



la Biennale di Venezia

13. Mostra  
Internazionale  
di Architettura

HY William Chan

# MAKING *Common Ground*

BYERA HADLEY TRAVELLING SCHOLARSHIP 2012



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Executive Summary Report  
6 December 2012

HY William Chan, BDesArch (DigitalArch) *Sydney*

# Synopsis

The month-long experience of creating the centerpiece Venice Biennale international exhibition, with the theme of *Common Ground*, occurred from the 1st to 26th August 2012.

I was invited by Indian architect Anupama Kundoo to contribute to *One to One Wall House*, a full scale replica of Kundoo's South Indian house. We were located in the 900-year-old Corderie in the Arsenale. For one month, I was part of a team of local Indian craftsmen, Venice architecture students, and architects, engineers and students from Brisbane.

My involvement included the on-site design and construction of the *Wall House*. Learning construction techniques and the use of power tools, I assisted with the making of timber spreader frames, ceiling barrel vaults, living room support structure and platform steps. I was also involved in paving and glass-cutting as well as the interior and lighting design.

The main feature of the installation was the self-supporting terracotta pot vault – an innovative system devised by Kundoo. Despite the initial collapse of the vault due to the inability to secure the structure with mortar at the last minute, a compromise in the architecture had to be made. This resulted in the solution of supporting the vault with steel batons.

This process of making, creative problem solving and cross-cultural collaboration has been the highlight of the experience. The ability to work together even with the numerous structural obstacles and cultural barriers is a testimony of not only the success of the project but the meaning of *common ground*.

# *Executive Summary*

**From the 1st to 26th August 2012, I had the privilege of contributing to the 13th International Architecture Exhibition of the Venice Biennale.**

It was an unforgettable, behind-the-scenes experience of helping to create the world's prestigious architecture showcase, through the *One to One Wall House* installation. Designed by Australia-based Indian architect, Anupama Kundoo, the *One to One Wall House* is a full scale replica of her original house in Auroville, South India.

The building is recognised for the technological and spatial innovation, incorporating low-tech sustainable materials and traditional labour techniques. It was described as the centerpiece exhibition by the Biennale's director, Sir David Chipperfield, who curated this year's theme of *Common Ground*. Indeed, displaying a building within a building – to have actual architecture at the architecture Biennale had never been done before.

We were located in the 900-year-old Corderie, the naval ropes factory within the Arsenale. This proved to be a major problem with the weight of our house not being able to be supported by the floor. And it didn't help with Venice being on water. The first week of construction were creating timber spreader frames on the ground to spread our building's point load. Leading a team of Italian architecture students from Università Iuav di Venezia, we created over 30 frames.



The barrel vaulted ceiling in the room on the ground floor was also constructed. By calculating the span and timber bends with the help of the engineering students from the University of Queensland, we were able to finish the room in three days – including the impressive shadow gap around the room. And in between sweating on site and trying to use the power tools, we would have lunch together with the students from Venice and the Indian craftsmen – many of them had never travelled further than their own Auroville community.

Pairing up with a university tutor and architect from BVN Architecture, I was given the task of creating the raised platform of the living spaces. Using timber batons, we created the structure that would hold the ferrocement floor panels on top. These panels are created by casting steel chicken wire into cement sheets and have similar properties to reinforced concrete but on a small scale. I had to unscrew and rescrew some of the supports after not realising that the position did not match up with the edges of the end panels.

Next, we had to build the steps leading up to the platform. Using extremely heavy bags of cement and sand, mixed with water, we created mortar. With rough terracotta bricks, we glued the structure together and then secured the pre-casted ferrocement treads into place. Finally, we had to design the platform around the historic Arsenale brick column. Touching the columns would cause the brick to crumble and so we had to build around with utmost care. After some careful calculations of the circumference of the column, I used the jigsaw cutter to create the four timber panels. My use of the power tools had dramatically improved over the three weeks of construction – I was extremely satisfied with the craftsmanship of this joinery.

I was fascinated by the low-tech systems we used, including the creation of the rammed-earth wall. The soil had to travel all the way from India. Other innovative concepts included using traditional terracotta pans, which were being replaced with modern versions in Auroville, as ceiling coffered waffles. The most exciting upcycle of material, however, was the use of terracotta pots. In the 3rd week, the crane arrived to position the steel structure for the main feature of the building – the innovative terracotta barrel vault. Using clay pots which have been hand-crafted individually, Anupama Kundoo has invented a new structural system. By stacking these pots on top of each other, they create a self-supporting arch.

Like many design projects, not all goes to plan. Six temporary steel poles were placed underneath the vault to temporarily hold the pots while they were stacked. When the 5th pole was removed, one row of pots began to twist. Pots started to crack and then they smashed onto the ground. Despite not having enough pots left, we salvaged as much as we could and had to rebuild. This time the Biennale engineer ordered that the temporary poles remain. The self-supporting terracotta vault has never collapsed before in the past 20 years. All previous vaults had mortar on top to glue the pots together and this was the reason for the failure. We couldn't replicate that because of the ground would not be able to take the weight anymore.

After this had happened the whole morale of the team dropped. It was extremely disappointing and all the other international architects had heard of our catastrophic failure. We were one week away from opening.

In architecture, the design process, the making, is crucial and sometimes even more important than the outcome. This was exactly the case in this project. We never ended up finishing the building, but the exposed structure is representational what could have been. It inspires the millions of visitors to their own creativity and imagination. It is architecture in progress.

Everyone loves a success story, but it is how we use our creative problem-solving skills as designers to overcome failure that I love and have learnt from. Our approach to *Common Ground* isn't just an exhibition – it is architecture that combines time, history and culture. It is architecture that breaks boundaries, both geographically, ethnically and linguistically. It is architecture the epitomises making and process through interdisciplinary collaboration, team work and learning.

Many architects find common ground within the design process in architecture projects. But for me, it is humbling to have had the first-hand experience to help *build* common ground.



# *Scholarship outcomes*

EXECUTIVE SUMMARY REPORT

# Outcomes

## Personal

### One to One blog

The One to One blog at [Blogs.USyd.edu.au/OnetoOne](http://Blogs.USyd.edu.au/OnetoOne) was hosted by the University of Sydney as an academic research blog and documented my reflections during my time in Venice. The content was connected back to the personal website at [HYWilliamChan.com](http://HYWilliamChan.com). The blog entries included multimedia elements such as photos, embedded videos, comment forms, social media sharing and important links.

The screenshot shows a web browser displaying a blog post. At the top, there is a navigation bar with links for 'BLOGS', 'UNIVERSITY HOME', 'LIBRARY', 'MEDIA', and 'CONTACTS'. A search bar is located on the right side of the navigation bar. Below the navigation bar is a header section with a red and blue background. The header contains the University of Sydney logo and the title 'ONE TO ONE' in large, bold letters. Below the title is a short paragraph: 'Involvement of Faculty of Architecture, Design and Planning Honours candidate, HY William Chan, in the 'One to One' International Exhibition at the 13th Venice Architecture Biennale, as a recipient of the NSW Architects Registration Board's 2012 Byera Hadley Travelling Scholarship.'

The main content area features a date '28 JUL' on the left. The title of the post is 'Byera Hadley and his legacy' by 'HY William Chan'. Below the title is a large photograph of Wesley College, a grand brick building with a central tower and spire. The photo has a caption: 'Wesley College within the University of Sydney designed by Byera Hadley [Photo: The University of Sydney Senate]'. Below the photo is a short paragraph: 'It is a brilliant honour to be selected for this year's [Byera Hadley Travelling Scholarship \(BHTS\)](#) for students. Administered by the [NSW Architects Registration Board](#), the scholarship began in 1951 and was established by the late Byera Hadley.'

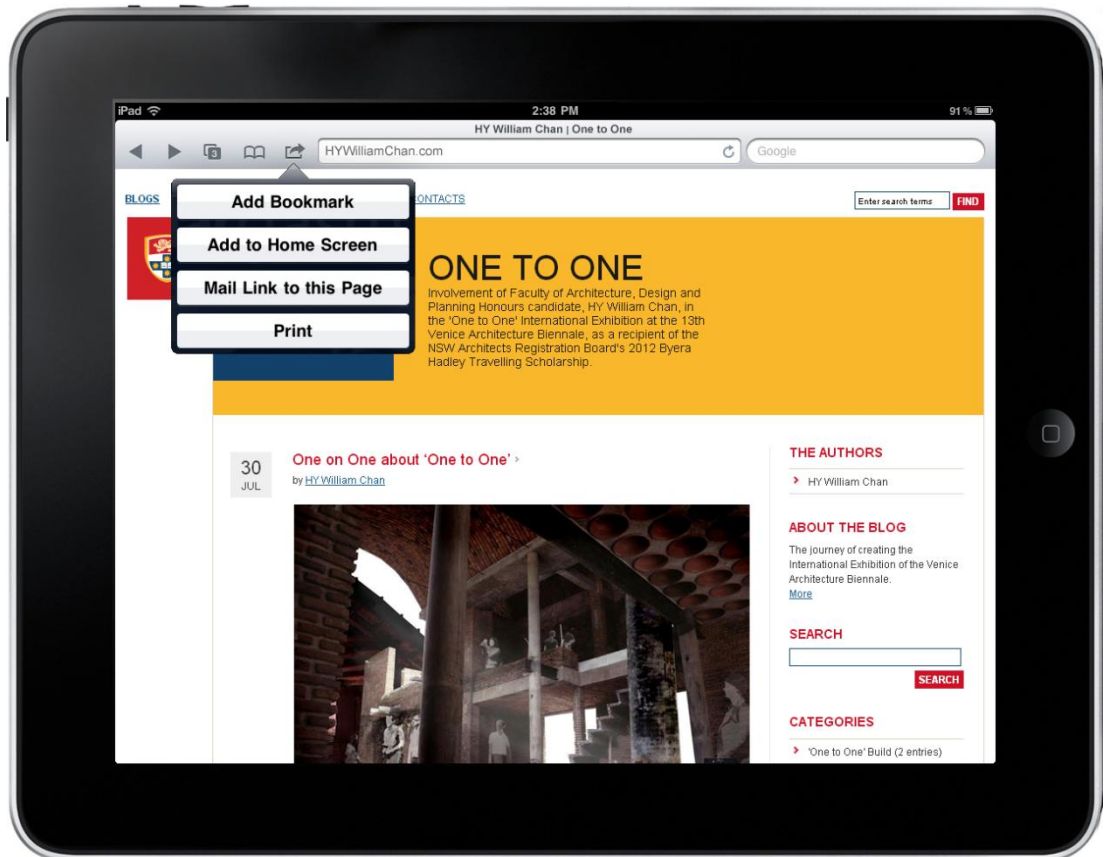
Below the paragraph is a black and white portrait of Byera Hadley, a man with a mustache wearing a suit and tie. The caption below the portrait reads: 'Byera Hadley [Photo: NSW Architecture Registration Board]'. At the bottom of the page, there is a line of text: 'A celebrated New South Wales architect and educator, [Byera Hadley](#) was appointed Head of the'.

On the right side of the page, there is a sidebar with several sections: 'THE AUTHORS' with a link to 'HY William Chan'; 'ABOUT THE BLOG' with a short description and a 'More' link; 'SEARCH' with a search bar and a 'SEARCH' button; 'CATEGORIES' with links to 'One to One' Build (2 entries), BHTS (2 entries), and Media (2 entries); 'ARCHIVES' with links to 'August 2012' and 'July 2012'; 'RECENT POSTS' with a list of recent posts including 'Blog app for your phone or tablet', 'Architecture Insights Media Release', 'Grande first impressions', 'One on One about 'One to One'', 'India's Anupama Kundoo at Global Studio', and 'Byera Hadley and his legacy'; 'KEEP UP WITH THE LATEST NEWS' with links to 'Follow on Twitter' and 'Subscribe on Facebook'; and 'RELATED WEBSITES' with a small red logo.

## Mobile application



A smart phone and tablet bookmarklet app was downloadable to access the latest blog entries and encouraged the audience to contribute to the discussion through touch-screen enabled connections to social media functions, including blog commenting and access to Twitter and Facebook.



## Sketches

Using charcoal pencils of brown and black, drawings of exhibitions at the Venice Biennale were recorded to understand the architecture and details.







## Photography

Refer to the appendix for the three-part photographic essay: *One to One Wall House*, *Exhibition installation highlights*, *Other international exhibitions*.

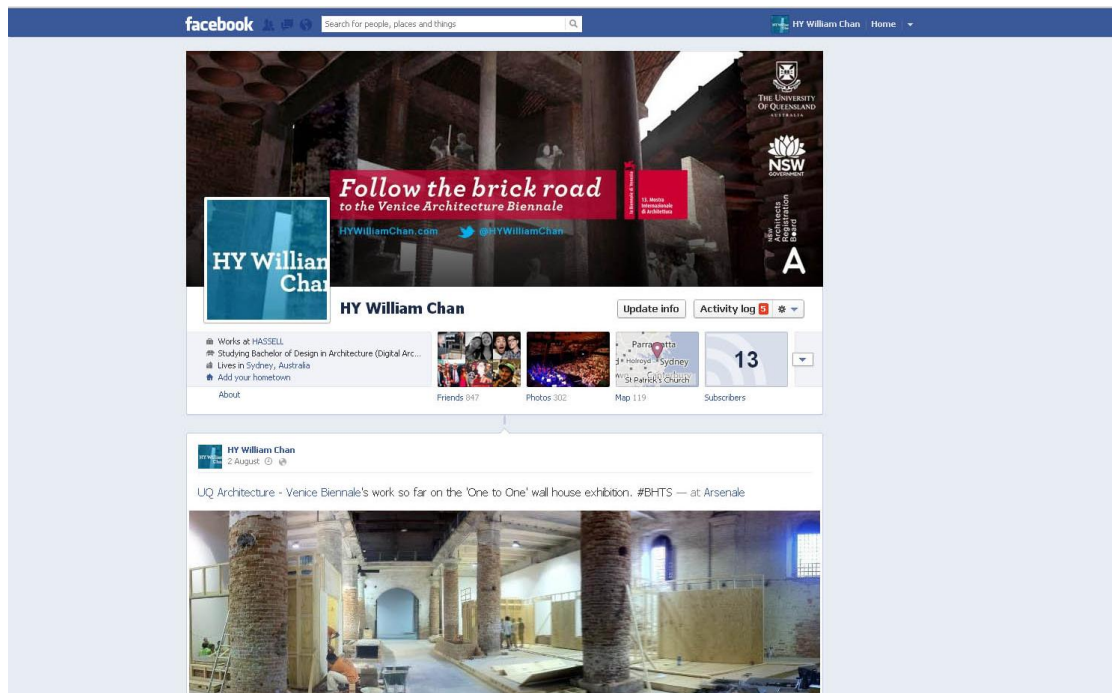
## External



## Social Media

Regular updates and news regarding the experience in Venice were made publicly on Twitter [Twitter.com/HYWilliamChan](https://twitter.com/HYWilliamChan) and Facebook [Facebook.com/HYWilliamChan](https://facebook.com/HYWilliamChan).

The audience were encouraged to follow the Twitter feeds or subscribe to the Facebook posts and contribute by replying back.

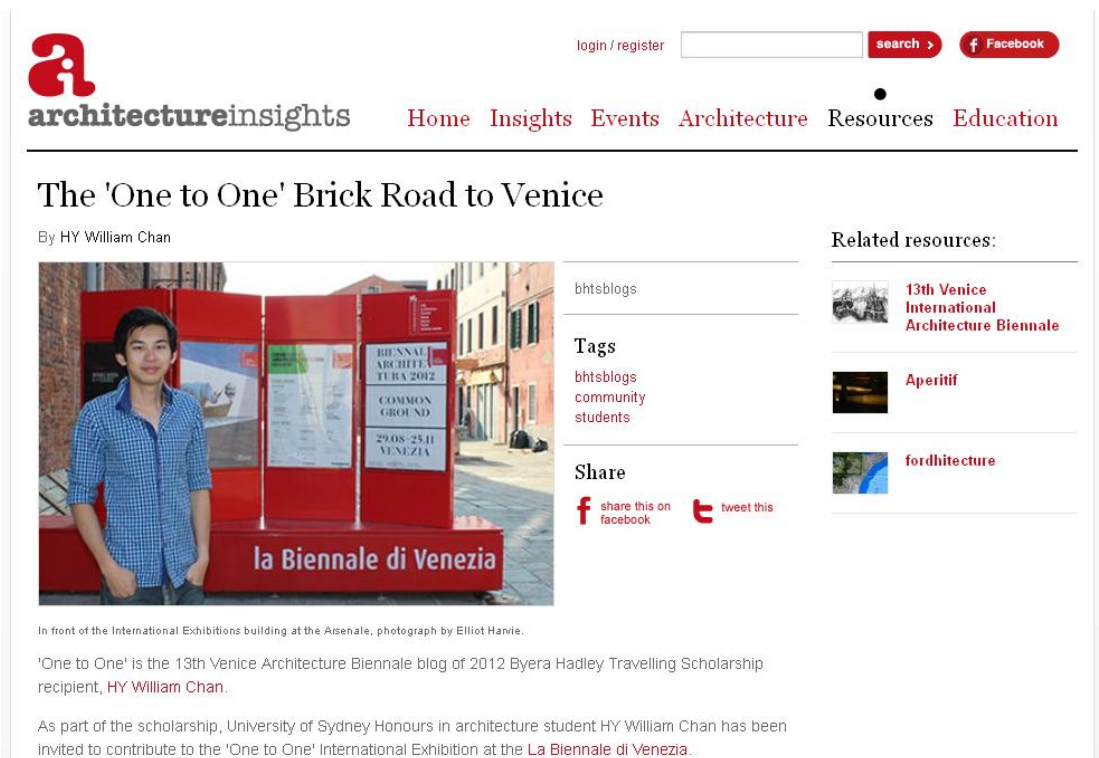




## Architecture Insights

Posts documenting the most important experiences were uploaded on to the *Architecture Insights* website at *ArchitectureInsights.com.au*. The posts received numerous comments and were also linked on Twitter and Facebook.

A definite highlight of my insights was the opportunity to interview the Venice Biennale Assistant Director, Kieran Long. This article generated much interest from the Australian public and was included in social media across the world.




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### The 'One to One' Brick Road to Venice

By HY William Chan



bhtsblogs

**Tags**  
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**Related resources:**  
13th Venice International Architecture Biennale  
Aperitif  
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In front of the International Exhibitions building at the Arsenale, photograph by Elliot Hanvie.

'One to One' is the 13th Venice Architecture Biennale blog of 2012 Byera Hadley Travelling Scholarship recipient, [HY William Chan](#).

As part of the scholarship, University of Sydney Honours in architecture student HY William Chan has been invited to contribute to the 'One to One' International Exhibition at the [La Biennale di Venezia](#).

Common Ground: Venice via India and Australia

*ArchitectureInsights.com.au/Insights/Common-Ground-Venice-via-India-and-Australia*

Kieran Long on finding common ground

*ArchitectureInsights.com.au/Insights/Kieran-Long-on-Finding-Common-Ground*

Official Top 5 at Venice Biennale

*ArchitectureInsights.com.au/Insights/Official-Top-5-at-Venice-Biennale-2*

Unofficial Top 5 at Venice Biennale

[ArchitectureInsights.com.au/Insights/Unofficial-Top-5-at-Venice-Biennale-3](http://ArchitectureInsights.com.au/Insights/Unofficial-Top-5-at-Venice-Biennale-3)

Looking back at making Venice's Biennale

[ArchitectureInsights.com.au/Insights/Looking-Back-at-Making-Venice-s-Biennale-2](http://ArchitectureInsights.com.au/Insights/Looking-Back-at-Making-Venice-s-Biennale-2)

## ArchitectureAU

Articles and photographs were published on the ArchitectureAU [ArchitectureAU.com](http://ArchitectureAU.com) website as 'postcards'.


# ARCHITECTUREAU

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## One to One Wall House: HY William Chan

Postcards | Words HY William Chan [Tweet](#) 9 [Like](#) 3




Interlocking terracotta tubes handmade by Indian craftsmen. Image: [HY William Chan](#) 1 of 6

Venice correspondent HY William Chan reports on his month-long involvement helping Anupama Kundoo's team build a replica of her Wall House for the 2012 Architecture Biennale.

**The construction** of the Venice Biennale International Architecture Exhibition, Wall House One to One, by Brisbane-based Indian architect Anupama Kundoo has been completed, ahead of the four-month long global architecture extravaganza of the Venice Architecture Biennale which begins today with the Vernissage.


Contributing to this building project, described as the centrepiece Biennale installation by the creative director, David Chipperfield, has been a once-in-a-lifetime experience that will no doubt influence my learning and future practice of architecture.

Creative zeal and energy for both architecture and people is one of Anupama's strengths. Her project shares a relationship to Chipperfield's theme of Common Ground by physically and architecturally transposing her original house into the context of the exhibition space, Venice's historic Arsenale. The project explores the connection between old and new as well as breaking cross-cultural boundaries.



### Top stories

- Saffire Freycinet landscape**  
On Tasmania's stunning ...
- Darling Street**  
A Melbourne duplex by ...
- Bandy House & Studio (1974) revisited**  
Begun in 1974, the unfinished ...
- Smith Residence**  
David Boyle updates a ...



### Most read

- 1 Smith Residence
- 2 Darling Street

## Architecture Bulletin

Postcard photo and description for the November/December edition of the Australian Institute of Architects, NSW Chapter magazine *Architecture Bulletin*.



## Other Published Magazines and Books

Photography of the international exhibition *Vessel* by O'Donnell + Tuomey were selected by the Irish practice and published by Italian architecture magazine *Europaconcorsi* and the London School of Economics.

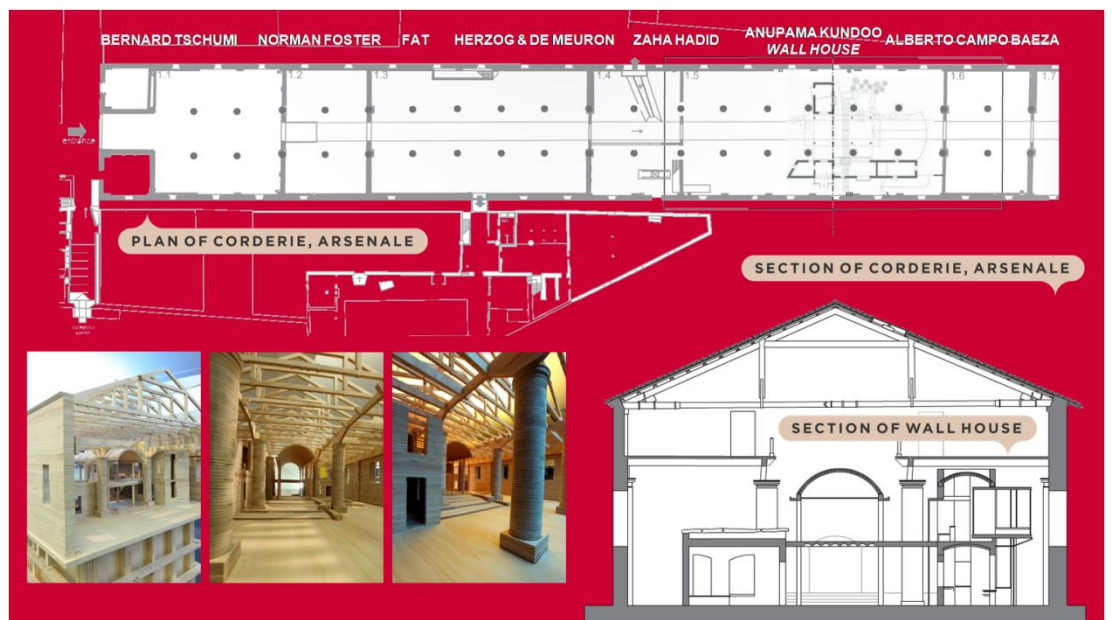
Involvement in the *One to One Wall House* exhibition has been the cover feature of *UQ News* of the University of Queensland, published in *Panorama*, the annual architecture catalogue of the University of Sydney and will also be featured in the University of Sydney Faculty of Architecture, Design and Planning's graduate catalogue.





## Graphic Design

Using illustration software, graphic design has assisted with the production of architectural drawings and photographic imagery for the blog website, slide show presentations and report.



## Public Presentations

The official oral report of as part of the Byera Hadley Travelling Scholarship was presented at *Short and Sharp at the Crypt* as part of the NSW Architects Registration Board Awards Night at the Sydney Architecture Festival.

Other presentations and discussions have been conducted at the University of Sydney's Faculty of Architecture, Design and Planning, HASSELL and the 2012 Think Brick Awards Presentation.



*Photo: NSW Architects Registration Board*

### **Public Exhibitions**

An exhibition showcasing the work from the *One to One Wall House* will open in March 2013 at Object, Australian Centre for Design, in Sydney.

# Acknowledgements

HY William Chan would like to sincerely thank the **Byera Hadley Travelling Scholarship Trust** for the provision of travel and living support through the **2012 Byera Hadley Travelling Scholarship for Students**, making the involvement at the Venice Architecture Biennale possible.

Thank you to the **NSW Architects Registration Board** for administrating the scholarship and for the award selection. In particular, gratitude is extended to the Registrar **Kate Doyle**, Deputy Registrar **Mae Cruz** and Projects Officer **Siobhan Abdurahman**.

Congratulations to the **fellow scholarship recipients**: Harry Catterns, Linda Matthews, Jennifer McMaster, Joanne Taylor, and with special mention to Jonathan Combley, Michael Ford and Tracey Hau for making the Vernissage experience unforgettable.

Immense appreciation is extended to **Dr Anupama Kundoo** for the invitation to join her project team and to contribute to this once-in-a-lifetime exhibition. Thanks to the **School of Architecture at the University of Queensland** for their commitment and generosity towards student learning, especially Senior Lecturer **Michael Dickson**. Thank you to the project team from Auroville in India, Venice in Italy and Brisbane in Australia.

Finally, many thanks to the referees for their support to the scholarship application: Adjunct Associate Professor **Dr Anna Rubbo** of the Faculty of Architecture, Design and Planning at the University of Sydney and to **Martin Lee**, Principal, and **Luke Johnson**, Principal and Head of Architecture Discipline, at HASSELL.



# Project team



**Exhibition Design** - Anupama Kundoo, Michael Dickson

**Structural Engineer** - Greg Killen

**Associate architects** - Nitin Bondre, Alvise Marzollo

**Material Production and Head Craftsman** - Sekar Sokkalingam

**Logistics** - Gautam Chatterjee, Frederick Schulze-Buxloh, Marina

Kiriakova, Yashoda Joshi

**Student Project Assistants** - Sari Bianca Basini, Katie Hawgood, Jessica

Spresser, Yohei Omura, Brianna Towers, Alexandra Kelly

**Student assistance in construction** - The University of Queensland, University of

Sydney, and Università Iuav di Venezia: Zeglar Fergus, Elliot Harvie, Daniel

Lau, Samuel Bowstead, Amy Learmouth, Georgina Russell, Leah Gallagher, Nicola

Eason, Marjorie Dixon, HY William Chan, Michela Benedetti, Valentina

D'Alberto, Elena Favaro, Laura Spezzoni, Paolo Toldo, Gabriele Longega, Stefano

Zeni, Enrico Perini, Alice Babini, Luca Iuorio, Giorgio Braga, Mattia Bittolo

**Craftsmen** - Sekar Sokkalingam, Ponnuvel Samikkannu, Manimaran

Govindasamy, Janakiraman Krishnamurthy, Kumar Saminathan, Gopi Seetharaman

**Acknowledgements** - John MacArthur, Natarajan Bala Baskar Sauro Mezetti





la Biennale di Venezia

BIENNAL  
ARCHITETTURA 2012

11. Mostra Internazionale di Architettura

COMMON  
GROUND

29.08-25.11  
VENEZIA

Spazio: Antonio Sant'Elia  
1914 - 1928  
1928 - 1930  
1930 - 1933

FOSCARINI

TELLECOM  
ITALIA

*One to One  
Wall House*

PHOTOGRAPHIC ESSAY



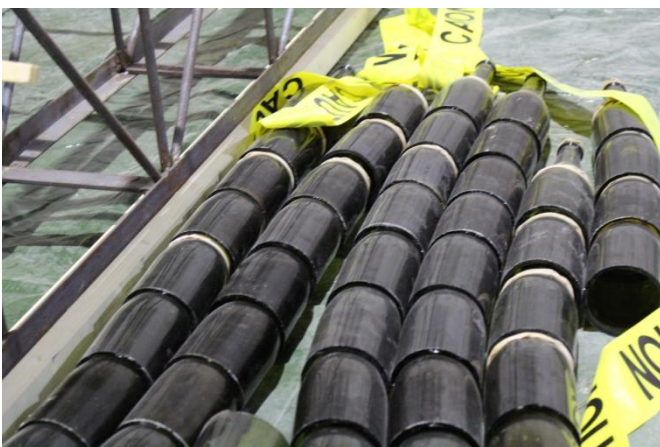


*First week of joining the design-build team*

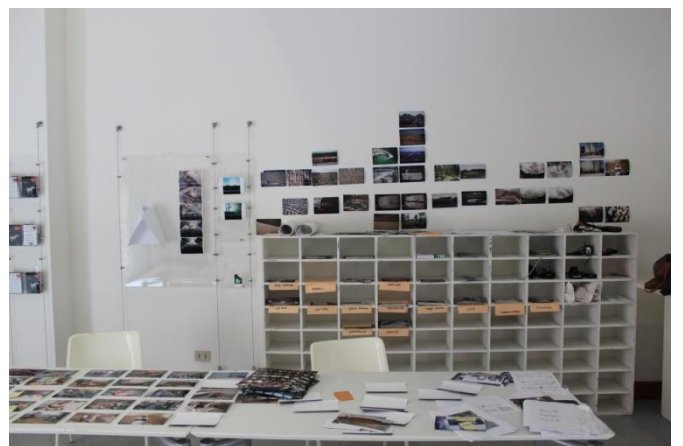




*Testing the glass bottle barrel vault for the bathroom. Bottles cut by scoring then dipping in hot and ice water.*



*Local Italian wine bottles were sourced*

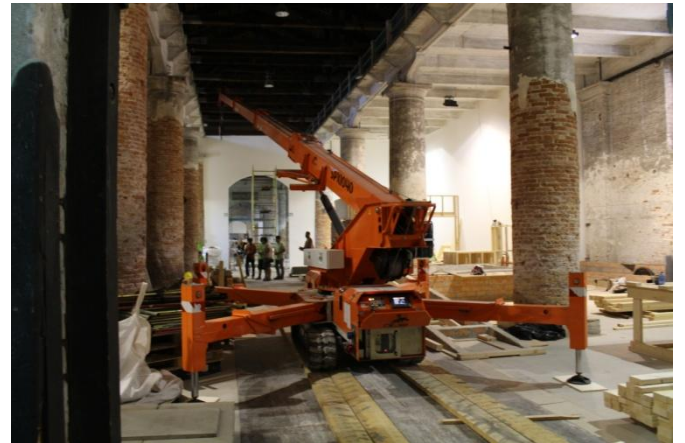


*Office in Arsenale to sort through photo exhibit*





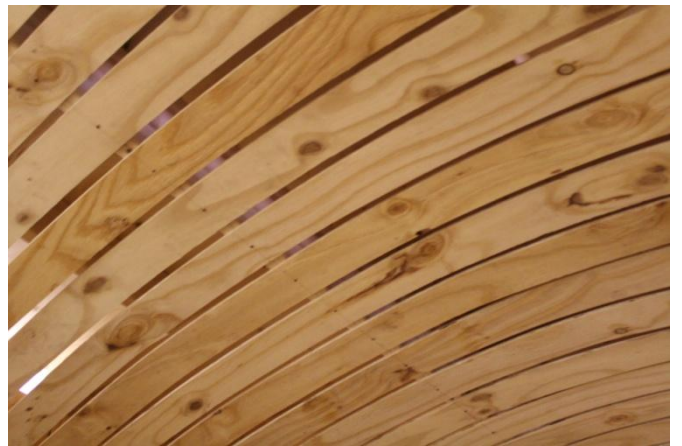
*Cleaning the terracotta bricks from Auroville to be laid by the Indian craftsmen*



*Crane arrives to position steel columns for vault*



*Personal construction projects for the three weeks of the build using timber, brick, cement and mortar*



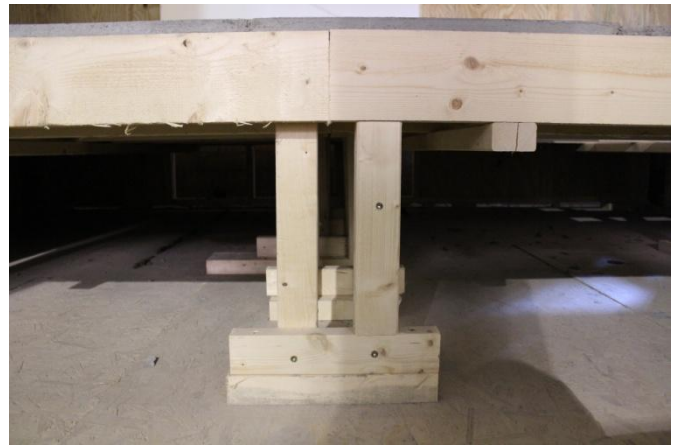
*Plywood timber vaulted ceiling*



*Completed timber spreader frames for new floor*





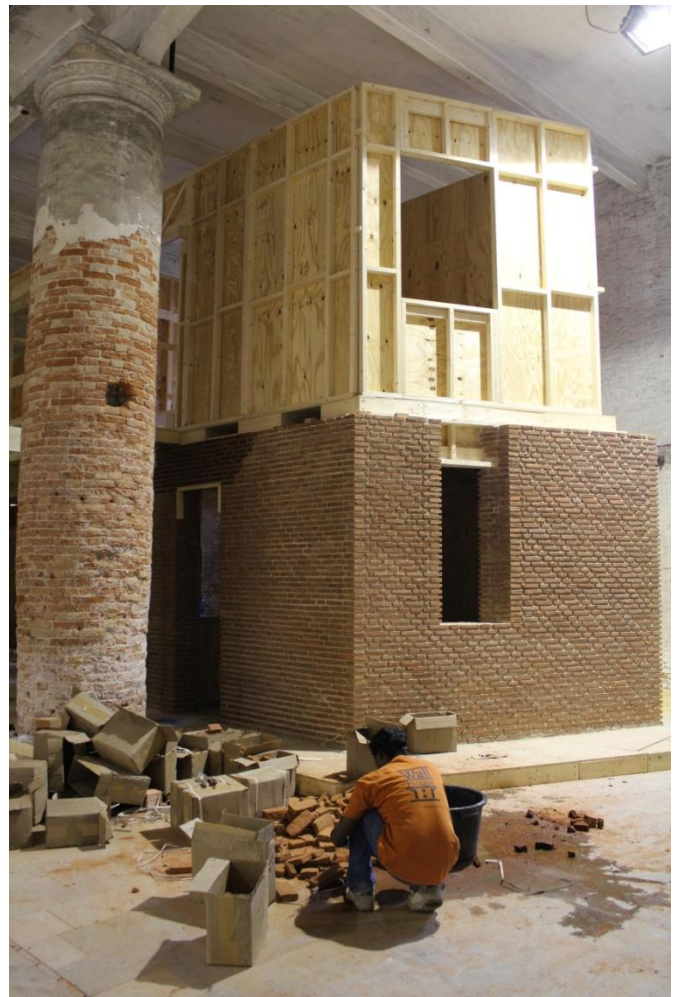


4-piece jigsaw timber around Corderie column

*Raised living room platform created from timber and brick supports with ferrocement sheeting and step treads*







*Sampling the self-polishing  
paint colours by mixing  
traditional Indian  
pigments with the cement*







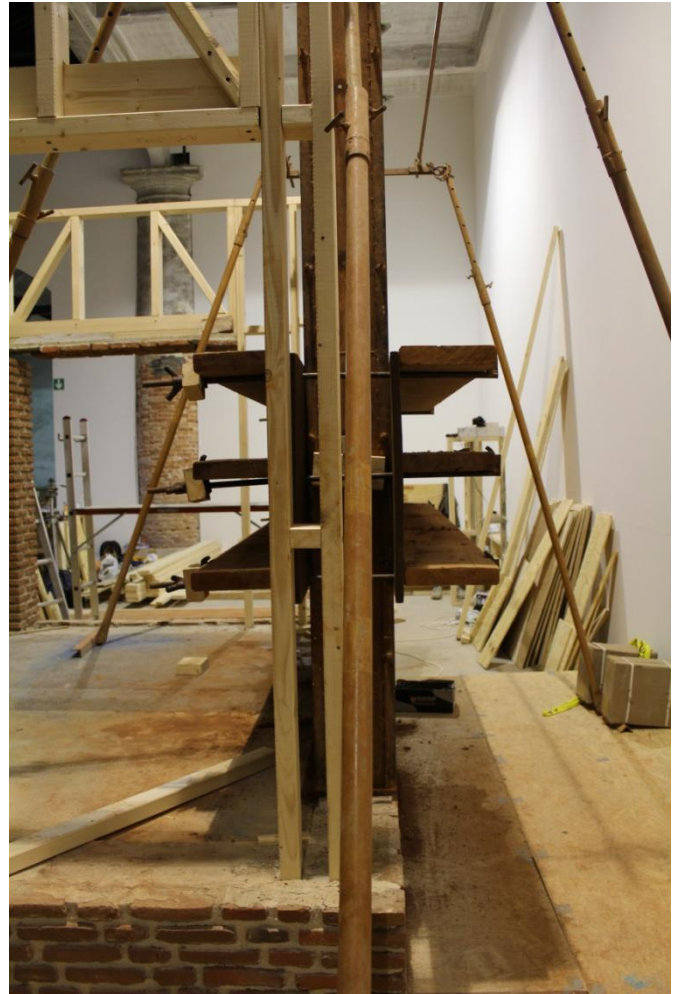
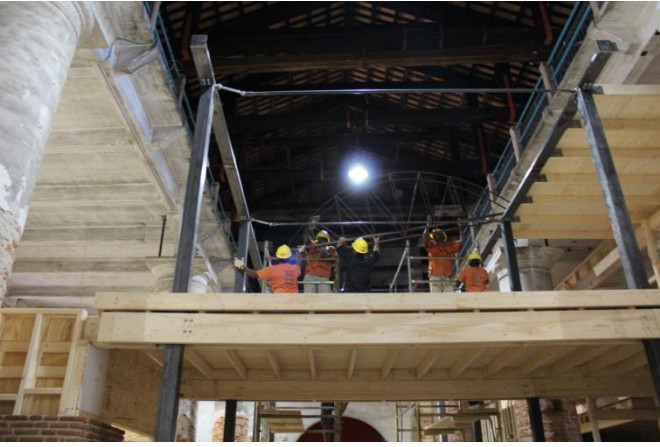
*Anupama Kundoo returns back on-site in Venice from Australia to inspect the current progress*











*Rammed earth wall casted using traditional Indian equipment with soil from Auroville*





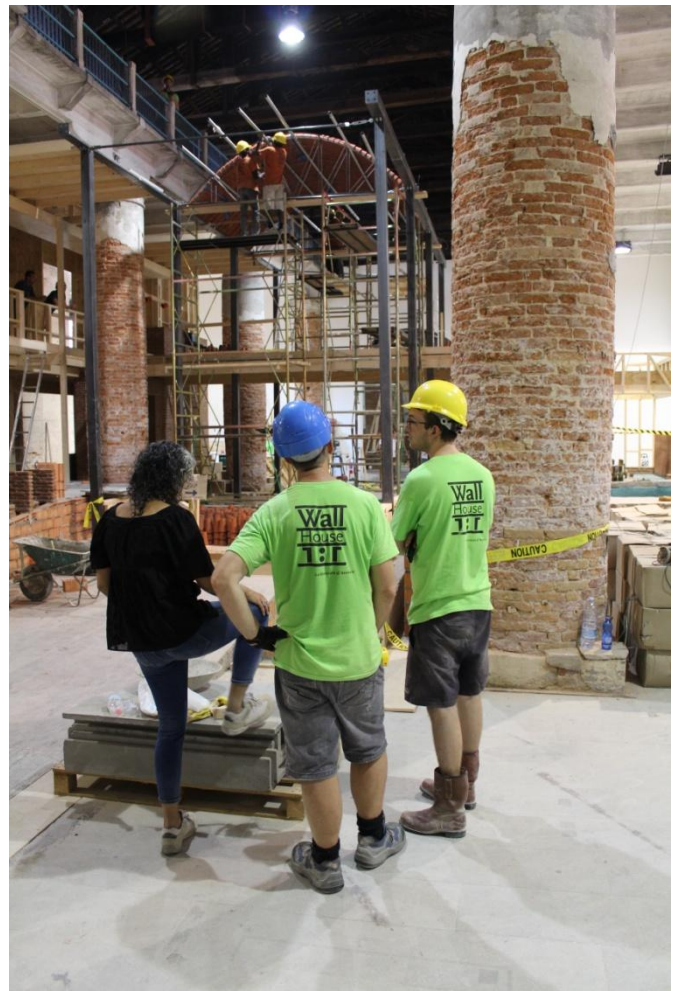
*Television bracket installed for documentary*



*Handmade terracotta pots from Auroville were individually unwrapped to be stacked for the main barrel vault*









*As the temporary steel poles are removed at the completion, a row of pots begin to twist and half the vault collapses*



*Indians inspect damage and remove all pots*





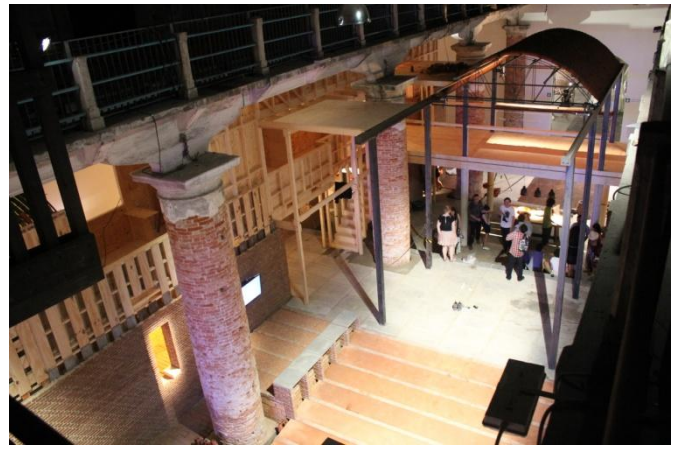
*With not enough pots left,  
the vault is half the  
proposed size and  
reconstructed with the steel  
poles remaining*



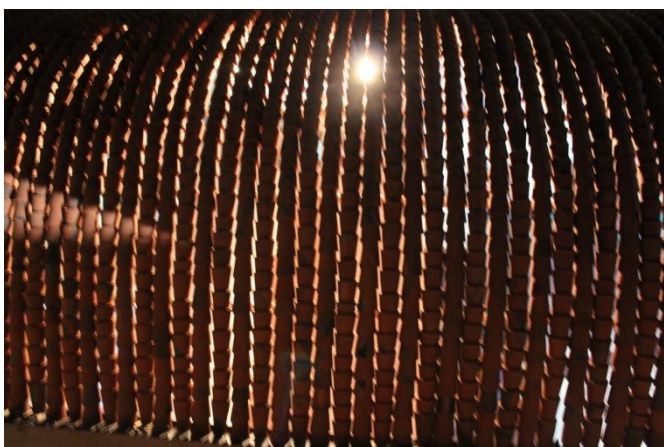
*Final touches being made on the final day*







*New Indian ceiling with the old Venice ceiling*



*Involvement featured in photo process exhibit*

# COMMON GROUND



Zaha Hadid Architects

Herzog & de Meuron

O'Donnell + Toumey

Robbrecht en Daem and MJosé Van Hee architecten

*Exhibition installation  
highlights*

PHOTOGRAPHIC ESSAY





*Zaha Hadid Architects' crates arrive*



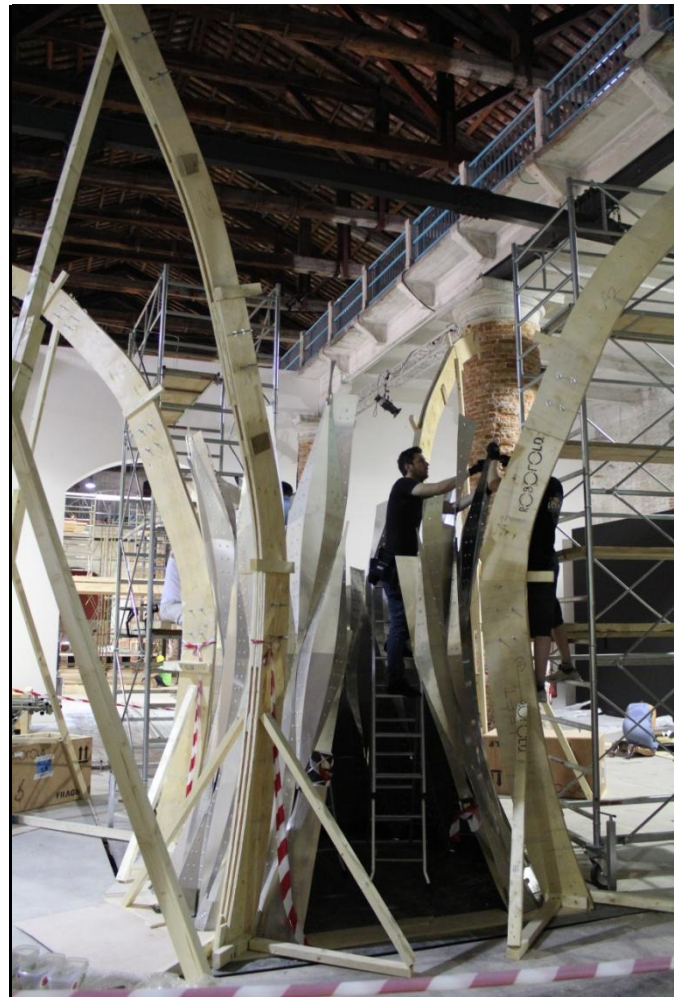
*Temporary timber  
Robofold supports secured  
in place for the  
construction of Zaha  
Hadid's Arum*



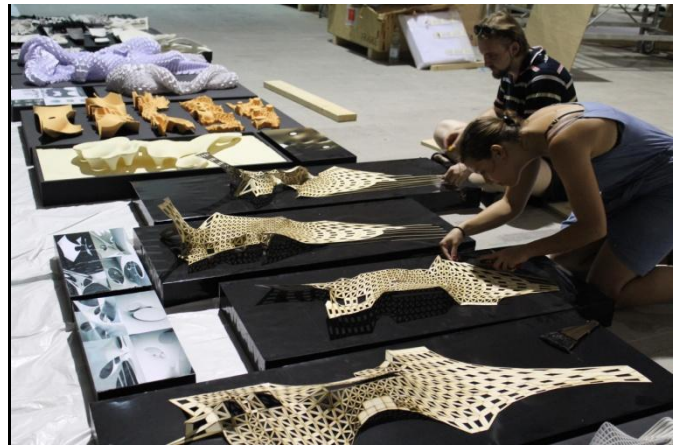
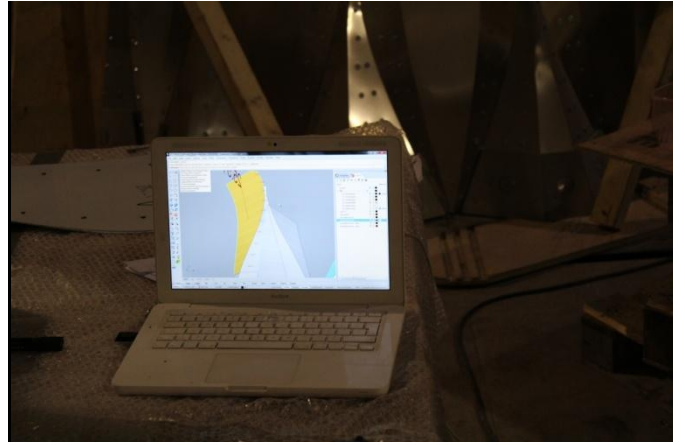




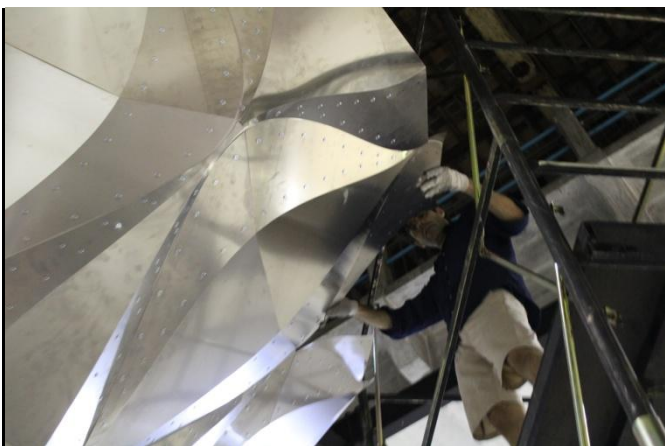
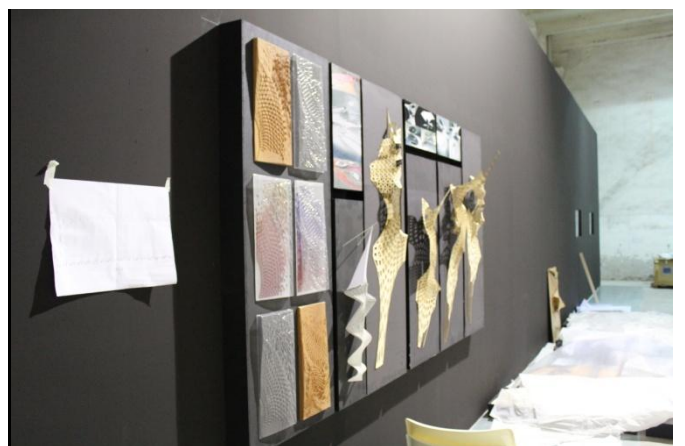
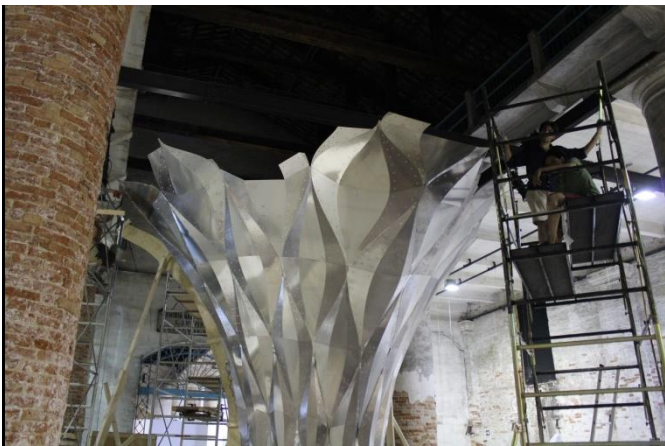
*Aluminium panels are uniquely, digitally pre-fabricated to size, grouped and bolted together*



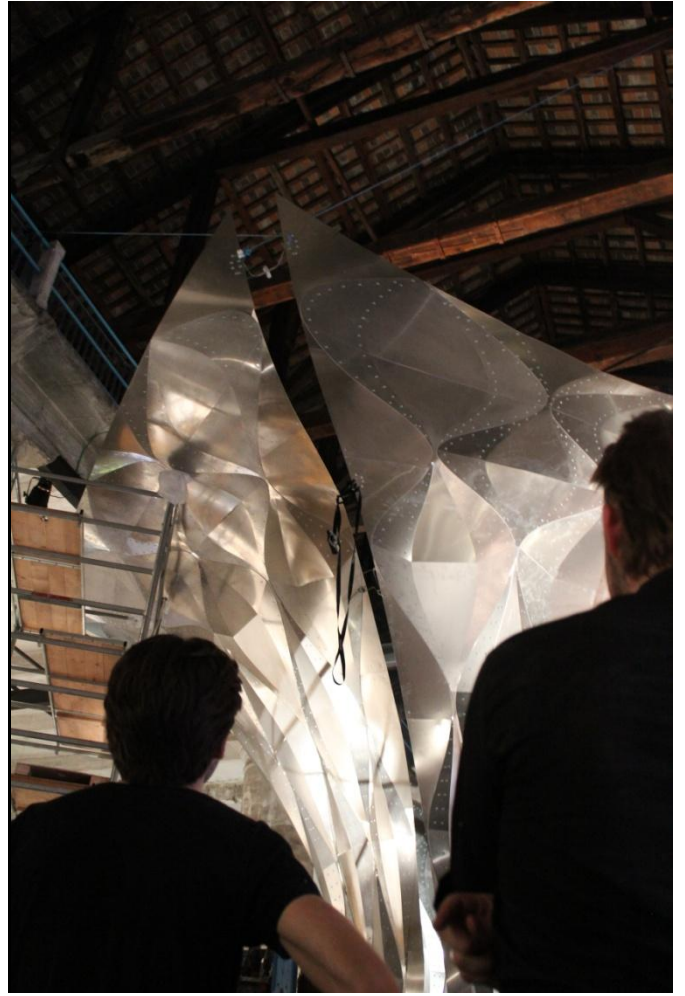




*Zaha Hadid's university students from Vienna*











*Crates containing sliced sectionals*



*Grey foam models of Herzog & de Meuron's Elbphilharmonie were installed in to 3 models*



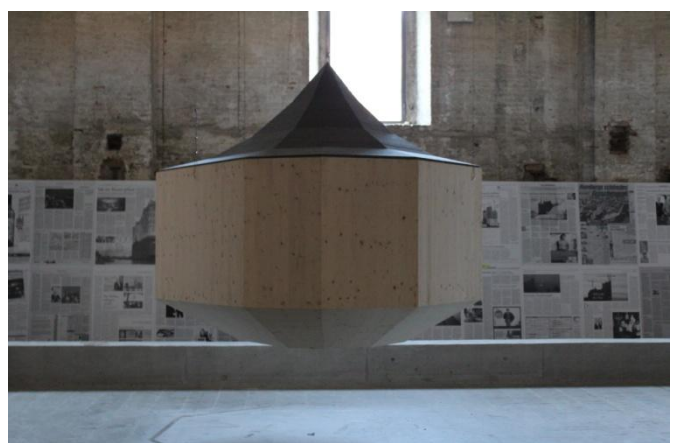




*Escalator circulation and theatre seating models with timber clad and were suspended from the ceiling*



*Internal seating section of the opera theatre*



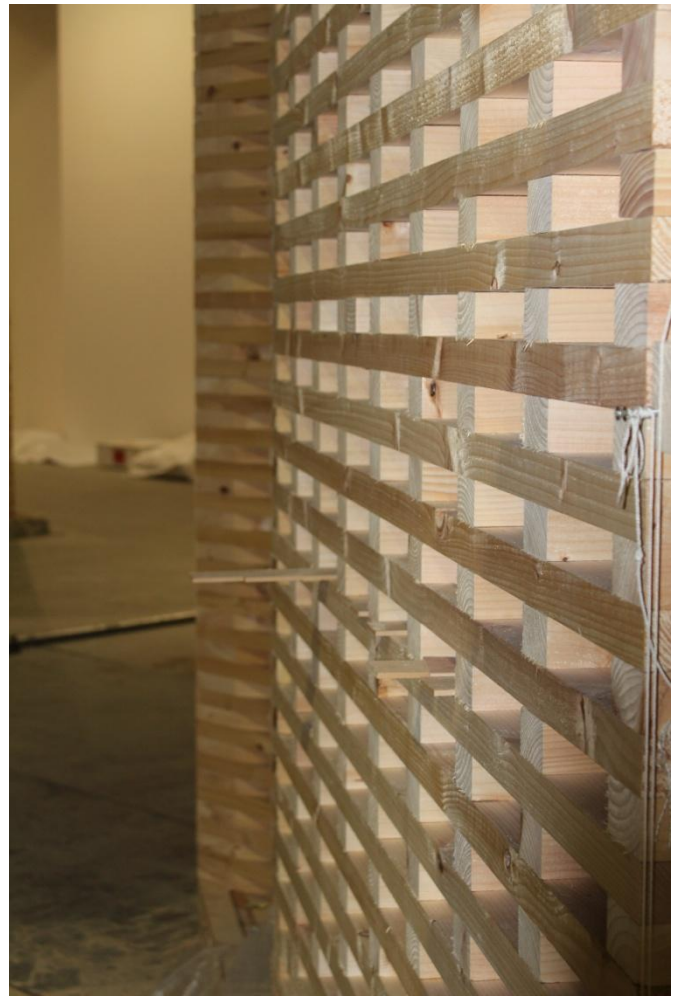




*Controversial newspaper coverage of the project over the decades were displayed along the walls*







*Using pre-cut timber pieces and only the equipment required, Vessel was assembled efficiently by O'Donnell + Tuomey*







*Timber and cast models of the firm's projects*

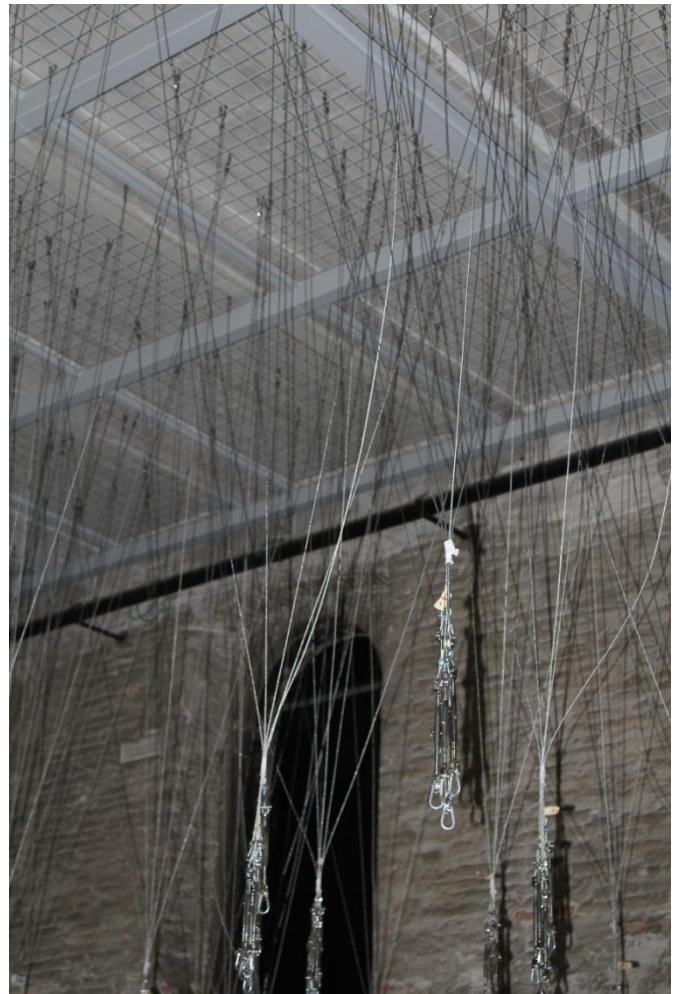
*Timber batons represent tradition brick making and laying, a material that reoccurs in the practice's architecture*







*Robbrecht en Daem with  
M José Van Hee  
architecten displayed their  
work surrounded by woven  
and projection screens*







*Shadows from the suspended interwoven screens*





# *Other international exhibitions*

PHOTOGRAPHIC ESSAY







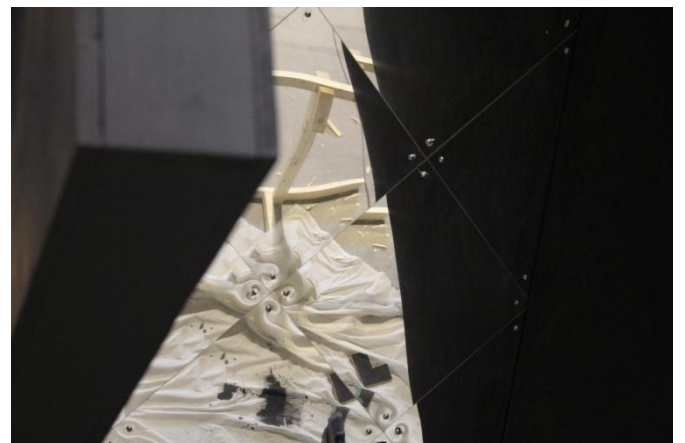
*Boxes from around the world delivered in the first week of August containing the international exhibits*



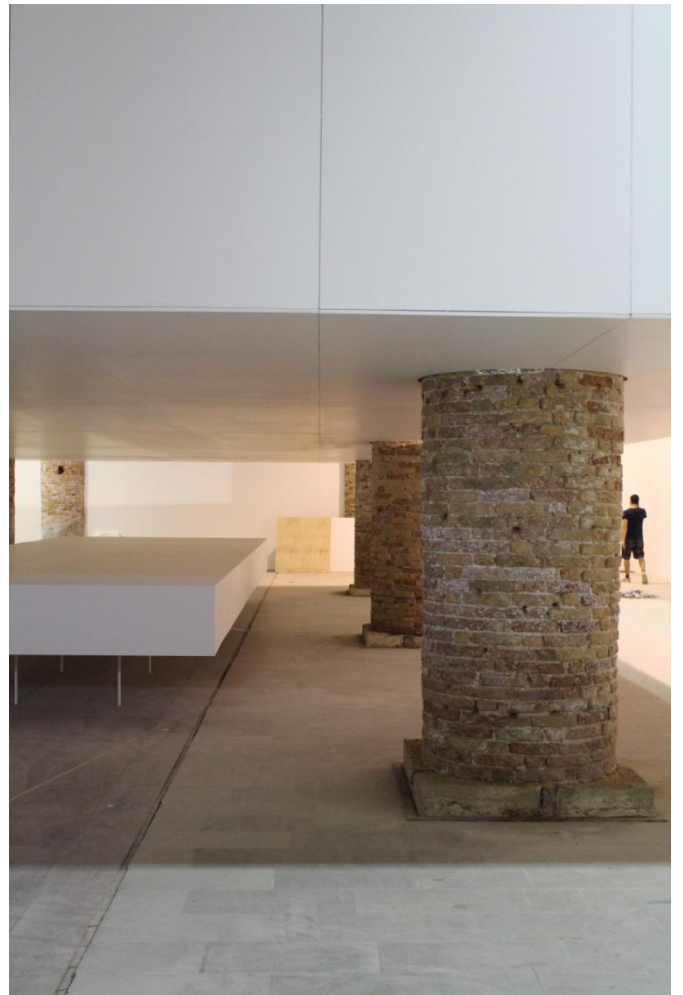
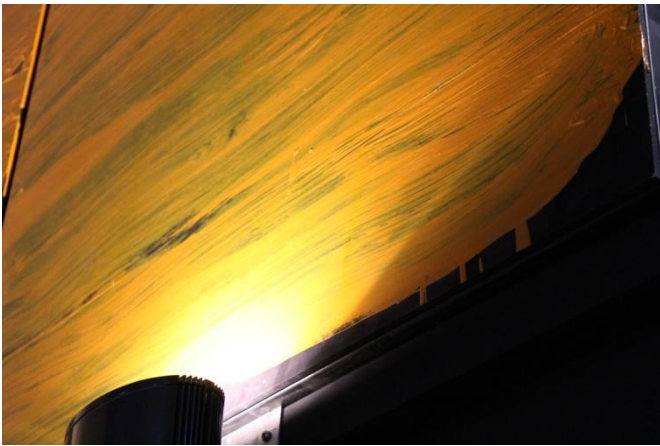
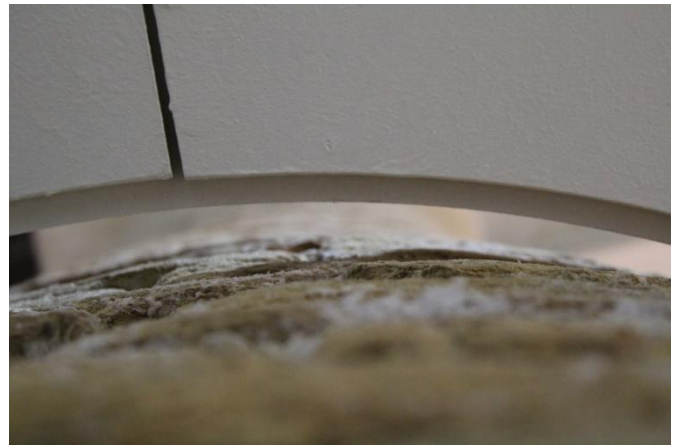
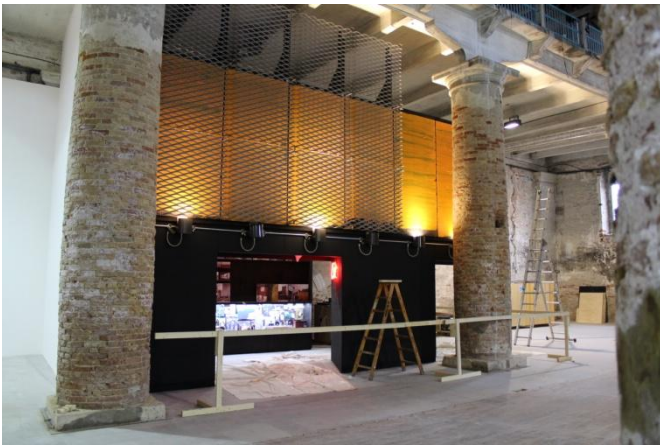




*13178 Moran Street from  
the US set-up their  
temporary house exploring  
university research*







*Valerio Olgiati showcased important photos from high-profile architects under a floating box insertion to the columns*

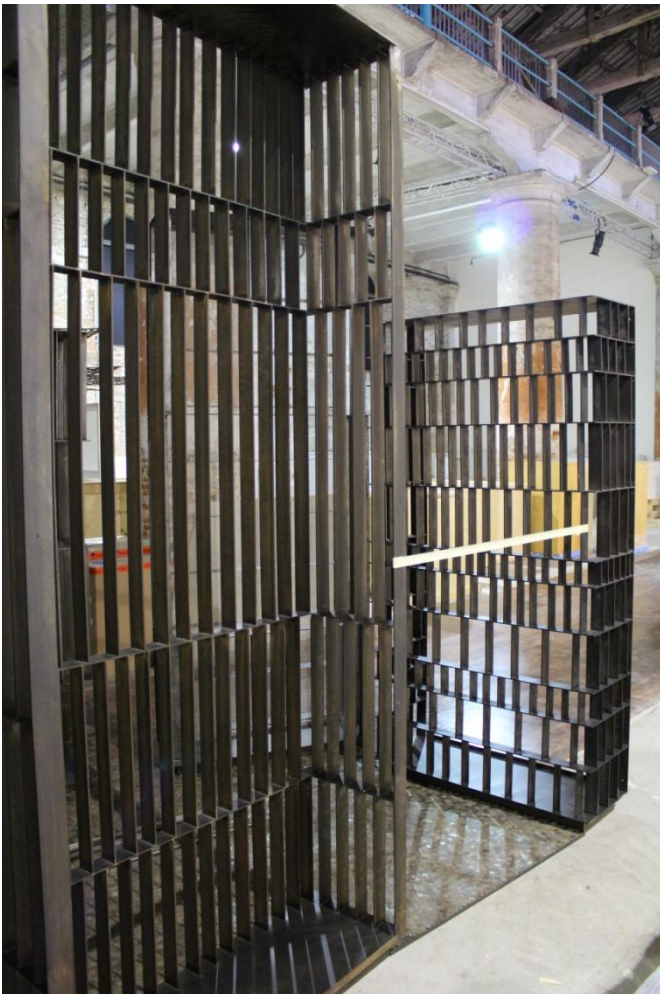


*Floating platform above table*





*Cino Zucchi displayed collections of objects, images and texts relating to history and society*







*Physical study models were the most effective form of communication by the architects in the Arsenale*











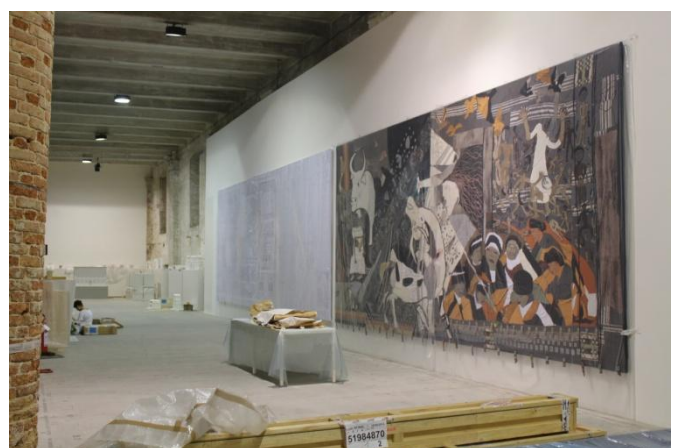
*Numerous white plaster models of renown architecture from around the world were from Hans Kollhoff*



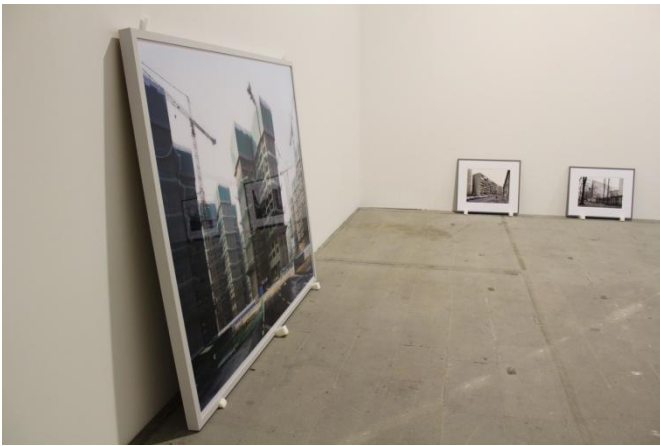




*Scaled replica of Palladio's Villa Rotunda*







*Exhibitions previewed from  
the attic of the Corderie,  
the night before the  
Vernissage opening*



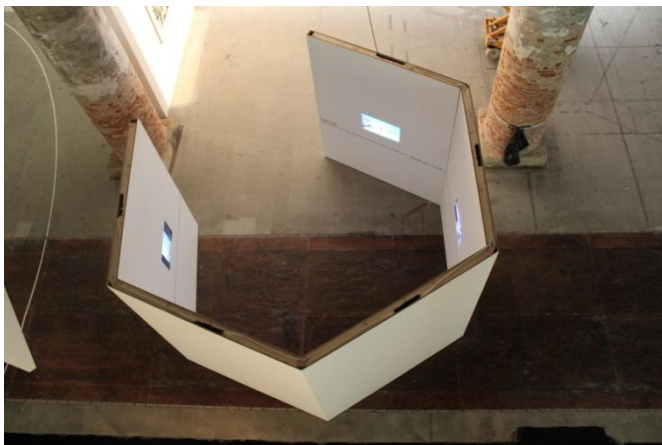
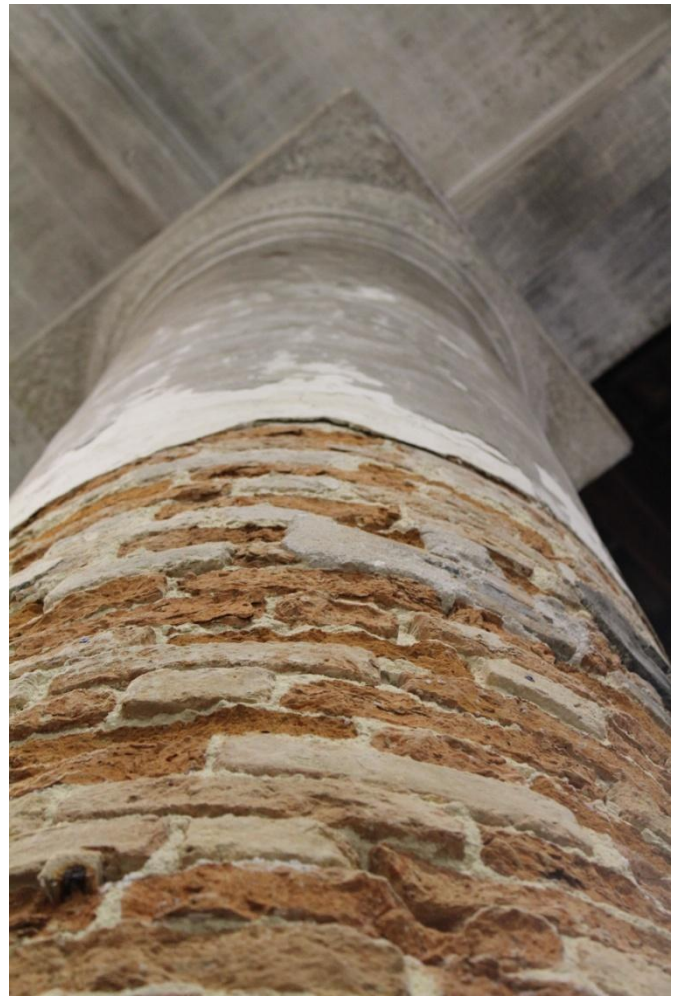
*Gold Lion for Urban Think Tank/Justin McGuirk*



*Projections and video technology were also popular with Norman Foster and Kenneth Frampton*



*Gateway by Sir Norman Foster*



*Opportunity to interview Assistant Biennale Director Kieran Long during the installation period*









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AUSTRALIA

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House  
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*Cover: Enrico Perini (Italian architecture student), Sekar Sokkalingam (Indian craftsman) and Alexandra Kelly (Australian engineering student)*

