

PROGRAM DRAFT 11.12.15

Sunday, March 13th - University of Sydney

2:00pm - 5:00pm **PRE-WORKSHOP**
Grasshopper Introductory Course

Monday, March 14th - Pier 2 & 3

10:00am-5:00pm **INDUSTRY WORKSHOP**
KUKA|PRC, ABB, KUKA LBR iiwa & Delcam

Tuesday, March 15th - Pier 2 & 3

10:00am-5:00pm **WORKSHOPS**
6:00pm - 10:00pm *Suggested Meeting Point: Opera Bar* *Details coming soon*

Wednesday, March 16th Pier 2 & 3

10:00am – 05:00pm **WORKSHOPS**
6:00pm - 10:00pm *Suggested Meeting Point: Hugos in Manly* *Details coming soon*

Thursday, March 17th Pier 2 & 3

010:00am – 05:00pm **WORKSHOPS**
6:00pm - 10:00pm *USYD BBQ / Optional Special Event : Huang Yi and KUKA Performance at Seymour Center Sydney* *To book for Huang Yi see Special Event listing under Schedule Page on this website.*

Friday, March 18th Pier 2 & 3

08:30am – 09:00 am **REGISTRATION / COFFEE**
09:00 - 9:15 am **WELCOME DAY 1 FROM CHAIRS**
Dagmar Reinhardt, Rob Saunders, Jane Burry and Marjo Niemelä *University of Sydney and RMIT*

09:15 - 9:55 am **KEYNOTE**
syd Mark Burry *University of Melbourne* Robots at the Sagrada Familia Basilica

9:55- 11:25am **FULL PAPERS**
Syd

Michael Jeffers	<i>Carnegie Mellon University</i>	Autonomous Robotic Assembly with Variable Material Properties
Paul Nicholas, David Stasiuk, Esben Nørgaard, Christopher Hutchinson and Mette Ramsgaard Thomsen	<i>Royal Danish Academy of Fine Arts, Monash University and Royal Danish Academy of Fine Arts</i>	An Integrated Modelling and Toolpathing Approach for a Frameless Stressed Skin Structure
Ammar Mirjan, Federico Augugliaro, Raffaello D'Andrea, Fabio Gramazio and Matthias Kohler	<i>ETH Zürich</i>	Building a Bridge with Flying Robots

11:25-11:45 COFFEE

11:45 pm – 1:15pm SESSION 2: PROJECT PAPERS

Xun Li, DongHan Shin, JinHo Park and HyungUk Ahn	<i>Inha University and B.A.T architecture</i>	Robotics-Based Prefabrication in Architecture : Prefabrication the Shinsa-town Free-Form Ceiling Structures
Nicholas Williams and John Cherrey	<i>MIT University</i>	Crafting Robustness: Rapidly Fabricating Ruled Surface Acoustic Panels
Simon Weir, Dion Moulton and Shayani Fernando	<i>University of Sydney</i>	Stereotomy of Wave Jointed Blocks : Toward a Wave-Jointed Stone Construction using Wire Cutter Toolpath Generation
Christopher Robeller and Yves Weinand.	<i>EPFL Lausanne</i>	Fabrication-Aware Design of Timber Folded Plate Shells with Double-Through Tenon Joints
Alexander Jung, Dagmar Reinhardt and Rod Watt	<i>University of Sydney</i>	RBDM_Robodome: Complex Curved Geometries with Robotically Fabricated Joints

01:15pm – 02:00pm LUNCH *Lunch provided & Cafes close vicinity*

02:00pm – 02:30pm INDUSTRY KEYNOTE

Frank-Peter Kirgis, Peter Katsos and Martin Kohlmaier (intro RIA) *ABB Switzerland* Collaborative Robotics

2:30 pm – 4:00pm SESSION 3: FULL PAPERS

Andrew Saunders and Greg Epps	<i>University of Pennsylvania and RoboFold Ltd</i>	Robotic Lattice Smock: A Method for Transposing Pliable Textile Smocking Techniques through Robotic Curved Folding and Bending of Sheet Metal
Philip F. Yuan, Hao Meng, Lei Yu and Liming Zhang	<i>Tongji University, Archi-Union Architects and Qing Hua University</i>	Robotic Multi-Dimensional Printing Based on Structural Performance
Ron Culver, Joseph Sarafian and Julia Koerner	<i>UCLA</i>	Fabric Forms: Robotic Positioning of Fabric Formwork

4:00 pm - 4:20pm COFFEE BREAK

4:20pm - 5:35pm SESSION 4: PROJECT PAPERS

Marjo Niemelä, Samantha Horlyck, Susana Alarcon-Licona, Dylan Wozniak-O'Connor, Gabriele Ulacco, Rodney Watt and Rob Saunders	<i>University of Sydney</i>	BotBar: A Platform for Multi-Disciplinary Design Education
Roland Snooks and Gwyllim Jahn	<i>RMIT University, Kokkugia, Studio Roland Snooks and Elseware Collective</i>	Closeness: On the Relationship of Multi-Agent Algorithms and Robotic Fabrication
Kaicong Wu and Axel Kilian	<i>Princeton University</i>	Developing Architectural Geometry through Robotic Assembly and Material Sensing
Asbjørn Søndergaard, Oded Amir, Phillip Eversmann, Luka Piskorec, Florin Stan., Fabio Gramazio and Matthias Kohler	<i>Aarhus School of Architecture, Israel Institute of Technology & ETH Zürich</i>	Topology Optimization and Robotic Fabrication of Advanced Timber Space-Frame Structures

5.35- 6.60 RIA PRIZE WINNERS

6.30pm - 6:45pm **Closing Day 1 (Reinhardt)**
6:45pm - 09:00pm **OPENING OF WORKSHOP EXHIBITION, BOTBAR** *Food trucks and/or Bar at the End of Wharf*

Saturday, March 19th Pier 2 & 3

09:00 - 9:15 am

WELCOME DAY 2 FROM CHAIRS

Dagmar Reinhardt, Rob Saunders, Jane Burry and Marjo Niemelä

University of Sydney and RMIT

09:15 - 9:55 am

KEYNOTE

Francois Roche, Camille Lacadee and Stephan Henrich

Lab M4 (mindmachinemakingmyth)

'Psychaestenia Psycho-case Studies by New Territories/M4

9:55 - 11:25am

SESSION 5: FULL PAPERS

Gregor Steinhagen, Johannes Braumann, Jan Brüninghaus, Matthias Neuhaus, Sigrid Brell-Cockan and Bernd Kuhlenkötter

TU Dortmund, Association for Robots in Architecture, University for Arts and Design Linz, RWTH Aachen University, Ruhr-Universität Bochum

Path Planning for Robotic Artistic Stone Surface Production

Dagmar Reinhardt, Densil Cabrera, Alexander Jung and Rod Watt.

The University of Sydney

Towards a Micro Design of Acoustic Surfaces

Asbjørn Søndergaard, Jelle Feringa, Toke Nørbjerg, Kasper Steenstrup, David Brander, Jens Gravesen, Steen Markvorsen, Andreas Bærentzen, Kiril Petkov, Jesper Hattel, Kenn Clausen, Kasper Jensen, Lars Knudsen and Jacob Kortbek

Odico Formwork Robotics Aps, Technical University of Denmark, GXN A/S, Danish Technological Institute

Robotic Hot-Blade Cutting: An Industrial Approach to Cost-Effective Production of Double Curved Concrete Structures

11:25am - 11:24am

COFFEE BREAK

11:45am - 12:15pm

INDUSTRY KEYNOTE

Heinrich Munz

KUKA Roboter GmbH

A New Approach to Simple Software Integration of Robots in Production Machinery, Automation Systems, and New Parametric Environments

12:15 pm - 1:30pm

SESSION 6: PROJECT PAPERS

Jsyd

Kathrin Doerfler, Timothy Sandy, Markus Gifftthaler, Fabio Gramazio, Matthias Kohler and Jonas Buchli

ETH Zürich

Mobile Robotic Brickwork : Automation of a Discrete Robotic Fabrication Process Using an Autonomous Mobile Robot

Jose Pedro Sousa, Cristina Gassó Palop, Eduardo Moreira, Andry Maykol Pinto, José Lima, Paulo Costa, Pedro Costa, Germano Veiga and A. Paulo Moreira

University of Porto, CEAU/DF, INESC TEC, Polytechnic Institute of Bragança,

The SPIDERobot: A Cable-Robot System for On-Site Construction in Architecture

Joshua Bard, Richard Tursky and Michael Jeffers

Carnegie Mellon University

RECONstruction: A Survey of Surface Scanning Techniques for Architectural Substrates in Robotic Assembly

Nathan King, Nathan Melenbrink, Nick Cote and Gustav Fagerström

Virginia Tech, The United Nations and Autodesk

BUILD-ing the MASS Lo-Fab Pavilion : Dynamo-Driven Collaborative Robotic Fabrication Workflows for the Construction of Spatial Structures

1:30pm - 2:15 pm

LUNCH

2:15pm - 2:45pm

INDUSTRY KEYNOTE

Matt Jczyk and Charles Jones

Autodesk, Delcam

Design Computation, Optimization and Fabrication

2:45pm - 4:15pm

SESSION 7: PROJECT PAPERS

Felix Amsberg, Gernot Parmann, Andreas Trummer and Stefan Peters

Graz University of Technology

From Analysis to Production and Back : Attempts and Results of Reusable Adaptive Freeform Production Strategies for Double Curved Concrete Construction Elements

Kate Dunn, Dylan Wozniak O'Connor, Marjo Niemelä and Gabriele Ulacco

University of NSW, The University of Sydney and AR-MA

Free Form Clay Deposition in Custom Generated Molds

Brian Peters

Kent State University and Design Lab Workshop

Solar Bytes Pavilion: 3D Printed Interlocking Modules

Sina Mostafavi and Henriette Bier

TU Delft

Materially Informed Design to Robotic Production : A Robotic 3D Printing System for Informed Material Deposition

Kam-Ming Mark Tam, James R. Coleman, Nicholas W. Fine and Caitlin T. Mueller

Massachusetts Institute of Technology

Robotics-Enabled Stress Line Additive Manufacturing

4:15pm - 4:35pm

COFFEE BREAK

4:35pm - 6:20pm

SESSION 8: WORKSHOP PAPERS

Curime Batliner, Michael Jake Newsum and M. Casey Rehm

Southern California Institute of Architecture (SCI-Arc)

Robot UI: User Interfaces for Robotic Live Control

Thibault Schwartz, Sebastian Andraos, Jonathan Nelson, Chris Knapp and Bertrand Arnold

HAL Robotics, Bond University and Soundisplay

Towards On-site Collaborative Robotics: Voice Control, Co-Speech Gesture & Context-Specific Object Recognition via Ad-Hoc Communication

Roland Snooks and Gwylim Jahn

RMIT University, Kokkugia, Studio Roland Snooks and Elseware Collective

Stigmergic Accretion

Alex Dubor, Gabriel Bello Diaz, Guillem Camprodon, Dagmar Reinhardt, Kate Dunn, Rob Saunders, Dylan Wozniak O'Connor, Marjo Niemelä, Susana Alarcon Licona and Samantha Horlyck

Institute for Advanced Architecture of Catalonia (IAAC), Make It Locally, The University of Sydney and University of NSW

Sensors and Workflow Evolutions: Developing A Framework for Instant Robotic Toolpath Revision

Dave Pigram, Iain Maxwell and Wes McGee

University of Technology Sydney and University of Michigan

Towards Real-Time Adaptive Fabrication-Aware Form Finding in Architecture

Tim Schork/ ICD

Monash University

Robotic Sewing of Custom Timber Modules

6:20pm - 6:35 pm

CONFERENCE CLOSING WORDS

Dagmar Reinhardt, Rob Saunders, Marjo Niemelä and Jane Burry

University of Sydney and RMIT

7:00pm

CONFERENCE CLOSING DINNER, HARBOUR CRUISE & AWARD CEREMONY

Alois Buchstab

KUKA Robot Group

KUKA Young Potential Award Presentation

Frank-Peter Kirgis

ABB

ABB Mobility Award Presentation

Ninotschka Titchkosky

BVN

Best Workshop Award

Plus other Awards Announced

Sunday, March 20th Opera House

Optional Special Event : Opera House Tour

To Book for the Opera House Tour see Special Event listing under Schedule Page on this website.