

Atila Zekioğlu

STRUCTURAL ENGINEER

Personal Journey & Career Snapshot

Reflections from 37+ years of...

Learning

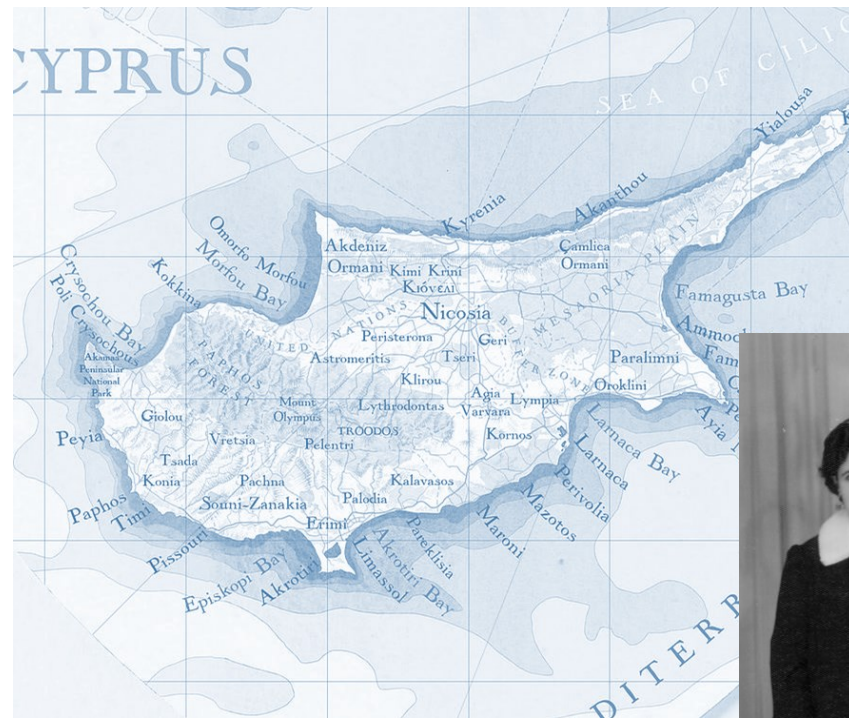
Knowledge Sharing

Inspiring and Inspired by My Teams & Clients

...and continuing!

a personal journey

CYPRUS ► LONDON ► TOLEDO ► BERKELEY ► LOS ANGELES



Cyprus

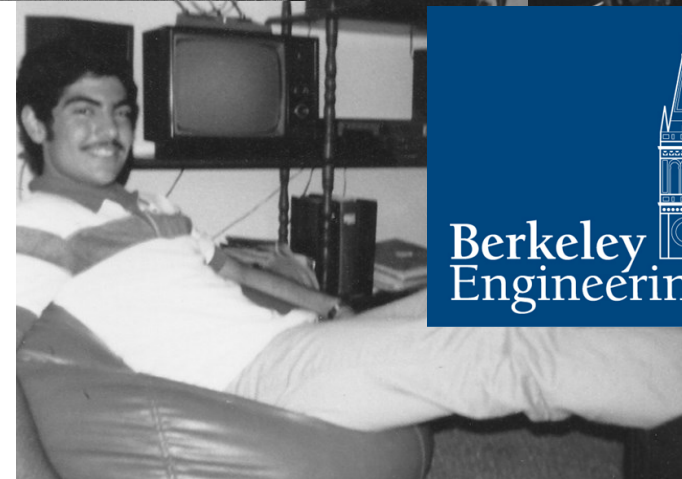
Ayhan
Atila



Slough



Los Angeles



Berkeley
Engineering

Toledo

Cemal
Cengiz



Nancy
Kaya

Atila
Suna

an engineering journey

1985 to 1990 Grossman & Speer - Glendale, CA

1990 to 1991 Johnson & Nielsen

1991 to 2022 Arup - Los Angeles

November 2022 - Saiful Bouquet



1985 - tilt-up construction with the help of Lotus 123



1991 - tilt-up experience injected into Phoenix Central Library

Every project is a new challenge...exploring better solutions, leveraging experience and creating better tools for the next project

Phoenix Central Library



One of the first Three projects dropped on my desk my first week at Arup
Will Bruder

1991

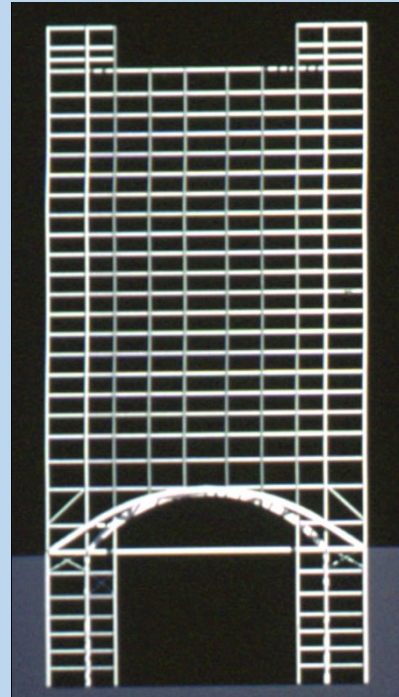
UCLA Powell Library Restoration



Seismic Strengthening
(under construction in January 1994!)

1991

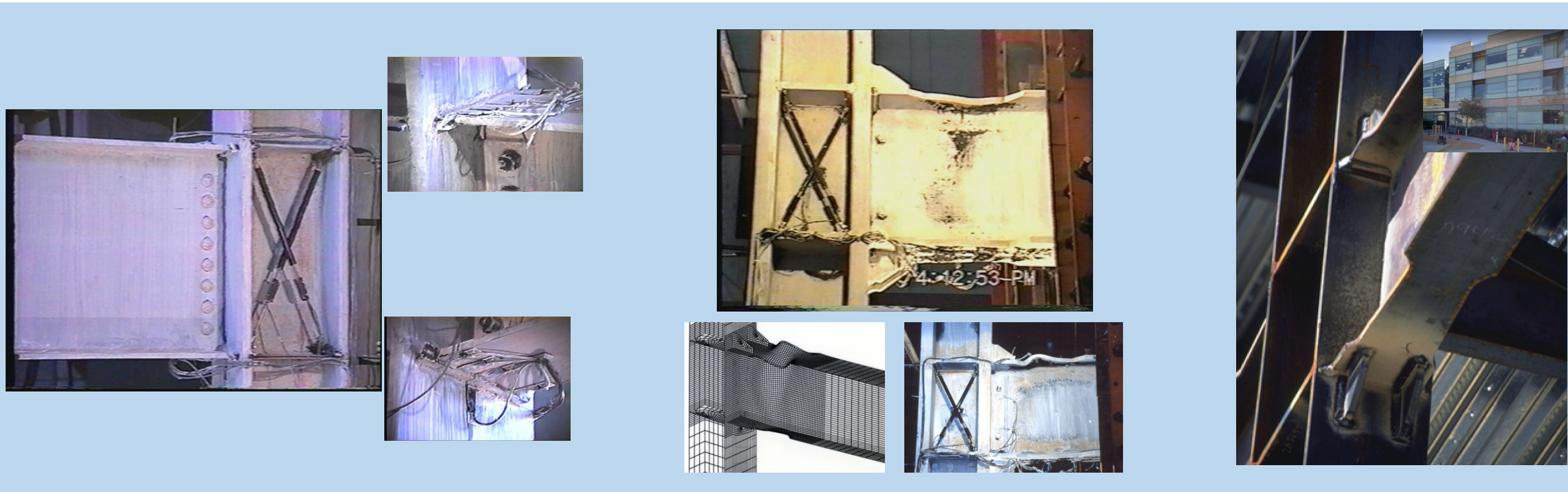
Projects in Korea



Learning about challenging geology
and top-down construction

1994

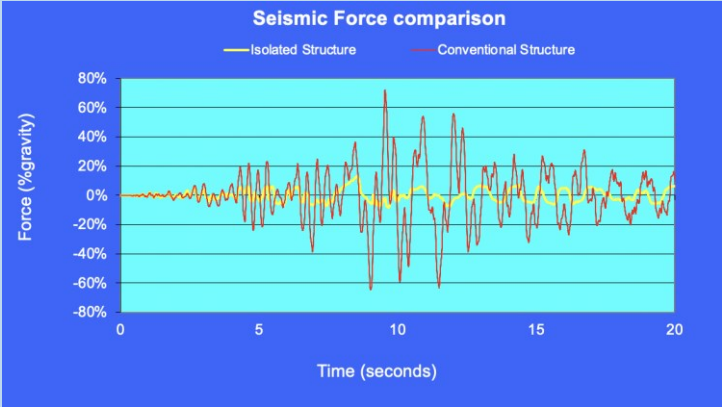
1994 Northridge Earthquake & Developing New Steel Moment Connection, MOB, City of Hope



1994 Northridge Earthquake – Fractured Steel Moment Connections
Reduced Beam Section Moment Connection Development and Testing at
UCSD

1994 -

Universal Headquarters

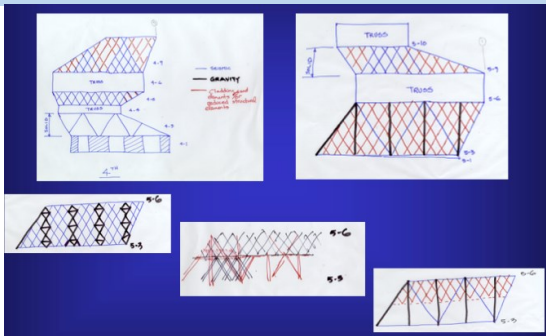
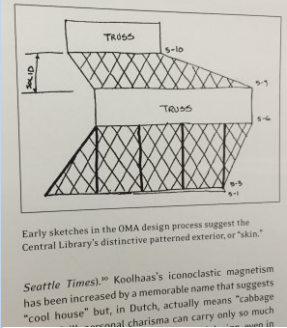
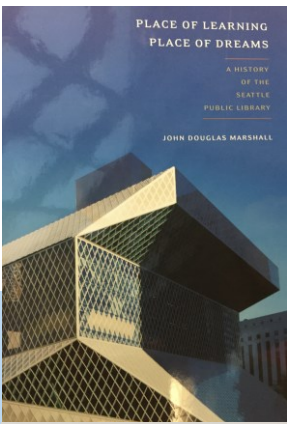
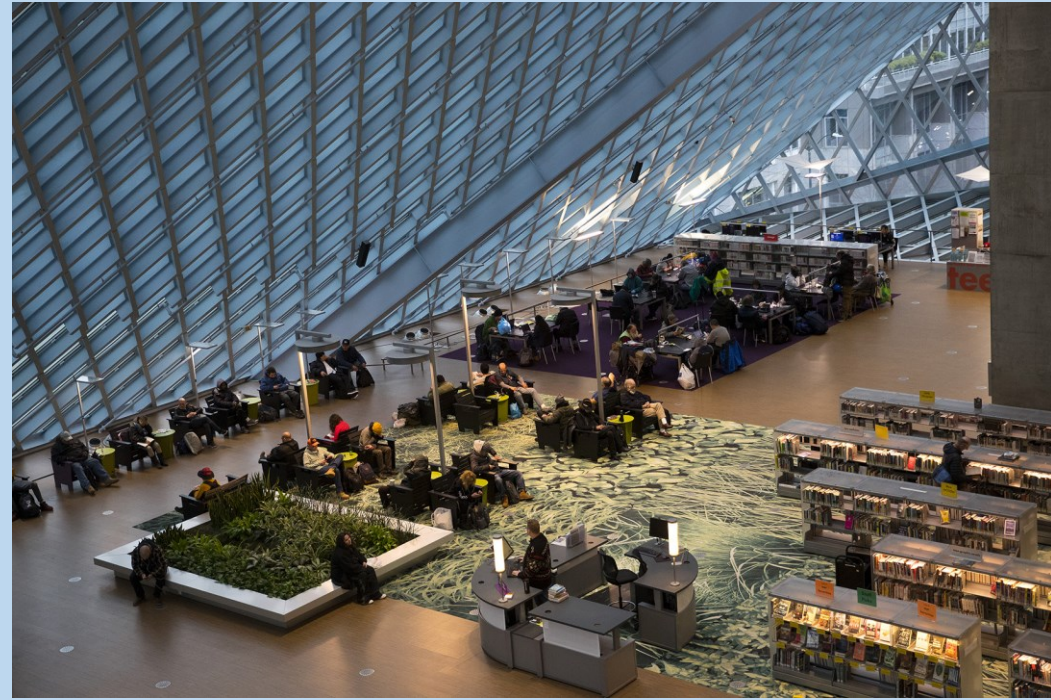


First Starchitect project

Scheming with Rem Koolhaas - OMA

1997

Seattle Central Library

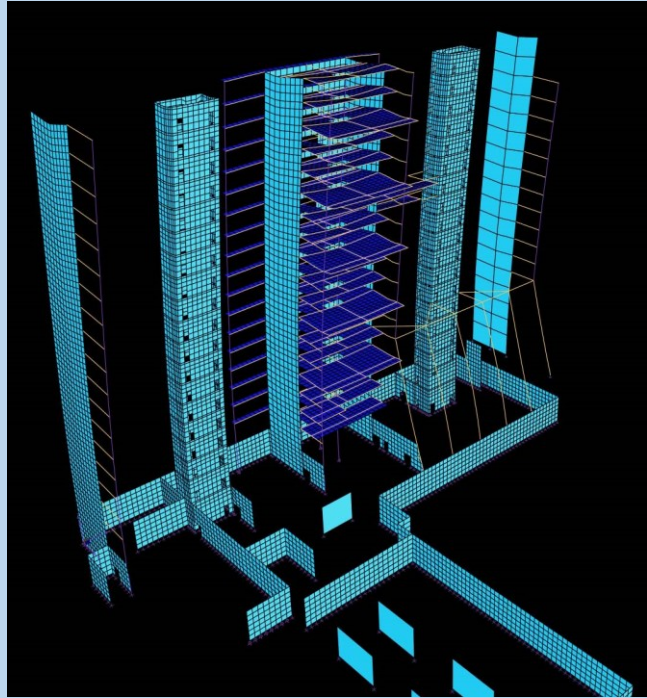


Reinventing the Library as a Public Space
The genius of Rem Koolhaas - OMA



1999

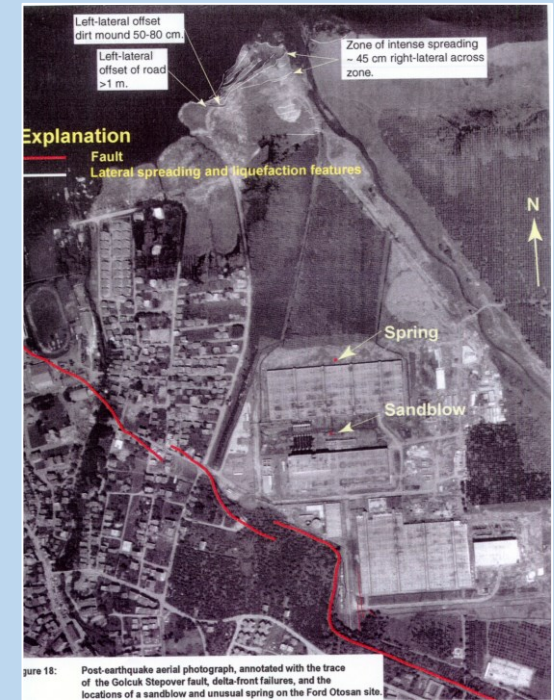
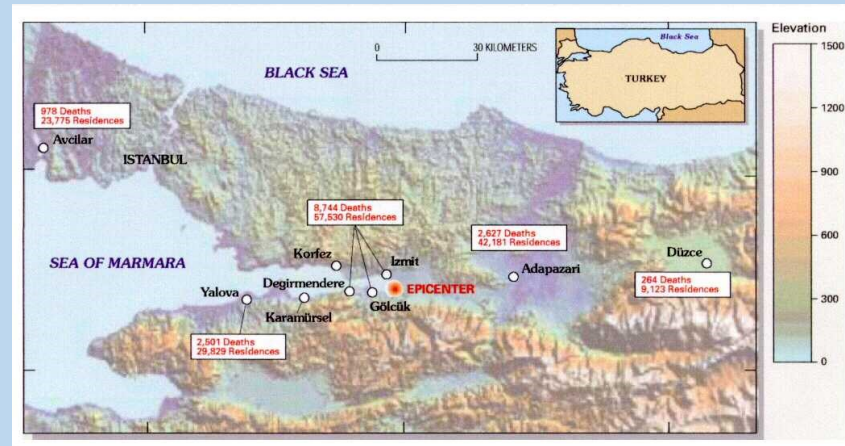
San Francisco Federal Building



The first Performance Based Seismic Design for GSA
Thom Mayne - Morphosis

1999

Ford-Otosan, Gölcük Plant, Istanbul



Earthquake Reconnaissance with PEER/NSF
Performance Based Seismic Retrofitting & 20+ year Client!

MAJOR BUILDING	AREA (m ²)	OPERATIONS PERFORMED	SYSTEM DESCRIPTION
• Body shop-BS	49,553	Relocated & Newly built	Steel MF&EBF
• Paint shop-PS	20,741	Retrofitted	Steel MF&EBF
• Assembly shop-AS	39,360	Retrofitted	RC & Steel Truss
• Press shop-PRS	23,240	Retrofitted	Steel MF&EBF
• Supplier Plant-SP	16,720	Newly built	Steel MF&EBF

1999

Denver Art Museum Addition

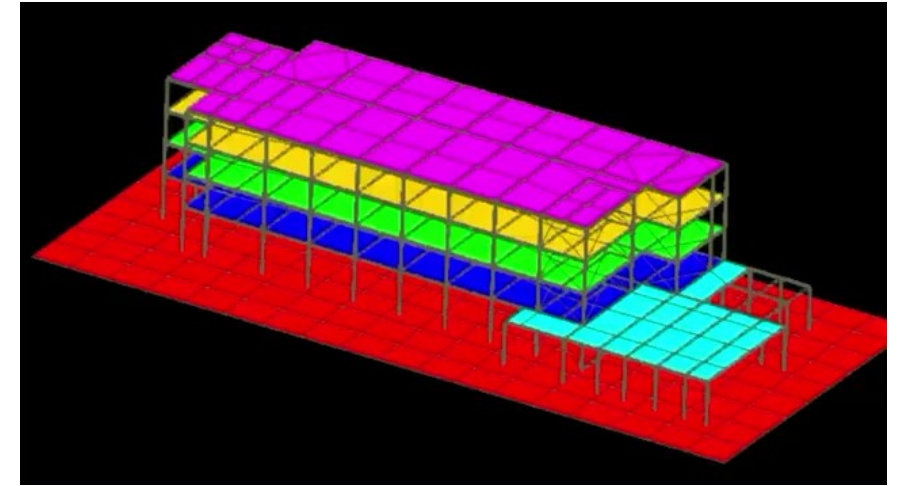


Redefining Massing/Geometry for a Museum, Daniel Libeskind – SDL
Smithsonian Channel Season 2 Episode 1

2000

Student Services Building

UC Berkeley



Can the analysis software capture element failure and Collapse?
Mehrdad Yazdani – Cannon Design

2000

Istanbul Kanyon Complex



Eczacibasi + IsBank Investment
Jerde

2002

Portland Aerial Tram



Connecting Oregon Health Sciences with MOB's at Waterfront?
Angelil Graham Architects

2003

LACMA Broad Contemporary Art Museum



Starting with a \$50k seismic study at May Company (Fairfax/Wilshire)
Renzo Piano – RPBW, Gensler

2003

The Nomadic Museum, Santa Monica



Temporary Museum with Containers + Sonotubes, adjacent to the Pier with removable piles
The genius of Shigeru Ban

2006

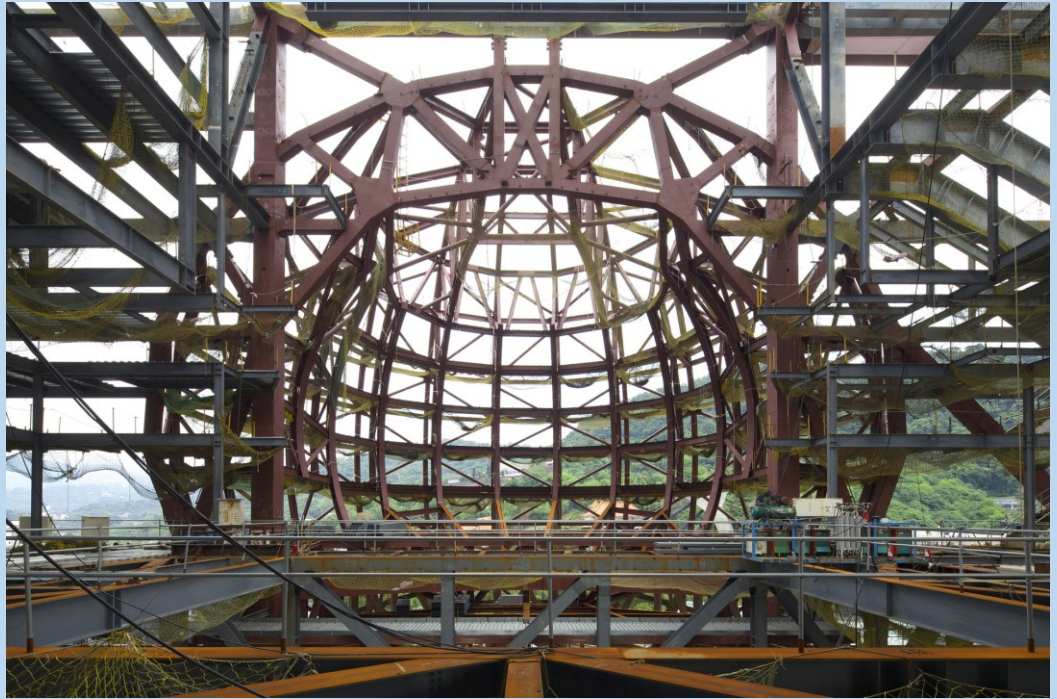
Sabiha Gökçen International Airport



Build-Operate-Transfer, 2.1 B Euros, 20 years, and the race begins!
Piling in 6 weeks for this large scale project with Seismic Isolation

2007

Taipei Performing Arts Center



Seismic Isolation Scheme helps win the Competition in 2008, Grand Opening August 7, 2022
Rem Koolhaas - OMA

2008

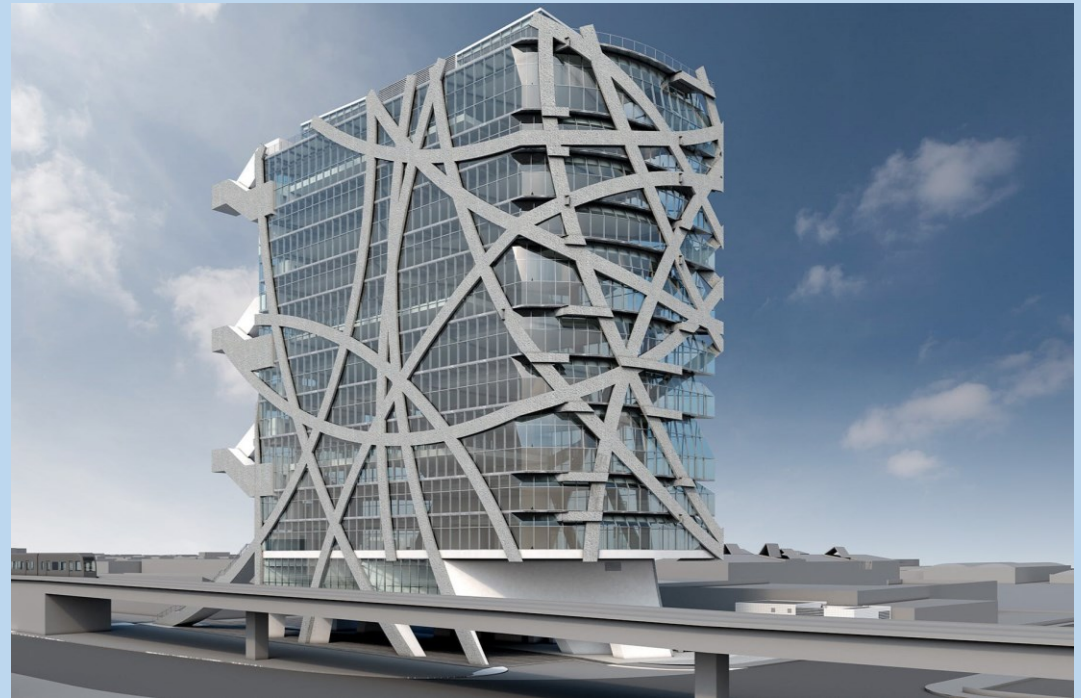
Space Shuttle Endeavour Display Pavilion



Helping the California Science Center to bring a National Treasure to Los Angeles
Raised ~1M+ in donations from collaborators in the Construction Industry

2011

(W)rapper Tower, Culver City



World's largest Sculpture w/ Curved Band geometry and cross-sections fixed + 24 isolators
Eric Owen Moss – EOMA, Frederick & Laurie Smith - Owner

2011

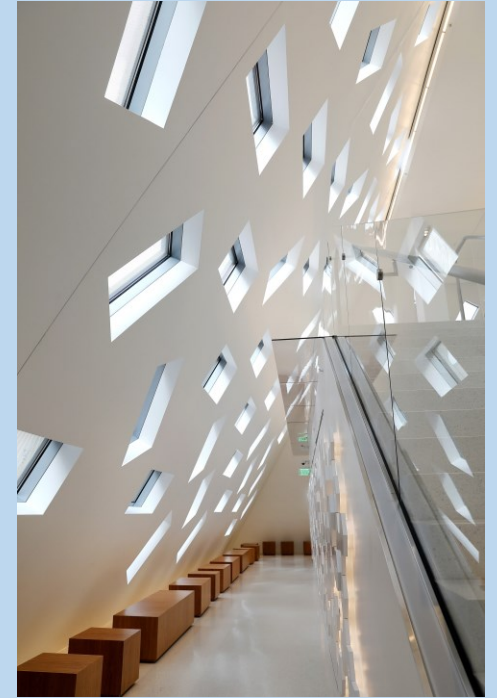
Google Charleston East



Scheming a Big Tent with 100ft x 100ft curved-quadrilateral cascading disconnected planes!
BIG + Heatherwick + Adamson Associates

2014

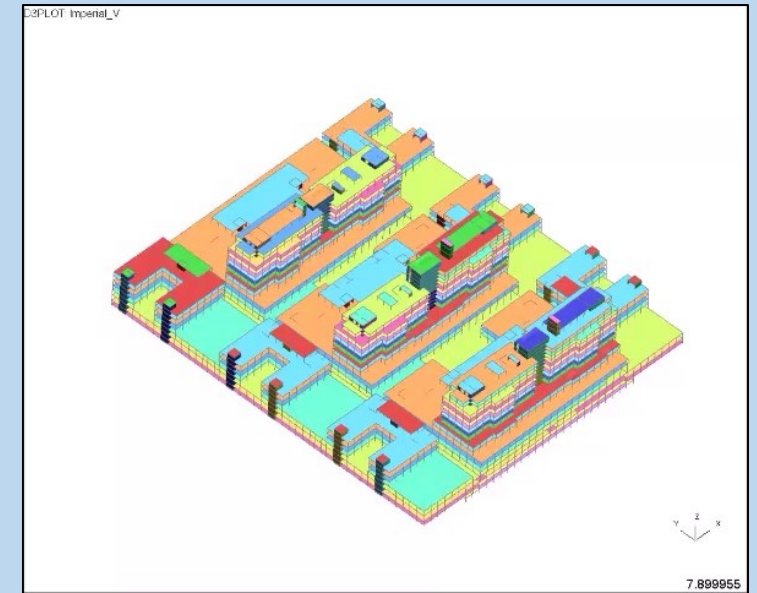
Wilshire Boulevard Temple



Leaning towards Wilshire and Harvard Boulevards, with BRB's active under gravity!
OMA

2015

Başakşehir Pine and Sakura Hospital



A phone call, interview...off to the races to design 10 million square feet, 2068 Seismic Isolators
Perkins & Will (DC) + Ronesans Holding

2015

Allegiant Raiders Stadium

Las Vegas

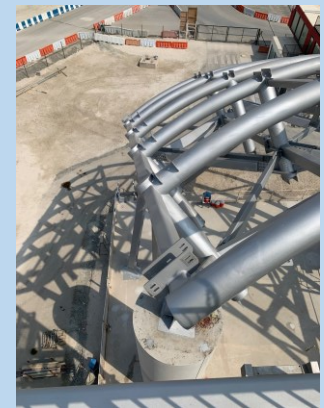


Other Stadium Projects Include:
Miller Park (Brewers) - Milwaukee
Paul Brown (Bengals) - Cincinnati
Lincoln Field (Eagles) - Philadelphia

Carson to Las Vegas, Design+Construction in 40 months
Manica Architecture + HNTB / Mortenson-McCarthy JV

2016

Guggenheim Abu Dhabi



1 million ft² enclosed and 500,000 ft² of Cones for shading
Frank Gehry, FOGA

2008

and
again
in

2018

One Beverly Hills



\$2B+ mixed-use project
Foster + Partners, Kerry Hill Architects and Gensler

2019-

Samuel Oschin Air and Space Center



How to protect a National Treasure starting with
The K & M matrices from the 1970's
Doss Mabe, Ted Hyman, Mark Piaia - ZGF

2013

and
again
in

2021

Cyprus International University



Construction Materials Laboratory
& Amphitheatre
Saffet Kaya Bekiroğlu - Mete Boyacı, Levent Group

2017

and
again
in

2022

Los Angeles Tall Buildings and Structural Design Council



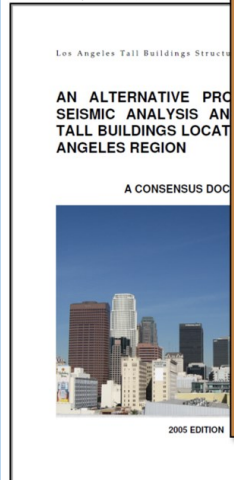
<https://www.latallbuildings.org>

2007-

Los Angeles Tall Buildings and Structural Design Council

Revised every three years, with a supplement issued the following year

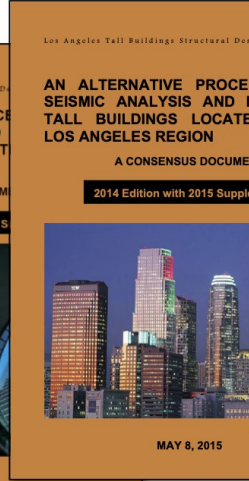
2007, 2008



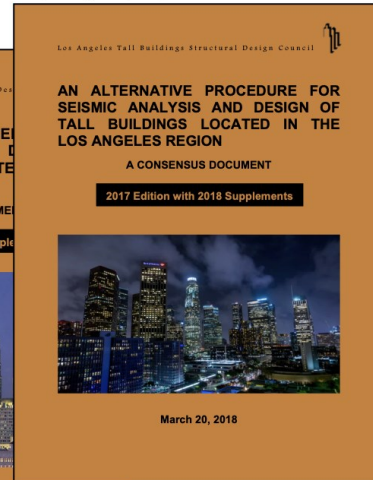
2011, 2012



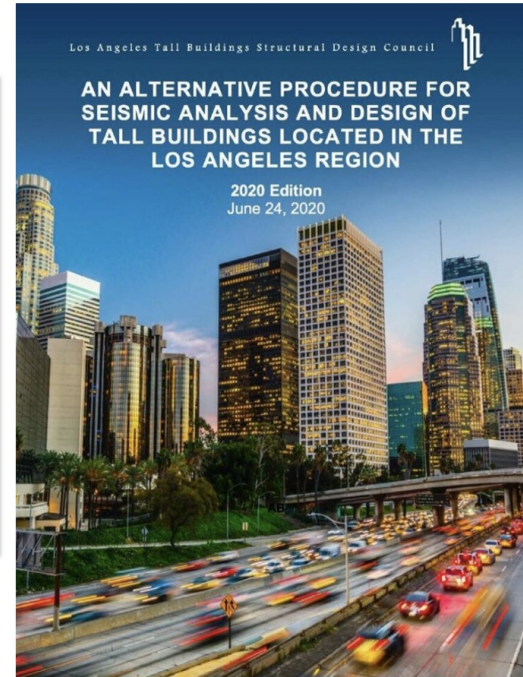
2014, 2015



2017, 2018



2020



2007-

<https://www.latallbuildings.org>

Los Angeles Tall Buildings and Structural Design Council Resiliency Committee

Resilient Buildings – How to achieve a step change?

- How do you facilitate project specific resilient goal setting, establish design considerations and performance targets aligned with the overarching Functional & Economic Recovery objective?
- How about starting with:
 - **Establishing a dialogue with all Stakeholders** and build on common ground
 - Achieving a **mind shift that design of buildings deserve specific resiliency goals** and the risk-acceptability applied to cars is not appropriate for the level of investment, and consideration of **Functional Recovery** is essential.
 - **How? Let's partner and Share Knowledge & Create Incentives to Influence Change towards Resilient Los Angeles:**
 - Publish a **Stakeholder Document** to inform and influence
 - Publish a **Technical Document** to improve resiliency of new building designs
 - Brainstorm to explore and roadmap incentives



Cars + Accidents



Performance Target: **Life Safety**
Design: Nonlinear Analysis with performance target
Testing: Full scale Prototype testing
Risk: **Unrepairable Car**
Solution/Timeline: **Replacement, days**
Funding source: **Insurance (+ Owner)**
Societal & Economic Impact: **a few people, \$k**

Structures + Earthquakes



Performance Target: **Life Safety**
Design: Linear Analysis with performance aspirations
Testing: Generalized component testing
Risk: **Unusable Building and/or Infrastructure**
Solution/Timeline: **Costly Repair/Replacement, years**
Funding source: **Owner (+ some \$\$ from insurance)**
Societal & Economic Impact: **thousands of people, \$B**

Same Life-Safety performance target/aspiration, but vastly different Societal & Economic Impact

2020-

Sharing a few final thoughts...

- Continue elevating the Structural Engineering profession through commitment in continuous learning and knowledge sharing.
- Good structural design can only come from rigorous study and comparison of multiple concepts.
- The achievement of Performance Based Seismic Design and Resilient Design requires structural system explorations and testing of concepts via rigorous analyses using many earthquake records to represent earthquake hazard at the project site.
- Understand your Client's business and use a non-technical communication style to enable partnering and collaboration to achieve the project's objectives together.

Thank you!