

Hong Kong and Shanghai Bank Headquarters

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Hong Kong and Shanghai Bank Headquarters

the team.....

Architects : Foster Associates
Structural Engineers : Ove Arup & Partners
Building Services : Roger Preston & Partners

Of Architect and Client.....

A : *“a symbol of strength and stability”*

C : *“the best bank building in the world”*

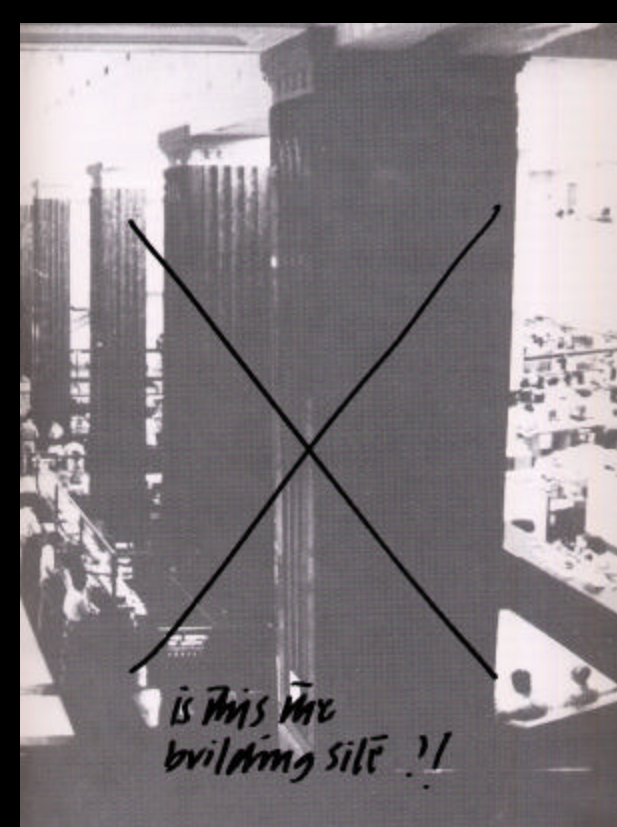
the building.....

Duration of construction : 1979 -1986
Built-up Area : 90,000 sq.m.
Number of level : 47+ 3 (B)
Total height : 179m



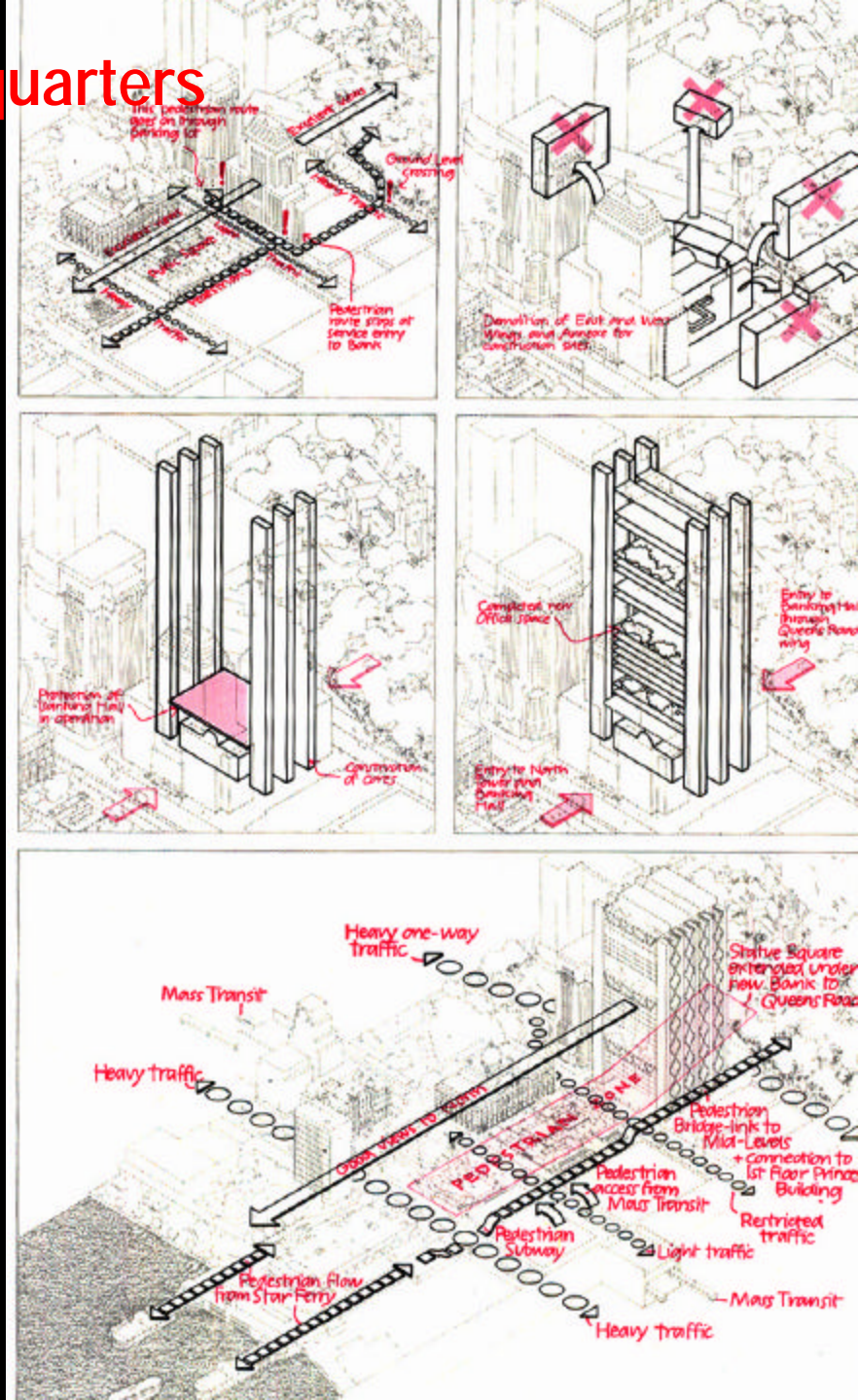
NORMAN FOSTER

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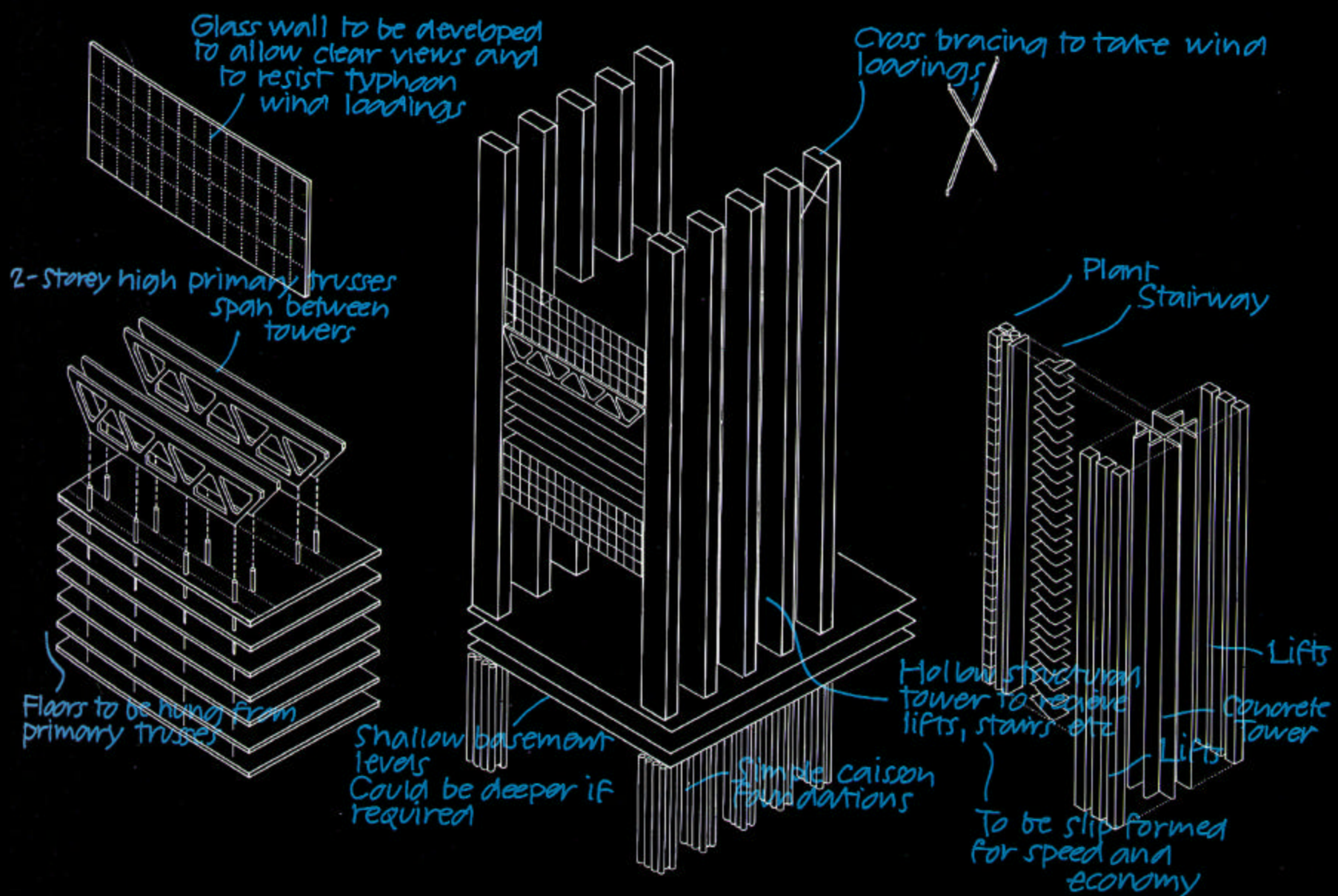


the challenges.....

- Time Constraint
- Restricted Site
- Soil Conditions –granite, mud and sands
- Few locally produced building materials
- “No noise, dirt or grime” restriction

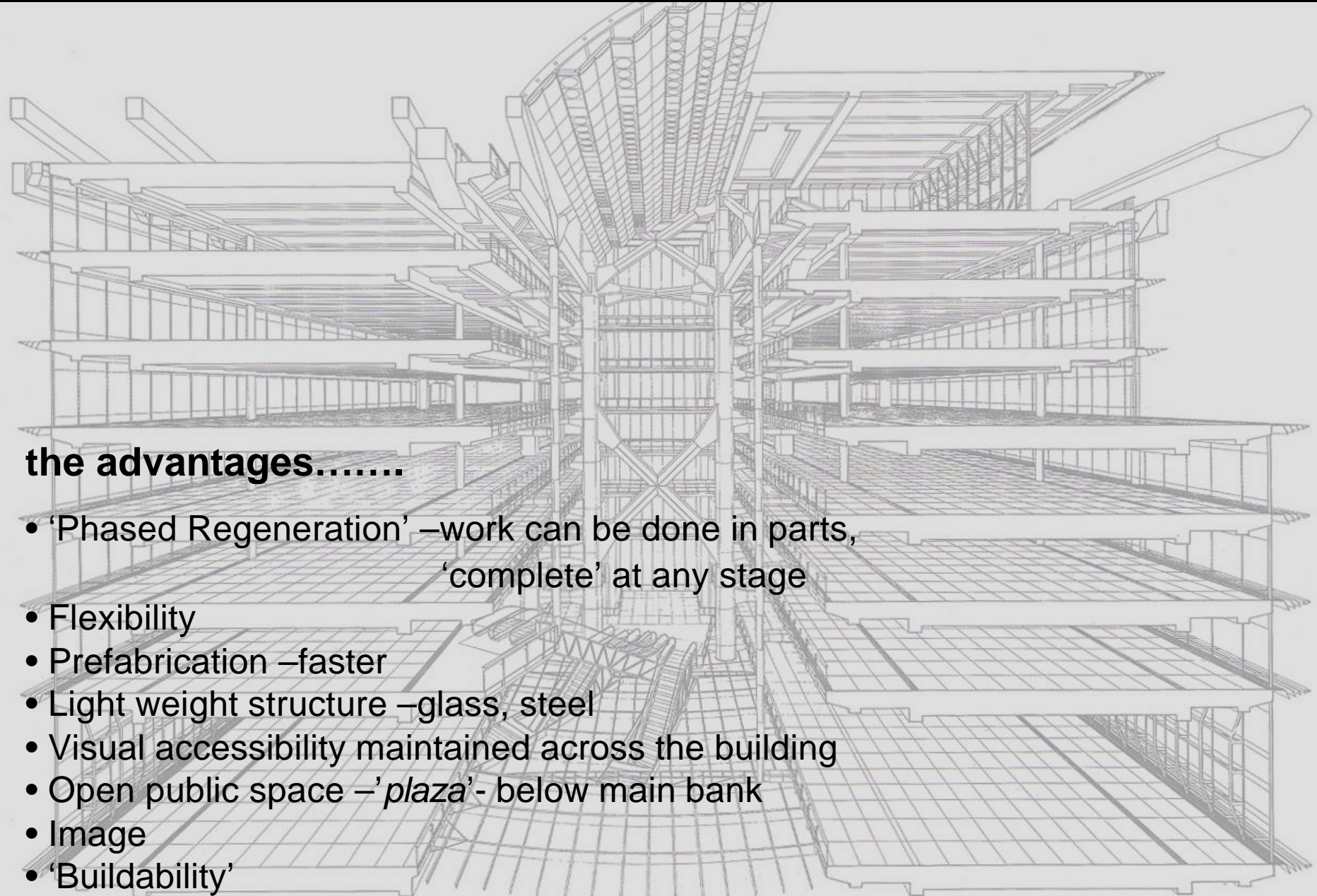


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Massive exoskeleton graphically illustrating the forces and the weight of the building

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the advantages.....

- ‘Phased Regeneration’ –work can be done in parts, ‘complete’ at any stage
- Flexibility
- Prefabrication –faster
- Light weight structure –glass, steel
- Visual accessibility maintained across the building
- Open public space –‘plaza’- below main bank
- Image
- ‘Buildability’

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•Steel Super-frame

Composed of "kit of parts":

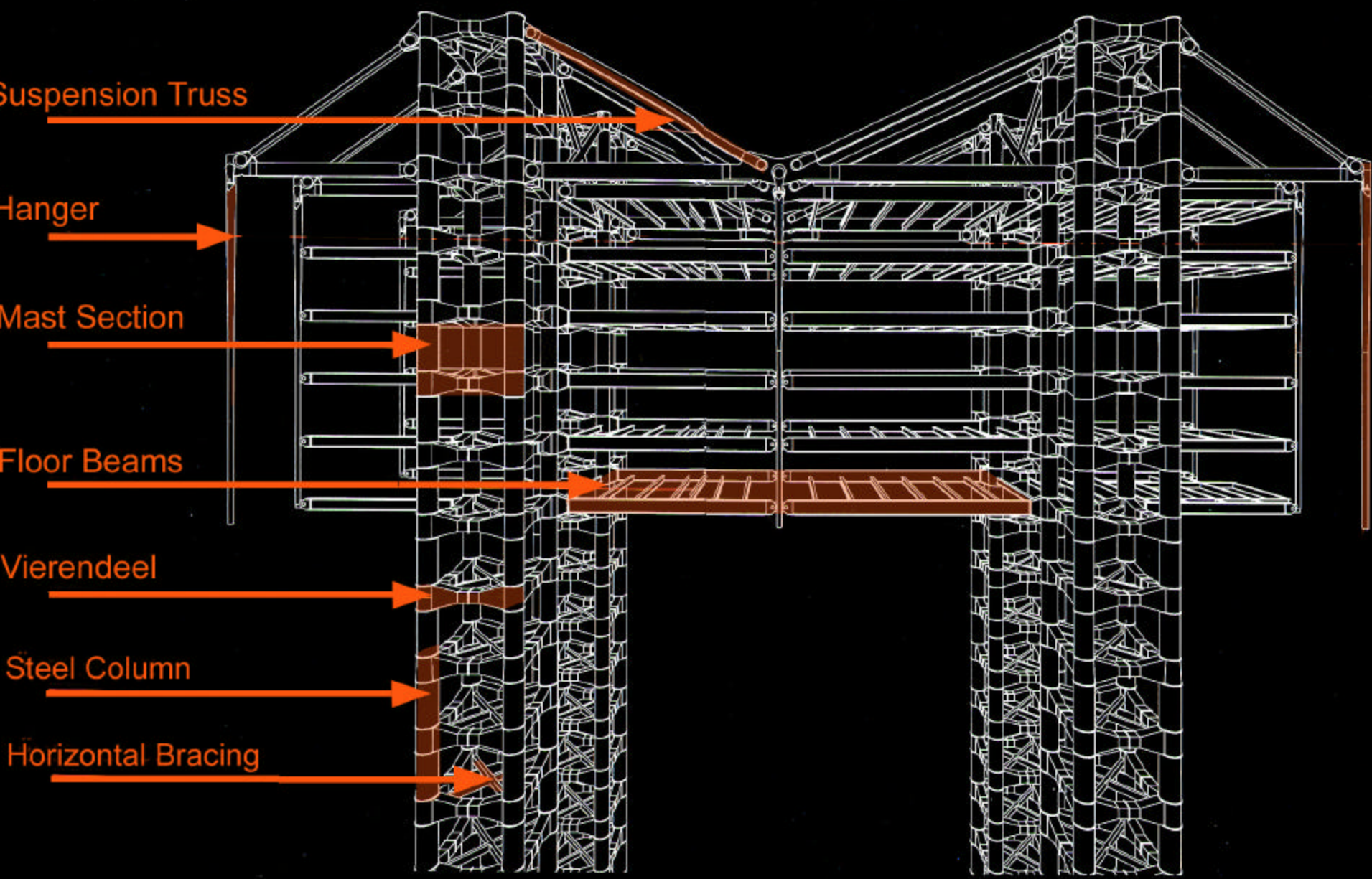


- 8 masts, arranged in two parallel rows of four. each mast consists of four tubular steel columns braced by rectangular beams
- 17 pairs of suspension trusses, located at each of the 5 double height spaces up the building
- 102 hangers, from which the floors of the building would be suspended
- 24 cross braces, each 2 stories high, designed to connect the masts inside the building at double height spaces. also 2 great 3-story high cross braces at either end of the atrium to provide north-south stability
- 43 floors framed by a series of primary and secondary beams, decked with steel and 100 mm of concrete

•Pile Foundation

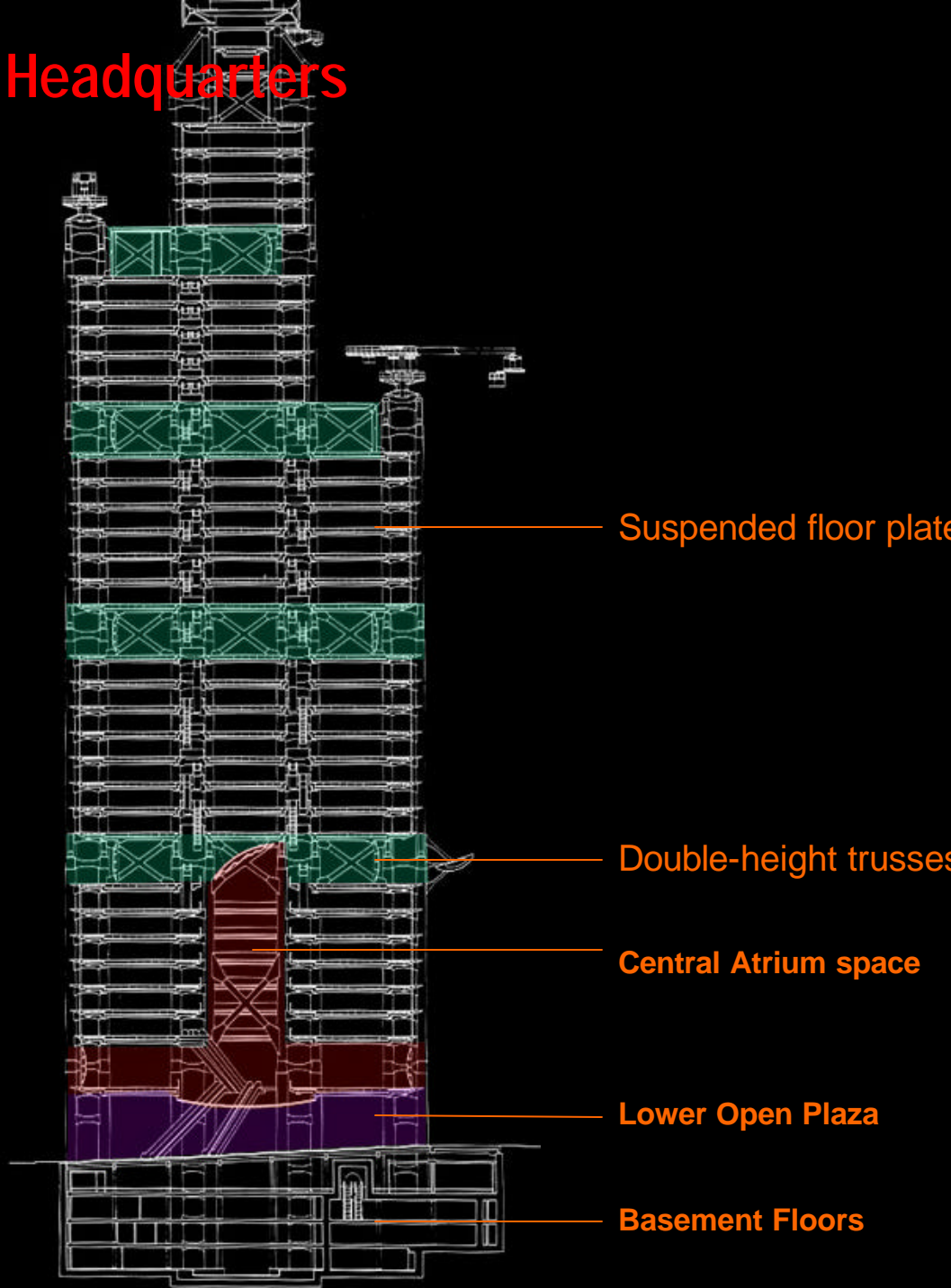
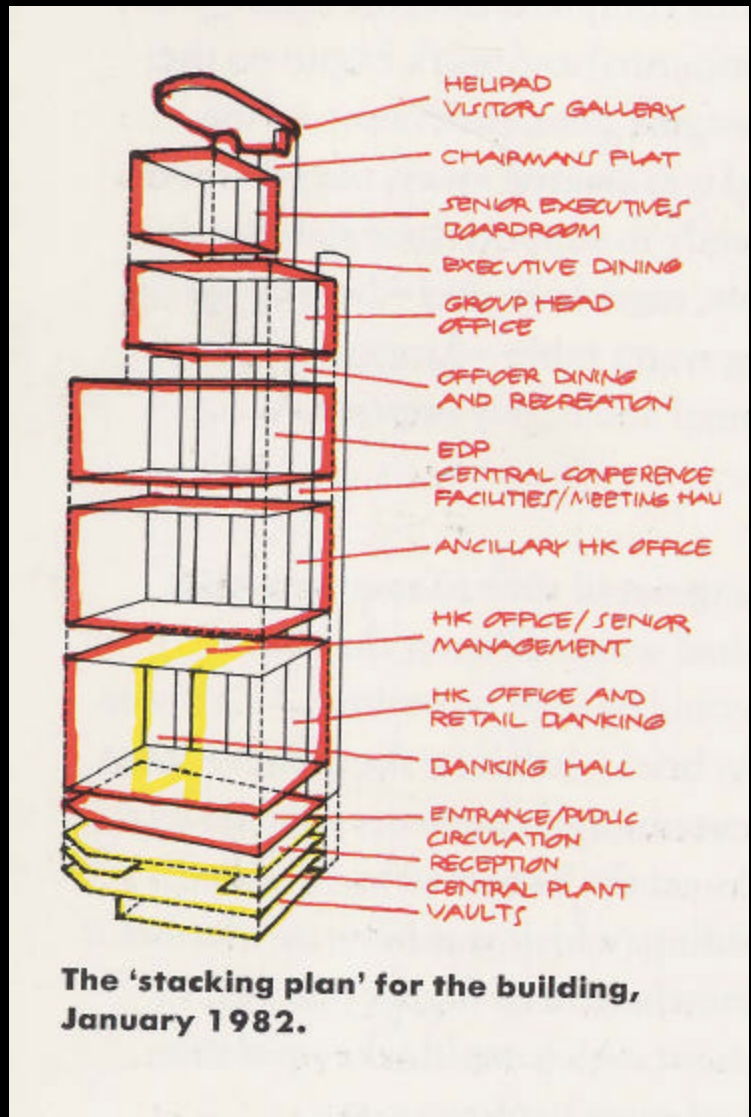
- 8 main caissons, 10 meters in diameter and 18 meters below ground

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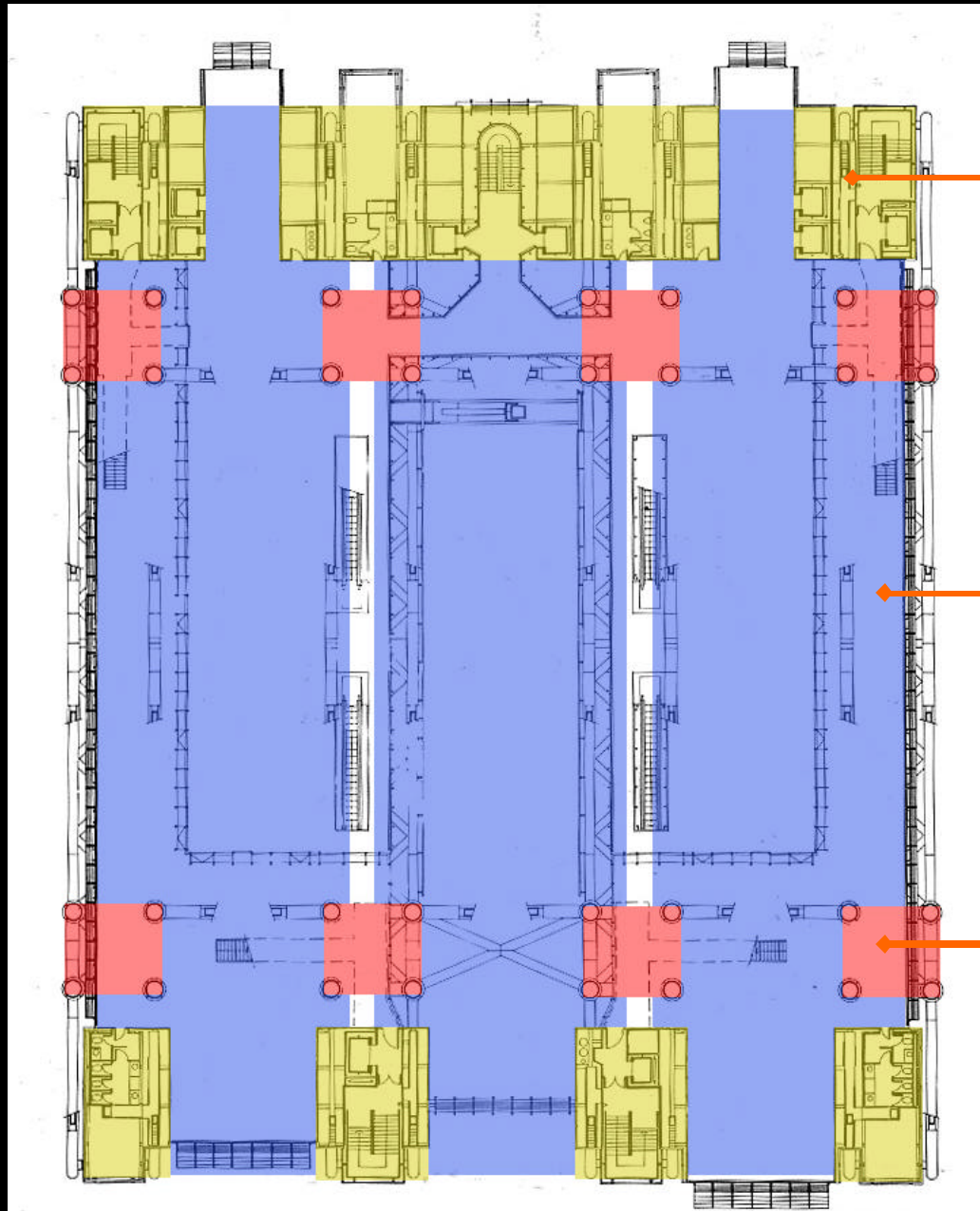


BASIC STRUCTURAL SYSTEM

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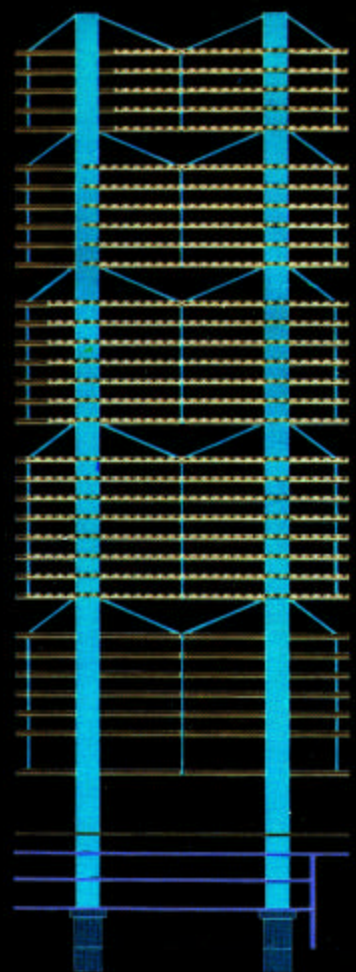
Service & Circulation core

Open Floor Space

Composite Steel Column

TYPICAL FLOOR PLAN

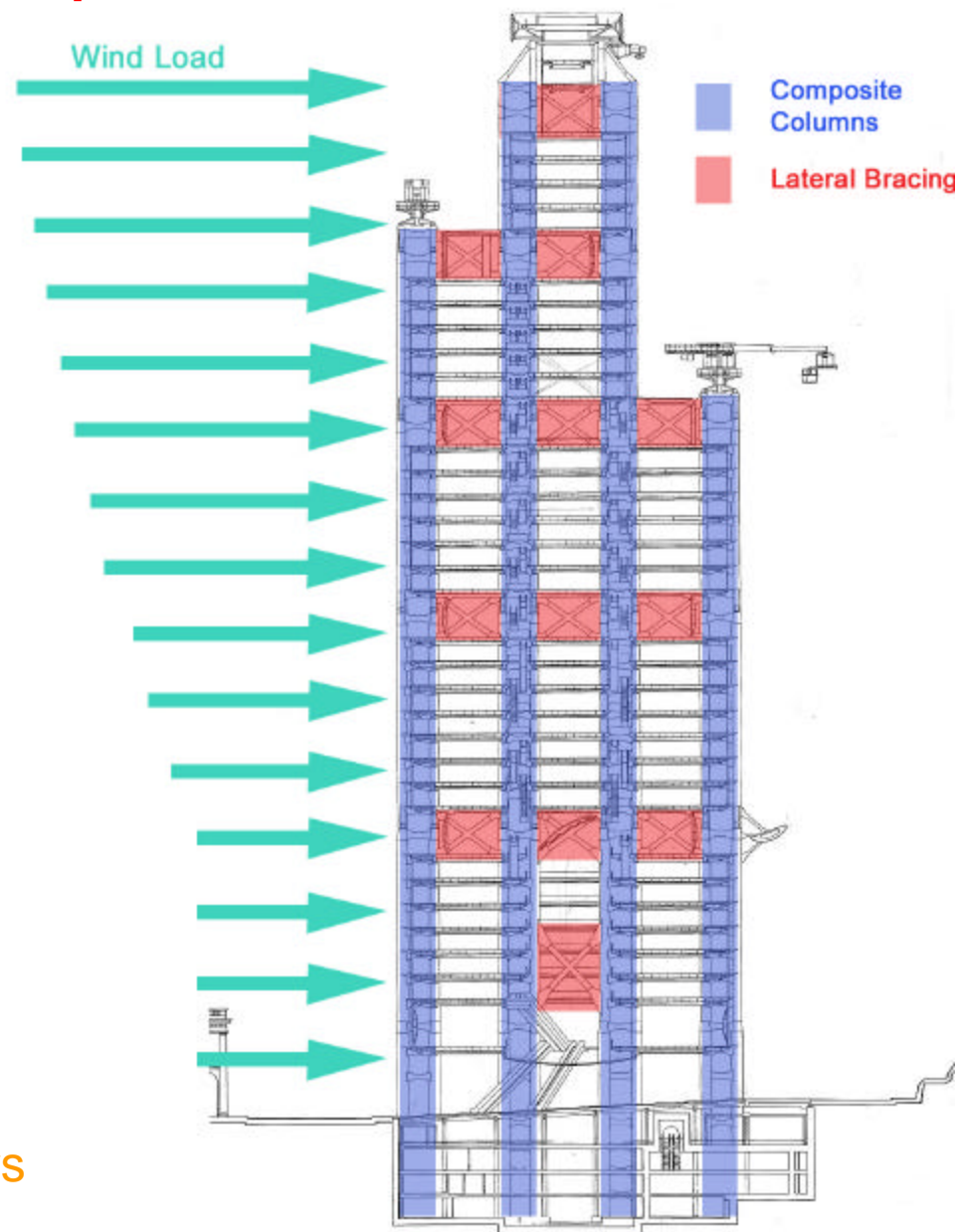
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schematic section

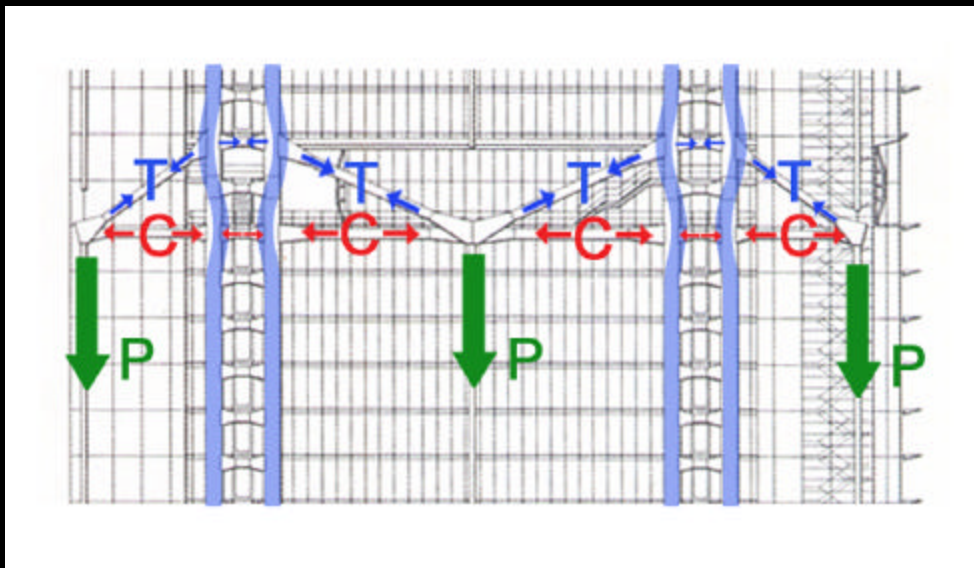
how the building works.....

blocks of floors are suspended by hangers dropped from trusses, which in turn are supported by the masts

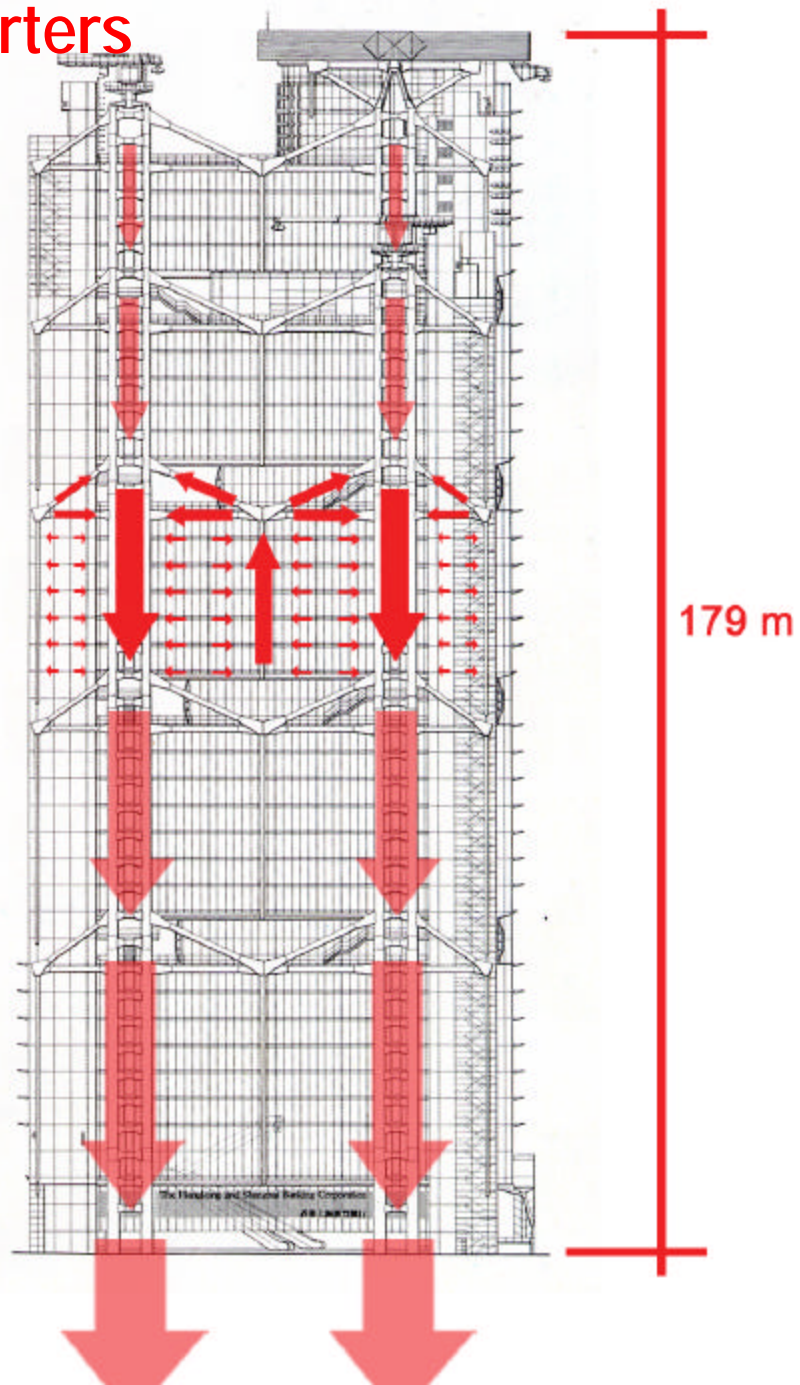


- Composite Columns
- Lateral Bracing

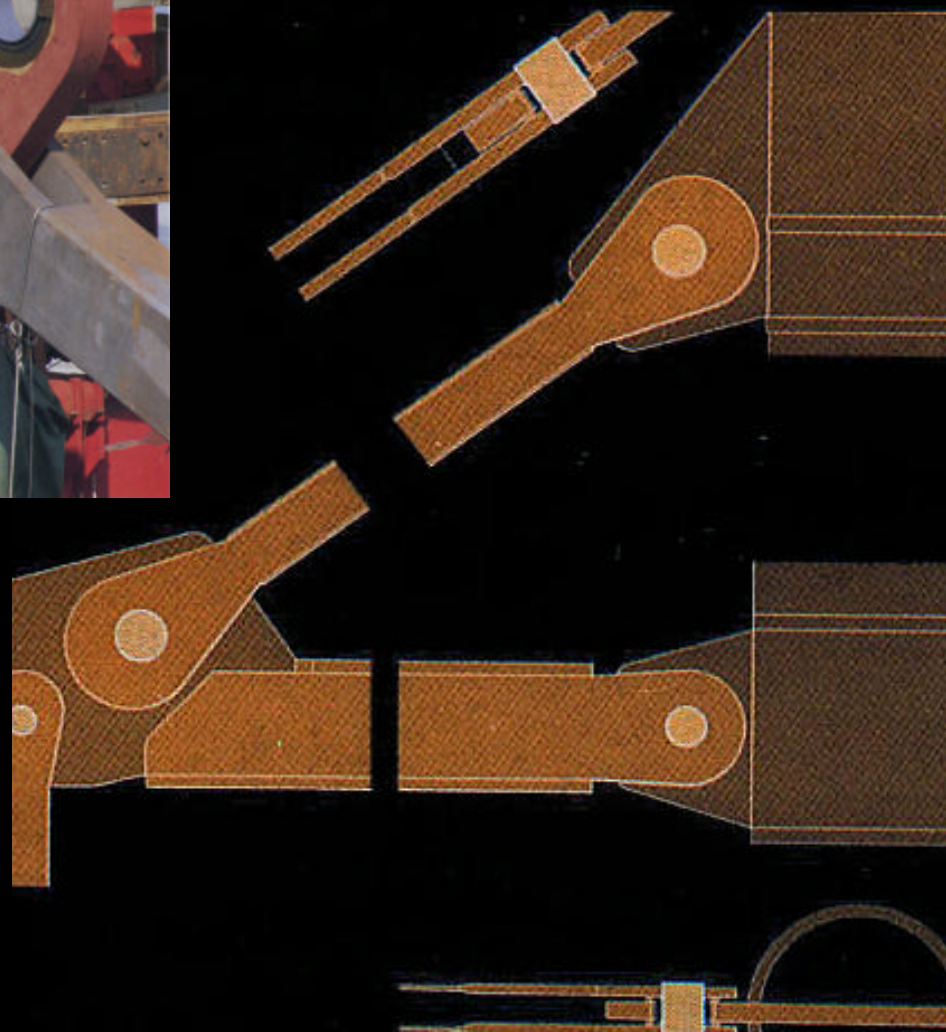
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LOAD DIAGRAM

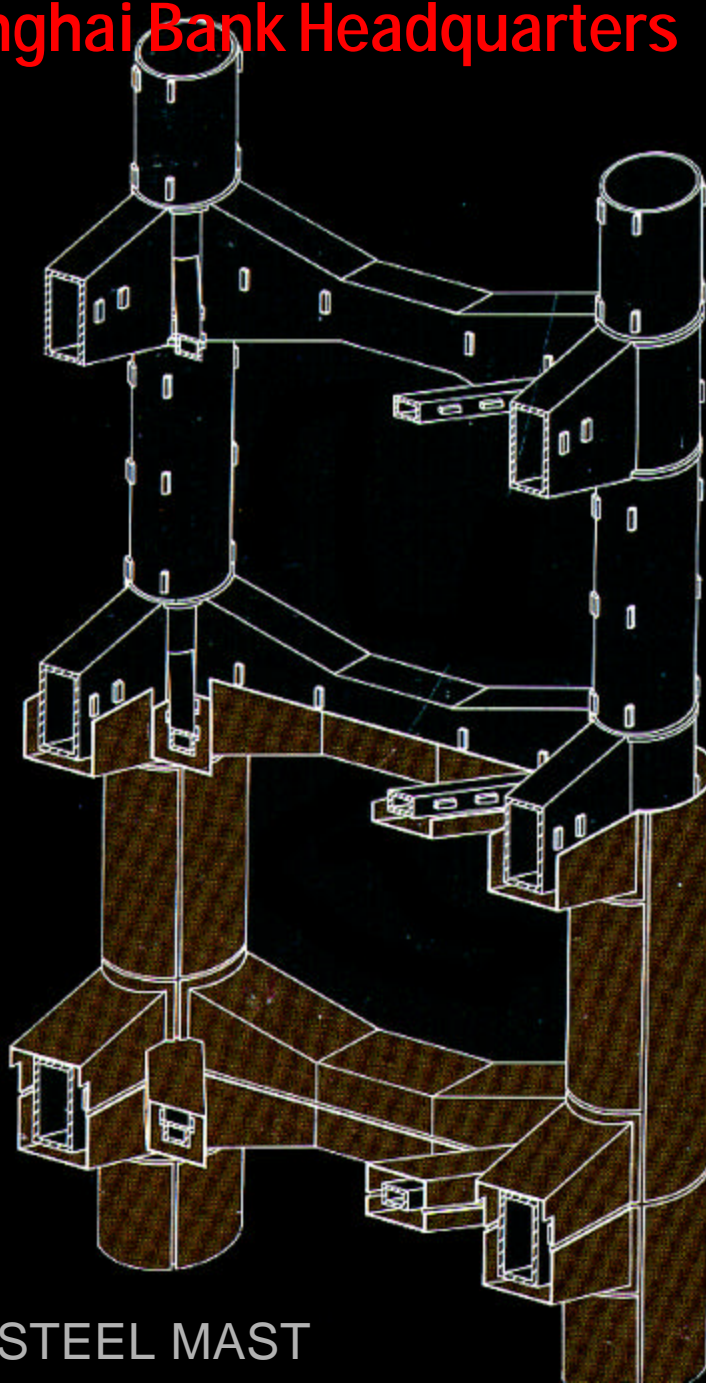


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Giant suspension trusses bolted to the main mast by spherical bearings

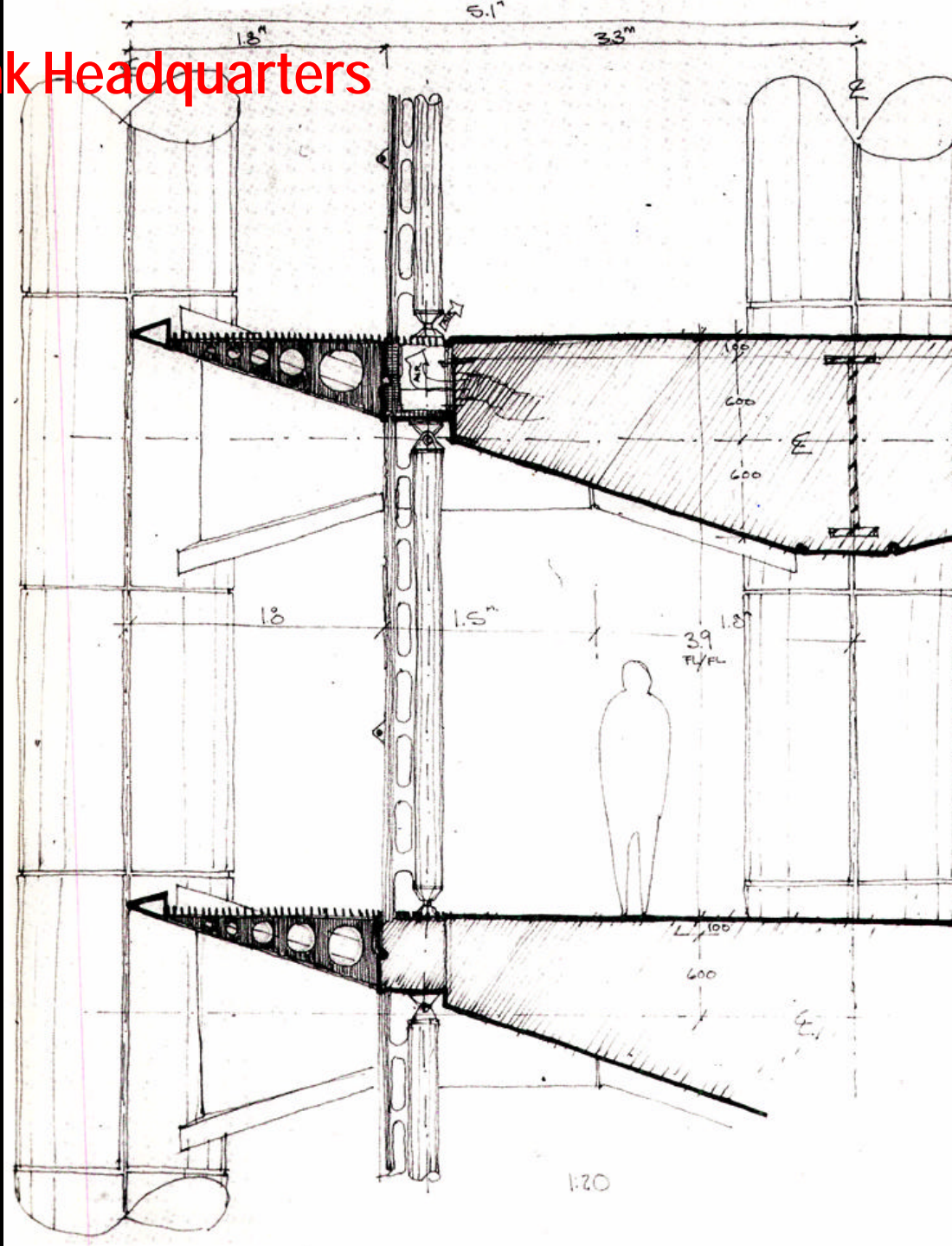
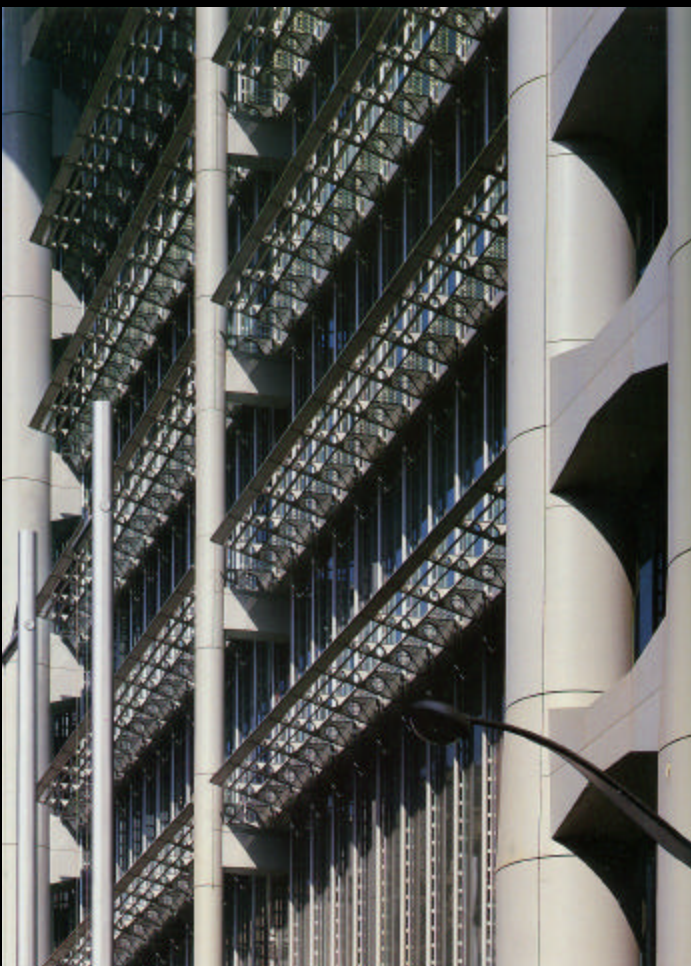
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8 masts, arranged in two parallel rows of four –each mast consists of four tubular steel columns braced by rectangular beams

PROTOTYPE OF THE STEEL MAST

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The relation between floors, ceilings
sunscreens, mullions and masts

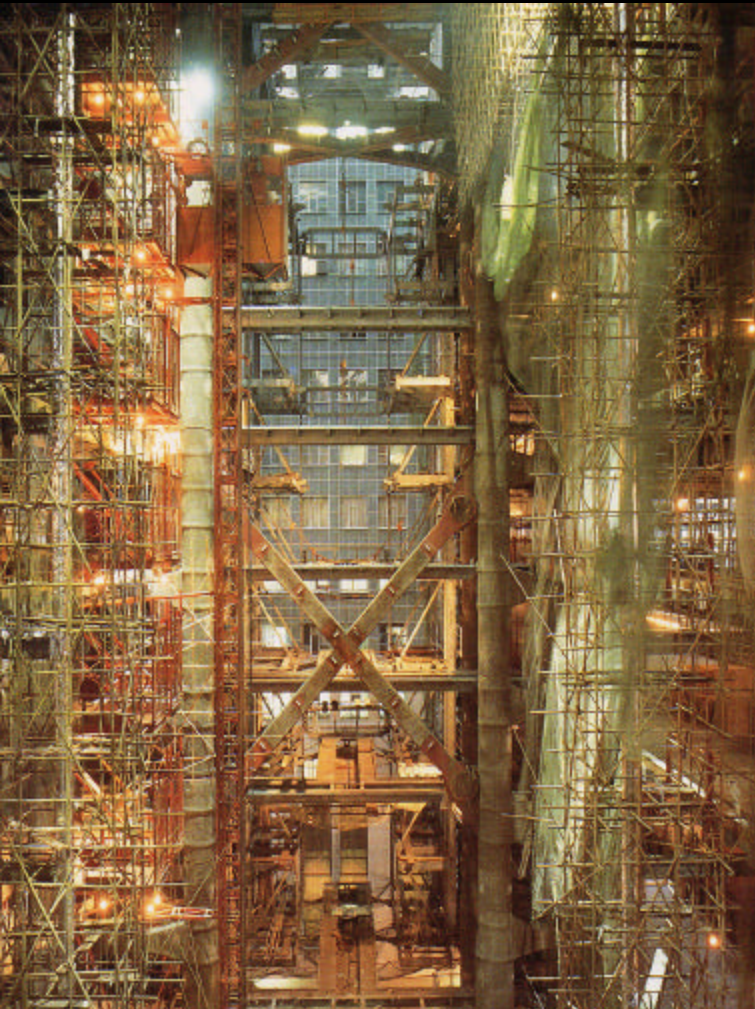
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The steel-framed underbelly of the building separating the air-conditioned space above from the public 'plaza' below



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POWER
MUSCULAR HI-TECH

DELICACY
PURE TRANSPARENCY

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References

Hong Kong Bank: The building of Norman Foster's masterpiece

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Bank Builders

-Edwin Heathcote

A+U: Norman Foster

Foster Catalogue - Prestel