

Making: Gridshells

Building: The Magnolia Gridshell

31st Oct - 4th Nov

(and on display till 12th Dec)

Situated at Sheffield's Hallam Square, Sheffield, the Magnolia Gridshell, is a design collaboration by Sheffield Hallam University with experts in this field. This forms part of the trio of events entitled Making Gridshells as part of Catalyst, Sheffield Hallam University's offering to Sheffield's Festival of Creativity 2016.

Inspired by the magnolia flower, the structure is positioned outside Sheffield city campus during the months of November and December 2016. Gridshells are typically used for benefits of strength as a result of their double curving shapes. On plan, the Magnolia Gridshell measures approximately ten meters square and stands three meters high. Made from glass reinforced fibre lattice, it is designed and constructed with students of architecture and architectural technology. Through our unique partnerships, this project imparts invaluable hands-on practical experience and constructional learning to result in a structure that fuses architecture and technology with a strong physical and structural basis.

Gabriel Tang

g.tang@shu.ac.uk @shellrevivalist

Interior gridshells at Hermès Rive Gauche, Paris, by Rena Dumas Architecture Interieure (RDAI) (©Michel Denancé)



Gabriel Tang

Architect and Senior Lecturer in at Sheffield Hallam University. An architect by profession, he trained at the Bartlett, University College London, UK, and worked at Norman Foster and Partners, London. He is currently completing a PhD at Edinburgh University on the use of deployable gridshells as formwork for concrete shell construction. He is co-author of the book Timber Gridshells, architecture, structure and craft, released by Routledge in October, 2016.



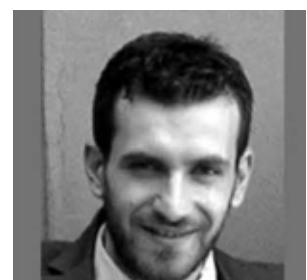
Diederik Veenendaal

Structural designer, based in Rotterdam, currently completing a PhD in architecture at ETH Zurich in Switzerland. He studied at TU Delft, and worked at Witteveen+Bos. Diederik is an expert in the design, form finding and engineering of lightweight structures, having worked on large tensioned membrane roofs and thin concrete shells. He is co-author of the book Shell Structures for Architecture - Formfinding and Optimization released by Routledge in 2014.



Edyta Augustynowicz,

an architect, collaborating with Veenendaal, studied and worked at ETH Zurich in Switzerland. She worked at the renowned architectural office of Herzog & De Meuron and is an expert in parametric design and complex geometry. She had worked on large stadiums and thin stone masonry shells and was most recently project architect for the ground-breaking Armadillo stone vault at this year's Venice Biennale 2016.



Bernardino D'Amico,

Structural engineer and lecturer, from Edinburgh Napier University, is an expert in the form finding and construction of timber gridshells. He worked as an architectural engineer on various research-driven projects, such as in gridshell.it, where he was responsible for the structural design of a series of life-scale prototypes. Currently lecturing at Edinburgh Napier University, he has been involved in many design and construction of timber gridshells in Italy and abroad.



@shellrevivalist #gridshell

Making: Gridshells

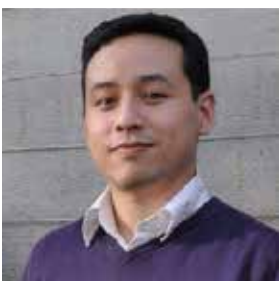
Lecture Series:

31st Oct 6pm (Monday)

Pennine Lecture Theatre,
Sheffield Hallam University, Sheffield S1 1WB

**The history
and future
of flexibly
formed shells**

**Recent vaulted
pavilions:
complex geometry as a smart
response to constraints**



Diederik Veenendaal

Structural designer, based in Rotterdam, currently completing a PhD in architecture at ETH Zurich in Switzerland. He studied at TU Delft, and worked at Witteveen+Bos. Diederik is an expert in the design, form finding and engineering of lightweight structures, having worked on large tensioned membrane roofs and thin concrete shells. He is co-author of the book *Shell Structures for Architecture - Formfinding and Optimization* released by Routledge in 2014.



Edyta Augustynowicz,

an architect, collaborating with Veenendaal, studied and worked at ETH Zurich in Switzerland. She worked at the renowned architectural office of Herzog & De Meuron and is an expert in parametric design and complex geometry. She had worked on large stadiums and thin stone masonry shells and was most recently project architect for the groundbreaking Armadillo stone vault at this year's Venice Biennale 2016.

<https://vimeo.com/167868985>



@shellrevivalist #gridshell

Making: Gridshells

Lecture Series:

1st Nov 6pm (Tuesday)

Pennine Lecture Theatre,
Sheffield Hallam University, Sheffield S1 1WB

Simplifying for constructability: a case study of two gridshells

Interior gridshells at Hermès Rive Gauche, Paris, by Rena Dumas Architecture Interieure (RDAl) (©Michel Denancé)



Jack Bakker

Parametric Specialist and architectural designer at ZJA (Zwarts and Jansma) Architects in Amsterdam.

He works in the interface between structures and architecture and has written about parametricism, with an attention to constructability, through his extensive experience of working with curved surface structures.

<http://www.zja.nl/>



@shellrevivalist #gridshell

Making: Gridshells

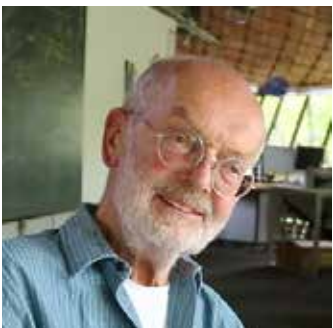
Lecture Series:

2nd Nov 6pm (Wednesday)

Pennine Lecture Theatre,
Sheffield Hallam University, Sheffield S1 1WB

Lightweight Gridshells and Frei Otto

Interior gridshells at Hermès Rive Gauche, Paris, by Rena Dumas Architecture Interieure (RDAl) (©Michel Denancé)



Jürgen Hennicke

Professor at Institute of Lightweight Structures, University of Stuttgart.

Since 1968, Professor Hennicke has been working with Frei Otto on the design of gridshells and other lightweight structures. Jürgen Hennicke studied civil and structural engineering with architecture, art history and mathematics at the universities of Karlsruhe, Heidelberg and Stuttgart. Graduated '68 as Dipl.Ing. Civ.Struct.Eng.

Jürgen Hennicke has been at the Institute for Lightweight Structures, University of Stuttgart since 1968: as collaborator and deputy with Prof. Frei Otto (emerited '91) and Prof. Werner Sobek (since '94): he is a collaborator and member of the Executive Committee for the German Federal Government Special Research Field #64 "Widespan Structures" ('70-'85) and # 230 "Natural Structures" ('84 to '95): member of the International Association for Shell and Spatial Structures (IASS): member of the Deutscher Werkbund (DWB)

His has teaching experience in the fields of architecture and building engineering at the University of Stuttgart, and was a guest professor at several universities in Germany and in Australia, Great Britain, Greece, Israel, Italy, Japan, Mexico, Switzerland, South Africa and USA.



@shellrevivalist #gridshell

Making: Gridshells

Lecture Series:

3rd Nov 6pm (Thursday)

Pennine Lecture Theatre,
Sheffield Hallam University, Sheffield S1 1WB

Digital Design and Modular Construction of Timber Gridshells

Interior gridshells at Hermès Rive Gauche, Paris, by Rena Dumas Architecture Interieure (RDAl) (©Michel Denancé)



Sergio Pone

Architect and Associate Professor at the University of Naples.

Sergio Pone is an architect heading the group **gridshell.it**. To date, they have built 13 gridshells, which they managed from conceptual design to construction. Their work overlaps with research, particularly by their experimentation in the areas of digital form-finding and construction. These timber gridshell structures have found themselves built at various locations in Italy and more recently in Melbourne, Australia, for purposes ranging from outdoor shelters for restaurants to smaller-scale outdoor courtyard shelters. The high level of student participation is feature of their research resulting in innovative structures that represents the synergetic collaboration between cutting-edge research and innovation teaching.



@shellrevivalist #gridshell

Making: Gridshells

Lecture Series:

4th Nov 6pm (Friday)

Pennine Lecture Theatre,
Sheffield Hallam University, Sheffield S1 1WB

Form, Materials and Shells

Interior gridshells at Hermès Rive Gauche, Paris, by Rena Dumas Architecture Interieure (RDAl) (©Michel Denancé)



Sigrid Adriaenssens

a structural engineer and Associate Professor and at Princeton University, USA, she directs **Form Finding Lab at Princeton University**.

She completed her PhD at the University of Bath and is co-author of the book *Shell Structures for Architecture, Form-finding and Optimisation* released by Routledge 2014. She was the recipient of the prestigious Tsuboi Award awarded by IASS (International Association of Shells and Spatial Structures 2014).

www.formfindinglab.princeton.edu



@shellrevivalist #gridshell