



May 1, 2011

Dear Business Associate,

We are happy to inform you that Enclos will be conducting a Workshop at the upcoming Glass Performance Days — the largest international conference on architectural glass — that is to be held June 17-20 in Tampere, Finland. We would be pleased if you would consider joining us at GPD.

On Friday, June 17th, Mic Patterson, Director of Strategic Development at Enclos' Advanced Technology Studio (EnclosATS), will conduct a full day workshop on "Structural Glass Facades & Enclosures." Joining Patterson will be Jeffrey Vaglio, Design Engineer at EnclosATS, and Michael Ludvick, Structural Engineer at M. Ludvik & Co. The workshop is scheduled to be a seven-hour intensive course discussing glass considerations, structure types, glazing systems and example applications of structural glass facades.

In addition, GPD Finland 2011 will feature over 200 presentations from industry leading experts, more than a dozen workshops, a glass expo, and the unique networking opportunities only available from an international gathering such as GPD. A total of six papers submitted by Enclos have been accepted and will be published in the conference proceedings. Topics include: glass performance, CFD modeling, blast design, double skins, structural glass facades and retrofit strategies.

If you are interested in attending our workshop at GPD Finland 2011, please visit www.gpd.fi for registration and event details. The deadline for workshop registration is May 31, 2011. We hope to see you in Finland.

Best regards,

Matt Elder

Communications & Marketing Specialist

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WS17: STRUCTURAL GLASS FAÇADES AND ENCLOSURES

Mic Patterson, Jeff Vaglio & Michael Ludvik, Advanced Technology Studio | Enclos

Time: Friday June 17, 2011 at 10.00 - 17.00 • Price 120€ + VAT 23%

COURSE SUMMARY

Structural glass facades are a unique building form with trend roots in the great nineteenth century iron and glass conservatory structures of England and Europe. The birth point of the technology can be traced to the Willis Faber and Dumas Headquarters in Ipswich England, designed by Foster and completed in 1972. Increasingly dramatic applications of the technology have occurred since that time. These applications are remarkably diverse in form, but are characterized by a pursuit of transparency, innovative structural design, highly crafted exposed structural systems, an extensive use of tensile elements, complex geometry, and a frequent use of glass as a structural material.

This workshop will explore the various structural systems used to support structural glass facades, the glass types characteristic of this building form, and the glass systems that connect the glass to the structures. The facades will be classified by the structural systems used to support them, including: mullion and truss systems, mast trusses, cable trusses, grid shells, cable nets, and all-glass structures. Glass system types will include veneer and panels systems as well as point-fixed systems in both bolted and clamped variations. Evaluation criteria will be identified to facilitate comparison of the various options with respect to a specific application. Appropriate project delivery strategies for structural glass facades will be examined. A range of applications will be reviewed through exemplary case studies. Issues of sustainability will be addressed, and the increasing use of structural glass façade technology in green building skins will be presented. Finally, a variety of hypothetical façade problems will be introduced, and the attendees will be involved in developing proposed solutions for discussion by the group.

BULLET POINT SUMMARY

- High transparency facades
- Structural system types
- Glass considerations
- Glass system types
- Steel fabrication considerations
- Cable nets
- All glass structures
- Double-skin applications
- Thermal and acoustical performance
- Solar control strategies
- Project delivery strategies
- Means and methods
- Case studies

COURSE TIMETABLE

- 10.00 Introduction
 - glass considerations • structure types • glass system types • example applications
- 11.00 Truss systems
 - mullion systems • hierarchical systems • steel fabrication • cable trusses • hybrid structures
- 12.00 Lunch
- 13.30 Cable Nets
 - flat facades • double-curved facades • geometry and form finding • means and methods
- 14.50 Coffee/tea
- 15.00 All glass structures
 - glass as structural material • structural glass members • connection design • means and methods
- 17.00 End of Workshop



*Mic Patterson MBS, LEED AP
(BD+C)*

Mic Patterson has made a career study of structural glass facades, participating in the design, fabrication and installation of a remarkably diverse body of novel applications. He founded ASI Advanced Structures Inc in 1991, the firm that pioneered the introduction of advanced façade technology in the US marketplace. Enclos, a leading global curtain wall firm, acquired ASI in 2007. Patterson subsequently participated in the establishment of the Advanced Technology Studio of Enclos, a façade think-tank located in downtown Los Angeles, where he works as the Director of Strategic Development. Patterson earned a Masters of Building Science degree from the School of Architecture at the University of Southern California, where he is currently a PhD candidate. He has taught, written extensively and lectured widely on diverse aspects of advanced façade technology. He is the author of *Structural Glass Facades and Enclosures*, to be published by Wiley in the spring of 2011.

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THURSDAY, JUNE 16, 2011

WS01: Structural properties of Laminated Glass

DuPont Glass Laminating Solutions

WS02: Optimizing Cutting and Grinding

Aachener Chemische Werke & Bohle AG

WS03: Glass Tempering Process Basics: Fundamental Steps in Tempering and Machine Test Runs

Glaston

WS04: Managing Quality in Glass Processing (Educational and commercial, including demos)

Glaston & Ayrox

WS05: Laminated Glass in Architectural Glass Structures – Coated, Colored, Curved, EVA, PVB, SGP - You name It!

Rakla & Bridgestone & Tambest Glass Solutions & DuPont & Pilkington

WS06: Oh Dear! - Glass Problems and Reasons

JCGC Limited

WS07: Beneq Coating Workshop – Industrial Aerosol Coating and Atomic Layer Deposition

Beneq Coating Team, Beneq Oy

WS08: Customizing Decorative Glass Facade. From Design to Implementation - Using Digital Printing with Ceramic Ink Technology

DipTech

WS09: Art of Gravity Bending Windshields

Safety Glass Experts International Oy Ltd

WS10: History – Today – Tomorrow: Milestones to Better Understand the Flat Glass Business

BJS.Différences

FRIDAY, JUNE 17, 2011

WS11: Profitability of the Glass Processing Factory

Glaston

WS12: How to Select the Right Furnace for Your Production (educational and commercial)

Glaston

WS13: Solar Power: Opportunities for the Glass Industry

Glaston & Beneq & Kuraray & AGC & Fraunhofer IST & Ritec

WS14: Fundamentals of Glass Strength, Stress Analysis and Design Methods for Glass Selection and use in Buildings

Jacob & Associates Pty Ltd

WS15: The Future of Architectural Glass Industry

WS16: Hybridization by Adhesive-free Direct Joining of Inorganic Glass and Organic Film

Chubu University

WS17: Structural Glass Façades and Enclosures

Advanced Technology Studio | Enclos

WS18: Glass Surface Treatment: Washing, Polishing, Corrosion Protection

Aachener Chemische Werke, TU Ilmenau, Grafotec

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