

# Phoenix Central Library

bruderDWLarchitects



Case study



Yujung Jang, Sihyun Sung Work





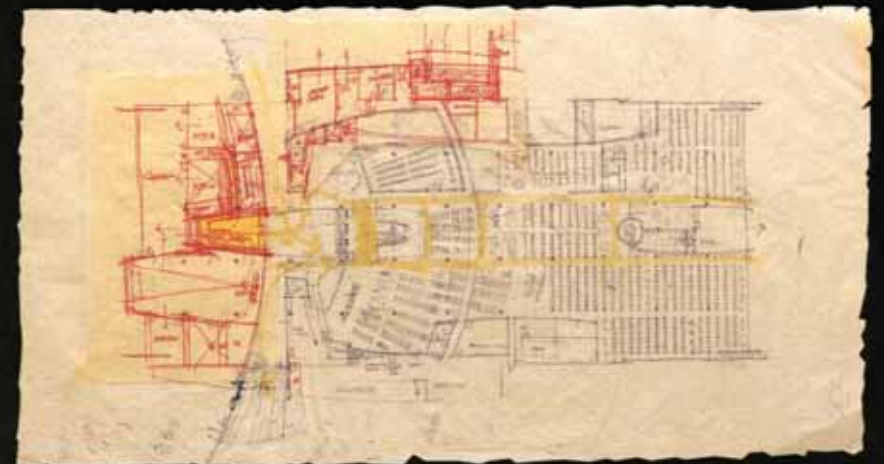
**Early concept sketch**



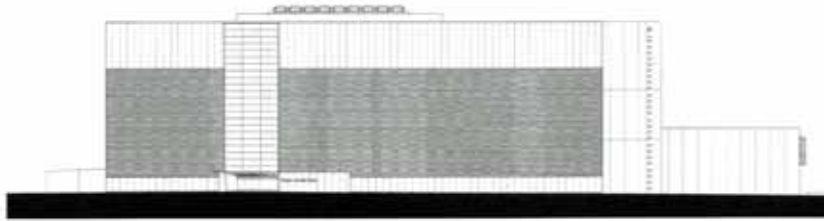
**Detail, southwest corner**



**Diagrammatic plan studies**



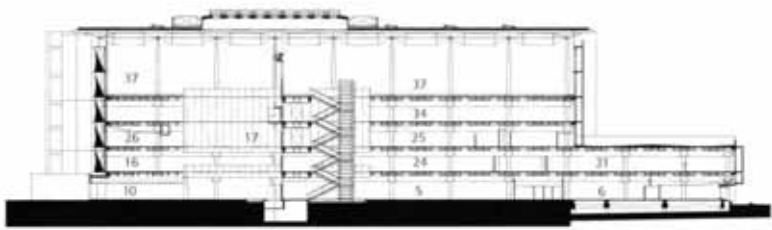
# Floor plan, section, and elevation



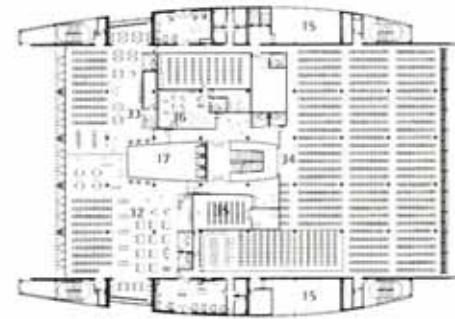
West elevation



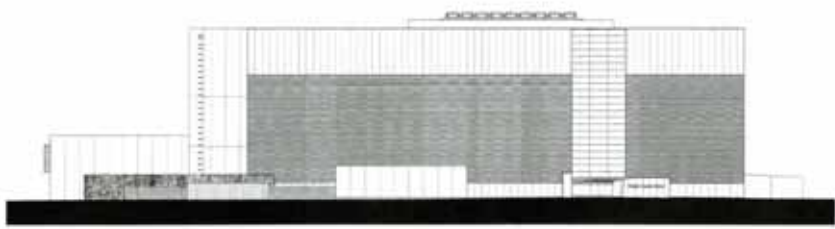
Third floor plan



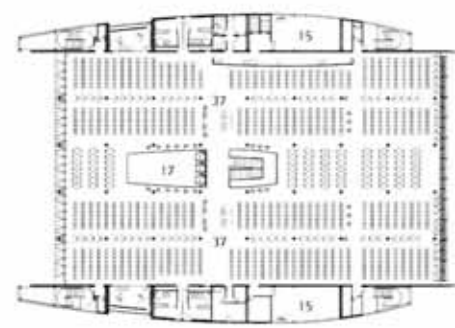
North-south section



Fourth floor plan



East elevation

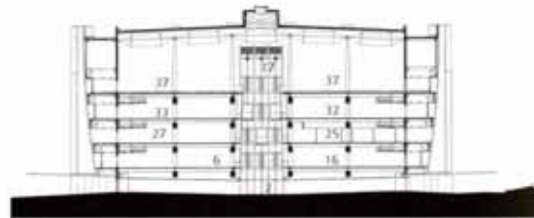


Fifth floor plan

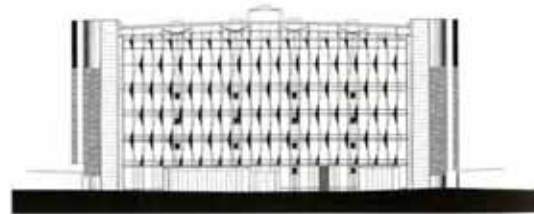
- 1 Entrance
- 2 Lobby
- 3 Check-in
- 4 Circulation
- 5 Fiction
- 6 Children's library
- 7 Biography
- 8 Video
- 9 Check-out
- 10 Gallery
- 11 Auditorium
- 12 Gift shop
- 13 Meeting rooms
- 14 Restaurant
- 15 Service
- 16 Reference
- 17 Atrium
- 18 Interlibrary loan
- 19 Maps
- 20 Government documents
- 21 Microfilm
- 22 Periodicals
- 23 Copy center
- 24 Computers
- 25 Administration
- 26 Board room
- 27 Technical services
- 28 Mail room
- 29 Librarians' offices
- 30 Collection development
- 31 Graphics
- 32 Arizona collection
- 33 Mass library/lecture
- 34 Closed stacks
- 35 Lecture hall
- 36 Rare book room
- 37 Sanitation



South elevation



East-west section



North elevation



Site plan

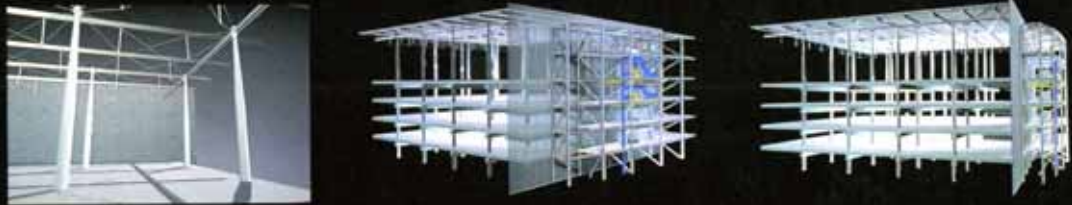


First floor plan

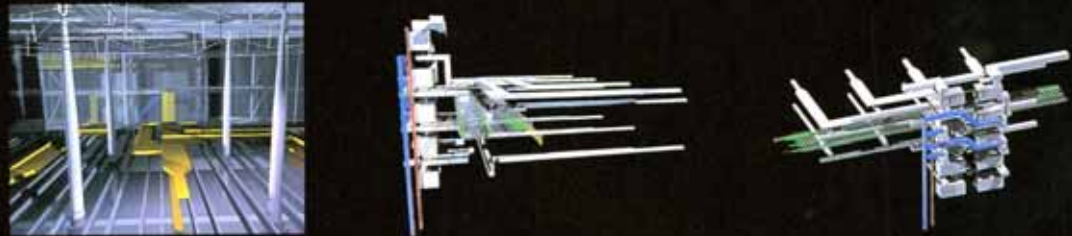


Second floor plan

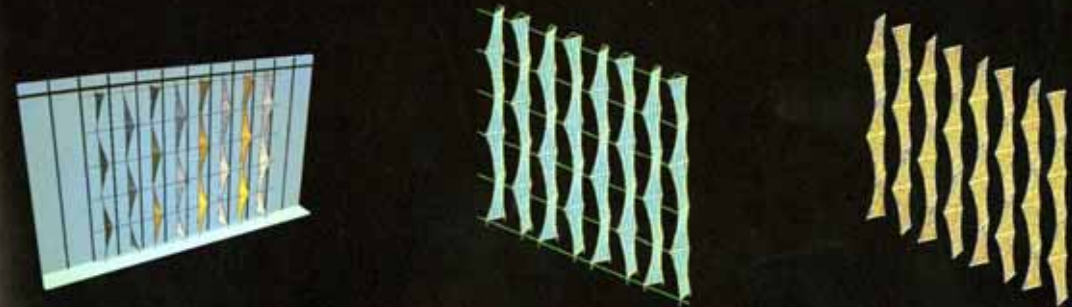
**3-D computer modeling of structural system**



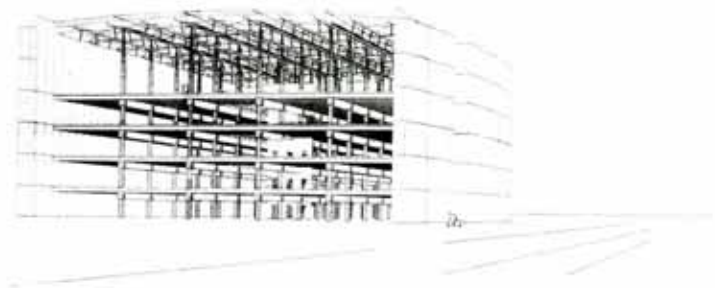
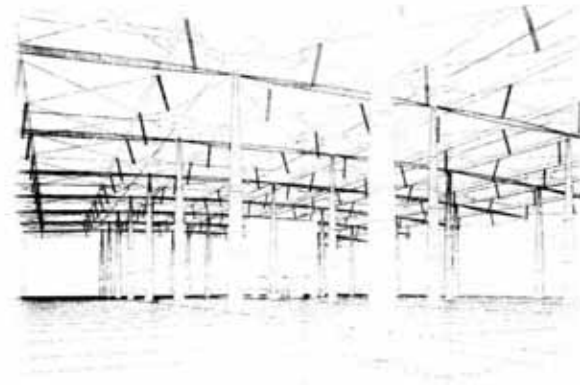
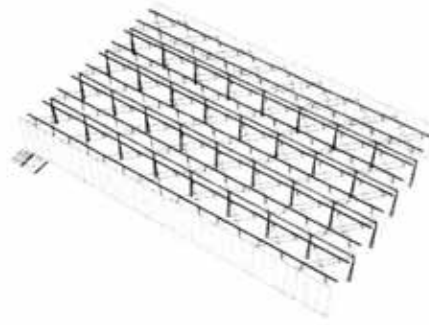
**Mechanical system**



**North elevation shade sail**

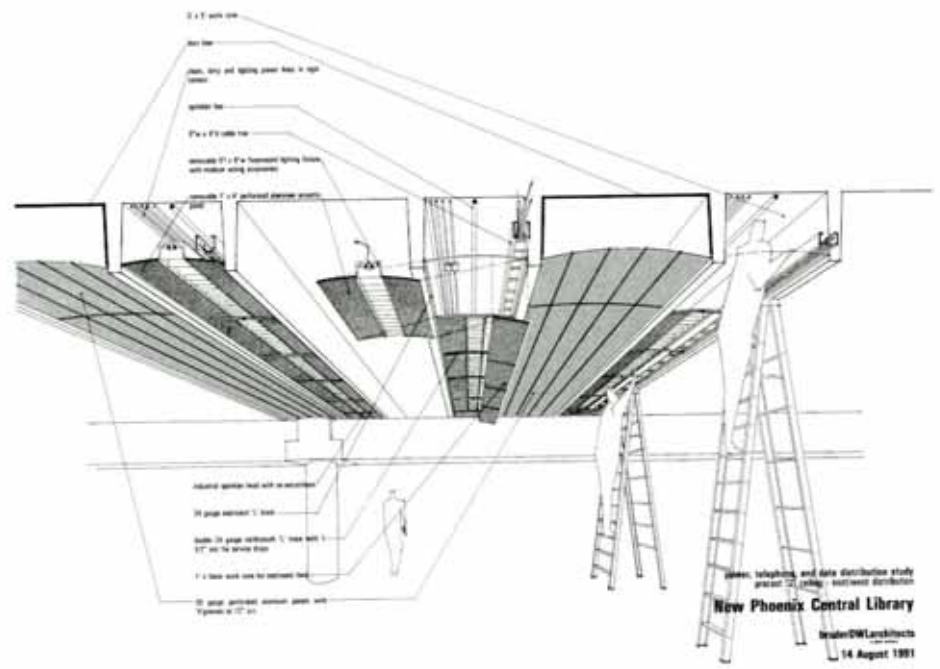
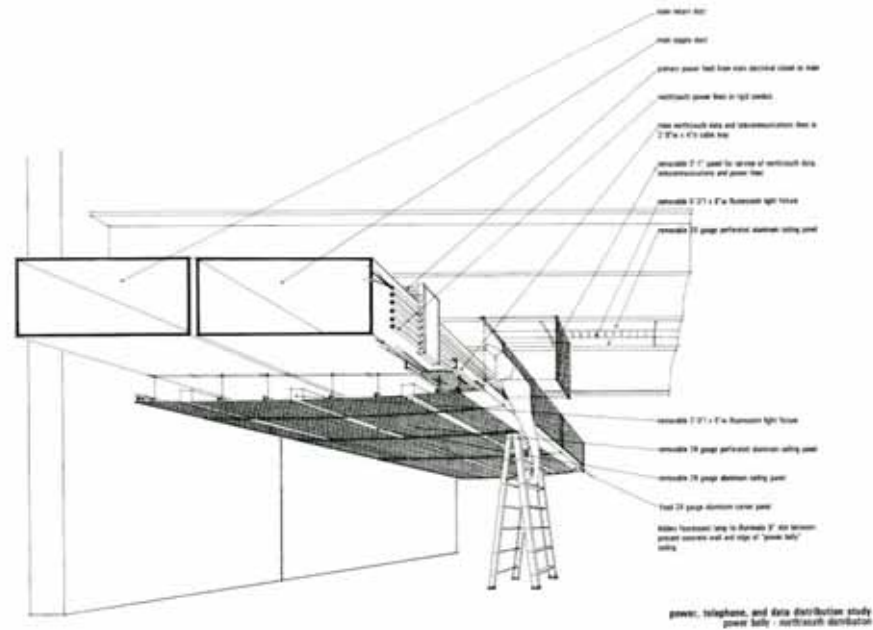


# 3-D computer analysis of structural system

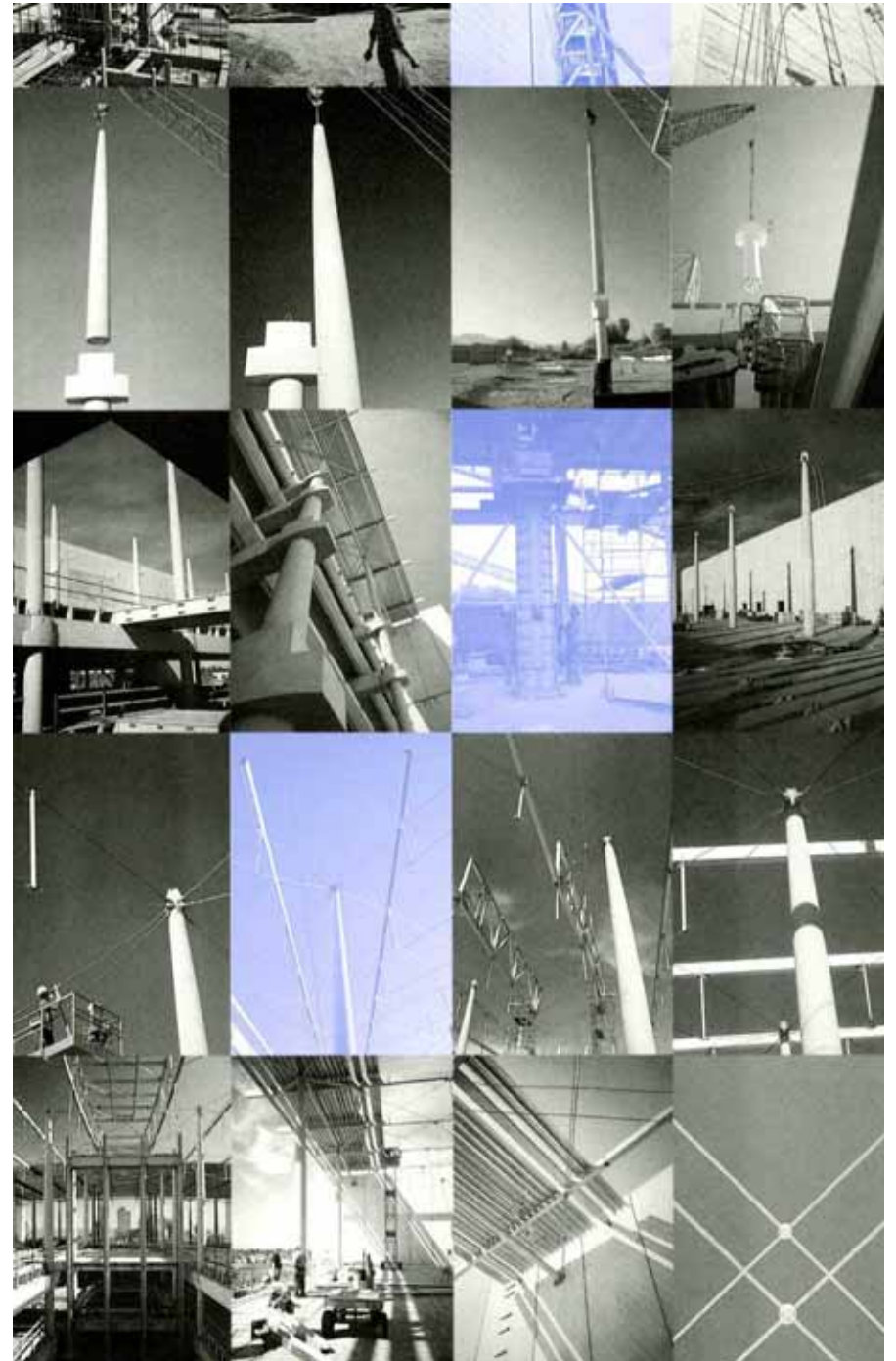




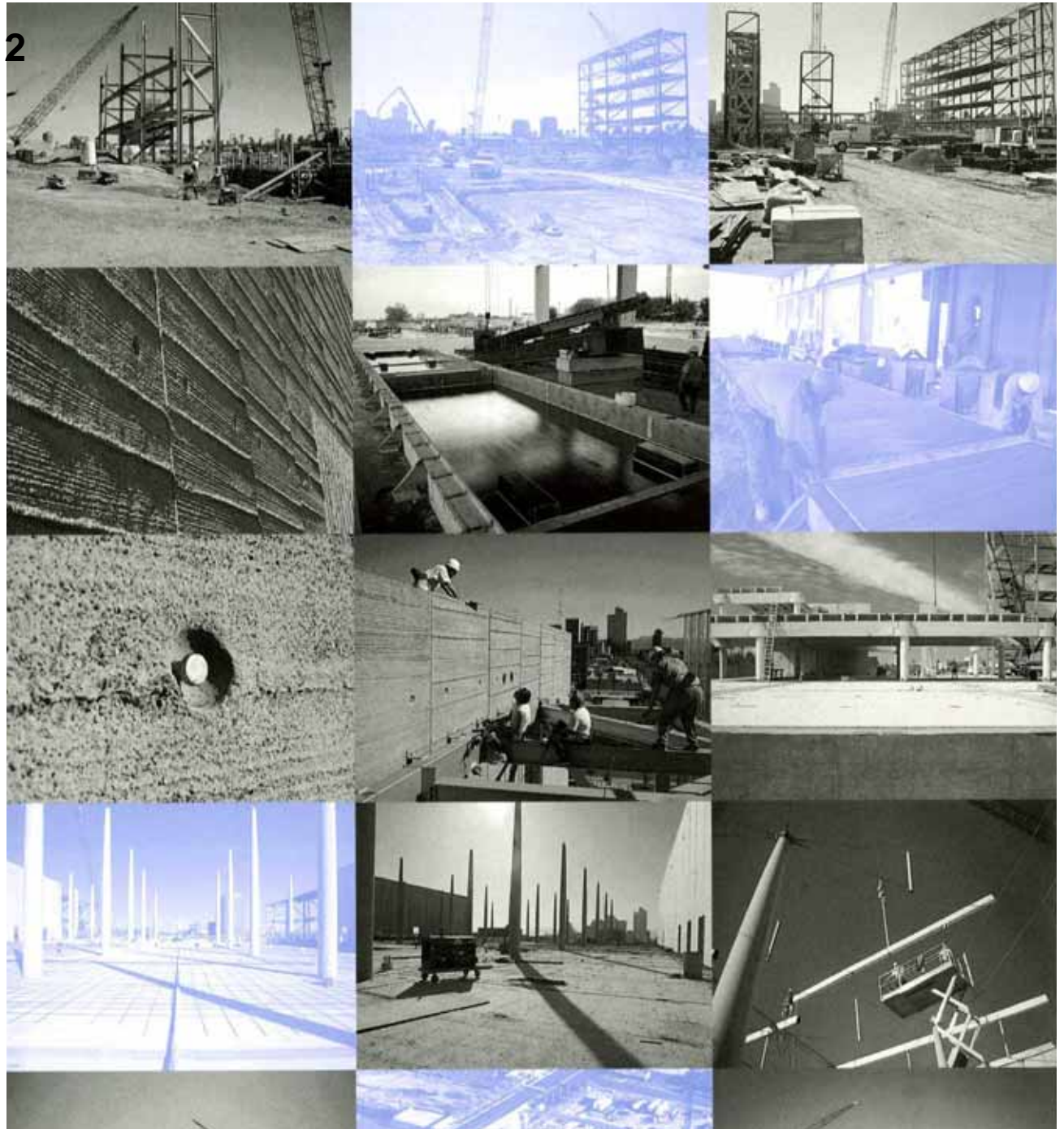
# Mechanical details



# Construction process 1



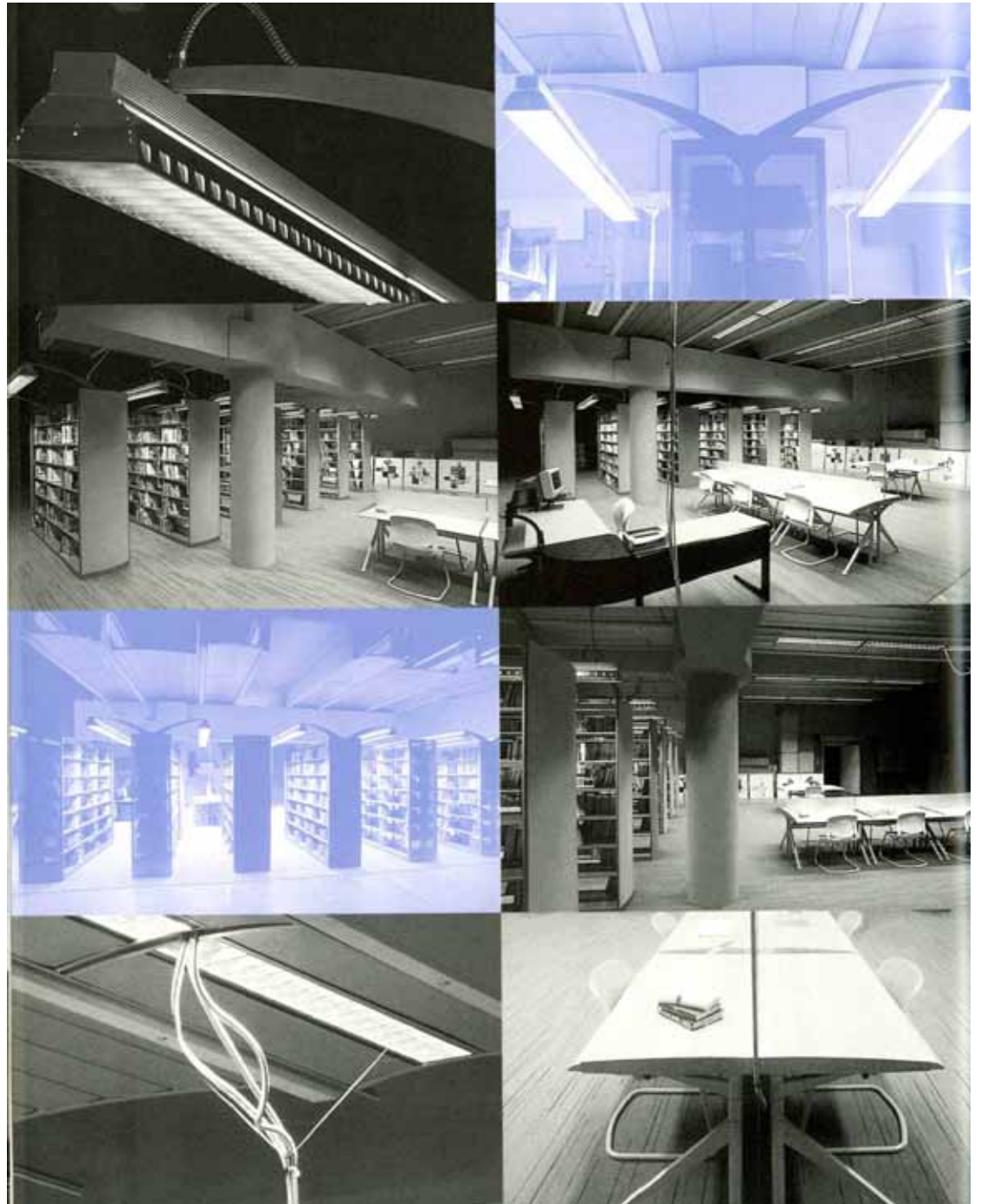
# Construction process 2



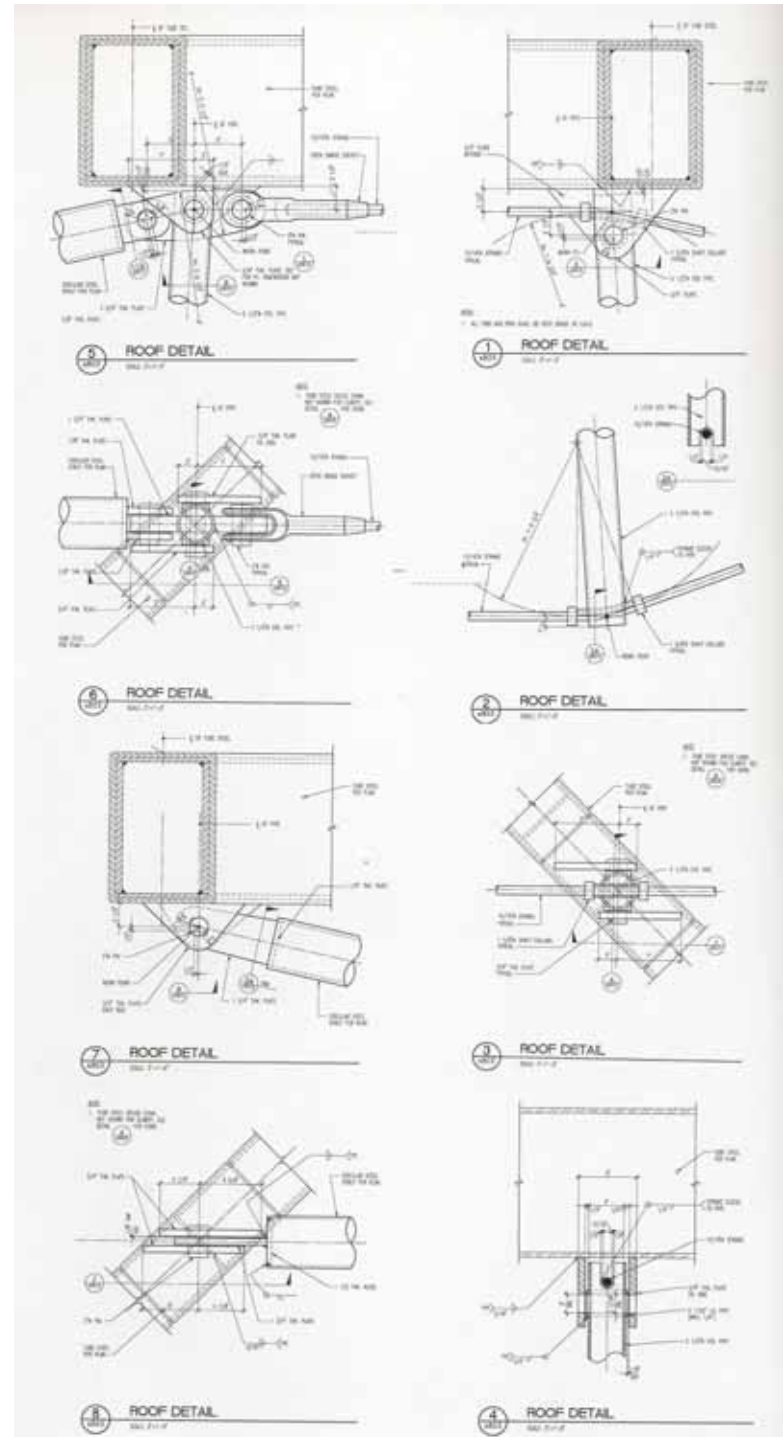
# Construction process 3



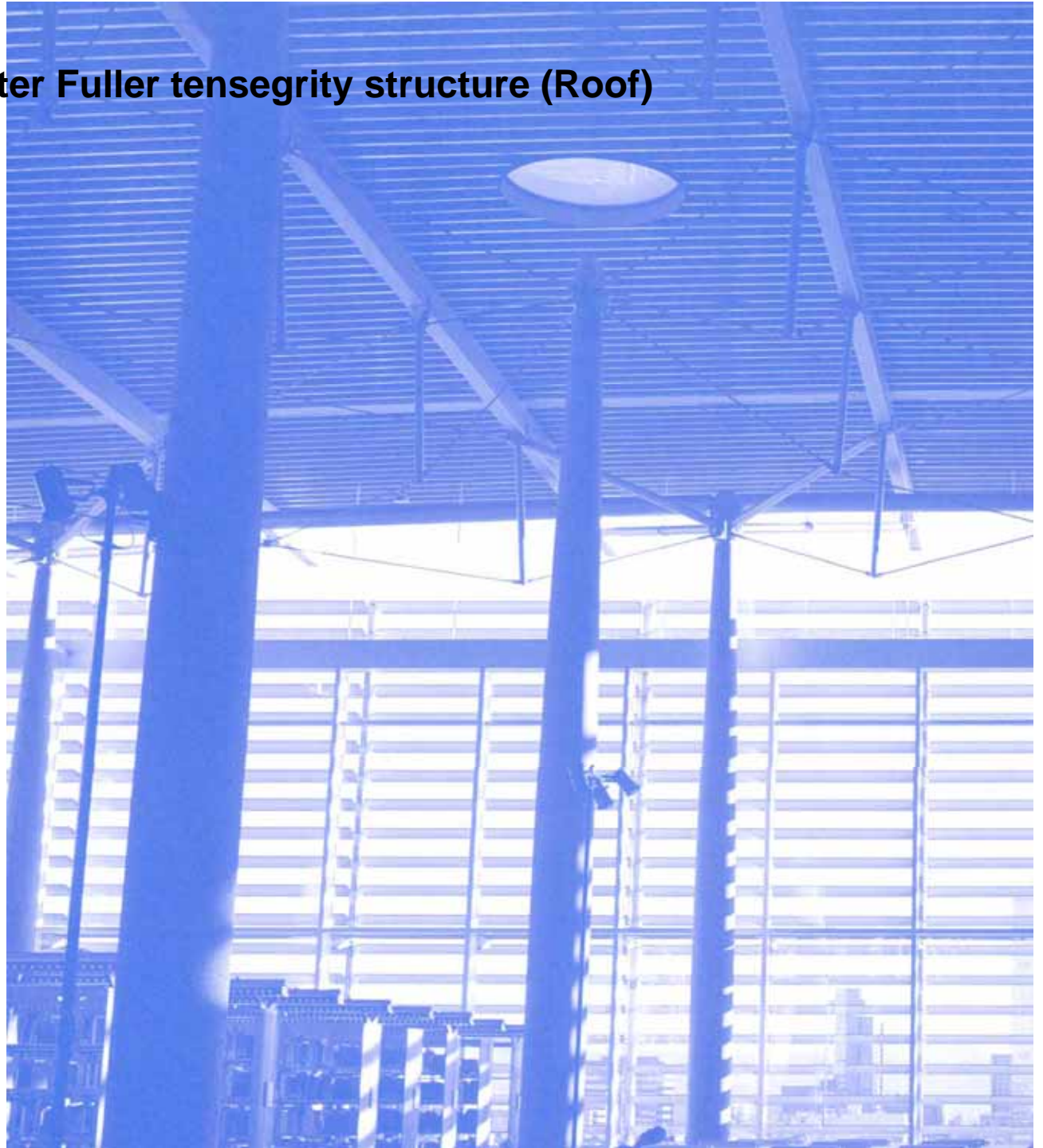
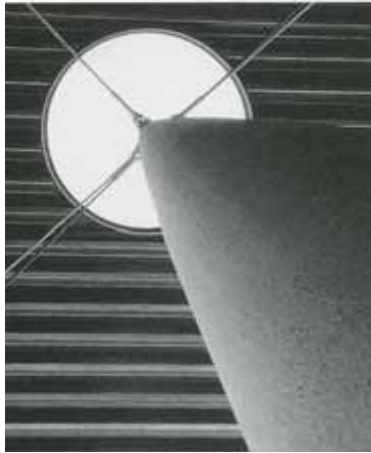
# Construction process 4



# Roof structure (details)



# Analysis: A Buckminster Fuller tensegrity structure (Roof)

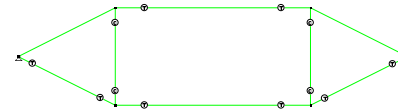


# Analysis: A Buckminster Fuller tensegrity structure (Roof)

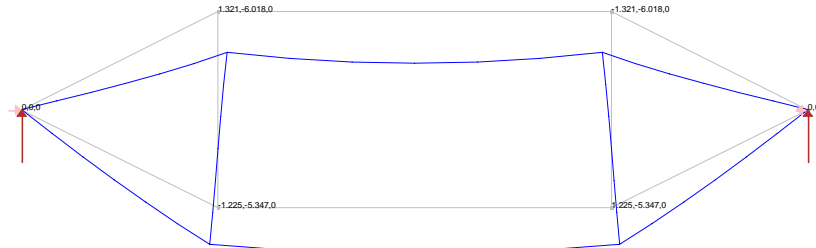
Multi 4D program

Sections

## Tensegrity structure

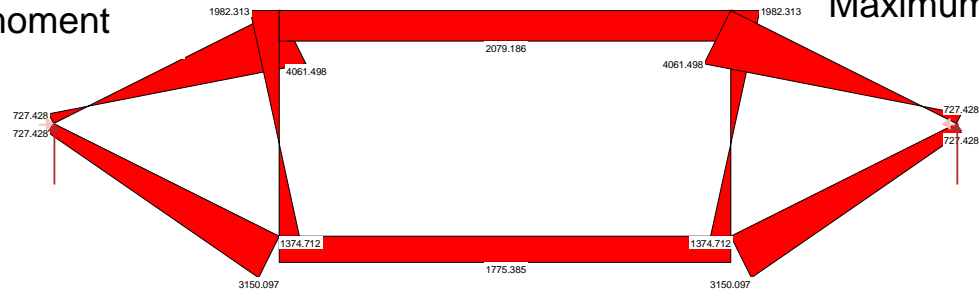


## Deflection





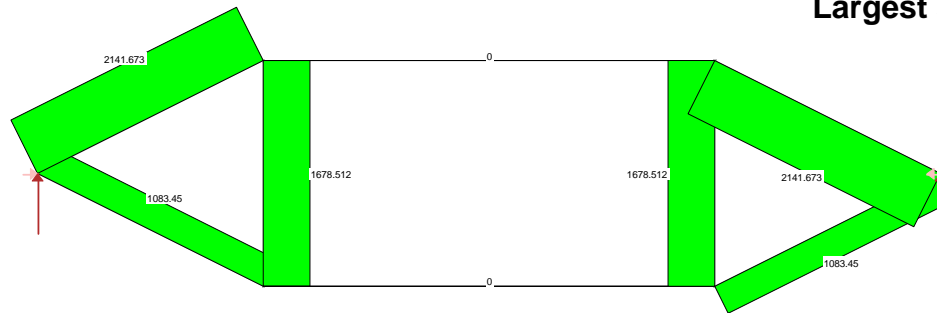
Maximum moment



Maximum moment

**Bending moment**

Largest shear



Largest shear

**Shear stress**

