



SOM

Multidisciplinary Design

Kent Jackson
Design Director
June 2014

SOM

A Multidisciplinary Practice

Formed in 1936

Timeless design for over 75 years

SOM was founded in 1936 following Skidmore and Owing's successful collaboration on the 1933 Exposition 'A Century of Progress' in Chicago.



Louis Skidmore



Nathaniel A. Owings



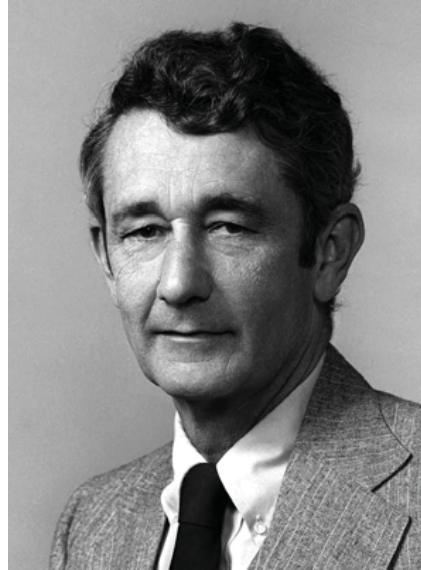
John O. Merrill

A Second Generation

Pushing SOM to Achieve Design Excellence



Gordon Bunshaft
Pritzker Prize 1988



Bruce Graham



Fazlur R. Kahn

Our Staff are Specialists

SOM invites designers from Architecture School and allows them to Specialise



Derek Moore
New York

Expert in
Transport
Planning



Lonny Israel
San Francisco

Expert in
Graphic Design



Jaime Valez
New York

Expert in
Workplace
Design



Dmitri Jajich
London

Expert in
Structural
Engineering



Takang Hsu
London

Expert in
3D Parametric
Design

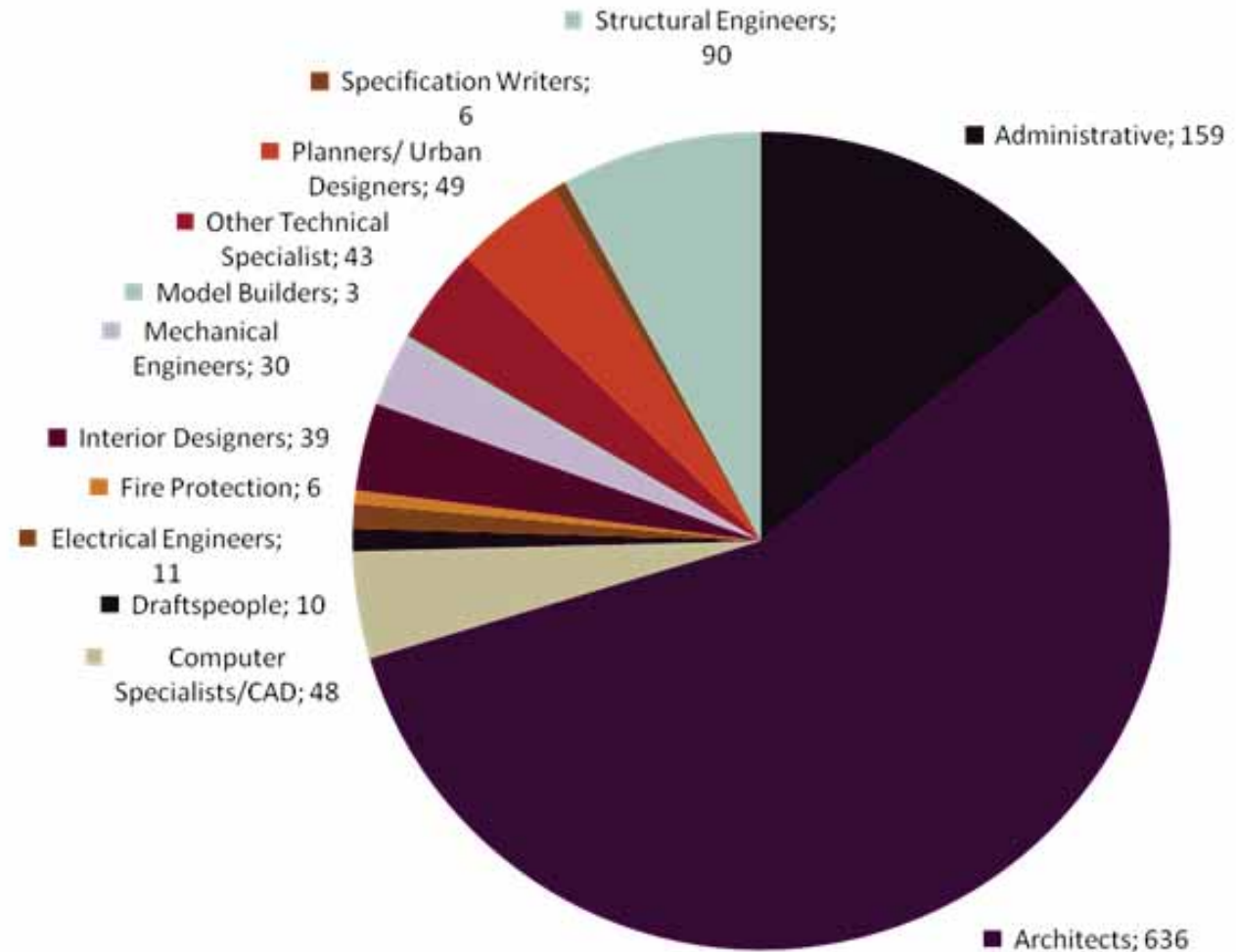
An Integrated International Practice

SOM currently employs 1130 people across 12 offices



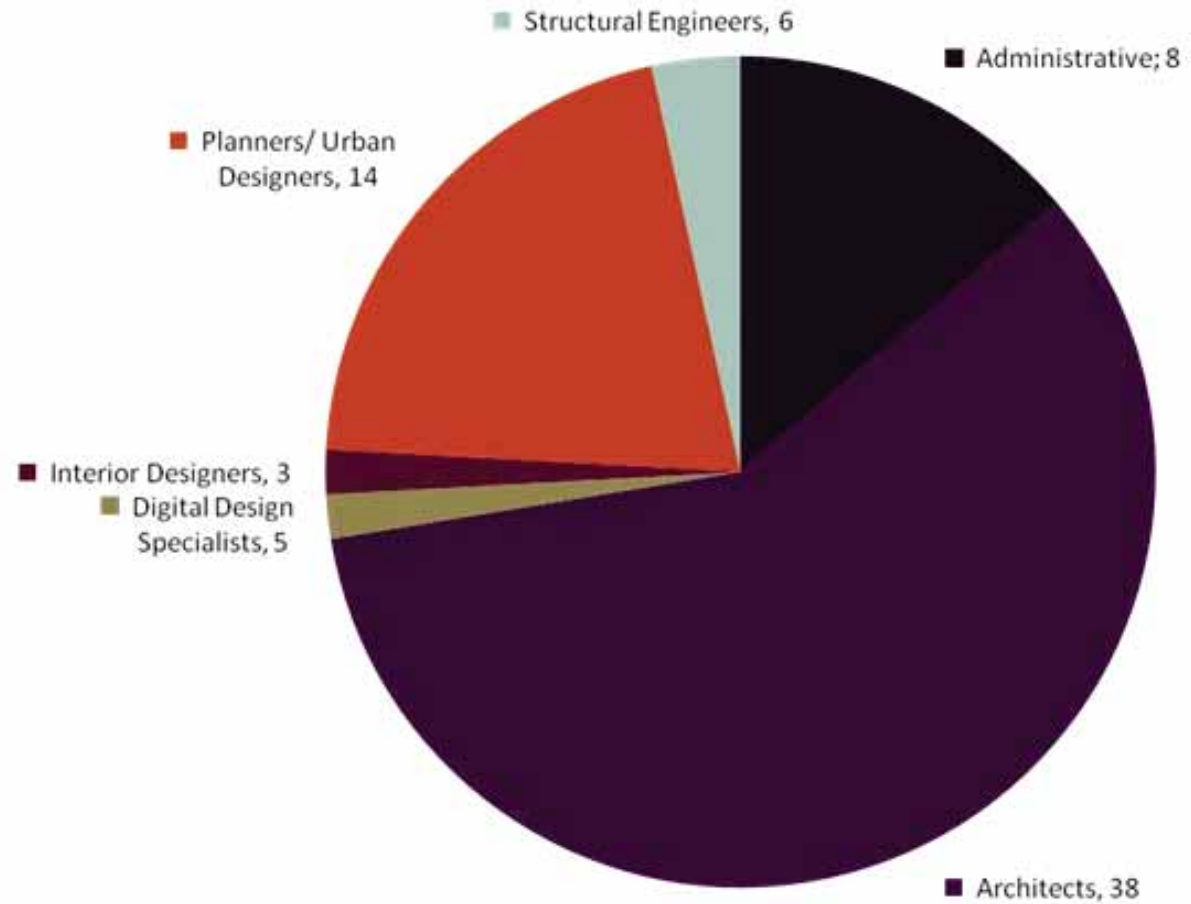
Multidisciplinary Practice

Firm wide Distribution of Staff Across Disciplines



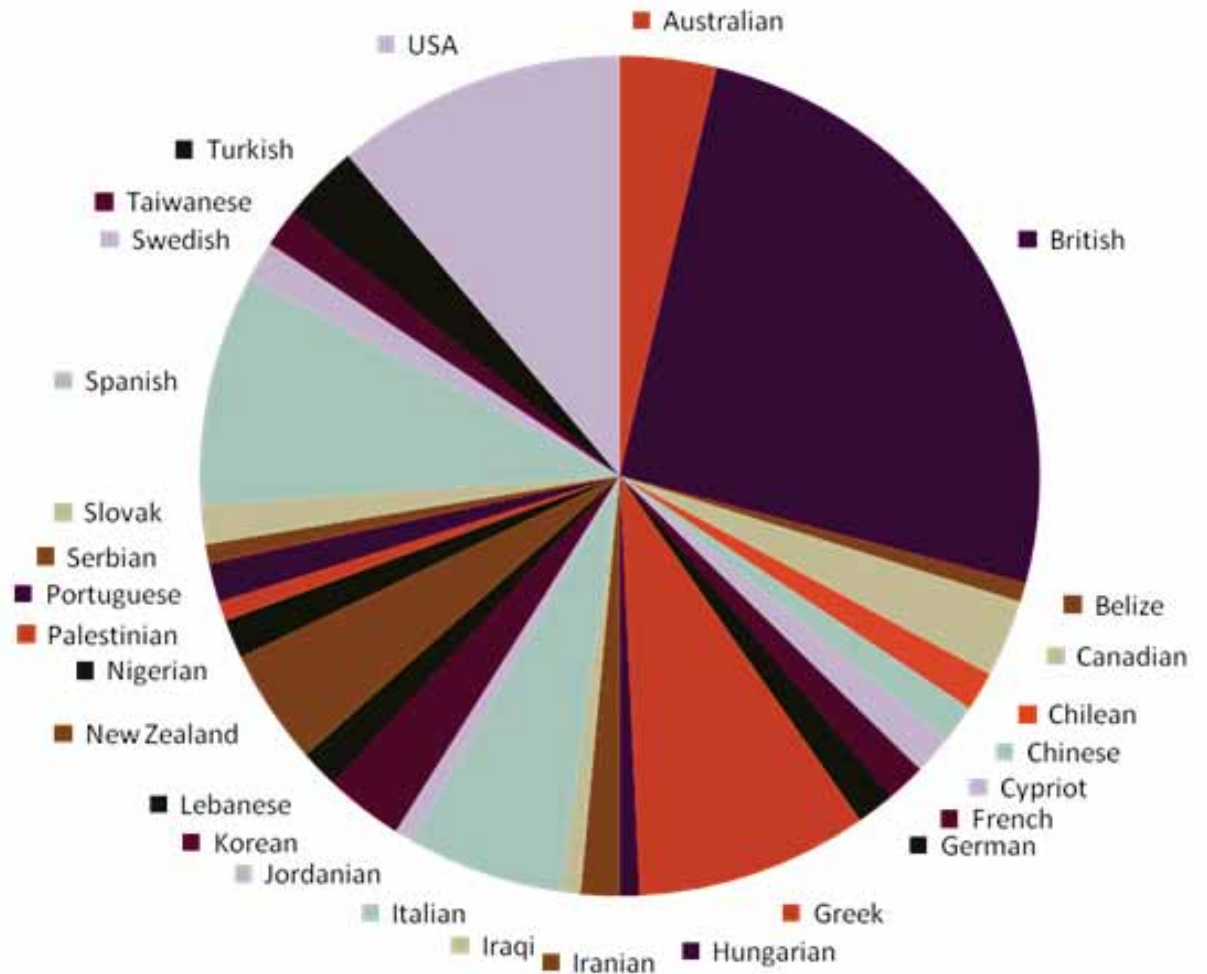
Multidisciplinary Practice

London Office Distribution of Staff Across Disciplines



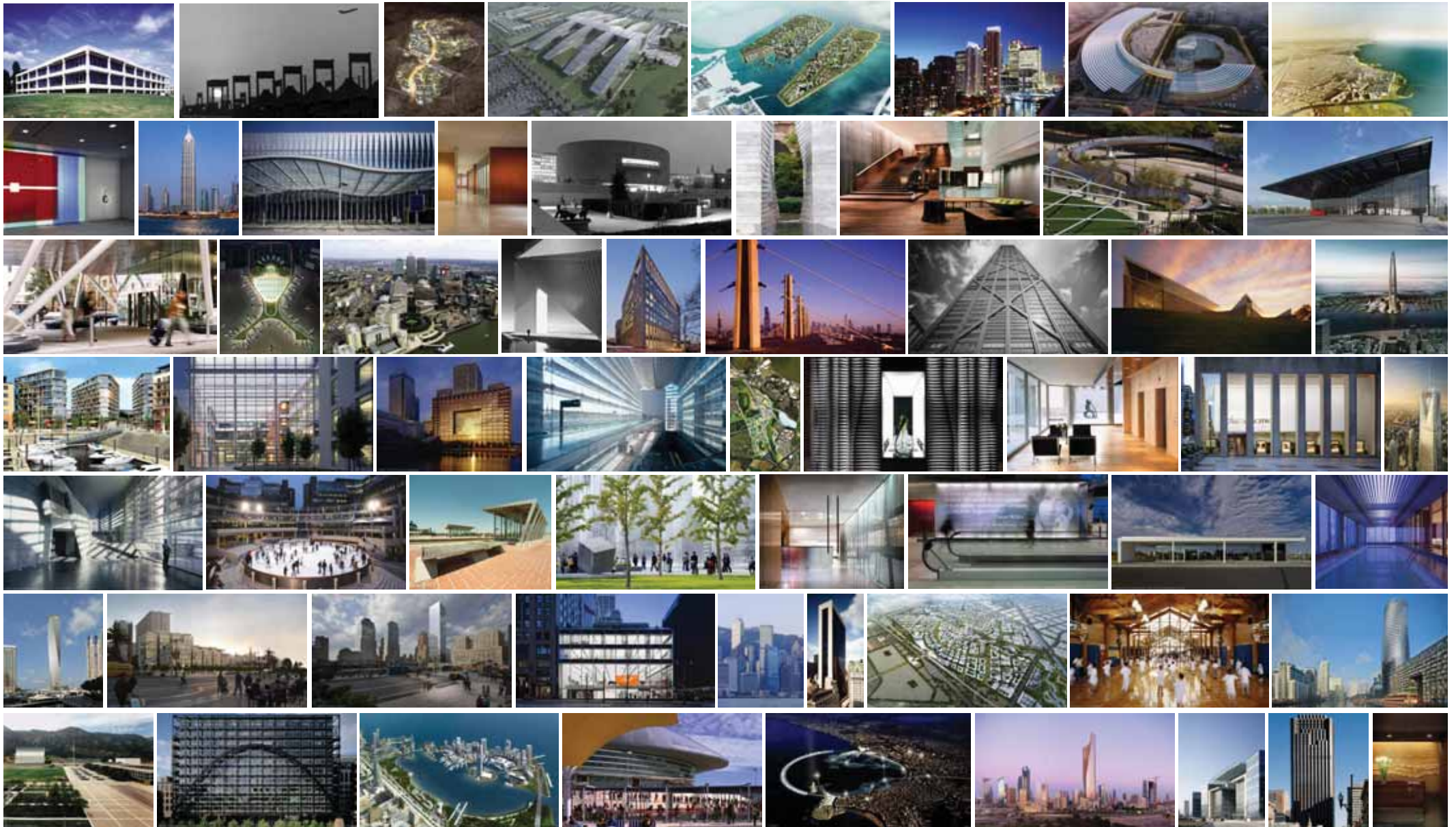
Our staff are diverse

London Office: 29 Languages, 26 Nationalities



A Significant Body of Work

SOM has built more than 10,000 projects



Modern Architects

Innovating and Adapting

“From the modern office building to the rural corporate campus and the great developer skyscraper, the contemporary airport and rail station, to say nothing of the populization of modern architecture in general. SOM was there.”

Nicholas Adams, Skidmore Owings & Merrill, the Experiment since 1936.



King Abdul Aziz International Airport – Hajj Terminal
Jeddah, Saudi Arabia



Ruck-A-Chucky Bridge
Auburn, CA USA



Changi International Airport - Terminal 3
Changi, Singapore

SOM

Design Excellence

A Single Goal, a Diverse Approach

SOM's multiple offices

“Despite a public face that sometimes appears monolithic, SOM functions more like a federated group of city states or affiliated research teams, each ruled in its own way with its own sense of history and purpose. The goals may be identical but each of the partners gives them slightly different weight.”

Nicholas Adams, Skidmore Owings & Merrill, the Experiment since 1936.

Consistent Design Excellence

Timeless award-winning design



Lever House
New York, New York
1980 AIA



John Hancock Tower
Chicago, Illinois
1993 AIA



US Air Force Chapel
Colorado Springs,
Colorado
1997 AIA



Weyerhaeuser HQ
Tacoma, Washington
2001 AIA



National Commercial Bank
Jeddah, Saudi Arabia
2008 AIA



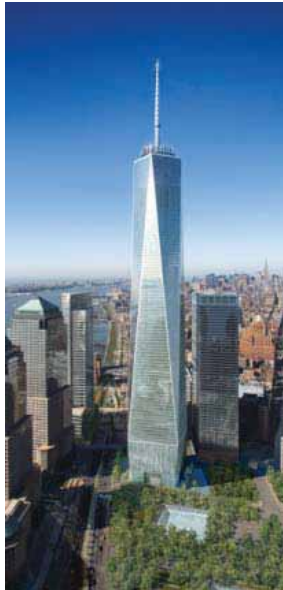
King Abdul Aziz Airport
Jeddah, Saudi Arabia
2010 AIA

SOM Today

The continued pursuit of timelessness



Burj Khalifa
Dubai, UAE



One World Trade Centre
New York



Trump Tower
Chicago, Illinois



JTI Headquarters
Geneva, Switzerland



Broadgate Tower
London, UK

Multi disciplinary = Collaborative

Internal Design Review



Leading the Industry

Design Excellence



Most Innovative Architecture Firm
Fast Company



Number 1 Architecture Firm
Architect Magazine



...and then to our Peers

The SOM Journals



SOM

Strength in Specialism

We are Masters of all Skills Associated with Construction

Drawing on the expertise of a diverse and multi-disciplinary firm



We are Masters of all Skills Associated with Construction

Drawing on the expertise of a diverse and multi-disciplinary firm



Planning

The Great Lakes Vision Plan, USA



01

Bigger than
a national park



02

Green cities
and great lakes



03

Great minds
and great lakes



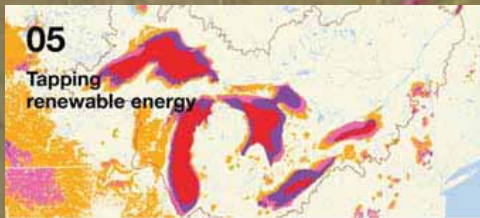
04

Blue is the new green



05

Tapping
renewable energy



06

Achieving
mobility



07

Leaders in a new
economy



08

Commitment
to local food



Architecture

1 World Trade Center, New York



Sustainable Design

Energy + Net Zero Building



Interior Design

JTI Mount Street



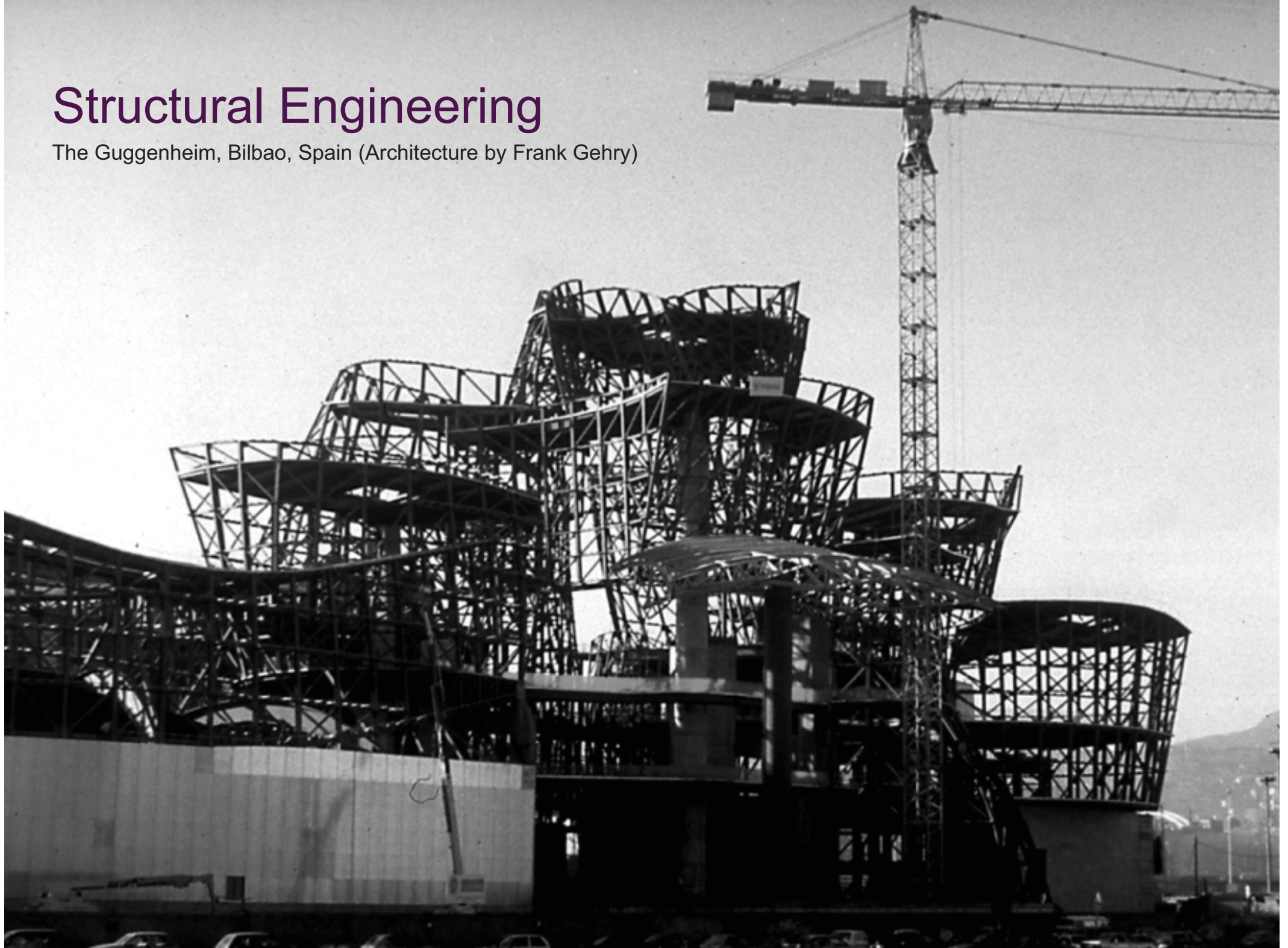
Structural Engineering

Timber Tower Research Project



Structural Engineering

The Guggenheim, Bilbao, Spain (Architecture by Frank Gehry)



SOM

Architects & Engineers

Huge Icons to Small Gems

Design Excellence



Burj Khalifa
Dubai, UAE



Cathedral of Christ the Light
Oakland, CA, USA

SOM Engineering

A Rich Legacy

SOM Partner Fazlur Kahn, creator of the 'bundled tube' spearheaded the firm's legacy of complex engineering projects.



King Abdul Aziz International Airport - Hajj Terminal
Jeddah, Saudi Arabia



SOM Engineering

A Rich Legacy

SOM Partner Fazlur Kahn, creator of the 'bundled tube' spearheaded the firm's legacy of complex engineering projects.



John Hancock Center
Chicago. USA



SOM Engineering

A Rich Legacy

SOM Partner Fazlur Kahn, creator of the 'bundled tube' spearheaded the firm's legacy of complex engineering projects.

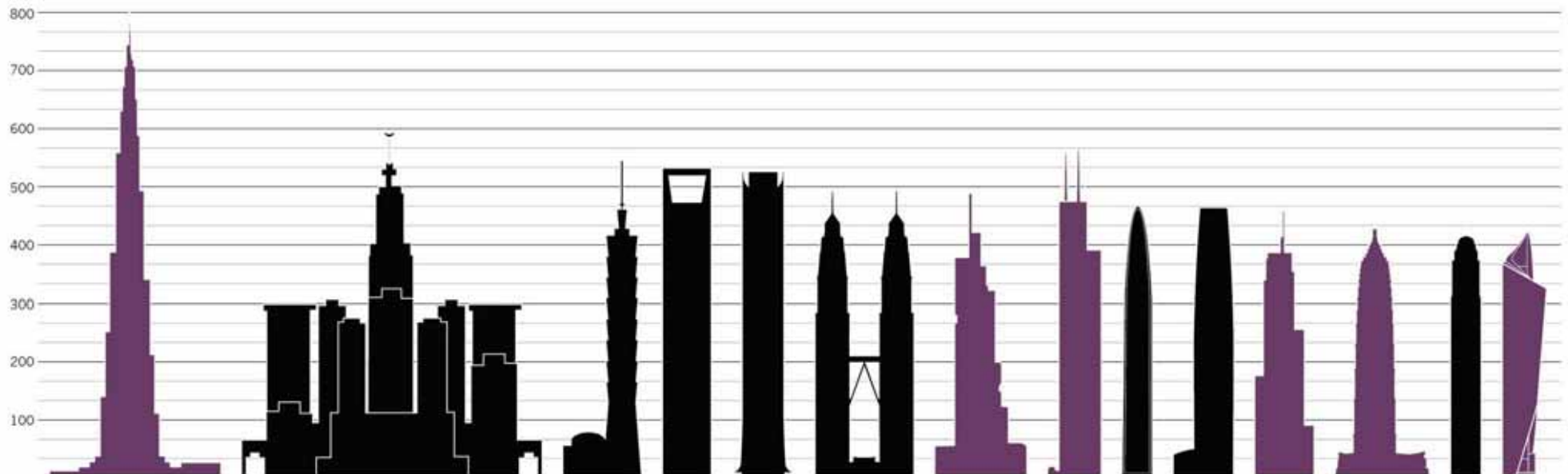


Willis Tower (formerly Sears Tower)
Chicago, USA

Pushing the Boundaries

SOM Tall Buildings

6 of the world's **15** tallest buildings were designed and engineered by SOM.



From left to right Burj Khalifa, Makkah Royal Clock Tower Hotel, Taipei 101, Shanghai World Financial Centre, International Commerce Center, Petronas Tower 1 & 2, Zifeng Tower, Willis Tower (formerly Sears Tower), KK 100, Guangzhou International Finance Center, Trump International Hotel & Tower, Jin Mao Building, Princess Tower, Al Hamra Firdous

■ SOM
■ Non SOM

The Tallest Building in the World

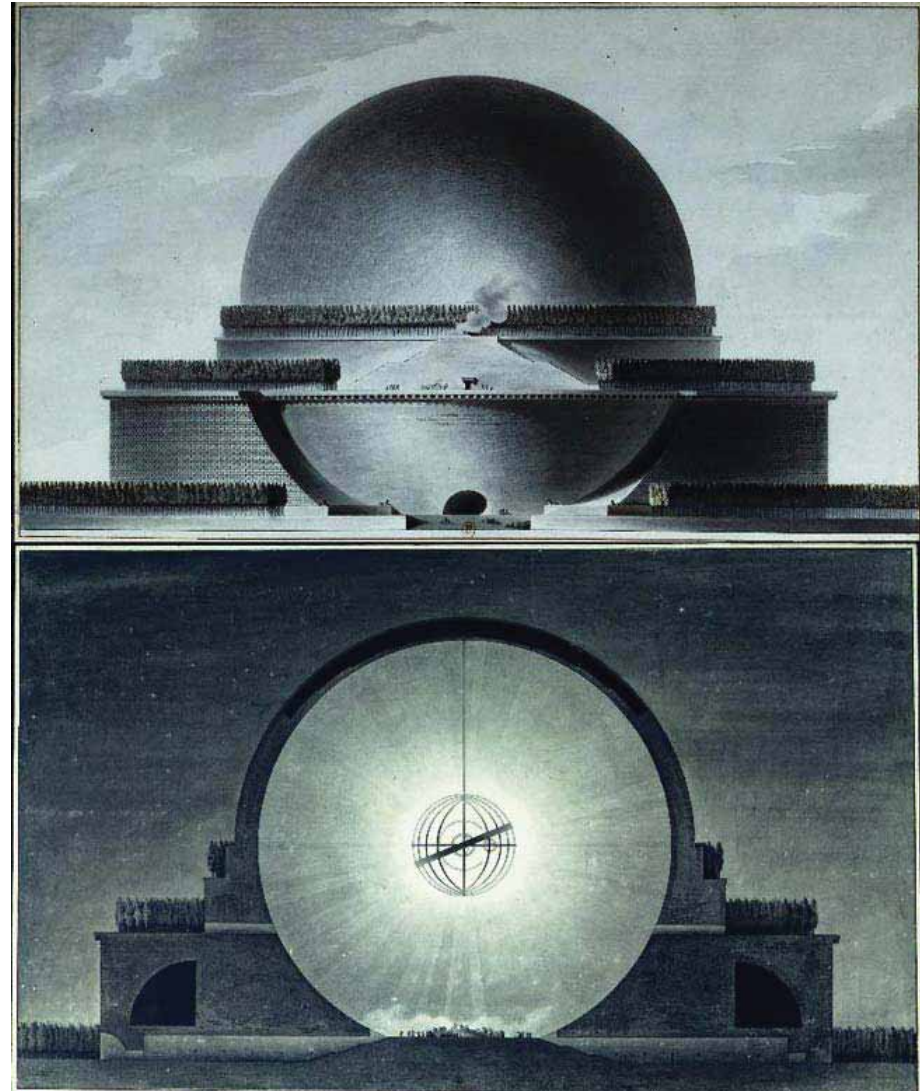
The Burj Khalifa, Dubai

Achieving and delivering the tallest building in the world would not have been possible without collaboration between our architects and our engineers from the outset of design

Designing Deliverable Buildings

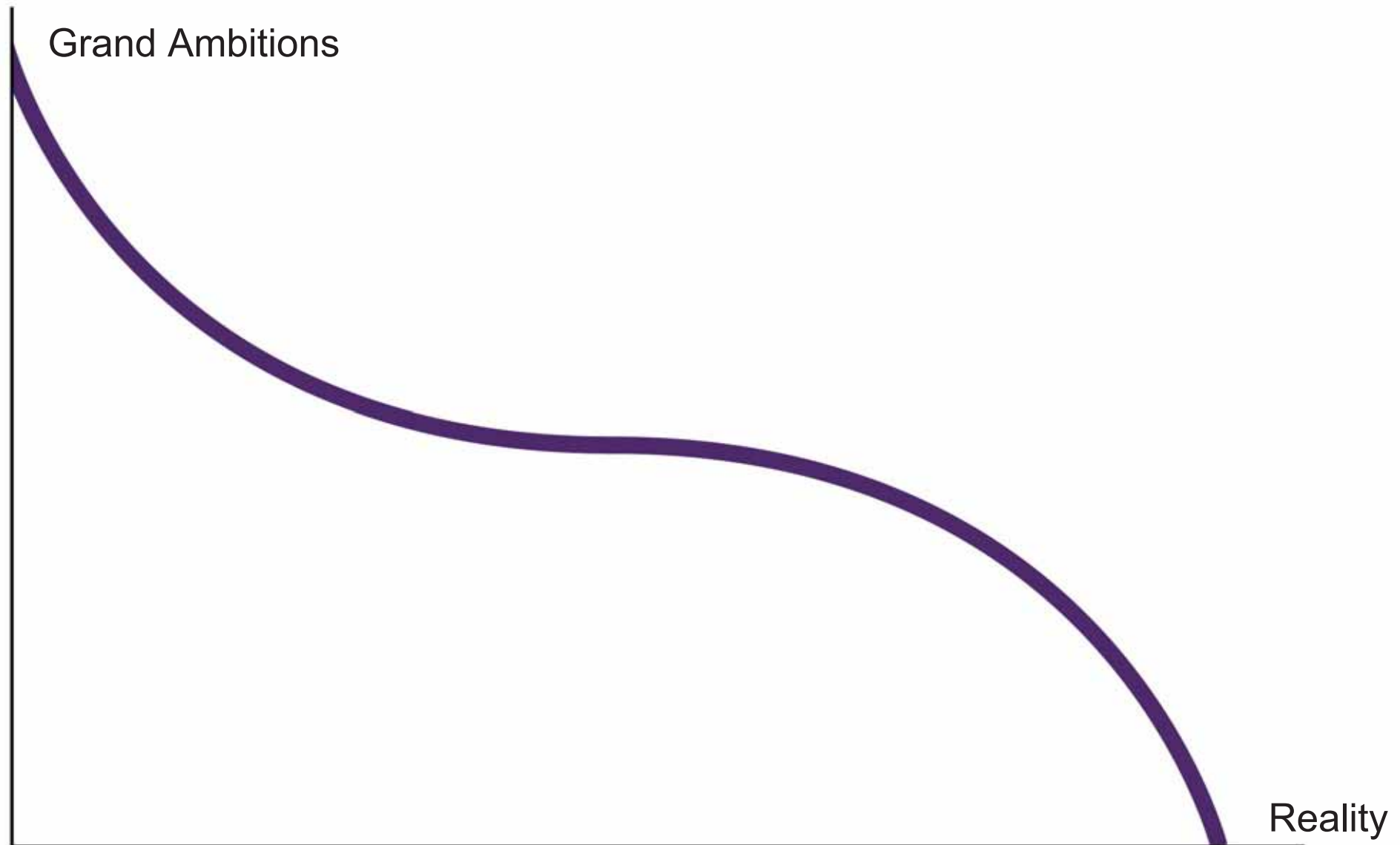
The Real Value of Collaboration

Without early input from engineers, the essence of a building's design concept may be lost through the value engineering necessary to actually deliver it, if it can be delivered at all.



Designing Deliverable Buildings

The Real Value of Collaboration



Designing Deliverable Buildings

The Real Value of Collaboration

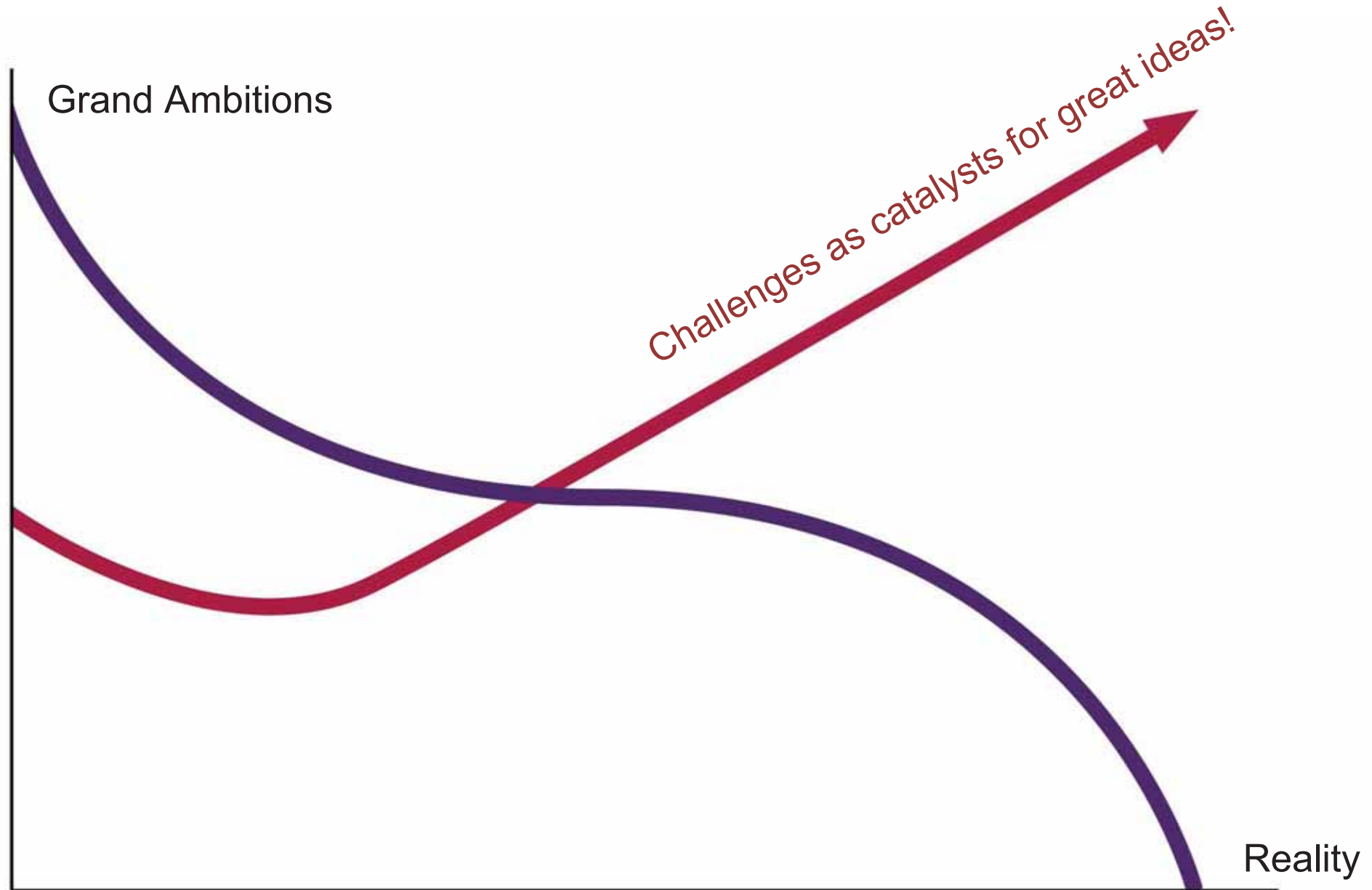
If, however, engineers are involved from the outset, the engineering will be integral to the design concept:

- The implication of design decisions on **cost can be understood** from the outset
- Identified early on in the design process, **constraints** can be translated into **opportunities** for great design ideas



Designing Deliverable Buildings

The Real Value of Collaboration



SOM

Case Study 1:

Iris Tower Competition, Paris

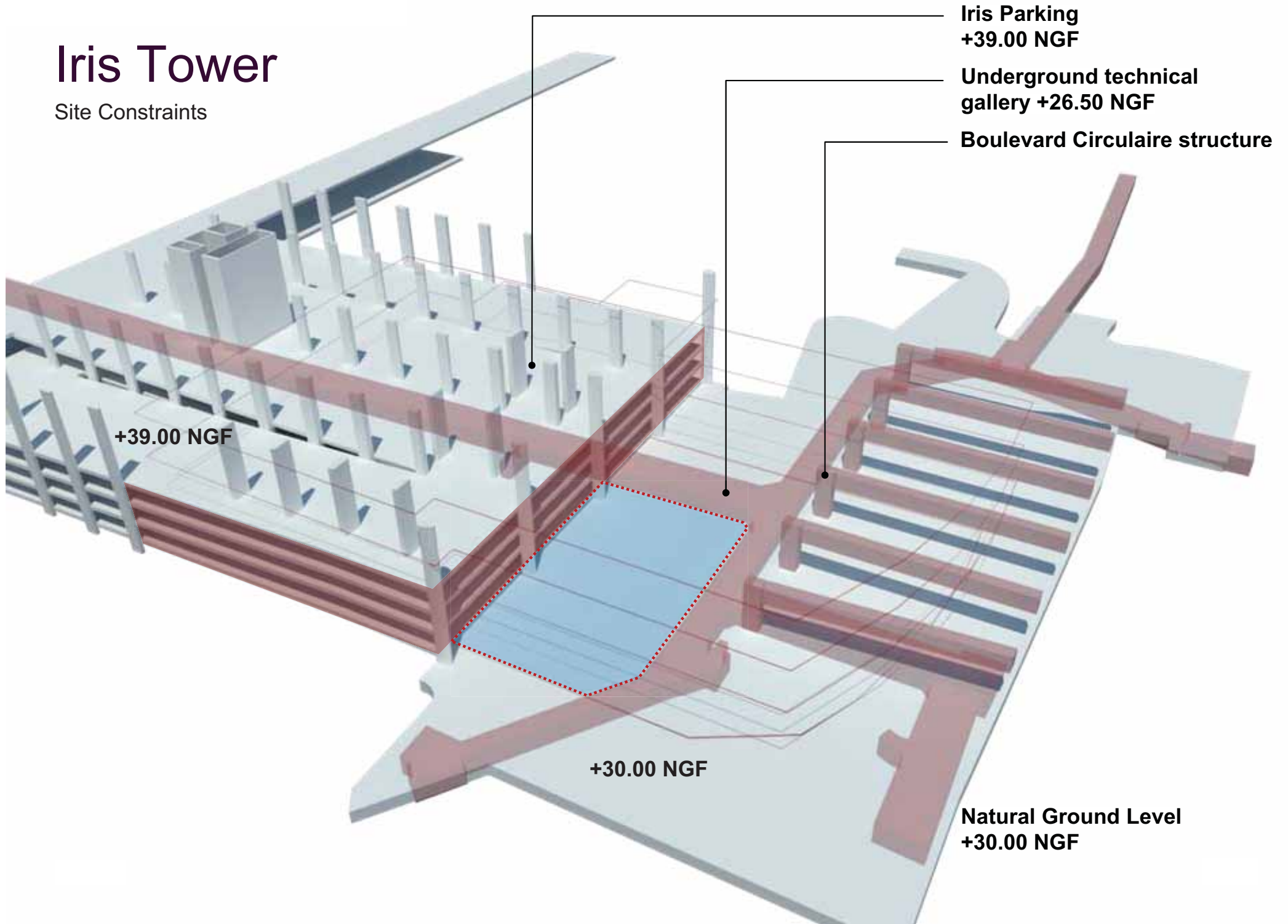
Iris Tower

Paris



Iris Tower

Site Constraints



Iris Tower

Limited building footprint



Iris Tower

The Green Carpet



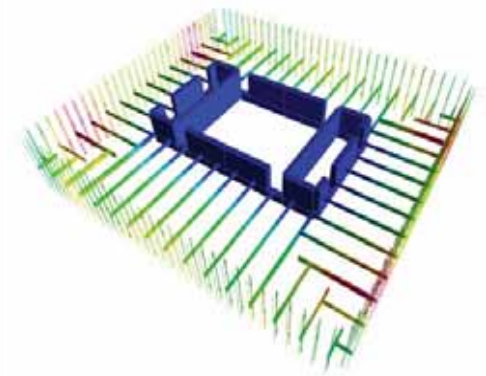
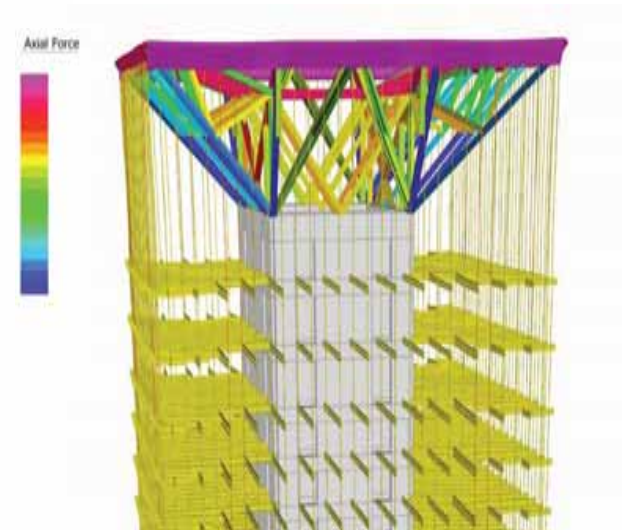
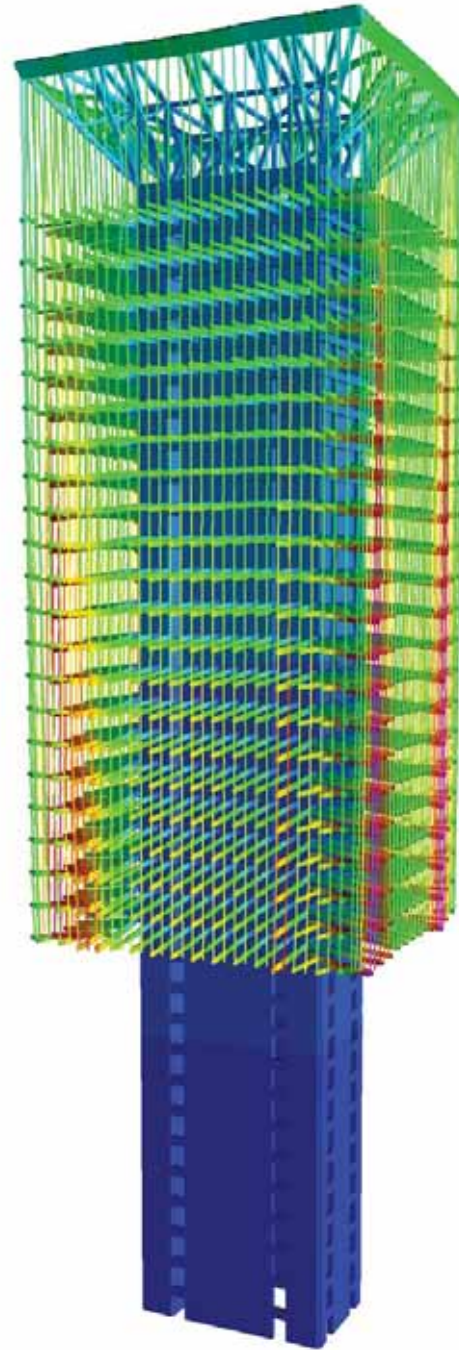
Iris Tower

Freeing up the Ground Floor



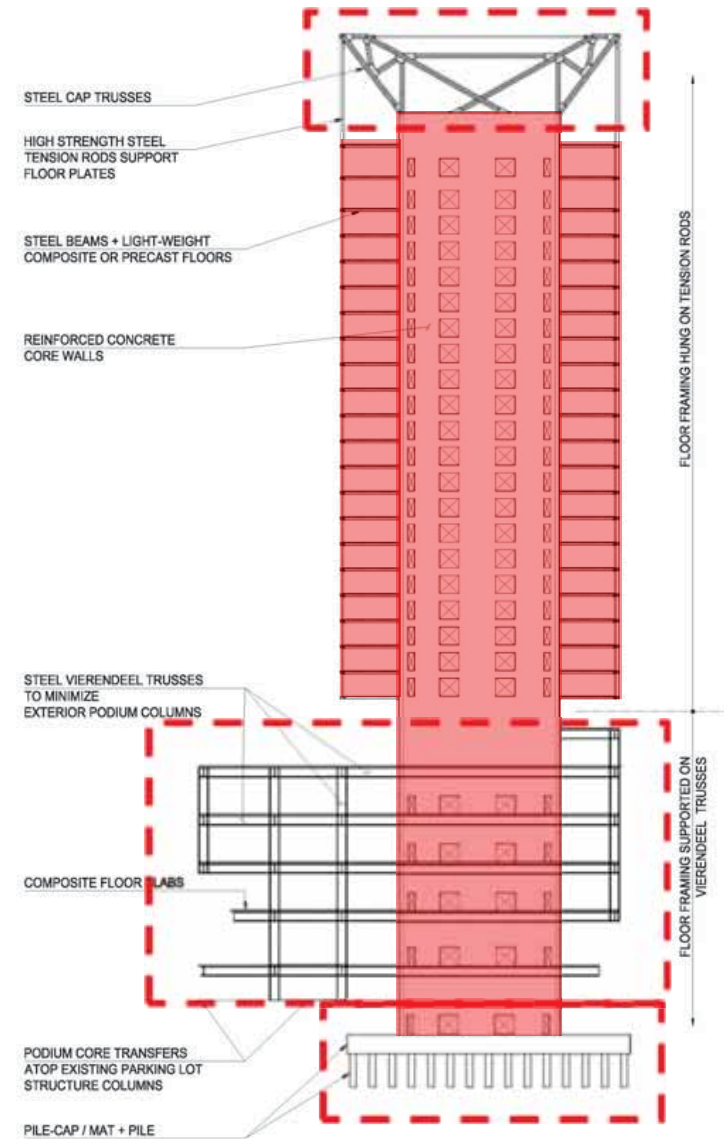
Iris Tower

Structural System



Iris Tower

Structural System



SOM

Case Study 2:
The JTI Building, Geneva

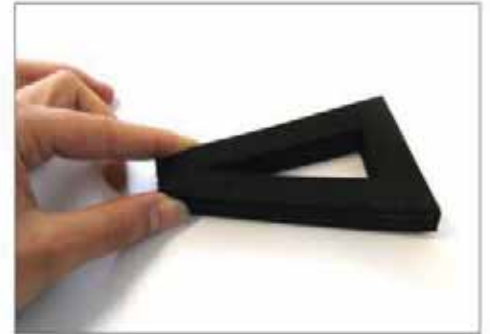
The JTI Building

Geneva, Switzerland



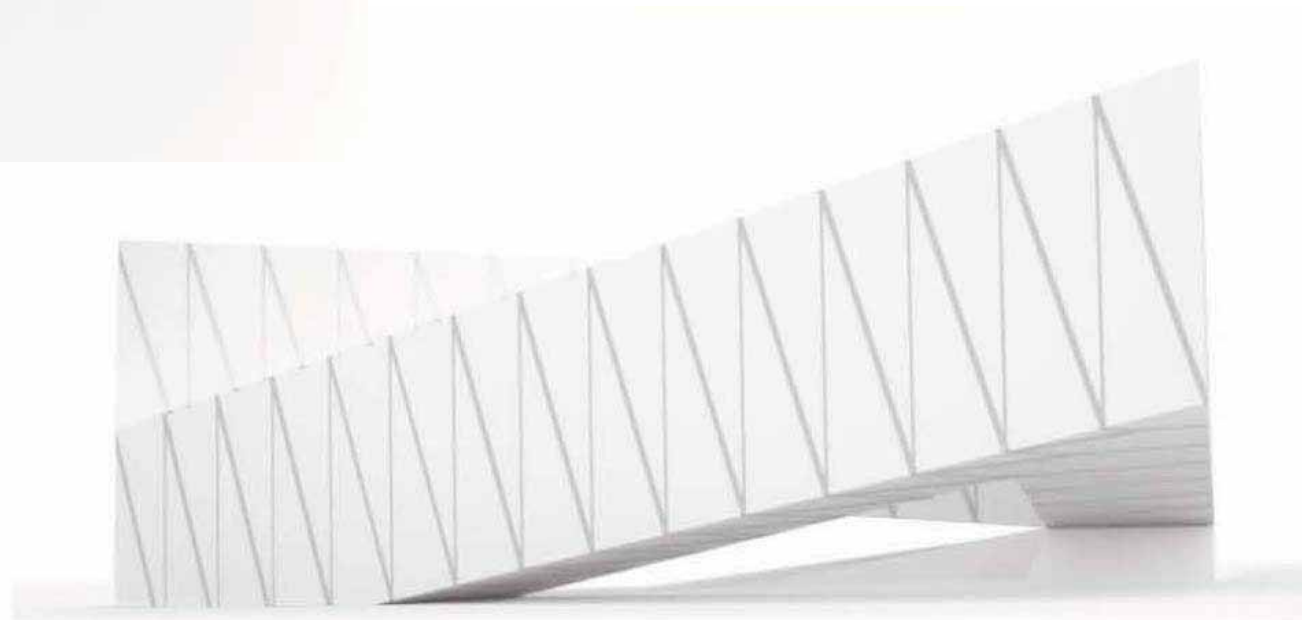
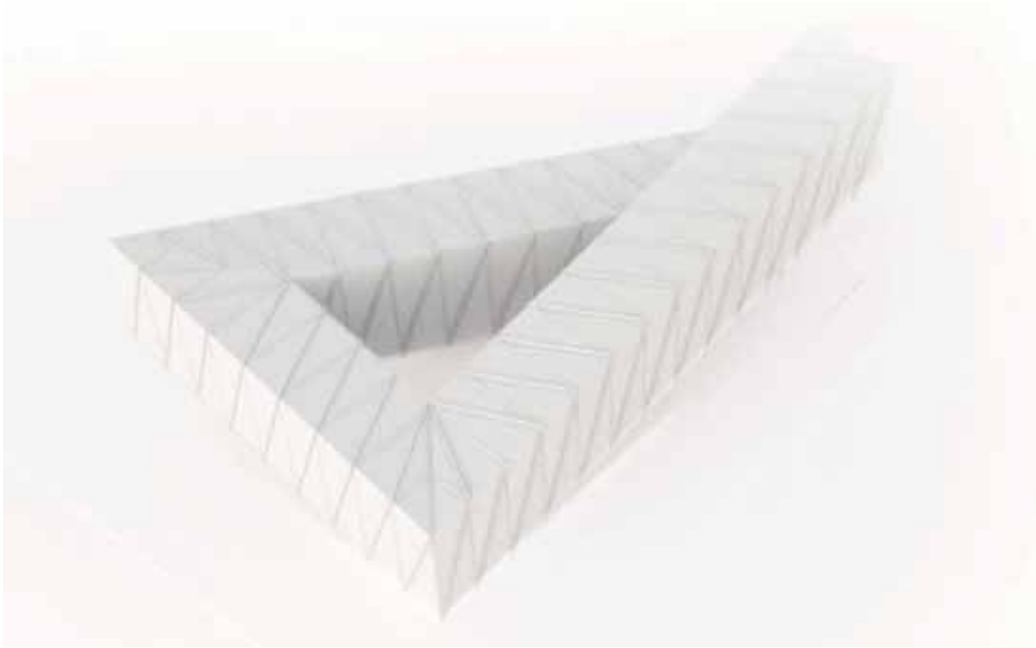
The JTI Building

Structural Concept



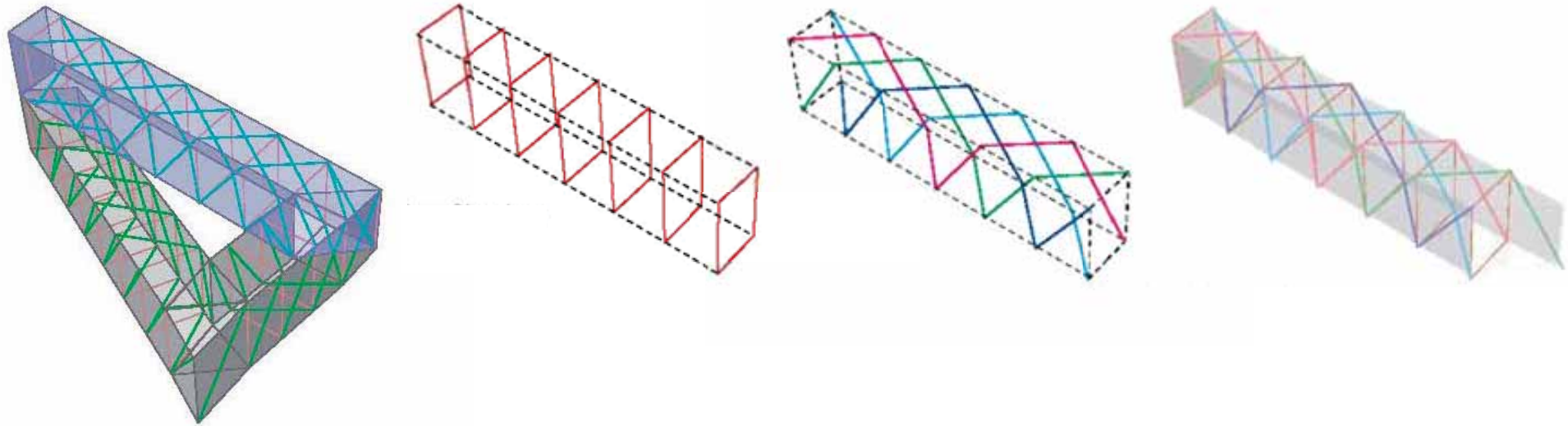
The JTI Building

Structural Concept



The JTI Building

Structural Concept



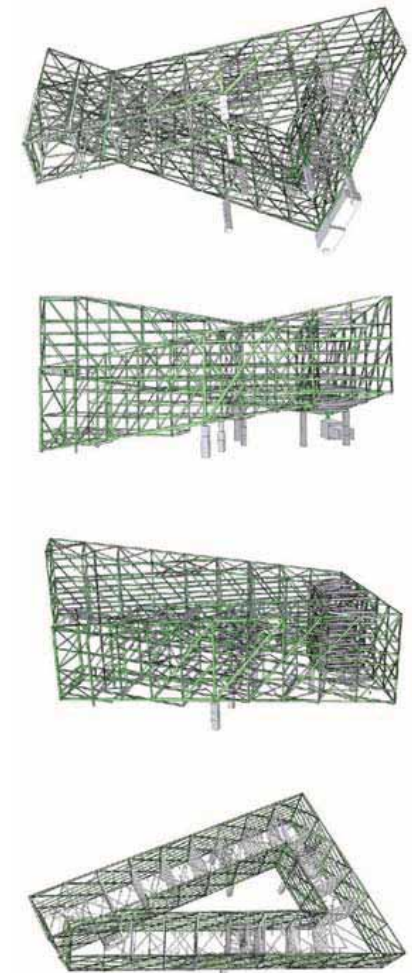
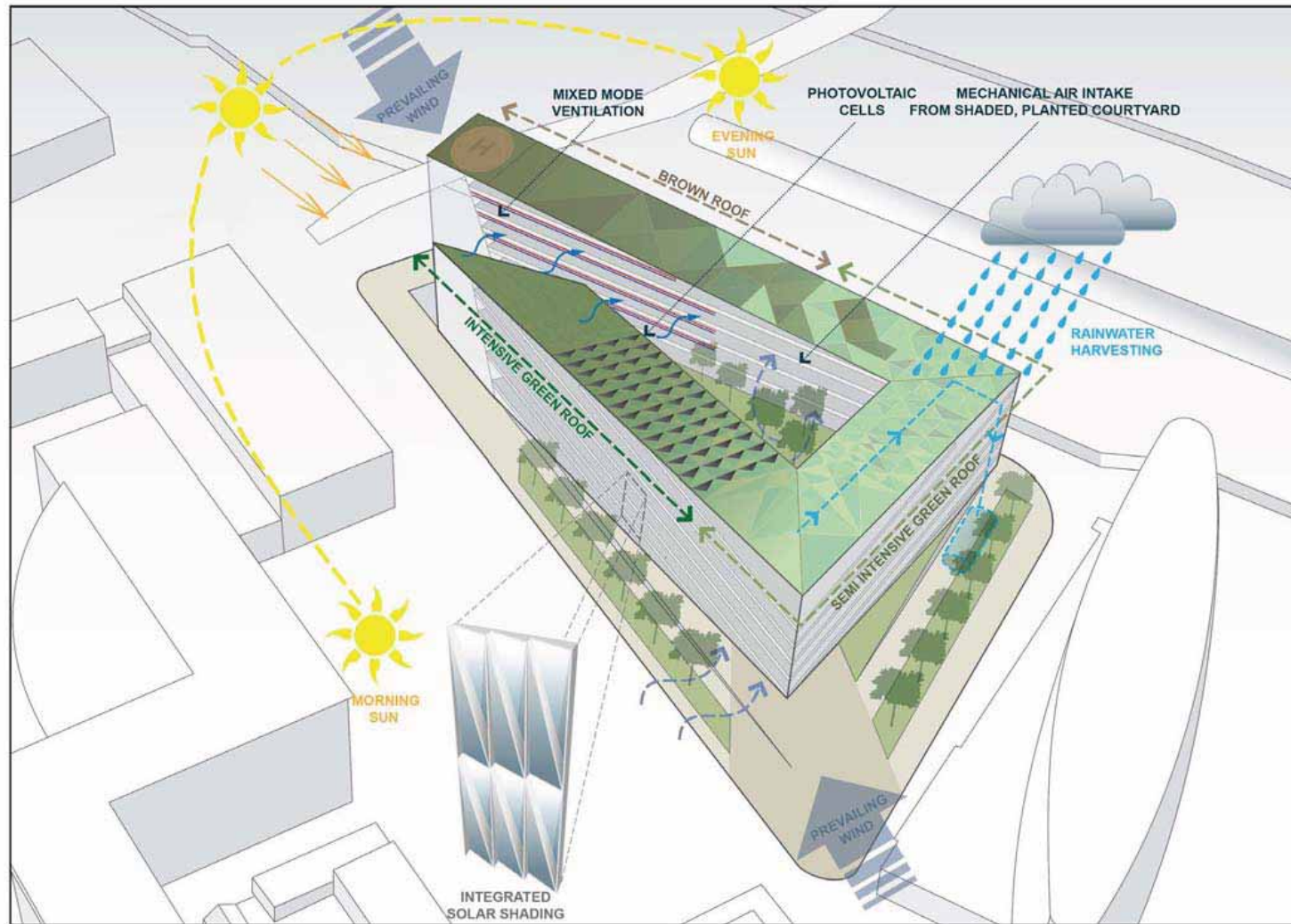
The JTI Building

On Site in Geneva



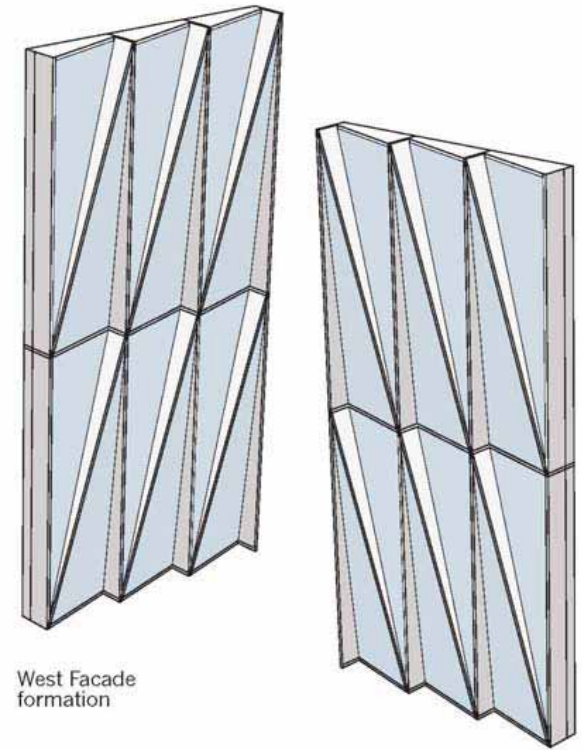
The JTI Building

Sustainability Concept



The JTI Building

High Performance Glass



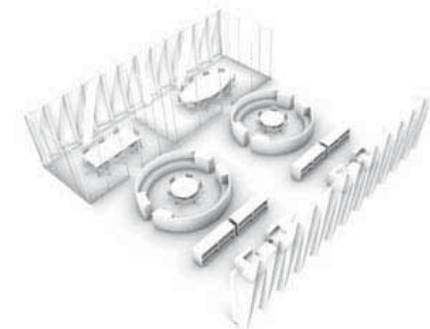
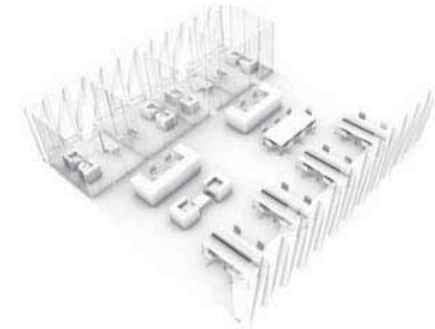
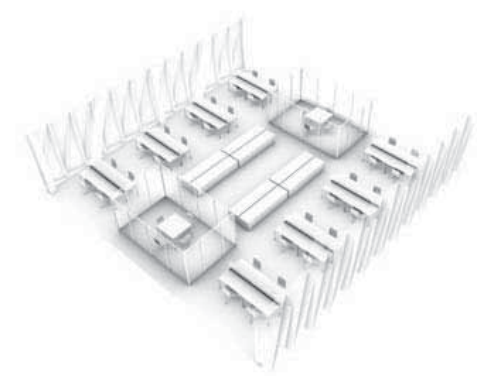
The JTI Building

High Performance Glass



The JTI Building

From Urban Design to Interior Design



SOM

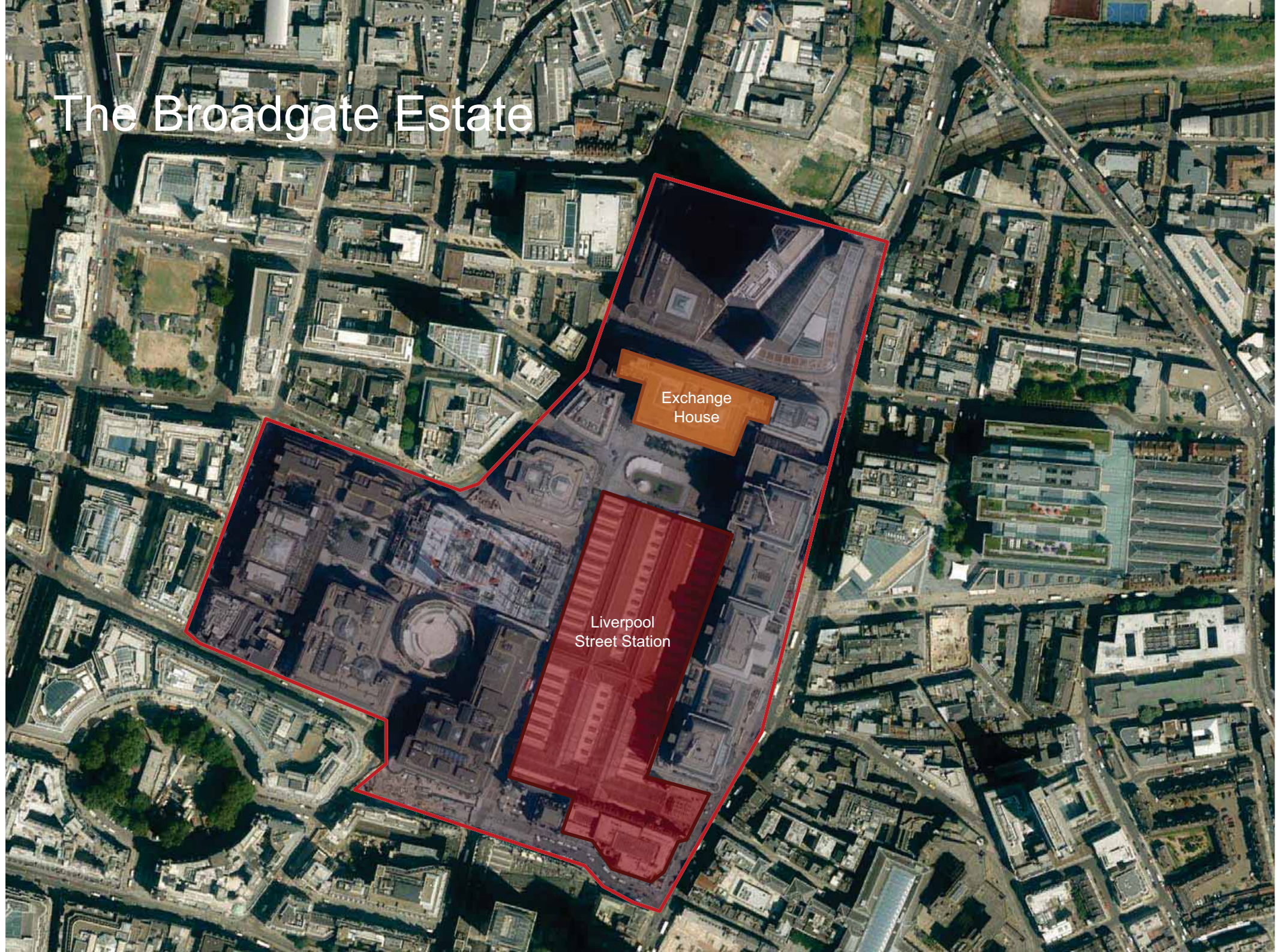
Case Study 3:

Broadgate, London

The Broadgate Estate



The Broadgate Estate



Exchange
House

Liverpool
Street Station

Exchange House

A Bridge Building



Exchange House

A Bridge Building



201 Bishopsgate & The Broadgate Tower

Air Rights Buildings



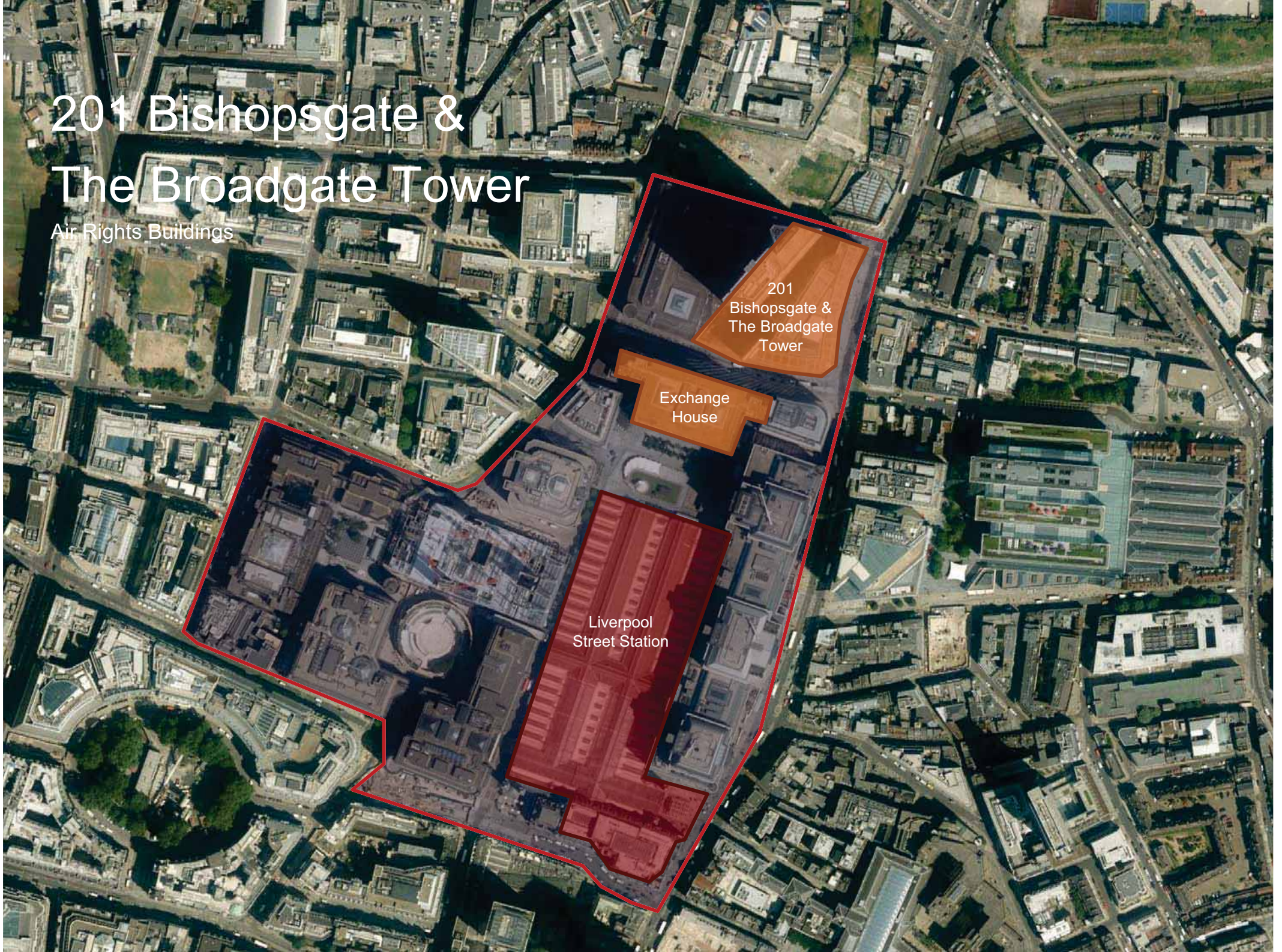
201 Bishopsgate & The Broadgate Tower

Air Rights Buildings

201
Bishopsgate &
The Broadgate
Tower

Exchange
House

Liverpool
Street Station



201 Bishopsgate & The Broadgate Tower

The Raft



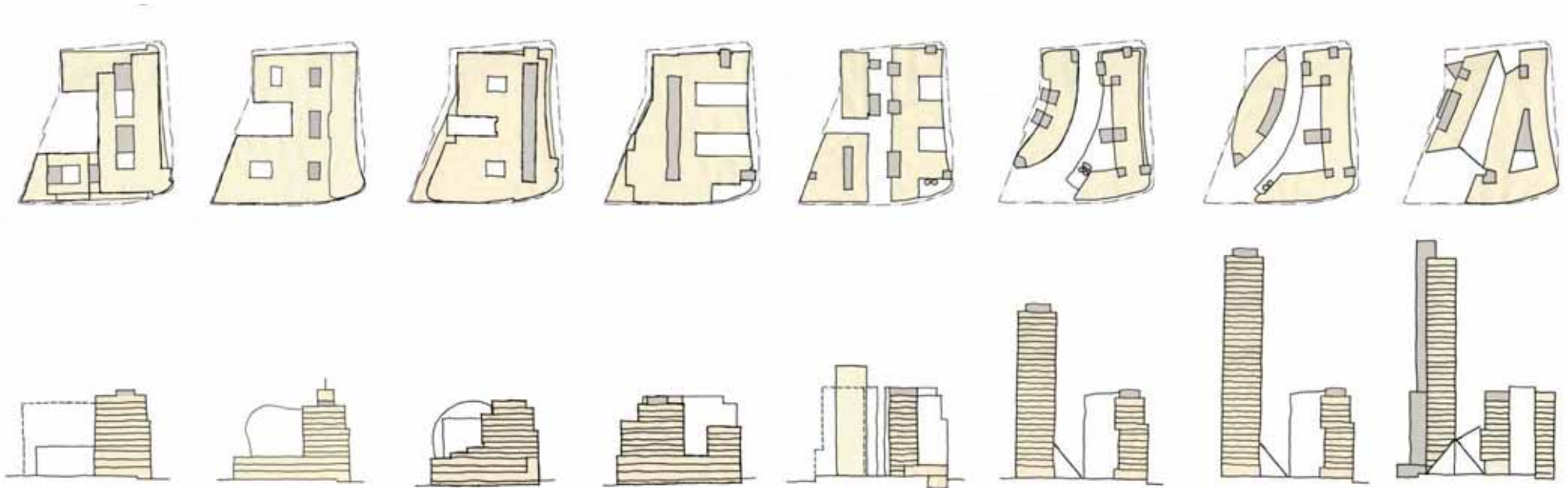
201 Bishopsgate & The Broadgate Tower

The Raft



201 Bishopsgate & The Broadgate Tower

Emerging Massing



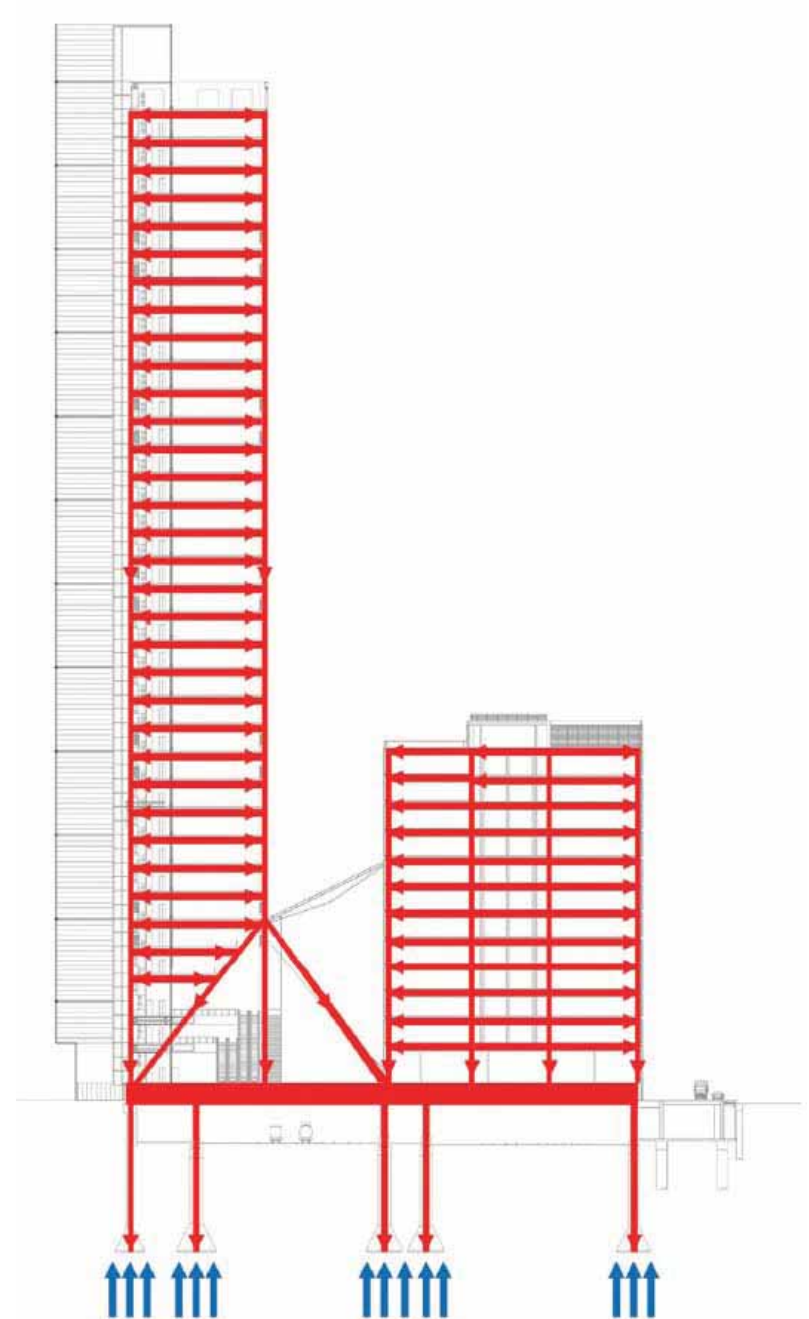
201 Bishopsgate & The Broadgate Tower

Footprint



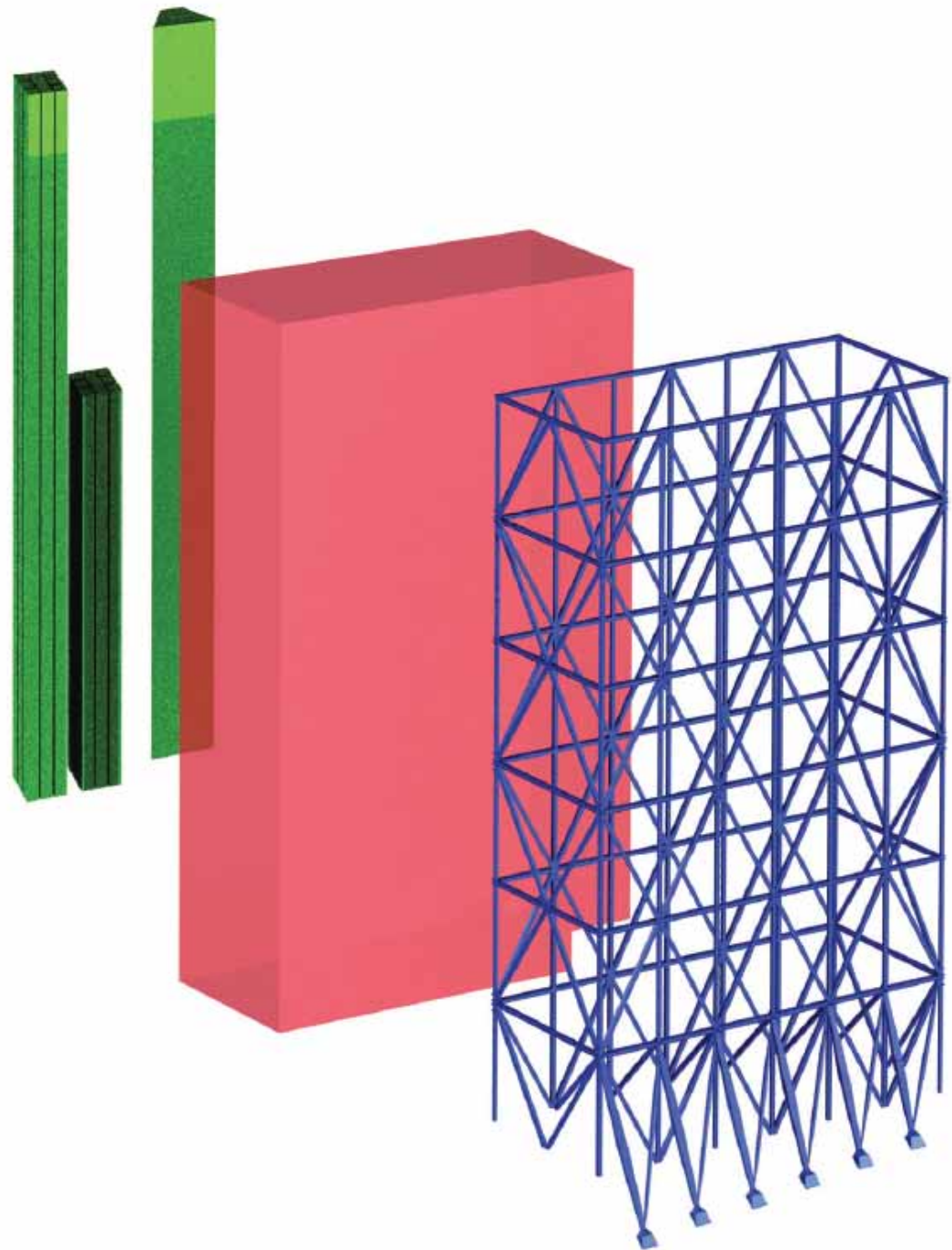
201 Bishopsgate & The Broadgate Tower

Structural Concept



201 Bishopsgate & The Broadgate Tower

Structural Concept

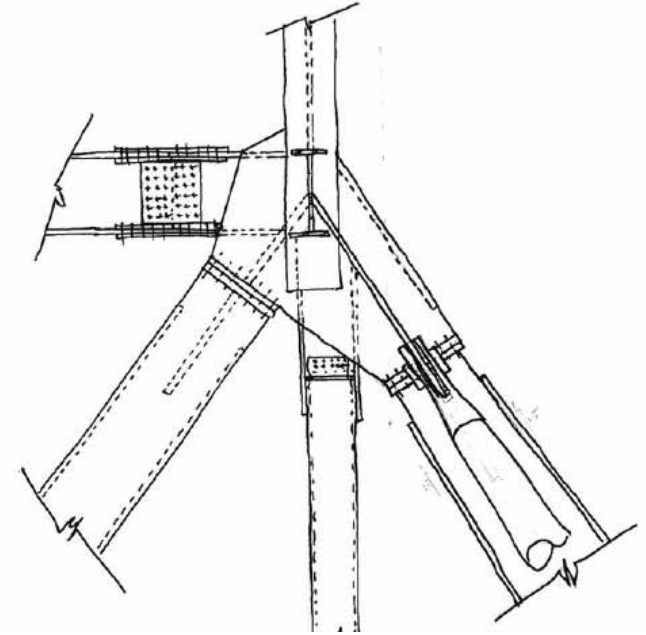


The Broadgate Tower

Lift Strategy



The Broadgate Tower



The Broadgate Tower



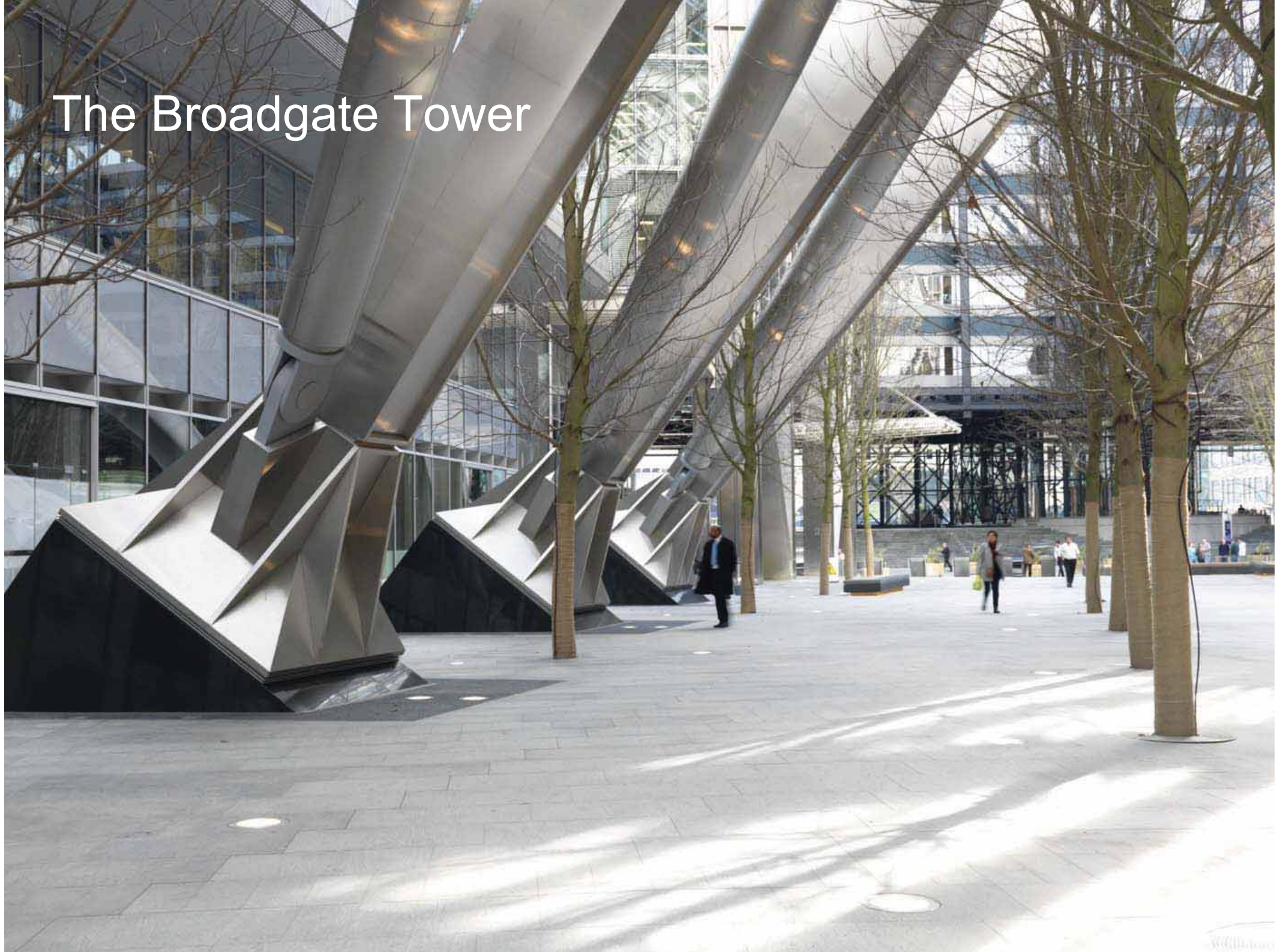
The Broadgate Tower



The Broadgate Tower



The Broadgate Tower



The Broadgate Tower



SOM

Case Study 4:

Manhattan Loft Gardens, London

Manhattan Loft Gardens

London, UK



Manhattan Loft Gardens

Design Concept



Maximum Zoning
Envelope



Maximum Zoning
Envelope



Sculpting an
Entrance



Maximum Zoning
Envelope



Sculpting an
Entrance



Creating a
community



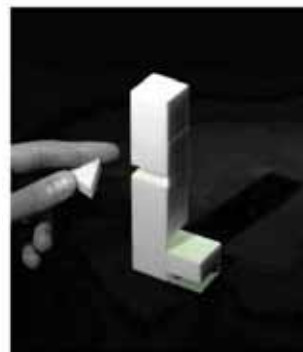
Maximum Zoning
Envelope



Sculpting an
Entrance



Creating a
community



Creating a sky
garden



Maximum Zoning
Envelope



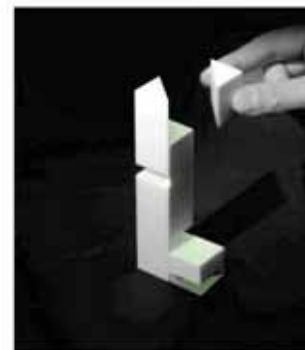
Sculpting an
Entrance



Creating a
community



Creating a sky
garden



Revealing a roof
terrace



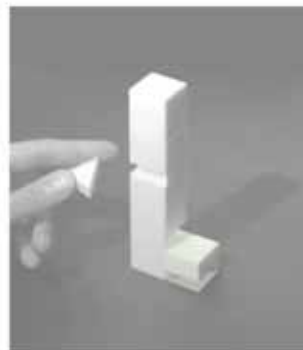
Maximum Zoning
Envelope



Sculpting an
Entrance



Creating a
community



Creating a sky
garden



Revealing a roof
terrace

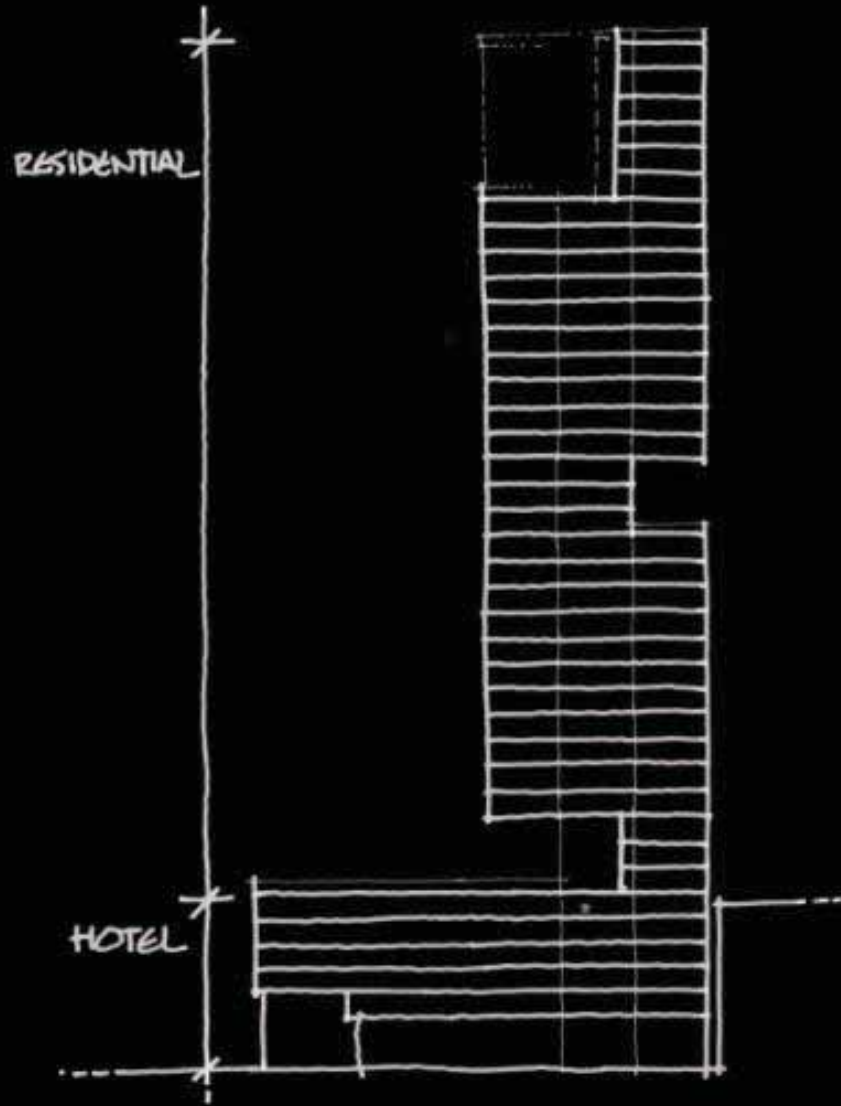


Resultant massing

Manhattan Loft Gardens

Building Structural Concept

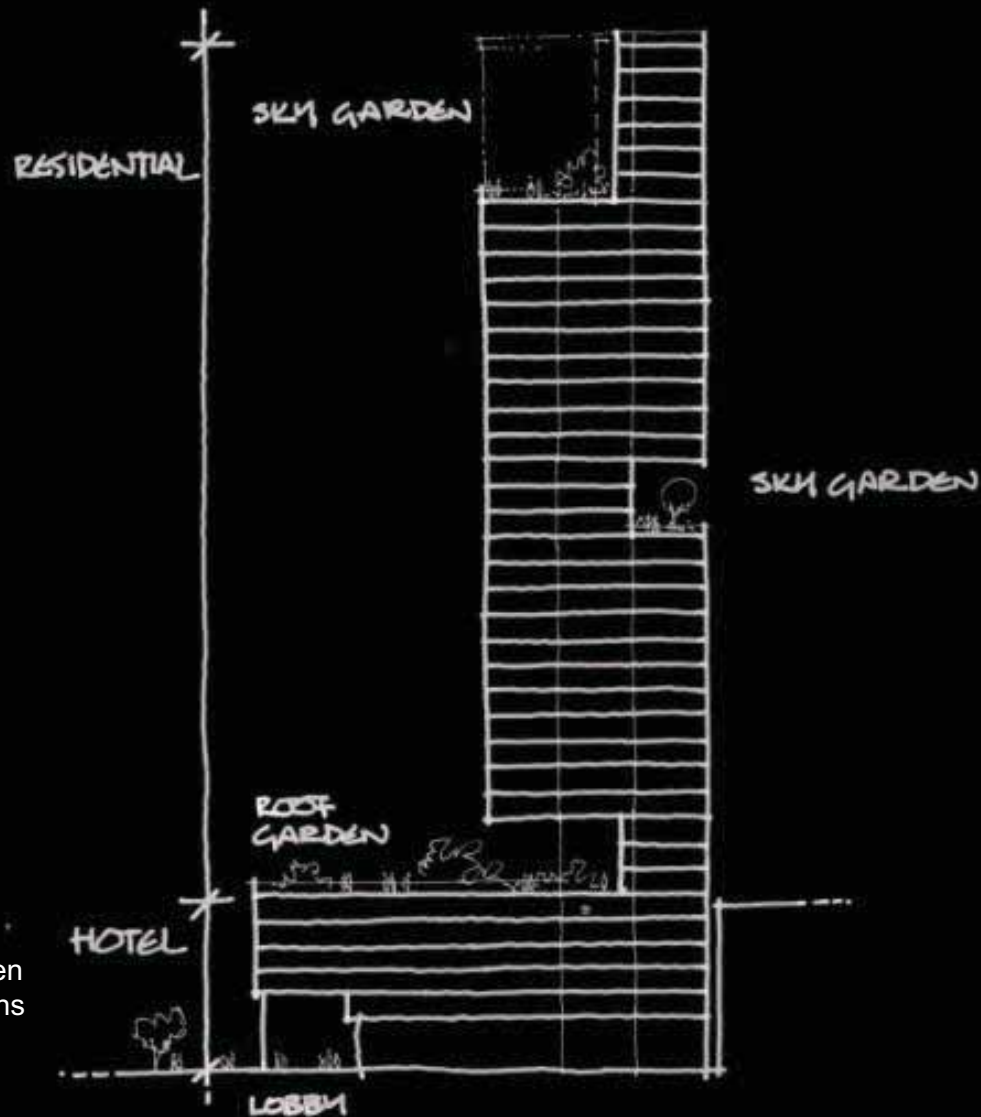
Building form



Manhattan Loft Gardens

Building Structural Concept

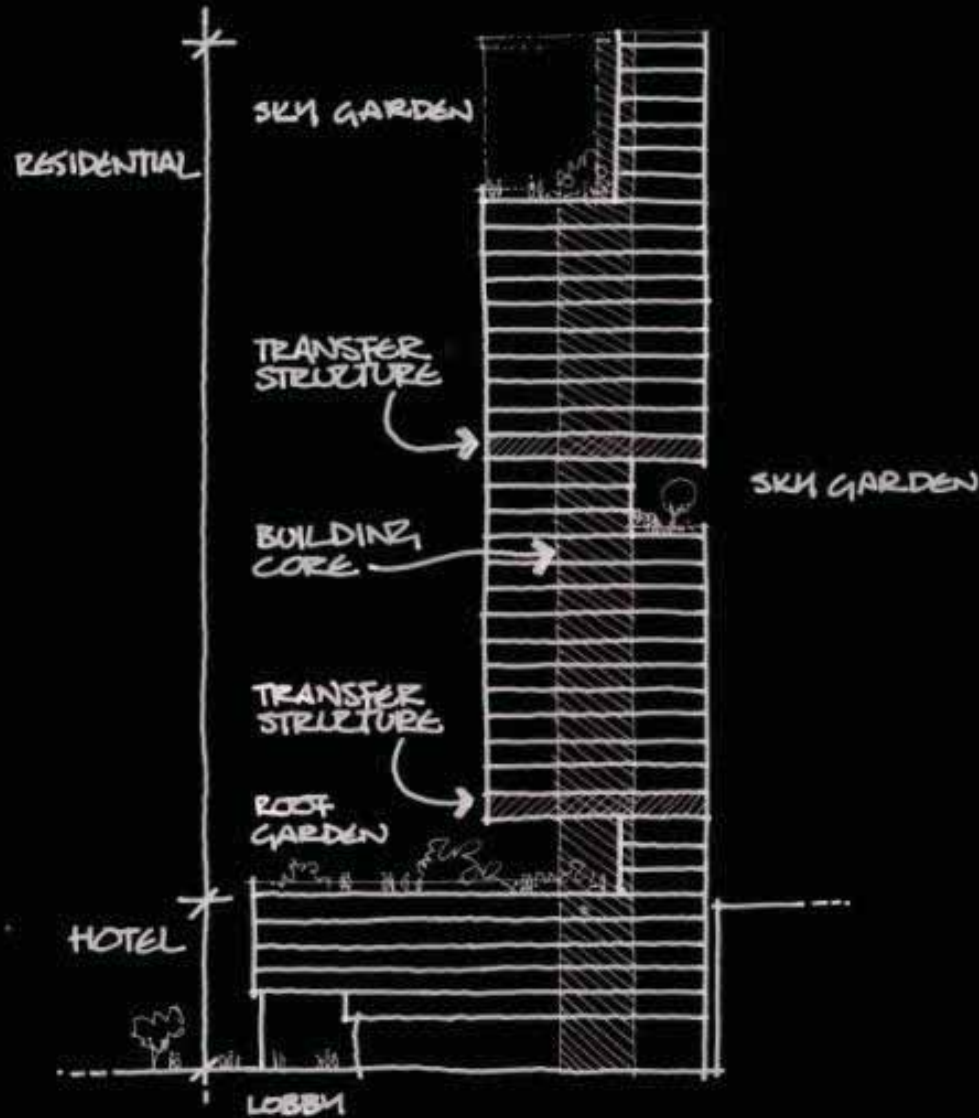
Key spaces – Lobby
Roof garden
Sky gardens



Manhattan Loft Gardens

Building Structural Concept

Structural core & transfer floors



Manhattan Loft Gardens

Interlocking Apartments



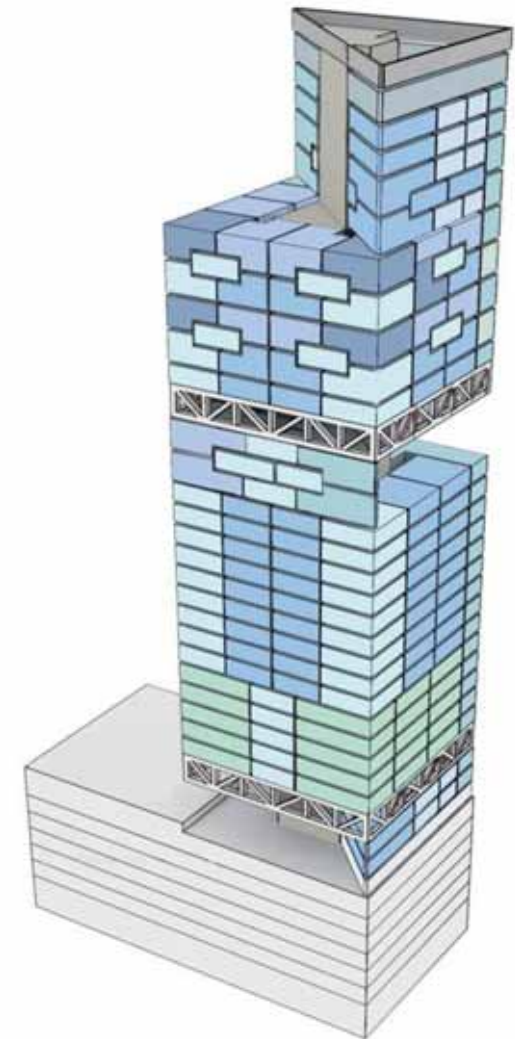
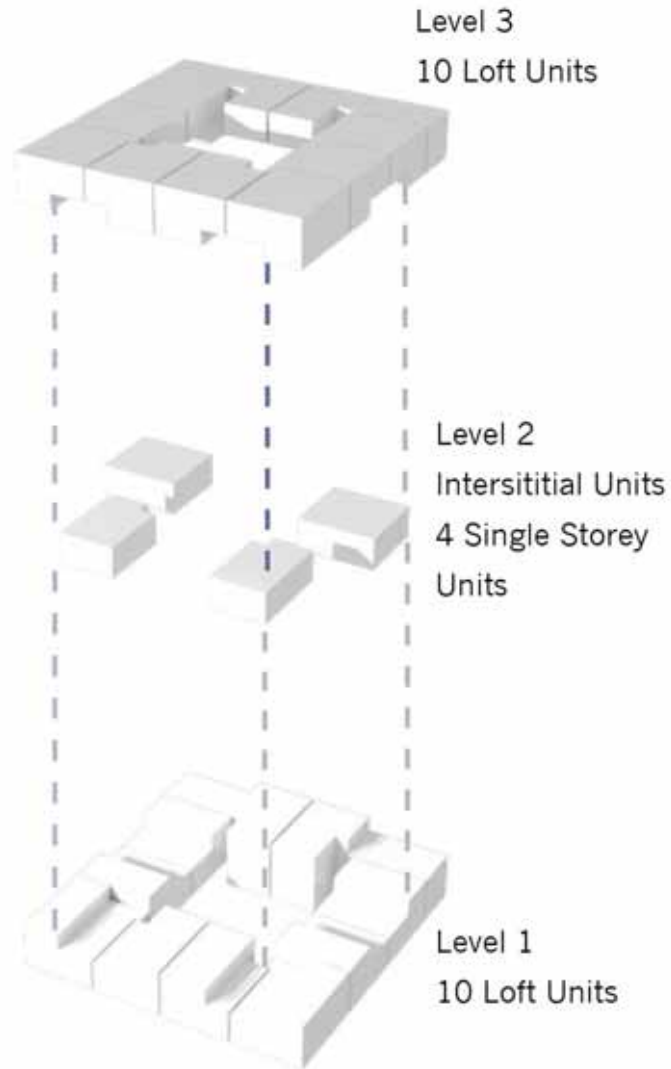
Upper Level
Loft



Middle Level
Studio



Lower Level
Loft



Manhattan Loft Gardens

Structural Concept

OT Load.

$H = 120\text{m}$

$W = 30\text{m}$

N/S

$W_w \approx W_s$

5

B/W

30×3.25

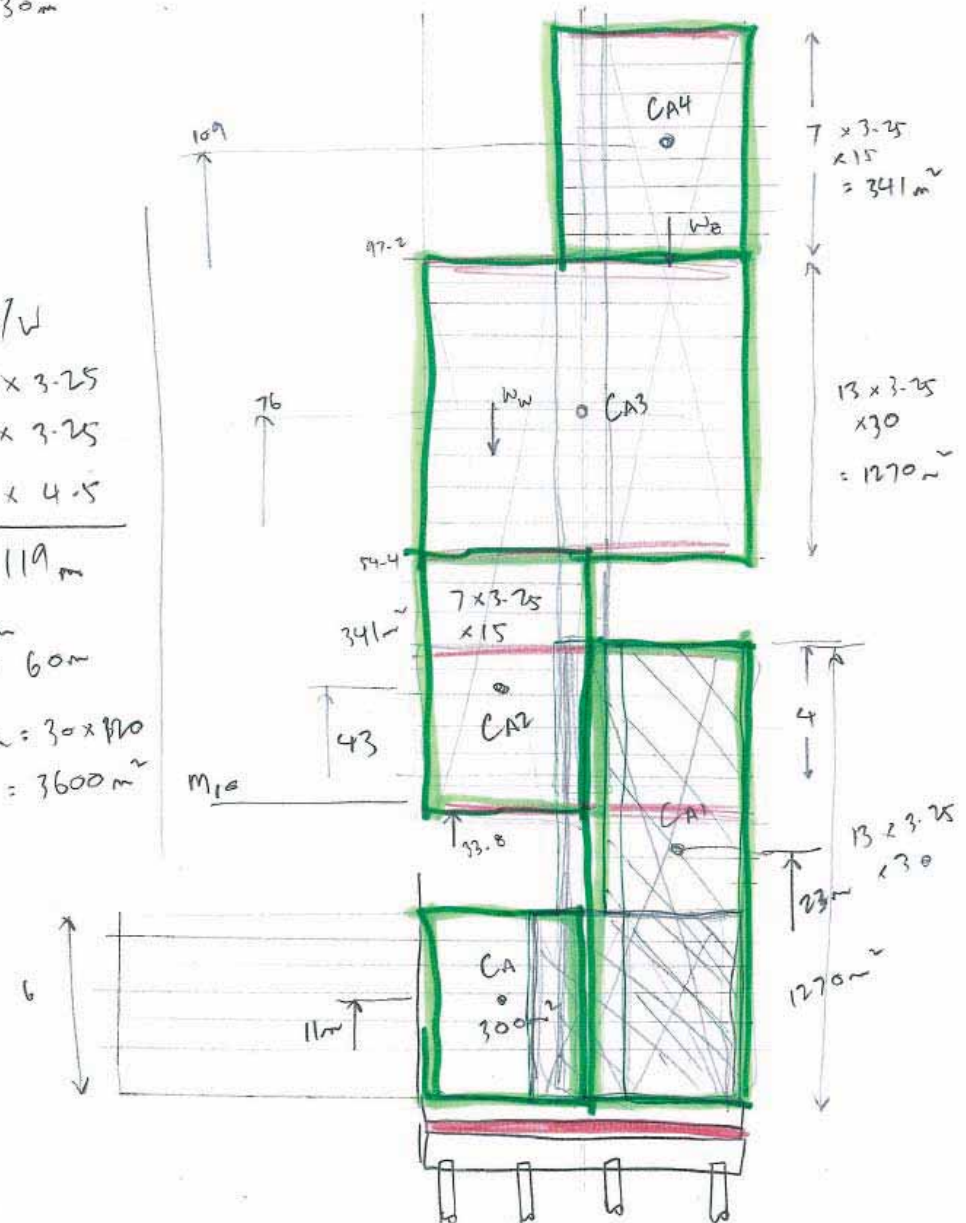
5×3.25

1×4.5

119m

$L.M.M = 60\text{m}$

$\text{Area} = 30 \times 120 = 3600\text{m}^2$

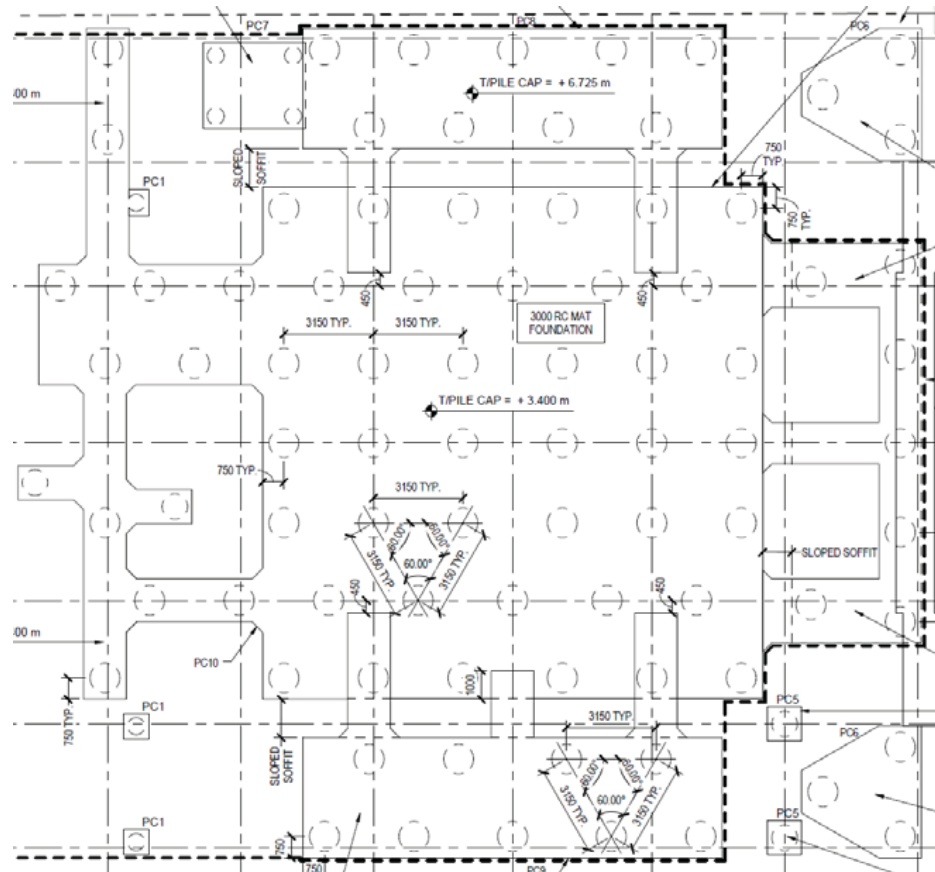


$$M_{10} = \frac{86.2}{2} \times 86.2 \times 30 \times 1.0 = 115 \times 1.5 = 170000 \text{ kNm}$$

Manhattan Loft Gardens

Construction Sequence:

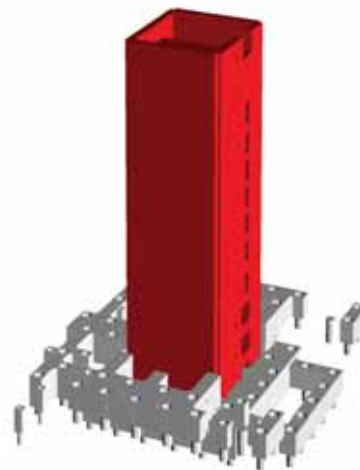
Piled Foundations & Basement



Manhattan Loft Gardens

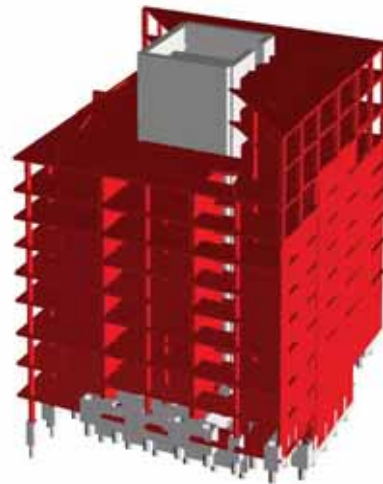
Construction Sequence:

Core & Buttress Walls



Manhattan Loft Gardens

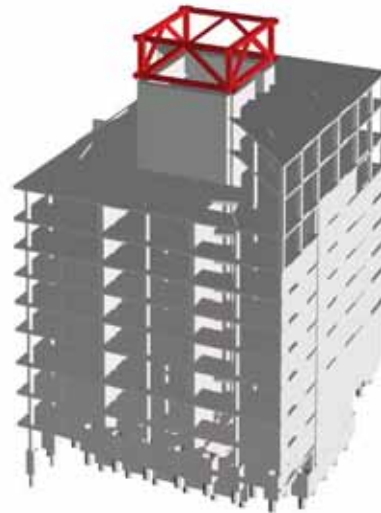
Construction Sequence



Manhattan Loft Gardens

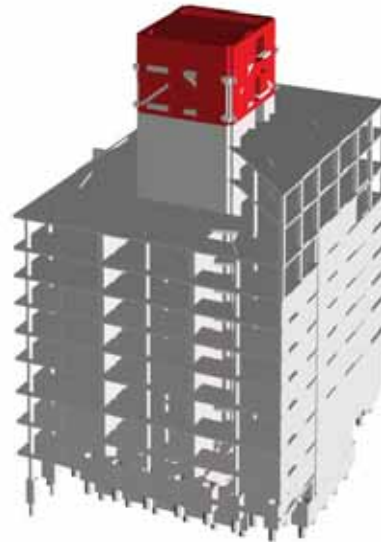
Construction Sequence:

Steel Trusses



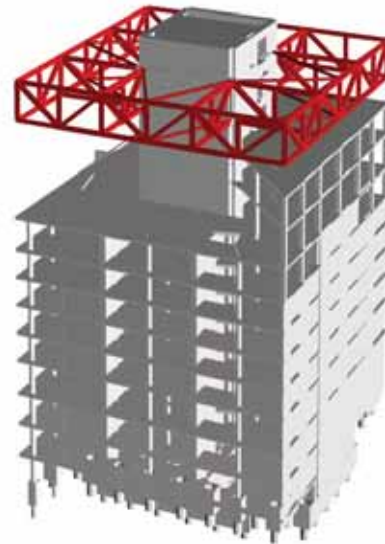
Manhattan Loft Gardens

Construction Sequence



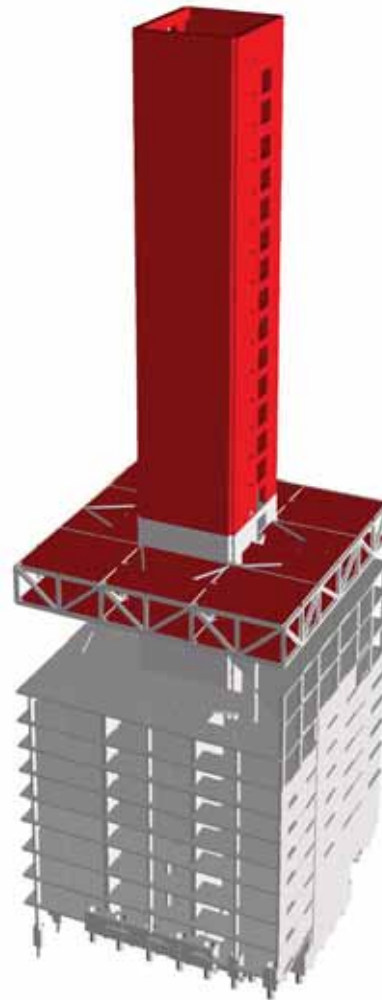
Manhattan Loft Gardens

Construction Sequence



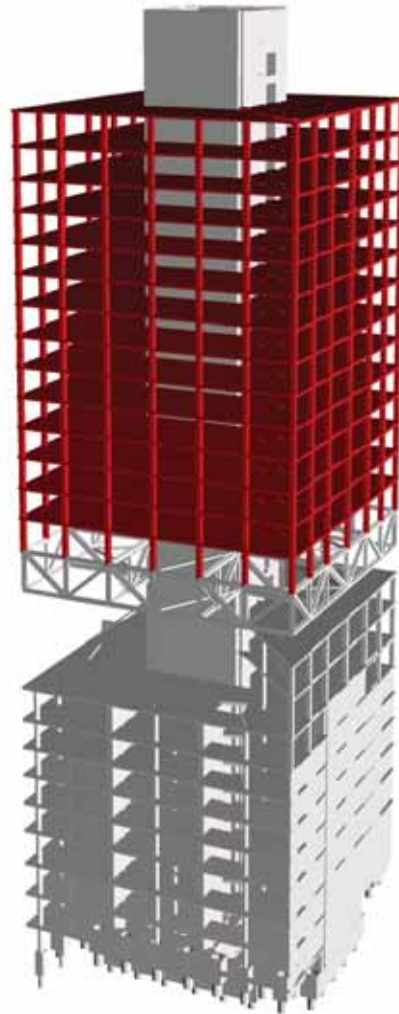
Manhattan Loft Gardens

Construction Sequence



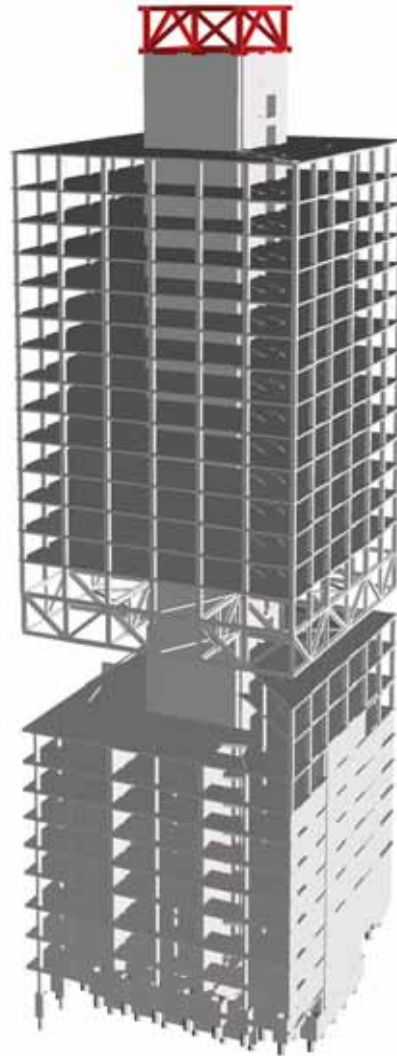
Manhattan Loft Gardens

Construction Sequence:
PS Truss-supported slabs



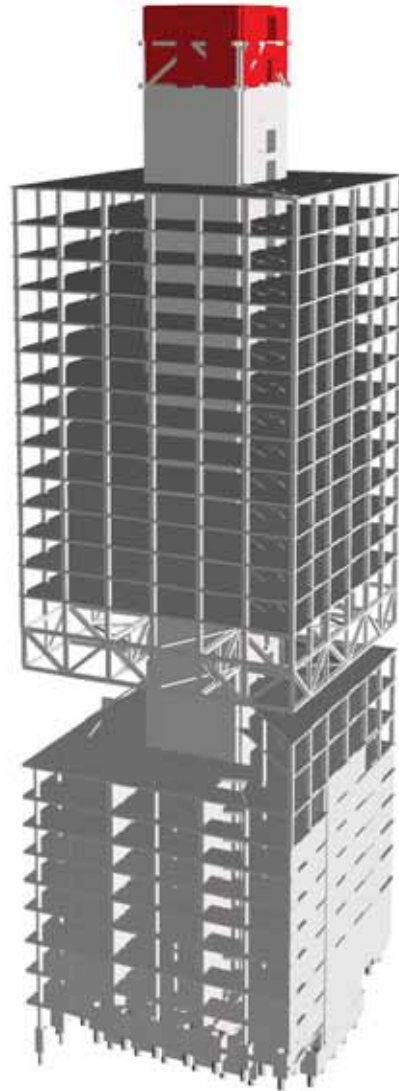
Manhattan Loft Gardens

Construction Sequence



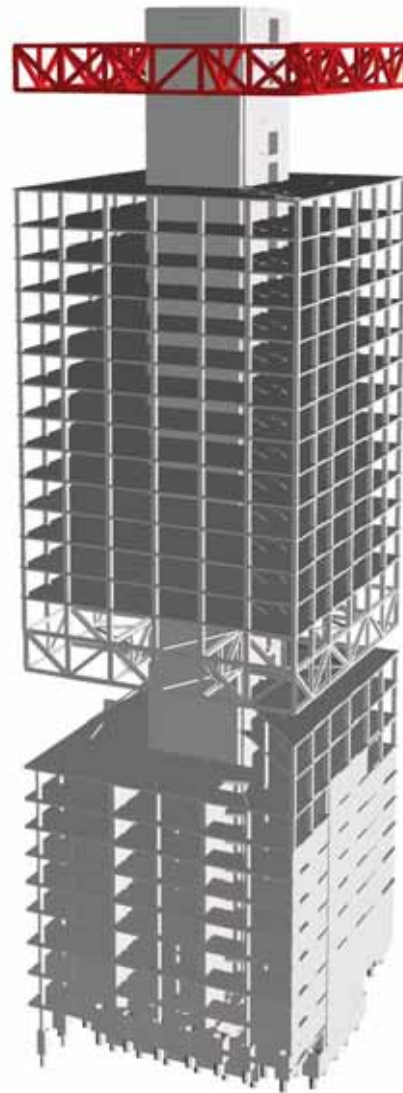
Manhattan Loft Gardens

Construction Sequence



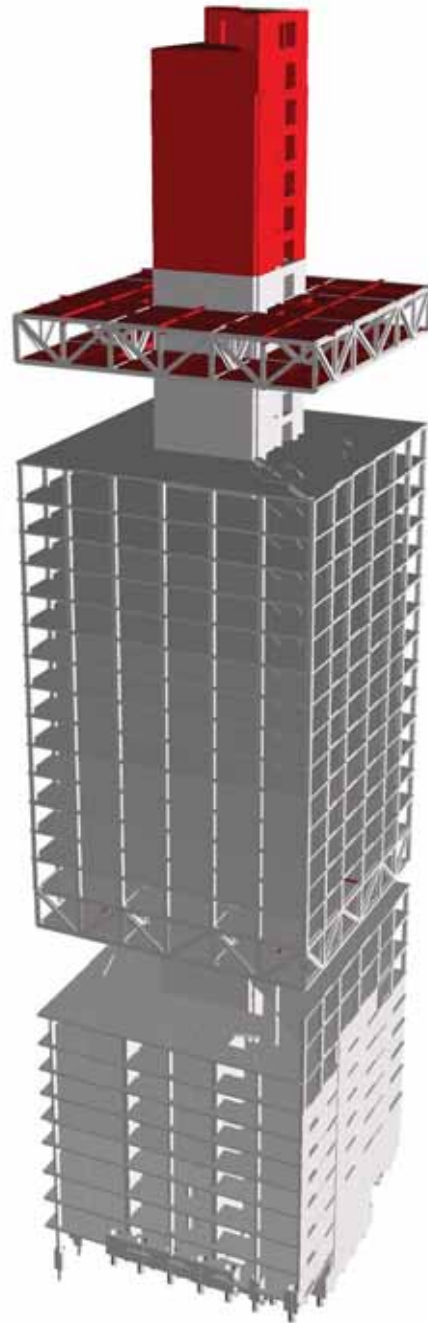
Manhattan Loft Gardens

Construction Sequence



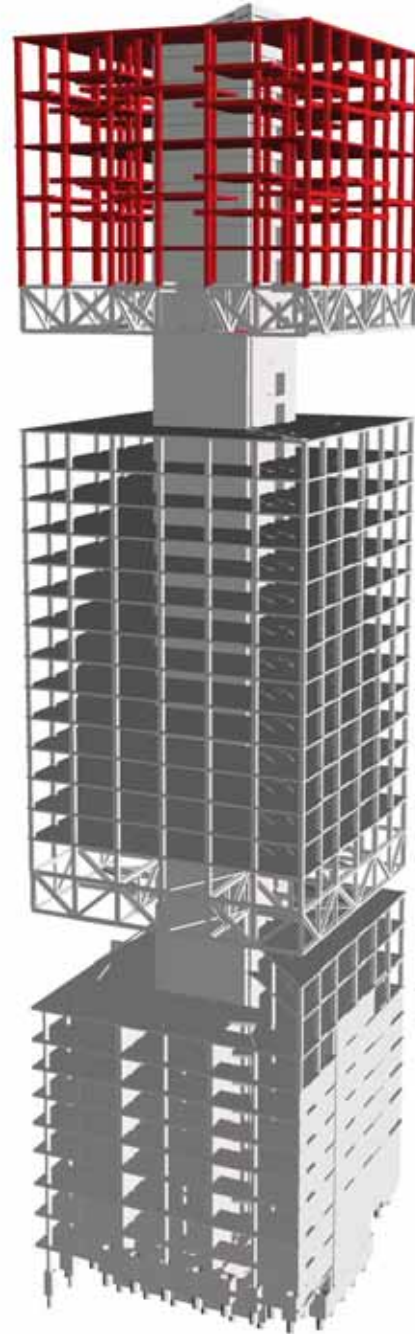
Manhattan Loft Gardens

Construction Sequence



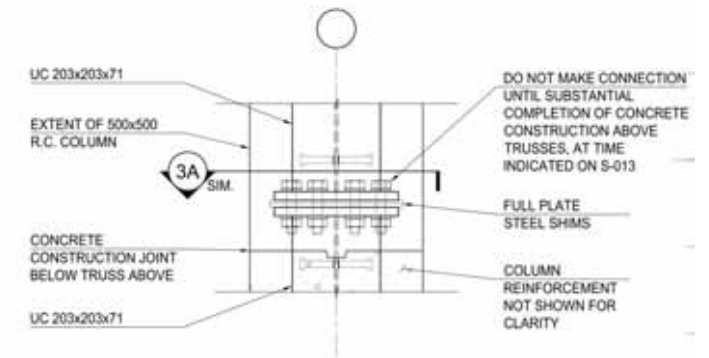
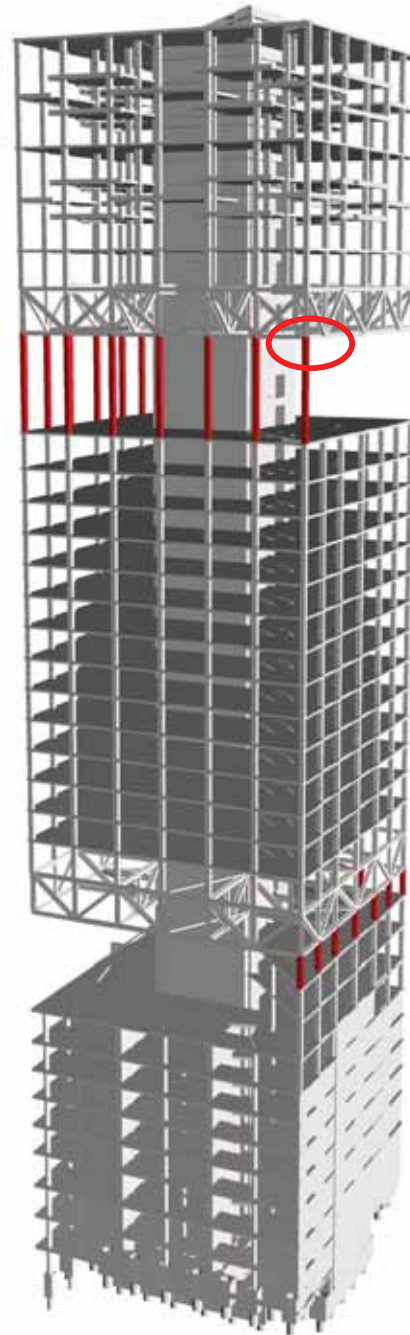
Manhattan Loft Gardens

Construction Sequence



Manhattan Loft Gardens

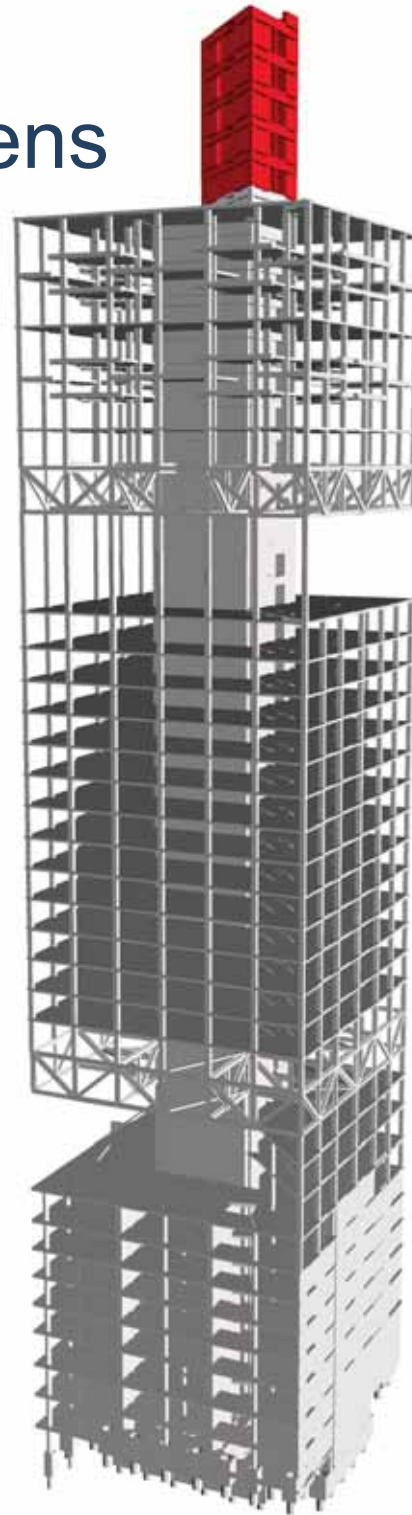
Construction Sequence:
Connecting the Columns



8 CONNECTION SPLICE DETAIL
EMBEDDED COLUMN BELOW BELT TRUSSES
SCALE: 1:10

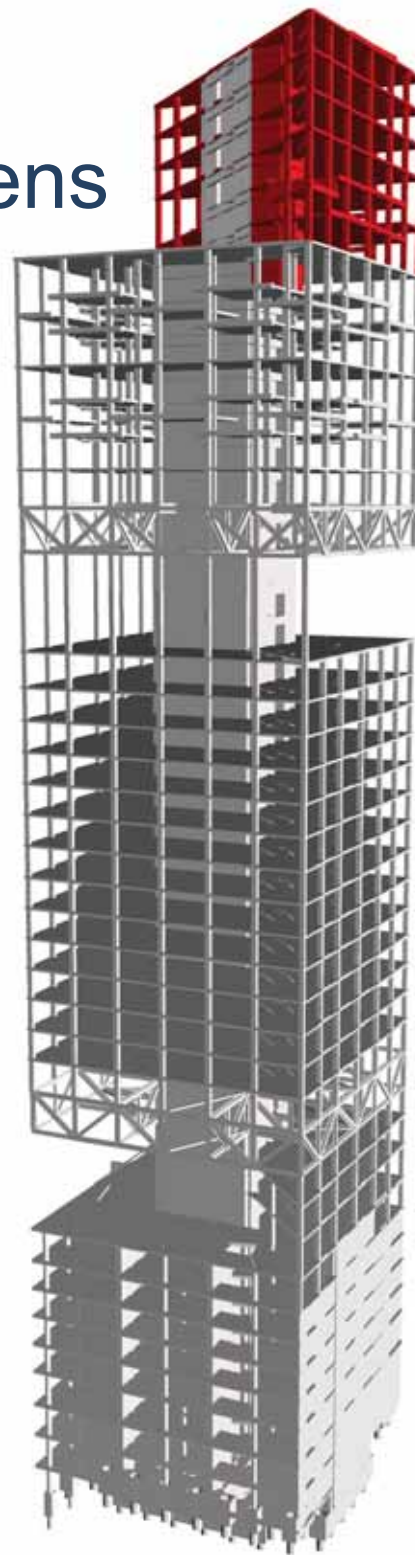
Manhattan Loft Gardens

Construction Sequence



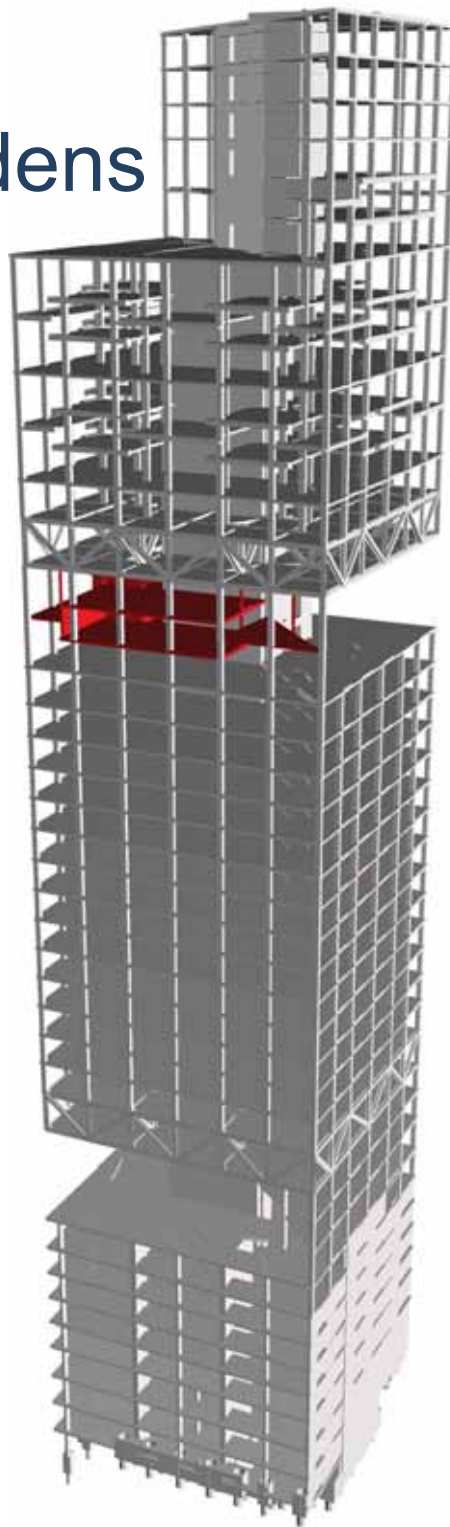
Manhattan Loft Gardens

Construction Sequence



Manhattan Loft Gardens

Construction Sequence



Manhattan Loft Gardens



Manhattan Loft Gardens







SOM

Multidisciplinary Design

Kent Jackson
Design Director
June 2014