Client: Corporation of Lloyd's of London
Business nature: Insurance
Design Team: Richard Rogers Partnership
Structural Engineer: Ove Arup & Partners
Services Engineer: Ove Arup & Partners
Built Up Area: 52,200 square metres gross area
Spatial Configuration

The Lloyds Building, consisting of twelve stories to the north, stepping down to six stories to the south.

Servant towers
with incorporation of raised flooring system and ceiling vioid

Atrium

Served zone
Structural Elements

Material: exposed concrete

Floor: waffle beam grid – enables longer span.

-The floors are composed of a network beams of **550mm x 300mm beams at 1.8m centres** supported by inserted in *situ* U-beams which are post-tensioned to allow the 18m span length.
-The corners of the building are also **prestressed and post-tensioned** in two directions to limit the deflections of the floors.
-To create a service void, stub columns are placed on top of these beams which a permanent, specially-designed steel shutter incorporating an acoustic sandwich is positioned, and a non-structural concrete topping is then added to complete the floor.

![Diagram of structural elements](image)
Load Tracing
By using beams with parallel sides and sharp arises Rogers emphasizes that the floor is a grid not a solid, coffered slab.
Soil and Foundation

- Constructed by Constain Group PLC
- **Pile foundation** with pile caps supporting main columns
- Over 300 piles, each 750 mm dia/ 26 meters deep
- **Diaphragm Walling** and **Cast-in-place Retaining walls** along edges of site
- **Soil** is mostly **clay** with a large deposit of **sand** on the north end of the site
Service Towers:

The service towers consist of pre-cast concrete members, each designed as a “kit.” Each tower is tied to the main structure by a concrete connection at each floor.
Load Tracing
Lateral Load
Multiframe Analysis

Deflections

Bending Moments

Lloyds Building 1978-86, London

Arch 631

Richard Rogers
Multiframe Analysis

Shear Diagram

Loads
**Bibliography:**

**Books:**


**Websites:**

http://www.lloyds.com/About_Us/The_Lloyds_building/Visiting_the_Lloyds_building.htm
Thank You!