

**Facade
Tectonics**

**WORLD
CONGRESS**

LOS ANGELES

SKINS on Campus

**BRIDGING INDUSTRY AND ACADEMIA IN PURSUIT
OF BETTER BUILDINGS AND URBAN HABITAT**

Join the Facade Tectonics Institute as we move beyond talk and into the realm of action and initiatives aimed at improving building performance and urban habitat through the art, science and technology of the building skin. Our SKINS ON CAMPUS theme combines networking with industry and academic leaders with a deep exploration of the building facade as the integrative factor in holistic building design. Read on for full program details.

FACADE TECTONICS

2018 WORLD CONGRESS

MARCH 12TH-13TH, 2018

USC SCHOOL OF ARCHITECTURE

8:30	SESSION 1	INTEGRATION + ADAPTATION Harris Hall 101	FACADE + MATERIAL Watt Hall 1	ENERGY + SUSTAINABILITY Stauffer Hall 100	HERITAGE + FACADES Stauffer Hall 102	MULTI-LAYER + FACADES Stauffer Hall 200
		ADAPTIVE FACADES: Towards Responsive Building Structures and Envelopes Michele Andaloro / Werner Sobek Stuttgart	THERMOELECTRIC MATERIALS IN EXTERIOR WALLS: Experimental Study on Using Smart Facades for Heating and Cooling in High-Performance Buildings Ajla Aksamija, Zlatan Aksamija / University of Massachusetts	XILINX CASE STUDY: Accelerating Replicable ZNE Retrofits Through High Performance Facade Optimization Mike Martinez, Stet Sanborn / Integral Group	VERTICAL LOUVERED SOLAR CONTROL: Richard Neutra and System Development to 1968 Clifton Fordham / Temple University	Multi-Layer Design Technique in the Metal Facades Kianoosh Farhang Djavid / Arvin Uzman
		PATCHWORK: Textile Techniques and Their Influence on Space, Form, and Structure in the Digital Age Alexander Worden / Studio NYL Structure Facade	SILICONE SPANDREL GLASS OPACIFIERS: Mitigating Glass Breakage Risk from Thermal and Other Stresses Chris Fronsoe / ICD High Performance Coatings	INTEGRATED ENERGY ANALYSIS: Leveraging an Integrated Energy Modeling Process Greg Verabian, Saurabh Shrestha / HKS LINE Laure Michelon / Glumac	PAUL RUDOLPH'S CHRISTIAN SCIENCE BUILDING (1965): The Concrete Facade of a Forgotten Brutalist Masterpiece Scott Murray / University of Illinois at Urbana-Champaign	THE DOUBLE SKIN FACADE: Enhancing Air Quality Lee A. Fithian / University of Oklahoma
		UNITIZED CURTAIN WALL: Case Studies in Performance Optimization and Design Variation Margaret Tyrpa, Kathleen Kulpa, Brian Masuda / Ennead Architects	VINTAGE VINYL: Lock-strip Gasket Replacement and Remediation Strategies Michael S. Plewacki / Morrison Hershfield	ORBIT TOWER: Proposal for a Hybrid Structural-Facade System Featuring a Self-Adaptive Solar Shading Device Enrica Oliva / Werner Sobek New York	CONTEXTUAL ENVELOPES: Using Modern Methods to Address Heritage in Urban Sites Zoltán Neville / Coldefy & Associés Architectes Urbanistes	MULTI-LAYER FACADES: A Modern Take on the Challenges and Balances Beres Dowdle / Surface Design Consulting Pty Ltd

10:00 NETWORKING BREAK

10:30	SESSION 2	INTEGRATION + ADAPTATION Harris Hall 101	FACADE + MATERIAL Watt Hall 1	ENERGY + SUSTAINABILITY Stauffer Hall 100	HERITAGE + FACADES Stauffer Hall 102	MULTI-LAYER + FACADES Stauffer Hall 200
		ADAPTABLE GLAZING SHIELDS: Pushing the Envelope of Facade and Window Retrofits Anas Al Kassas / Inovues	TERRACOTTA 1912 TO 2018: Center Three Case Study Carol Loewenson, Stephen Dietz / Mitchell Giurgola Architects	FORM AS ENERGY: The Building Envelope as an Expression of Energy Matthew Fineout / Smart Architecture	RETROFIT OPTIONS FOR HISTORIC FACADES: Analysis and Design of Coil Drapery Catcher Systems Carrie Davis / Protection Engineering Consultants	THE 'THERMAL BLANKET' CONCEPT: An Active Double Skin Facade at the Manhattan Beach Public Library Bharat Patel, Michael Bulander / Harley Ellis Devereaux
		STRUCTURING SKIN: Patterns of Integrating Cladding and Structure John Neary / HOK NY	ARCHITECTURAL CERAMIC ASSEMBLIES: A Collaborative Research Model for Industry Engagement Omar Khan / University at Buffalo	EUI of BUILDING CLUSTERS: Integrating Envelope Performance with Urban Design Srinivas Rao / KRITZINGER+RAO	RENEWING TWO SAARINEN ICONS: The 1955 MIT Chapel Window Wall and Kresge Curtainwall David Fixler / David Fixler Architecture Planning Preservation	A COMPACT, UNITIZED DOUBLE SKIN FACADE: Thermal Performance Comparison in US Climates Alex Cox, James Hock / Permasteelisa North America
		Heat-Actuated Auxetic Facades Amira Abdel-Rahman / Autodesk Elnaz Tafrihi / Steinberg Architects	CERAMIC PRECAST COMPOSITE PANELS: High Performance Structural and Architectural Building Enclosures Edward Rubio, Edward J. Rubio / American Craftsmen	DATA-DRIVEN SHADING SYSTEMS: Application for Freeform Glass Facades Luis Santos / UC Berkeley, College of Environmental Design	CHALLENGES OF TALL ICONIC BUILDING RETROFIT: Skin, Bones & Internal Systems Hamid Vossoughi / WSP Canada	DIFFERENTIATED BUILDING SKIN: An Experimental Case for AM Structural Components James Warton / HKS LINE, Southern Methodist University

12:00 LUNCH BREAK – SPONSORED BY PILKINGTON PLANAR BY W&W GLASS

1:30	SESSION 3	INTEGRATION + ADAPTATION Harris Hall 101	FACADE + MATERIAL Watt Hall 1	GLASS + MATERIAL Stauffer Hall 100	HERITAGE + FACADES Stauffer Hall 102	SAFETY + STRUCTURE Stauffer Hall 200
		KINETICS IN BUILDING FACADES: Development of Taxonomy of Kinetics in Climatic Building Envelopes Sean Cullen / Queens University Belfast	HYDROPHOBIC STAINLESS STEEL SURFACES: Low Maintenance, Energy Efficient Facades Fred Deuschle, Jim Halliday / Rigidized Metals Corporation	TRANSPARENT GENERATOR: Tapping the Gap Eric Carbonnier / University of Oregon	MIES VAN DER ROHE, GROPIUS, LE CORBUSIER – FACADE TECTONICS: A Comparative Analysis Edgar Stach, Barbara Klinkhammer / Thomas Jefferson University	Ballistic and Blast Integrated Design James Hock, Alberto Franceschet / Permasteelisa North America
		EXO-SKINS: Self-actuating, Themally-responsive, Laminated Bio-composites for Retrofits Nick Braaksma / Bates Masi + Architects	STAINLESS STEEL 101: High Performance Alloys for Architecture Michael Mulhern / TriPyramid Structures	GLASS STRENGTH UNDER POINT LOADING: Parametric Determination of Probability of Breakage for Typical Panel Dimensions Joshua Schultz / Gonzaga University John Knowles / Stutzki Engineering	TRANSFORMATION AS MOVEMENT: A Roman Baroque Church Facade Case Study Vytenis Gureckas / The Catholic University of America	BLAST PERFORMANCE OF TSSA: Testing of Point Fixed Assemblies Jon H. Kimberlain / Dow Chemical Company
		KINETIC SHADING SYSTEMS: A Parametric Approach to Optimizing Daylighting Performance Alireza Jahanara / Sapienza University of Rome, Texas A&M University	Specifying Commercial Aluminum Finishes Ben Mitchell / AkzoNobel	DESIGNING STRUCTURAL LAMINATED GLASS: How the Interlayer Properties Affect Post Breakage Performance Vaughn Schauss / Kuraray Trosifol	HISTORICAL EVOLUTION OF RESPONSIVE FACADES: Factors Affecting the Design and Development Negar Heidari Matin / Eastern Michigan University	HARDENED FACADES EFFECTS ON STRUCTURAL SYSTEMS: Analytical Study and Test of Blast-Resistant Facades Effects on Structural Braced Frames Carrie Davis, Tim Brewer / Protection Engineering Consultants

3:00 NETWORKING BREAK

3:30	SESSION 4	INTEGRATION + ADAPTATION Harris Hall 101	FACADE + MATERIAL Watt Hall 1	GLASS + MATERIAL Stauffer Hall 100	PROCESS + DESIGN Stauffer Hall 102	SAFETY + STRUCTURE Stauffer Hall 200
		KINEMATIC STRUCTURAL GLASS: 111 Main Case Study: Accommodating Extreme Building Movements (Part 1) Lisa Follman / Skidmore, Owings & Merrill	TRANSITIONS BETWEEN DIVERSE ENVELOPE SYSTEMS: Facade Joints at Lucile Packard Children's Hospital Andrew Tsay Jacobs, Megan Koehler / Perkins+Will Kristian Fosholt / John Maniscalco Architecture	TRANSLUCENT PRE-FABRICATED STRUCTURAL CAST GLASS: A New Unitized U-Channel Assembly Gordon Talbot / Ian Ritchie Architects Limited	Performance Criteria for Museum Design Karen Brandt / Heintges & Associates	WHEN FACADES KILL: A Problem of Extreme Flammability Terri Meyer Boake / University of Waterloo
		KINEMATIC STRUCTURAL GLASS: 111 Main Case Study: Accommodating Extreme Building Movements (Part 2) Gregor Horstmeyer / Eckersley O'Callaghan	DESIGN CONSIDERATIONS AND THE COMPLEX FACADE: Kolon Future Research Park Stan Su / Morphosis	Let Thin Glass in the Facade Move Jürgen Neugebauer / University of Applied Sciences, FH-Joanneum	EMULATING NATURE'S STRUCTURED RANDOMNESS IN FACADE DESIGN: Using Parametric Modeling Tools Ned Kirschbaum / Fentress Architects	LIGHTNING PROTECTION AS BUILDING ENVELOPE Michael Chusid / East Coast Lightning Equipment, Inc.
		ALGORITHMIC PATTERNS FOR FACADE DESIGN: Merging Design Exploration, Optimization, and Rationalization Inês Caetano, Luís Santos / INESC-ID/IST – University of Lisbon	HYBRID TIMBER: Performative, Biophilic and Beautiful Stacey Hooper / NBBJ Architecture	DESIGN CONSIDERATIONS: Heat Strengthened Glass with Ceramic Enamel Frit H. Scott Norville / Texas Tech University	Evaluating Additive Manufacturing for Metallic Facade Components Natasa Mrazovic / Stanford University	FIRE SAFETY IN HIGH RISE EXTERIOR FACADES: Mineral Wool Design Strategies for ASTM E 2307 and NFPA 285 Compliance Angela M. Ogino / Owens Corning Thermafiber

6:00 RECEPTION – SPONSORED BY WALTER P MOORE | City National Plaza Event Space at 555 S Flower Street, Los Angeles, CA 90012

TUESDAY, MARCH 13, 2018 | LOS ANGELES, CA

8:30 SESSION 1		PROCESS + DELIVERY Harris Hall 101	LIGHT + AIR Watt Hall 1	ANISOTROPY + FACADES Stauffer Hall 100	FACADE + FABRICATION Stauffer Hall 102	SAFETY + STRUCTURE Stauffer Hall 200
	WORKING WITH BIG DATA: New Pathways to Design in the Digital Era Cristobal Correa / BuroHappold Consulting Engineers	SEPARATING DIRECT FROM DIFFUSE: Observations of Visible Transmittance Through a Tracking Photovoltaic Envelope Nick Novelli / HeliOptix LLC Robert Gordon / Arzon Solar LLC	ANISOTROPY AND HAZE MEASUREMENT WITH ONLINE SCANNERS: Balance between Architect's Expectations and Glass Supplier's Delivery Quality Rainer Feuster / Viptron GmbH	ORIGAMI-INSPIRED Facade DESIGN: Parametric Studies for Architectural and Structural Efficiency Joshua Schultz / Gonzaga University Neil Katz / Skidmore Owings and Merrill	NEW PROVISIONS IN ASTM E1300-16: A comparison of the Basic and New Analytical Procedures for Determining the Load Resistance of Window Glass Stephen Morse / Michigan Technological University	
	Novel Techniques for Facade Optimization Viktoria Henriksson / Thornton Tomasetti	DAYLIGHTING POST-OCCUPANCY EVALUATION STUDY: Baylor University Paul L. Foster Campus for Business and Innovation Jae Yong Suk / University of Texas at San Antonio Helena Zambrano / Overland Partners	ANISOTROPIC EFFECTS IN ARCHITECTURAL GLASS: New Measuring and Monitoring Approaches Luis M. Hildago, Michael Elstner / AGC Interpane	TOWARDS A DATA DRIVEN FABRICATION PROCESS Becher Neme / Neme Design Studio Michael Kilkelly / ArchSmarter	Localized Rigidification Through PCM Freezing Elhaz Tafrihi / Steinberg Architects	
	SUBJECTIVE PERCEPTION AND OBJECTIVE MEASUREMENT: The Standardization of Visual Effects in Glass Caroline Lama, Antonio Luz / Vidaris Ashley Reed / Eckersley O'Callaghan		CONTROLLING ANISOTROPY IN HEAT TREATED GLASS Francis Serruys / Saint-Gobain Building Glass Europe (Brussels)	CURVED FORMING PANEL FACADES : Origami Folding for Enhancing Diaphragm Strength Roger Schroeder / Alfred State, Rigidized Metals Corporation	FULLY TEMPERED GLASS IN SPANDREL APPLICATIONS: Assessing the Residual Strength after Inner Light has Shattered Stéphane Hoffman / Morrison Hershfeld	
10:00 NETWORKING BREAK						
10:30 SESSION 2		PROCESS + DELIVERY Harris Hall 101	LIGHT + AIR Watt Hall 1	ENERGY + SUSTAINABILITY Stauffer Hall 100	FACADE + FABRICATION Stauffer Hall 102	SAFETY + STRUCTURE Stauffer Hall 200
	VERIFYING THERMAL PERFORMANCE: A Case Study Matthew Herman / BuroHappold Engineering	EDGE LIGHTING GLAZING WITH HIDDEN FIXTURES: Integrated Dynamic LED Light into Modern Glass Facades Lei Fu / KGM Architectural Lighting	DIRECT SUN AND OCCUPANT COMFORT: Practical Applications of the CBE SolarCal Method in the Design Process Henry Richardson, Madeline Gradillas / Atelier Ten	OPTIMIZED GREEN WALL: A Tensioned Laser Cut Plate Structure Algis Lencus / M Ludvik Engineering	Glass and Electromagnetic Eavesdropping Protection Eric Stein / Viracon	
	Thermal Comfort Assessment of Multi-Zone Electrochromic Window Ahoon Malekafzali / SageGlass	GLAZED SPANDRELS: Quantifying the Benefit of Venting to Minimize Risk of Glass Breakage Julien Schwartz / Morrison Hershfeld	DC WATER HEADQUARTERS CASE STUDY: Parametric Tools to Optimize a Curved Facade Sven Shockey, Leland Curtis, David Fersh / SmithGroupJJR	ELLIPTICAL WAYS: Realization of Complex Forms by Means of Geometric Primitives and Planar Cladding Elements Gustav Fagerström, Kelly Burkhart / Walter P Moore	SEISMIC MOVEMENTS: Mitigation Strategies, Case Studies, Parametric Analyses Gijs Libourel, Daniel Segraves / Thornton Tomasetti	
	INNOVATIVE FACADE LIFE CYCLE ASSESSMENT: Establishing a Methodology Vikki Lew / AIA Hong Kong Chapter	SHADOW BOX DESIGN: To Vent or Not To Vent Mark Walsh / Perkins+Will	DECONSTRUCTING THE WINDOW: How to Achieve Optimum Thermal Performance Helen Sanders / Technoform North America	MUSEUM OF FINE ARTS, HOUSTON: Challenges realizing a 250,000 sf Art School and Exhibition Building Roman Schieber / Knippers Helbig	FACADE WIND LOADING: Modeling Facade Performance to Wind Loads in Urban Environments Timothy Brewer / Protection Engineering Consultants	
12:00 LUNCH BREAK						
1:30 SESSION 3		EDUCATION + FACADES Harris Hall 101	DESIGN + DIGITAL Watt Hall 1	ENERGY + SUSTAINABILITY Stauffer Hall 100	CONSULTING + COMMISSIONING Stauffer Hall 102	COLLABORATION + DESIGN Stauffer Hall 200
	INTERNATIONAL FACADE EDUCATION: Findings from the Facade Design and Technology Survey James Doerfler / Thomas Jefferson University	Performance Based Generative Facade Workflow for Large Scale Projects Tim Logan / HKS LINE	Thermal Analysis of Complex Glazing Adrian Turcato / Transsolar Klima Engineering	IN FACTORY COMMISSIONING: The Role of Factory Inspections in the BECx Process Robert Golda / Horizon Engineering LLP	Collaborative Methodology for Fastracking Challenging Facade Concepts Stuart Berriman / GB Design Peter Simmonds / Building and Systems Analytics LLC	
	TEACHING FACADES: One Goal, Three Approaches to Facade Design Curriculum Alex Terzich / HGA Architects, University of Minnesota	GENERATIVE DESIGN TOOL: Integrated Approach Toward Development of Piezoelectric Facade System Amir Hosseinzadeh Zarrabi / University of North Carolina at Charlotte	CLIMATE-ORIENTED PREFABRICATED BUILDING ENVELOPES: Methodology to Aid Building Envelope Selection Sridharan Gandhi / Microdesk Andrew Tsay Jacobs / Perkins+Will	TARGETED ENCLOSURE CONSULTING: Look before Leaping, a Case for More Thoughtful Decisions Karl Jones / Mott MacDonald	DESIGN DIGITAL RECIPES: Facilitating Collaboration for Facade Design Steve Lewis, Lukasz Blonski, Jessica Chen / Walter P Moore	
	THINKING ABOUT FACADES: A Theoretical Perspective for Useful Prototypes Marc Schiler / University of Southern California		Digital Medium, Tangible Message Nathaniel Barlam / Virtual Construction Lab of Schüco		COUPLING FACADE AND STRUCTURE: Engineering a Breathable Skin Steve Lewis, Jessica Chen / Walter P Moore	
3:00 SPECIAL PRESENTATION Harris Hall 101						
4:00 CONCLUSION						

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