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

Platinum
USG Ceilings Plus, LLC
Myerski Architects, Inc.

Gold
Andersen Windows
Behr Paint Company
Bohlin Cywinski Jackson
Carlisle Construction Materials
Fergus Garber Young Architects (FGY)
Marvin Windows and Doors
SmithGroup

Silver
SieMatic

Bronze
Basel Convention Visitors Bureau
Kreisler and Associates
Lucerne Tourism AG
Quart Architekturbücher

Other
Turner Construction

Contributors
Autodesk
Mobimo
Schefflin 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

Circle size = population

---

Innovation quality

300-maximum quality

High-income countries
United States
Britain
Japan
Germany
Switzerland
Canada
France
South Korea
Netherlands
Sweden
Average

Middle-income countries
China
Brazil
India
South Africa
Seychelles
Argentina
Mexico
Hungary
Malaysia
Turkey
Average

Source: Global Innovation Index, 2015

---

*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
THE TEN TYPES OF INNOVATION
AN OVERVIEW

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.

- **Profit Model**
- **Network**
- **Structure**
- **Process**
- **Product Performance**
- **Product System**
- **Service**
- **Channel**
- **Brand**
- **Customer Engagement**

**CONFIGURATION**

**PROFIT MODEL**
The way in which you make money

For example, how Netflix remade the video rental industry on its lead by implementing a subscription model.

**NETWORK**
Connections with others to create value

For example, how Target works with renowned external designers to differentiate itself.

**STRUCTURE**
Alignment of your talent and assets

For example, how Whole Foods has built a robust feedback system for internal teams.

**PROCESS**
Signature or superior methods for doing your work

For example, how Zara’s “fast fashion” strategy moves its clothing from sketch to shelf in record time.

**PRODUCT PERFORMANCE**
Distinguishing features and functionality

For example, how OGG-Good Grips cost a premium but fit the “universal design” has a loyal following.

**PRODUCT SYSTEM**
Complementary products and services

For example, how Apple’s diversified its transformation from sketch to shelf in record time.

**SERVICE**
Support and enhancements that surround your offerings

For example, how “Defend HOME through service” on Zappos’ #1 internal core value.

**CHANNEL**
How your offerings are delivered to customers and users

For example, how Nespresso builds a brand around its coffee machines, its useful members only club.

**CUSTOMER ENGAGEMENT**
Distinctive interactions your foster

For example, how NFL’s experience drivers move from the interactions in the room than on-screen.
“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
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.
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.
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

<table>
<thead>
<tr>
<th>Decade</th>
<th>Economic context</th>
<th>Project delivery model</th>
<th>Evolution of design technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>70s</td>
<td>High Interest Rates</td>
<td>Design Bid Build</td>
<td>Tracing Paper</td>
</tr>
<tr>
<td></td>
<td>High Energy Costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80s</td>
<td>Liability Crisis</td>
<td>Fast Track + Original CM</td>
<td>Computer-Aided Drafting</td>
</tr>
<tr>
<td></td>
<td>Savings + Loan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90s</td>
<td>Worldwide Downturn + Early Sustainability</td>
<td>Design Build + Flavored CM</td>
<td>Layered Production</td>
</tr>
<tr>
<td>00s</td>
<td>Digital Design Data + Interconnectivity</td>
<td>Integrated Design + Construction / Building Lifecycle</td>
<td>Building Information Modeling</td>
</tr>
<tr>
<td>10s</td>
<td>Digital Fabrication + Big Data</td>
<td>Measured Performance + Outcomes</td>
<td>Connected Systems</td>
</tr>
<tr>
<td>20s</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Implications for the architect’s process

1. Transactional
   - Improved efficiency

2. Executional
   - Improved construction means and methods

3. Operational
   - Improved performance of the final asset

4. Aspirational
   - Improved social conditions and advancing culture

Increasing project value

profit
credibility
influence

Implications for the architect’s results
Salesforce Tower and Transbay Terminal
Pelli Clarke Pelli Architects
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
Apple Visitors Center
Foster and Partners
588 Mission
David Baker
Uber Headquarters
SHoP
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
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
VitraHaus
Herzog & de Meuron
Nora Fehlbaum
Vitra CEO

Fire Station
Zaha Hadid
Congress Center Basel
Herzog & de Meuron
Roche Pharma Research
Herzog & de Meuron
Dreispitzareal and Kabinett
Herzog & de Meuron
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
International Olympic Committee Headquarters
3XN, IttenBrechbuehl
Nestlé Headquarters
Jean Tschumi
Villa Le Lac
Le Corbusier
Sportarena Allmend / Towers
Marques Architects, Ivan Bühler Architects, Lucerne
Lucerne Culture and Convention Center
Ateliers Jean Nouvel
Pius Church
Franz Fueg
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
Caplutta Sogn Benedetg
(Chapel Saint Benedict)

Peter Zumthor
7132 Hotel Architect Rooms
Kengo Kuma
Shelter for Roman Archaeological Ruins
Peter Zumthor
Kunstmuseum Extension
Estudio Barozzi Veiga
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 commitment and how we might plan for the future.

1969 Jean-Paul Carrihan, FAIA
1970 Ralph P. Youngra, FAIA
1971 Henry N. Cobb, FAIA
1972 Ulrich Franzen, FAIA
1973 Hugh Newell Jacobsen, FAIA
1974 Henry 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. Weeland, 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 Soopan, Jr., AIA
1988 Glenn Garrison, AIA
1989 Bobbe Peverly, FAIA
1990 Harold Roth, FAIA
1991 John M. Syvertsen, AIA
1992 Richard S. Bundy, FAIA
1993 Margaret I. McCurry, FAIA
1994 Charles Derg, Jr., FAIA
1995 Steven M. Goldberg, FAIA
1996 Barton Phelps, FAIA
1997 Joseph Valeno, FAIA
1998 Raymond L. Gindroz, AIA
1999 Frances Halsband, FAIA
2000 Henry "Dusty" Reed, FAIA
2001 Wendy Evans-Joseph, FAIA
2002 Robert Fraser, FAIA
2003 Kent L. Hubbell
2004 Windsor Kimsey, FAIA
2005 Ronette Riley, FAIA
2006 David Brems, FAIA
2007 Michael Ross, FAIA
2008 Carol Rusche Batiel, FAIA
2009 Louis R. Pounds, FAIA
2010 Thomas Heworth, FAIA
2011 Anne Scholi, FAIA
2012 Mike Mense, FAIA
2013 Marlene Imirzian, FAIA
2014 Steven Alspaugh, AIA
2015 Jim Childress, FAIA
2016 Phillip Leal, 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