

THE INNOVATORS & MAINTAINERS:  
INNOVATION IN ARCHITECTURE,  
INFRASTRUCTURE & TECHNOLOGY

SAN FRANCISCO + SILICON VALLEY

April 4 - 7, 2019



## Sponsors

The American Institute of Architects (AIA) Committee on Design (COD) knowledge community strategically pursues funding partners whose goals align with the AIA COD Sponsorship Principles. Funding from reputable organizations provides opportunities to inspire emerging professionals, supports continuing education for established design professionals, and secures beneficial resources for COD programs.

We thank our sponsors for making this program possible and rewarding for attendees.

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Marvin Windows and Doors  
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### Silver

SieMatic

### Bronze

Basel Convention Visitors Bureau  
Kreysler and Associates  
Lucerne Tourism AG  
Quart Architekturbücher

### Other

Turner Construction

### Contributors

Autodesk  
Mobimo  
Scheitlin Syfrig Architekten



We would also like to thank the Embassy of Switzerland in the United States of America and the Swiss Touch Campaign for their support and collaboration during our planning process. Through their partnership, we have enabled local emerging professionals to attend the conference.



Innovation distinguishes between a leader and a follower  
Steve Jobs

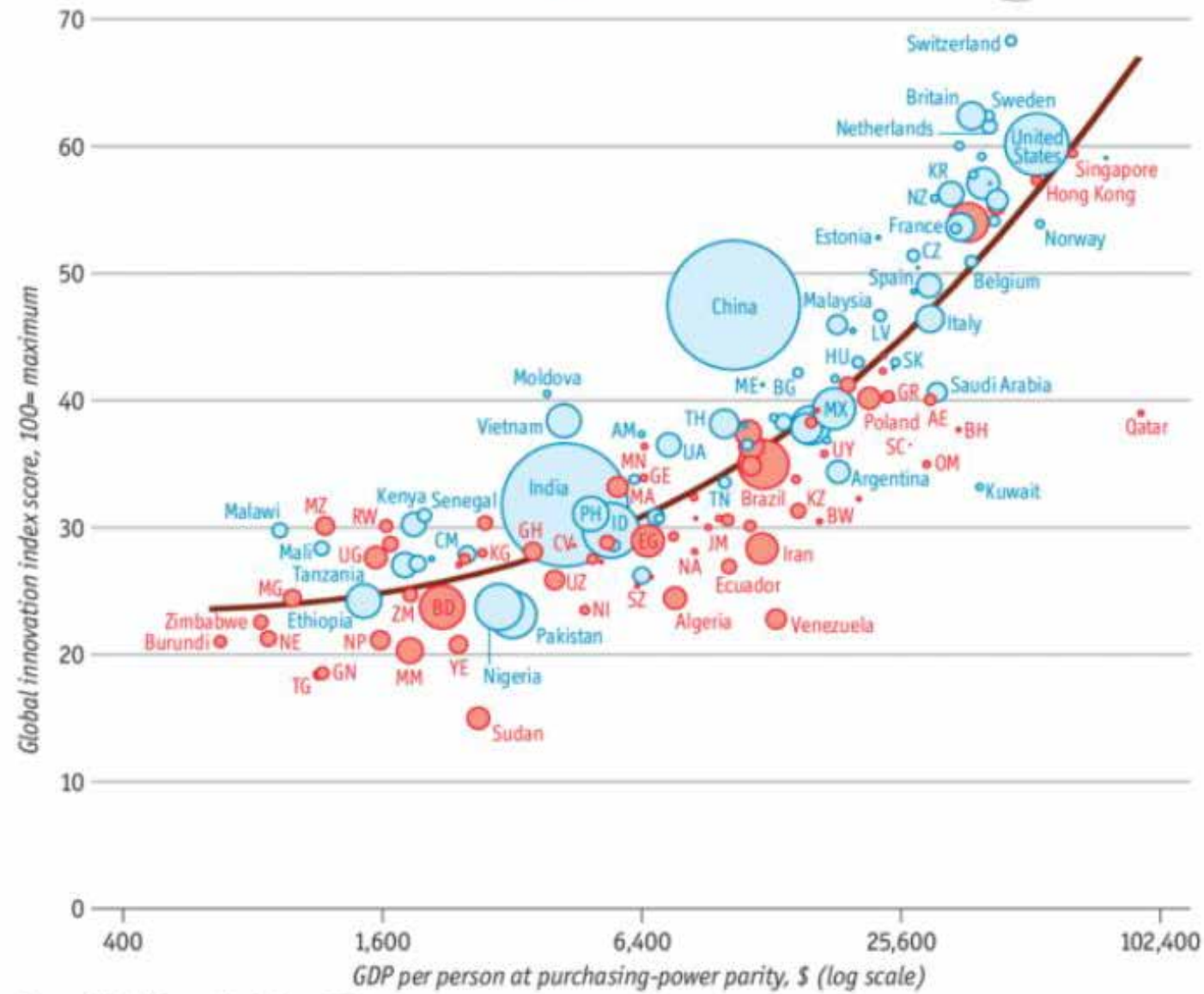


## Global Innovation Index

2014 or latest available year

● Efficient innovators  
● Inefficient innovators

1bn Circle size = population



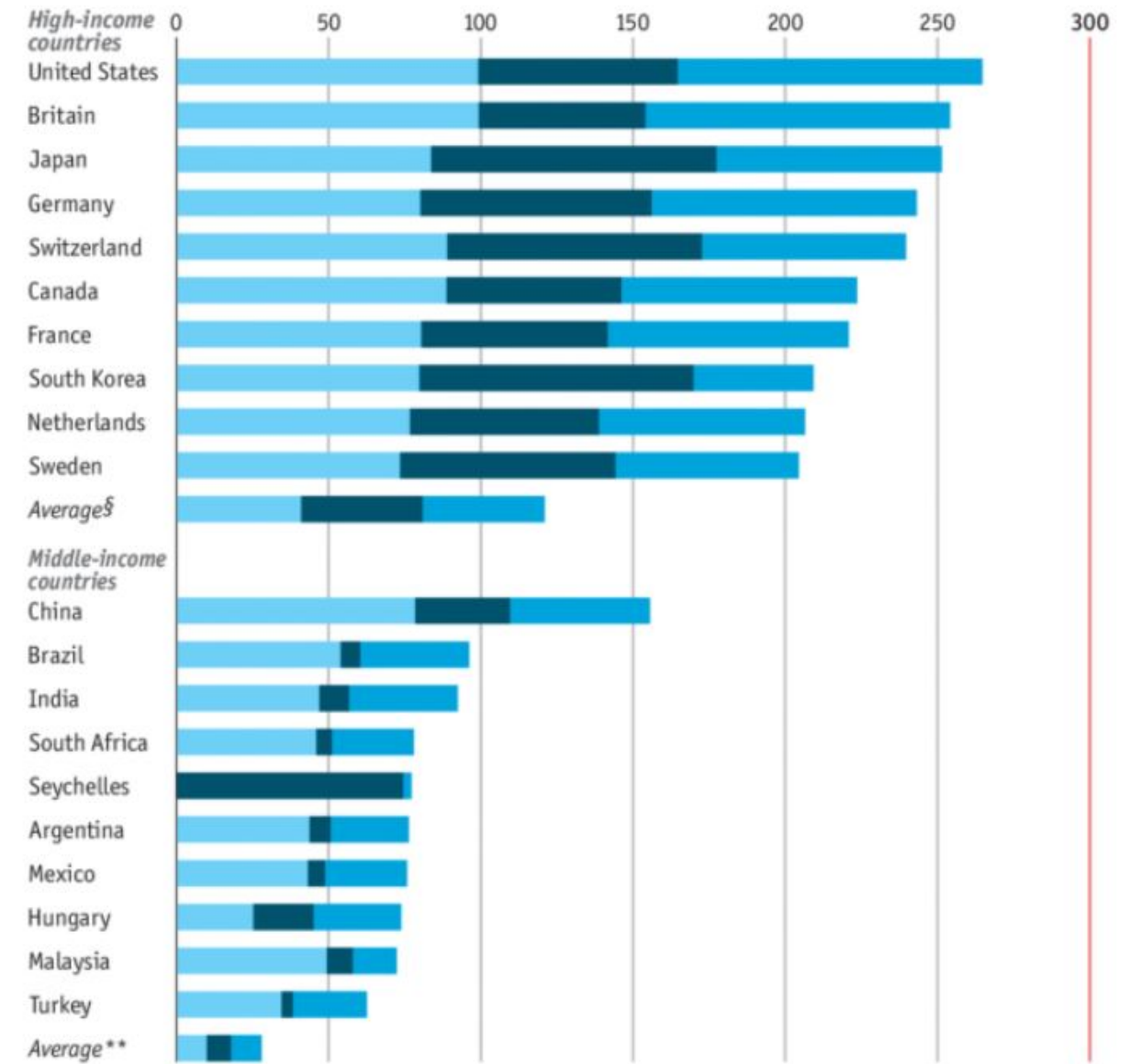
Source: Global Innovation Index, 2015

Economist.com

## Innovation quality

300=maximum quality

Universities\* Patents† Citations‡



Source: Global Innovation Index, 2015

Economist.com

\*Average rating of top three universities †Number of patents filed per unit of GDP  
‡Cited articles as % of published articles §Of 48 countries \*\*Of 72 countries





## Types Of Innovation

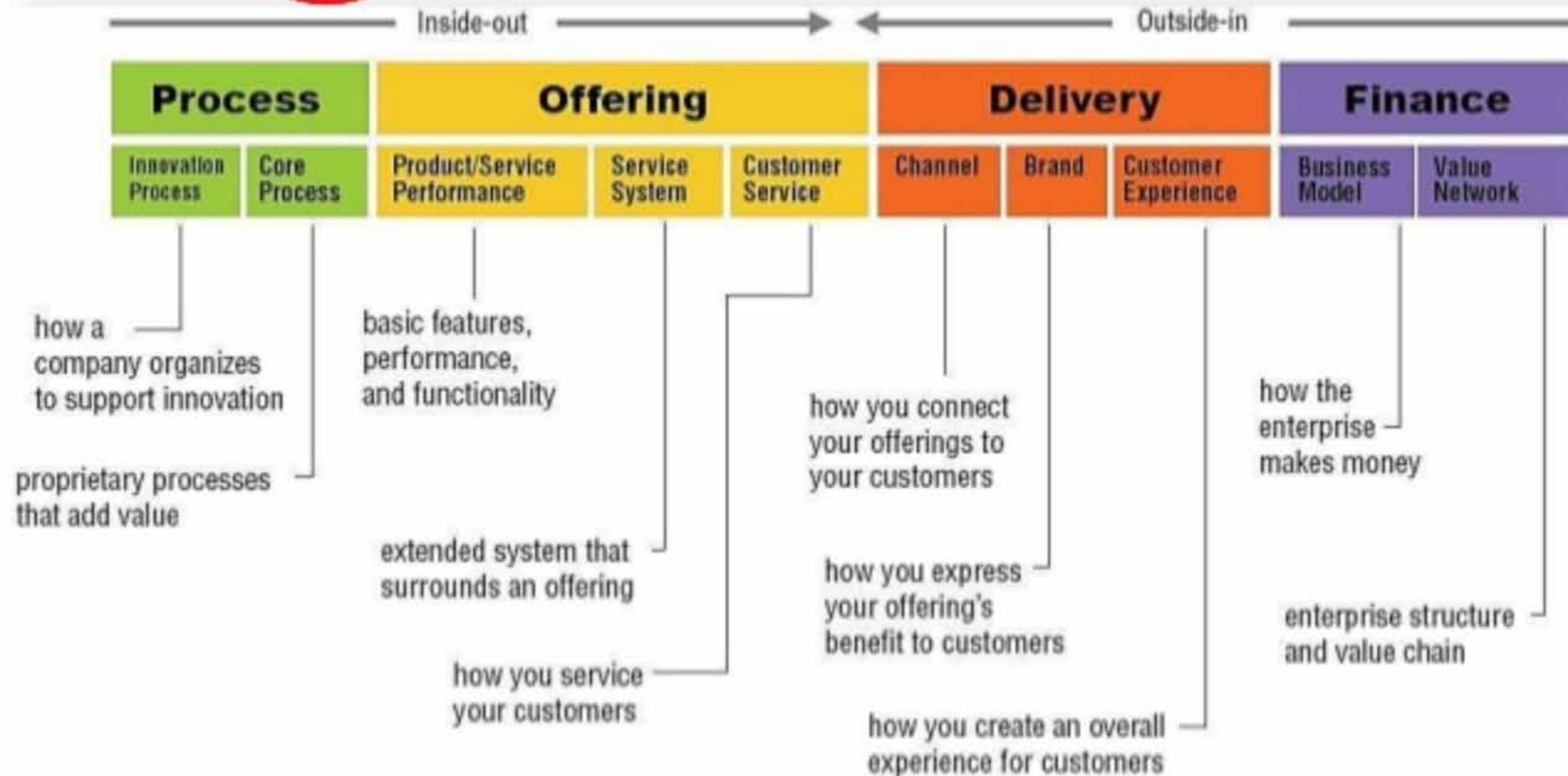
- Incremental Innovation
- Radical Innovation
- Business Model Innovation
- Product, Process And Service Innovations





10

# TYPES OF INNOVATION



10 Types of Innovation. Larry Keeley, Ryan Pikkell Brian Quinn, Helen Walters

<http://www.doblin.com/tentypes/>



# THE TEN TYPES OF INNOVATION

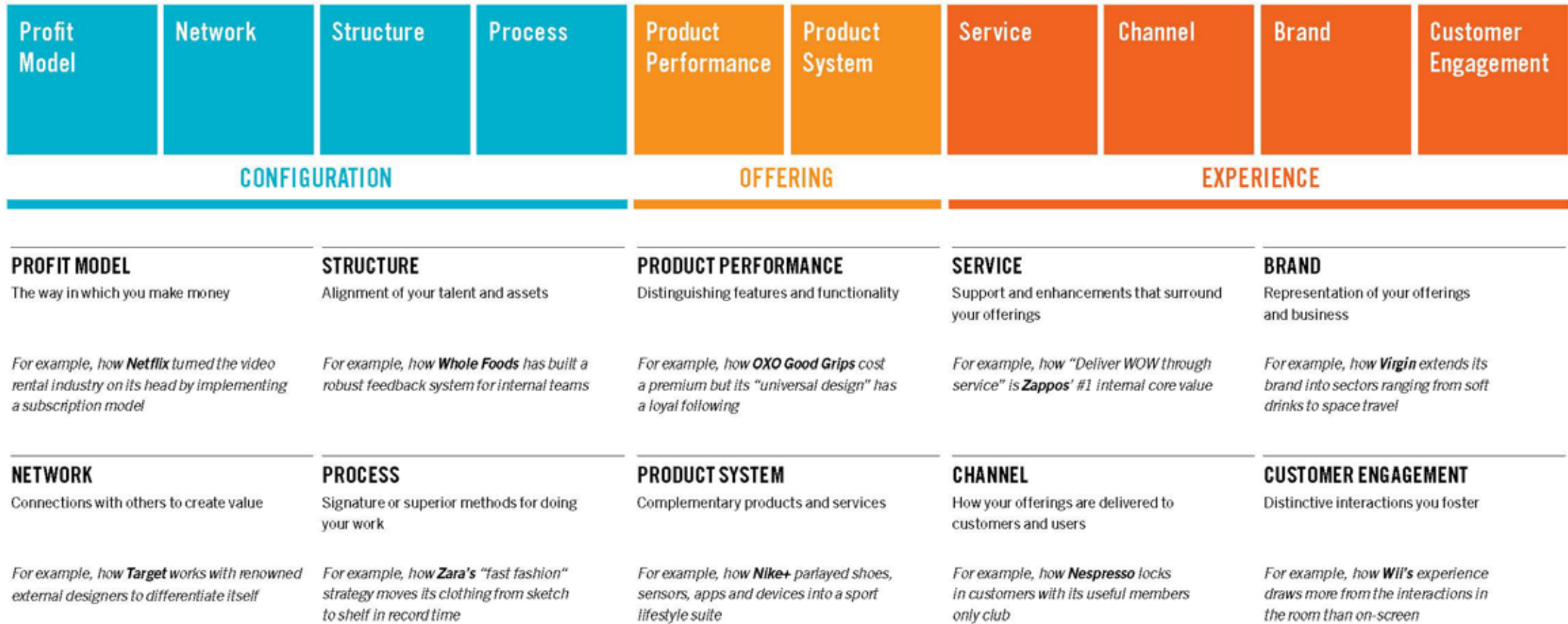
## AN OVERVIEW

DOBLIN

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The Ten Types framework is simple and intuitive. It is a useful tool you can use both to diagnose and enrich an innovation you're working on, or to analyze existing competition. It makes it especially easy to spot errors of omission — missing dimensions that will make a concept stronger.

The Ten Types framework is structured into three color-coded categories. The types on the left side of the framework are the most internally focused and distant from customers; as you move toward the right side, the types become increasingly apparent and obvious to end users. To use a theatrical metaphor, the left of the framework is backstage; the right is onstage.





# **“Integrating Innovation in Architecture: Design, Methods and Technology for Progressive Practice and Research”**

by Ajla Aksamija

## **1 INNOVATIVE MATERIALS**

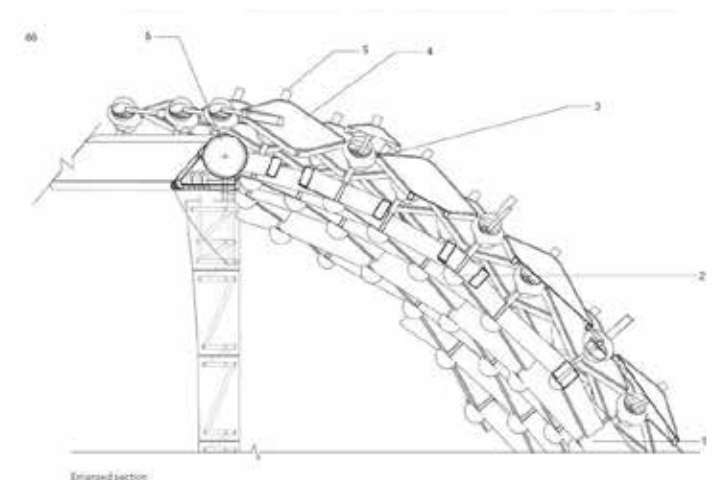
Advances in concrete  
Advances in glass  
Advances in metals  
Biomaterials  
Composite materials  
Electrochromics  
Shape-memory alloys  
Self-healing materials  
Sensors and controls  
Phase-change materials  
Photovoltaics  
Thermoelectrics

## **2 INNOVATIONS IN COMPUTATIONAL DESIGN**

Advances in computational design  
Tools and methods  
BIM in design  
BIM in virtual construction  
BIM in facility management  
Environmental simulations and energy analysis  
Structural analysis  
CFD analysis  
Digital fabrication and methods  
Design to fabrication

## **3 TECHNOLOGICAL INNOVATIONS**

Advances in facade systems  
Advances in HVAC systems  
Advances in lighting  
Building automation systems  
Prefabrication and modular construction  
Automation in construction  
Robotics in construction  
Smart and responsive buildings





#### 4 INNOVATIONS IN THE DESIGN PROCESS AND ARCHITECTURAL PRACTICE

Motives and goals for innovation

Organization and roles

Integration of research and design practice

Research methods for innovation

Financial factors and investments for innovation

Value of innovation

Innovations in project delivery

Risk management in innovative design practice

+

#### 5. INNOVATION IN URBAN AND REGIONAL DESIGN

Adapting to changing demographics and lifestyles

Creation new types and improvements of Infrastructure

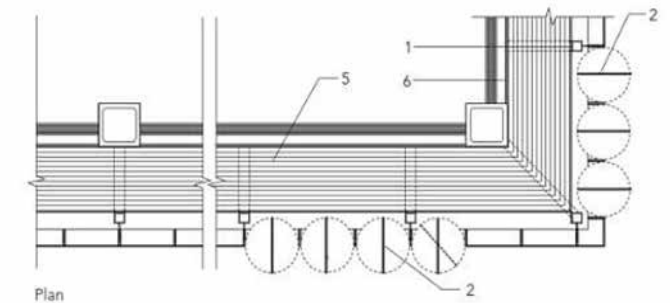
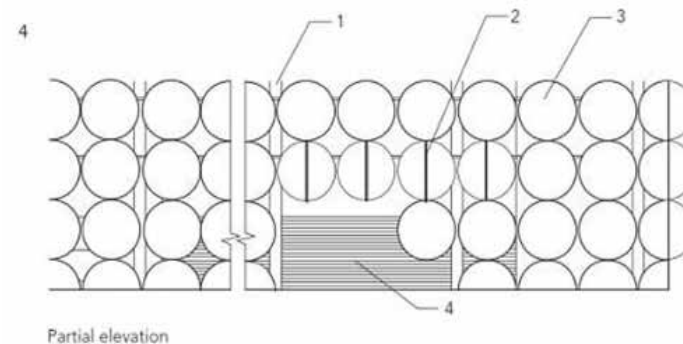
Lifestyle accommodation

Resiliency

#### 6. PROCESS AND BUSINESS MODEL INNOVATIONS

New space types and configurations

New adjacencies or relationships in space programming



- 1 Vertical support
- 2 Rotated disk
- 3 Operable disk
- 4 Louvres
- 5 Catwalk
- 6 Curtain wall



Creativity is thinking up new things.  
Innovation is doing new things.

Theodore Levitt





**RECAP:  
INNOVATORS AND MAINTAINERS  
SAN FRANCISCO/ SILICON VALLEY CONFERENCE**



## Agenda and locations:

### Thursday, April 4, 2019

Day 1: San Francisco

### Friday, April 5, 2019

Day 2: San Francisco, Downtown

### Saturday, April 6, 2019

Day 3: Silicon Valley

### Sunday, April 7, 2019

Day 4: SF, Mission Bay

## SF Conference Planning Committee

Heather Young, AIA

Dan Garber, FAIA

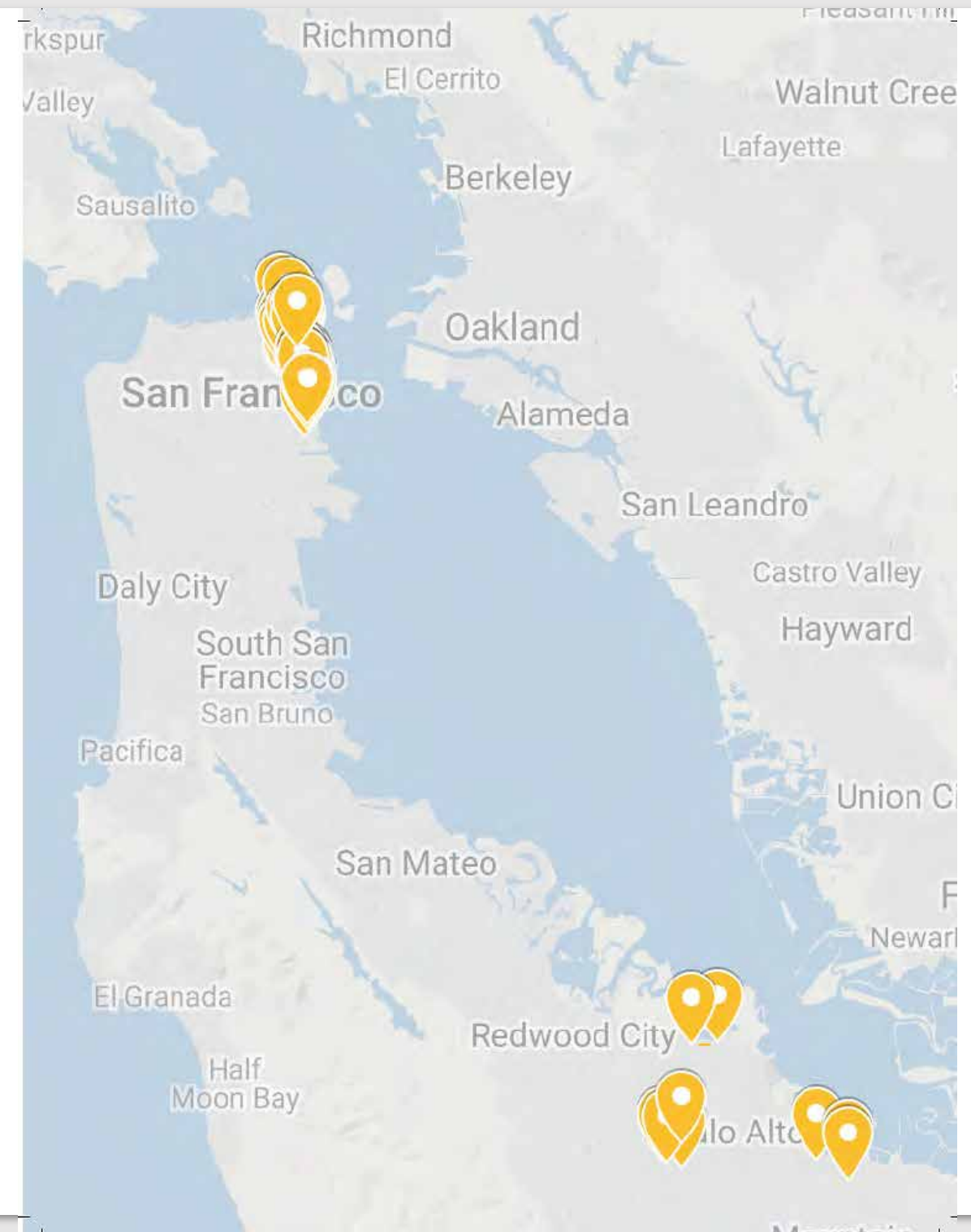
Cathy Simon, FAIA

Karl Backus, FAIA

David Greenbaum, FAIA

Susan Parrish, Lori Feinman

**Photo Credits:** Jason O'Rear

























## Symposium on Innovation

- Moderated symposium to compare and contrast how the topics of social equity, housing development, and landscape design are evolving in San Francisco to better reflect the values of social equity and public engagement.
- We learned how the symposium speakers modified their practices to implement innovative thinking into their practices and work, ultimately reshaping the services they provide to the public.



Katie Gerfen, Moderator;  
Speakers: Margie O'Driscoll, Deanna Van Buren,  
Steve Wiesenthal, Richard Kennedy



# Let's review:

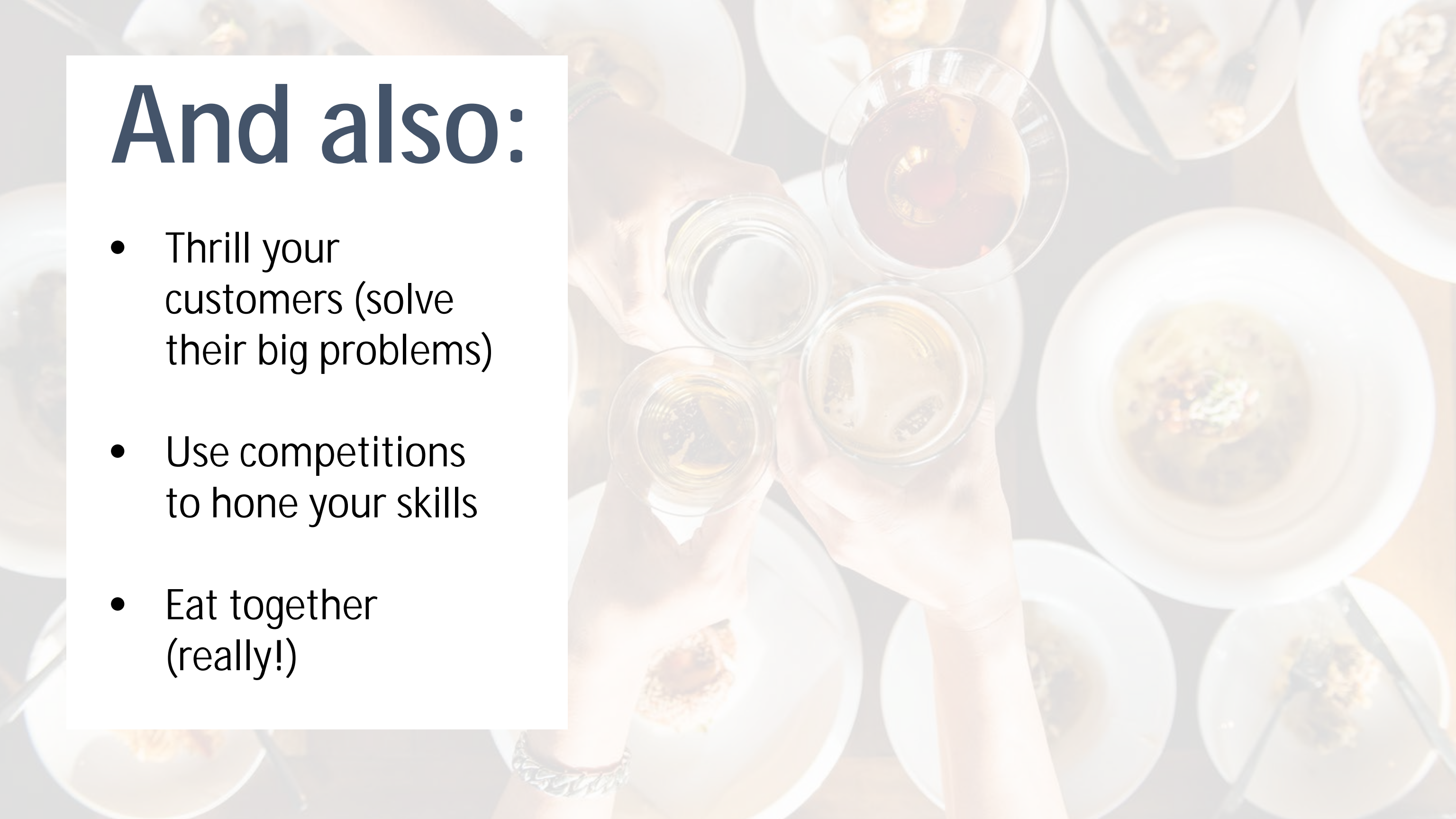
## How to drive innovation in design?

- Time and money
- Diverse teams
- Embrace “beta”
- Learn from failures
- Think different
- Get political



# And also:

- Thrill your customers (solve their big problems)
- Use competitions to hone your skills
- Eat together (really!)





## Panel Discussion - Issues and Innovation on Campus

- How enormous tech and institutional **workforce growth** is impacted by bay area constraints of space, housing, and transit.
- The **planning and transit forces** in the San Francisco bay area that impact commercial and institutional development.
- The **planning principles** that drove revitalization of the San Francisco bay area as they learn about the role that urban planning, and zoning play in such programs.
- How Google, Apple, and Stanford University develop their real estate to address the specific bay area pressures of intense workforce growth and the lack of public transit and housing.



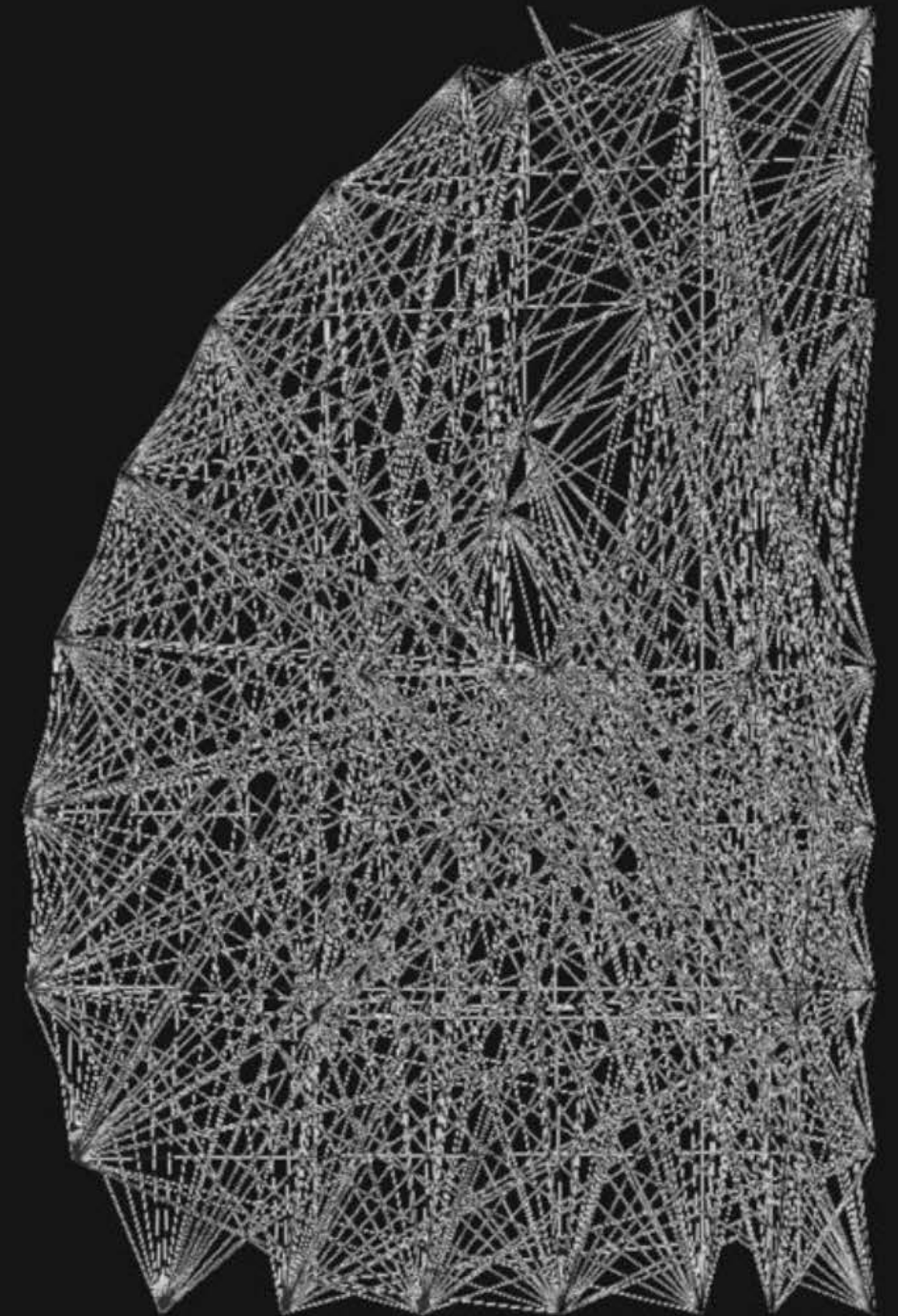
Daniel Garber, Moderator;  
Panelists: Joe Van Belleghem, Dan  
Whisenhung, Jack Cleary



# Architecture Design Data,

Phil Bernstein

- Evolution of tools and technologies
- Practice competency in the era of computation
- Evolution of project delivery models
- Project operational and performative optimization

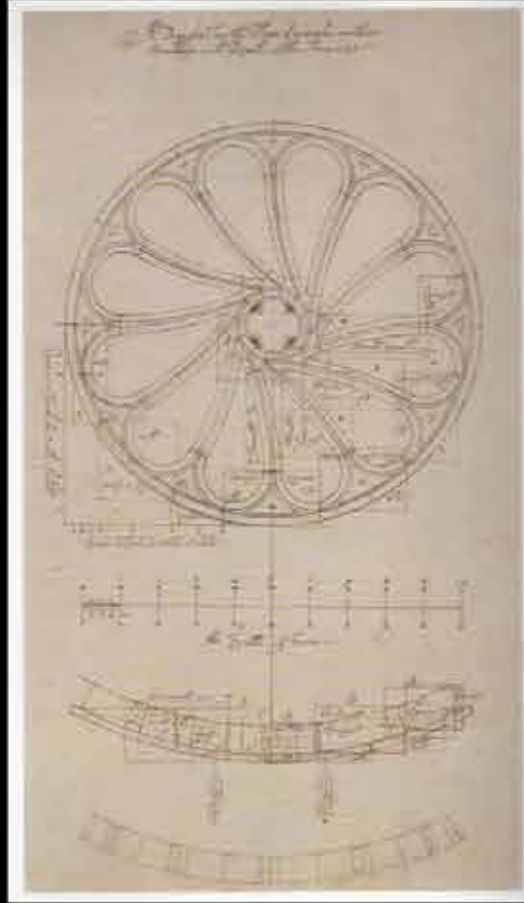




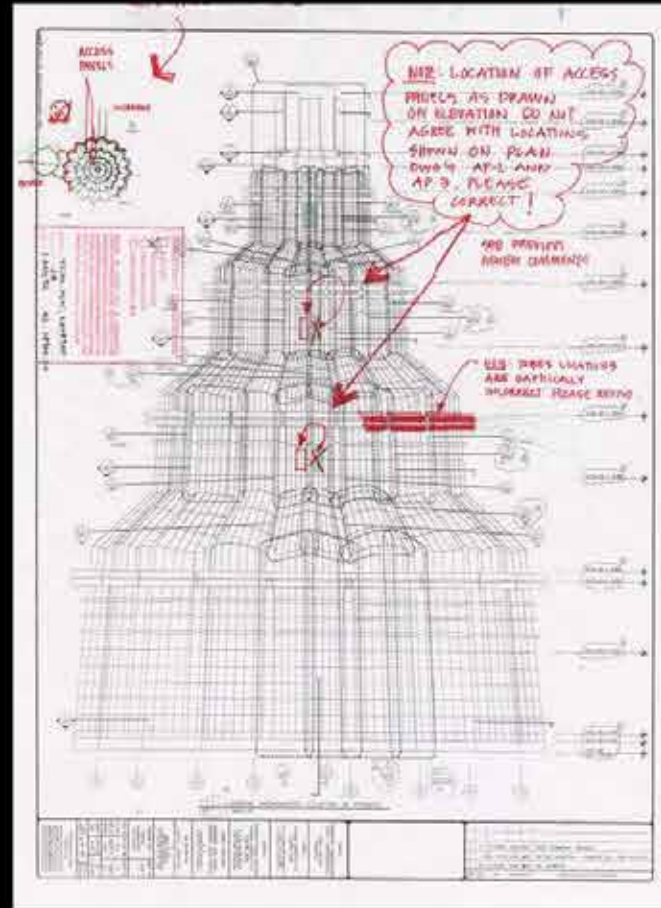




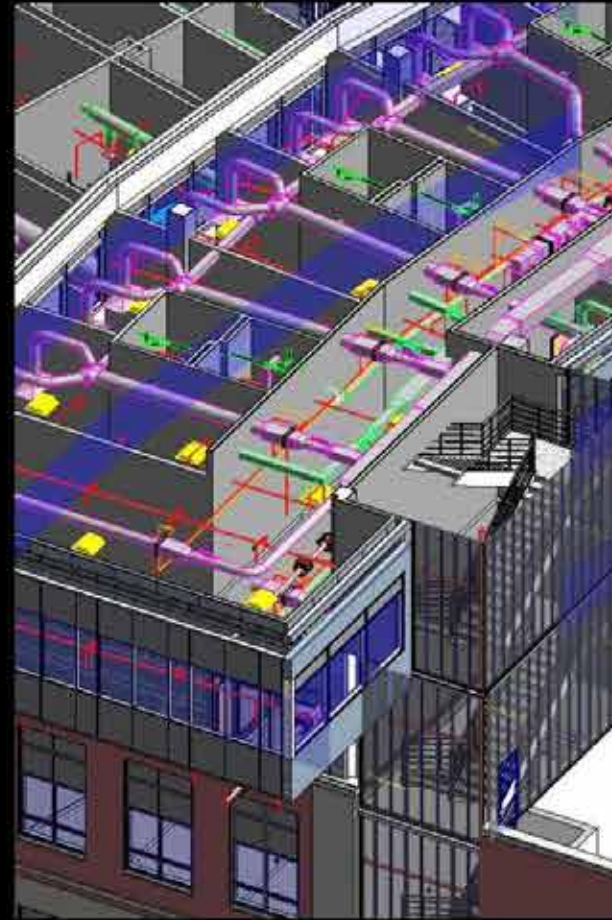
## Evolution of Tools and Technologies



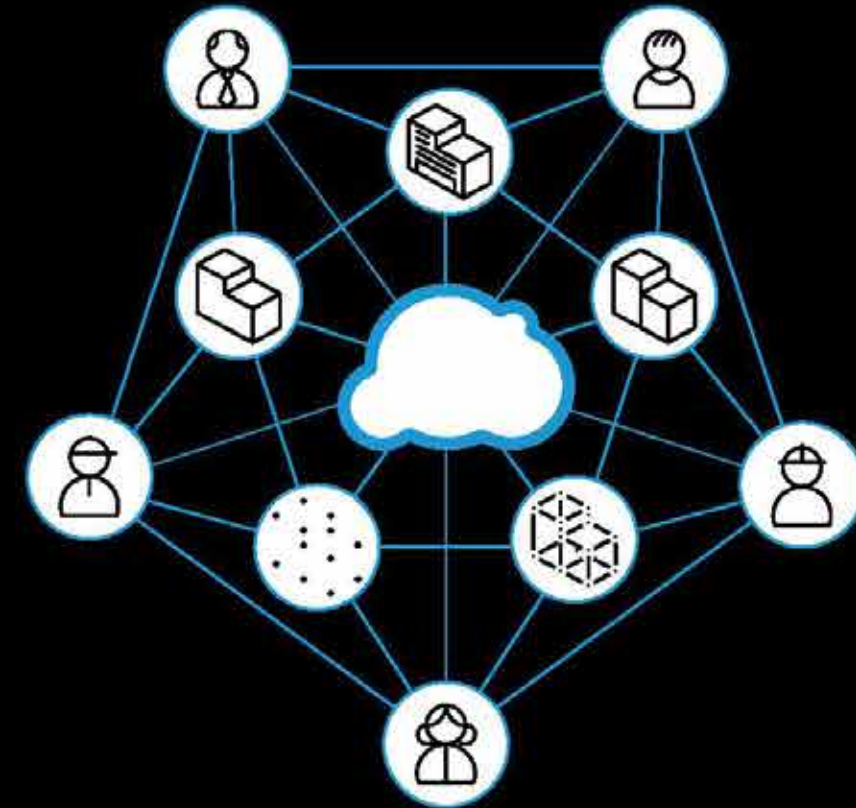
## Drawing



# CAD



# BIM

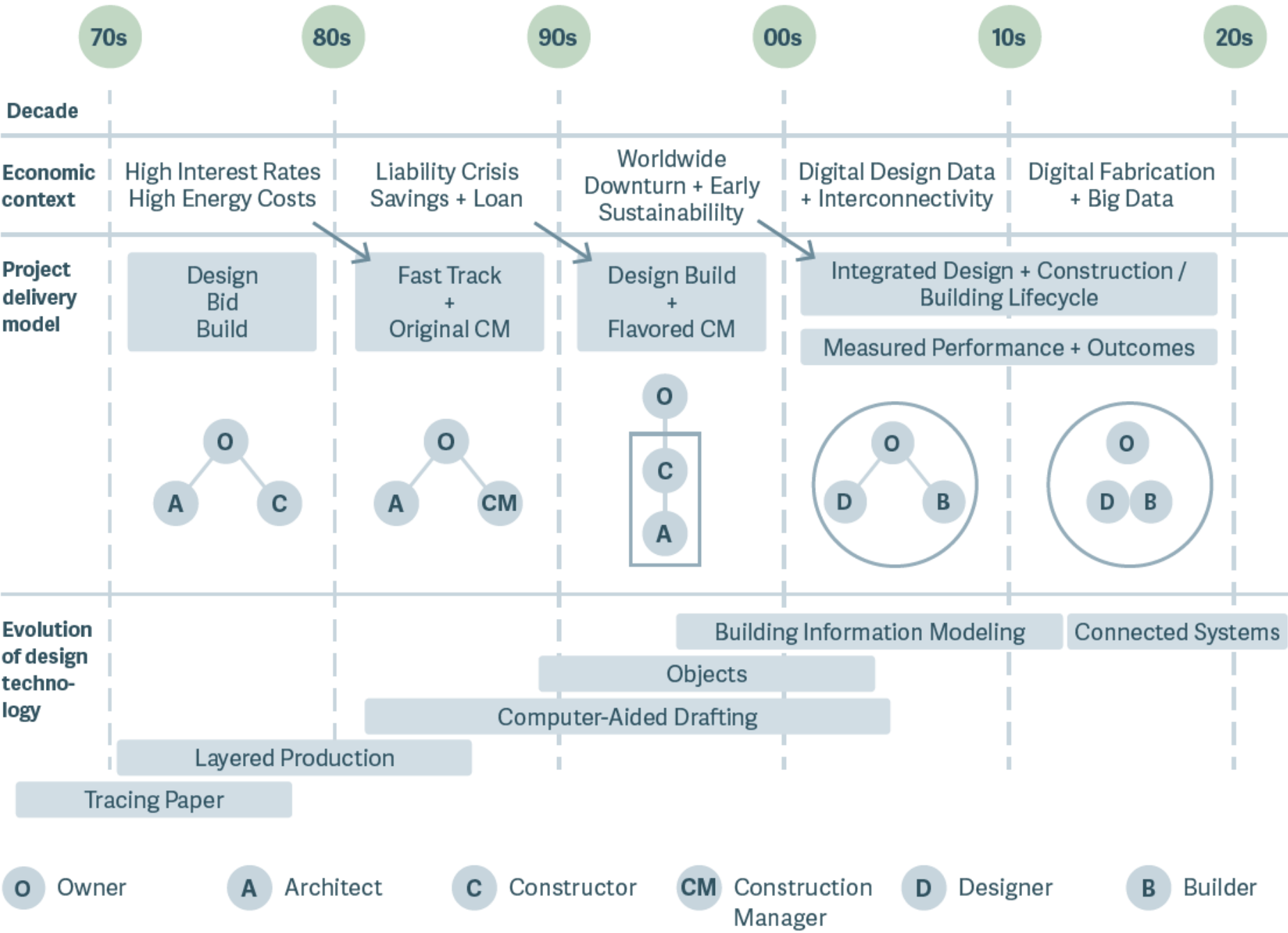


## Connected BIM





2.1.5 The evolution of project delivery models, 1970–2020









# KIERAN TIMBERLAKE

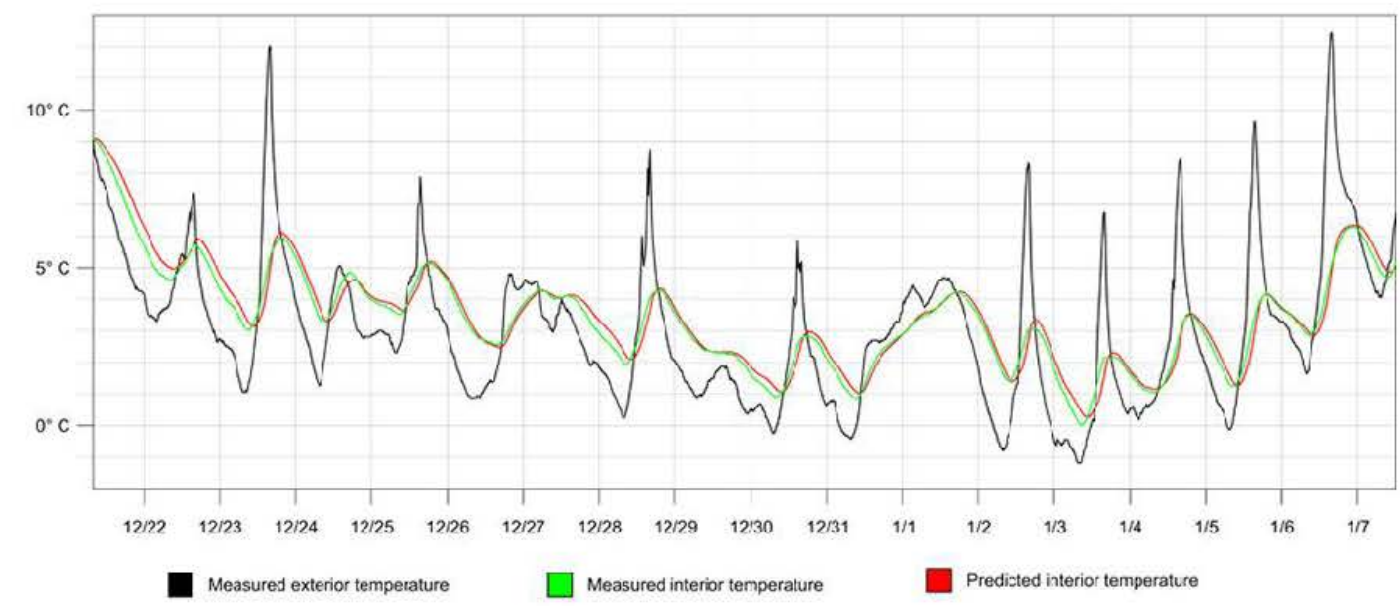
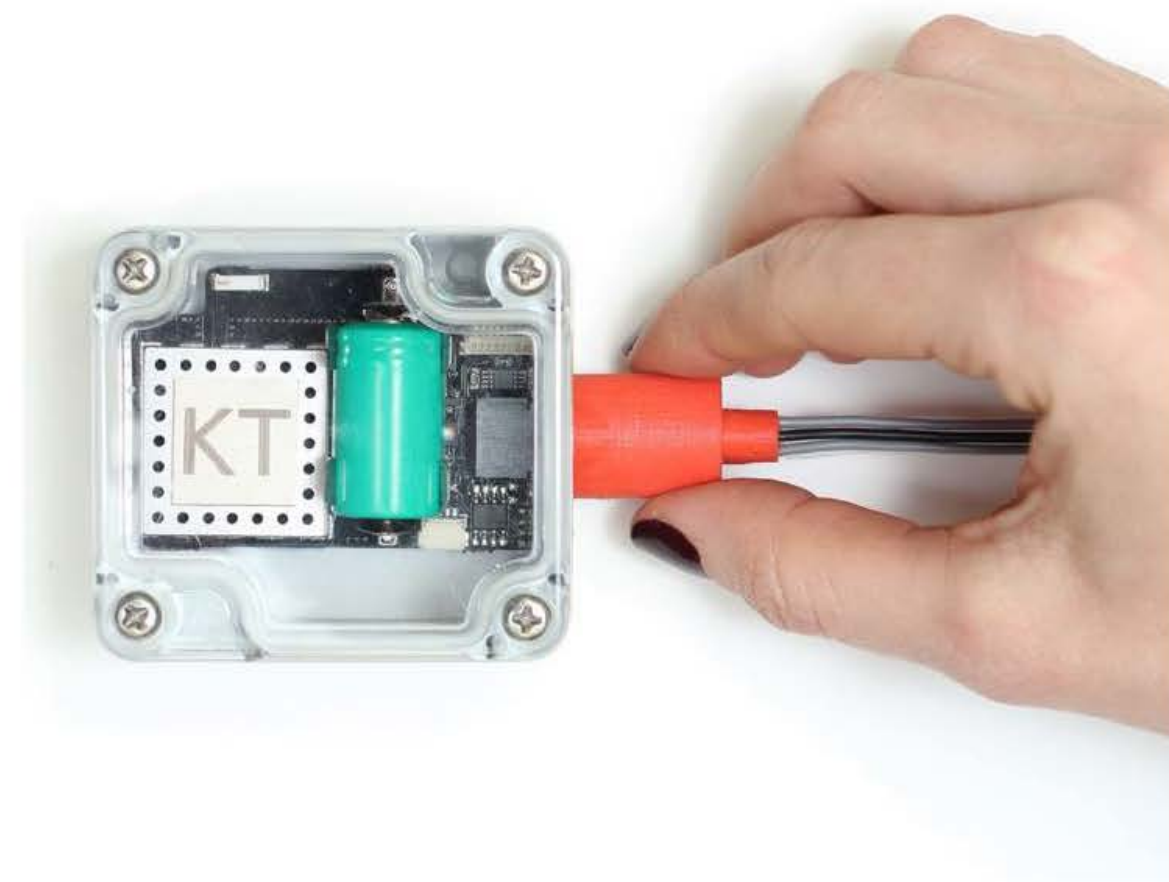
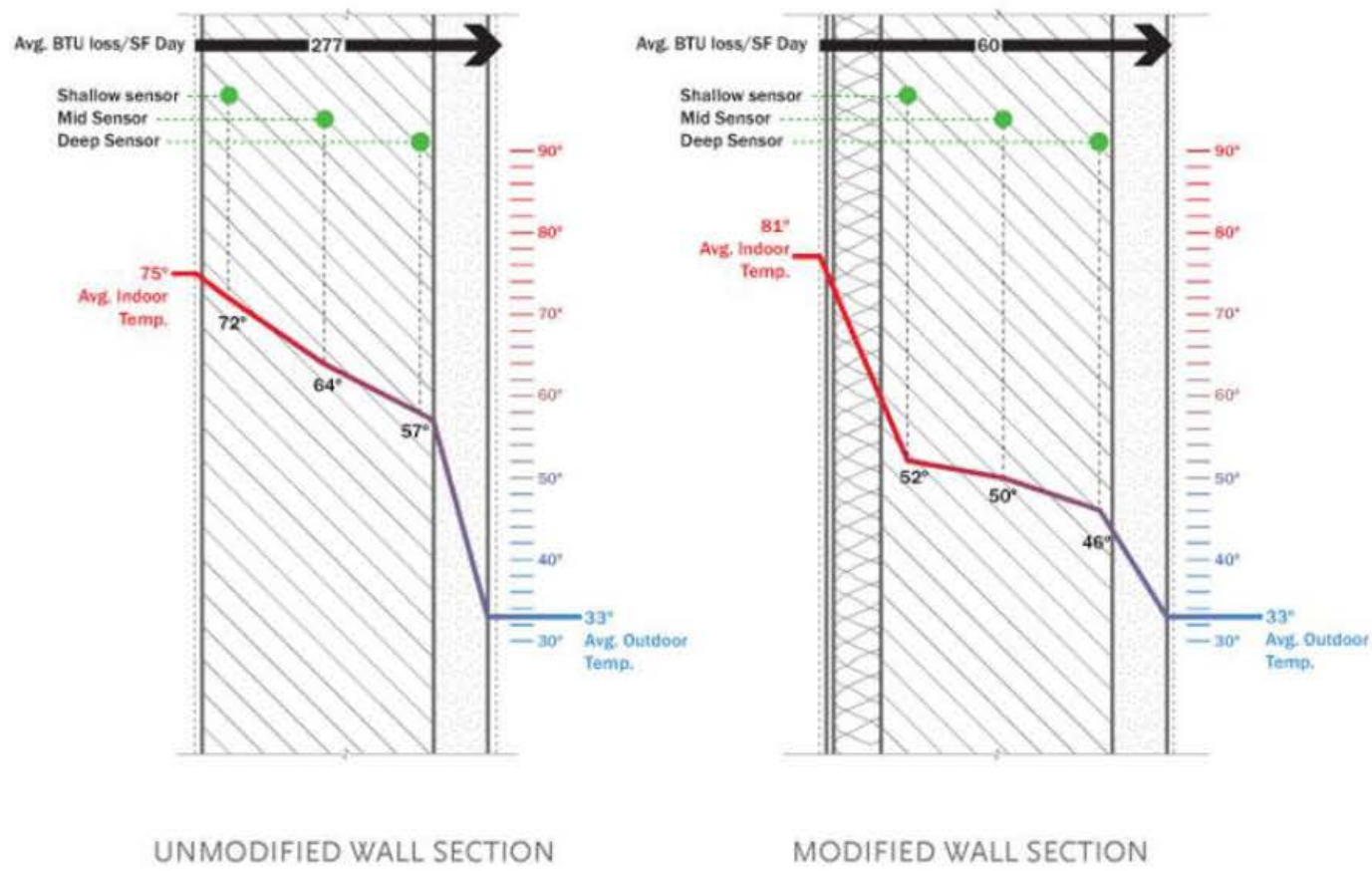










Photo by: Jason O'Rear



**Salesforce Tower and Transbay Terminal**  
Pelli Clarke Pelli Architects





Photos by: Jason O'Rear









While innovation — the social process of introducing new things — is important, most technologies around us are old, and for the smooth functioning of daily life, maintenance is more important. Statistics are difficult to come by, since American federal agencies do not account for maintenance costs in a standard way. But in the computer industry, software maintenance — that is, fixing bugs and distributing upgrades — can account for more than 60 percent of total costs. According to one study, roughly 70 percent of engineers work on maintaining and overseeing existing things rather than designing new ones.

All varieties of American infrastructure — roads, bridges, airports, sewers — are in decrepit condition.

Andrew Russell and Lee Vinsel





## SFMOMA Expansion Snowhetta





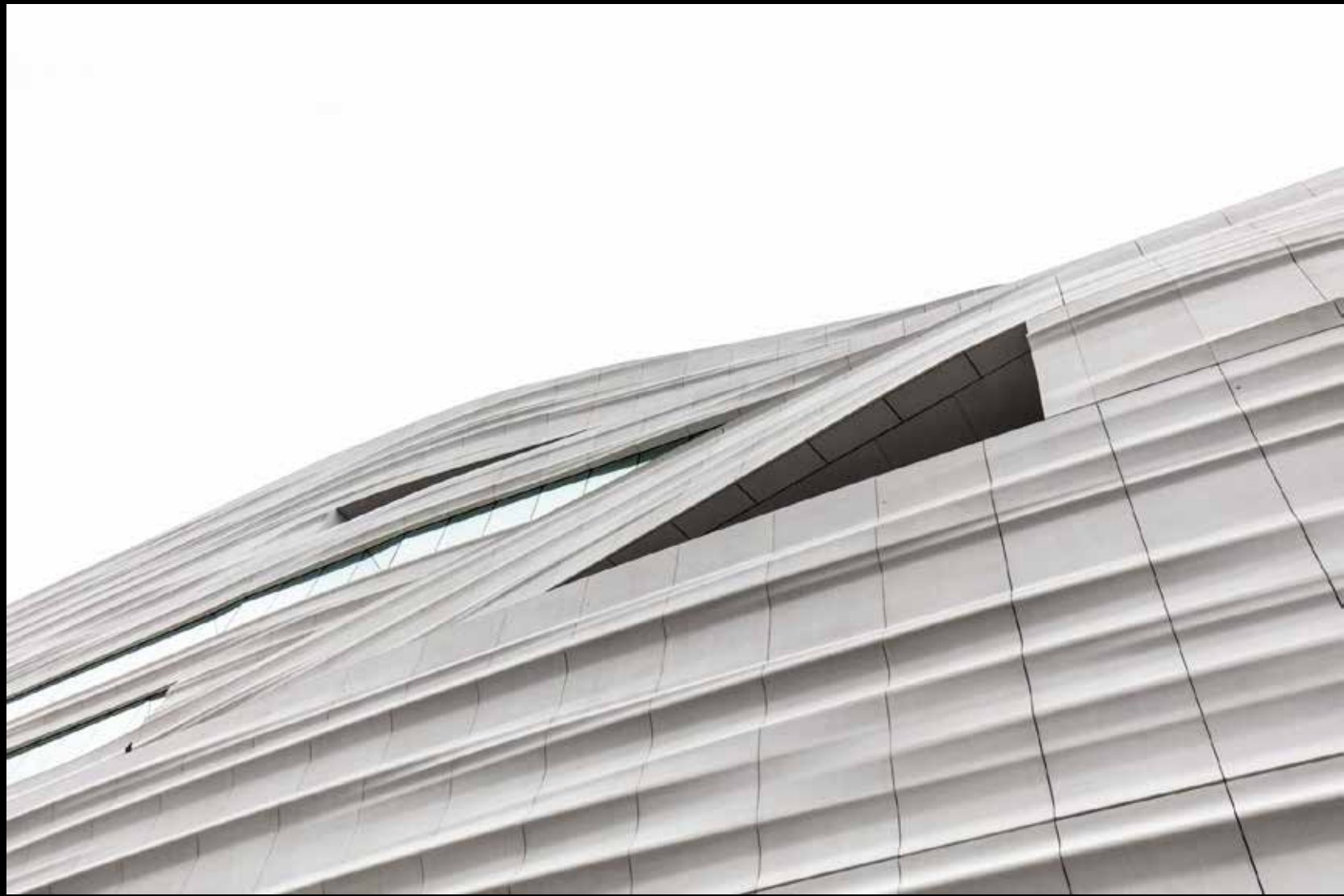










Photo by: Steve Proehl



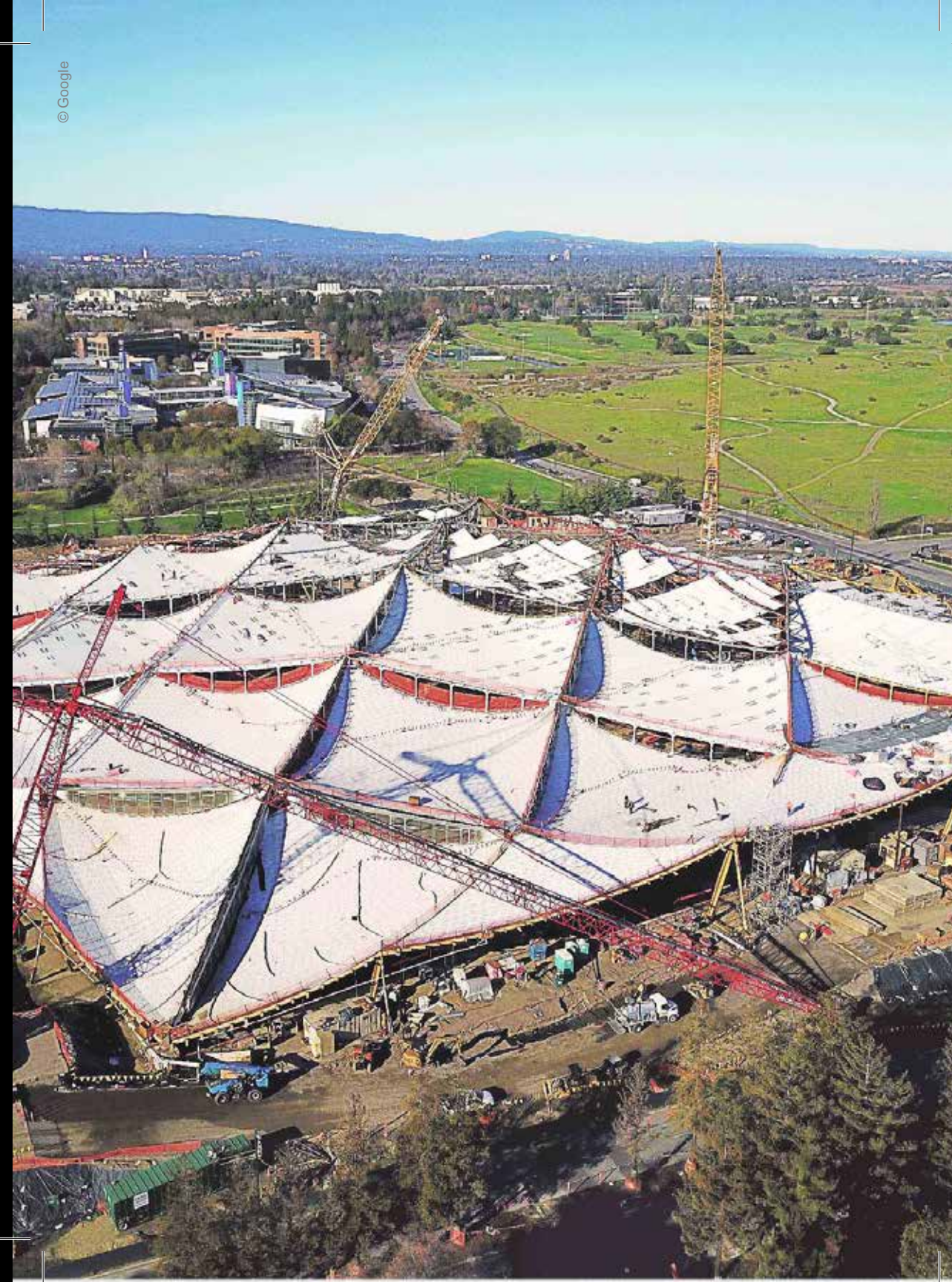
**Stanford Central Energy Facility**  
ZGF



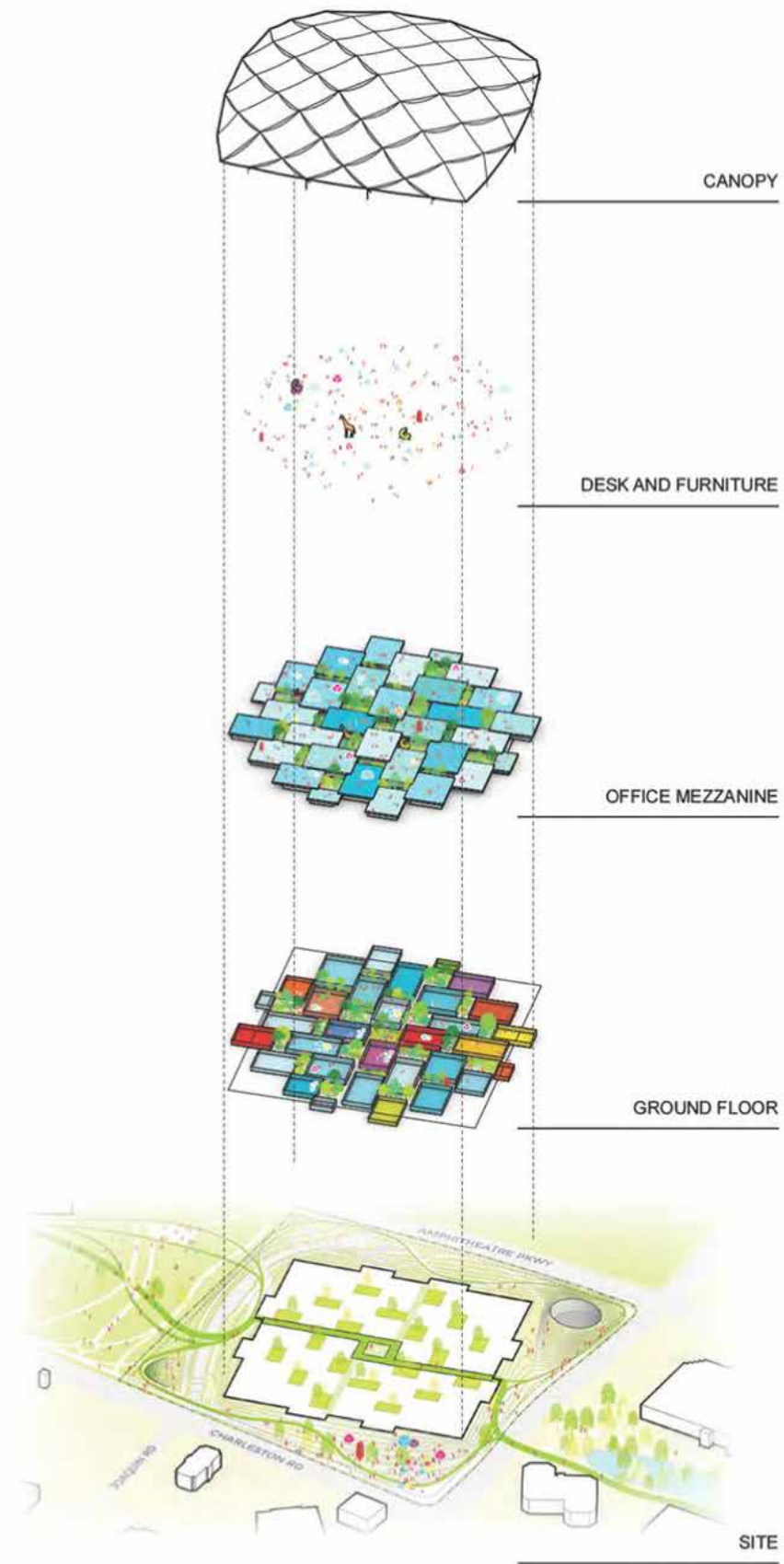




**Google Charleston East**  
by BIG/Heatherwick















© Foster + Partners/Nigel Young



**Apple Visitors Center**  
Foster and Partners









**588 Mission**  
David Baker

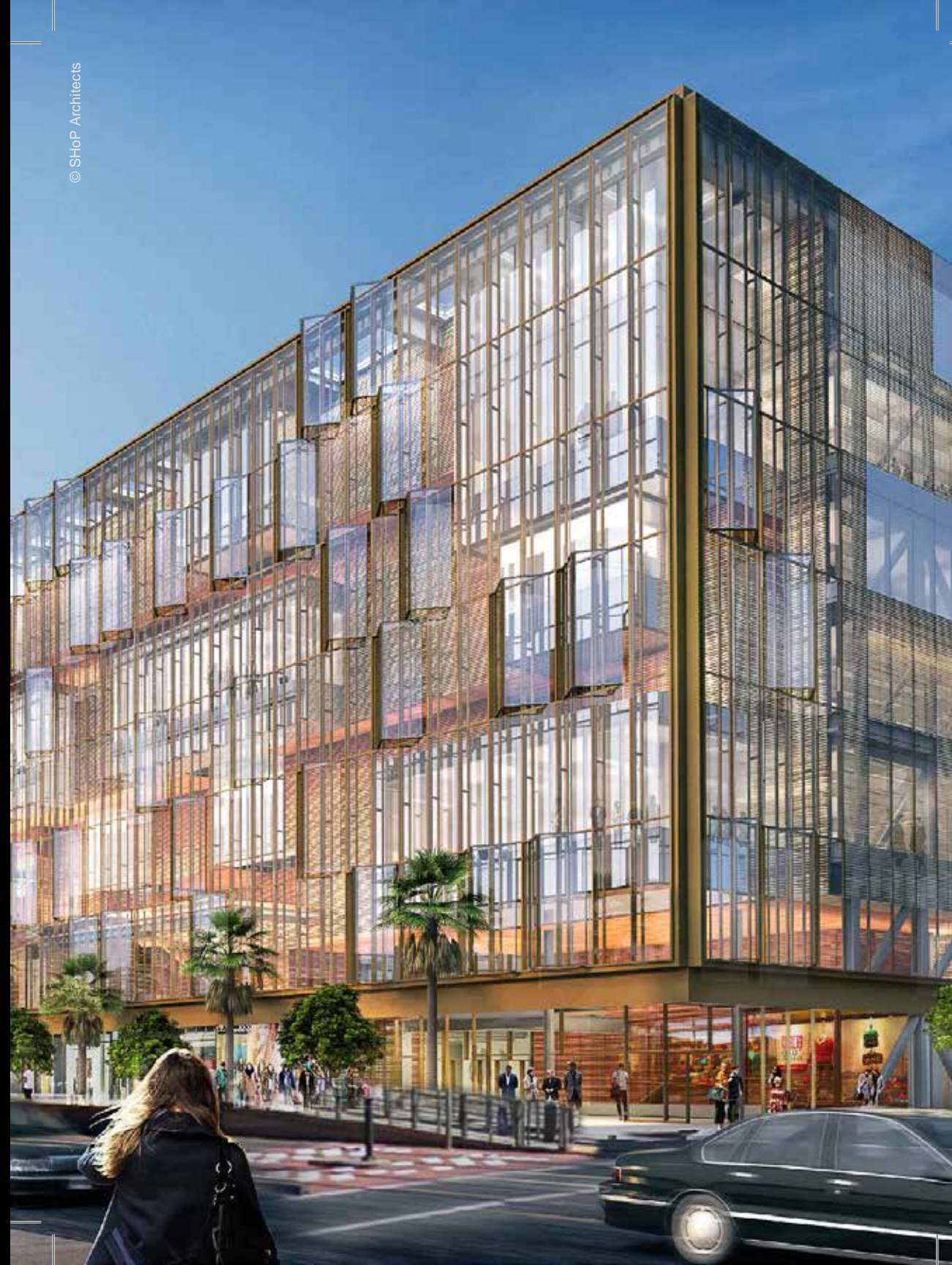








Uber Headquarters  
SHoP



© SHoP Architects



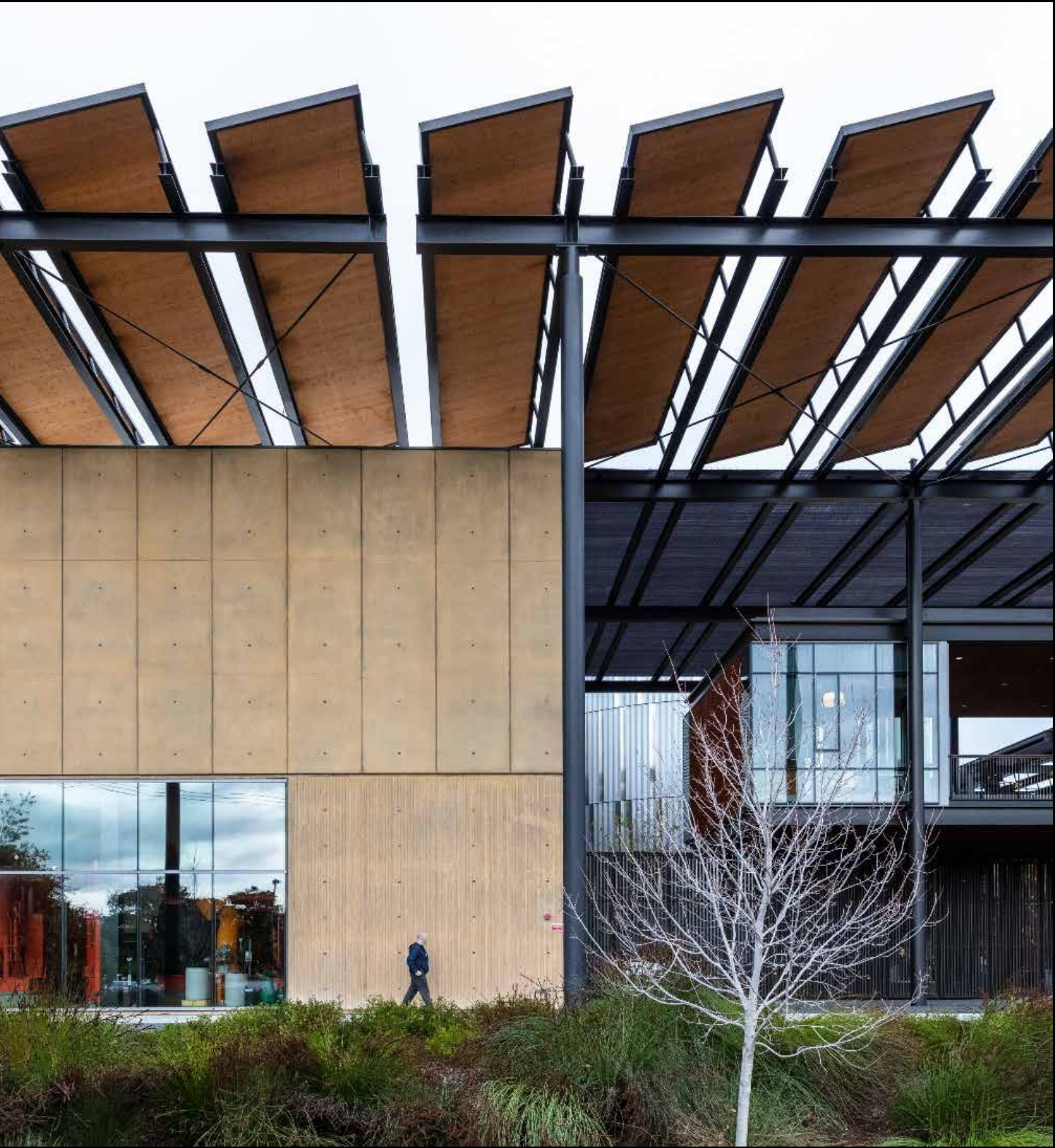




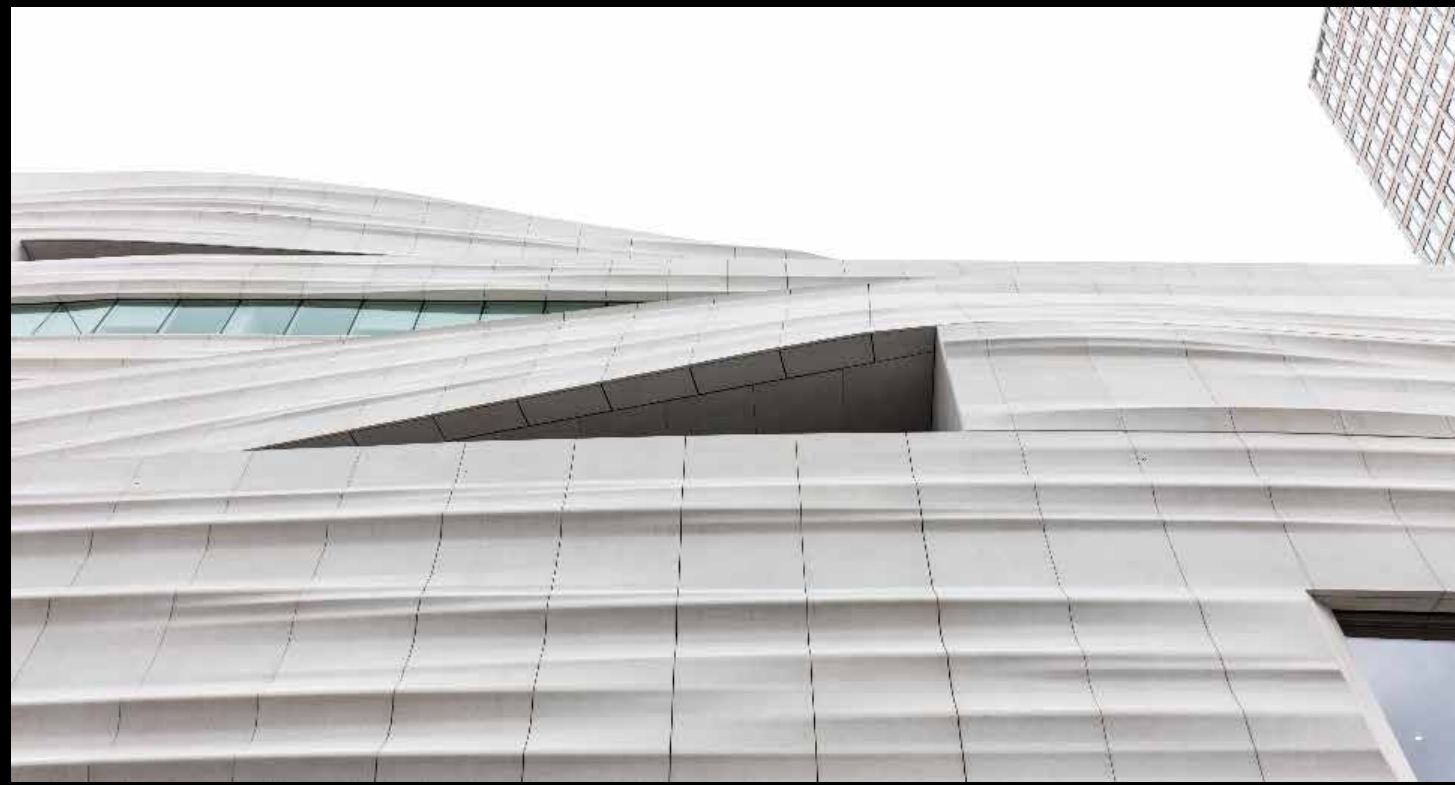
The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man. ... One man that has a mind and knows it can always beat ten men who haven't and don't.

George Bernard Shaw

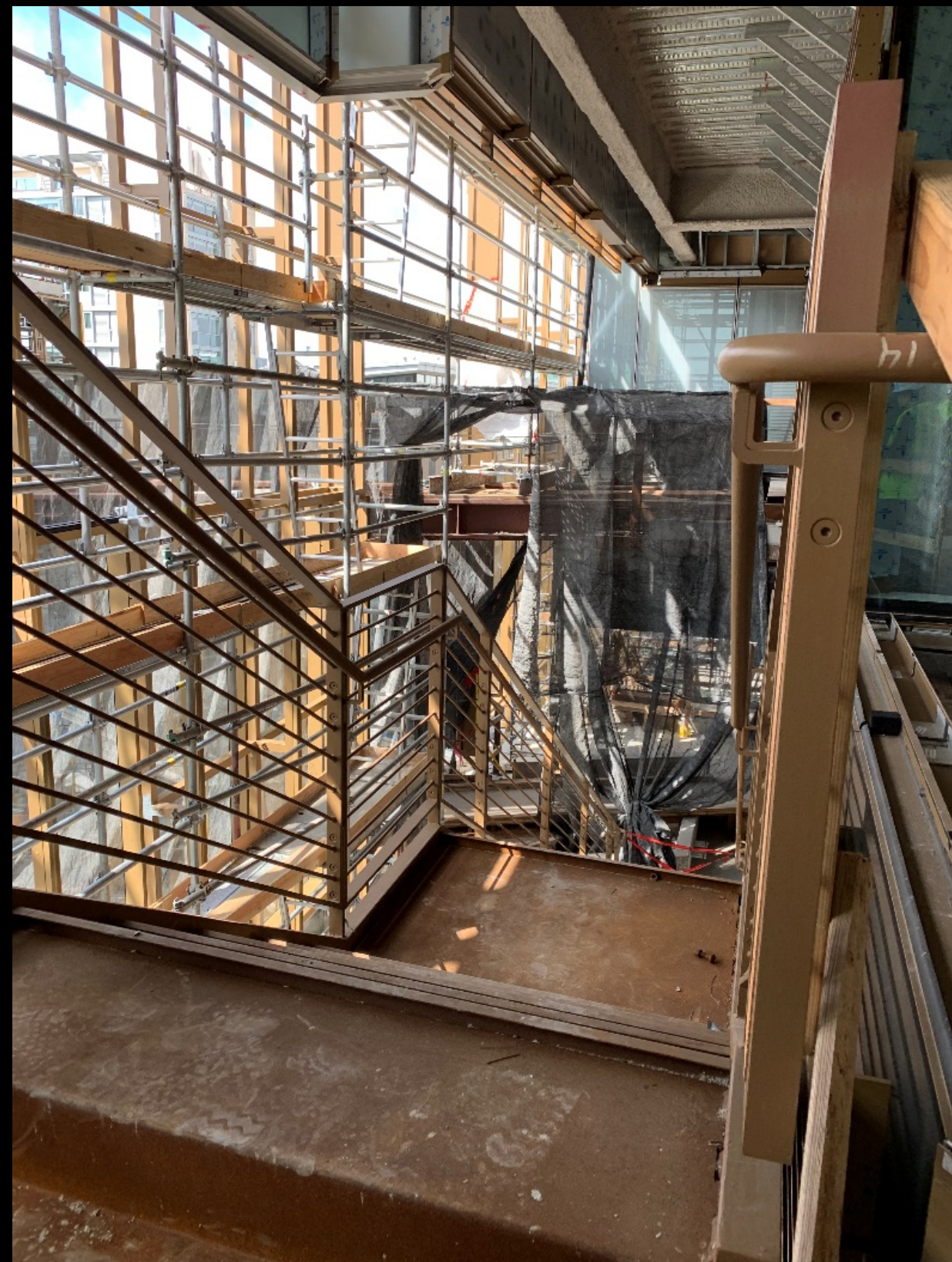




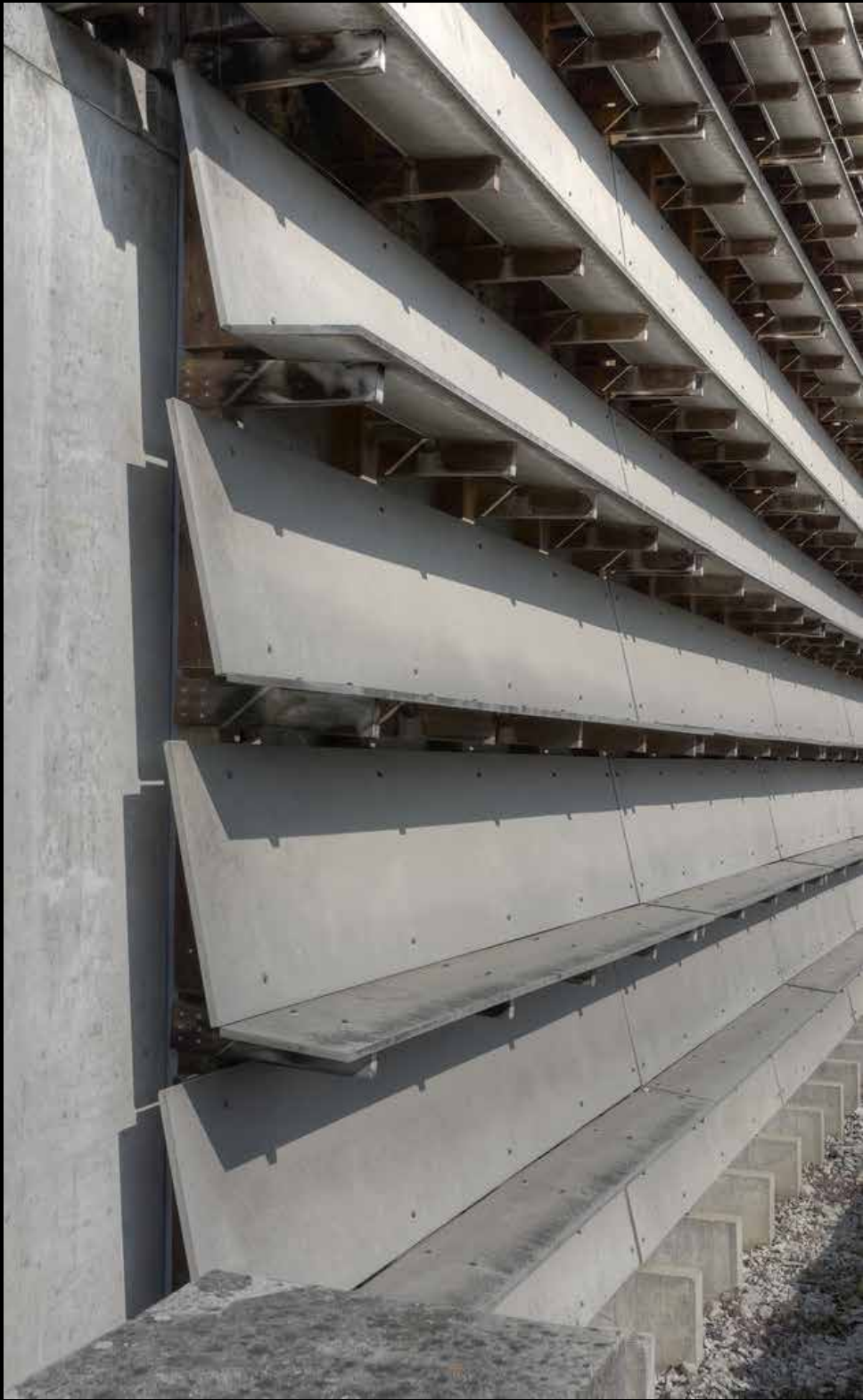




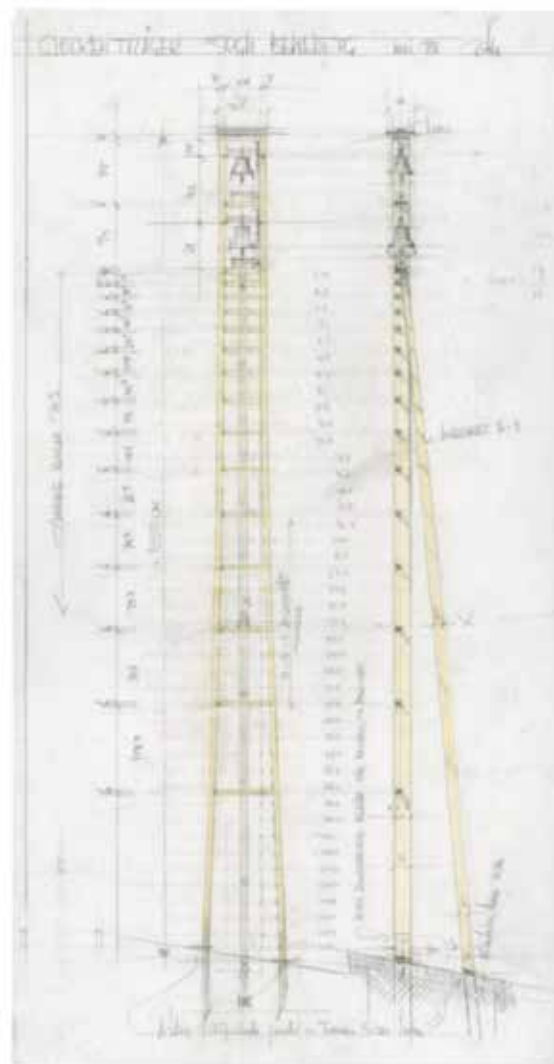




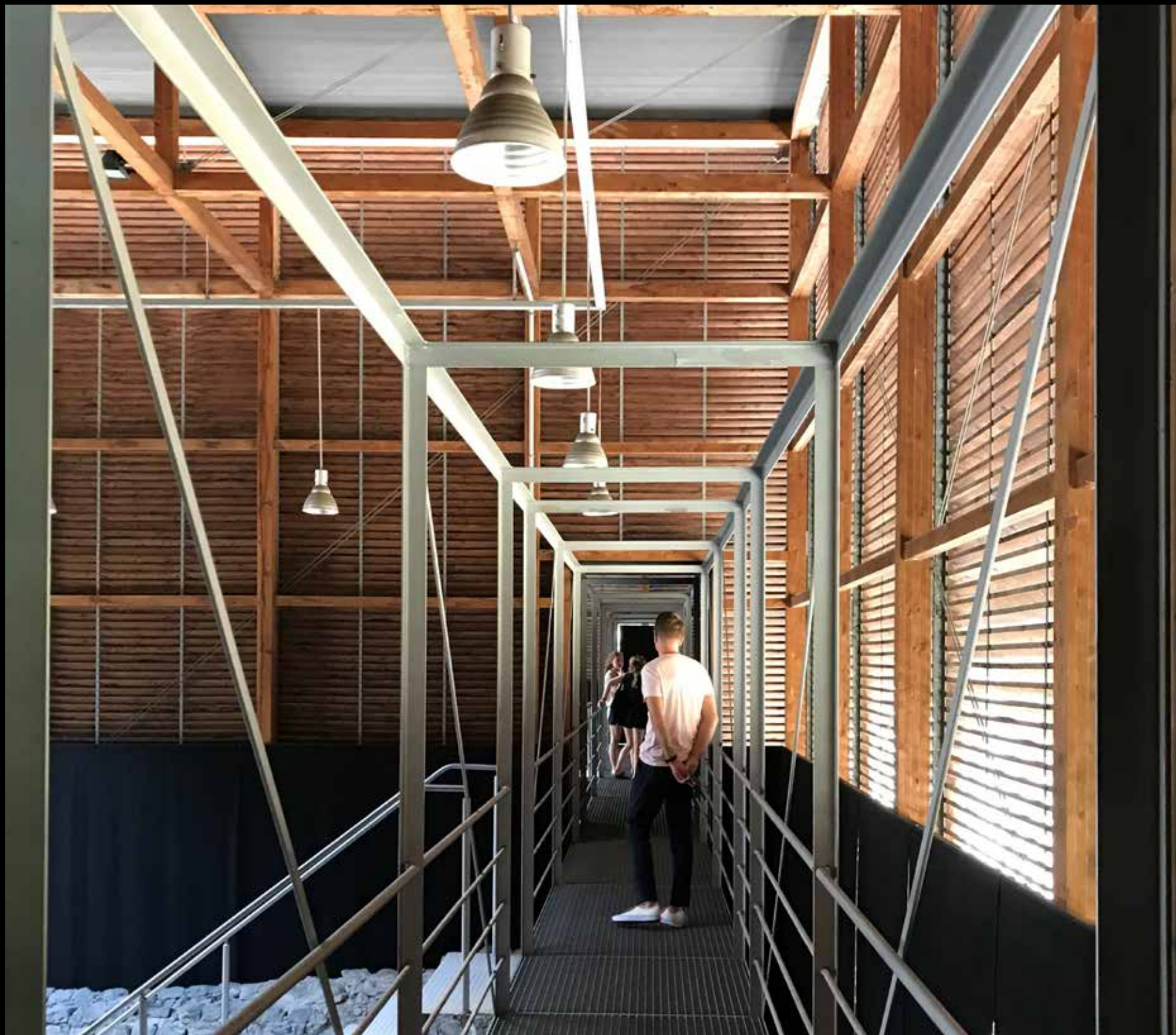


















**THE INNOVATORS & MAINTAINERS:  
SWISS INNOVATION IN ARCHITECTURE,  
INFRASTRUCTURE & TECHNOLOGY**

**2019 AIA  
COMMITTEE  
ON DESIGN  
INTERNATIONAL  
CONFERENCE**

**SWITZERLAND**

**September 21-29, 2019**

**Add-On Tour:**

**September 29-October 2, 2019**



## CREDITS AND NOTES

- Photos by Tom Rossiter, FAIA
- BW Sketches by Dan Wheeler, FAIA
- Colored Sketches by Robert Miller, FAIA
- Smaller photos by David Greenbaum, FAIA
- Please refer to the conference guidebook for additional information on schedule, project information and speakers

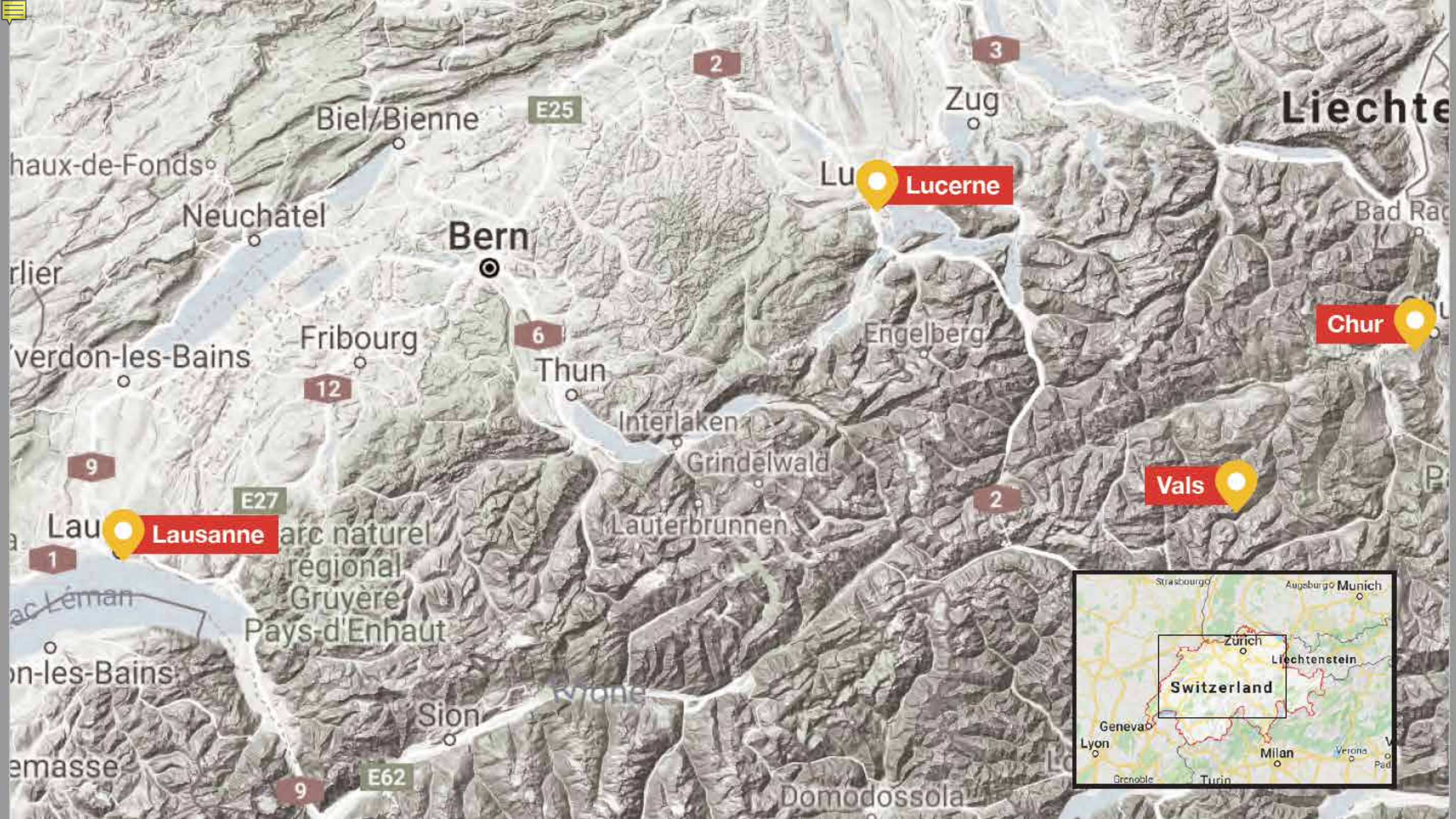










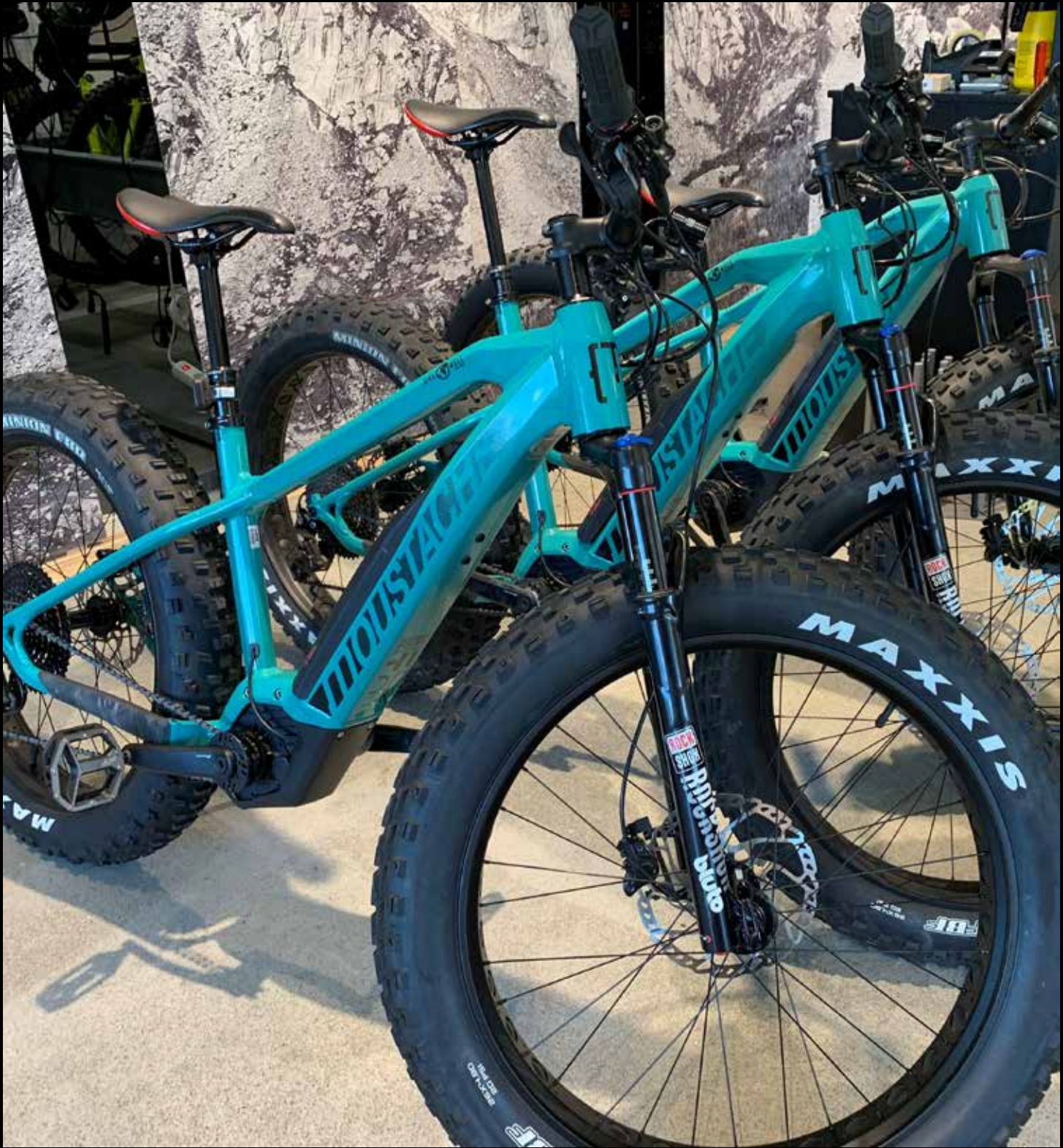






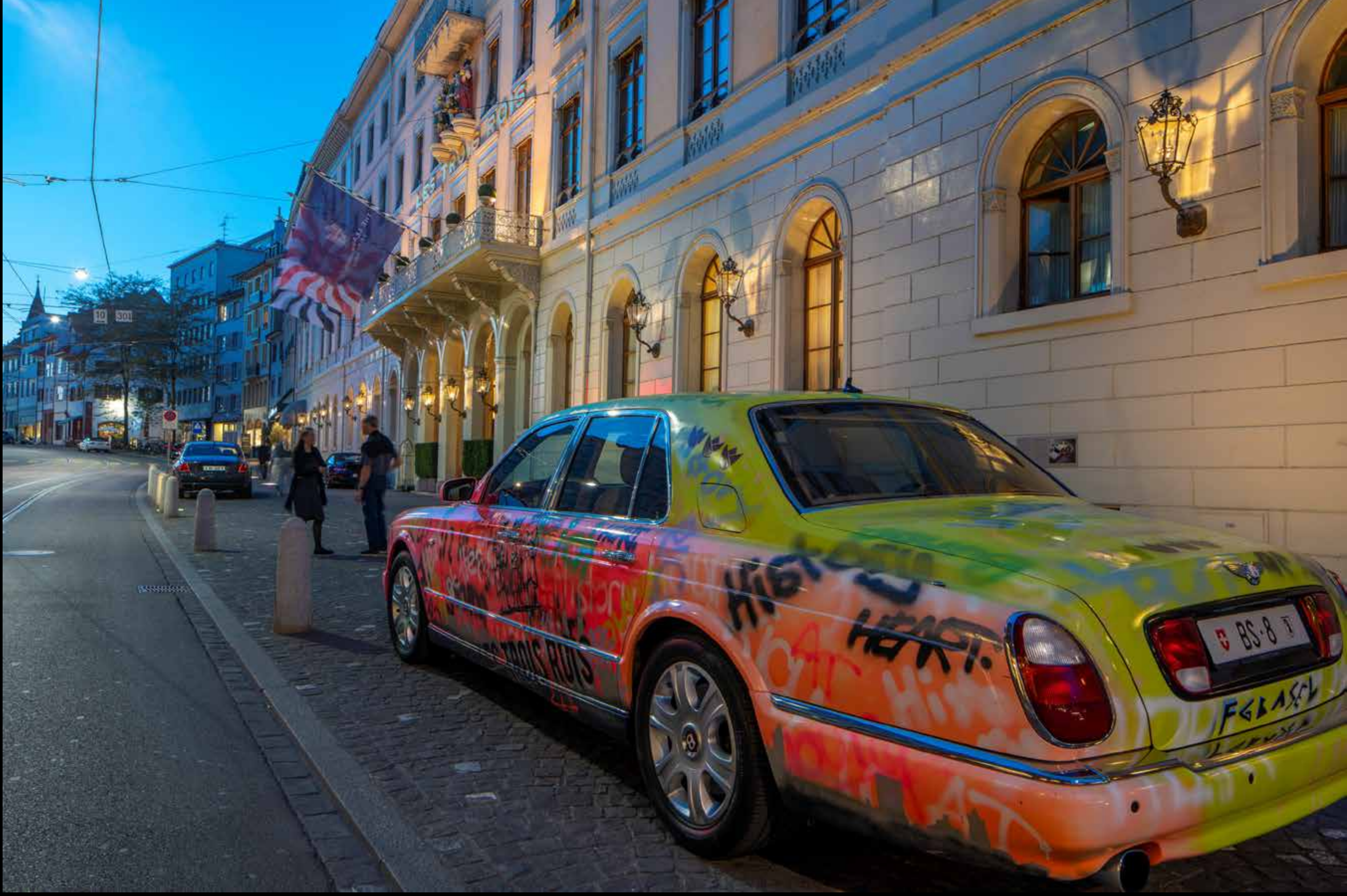
Speakers in multiple locations







Hotel Les Trois Rois  
Basel







A wide panoramic photograph showing a stone wall on the left, a paved walkway, and a garden area with colorful autumn foliage on the right.





Peter Zumthor  
Atelier Zumthor



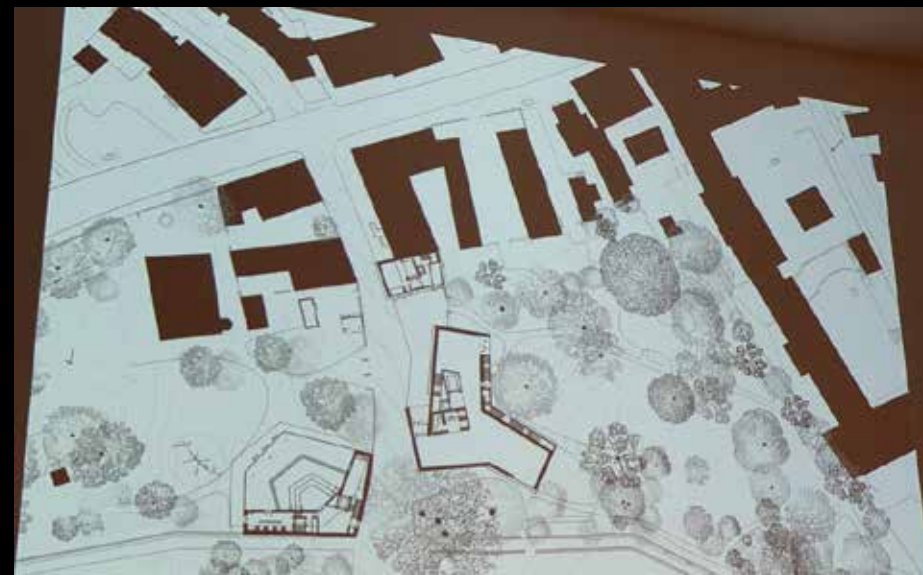


Peter Zumthor  
Atelier Zumthor





Museum, Südwestansicht vom Iselin Weberscher Park







VitraHaus  
Herzog & de Meuron













Vitra Schaudapot  
Herzog & de Meuron





**Nora Fehlbaum**  
Vitra CEO



**Fire Station**  
Zaha Hadid









Vitra Design Museum  
Frank Gehry









Congress Center Basel  
Herzog & de Meuron





Roche Pharma Research  
Herzog & de Meuron





Roche  
Herzog & de Meuron





Novartis  
Herzog & de Meuron





Dreispitzareal and Kabinett  
Herzog & de Meuron



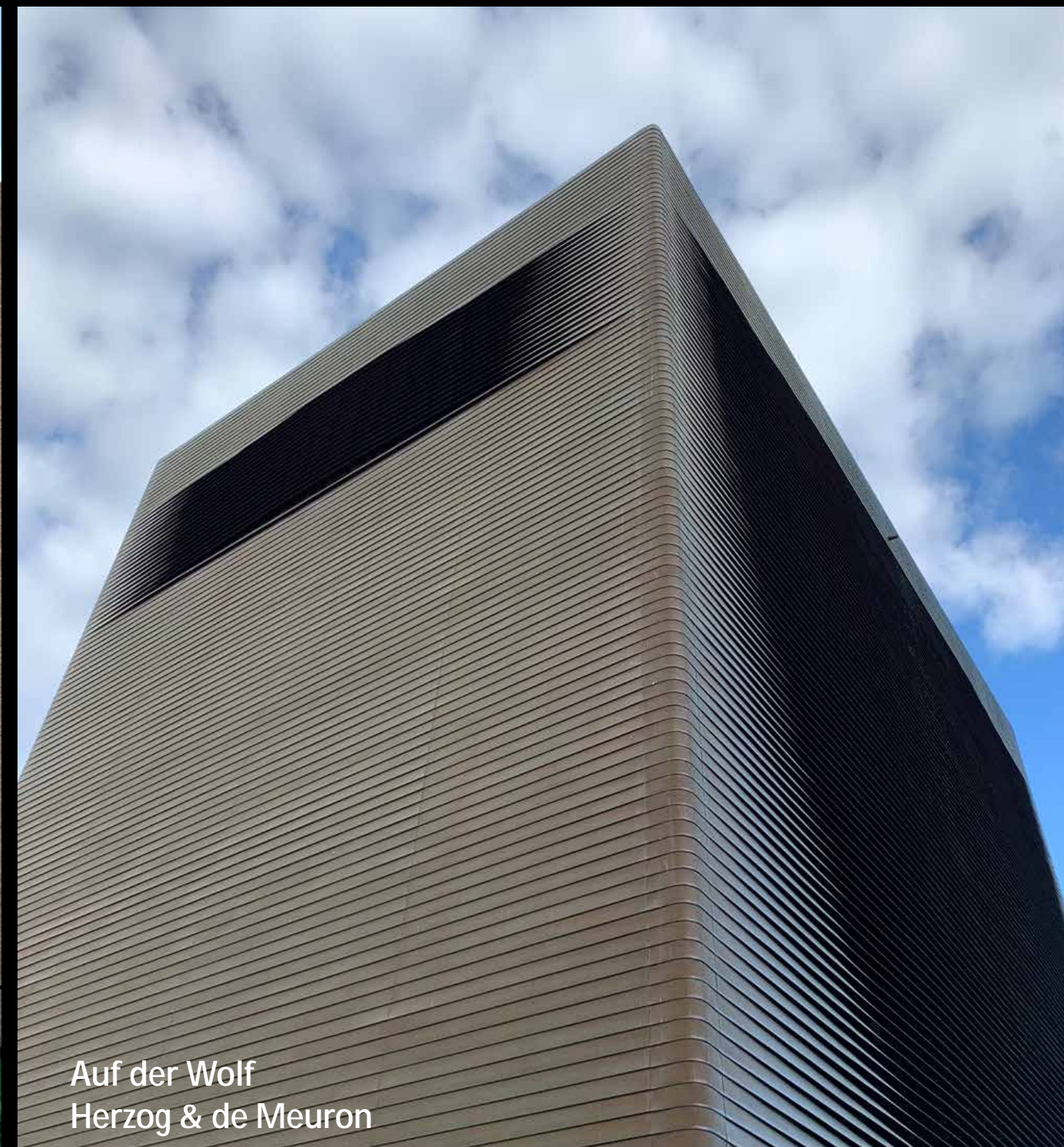












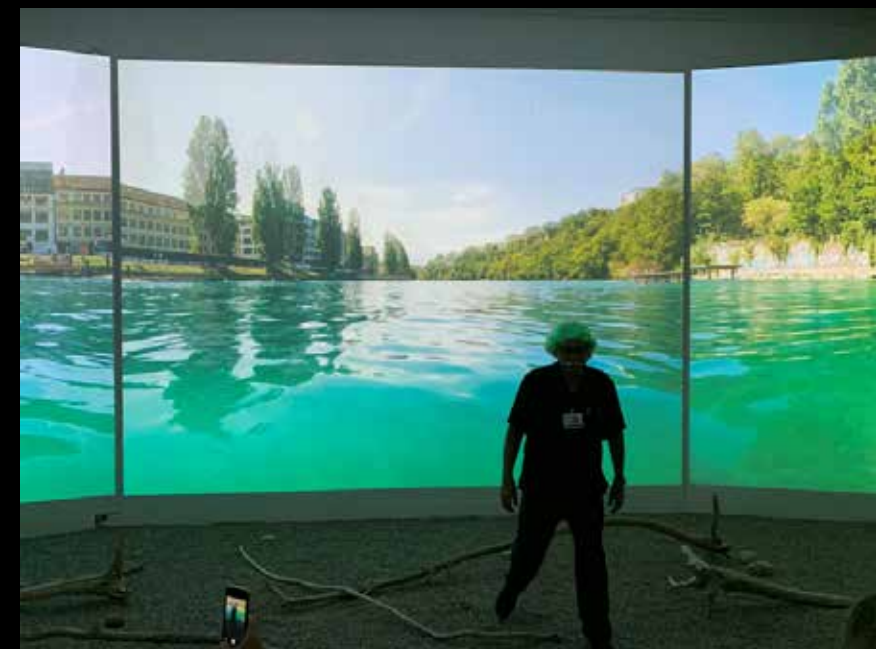








Andreas Ruby  
Swiss Architecture Museum, Swim City Exhibit







Save! Project by EOOS Design and  
Laufen Bathrooms  
Laufen Ceramics Factory Tour











Ricola Storage Building, and Ricola Kreuterzentrum  
Herzog & de Meuron





Audemars Piguet Museum,  
Bjarke Ingels Group (BIG)







Hotel Savoy  
Lausanne

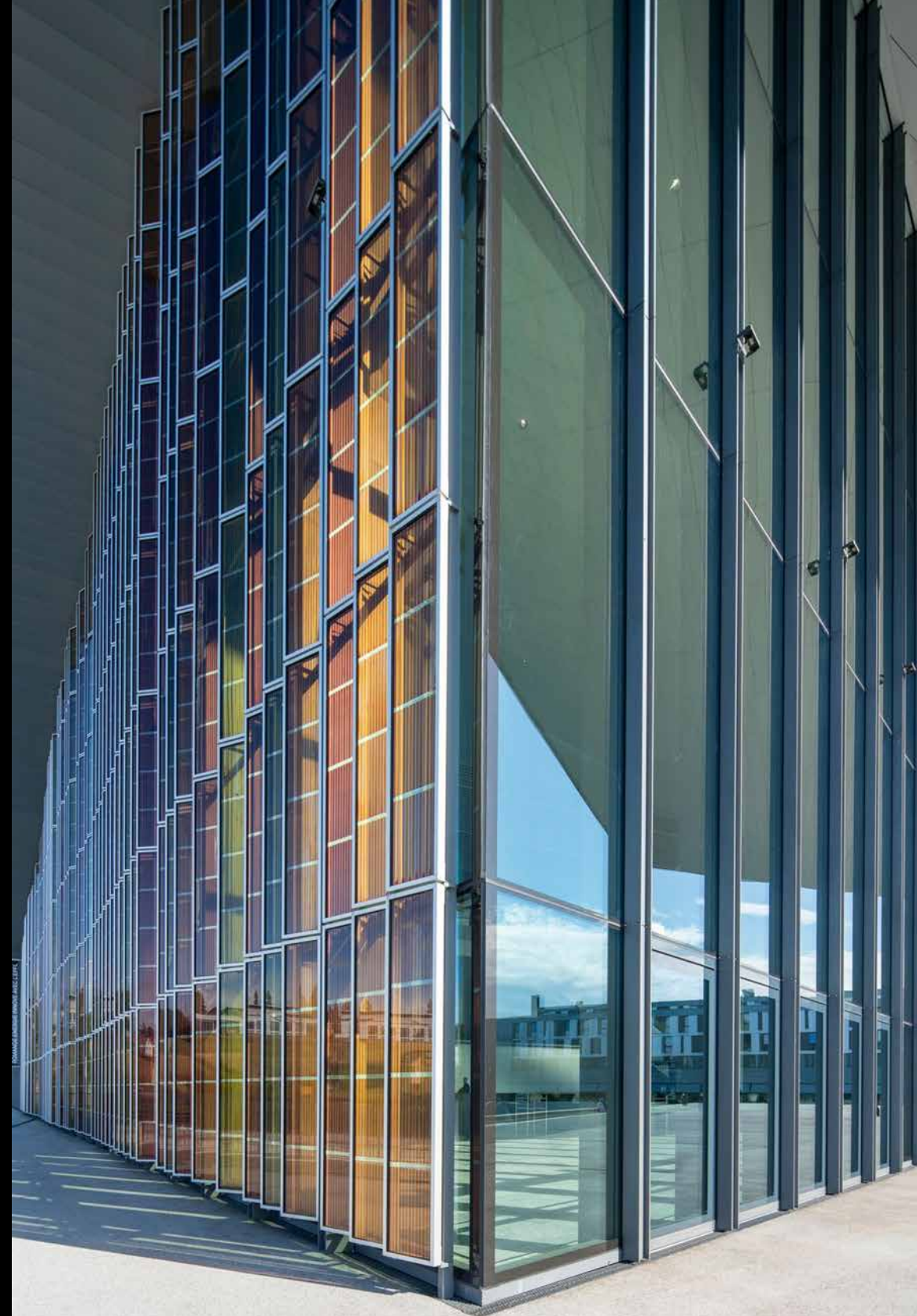








SwissTech Convention Center, EPFL  
Richter Dahl Rocha & Associés

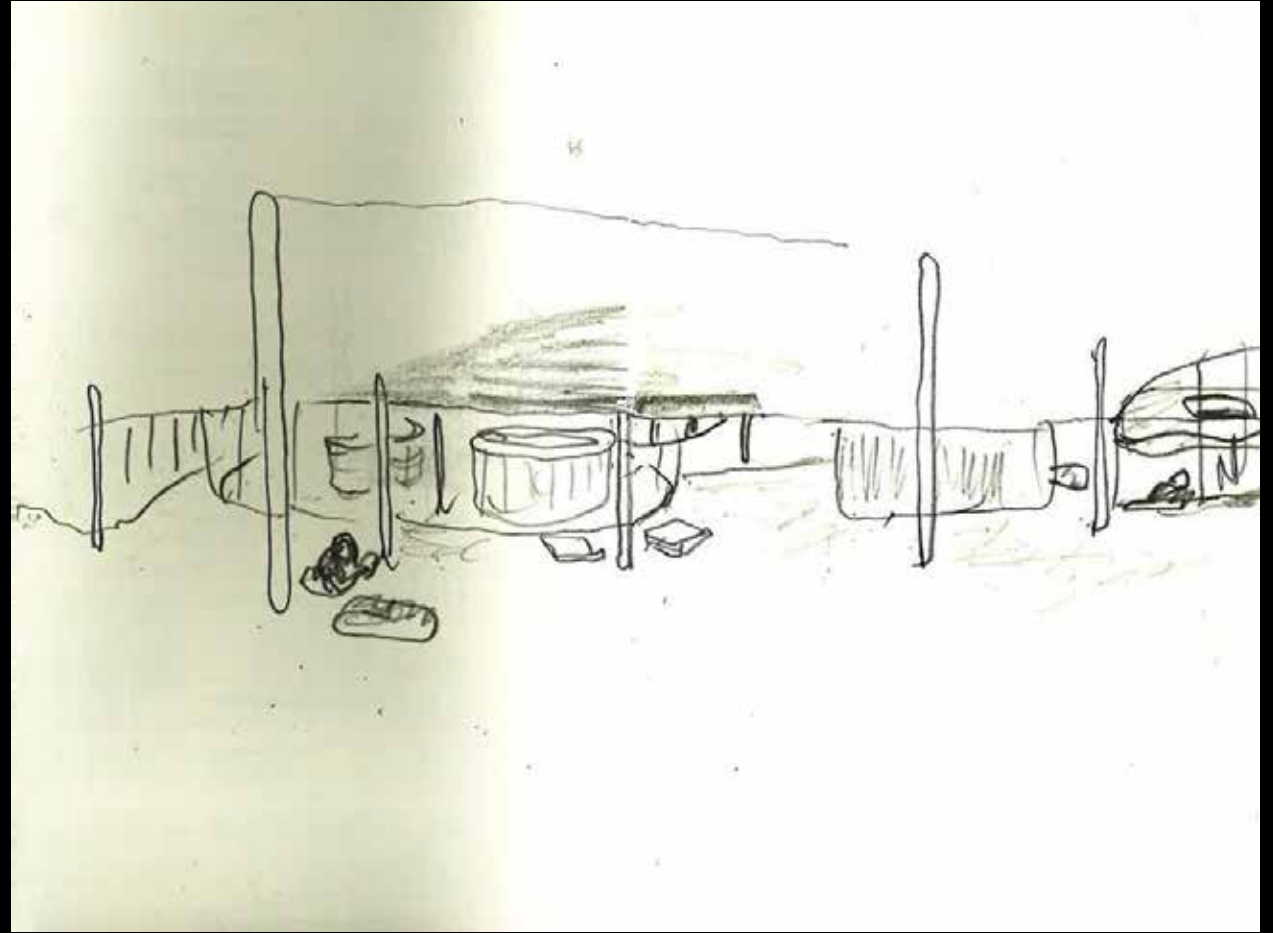
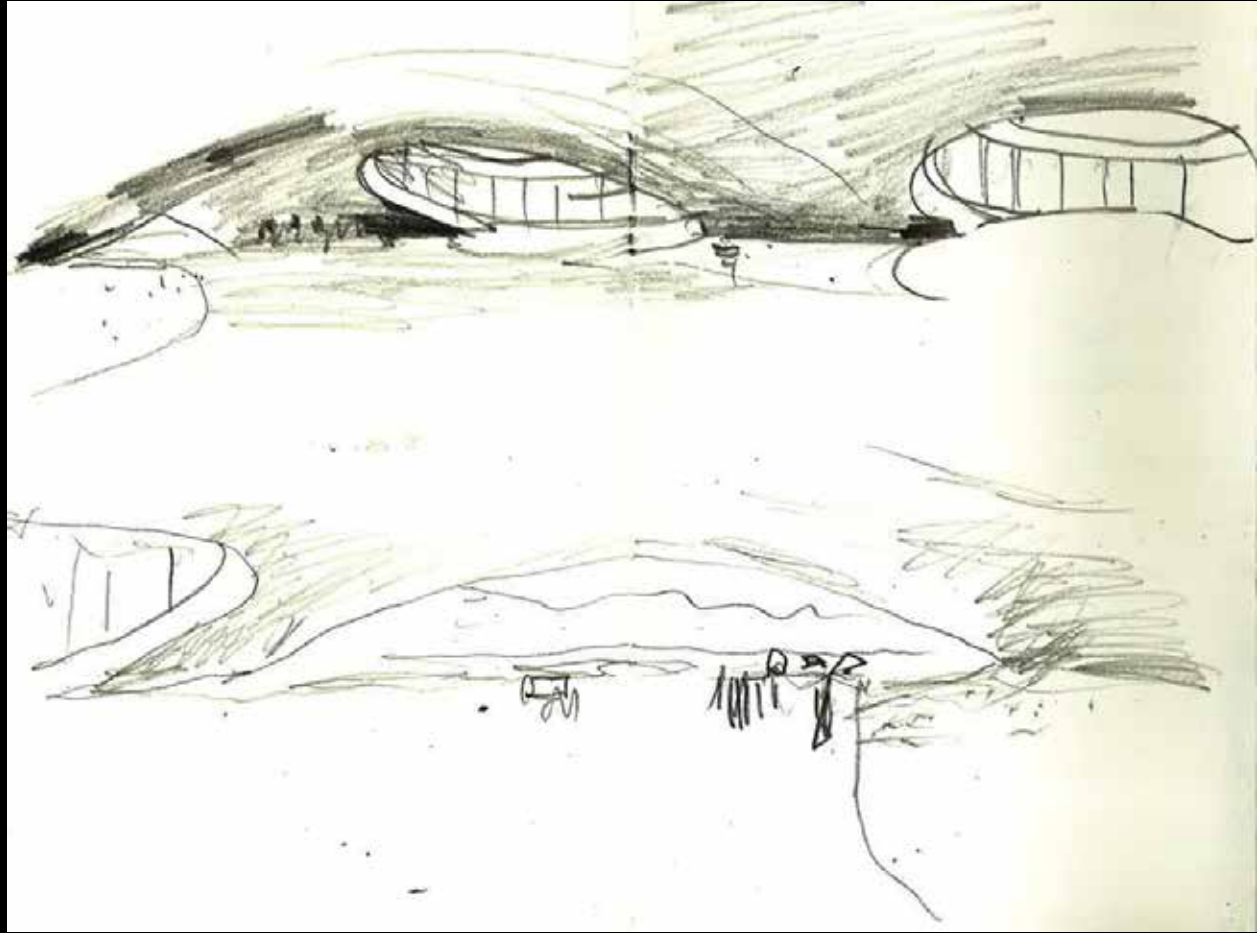




EPFL Student Housing  
Richter Dahl Rocha & Associés











Rolex Learning Center  
Sanaa





Art Lab  
Kengo Kuma & Associates





**Mechanical Engineering Building, EPFL**  
Dominique Perrault Architecture





Apple Visitors Center  
Foster and Partners







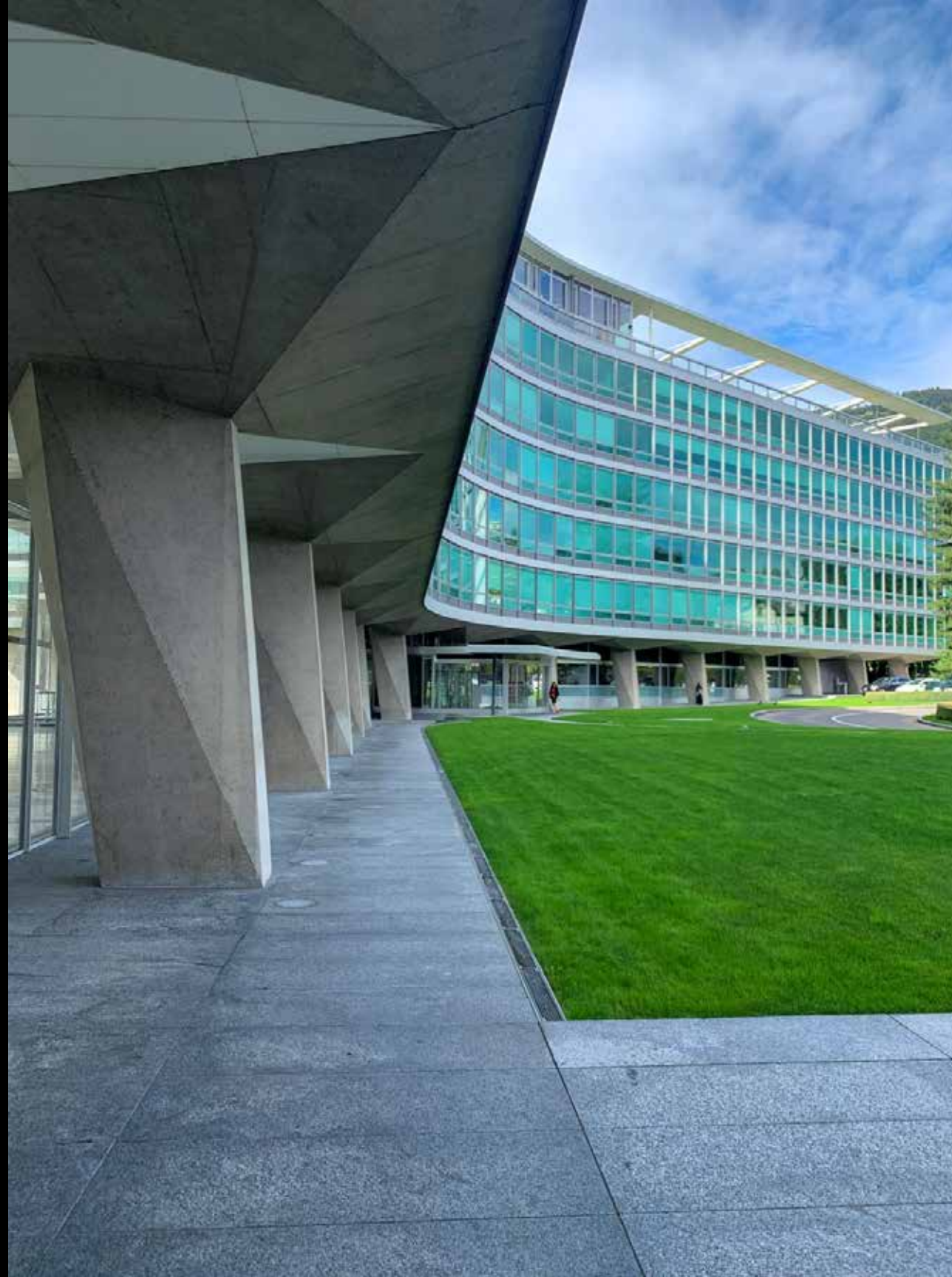






International Olympic Committee Headquarters  
3XN, IttenBrechbuehl





Nestlé Headquarters  
Jean Tschumi







Villa Le Lac  
Le Corbusier







Villa Chardonne  
MADE IN







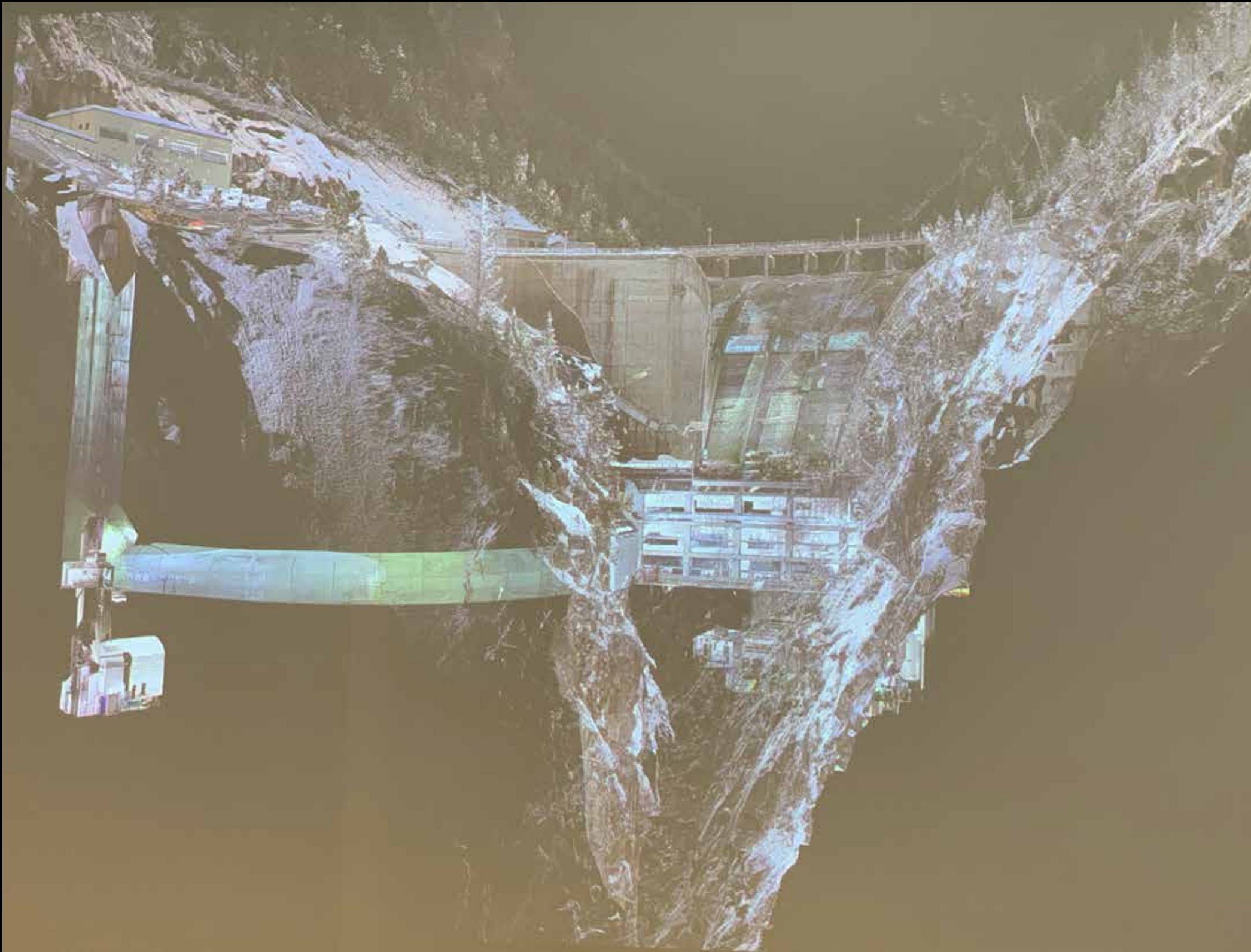






Mt. Pilatus Visitor Center  
Graber & Steiger





**Point Cloud Modeling**  
Matthias Vollmer, Johannes Rebsamen













**Sportarena Allmend / Towers**  
Marques Architects, Ivan Bühler Architects, Lucerne



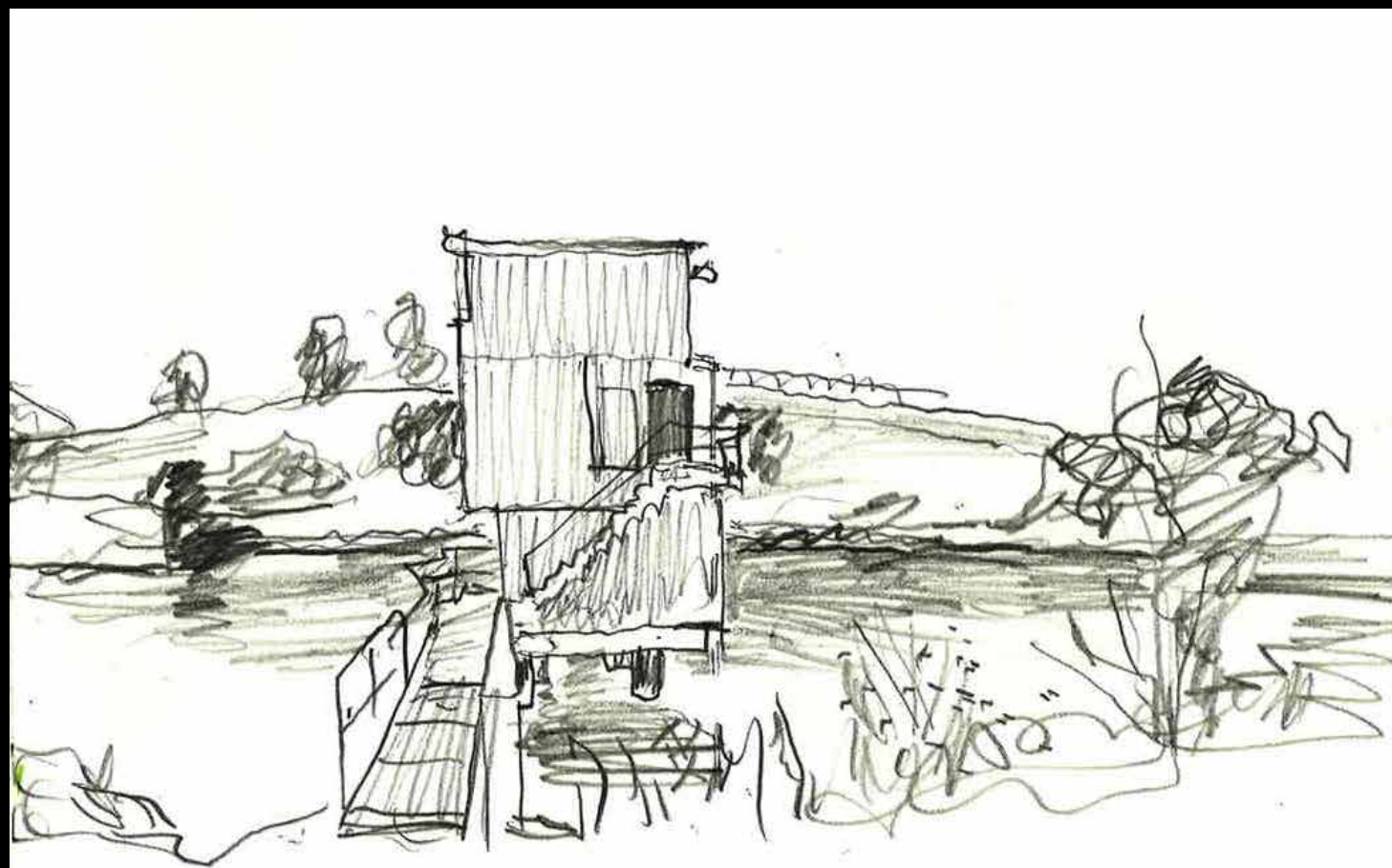






Lucerne Culture and Convention Center  
Ateliers Jean Nouvel









Finish Tower, Rowing Center  
Andreas Fuhrmann Gabrielle Hächler Architects





Swiss Museum of Transport  
Gigon Guyer













Pius Church  
Franz Fueg





Pius Church  
Franz Fueg





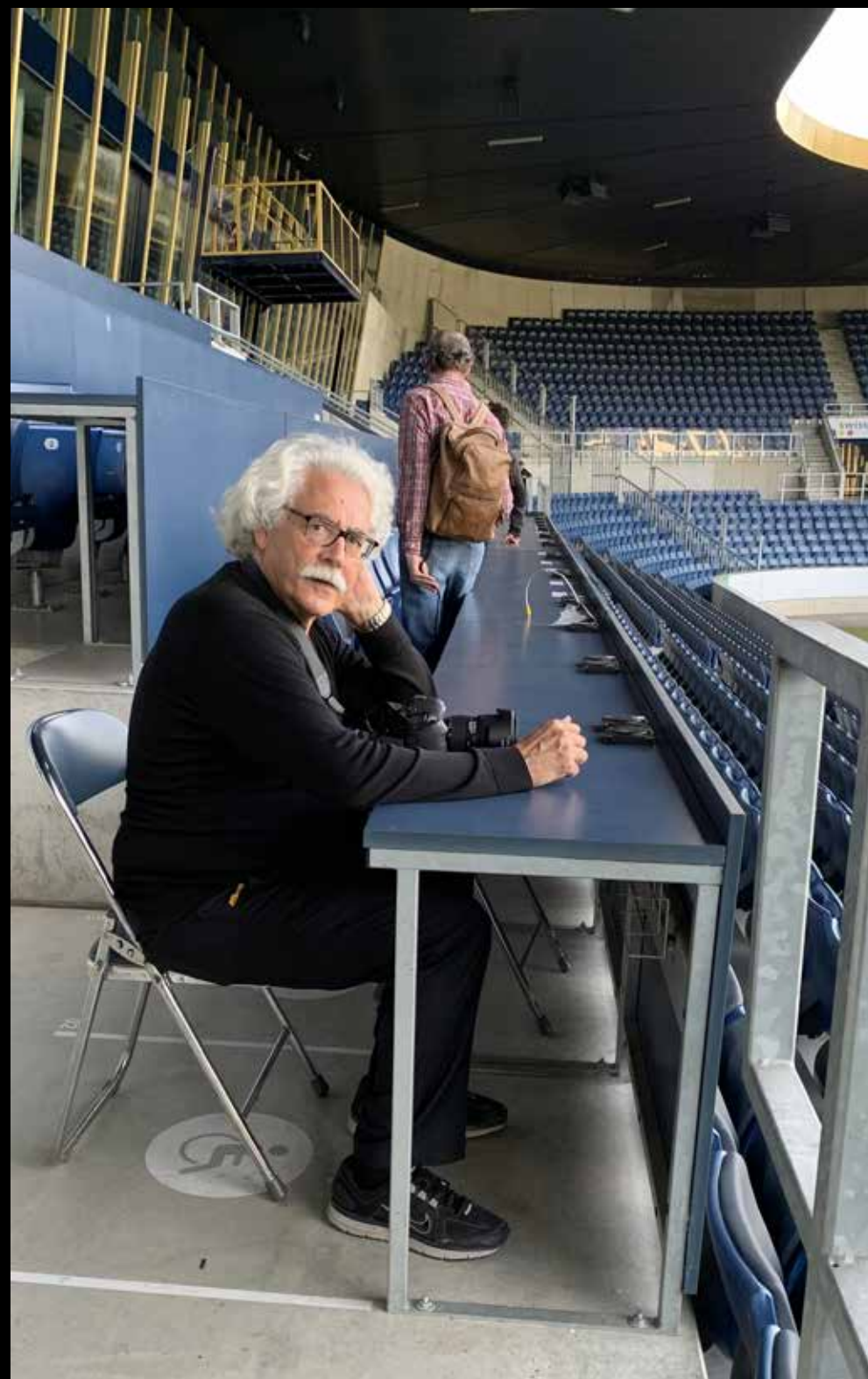
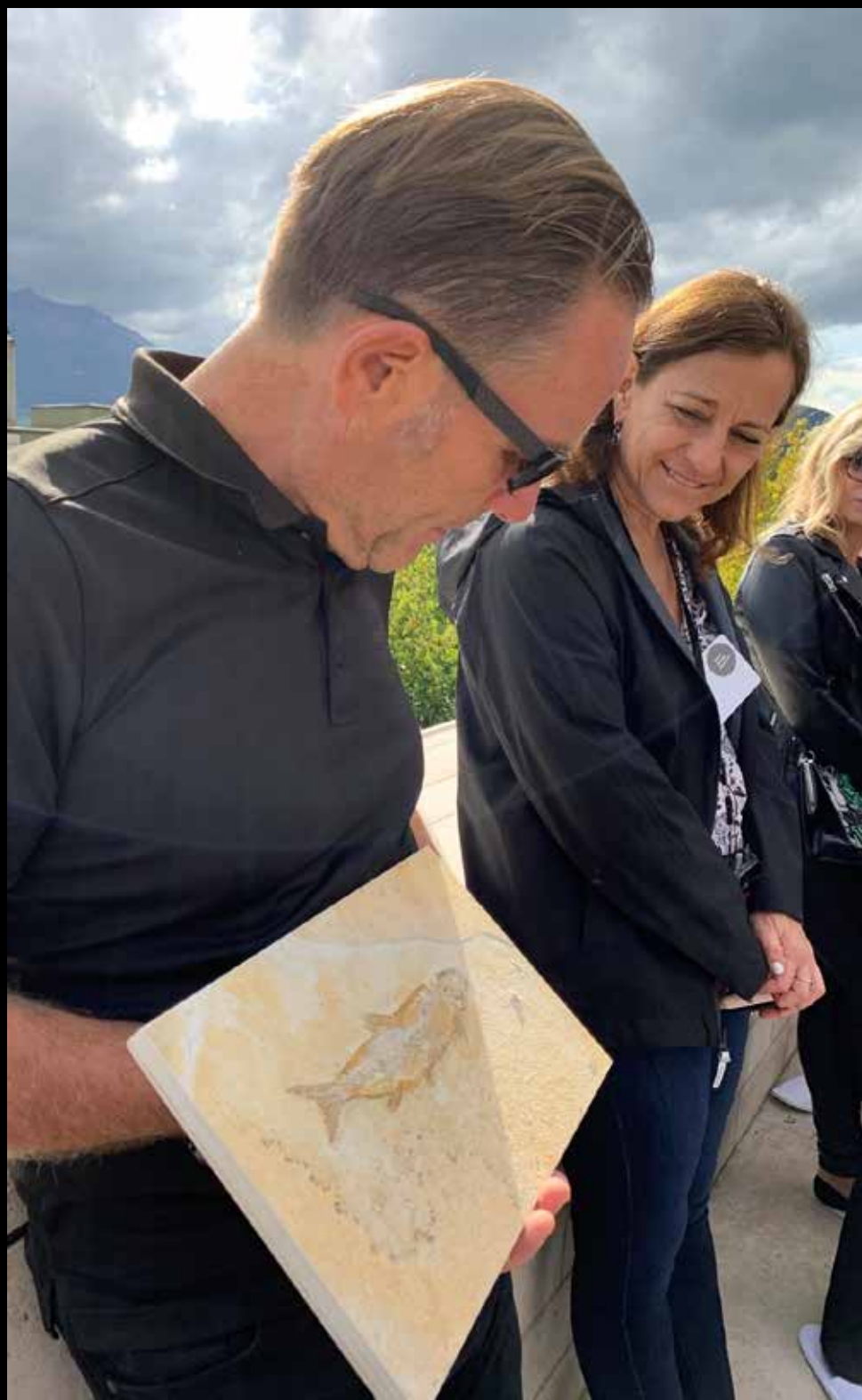
Three Terrace House  
Marques Architects





**Urban Villas**  
Alp Architektur Lischer Parntner AG









Cruise on Lake Lucerne  
Closing Gala Dinner









Current and Former Chairs  
Closing Gala Dinner





Conference Planning Team  
Closing Gala Dinner













Gotthard Station  
Alp Architektur Lischer Partner AG



Chapel on Ruess River  
Bonus project  
Schattdorf

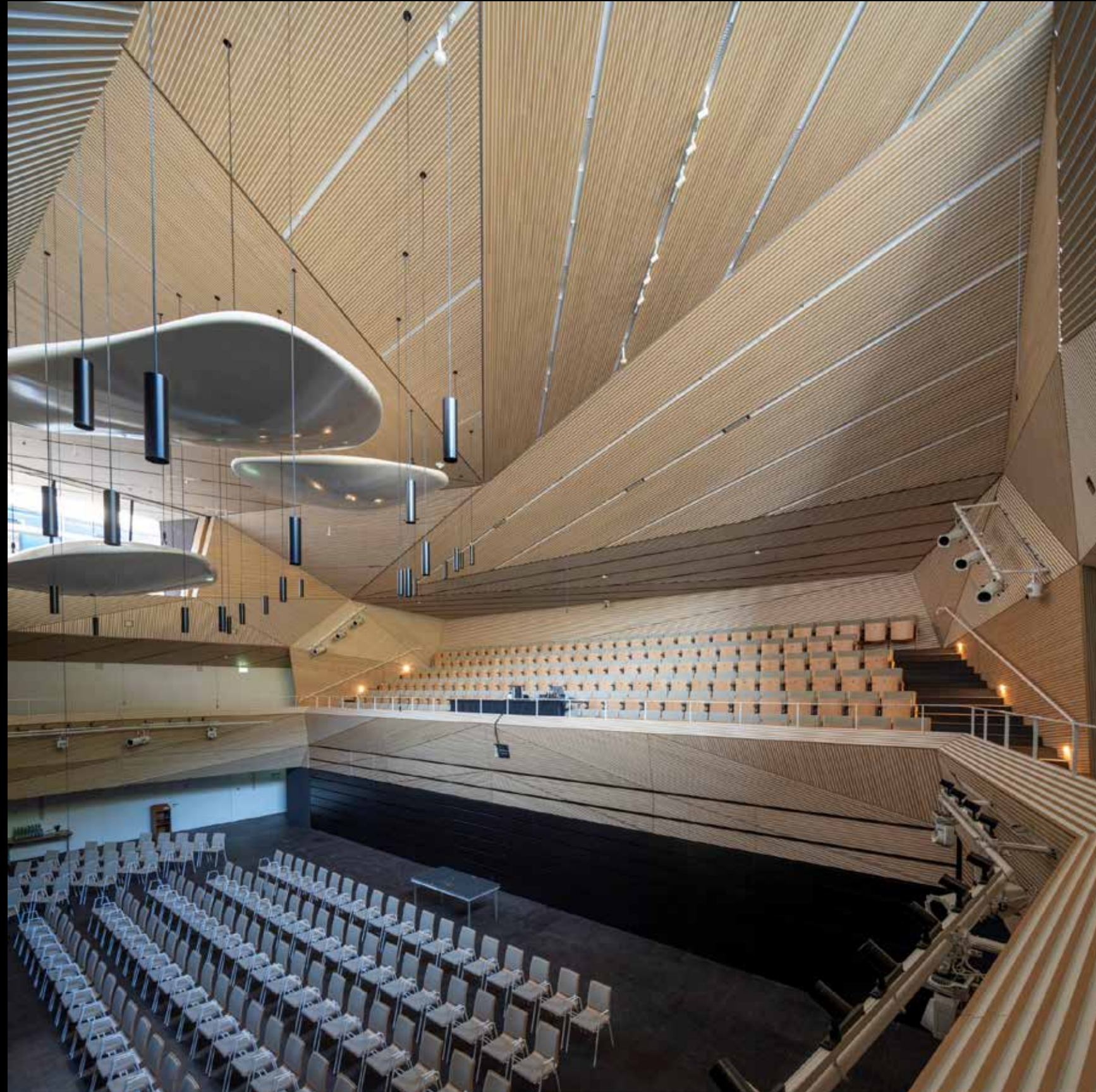




Radisson Blu Hotel Reussen  
Andermatt







Andermatt Concert Hall  
Studio Seilern

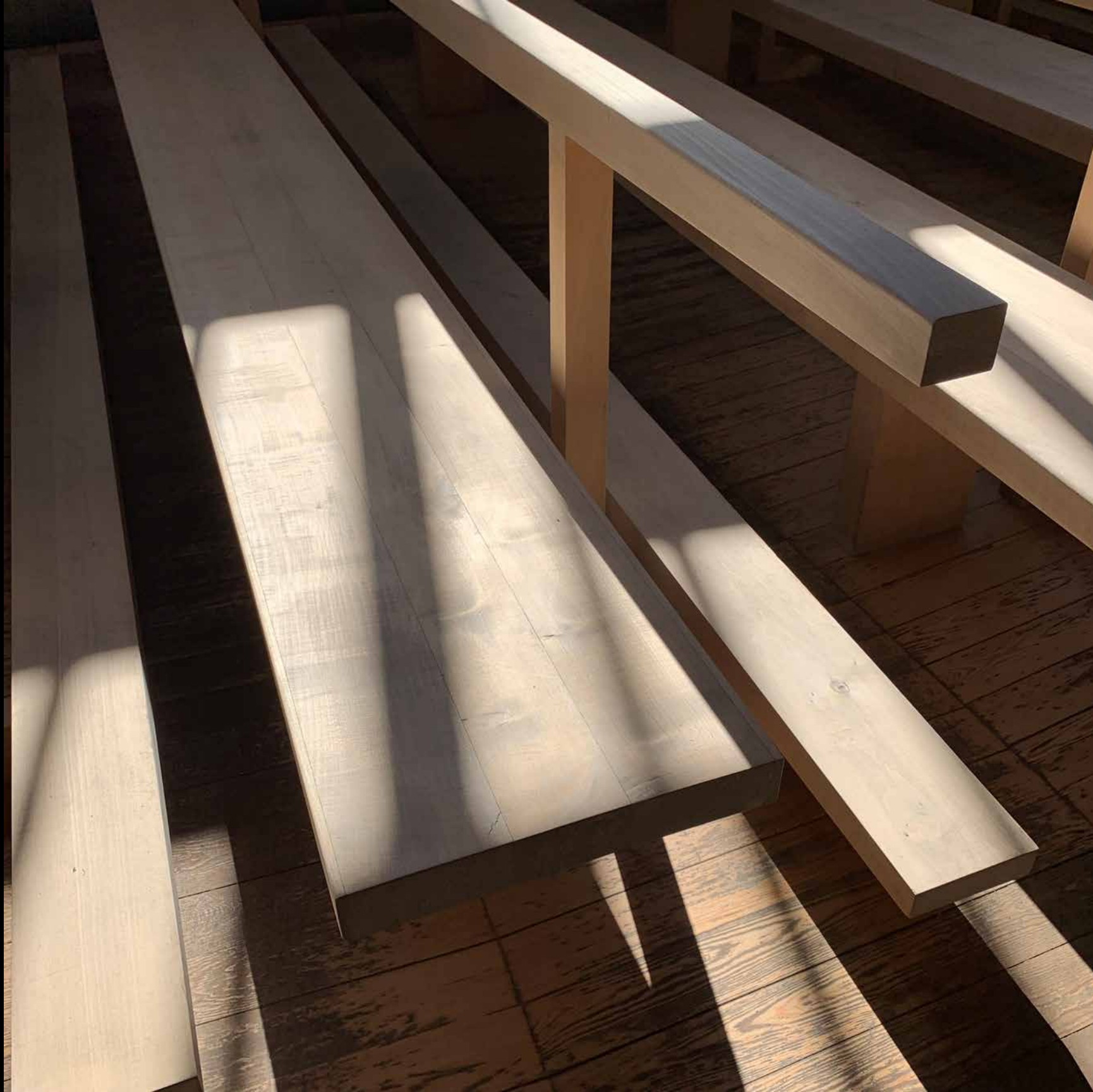




Caplutta Sogn Benedetg  
(Chapel Saint Benedict)

Peter Zumthor



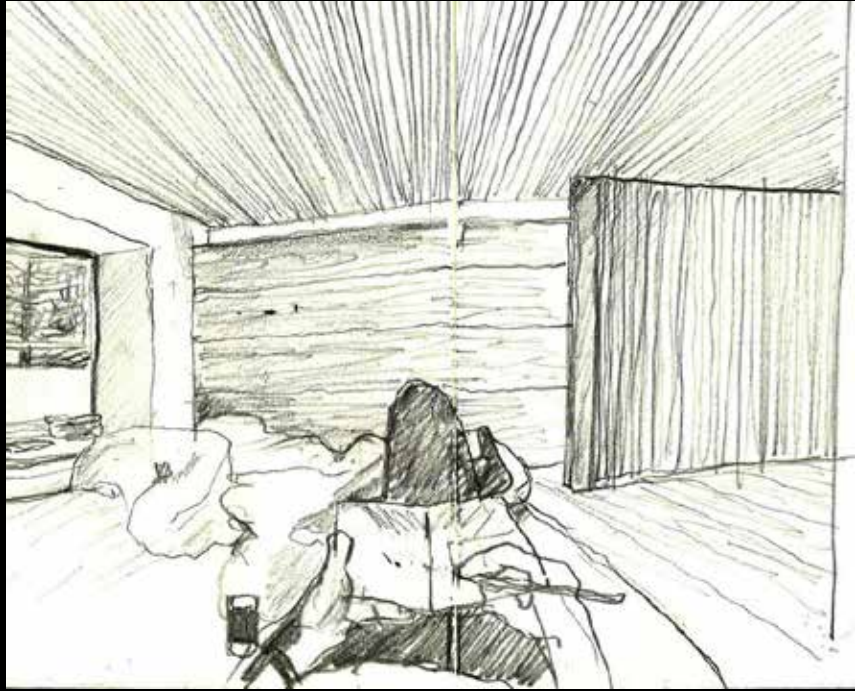




Aerial View 7132 Hotel  
Vals

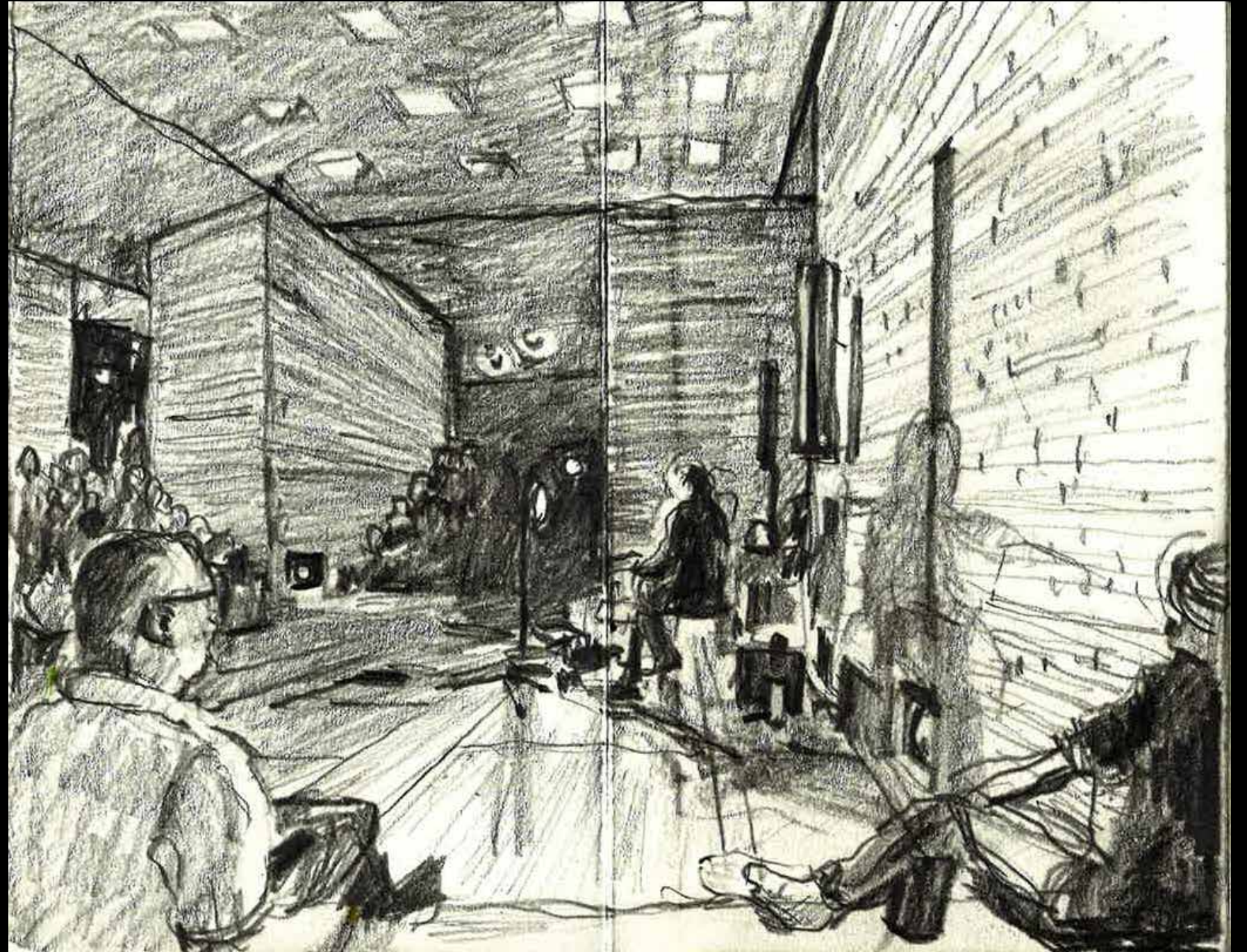






7132 Hotel Architect Rooms  
Kengo Kuma



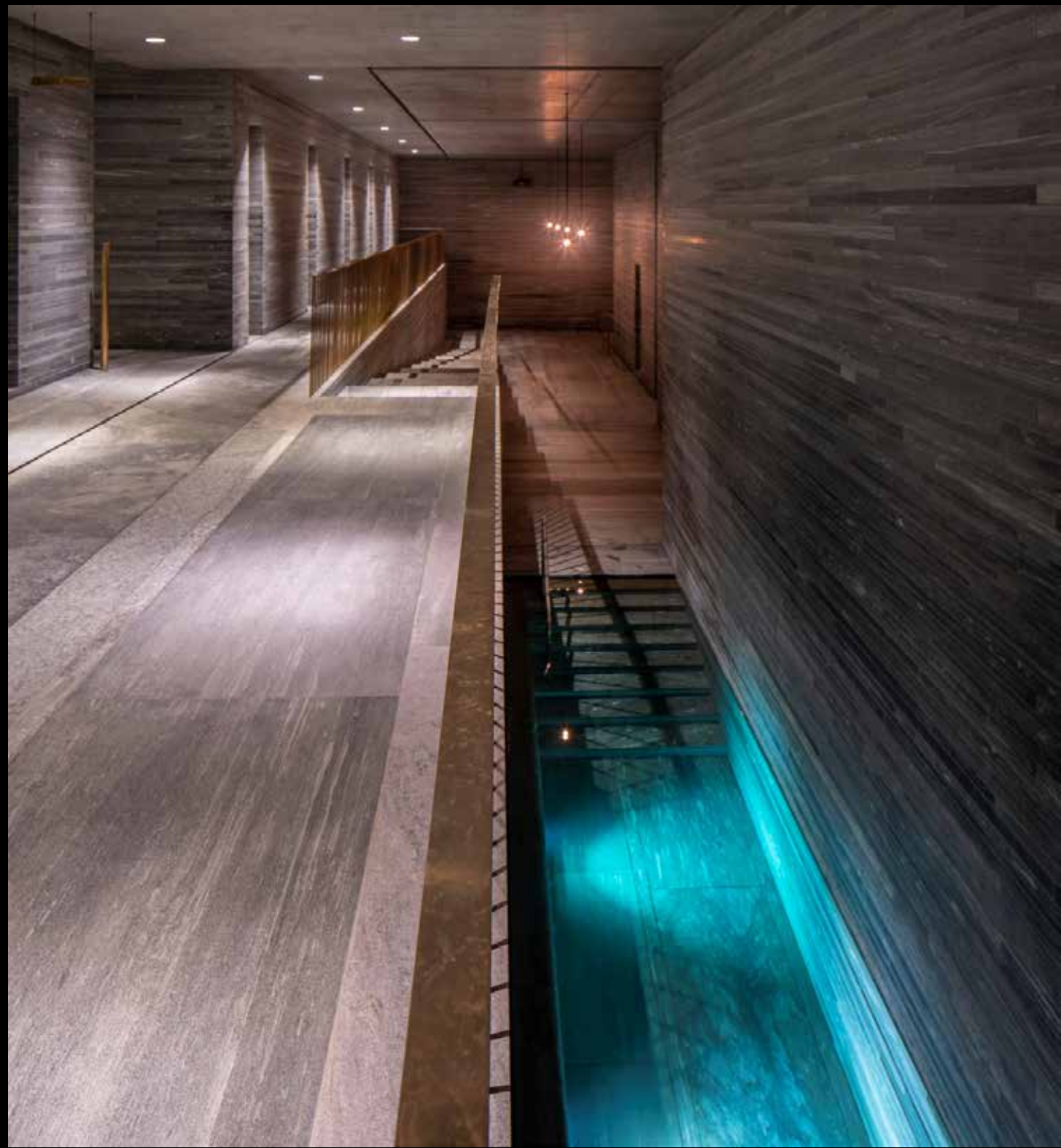




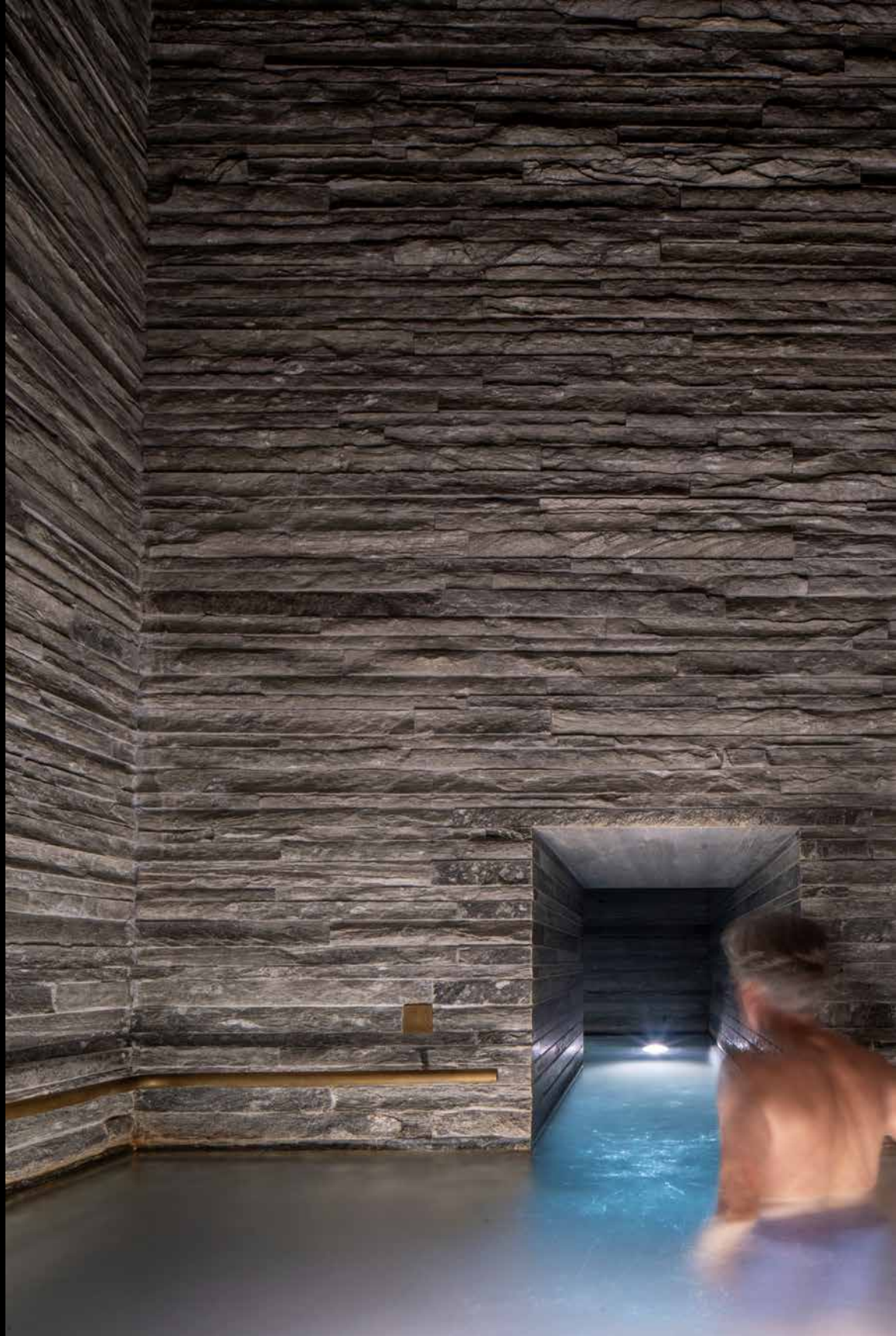


Therme Vals  
Peter Zumthor

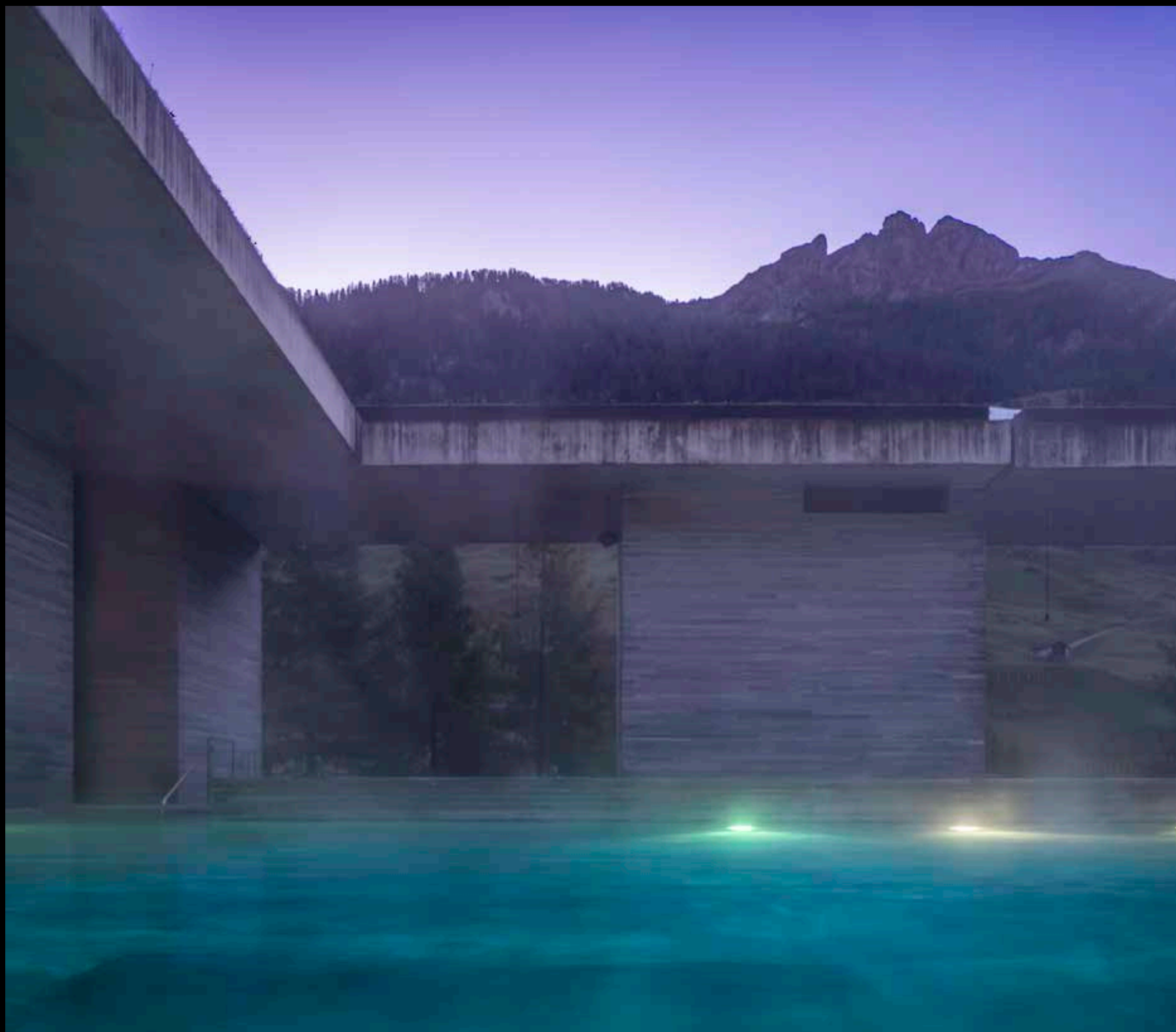
























Truffer Stone  
Vals- bonus tour





Shelter for Roman Archaeological Ruins  
Peter Zumthor







Kunstmuseum Extension  
Estudio Barozzi Veiga







Atelier Zumthor  
Peter Zumthor















# 50 YEARS

## of Committee on Design Leadership

This year we celebrate 50 years of COD Leadership, recognizing the past chairs of COD at The Exploratorium in San Francisco. A panel of former chairs to provide their insights on the importance of the committee and how we might plan for the future.

1969 Jean-Paul Carthlan, FAIA

1970 Ralph P. Youngran, FAIA

1971 Henry N. Cobb, FAIA

1972 Ulrich Franzen, FAIA

1973 Hugh Newell Jacobsen, FAIA

1974 Harry C. Wolf, FAIA

1975 James Ingo Freed, FAIA

1976 Stanley Tigerman, FAIA

1977 George E. Hartman, FAIA

1978 William Newton Morgan, FAIA

1979 Thomas R. Vreeland, FAIA

1980 Roger H. Clark, FAIA

1981 Thomas S. Marvel, FAIA

1982 James L. Nagle, FAIA

1983 John Morris Dixon, FAIA

1984 Peter Q. Bohlin, FAIA

1985 John L. Field, FAIA

1986 Mark Simon, FAIA

1987 B. Mack Scogin, Jr., AIA

1988 Glenn Garrison, AIA

1989 Boone Powell, FAIA

1990 Harold Roth, FAIA

1991 John M. Syvertsen, AIA

1992 Richard S. Bundy, FAIA

1993 Margaret I. McCurry, FAIA

1994 Charles Dagit, Jr., FAIA

1995 Steven M. Goldberg, FAIA

1996 Barton Phelps, FAIA

1997 Joseph Valerio, FAIA

1998 Raymond L. Gindroz, AIA

1999 Frances Halsband, FAIA

2000 Henry "Dusty" Reeder, FAIA

2001 Wendy Evans Joseph, FAIA

2002 Robert Frasca, FAIA

2003 Kent L. Hubbell

2004 Windom Kimsey, FAIA

2005 Ronnette Riley, FAIA

2006 David Brems, FAIA

2007 Michael Ross, FAIA

2008 Carol Rusche Bentel, FAIA

2009 Louis R. Pounders, FAIA

2010 Thomas Howorth, FAIA

2011 Anne Schopf, FAIA

2012 Mike Mense, FAIA

2013 Marlene Imirzian, FAIA

2014 Steven Alsbaugh, AIA

2015 Jim Childress, FAIA

2016 Phillip Laird, AIA

2017 James C. Lord, II, AIA

2018 George H. Miller, FAIA







# ***Upcoming COD presentations at A'20 in Los Angeles***

## **Honors and Awards Reception**

Curt Fentress, FAIA

- Celebration/recognition for Honor Award recipients and applicable awardees
- Sponsorship: \$3,000 for gift to awardees

## **AIA Gold Medal Nomination**

Doug Benson, FAIA and Paul Mankins, FAIA

- As a KC, COD prepares nominations for the Gold Medal
- Convention education session
- Chair of COD or a designated Moderator

## **AIA Firm Award Nomination**

Doug Benson, FAIA and Paul Mankins, FAIA

- As a KC, COD prepares nominations for the Firm Award
- Convention education session

## **Twenty-five Year Award Nomination**

Heather Young AIA and Daniel Garber, FAIA\*

- As a KC, COD prepares nominations for the 25 Year Award
- Convention education session



## ***Upcoming COD presentations at A'20 in Los Angeles***

### **Institute Honors for Collaboration Achievement Nomination**

Craig Brandt, AIA

- As a KC, COD prepares nominations for Collaborative Achievement
- Convention education session

### **Honorary Fellows Nomination**

Phillip Hamp, FAIA

- As a KC, COD prepares nominations for Honorary Fellows
- Convention education session)

### **AIA Institute Honor Awards for Architecture**

David Greenbaum, FAIA

- Convention education session

*Under direction from Robert Miller, FAIA*



## ***New programs and events in 2019***

### **50 Years of COD Leadership Celebration**

held during the San Francisco conference formal dinner

### **Annual Ideas Competition**

Windom Kimsey, FAIA

Support the local community and leave positive impact

### **AIA Academy of Architecture for Health Awards Jury and Charrette**

Recurring year commitment, COD Chairs are volunteered for successive years

### **Campaign to engage Emerging Professionals**

Led by current Chair and Conference Chairs, through outreach to local components/chapters

### **COTE Metrics Awards Task Force**

Review COTE's new "Common APP." Providing feedback and comments

Awards criteria metrics for Knowledge Communities and Honors and Awards.



**THE INNOVATORS & MAINTAINERS:  
SWISS INNOVATION IN ARCHITECTURE,  
INFRASTRUCTURE & TECHNOLOGY**

**2019 AIA  
COMMITTEE  
ON DESIGN  
INTERNATIONAL  
CONFERENCE**

**SWITZERLAND**

**September 21-29, 2019**

**Add-On Tour:**

**September 29-October 2, 2019**





2020 Chair at Villa Le Lac  
Curt Fentress (and Agatha Kessler)