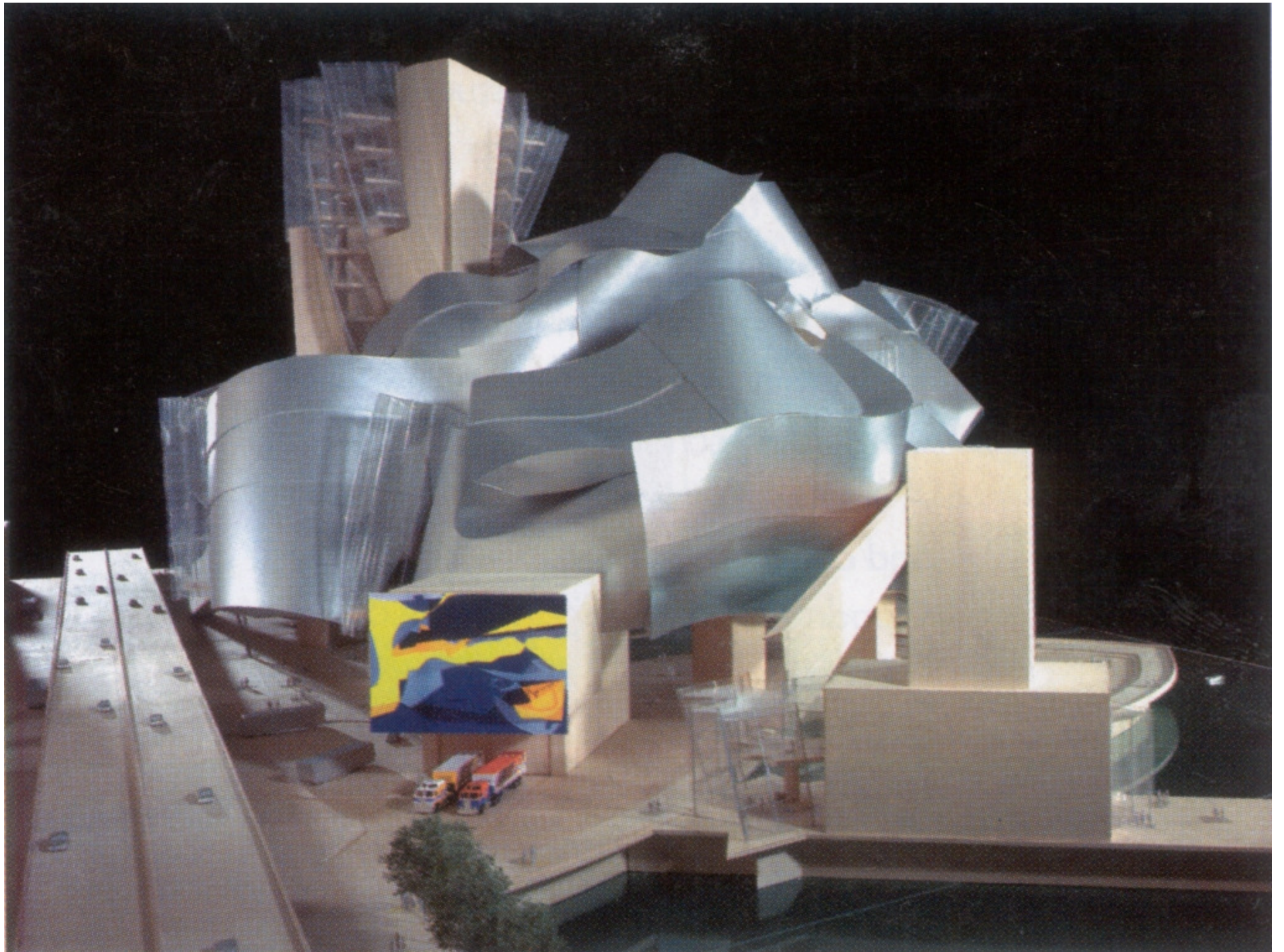


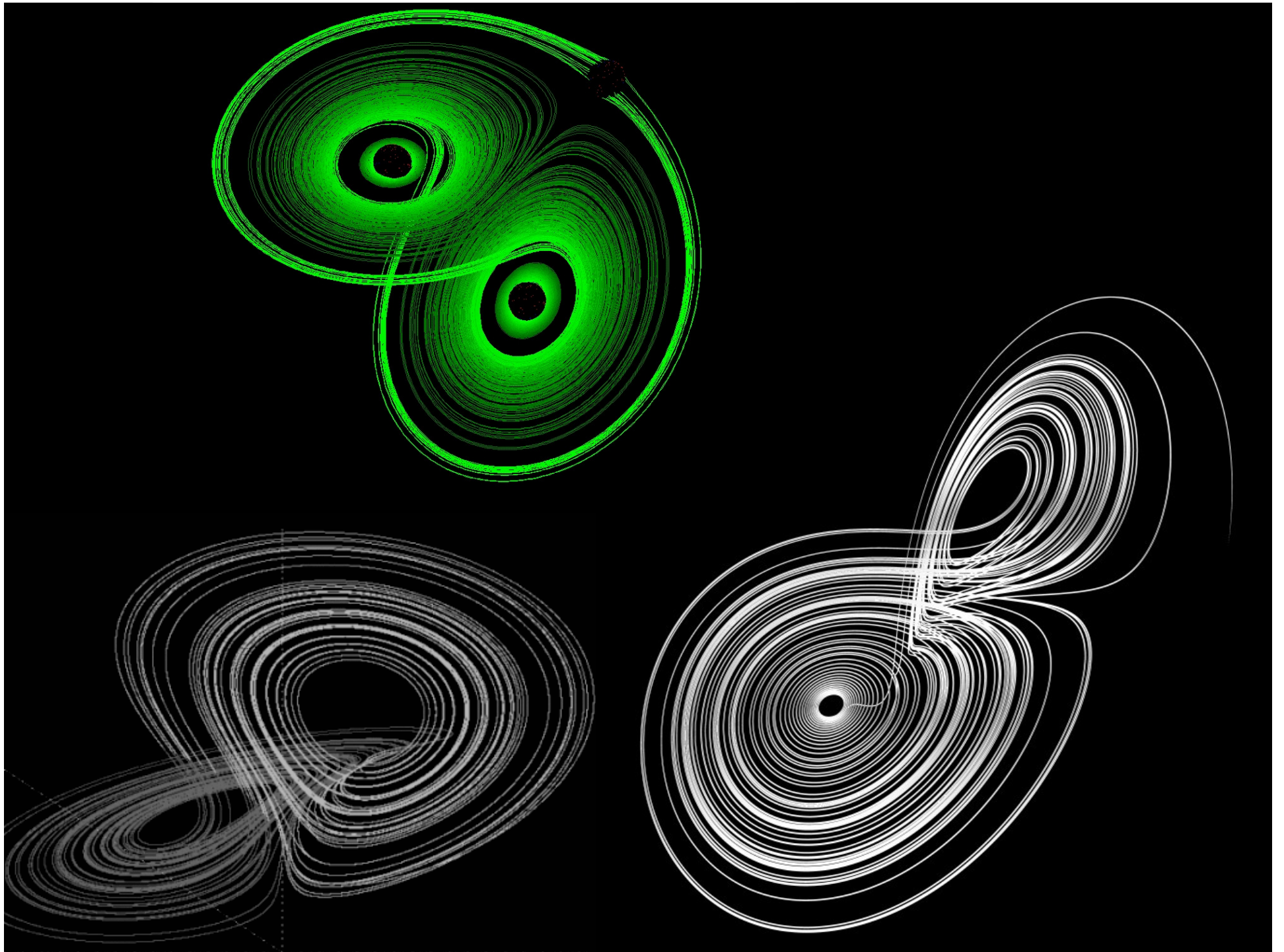
Fractal Spiral - Sascha Ledinsky 2002

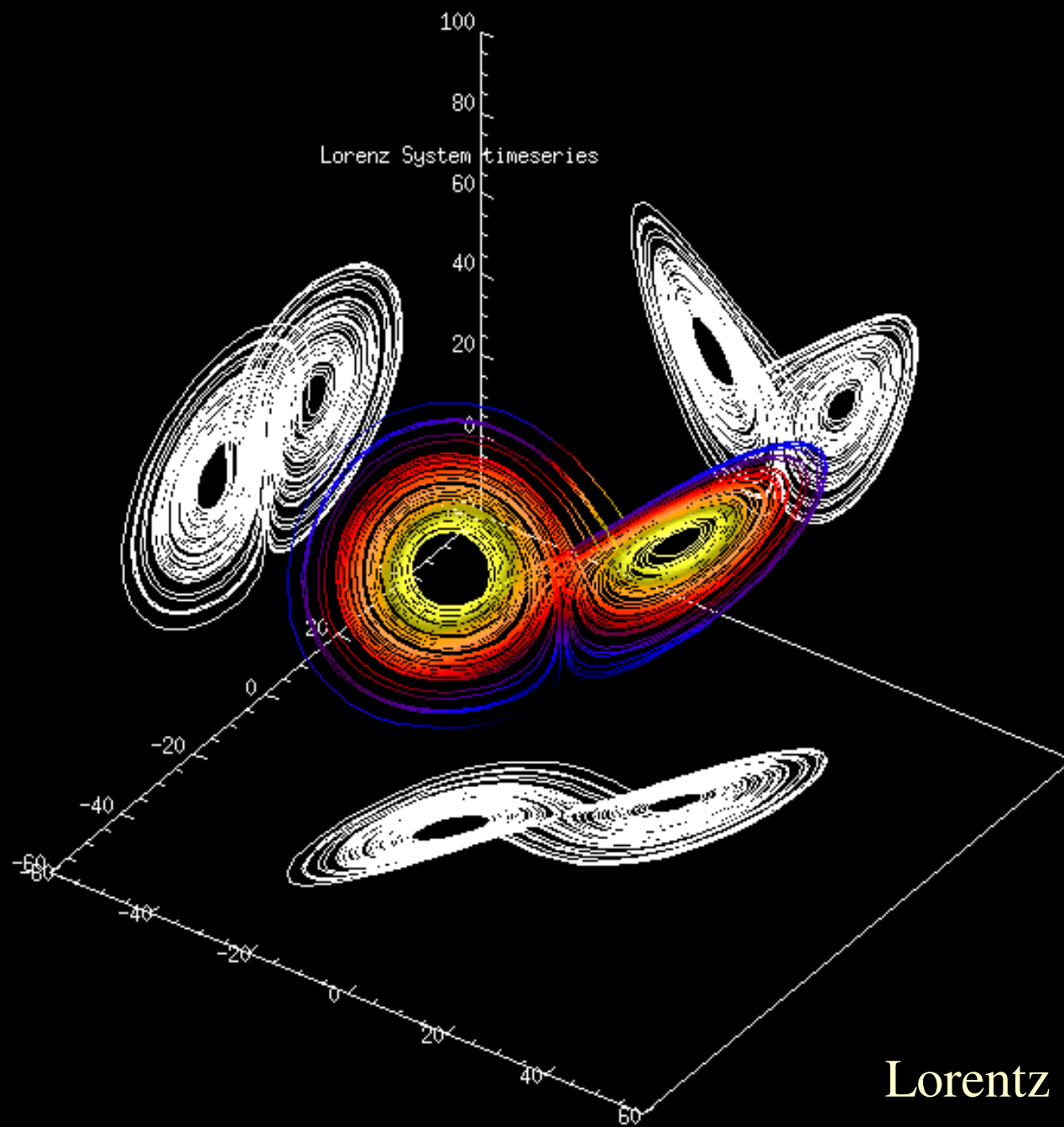


New Guggenheim Museum - New York









Lorentz

IT SEEMS TO ME THAT WE KNOW
ALMOST NOTHING OF THE
ESSENCE OF SPACE.

Gauss

Gauss, Bolyai, Lobachevskji

IMAGINARY GEOMETRY

1800-1835

NON EUCLIDEAN GEOMETRY

GAUSS

Disquisitiones generales circa
superficies curvas

1825

TO STUDY THE GEOMETRY
OF A SURFACE
“LOCALLY”

Invariants for isometric
transformations

RIEMANN

Über die Hypothesen welche der
Geometrie zu Grunde liegen

1854-1867

Manifolds in *n* dimensions

Curvature of a manifold

KLEIN

Erlangen

1872

POINCARÉ'

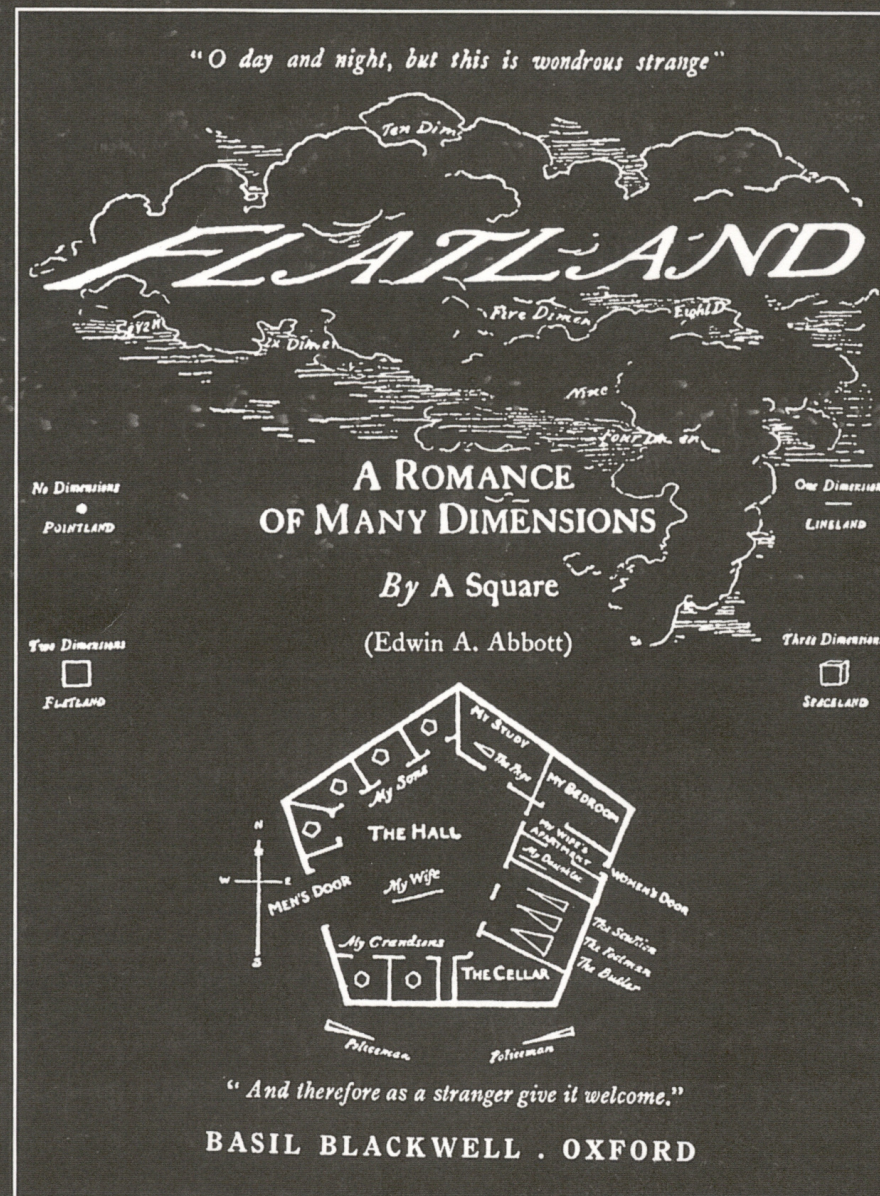
Les Geometries non euclidiennes

1891

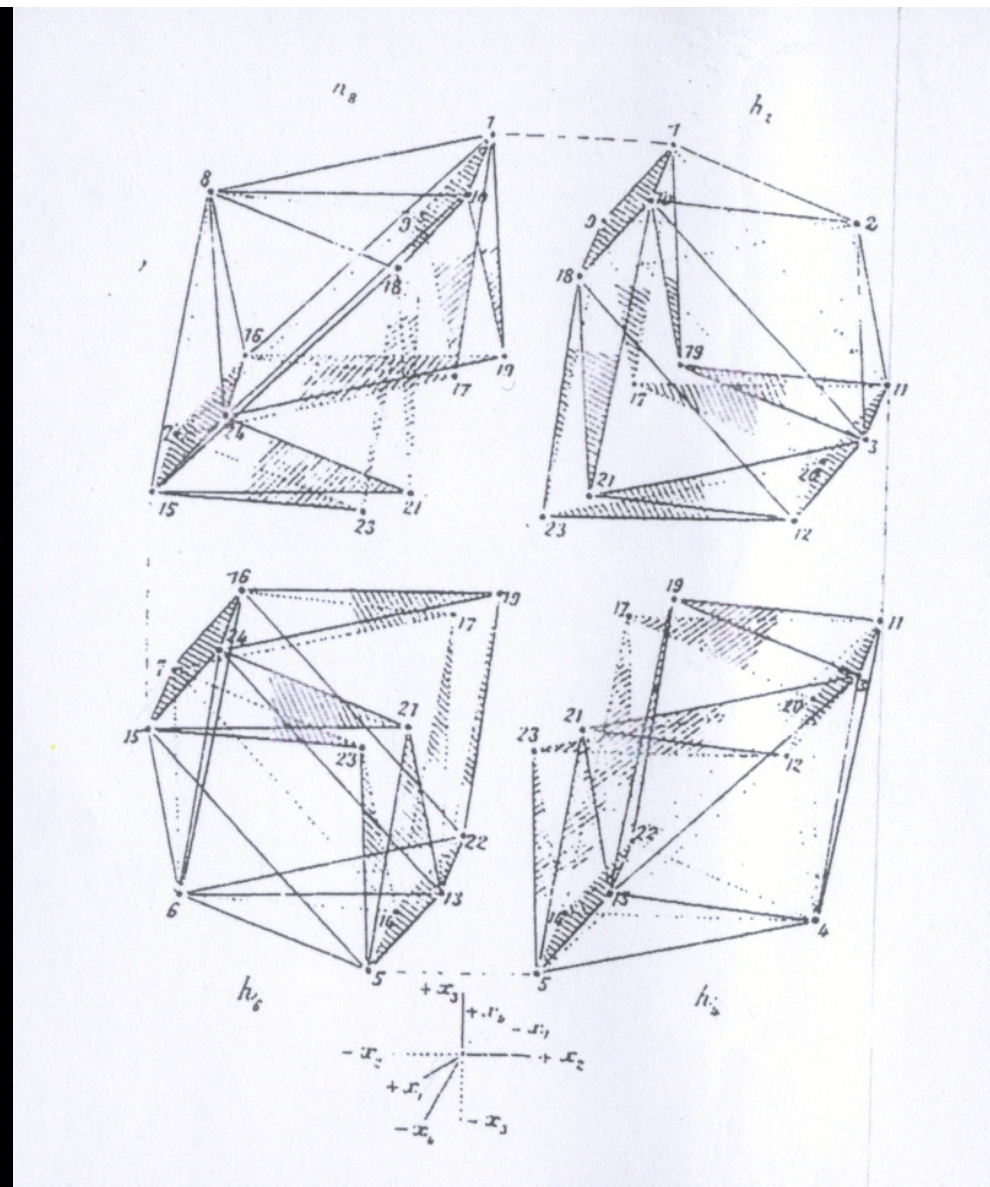
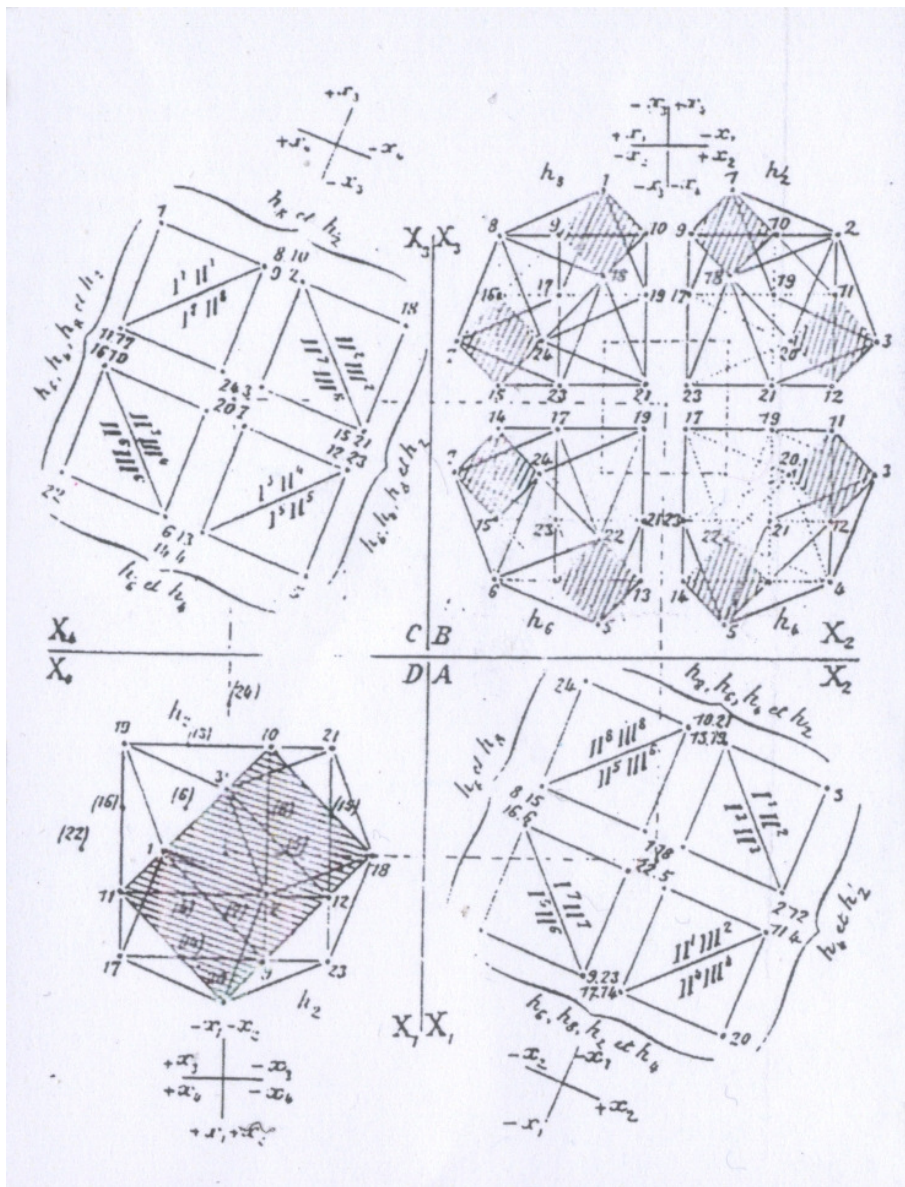
POINCARÉ'

Analysis Situs

1895



Frontespizio del romanzo *Flatland. A Romance of Many Dimensions* di Edwin A. Abbott (Londra, 1884), che racconta di Flatlandia un "paese" popolato da figure geometriche perfettamente "piatte" cioè giacenti su un piano a due sole dimensioni: larghezza e lunghezza



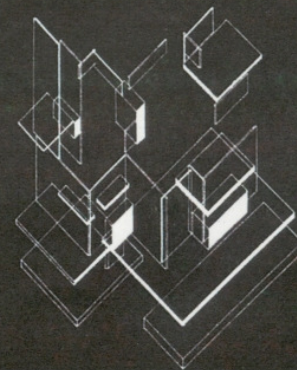
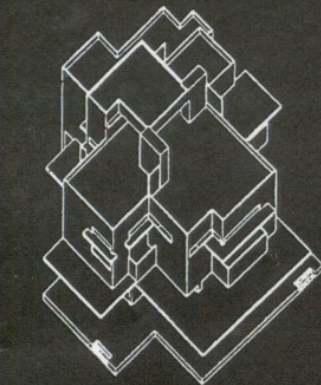
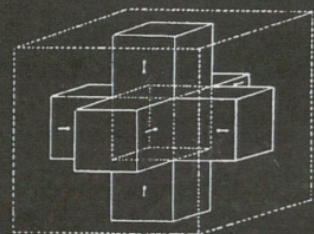
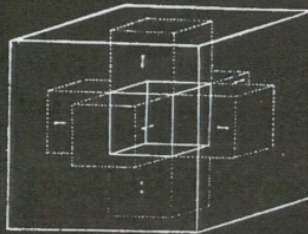
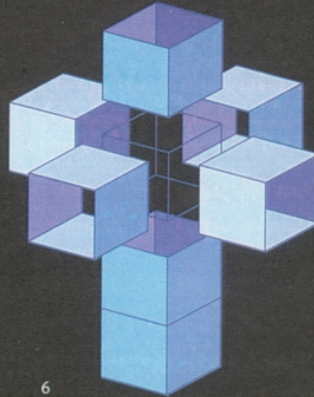
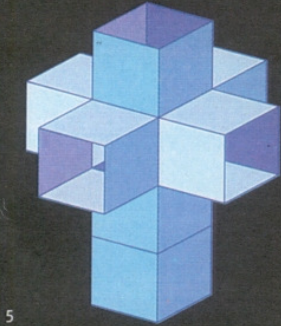
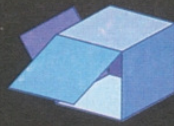
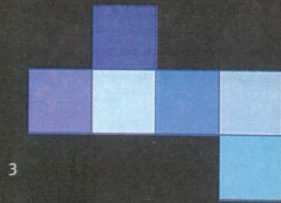
Jouffret



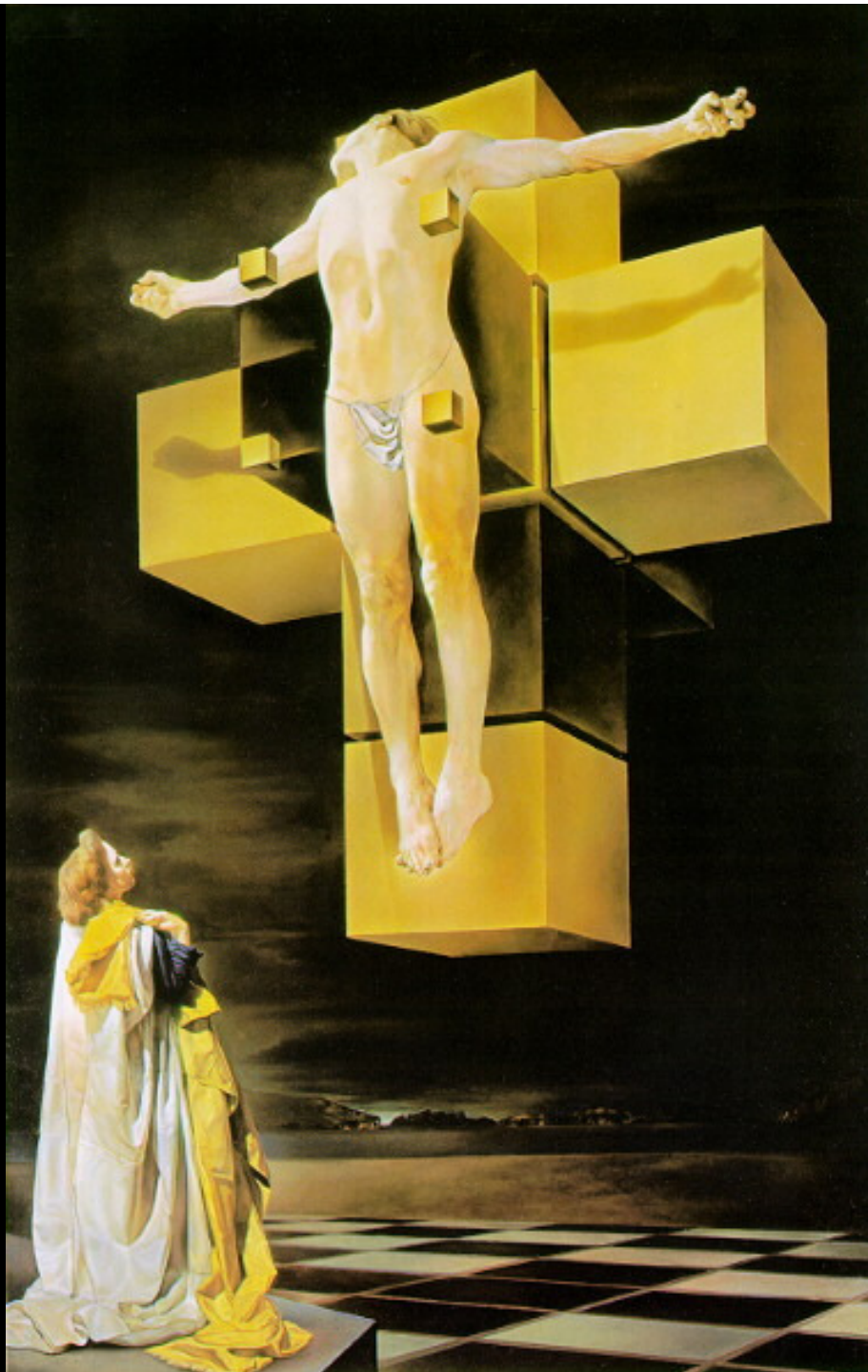
Picasso



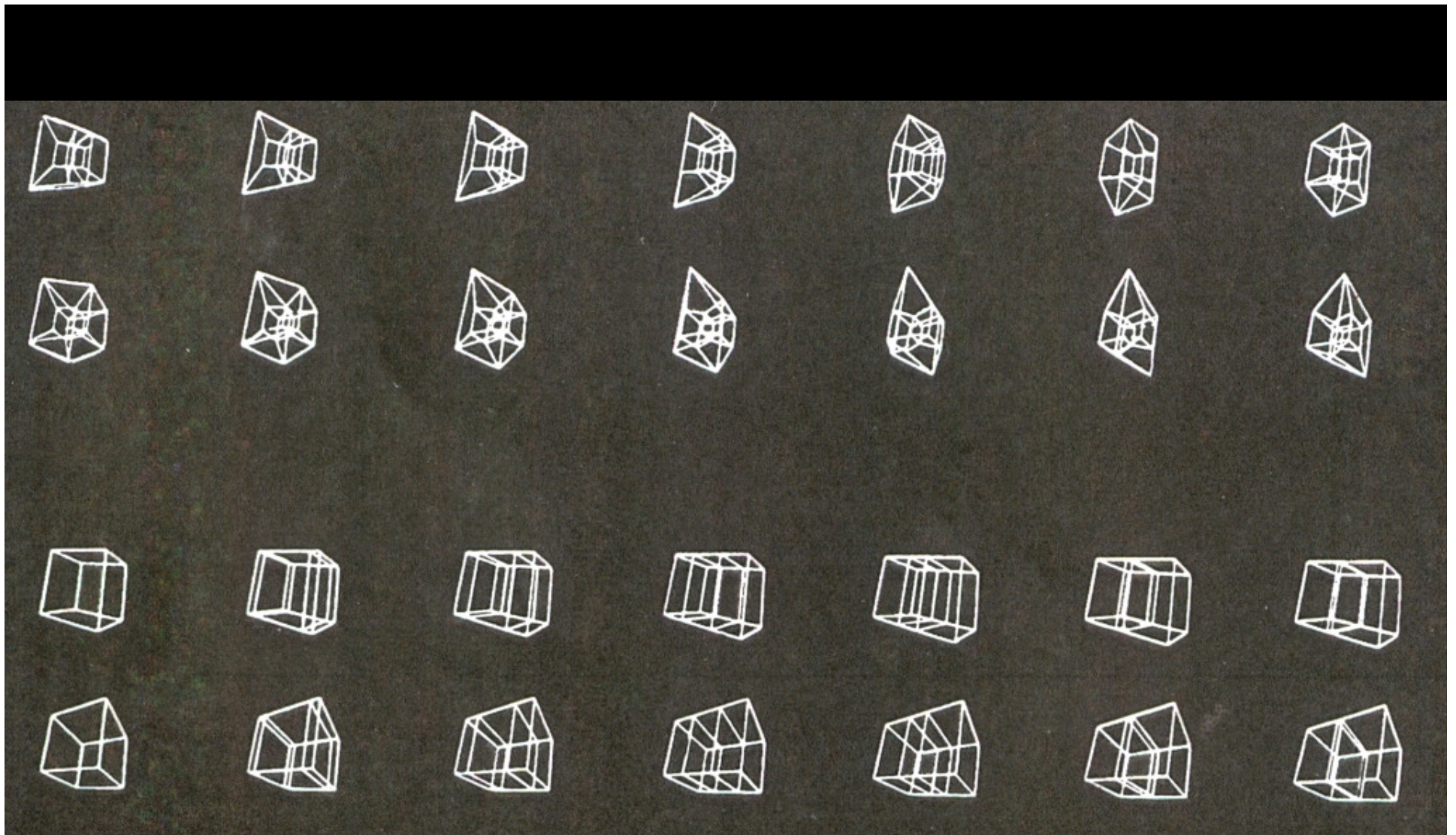
Boccioni



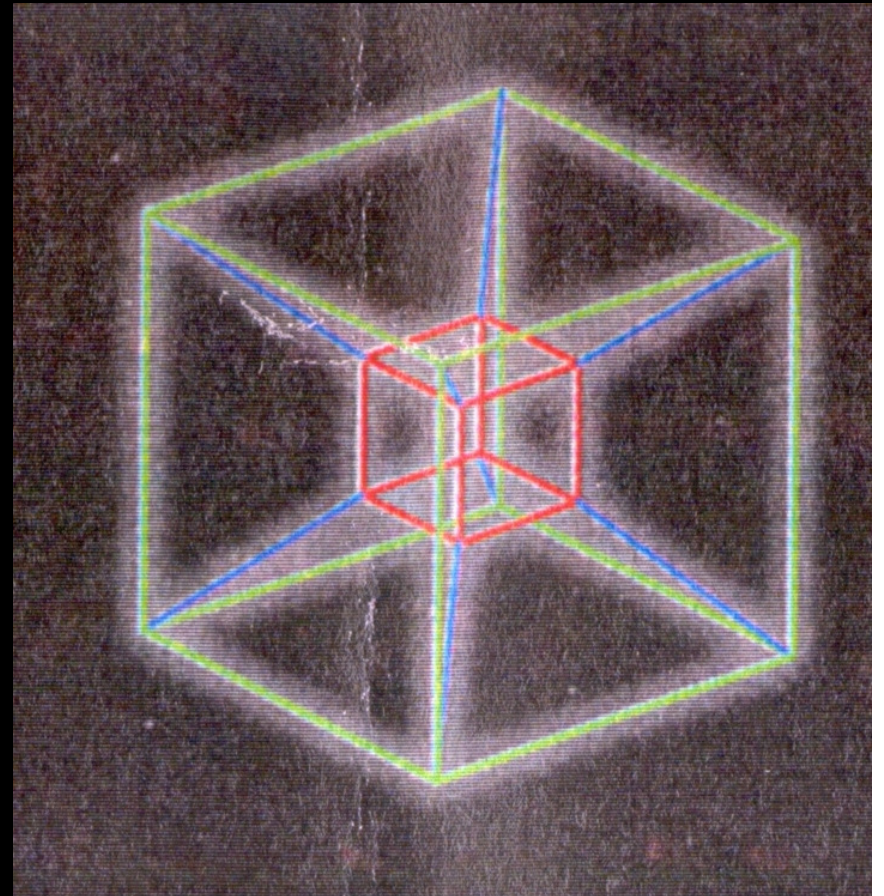
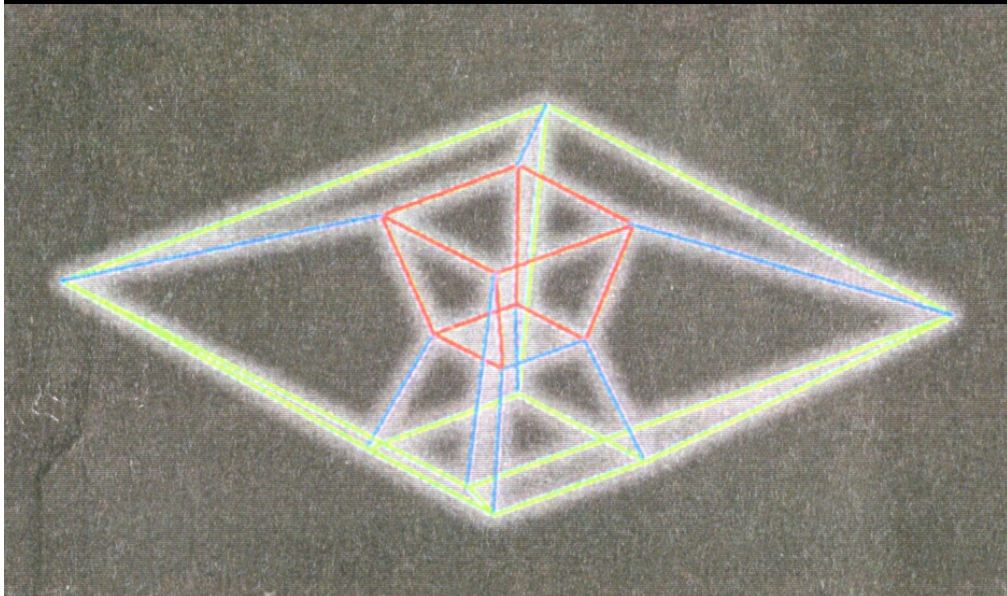
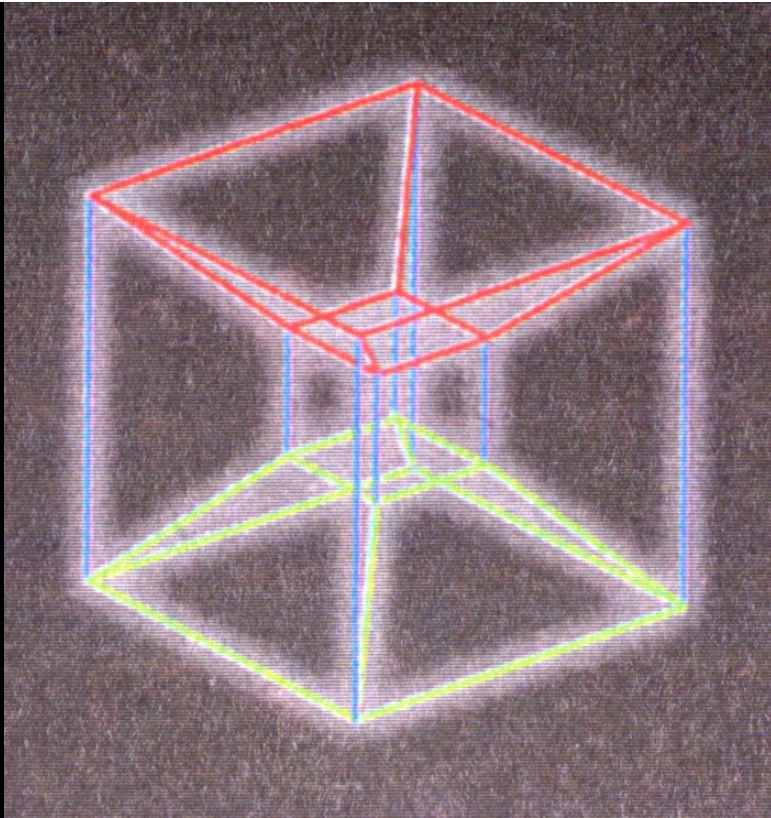
Van Doesburg



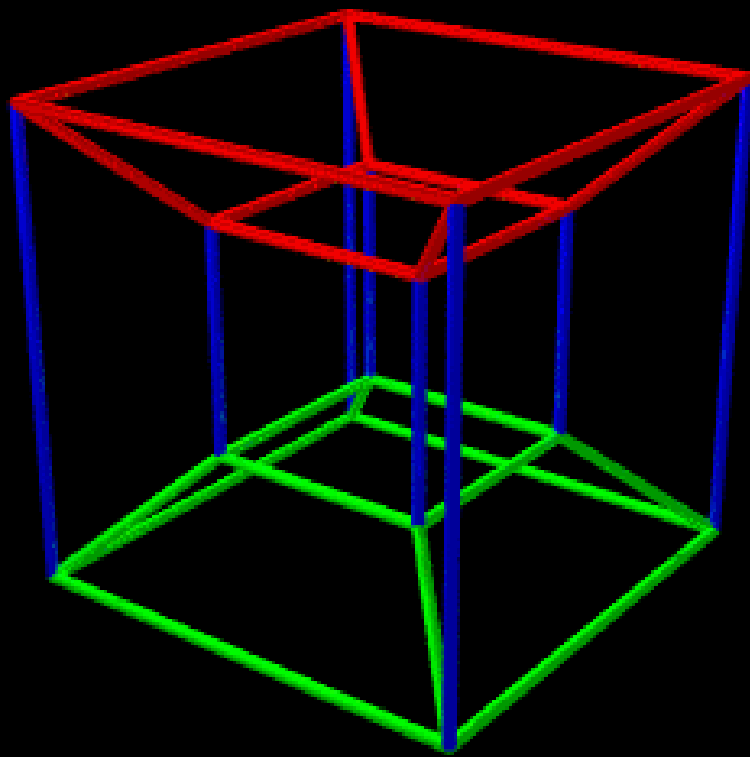
Dalì

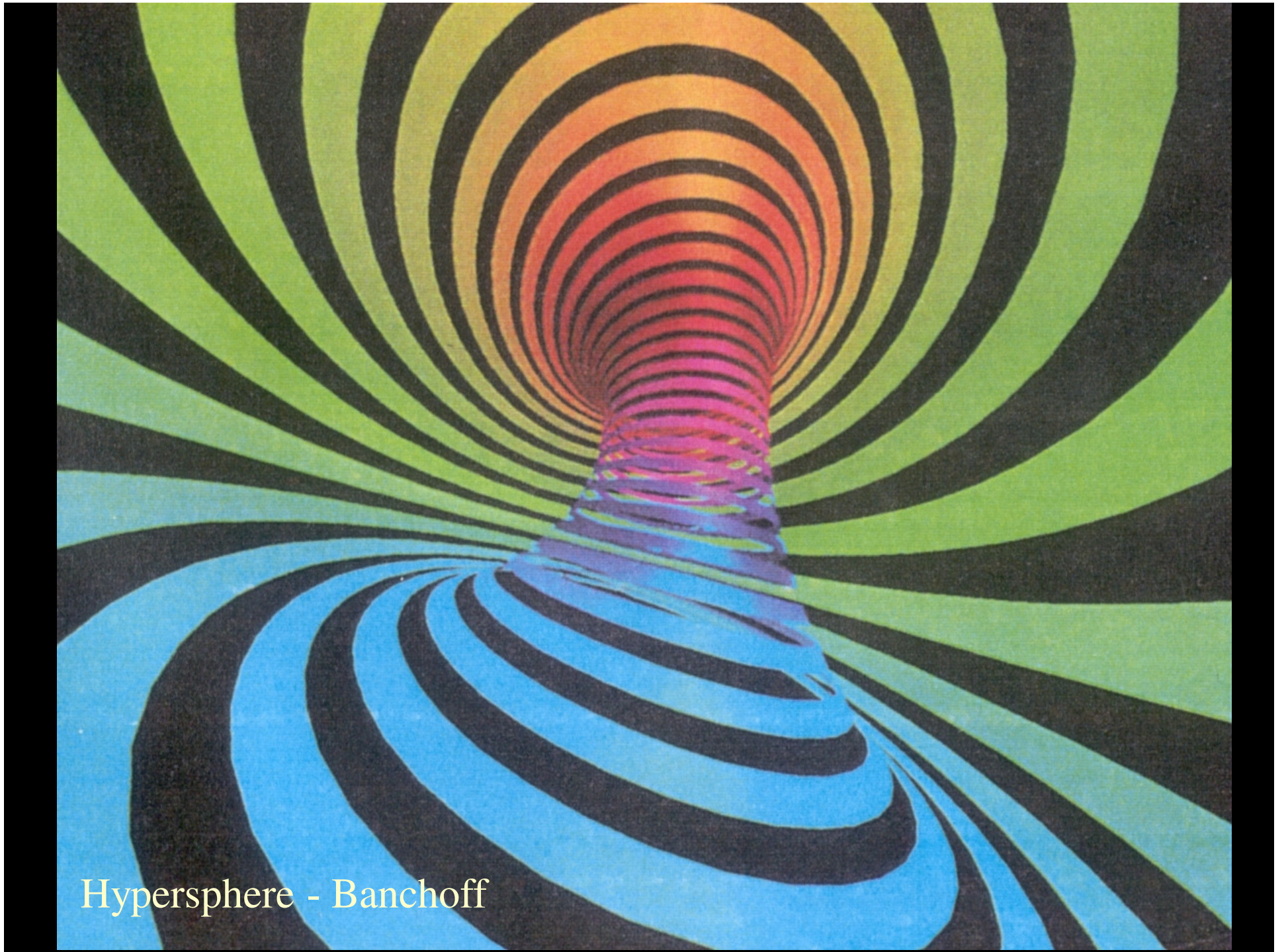


Michael Noll

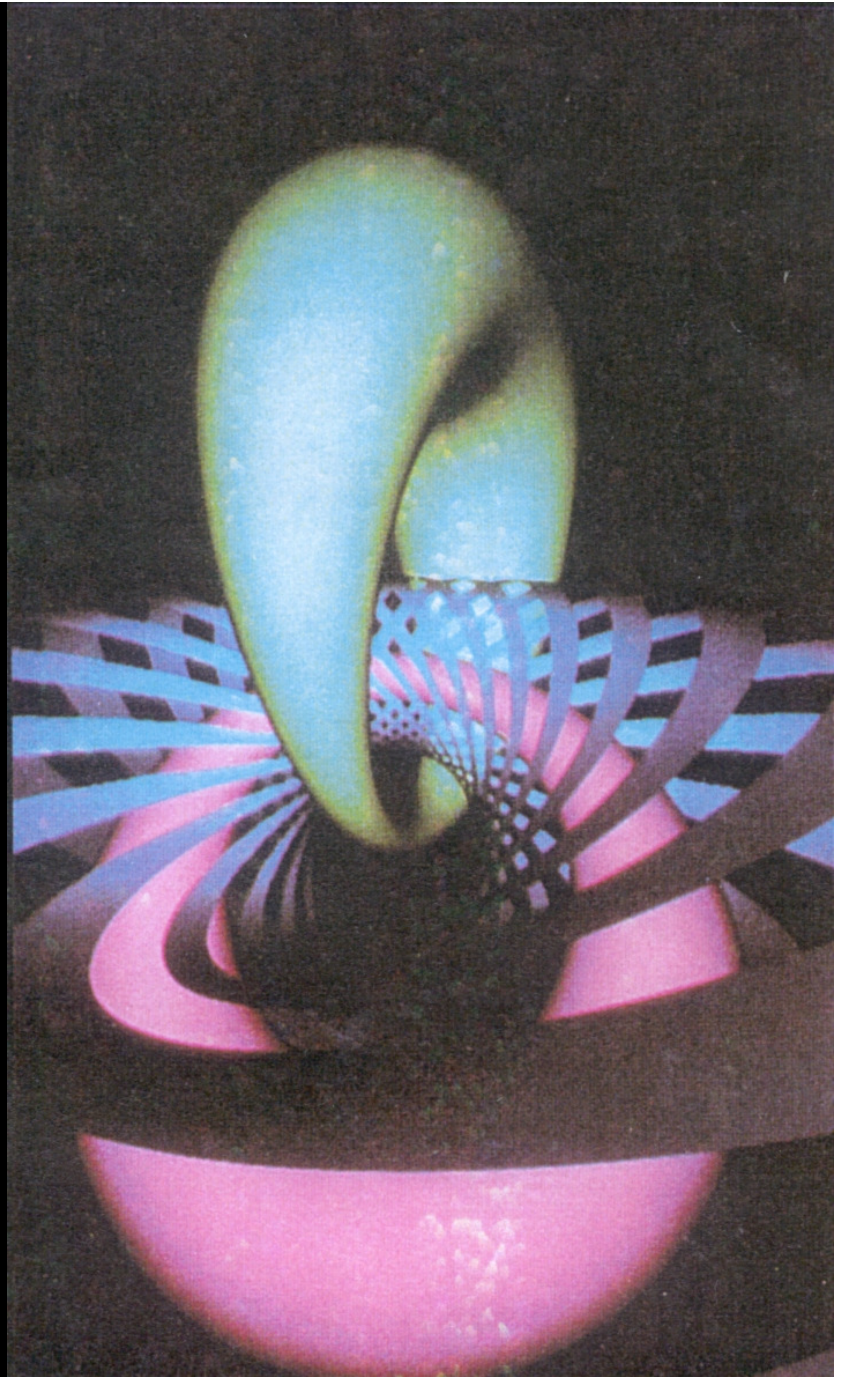
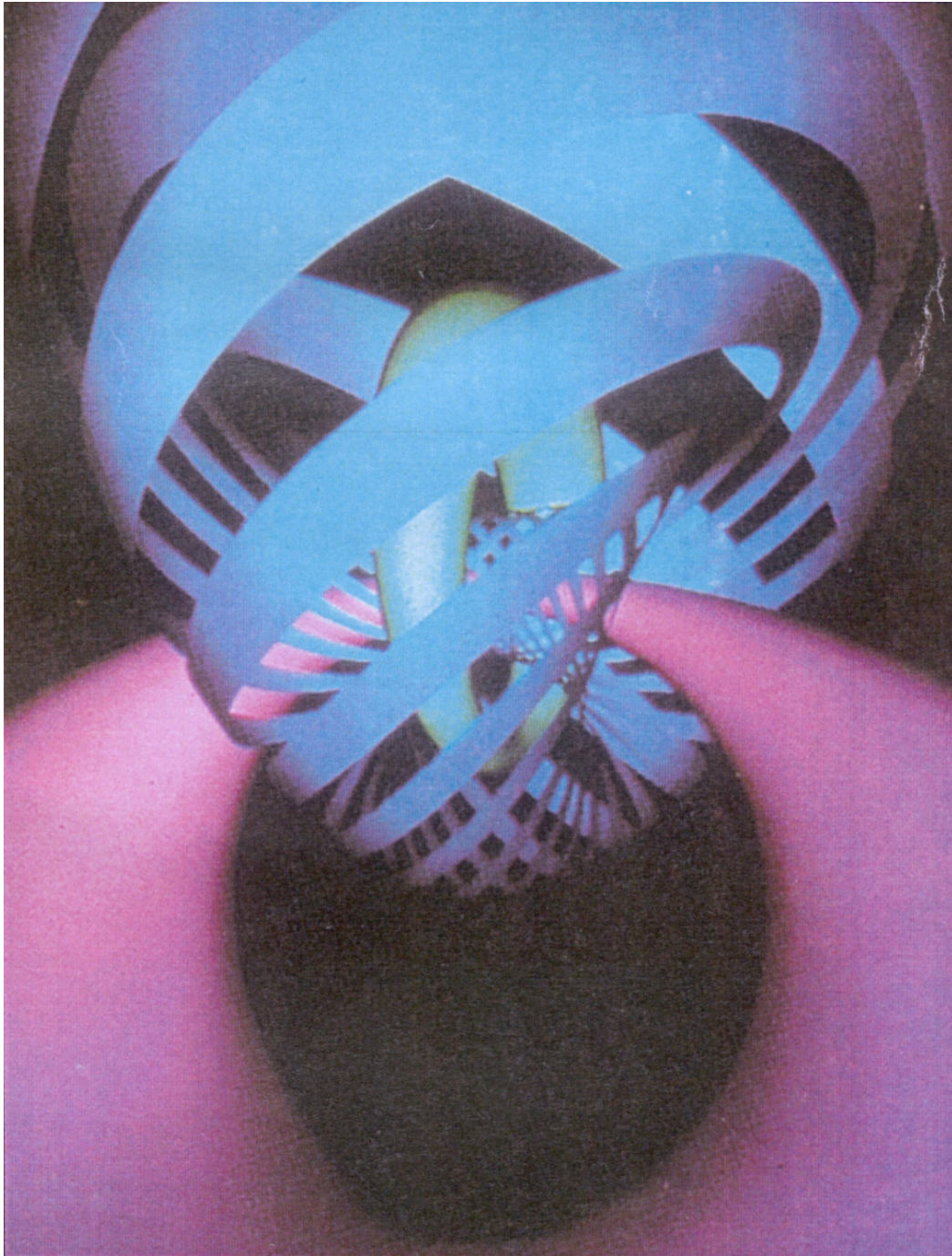


Thomas Banchoff





Hypersphere - Banchoff

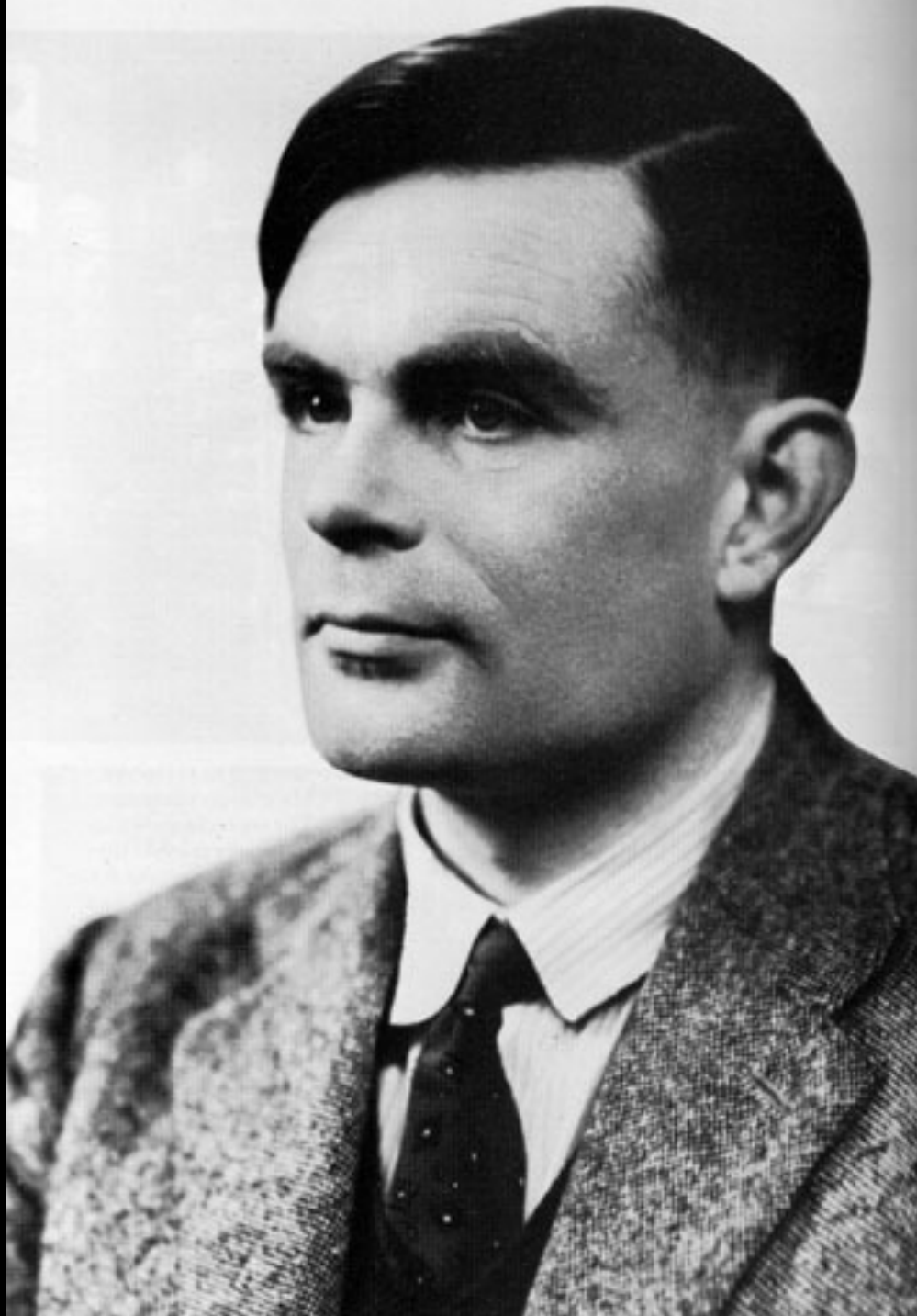




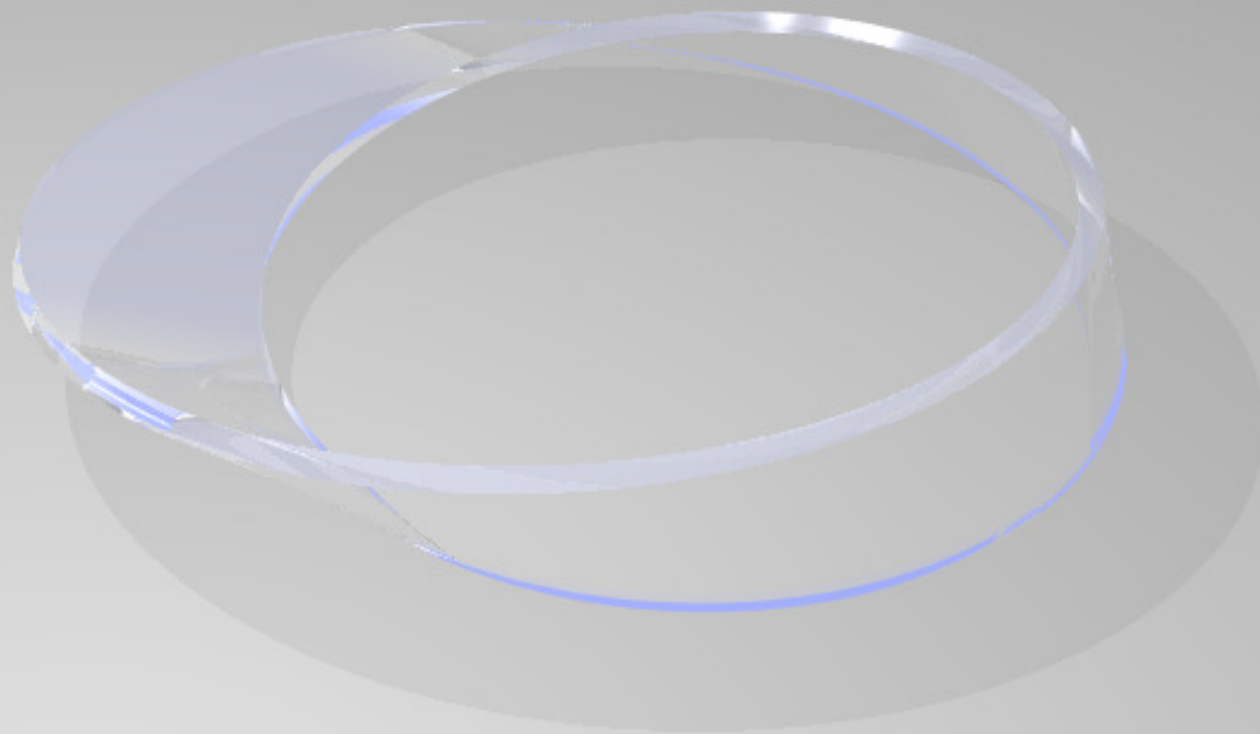
Enigma



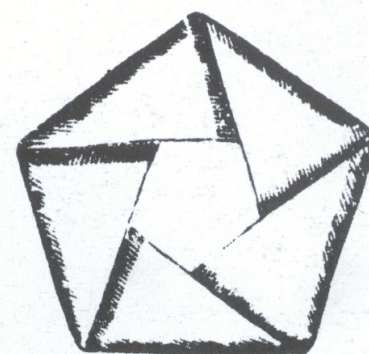
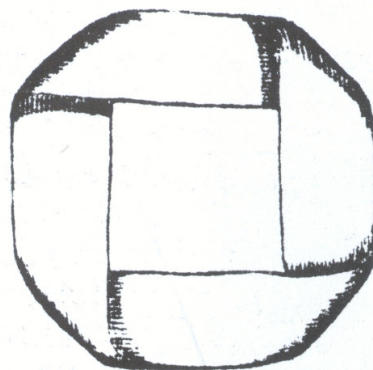
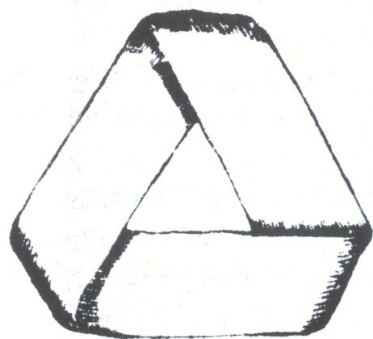
Enigma



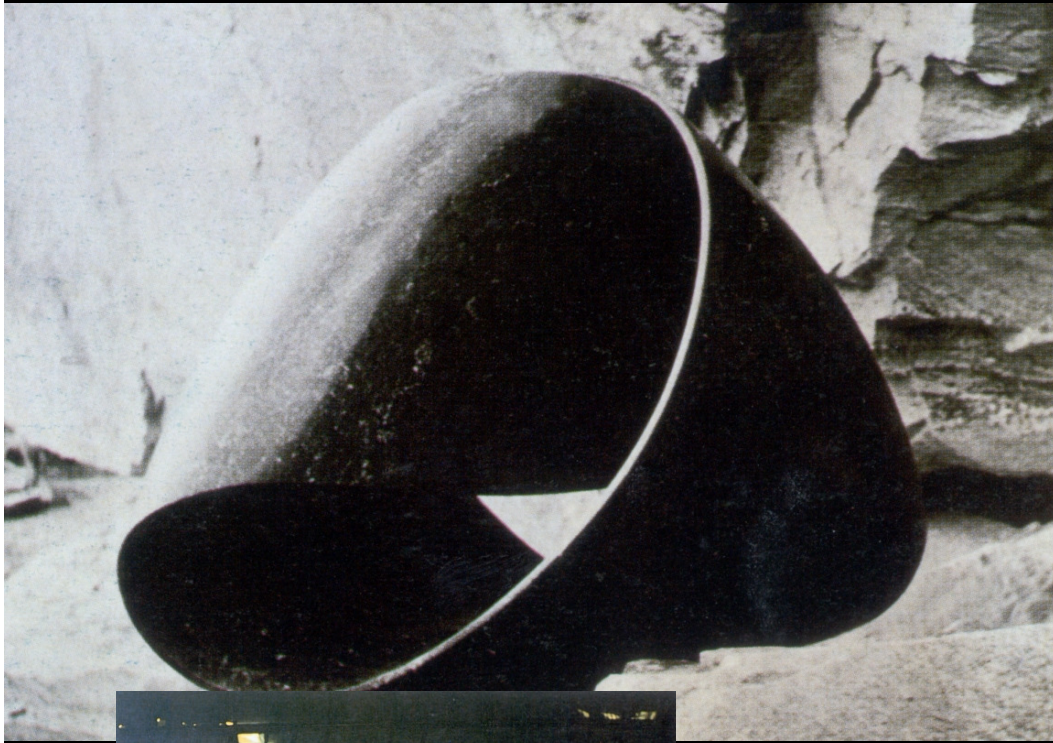
Alan Turing



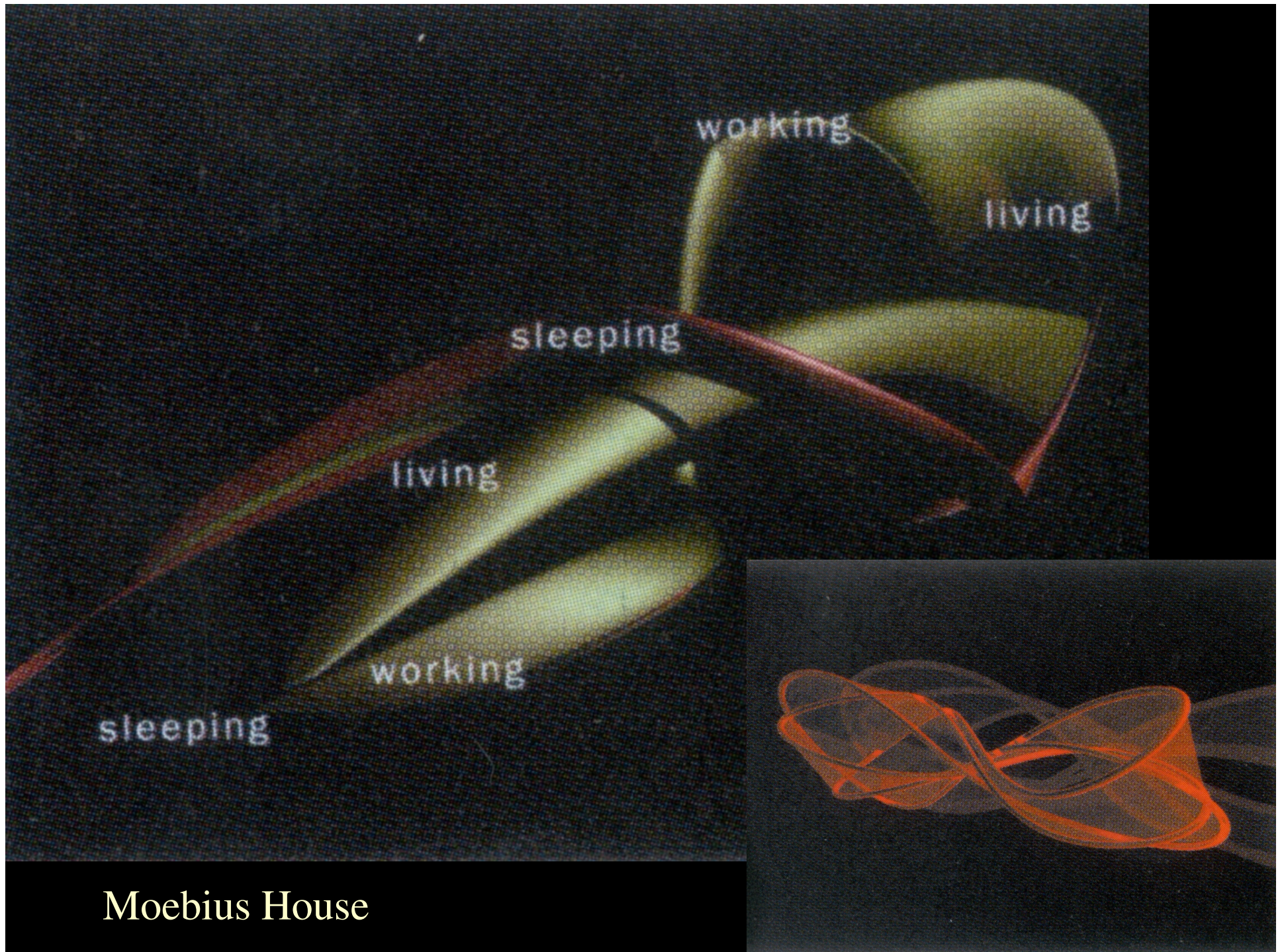
Möbius band



Drawings by Moebius



Max Bill

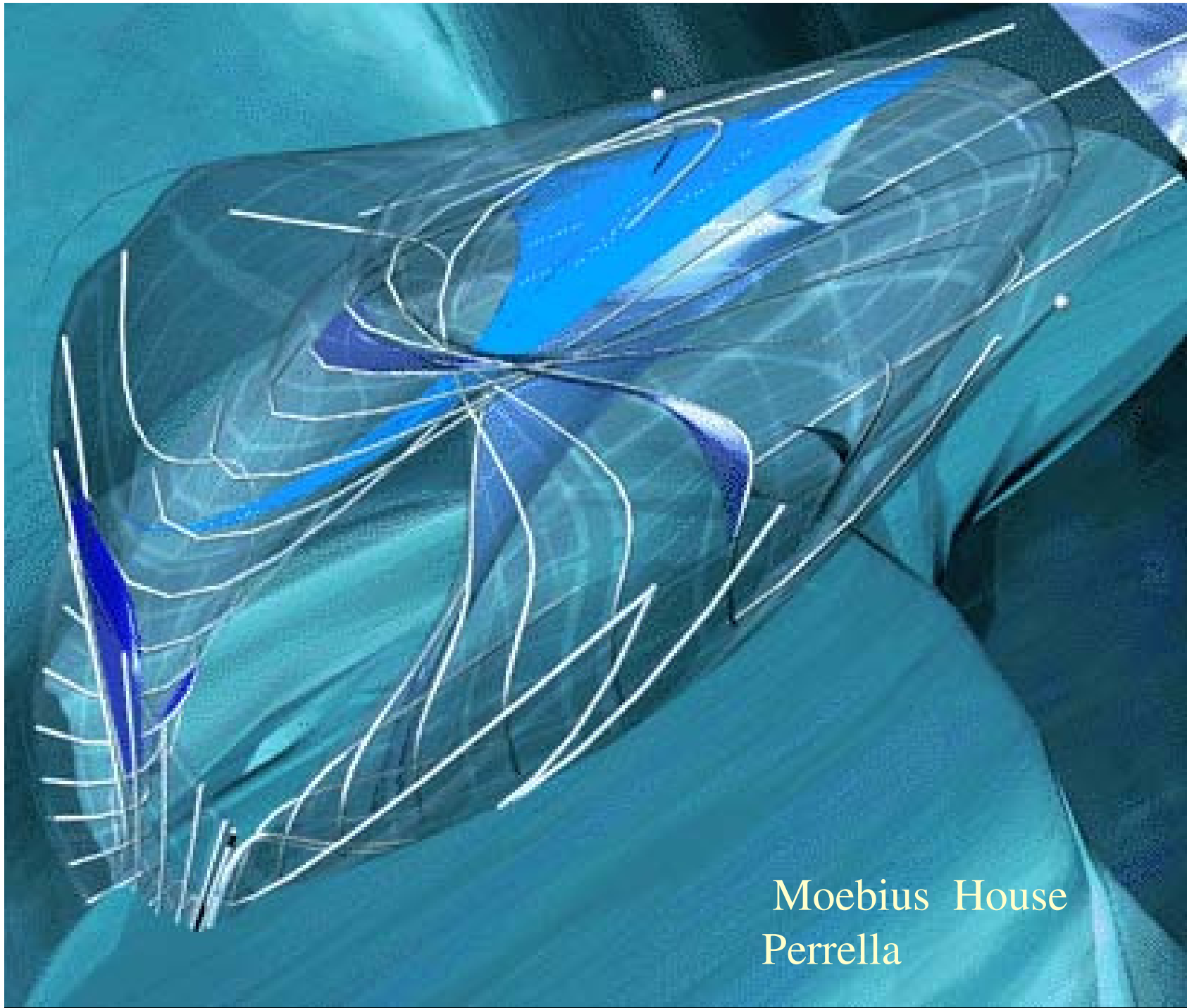


Möbius House



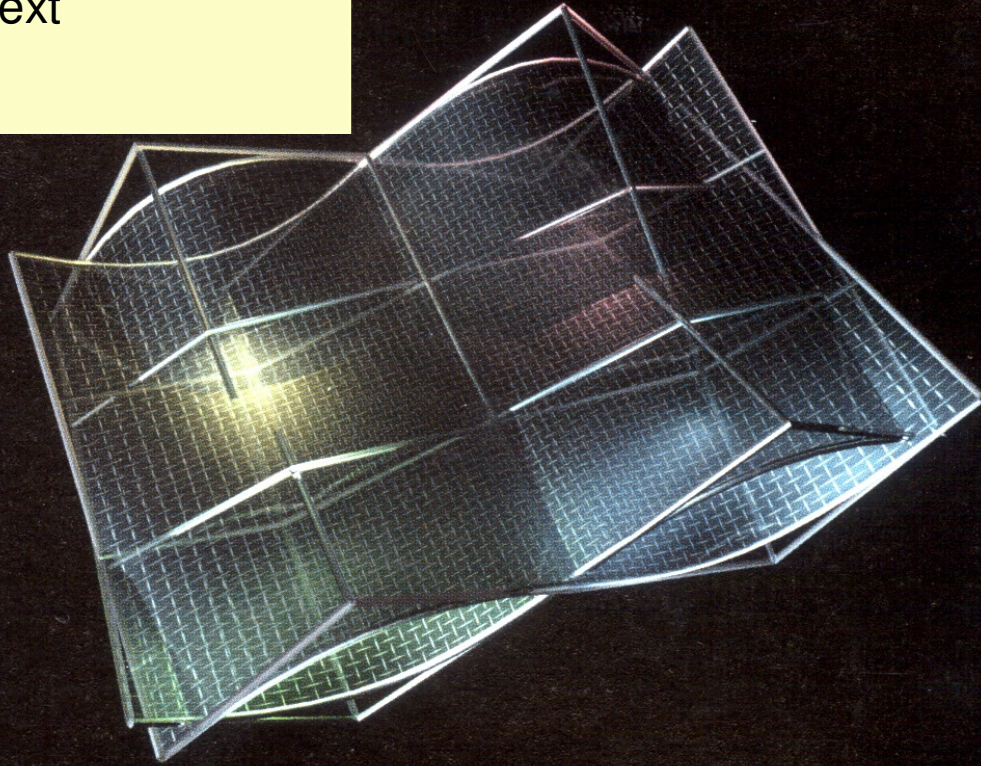
Moebius
House



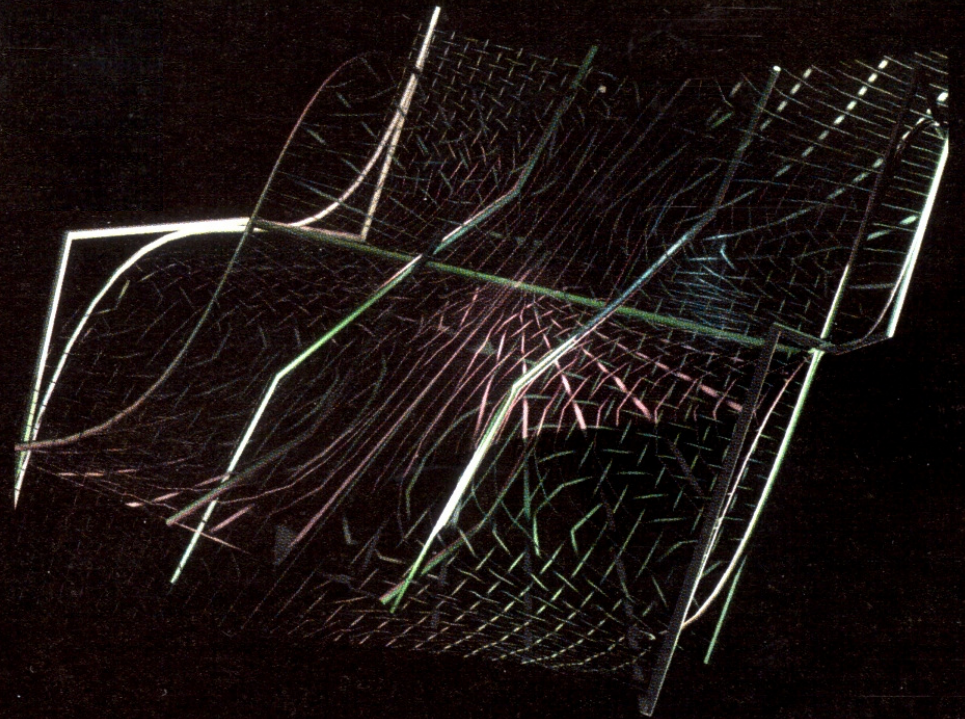


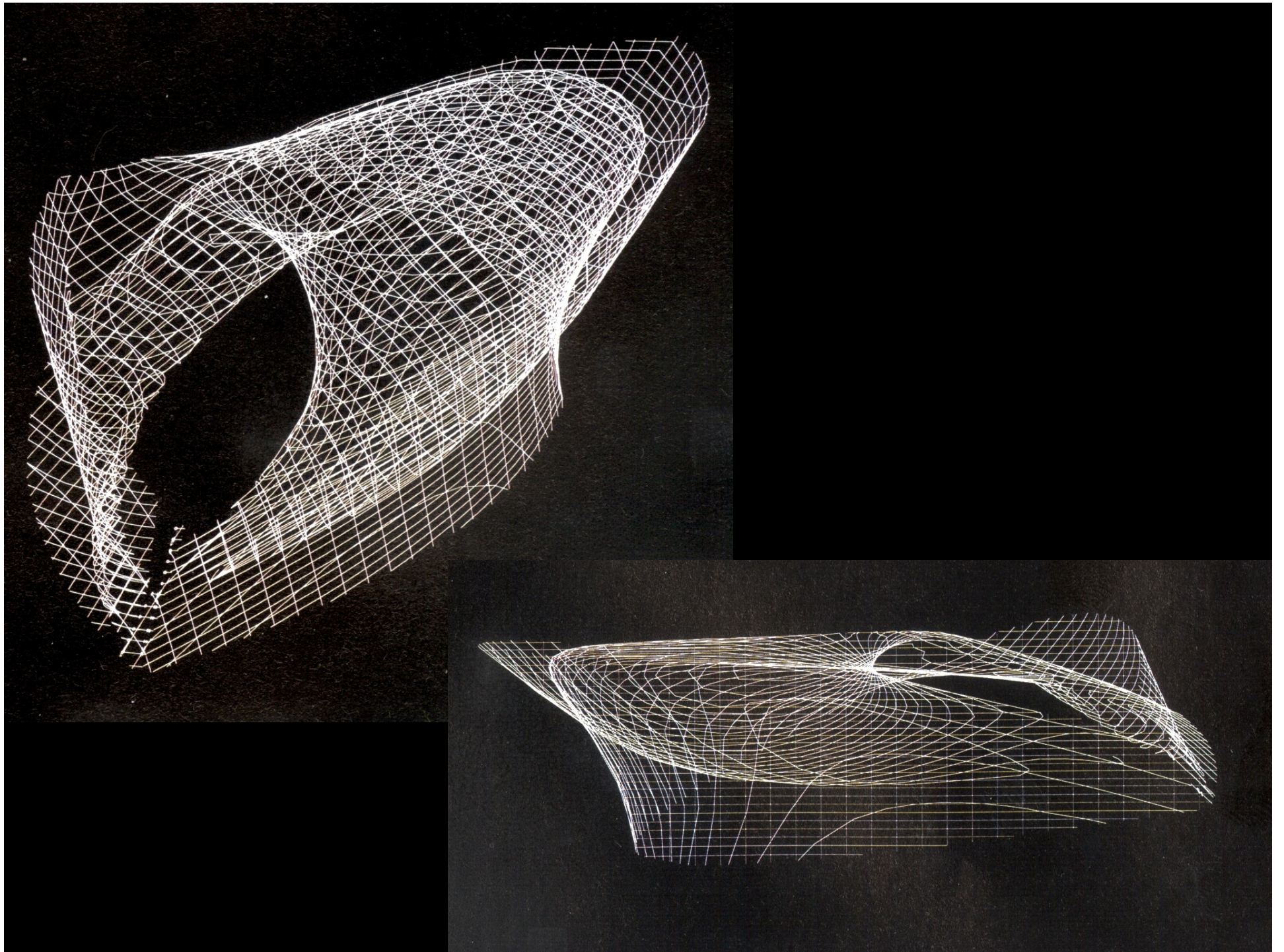
Moebius House
Perrella

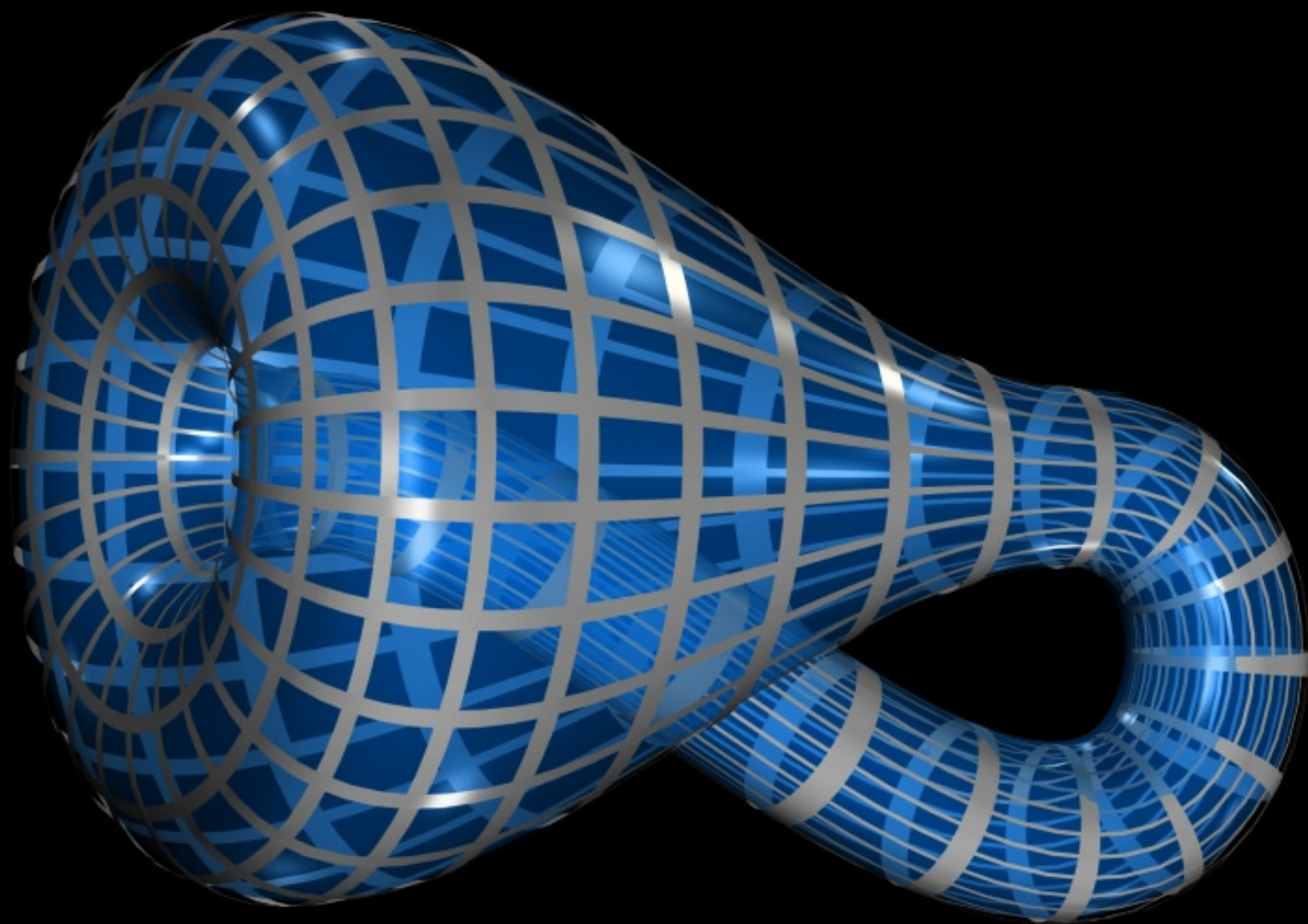
text



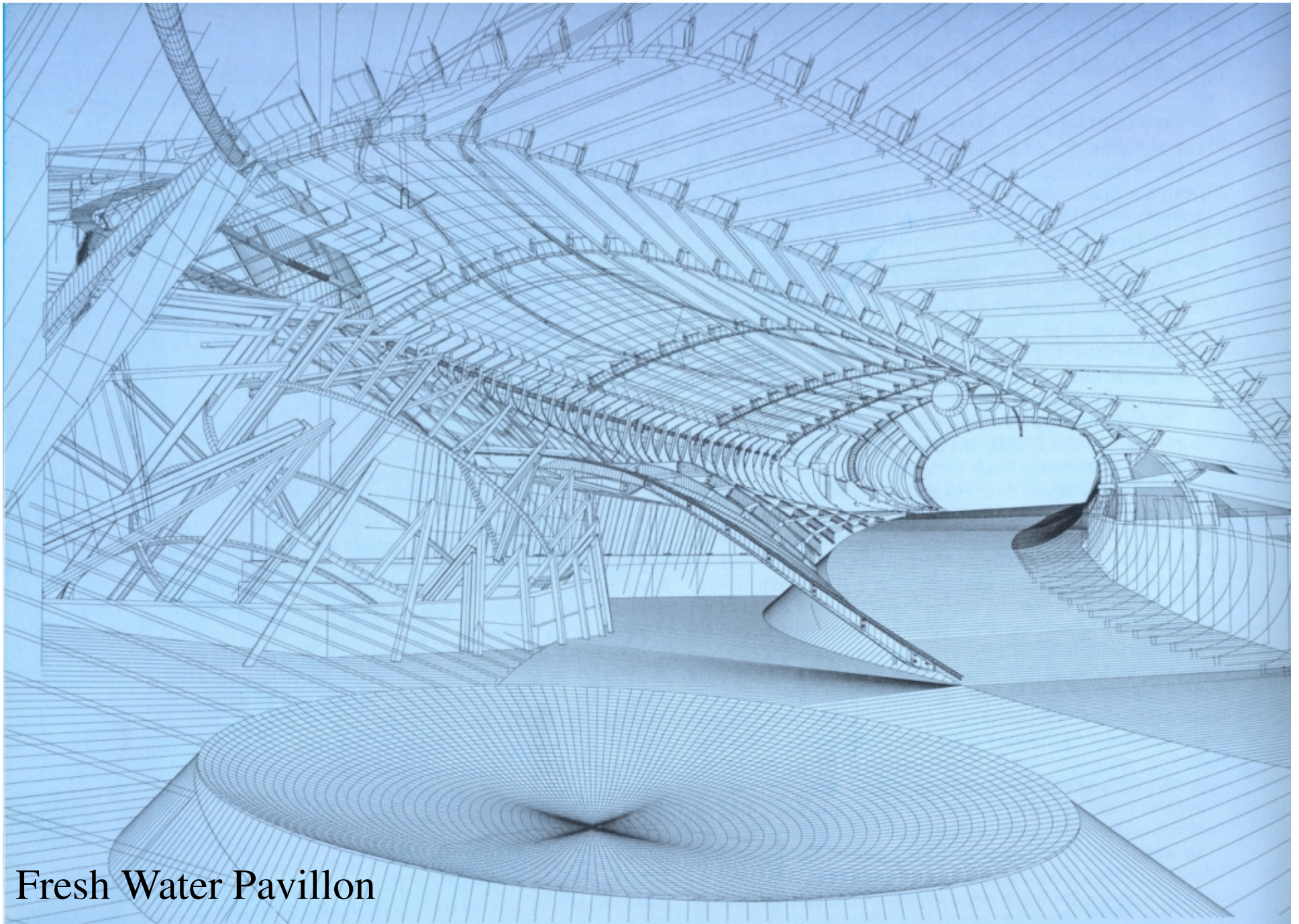
Moebius House
Perrella



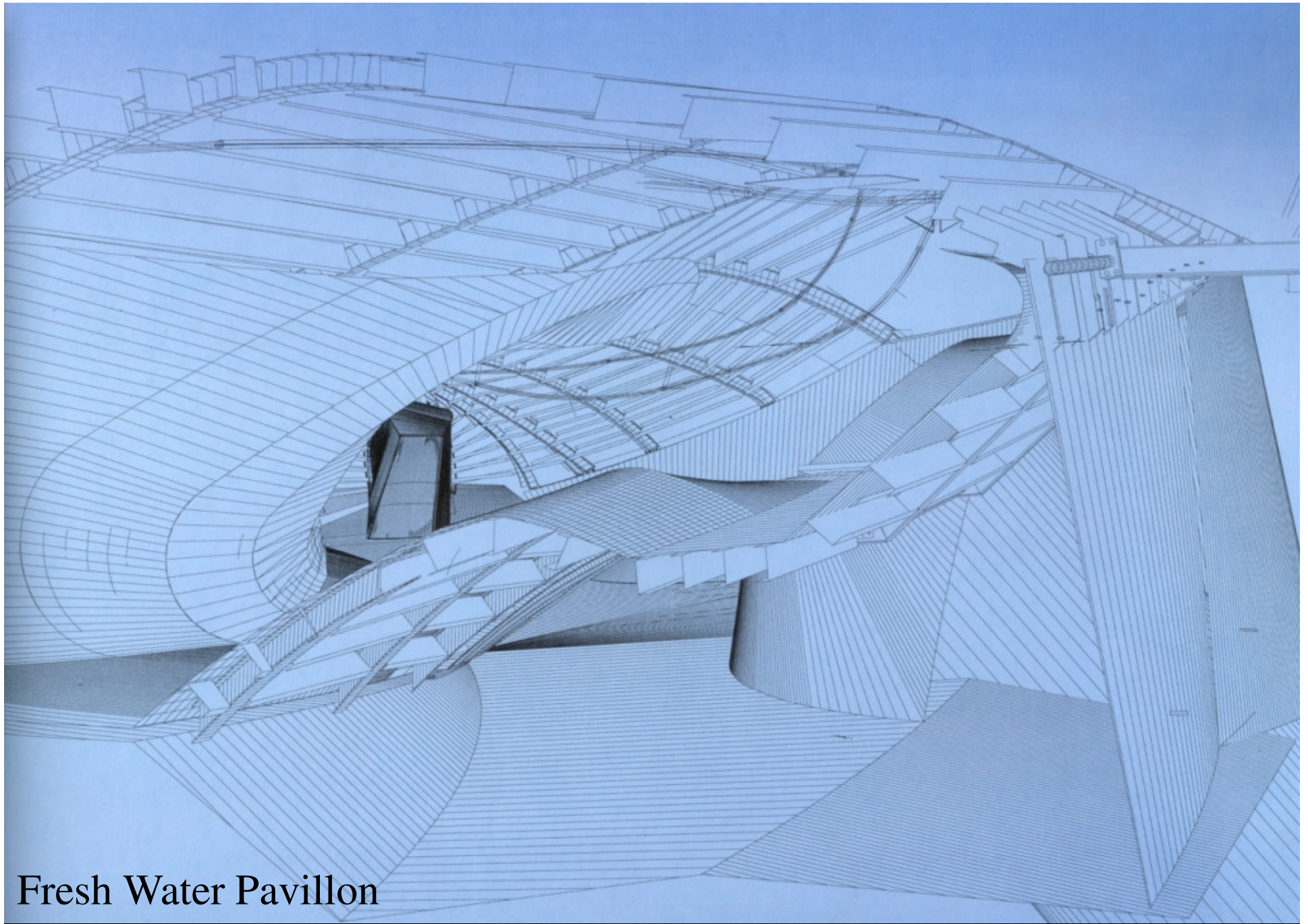




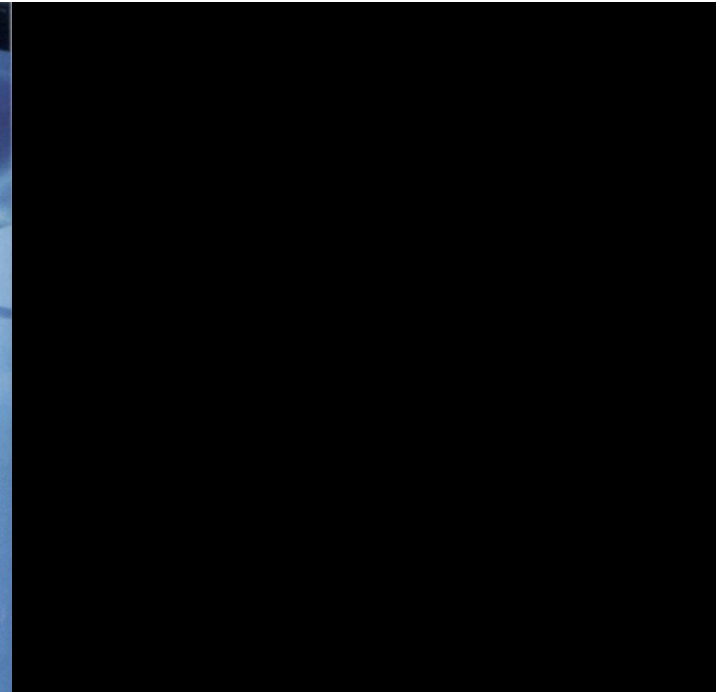
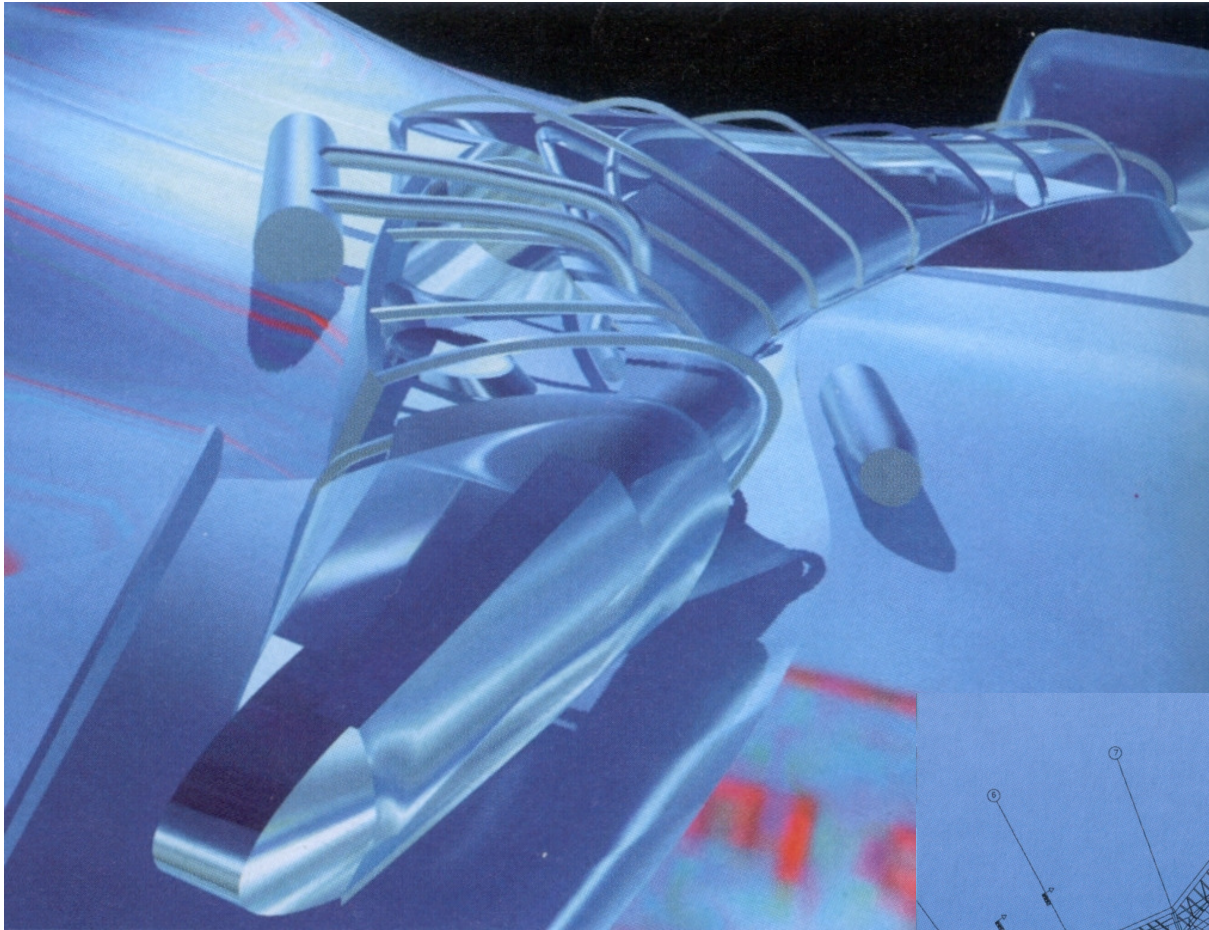
Klein Bottle



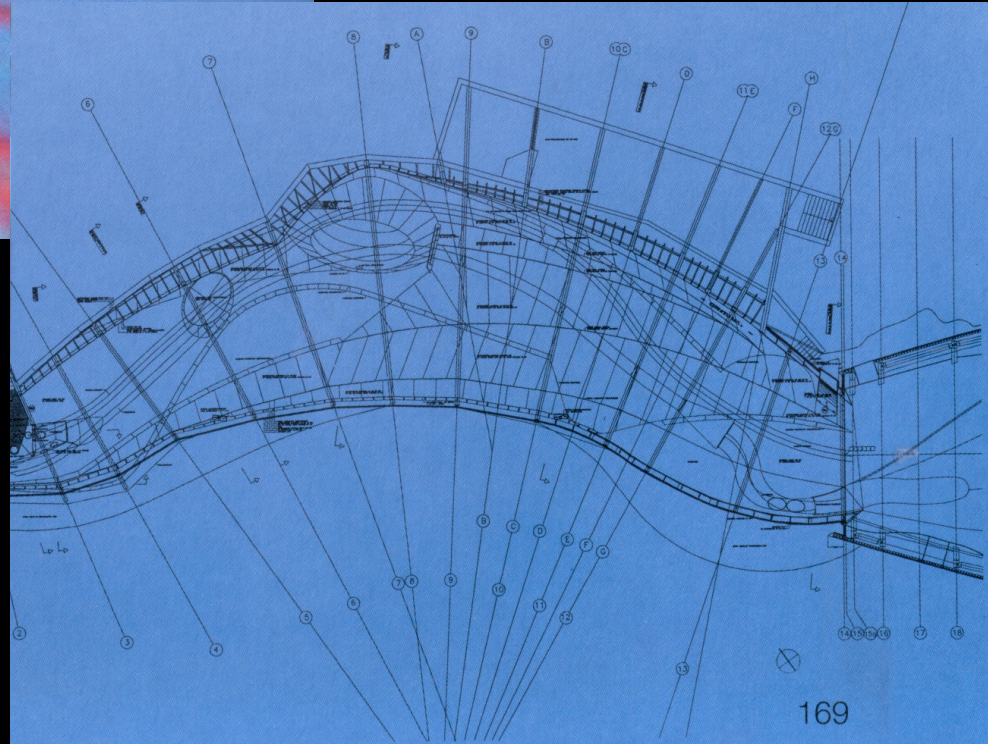
Fresh Water Pavillon

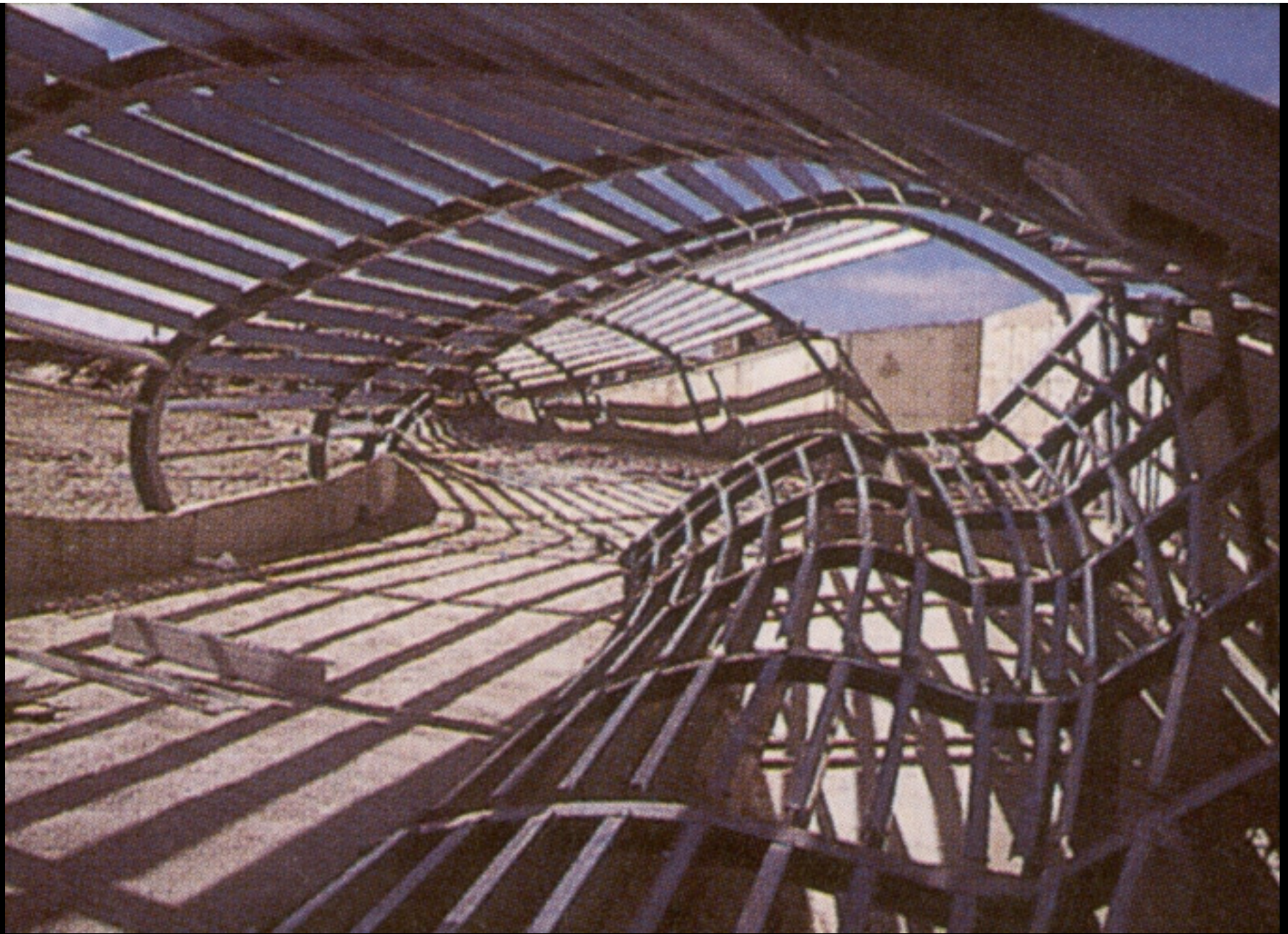


Fresh Water Pavillon

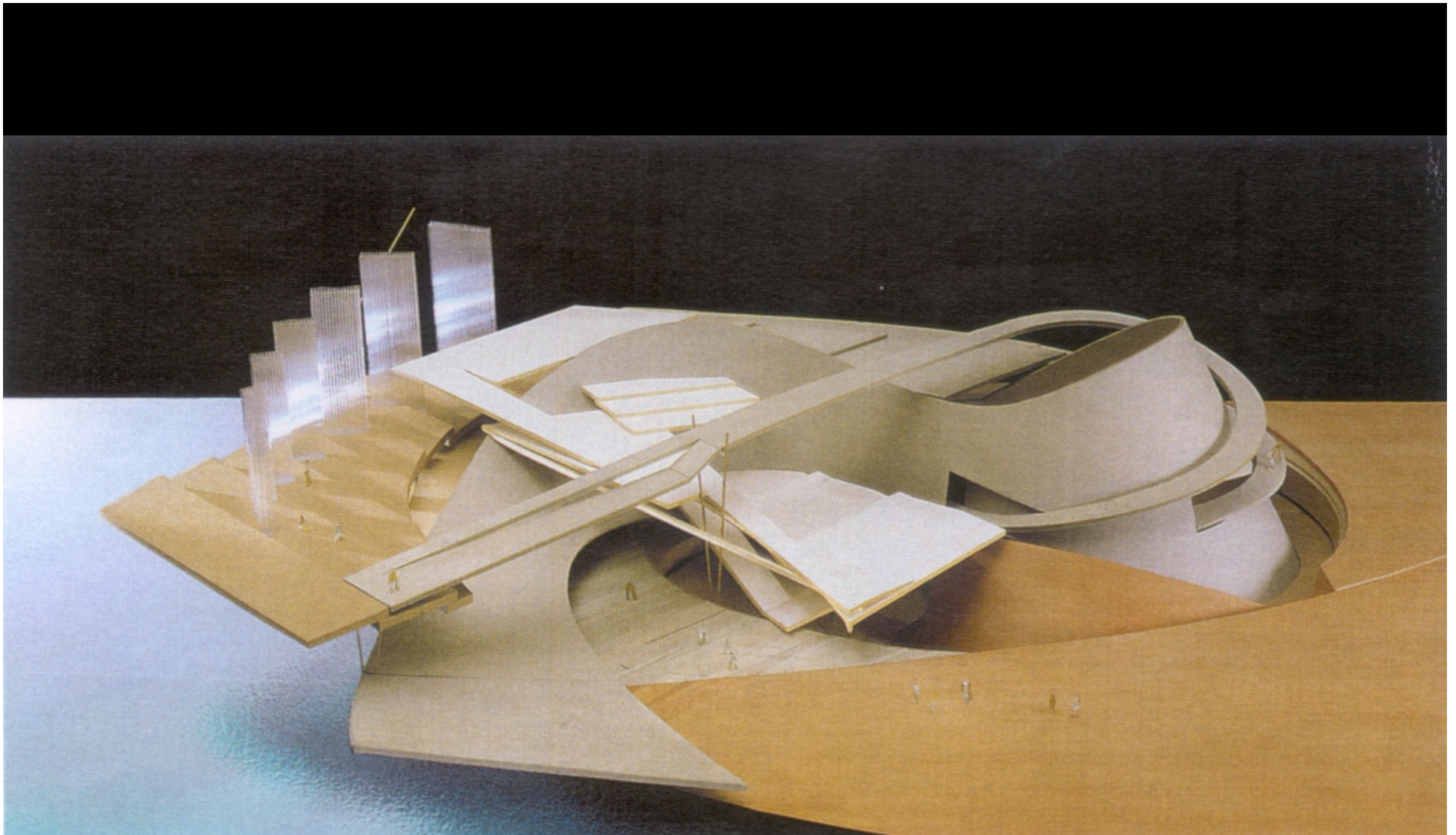


Fresh Water Pavillon

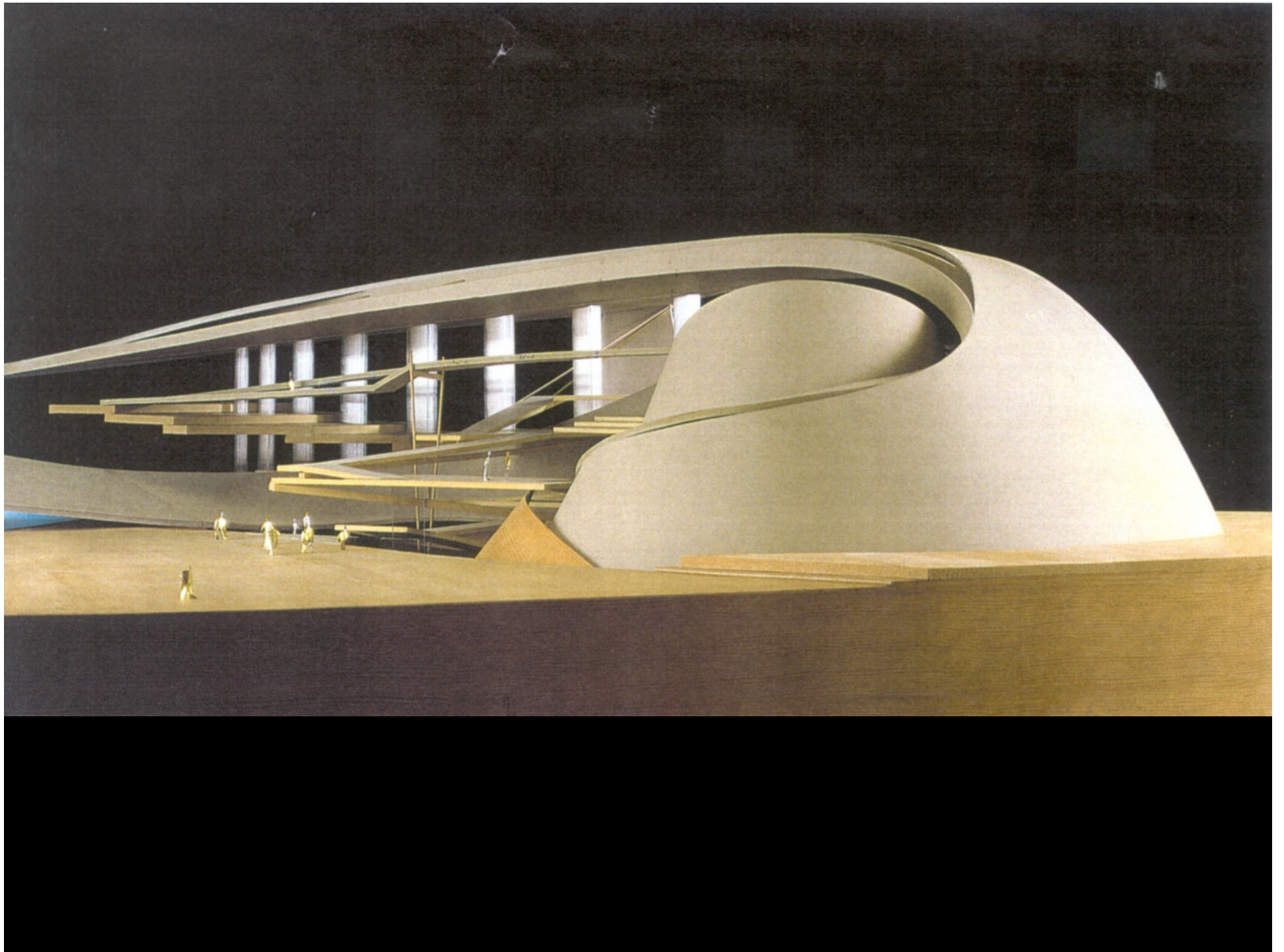


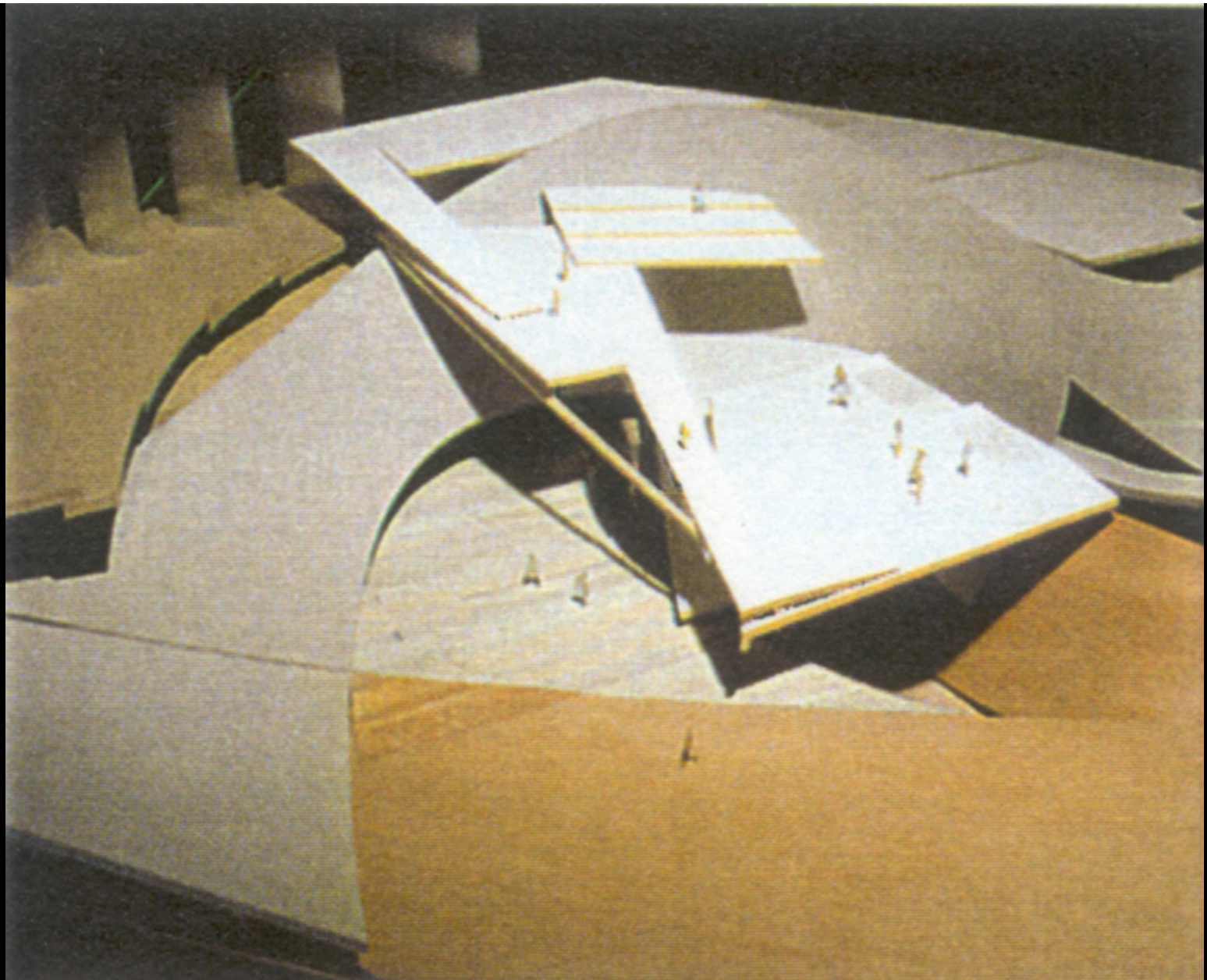


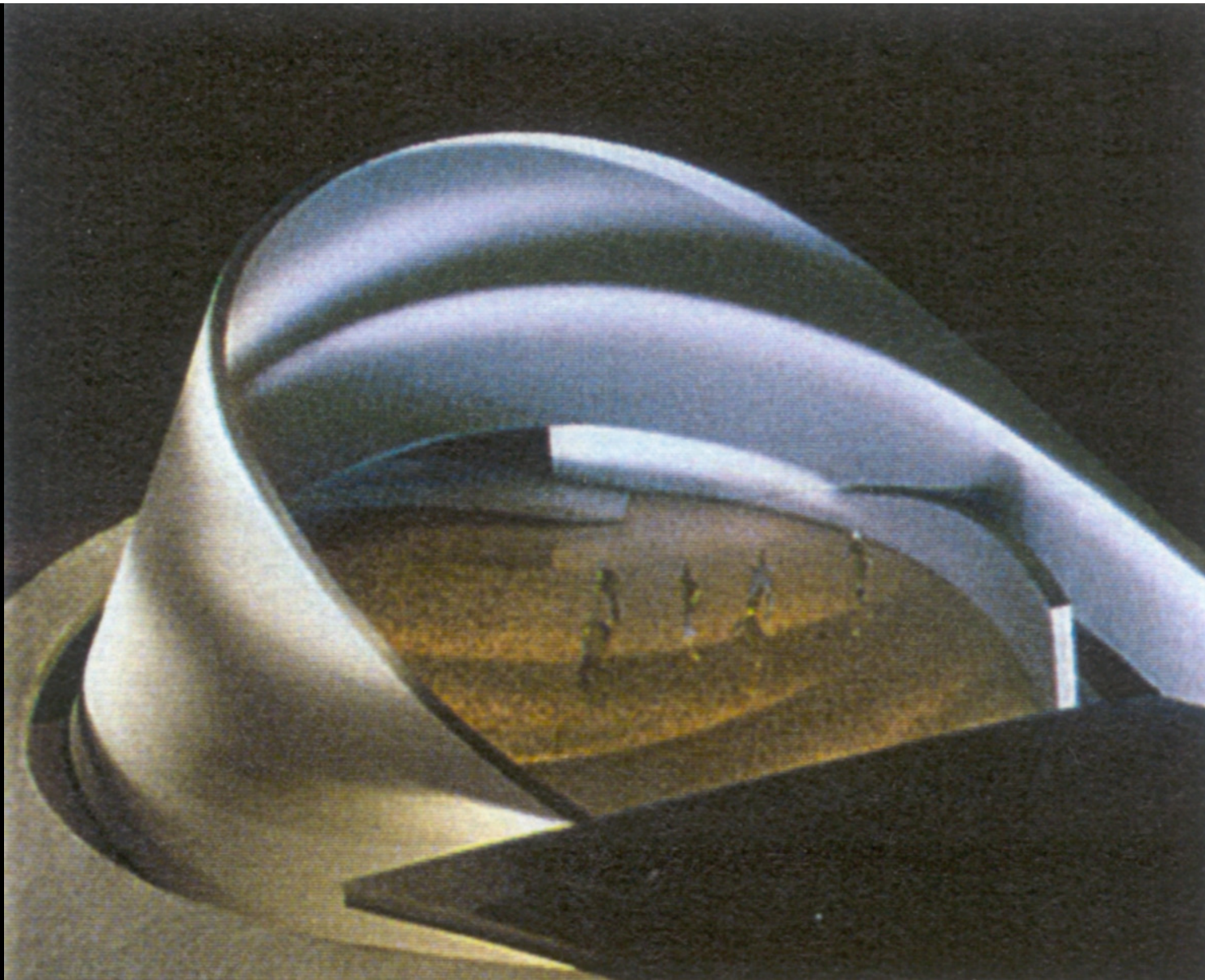
Fresh Water Pavillon



Center of Hellenistic Culture







MICHELE EMMER
Editor

Mathematics and Culture V

 Springer

The Visual Mind II



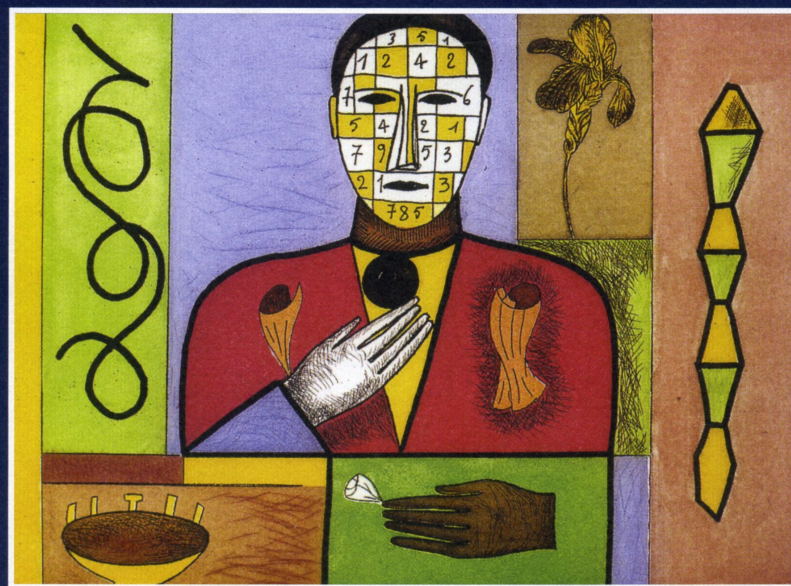
edited by Michele Emmer



MICHELE EMMER

VISIBILI ARMONIE

Arte Cinema Teatro e Matematica



Bollati Boringhieri



Bollati Boringhieri

Edwin A. Abbott
Flatlandia

Introduzione e postfazione di Michele Emmer

Testo originale a fronte
Con il DVD del film «Flatlandia» di Michele Emmer
Musiche originali di Ennio Morricone



MICHELE EMMER
BOLLE DI SAPONE

Tra arte e matematica



Bollati Boringhieri

SPACE AND FORM

THE COURSE IS CENTERED ON THE CULTURAL ASPECTS OF MATHEMATICS IN CONNECTIONS WITH THE ARTS, ARCHITECTURE, LITERATURE, THEATRE AND CINEMA STARTING FROM THE SECOND HALF OF THE NINETEENTH CENTURY

STUDENTS OF THE LAST YEAR OF
MATHEMATICS AND OF DESIGN,
USUALLY 30 AND 40 STUDENTS,
STARTING FROM THE ACADEMIC
YEAR 2005

All details:

<http://www.mat.uniroma1.it/people/emmer>

than click on students and
“Spazio e forma”

Matematica e cultura 2011

Venezia, 25-27 marzo, 2011

<http://www.mat.uniroma1.it/venezia2010>

Michele Emmer

- emmer@mat.uniroma1.it
- www.mat.uniroma1.it/people/emmer