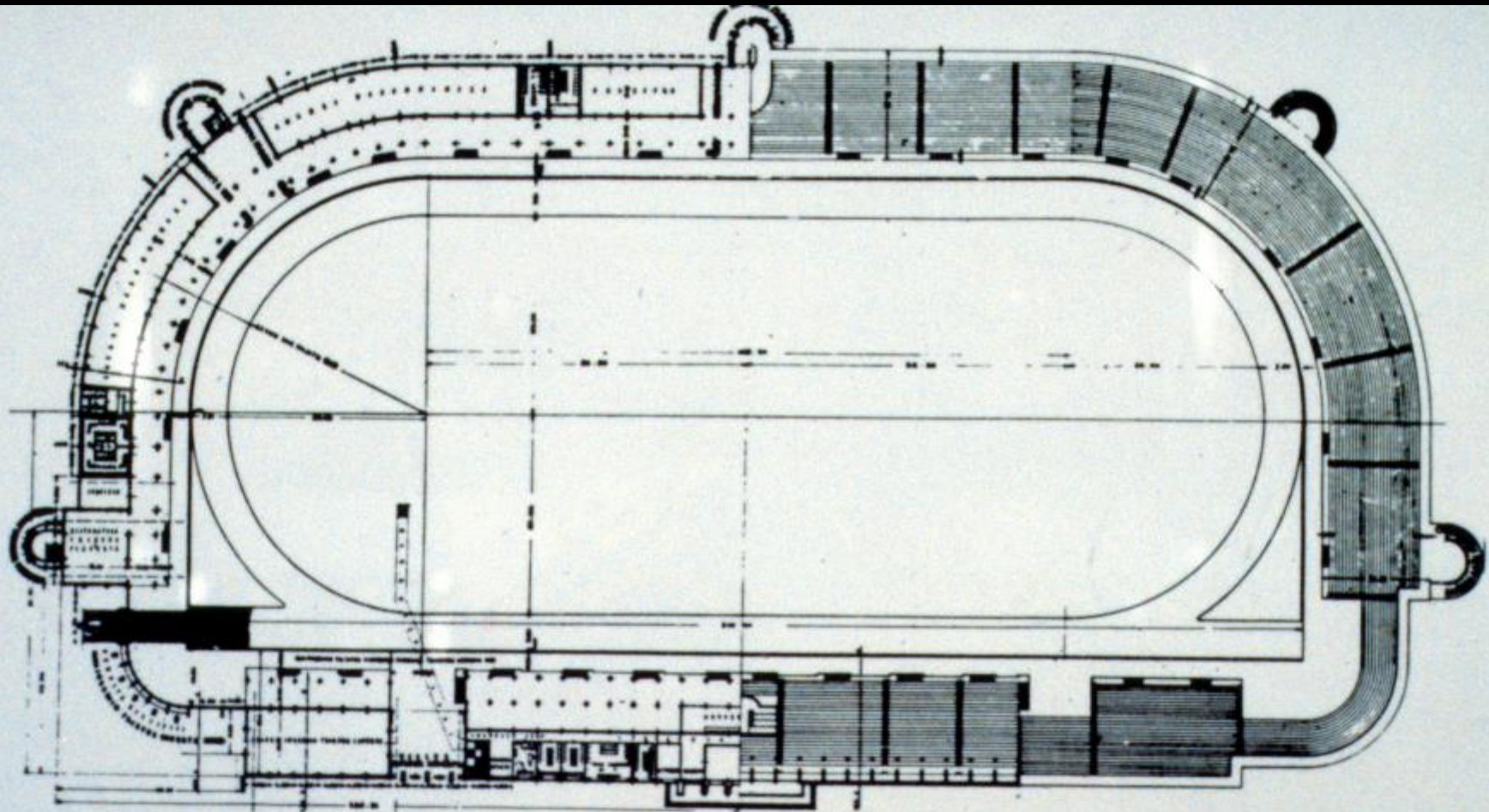


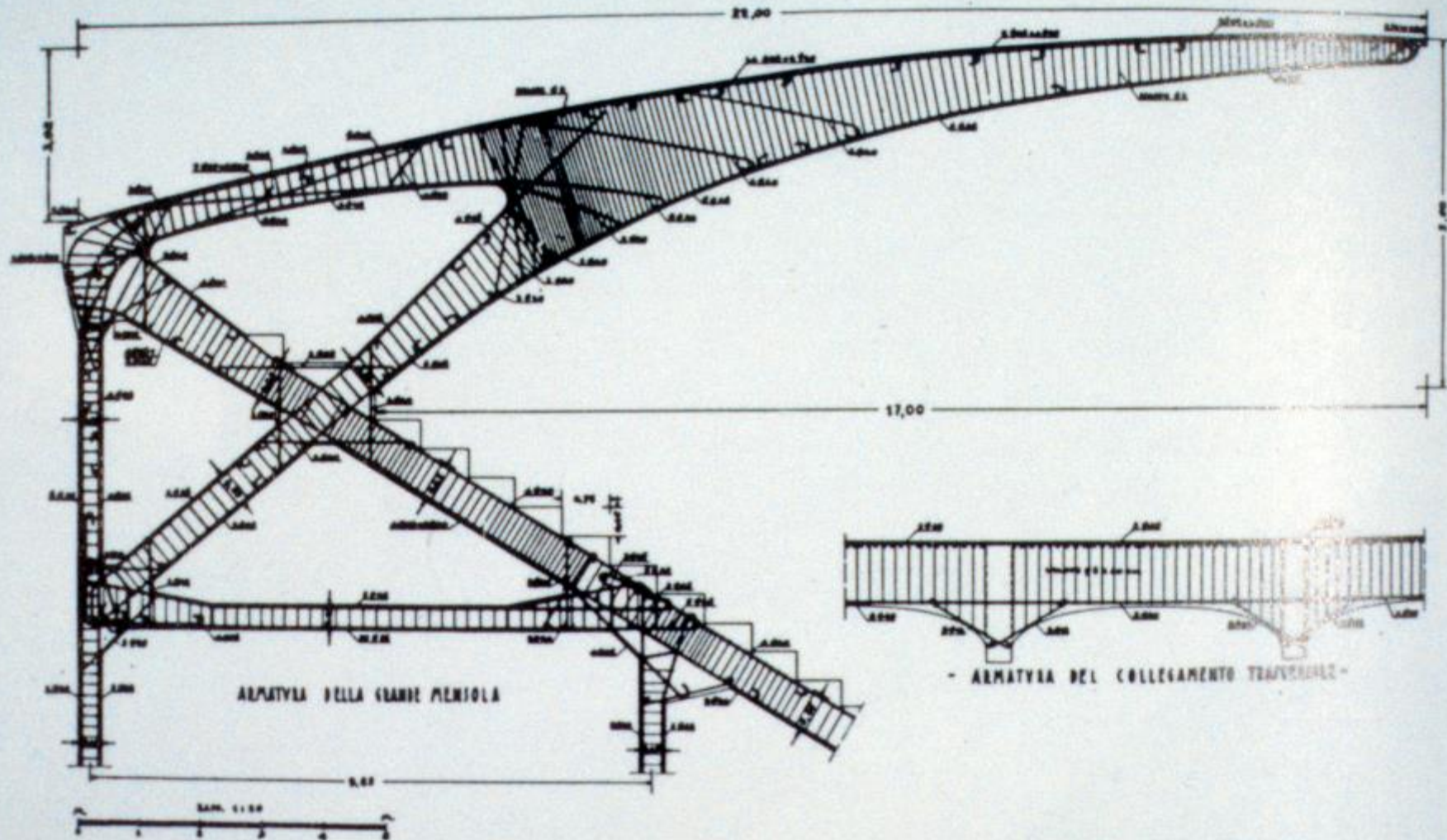
Developments in Concrete Construction

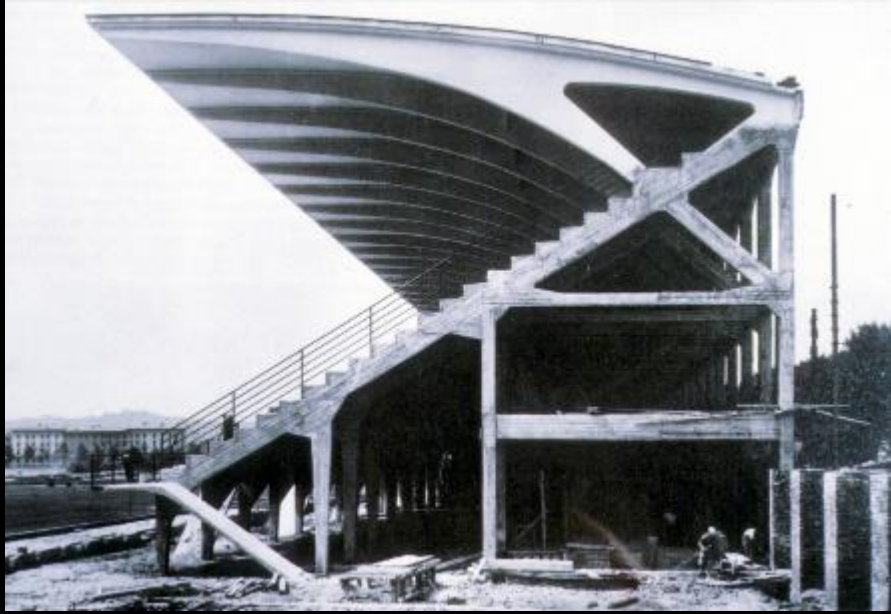
Part 2: Curves, Cantilevers and Brutalism

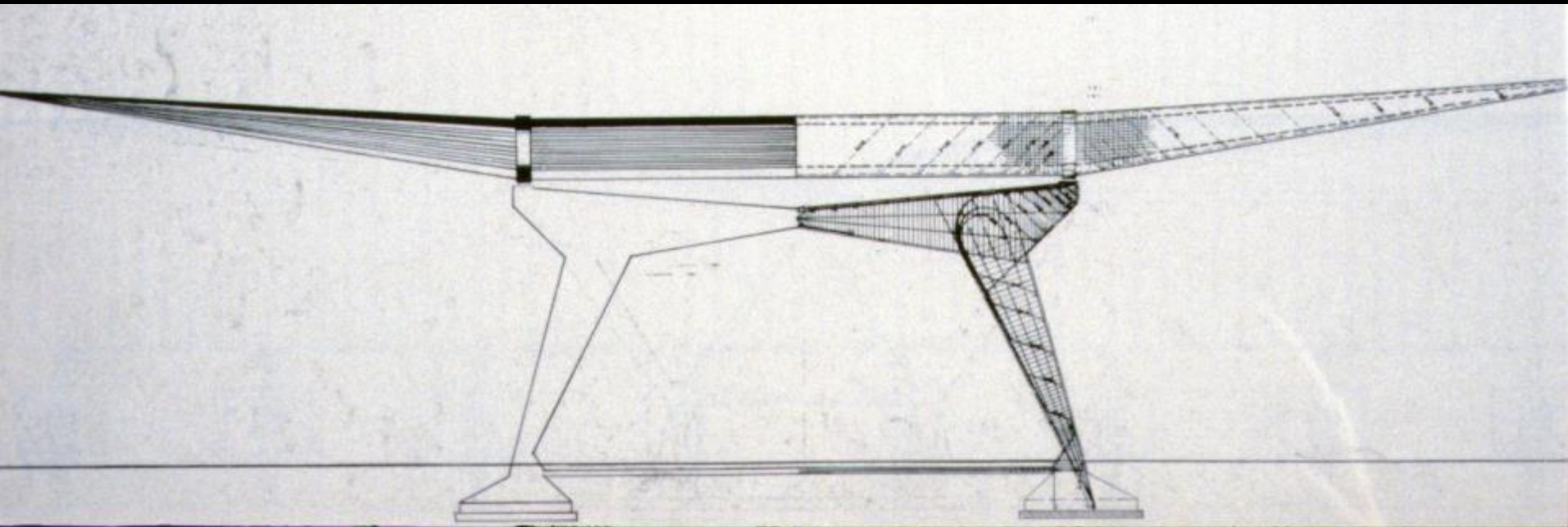
Cantilevers

Pier Luigi Nervi
Italian Engineer
1891 to 1979

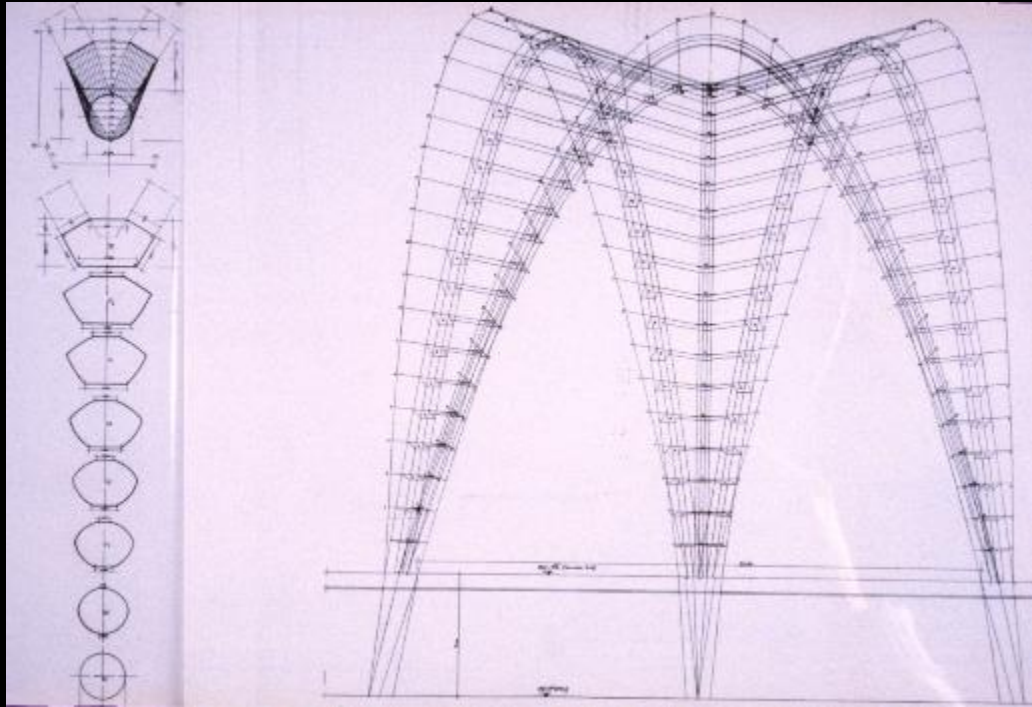
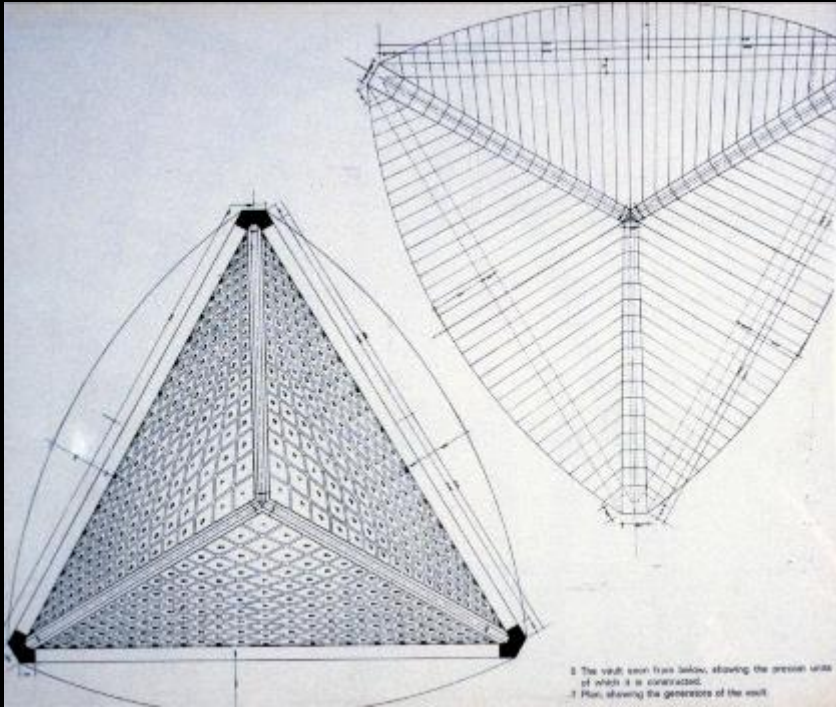


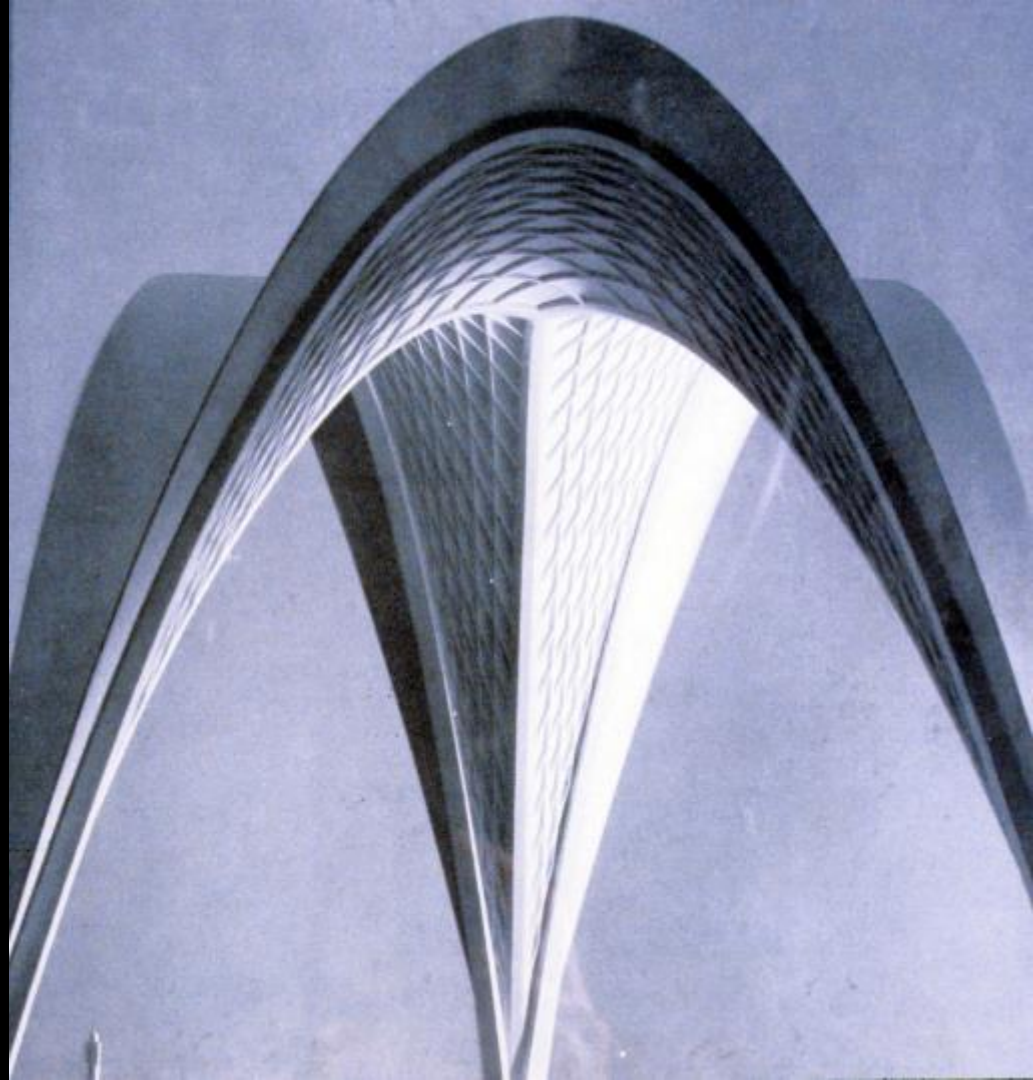










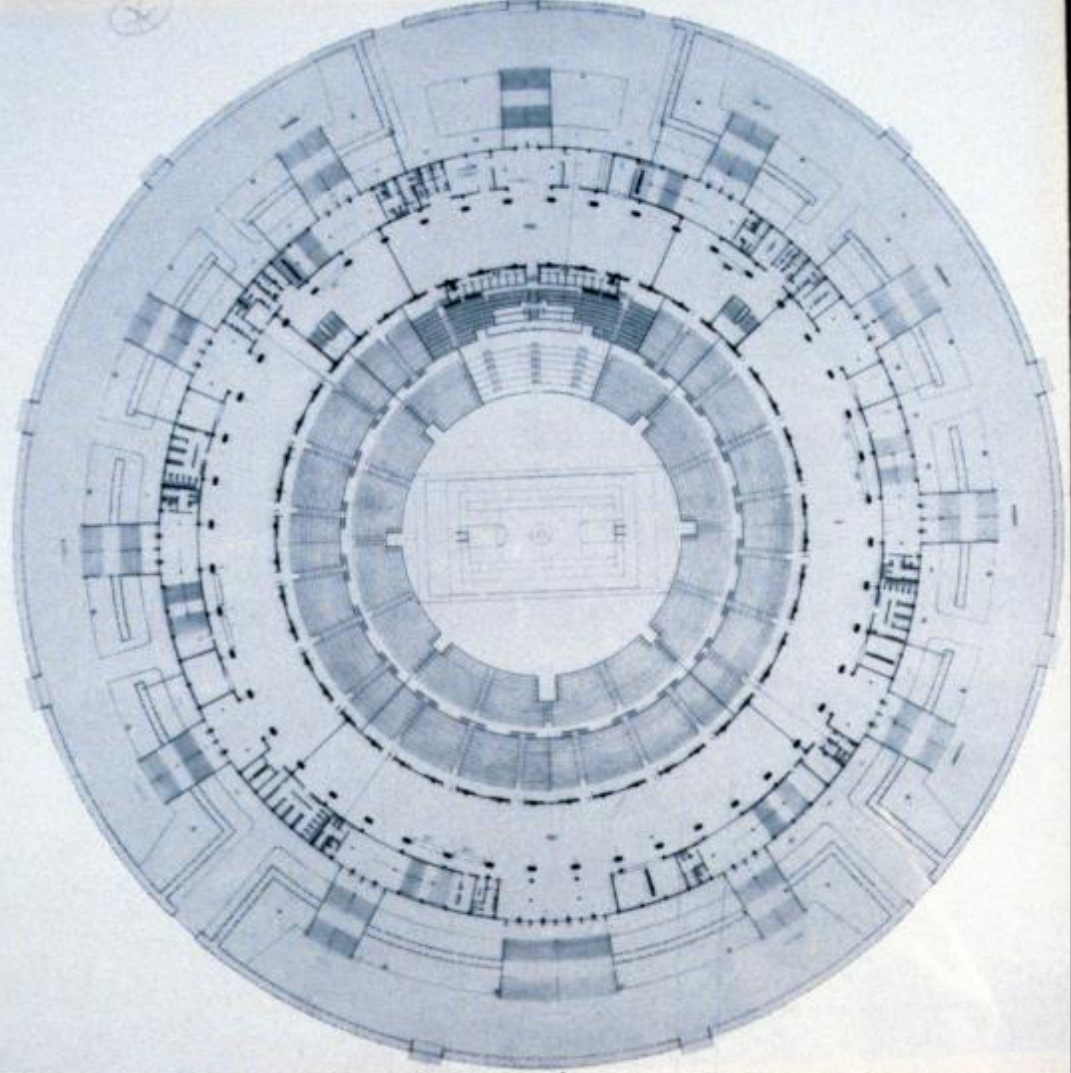


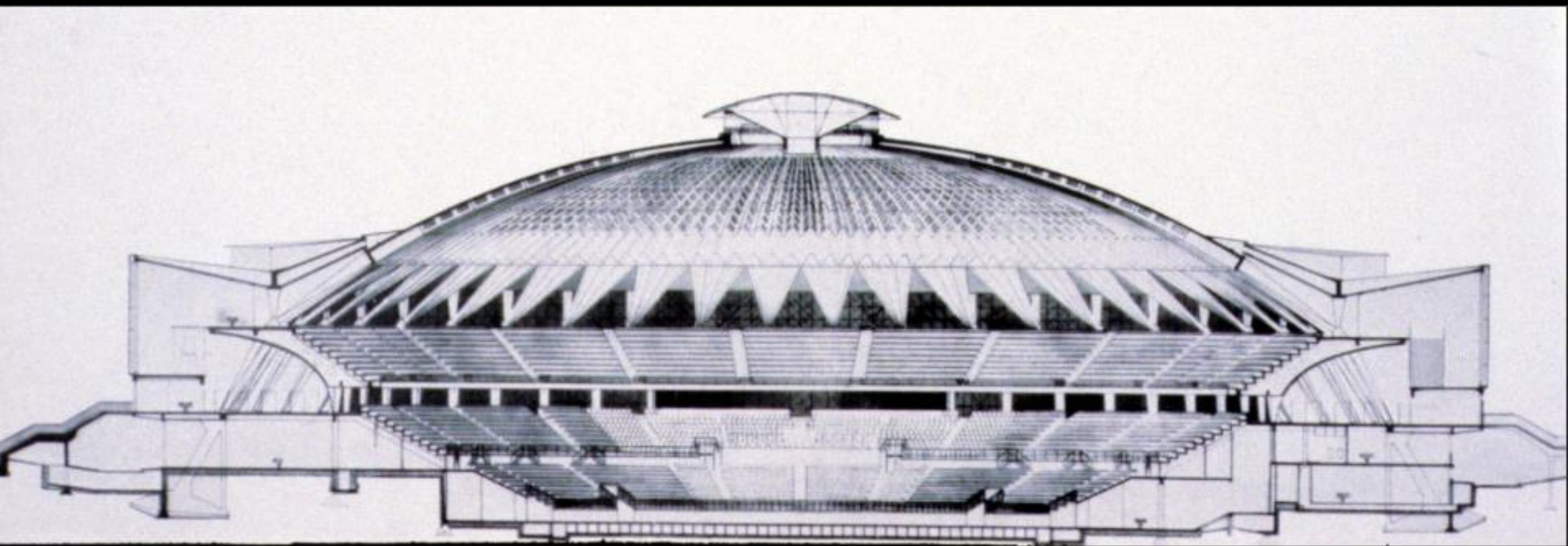




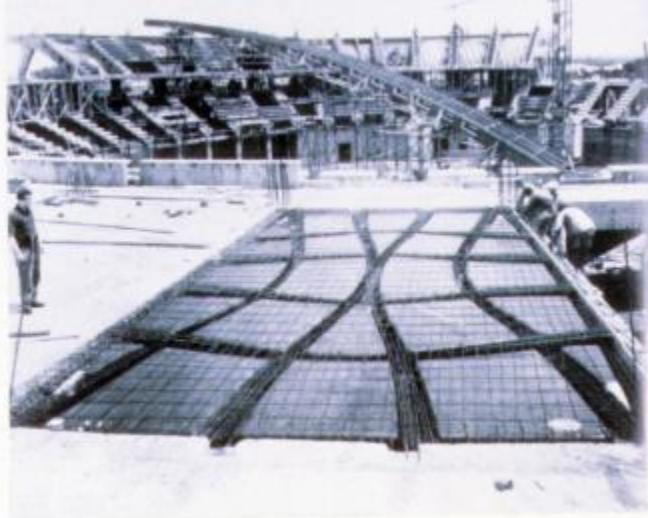
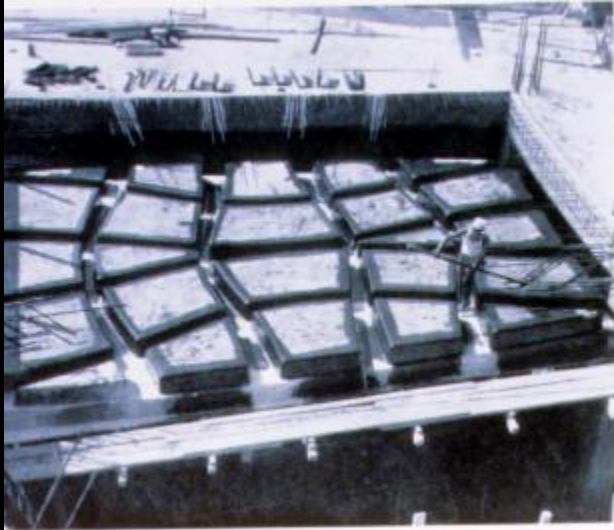
PalaLottomatica
(Palazzo dello Sport)
Rome, Italy
1960

Pier Luigi Nervi Engineer
Marcello Piacentini Architect









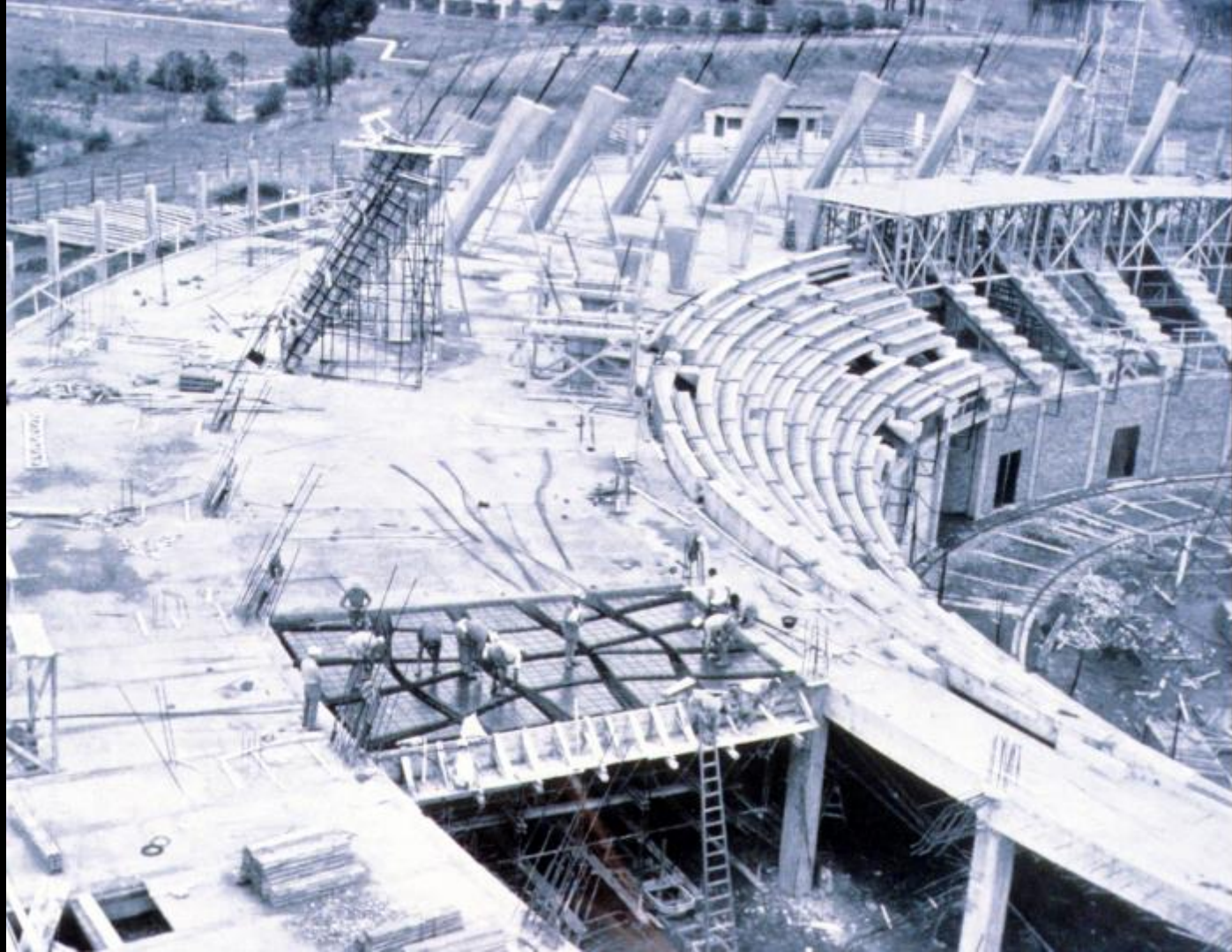
reusable "ferro-cemento" forms used for casting the gallery floor, in which the ribs follow the lines of the principal stresses (P. L. Nervi, 1951).

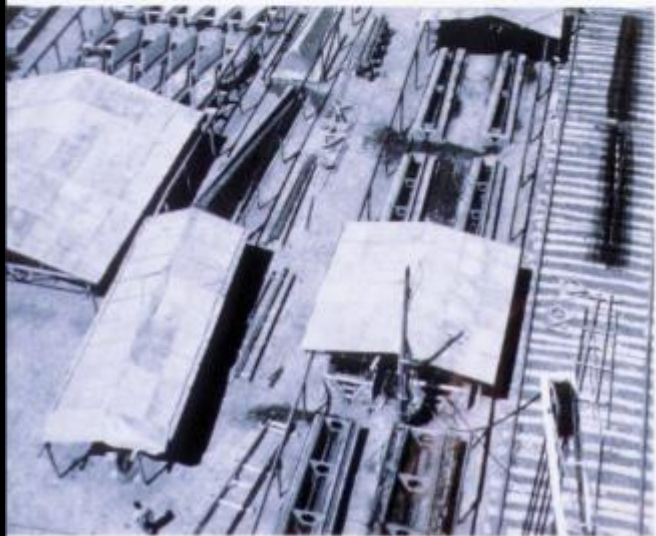
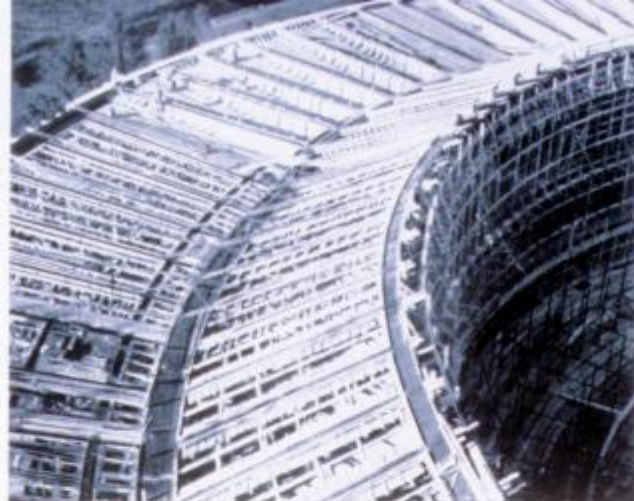
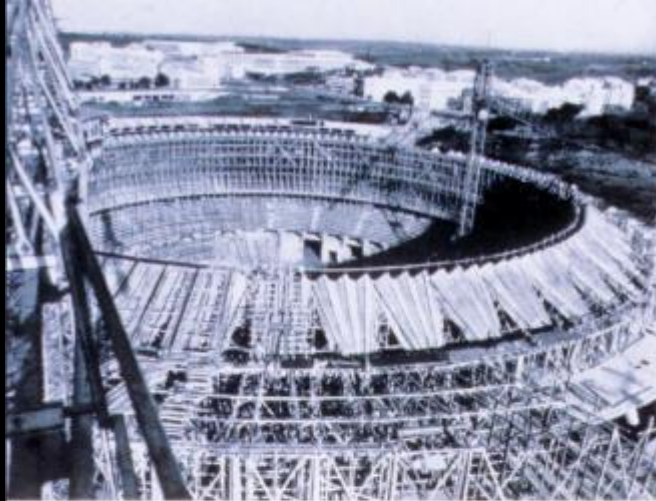
Reinforcement ready for concreting.

Finished floor, from below.

Reinforcement under construction, showing the three sections of timber formwork reinforced with steel which were used for casting the 45° inclined ribs.







22 The prefabricated fan-shaped supports.
23 Timber formwork in position for casting the peripheral roof.
24 The casting yard.























Palazzetto dello Sport
Rome, Italy
Pier Luigi Nervi
1960






Tribuna Flaminio

settore F1 / F2




Ingresso Atleti









Bruno

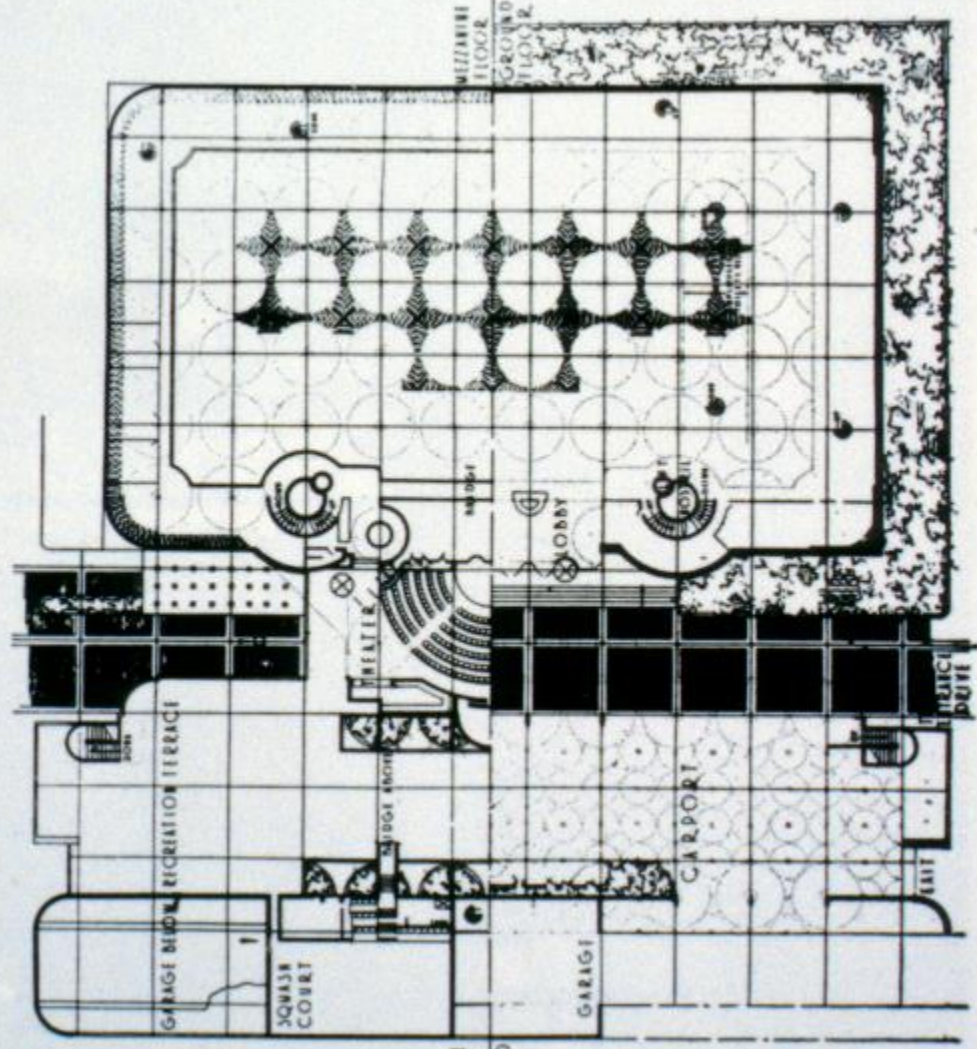


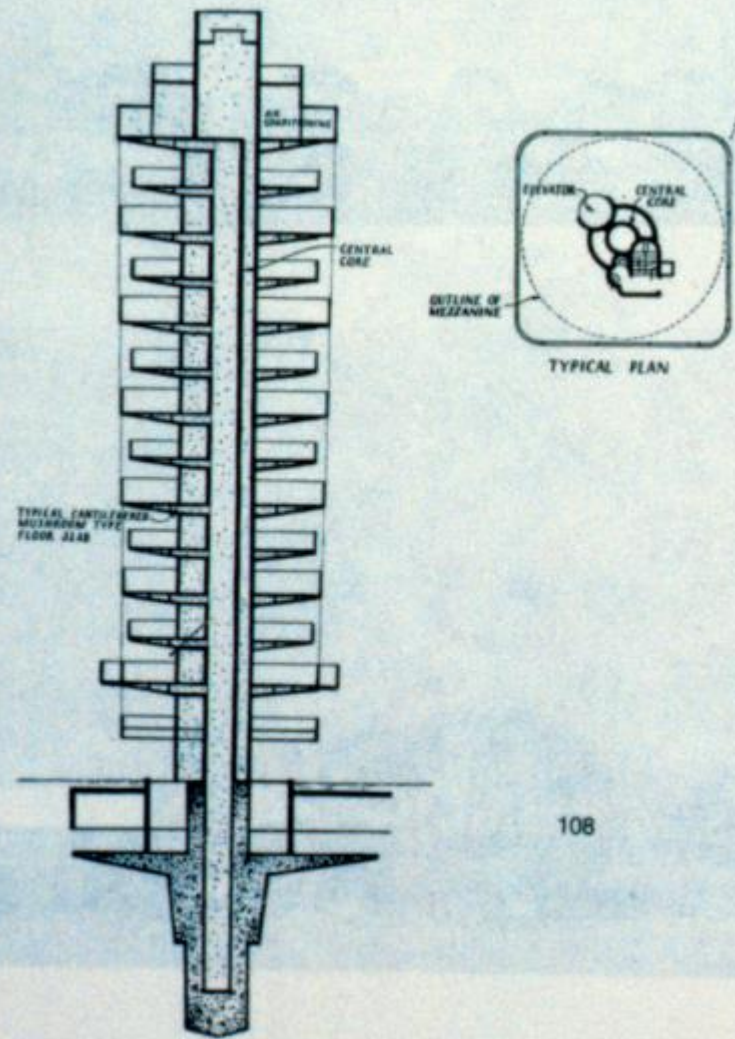
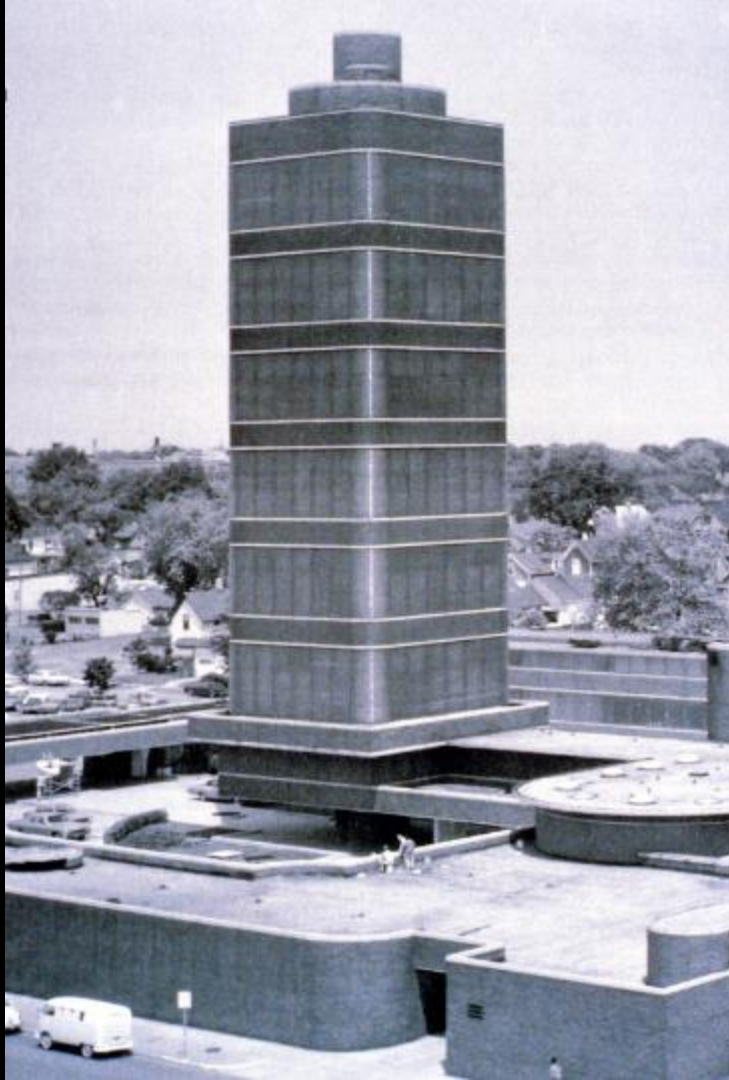


GRUPPO
LOTTOMATICA
giochi e servizi



Johnson Wax Headquarters
Racine, Wisconsin
Frank Lloyd Wright 1939

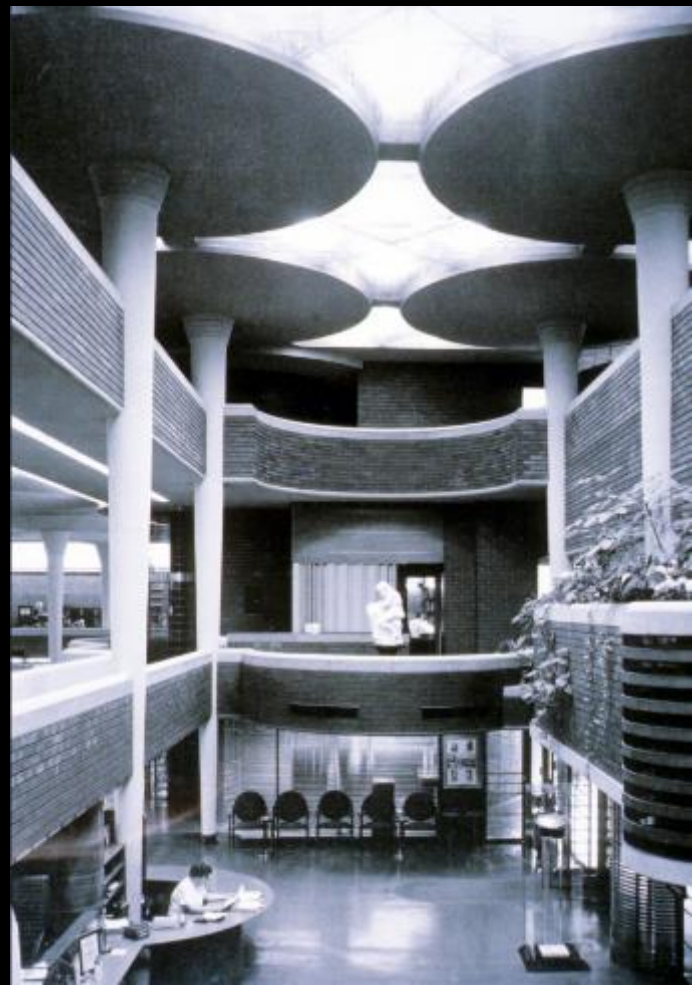














Marina Towers
Chicago, Illinois
Goldberg & Associates
1968



FIGURE 7.18 Marina Towers in Chicago during construction.

FIGURE 7.17 Model of Marina Towers in Chicago. Architects and engineers: Bertrand Goldberg and Associates. Consulting Engineers: Severud-Elstad-Krueger Associates. Foundation Consultants: Moran, Mueser and Rutledge and R. B. Peck. Sponsors: Building Service Employees International Union.

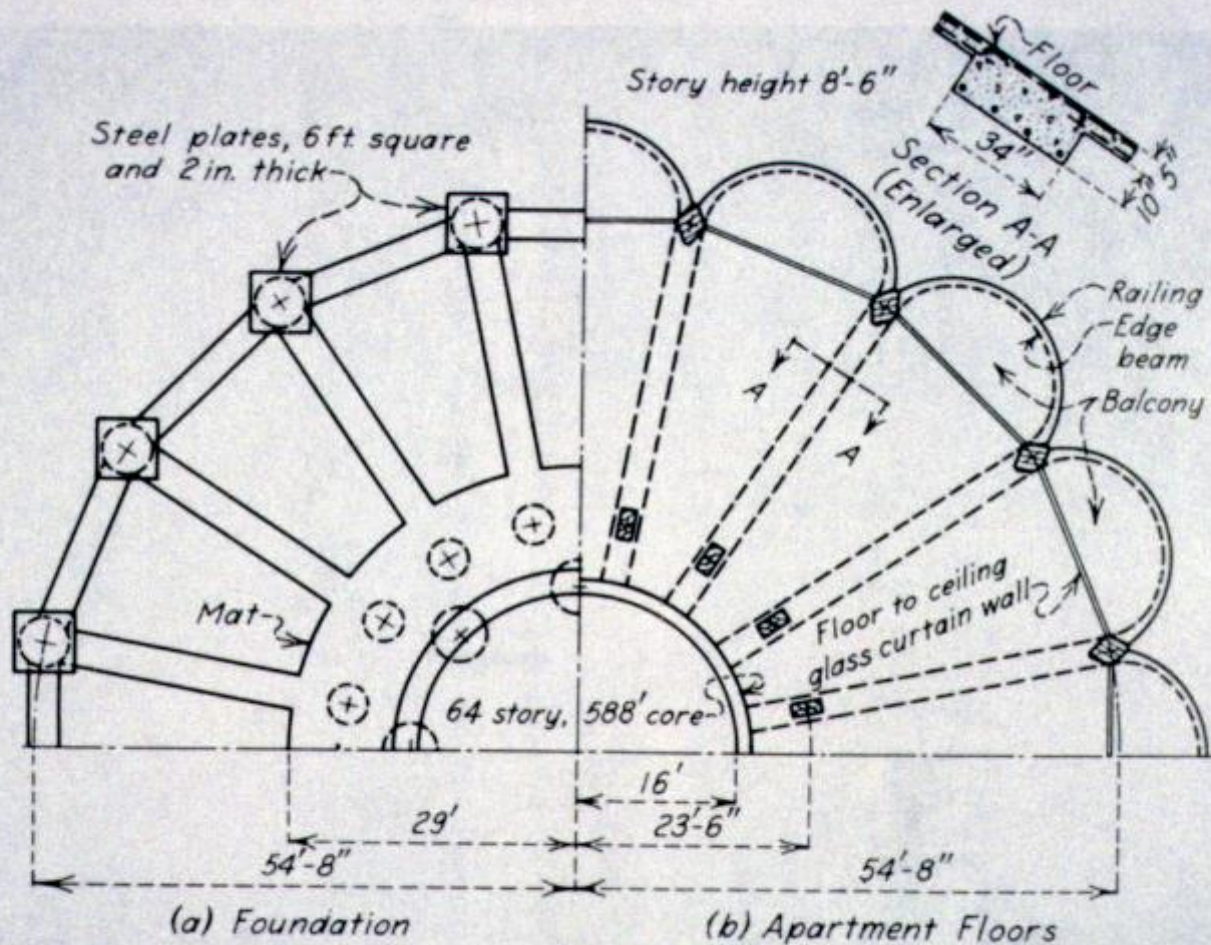
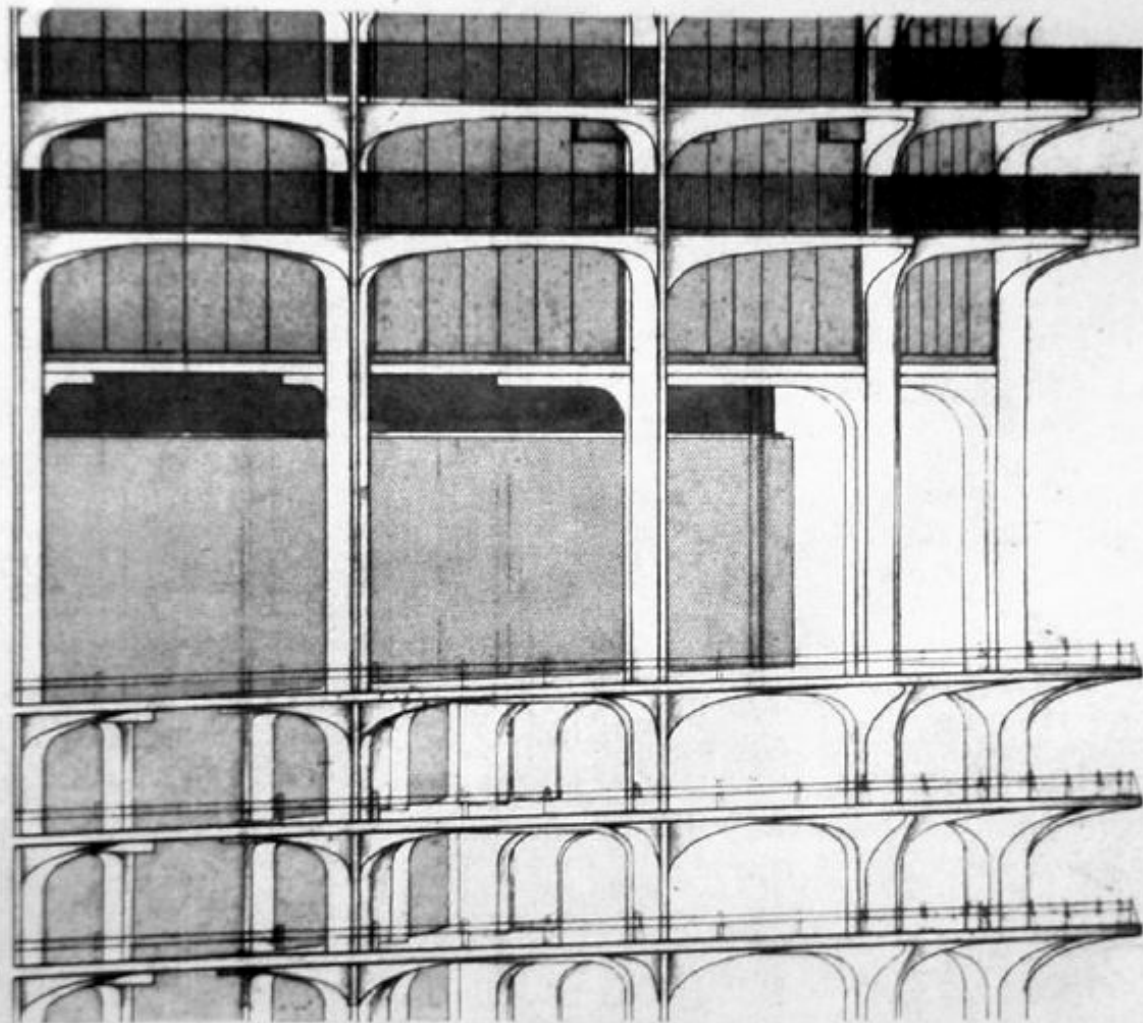


FIGURE 7.19 Partial plans of Marina Towers.









PUBLIC PARKING

MORNING SPECIAL

\$9.75
PER HOUR

MONDAY-FRIDAY
In by 10:00am - Out by 7:00pm

OPEN 24 HOURS
7 Days a Week

Enter On State Street

























NA
737
S28F87
1977
U.S.A.



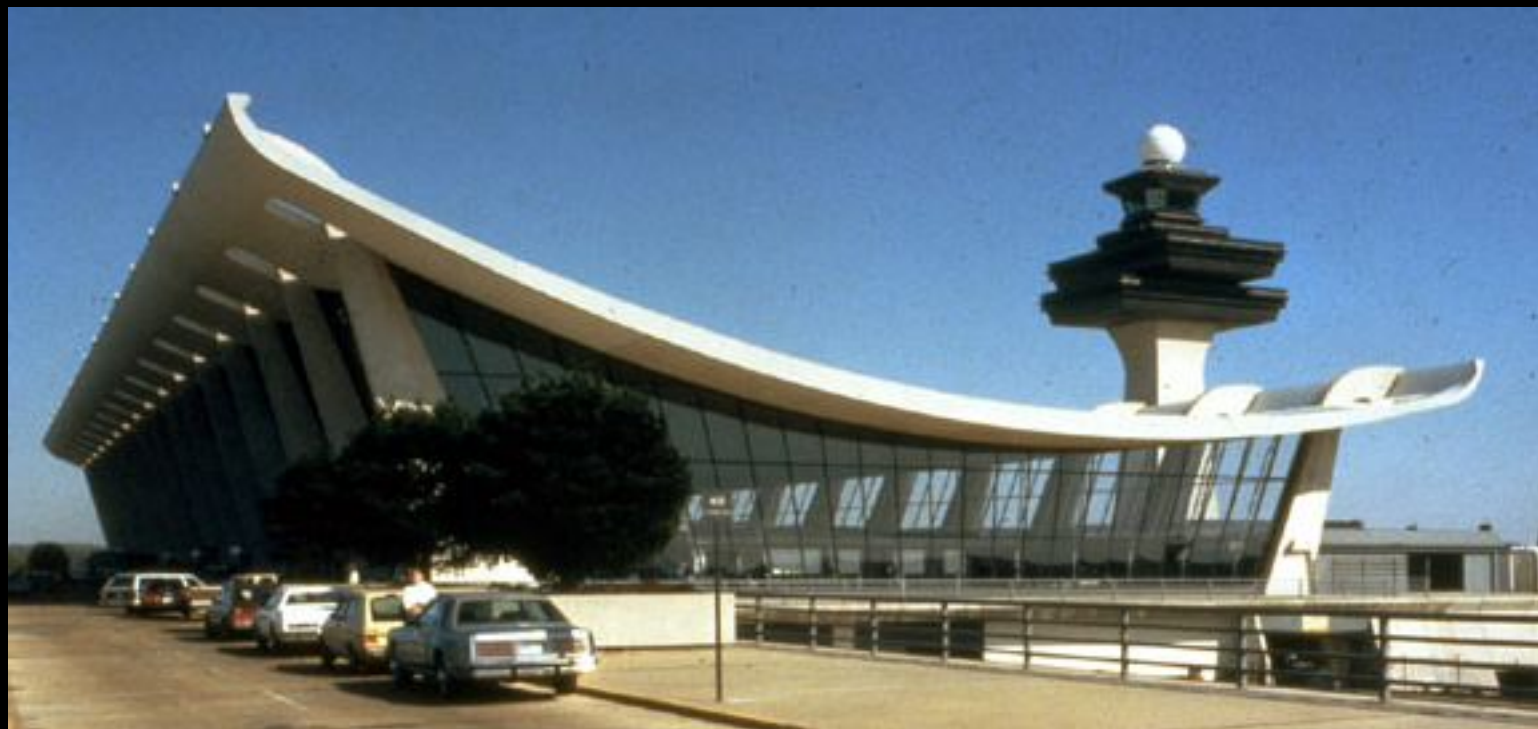
Washington Dulles International Airport
Washington, DC, USA
Eero Saarinen Architect
1962



GFA

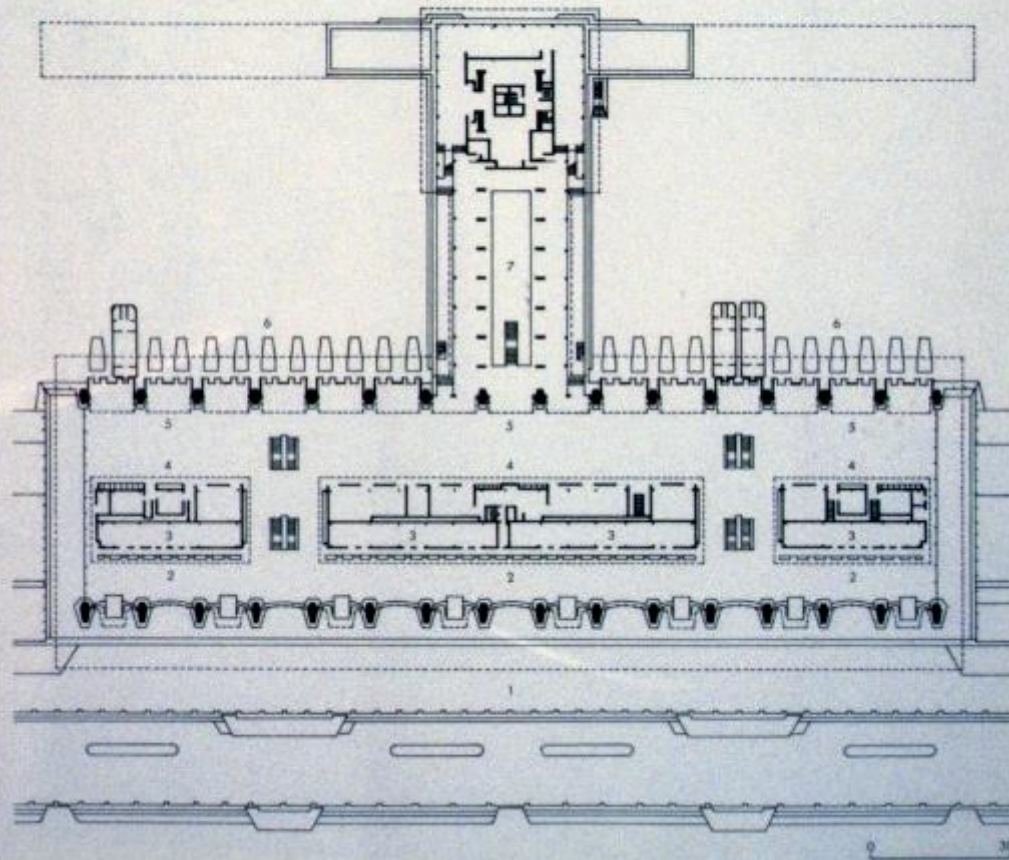
Global Architecture

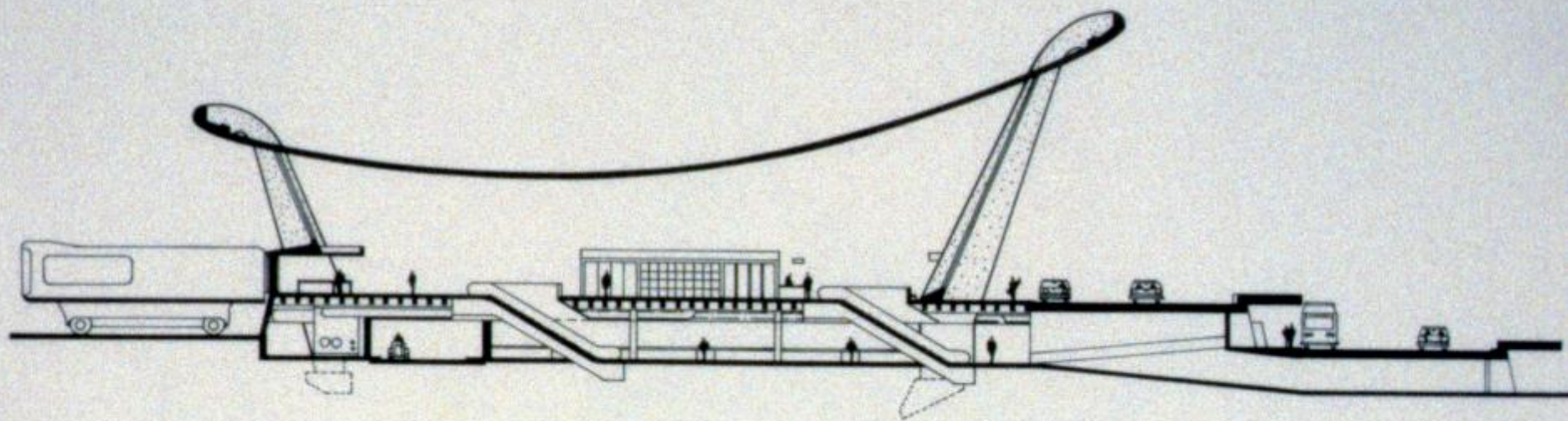
*Eero Saarinen
DCA Terminal Building,
Kennedy Airport, New York. 1956-62
Dulles International Airport (Washington, D.C.)
Chantilly, Virginia. 1958-62
Edited and Photographed by Yukio Futagawa
Text by Nobuo Hozumi*



Plan

- 1 Explaining road*
- 2 Ticketing*
- 3 Offices*
- 4 Concessions*
- 5 Waiting area*
- 6 Transporter docks*
- 7 Concourse*





Section











Another architectural pilgrimage:
How far will you go to visit a building?
How important are buildings to you?

















GE
CURRENCY EXCHANGE

Bank Cash Go

Orange	Green	Purple
1000	500	200

Bank Cash Go logo at the bottom.





UNITED

5

united.com
bag check

UNITED

UNITED

UNITED

UNITED

UNITED

UNITED

UNITED AIRLINES
CHECK-IN

UNITED AIRLINES
CHECK-IN

UNITED AIRLINES
CHECK-IN

UNITED AIRLINES
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UNITED AIRLINES
CHECK-IN

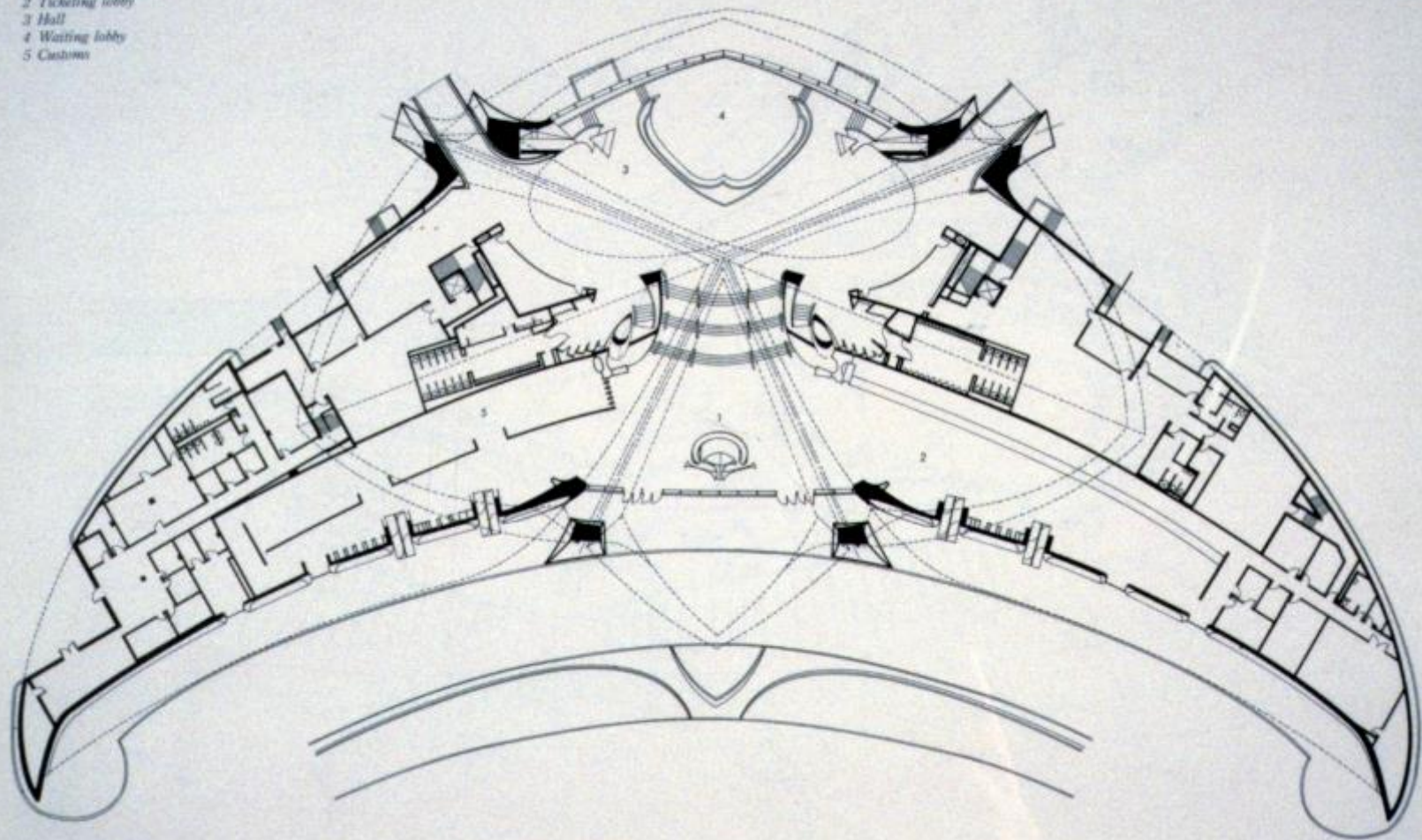
UNITED AIRLINES
CHECK-IN



TWA Flight Center
New York City, USA
Eero Saarinen
1962

Plan

- 1 Information counter*
- 2 Ticketing lobby*
- 3 Hall*
- 4 Waiting lobby*
- 5 Customs*





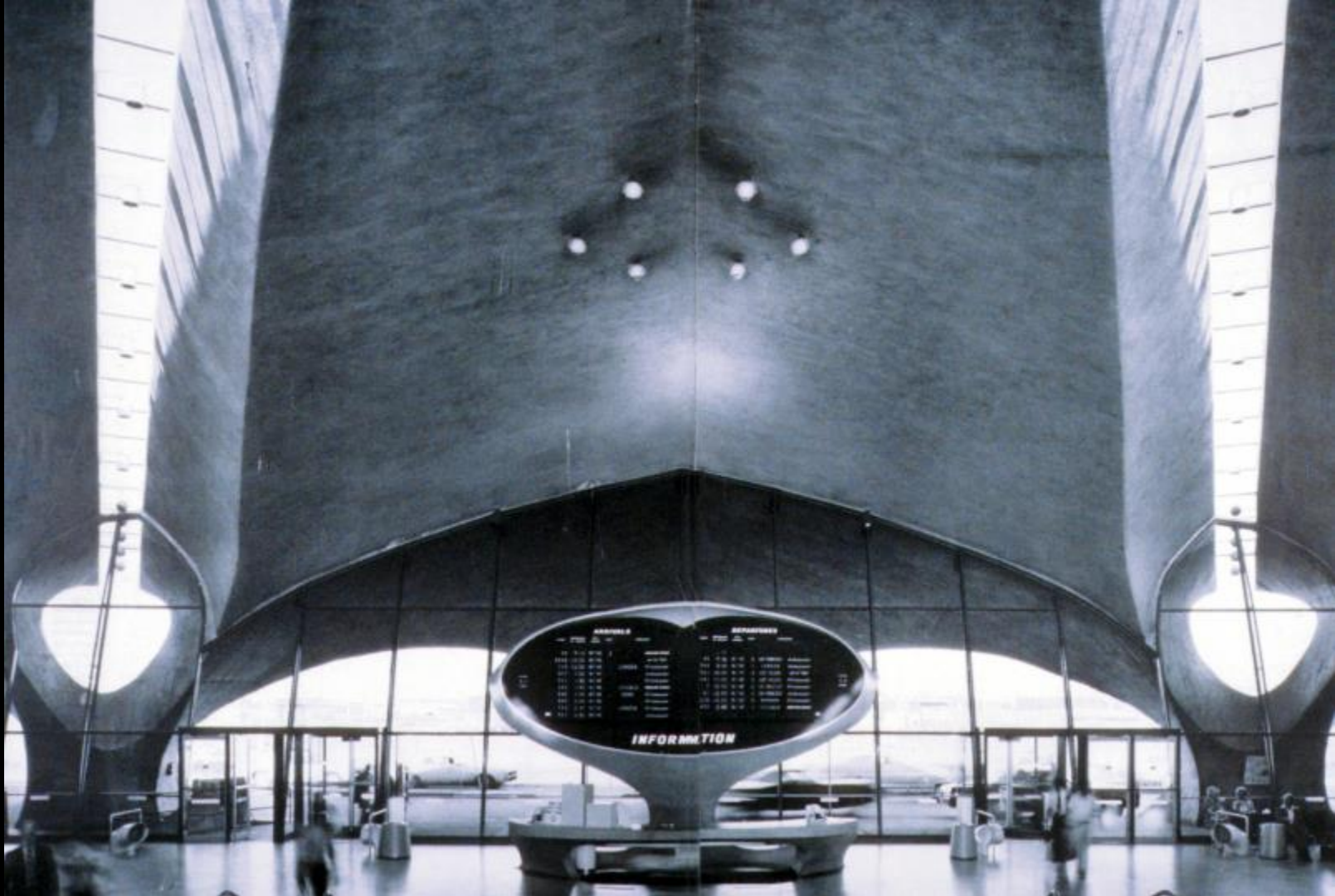


Bill Meyer photo









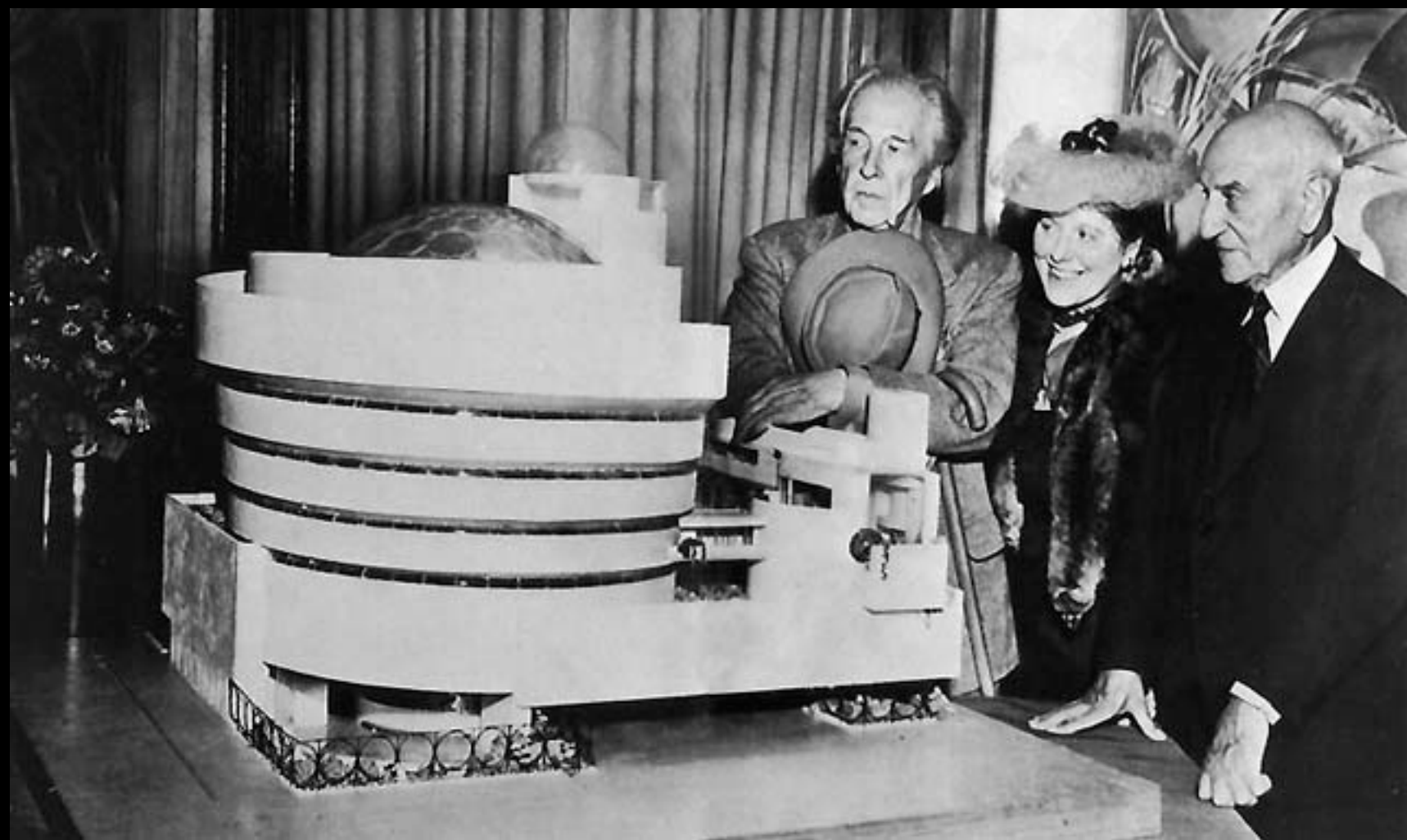




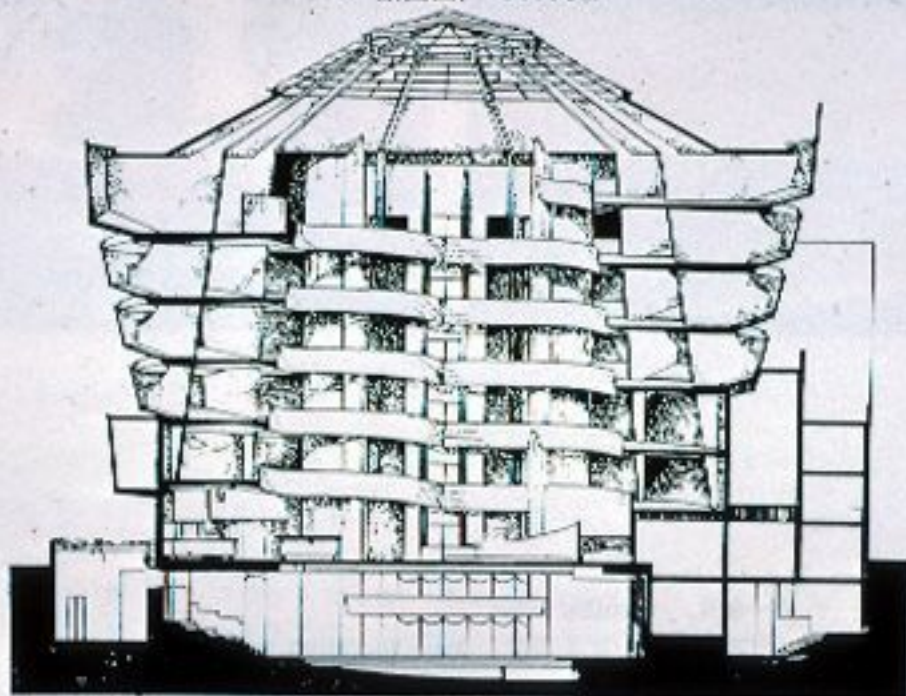
Curves and Plastic Forms



Solomon R. Guggenheim Museum
New York City, USA
Frank Lloyd Wright
1959



5- 塔圖, Section.





















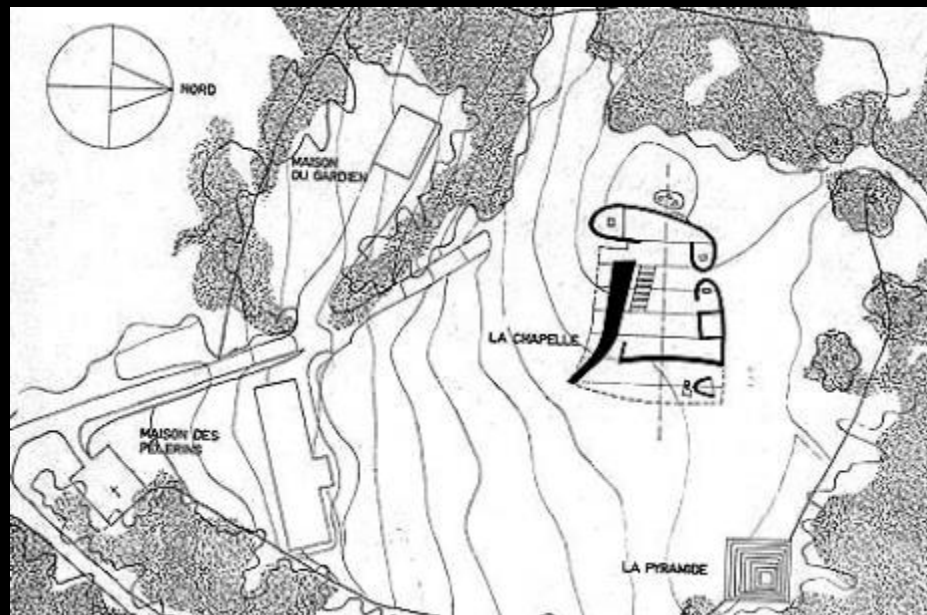


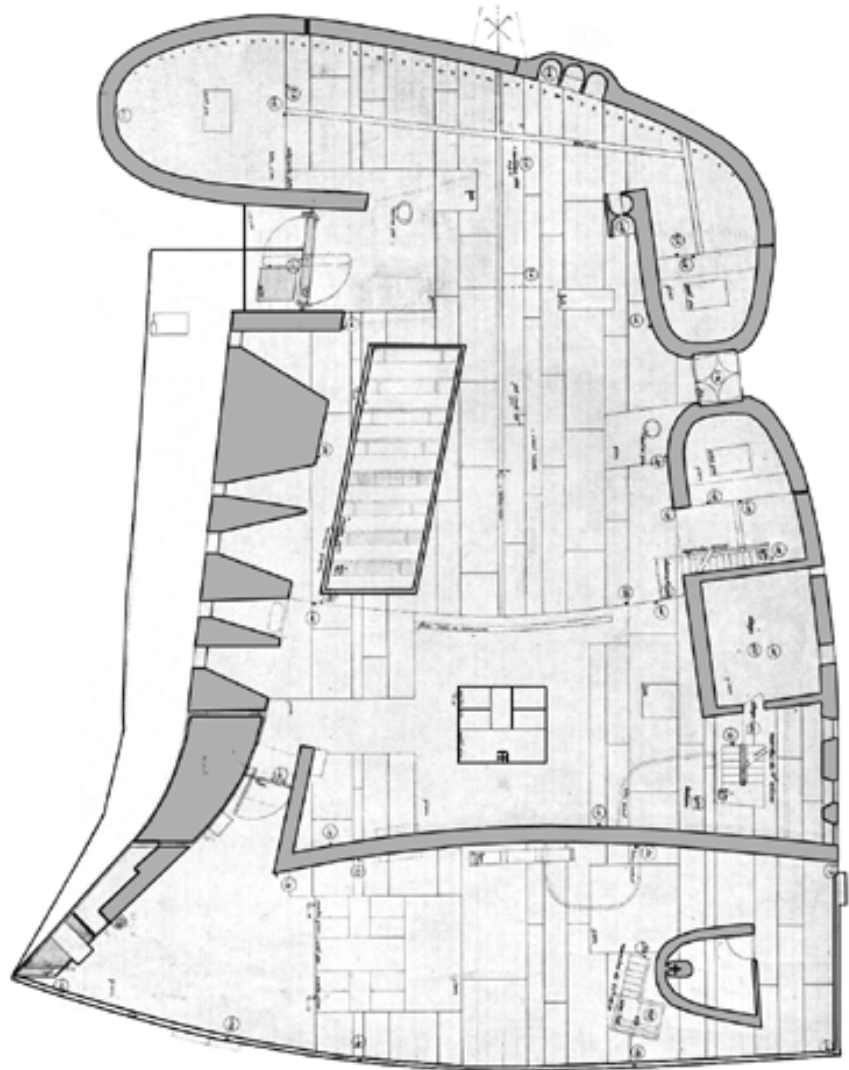






Chapelle Notre-Dame-du-
Haut de Ronchamp
Ronchamp, France
Le Corbusier
1955









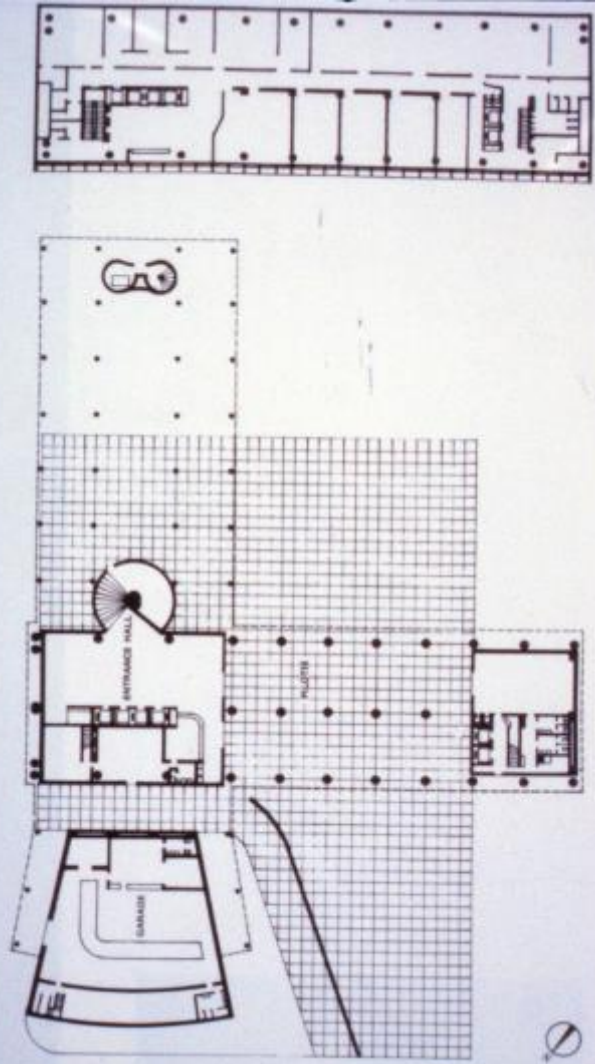








Oscar Niemeyer
Brazilian Architect
1907 to 2012
(104 years!)



Ministry of Education
and Health
Rio de Janeiro, Brazil
Oscar Neimeier
1943





Cathedral of Brasília
Brasília, Brazil
Oscar Neimeier
1970





National Congress Building
Brasília, Brazil
Oscar Neimeier
1960





Niterói Contemporary Art Museum
Niterói, Brazil
Oscar Neimeier
1996








Museu Oscar Neimeier
Curitiba, Brazil
Oscar Neimeier
2002





Auditorio Ibirapuera
São Paulo, Brazil
Oscar Neimeier
2005



Brutalism



Maisons Jaoul
Neuilly-sur-Seine
Le Corbusier
1955







Sainte-Marie de La Tourette
Convent
Eveux, France
Le Corbusier
1960

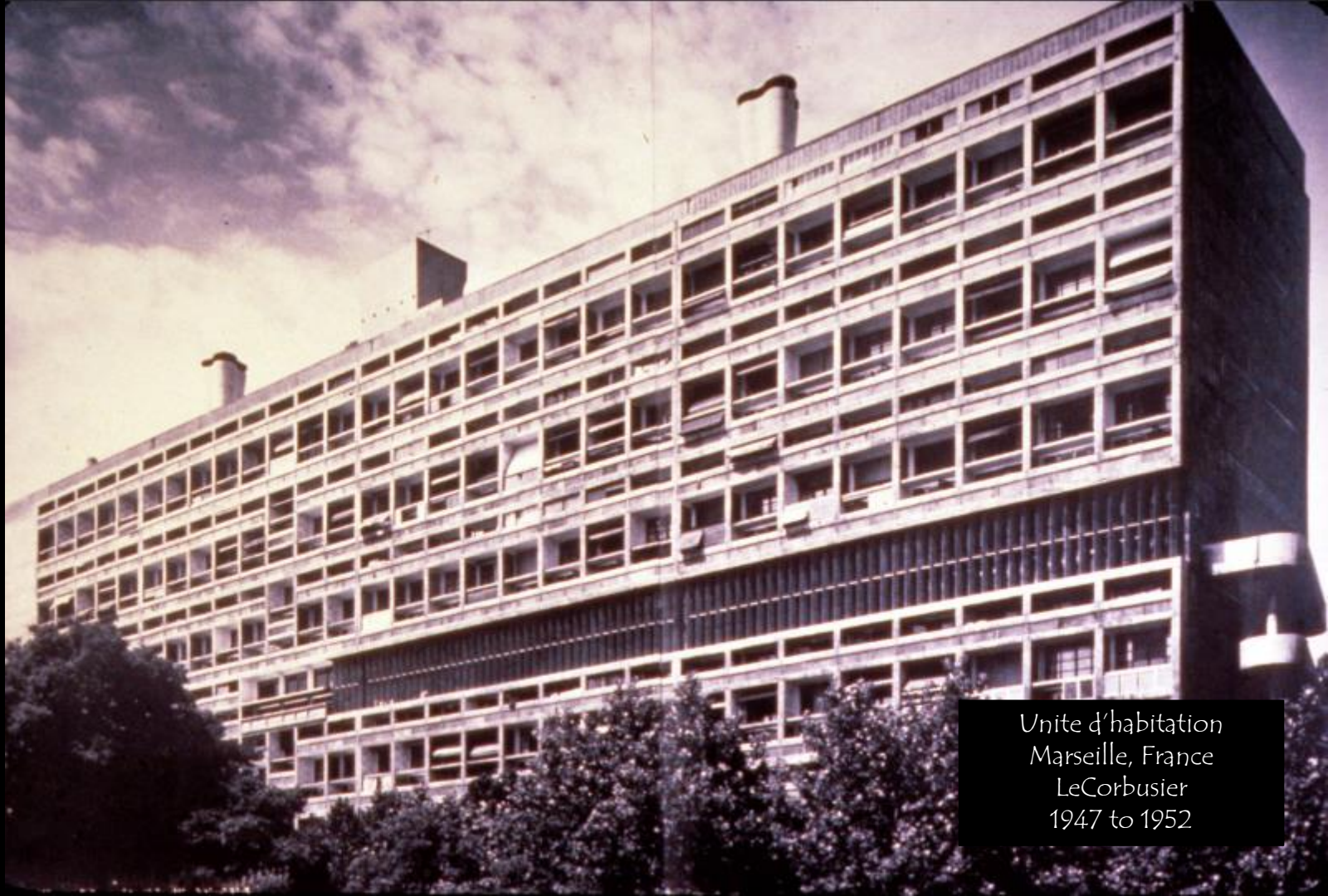




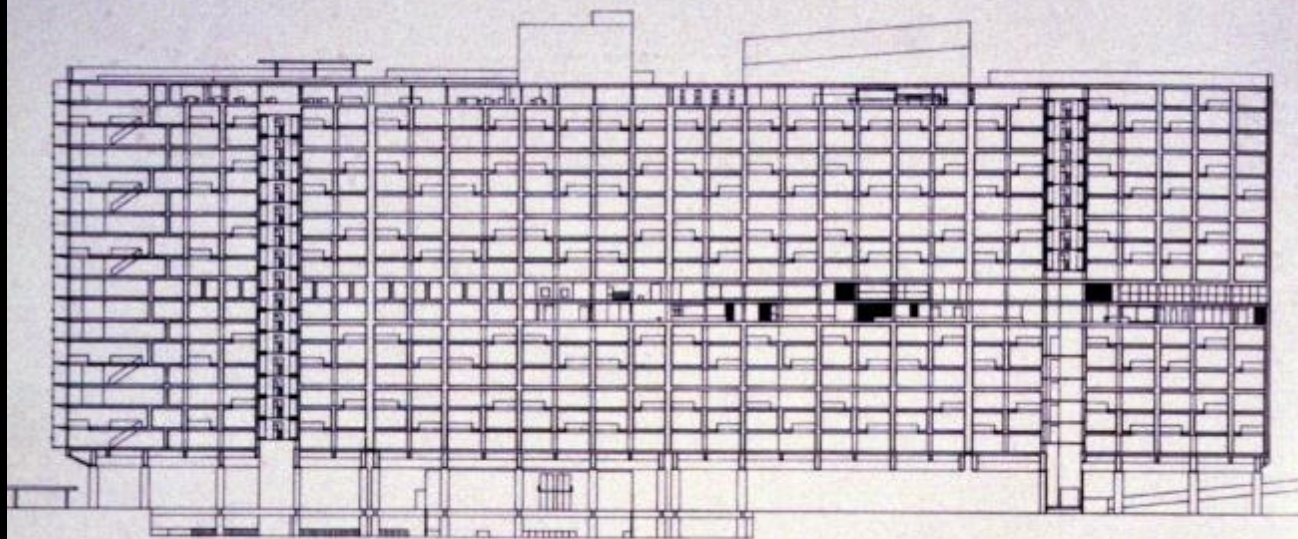




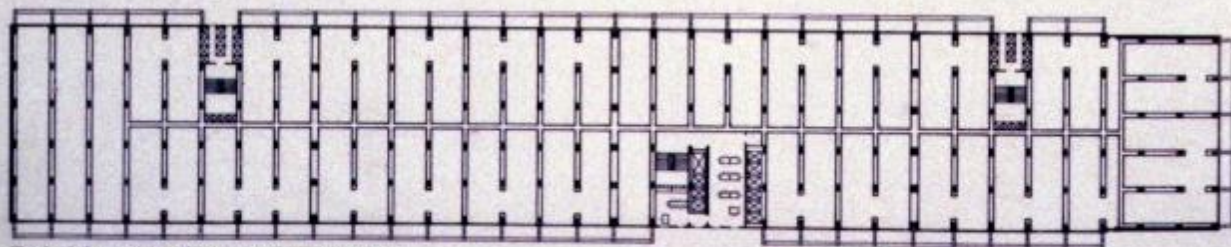




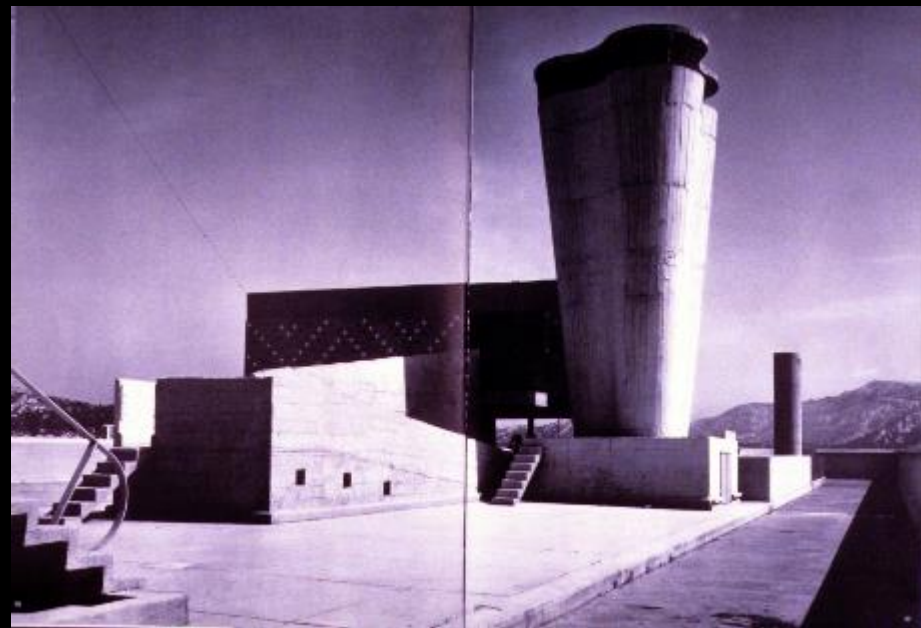
Unité d'habitation
Marseille, France
LeCorbusier
1947 to 1952



Long section looking west.



Typical floor plan of apartments, lower level.





Unite d'habitation of Berlin
Berlin, Germany
Le Corbusier
1958

























Carpenter Center for the Visual Arts
Harvard University, Massachusetts
Le Corbusier and
Guillermo Jullian de la Fuente
1962















Boston City Hall Plaza
Boston, Massachusetts
Kallmann McKinnell & Knowles
1962







1916



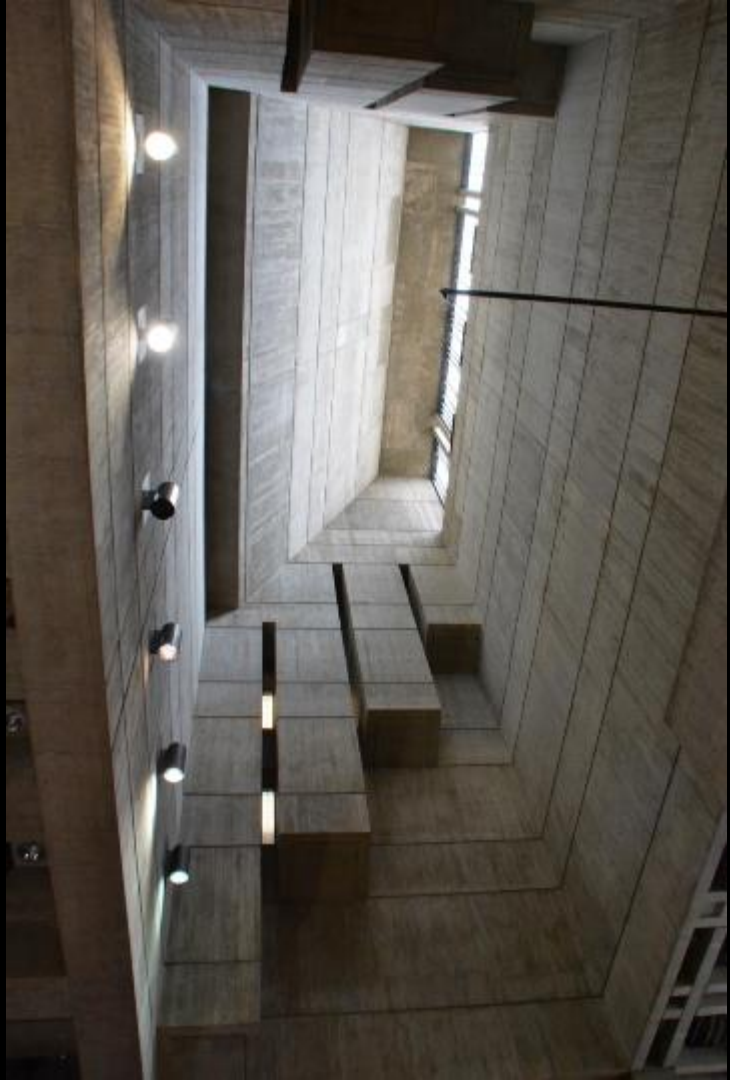














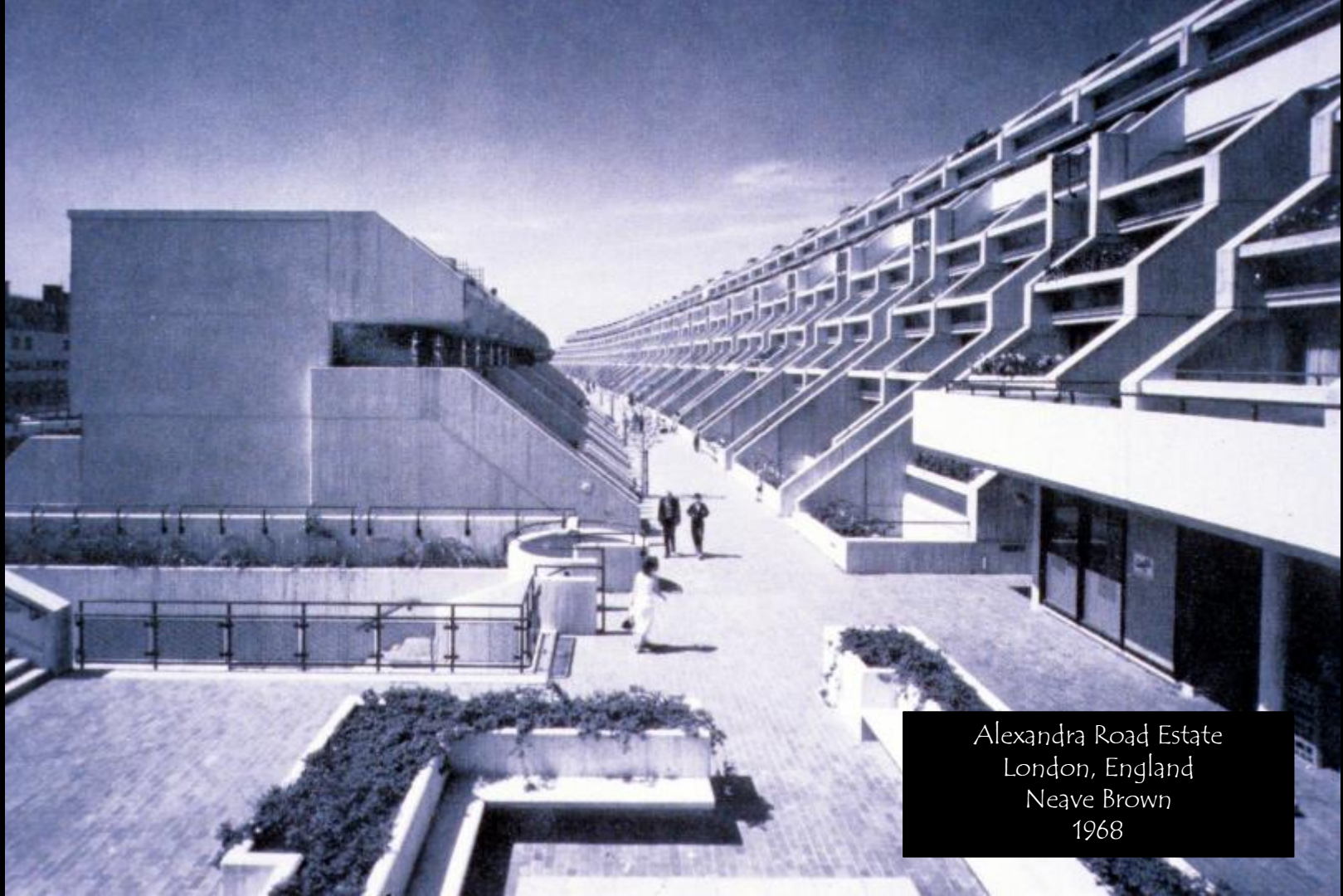
Math and Computer Building
University of Waterloo



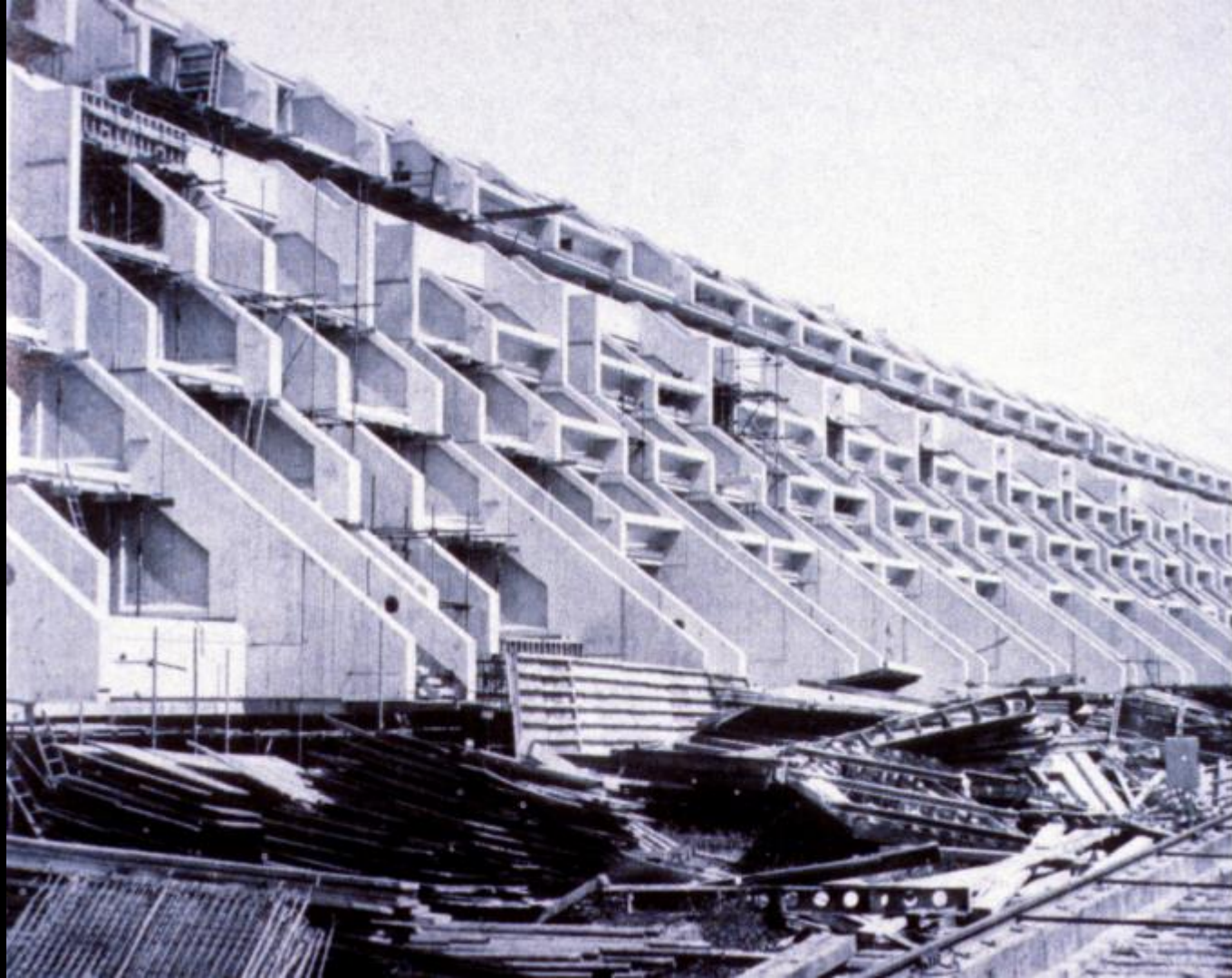
Atelier 5
Swiss Architectural Firm







Alexandra Road Estate
London, England
Neave Brown
1968









Brunswick Centre
London, England
Patrick Hodgkinson
1967 to 1972



BRUNSWICK











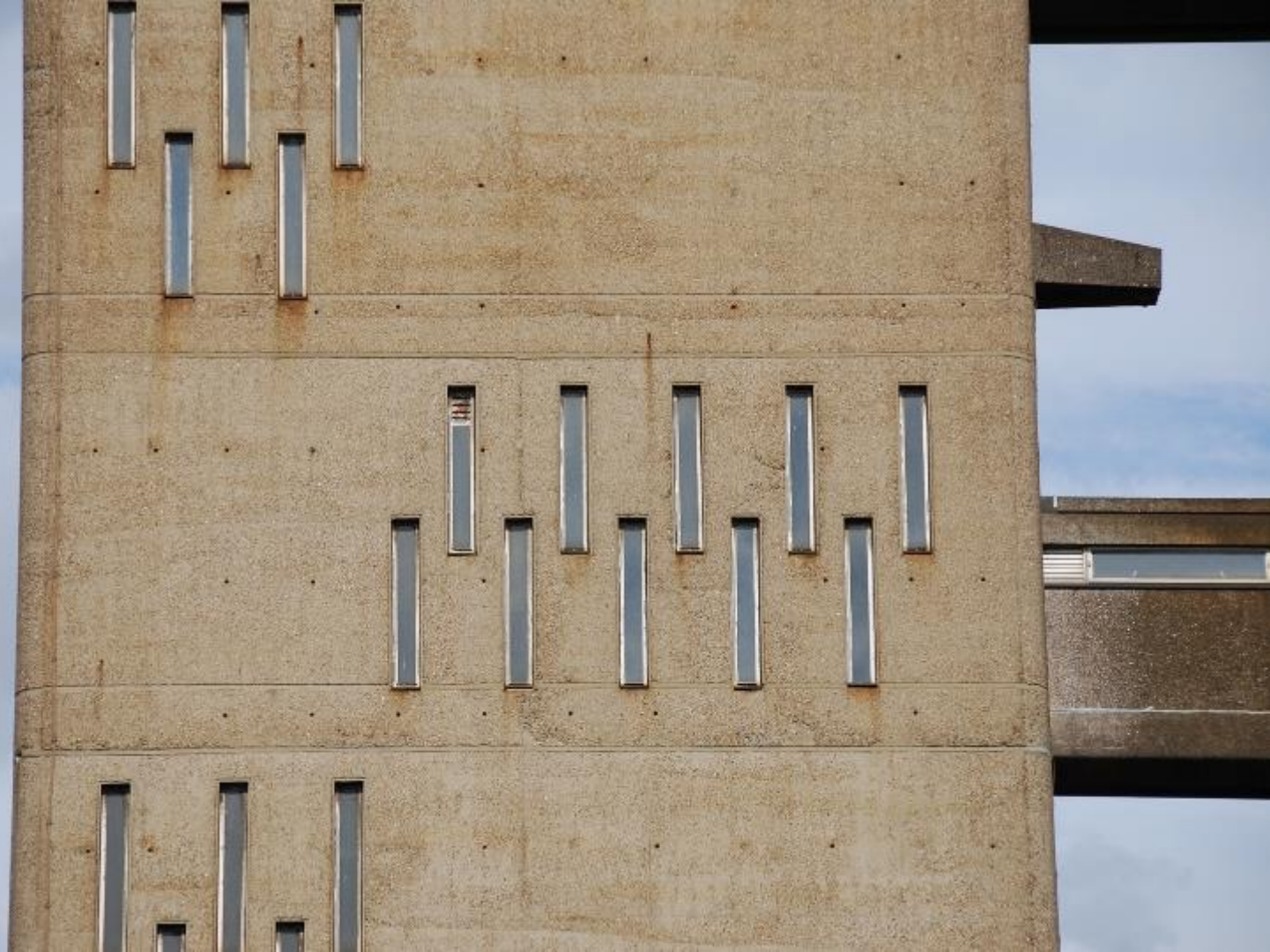


Trellick Tower
London, England
Erno Goldfinger
1972

























Robinhood Gardens
London, England
Peter and Alison Smithson
1972
(demolition 2017-2019)













Mary Wharf (via subway)
Swwich (via foot tunnel)

 Wharfside
Point North





"A Clockwork Orange"
Film by
Stanley Kubrick



Thameshead Estate
London, England

