



# MPAVILION

## EDUCATION GUIDE

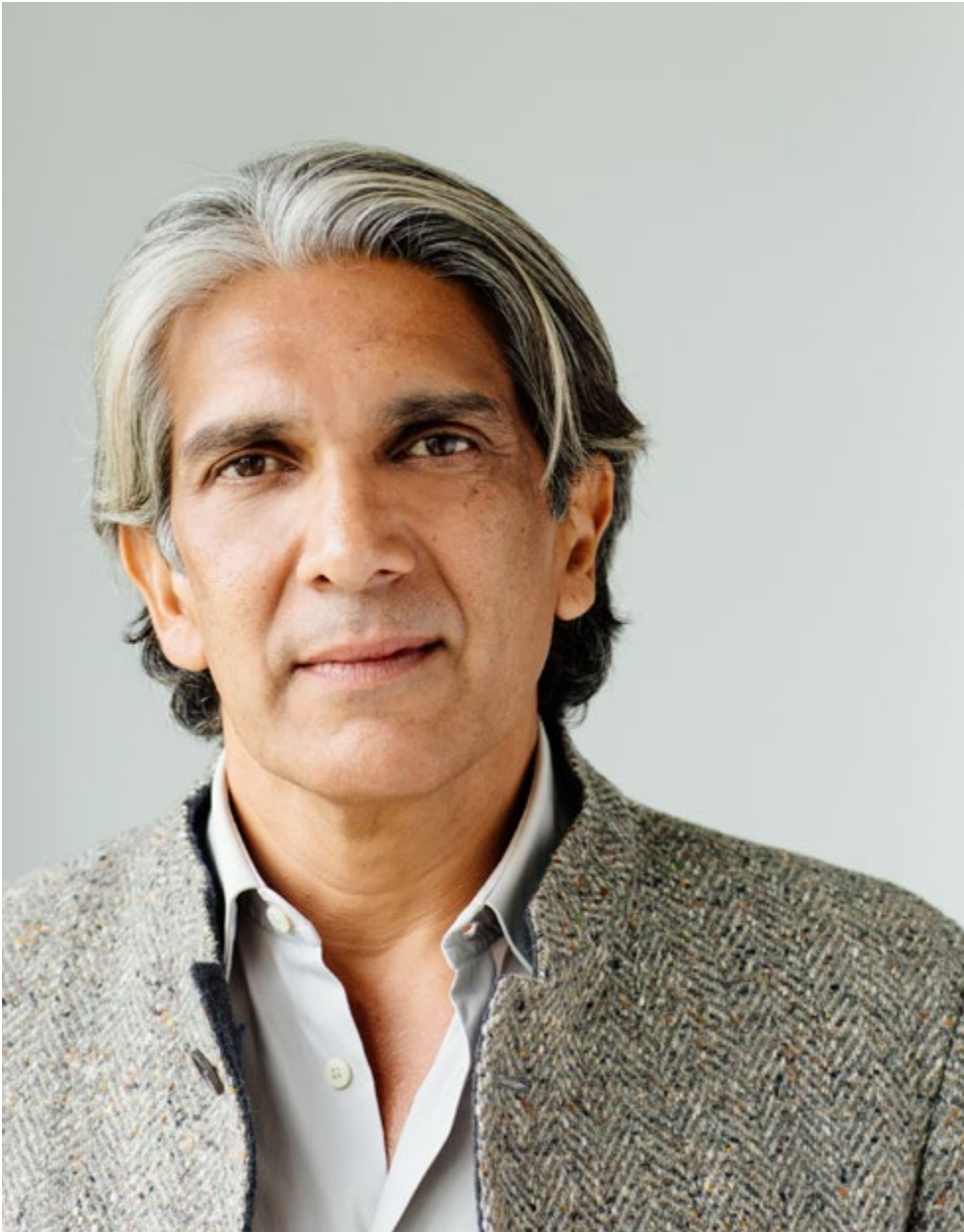
## 2016 BY BIJOY JAIN FOR STUDIO MUMBAI

MPavilion is an annual initiative of the Naomi Milgrom Foundation that, since 2014, has brought leading architects from Australia and around the world to Melbourne to design a temporary pavilion for the Queen Victoria Gardens. Each MPavilion hosts a diverse program of free talks, performances, workshops and educational activities and is open daily during its season.

The ambition of MPavilion is to make architecture accessible as a field of design that is of central importance to the way we each experience the world. The architects invited to design each MPavilion are chosen because they are outstanding in their field and unique in their approach to architectural design. This selection criteria has resulted in each new MPavilion being very different from the last in form, materials and building technologies used. At the close of the season each MPavilion is relocated to a new home. You can visit previous MPavilions at locations across Victoria. The 2016 MPavilion by Bijoy Jain for Studio Mumbai can be visited at the Melbourne Zoo in Parkville, Melbourne.

### How to use this resource

This resource introduces the MPavilion initiative and focuses upon the 2016 edition by Indian architect Bijoy Jain for the firm Studio Mumbai. It is aimed at students in levels/years 3-10 and its content is aligned with Victorian and Australian curriculum descriptors. It is intended as a source of insight for educators to draw upon for use either in the classroom, or to help structure an excursion to MPavilion. Each MPavilion has its own dedicated resource and it is recommended that students visit more than one MPavilion to appreciate the contrasts between the designs of different years.



### About the Architect: Bijoy Jain for Studio Mumbai

Studio Mumbai is a highly regarded architecture firm with offices in Mumbai, India and Milan, Italy. Studio Mumbai is led by Bijoy Jain, its principal architect, and employs a team of architects and craftspeople, including stonemasons and carpenters, which enables the firm to carry out both the design and construction on the majority of its projects.

Bijoy Jain founded Studio Mumbai in 2005, ten years after establishing his own practice, Bijoy Jain & Associates. Jain undertook the first two years of his architectural studies in Mumbai, before transferring to the USA to complete his studies at Washington University in St. Louis, Missouri. Upon completing his qualification Jain began his career working at the offices of noted American architect Richard Meier. In 2010 Studio Mumbai was honoured with a Special Mention at the Venice Architecture Biennale for the installation *Work Place*, a full-scale recreation of the firm's studio and workshop — including maquettes (miniature design models), material experiments, and design drawings. In 2015-16 a major retrospective exhibition of Bijoy Jain's work titled *Between the Sun and the Moon* was co-hosted by Arc en Rêve in Bordeaux, France, Centre d'Architecture in Montréal, Canada, and at the Danish Architecture Centre in Copenhagen, Denmark. Studio Mumbai has won several awards, including the Global Award in Sustainable Architecture (2009) and the Grande Medaille d'Or from the Academie D'Architecture, Paris, France (2014). Jain also lectures on design, and has held positions at several international architecture schools.

Portrait of Bijoy Jain  
Image by Timothy Burgess

## What is architecture?

Put simply, architecture is the art and practice of designing buildings. A person who practices architecture is called an architect, and to become qualified they must have studied architecture at university. The field of architecture is diverse, including very practical buildings, like hospitals, and also highly creative and expressive ones, like art galleries. And very often, the best architectural buildings combine both practicality and creativity together.

## What is a pavilion?

Generally, pavilions are defined by their use as venues for enjoyment or pleasure-related activities such as art exhibitions, music concerts, or as shelters at sporting events. Ordinarily, people don't live or work permanently in a pavilion, and this is reflected in their designs - you are unlikely to ever find amenities such as a kitchen or bedroom in a pavilion. Because pavilions do not need to be functional for day-to-day work or habitation (living), they offer architects unique opportunities to take creative risks and to test experimental designs.

You might already have encountered some examples of pavilions in day-to-day life. For instance, a bandstand in a park, a gazebo in a garden, or a grandstand at a football oval are all different types of modern pavilion. The word 'pavilion' is thought to have developed from two words, the Latin word *papilo*, meaning tent, and the French word *papillon*, meaning butterfly. This is because very early examples of pavilions were large tents with extended fabric sections that were reminiscent of the spread wings of a butterfly. Some of the earliest known pavilions built from permanent materials were Chinese and date back millennia — to 1046-256 BCE!

**Exploration opportunity:** Investigate these historical and contemporary examples of pavilion design from around the world. What characteristics do they share with the Studio Mumbai MPavilion?

- Bamboo pavilion, by Zuo Studio, Taiwan
- Cloud pavilion, by Schmidt Hammer Lassen Architects, Shanghai
- Taoranting Park Pavilion, Beijing
- Serpentine Pavilion, London

## Key design: 2016 Studio Mumbai MPavilion

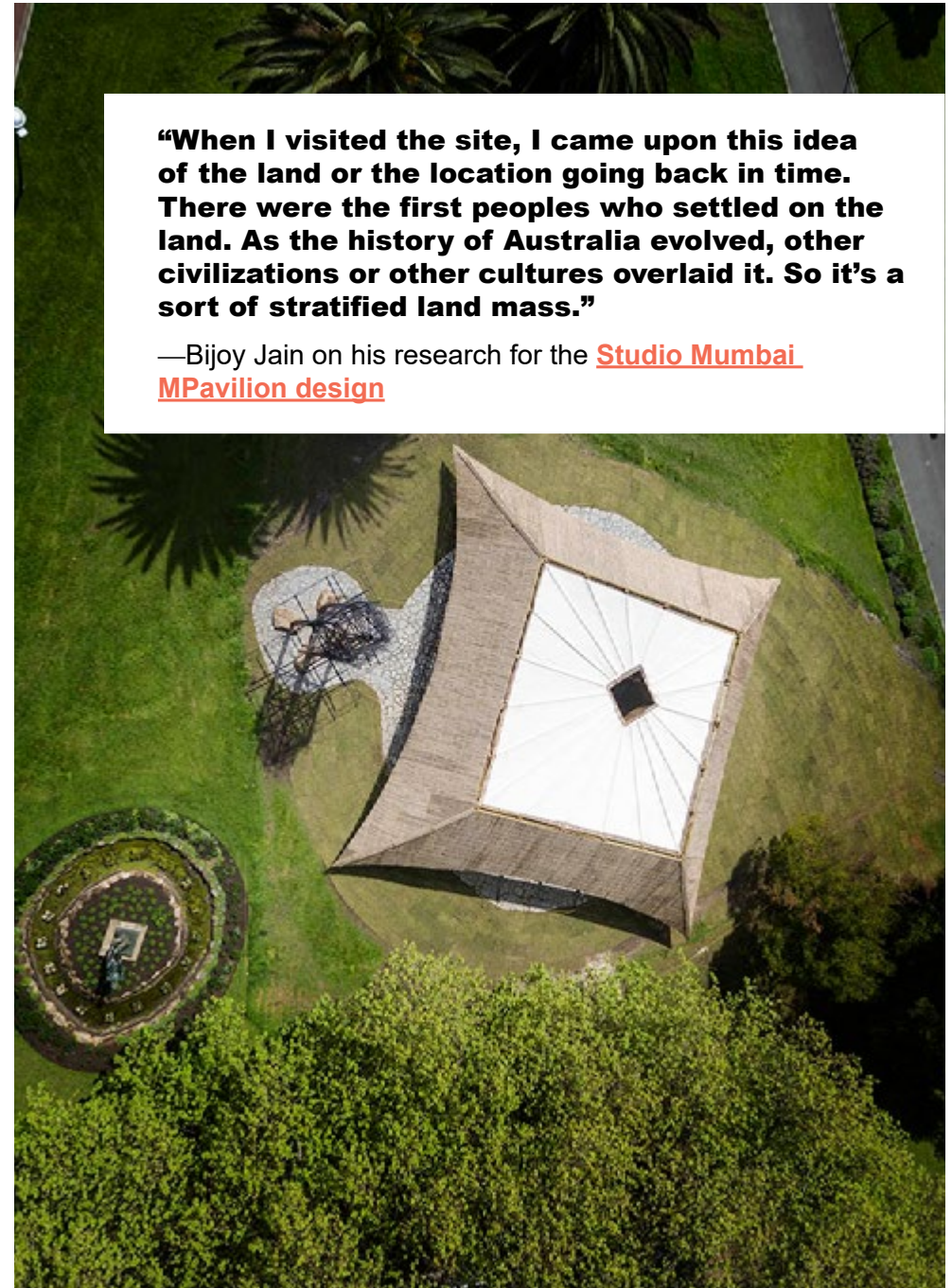
The physical structure and materials of the 2016 MPavilion by Studio Mumbai are inspired by philosophical considerations of place, intercultural understanding, and deep history (meaning in related to the distant past of the human species). When addressing the site of MPavilion, in what is known today as the Queen Victoria Gardens, architect Bijoy Jain's primary consideration was its complex, layered histories. Jain considered both the Indigenous people, who were there first for thousands of years developing culture and knowledge, and the much later Anglo and European arrivals who brought their cultures and knowledge to the same location. Jain responded by designing a pavilion that would reflect this complex historical strata through its structure - by creating a connection between the layered depths of the earth below, the sky and the air we breathe, and the infinite space of the stars above.

At the very centre of the design of the MPavilion is a small gold leaf covered pipe coming up from the ground, which is a water bore. A water bore is an excavated hole that taps into a water table below ground. For many around the world a water bore is an essential utility for the day-to-day necessities of drinking, cooking and bathing. For Jain, the physical connection to water was important as a symbol of the essential connection to water that people from all stages in history share, and as a way to connect to different cultural histories and ancestors.

**"...this is a bore that is actually connecting to time, to our ancestors. That, in a sense, is the genius loci of the site. Everything else around that supports or holds the centre – an imaginary centre – just in the way the human body is constructed."** —Bijoy Jain on the [principles of his pavilion design](#)

**"When I visited the site, I came upon this idea of the land or the location going back in time. There were the first peoples who settled on the land. As the history of Australia evolved, other civilizations or other cultures overlaid it. So it's a sort of stratified land mass."**

—Bijoy Jain on his research for the [Studio Mumbai MPavilion design](#)



*Genius loci* is a term that translates to the spirit of a place, but is used more commonly to refer to a location's distinctive atmosphere. Jain recognised water as the reason that people settle in a place — as a universal need that transcends language, culture and belief — and the elemental source from which the character and atmosphere of a site radiates.

**‘Civilisations are built on aqueous foundations. Cultivation of architecture germinates from this very primordial relationship.’**

—Bijoy Jain quotes on [his inspiration for the 2016 Studio Mumbai MPavilion](#)

In developing the structure of the pavilion Bijoy Jain found inspiration in Tazia — tall, ceremonial structures that are carried in annual parades in India to commemorate saints and are intended to connect living people to the celestial (meaning relating to the sky or visible heavens) realm. Because Tazias reach up from the ground, Bijoy Jain saw their structure as a physical means to connect the earth to the sky. In the original composition of the 2016 MPavilion, the Tazia is represented by a separate tower in close proximity to the main pavilion structure (please note, this section of the MPavilion was not able to be relocated to its new home at Melbourne Zoo). To create a welcoming space in the main part of the pavilion Jain created a low, sprawling roof to provide shelter from and open area for visitors to inhabit, with a central *oculus* (opening to the sky) to allow in light. In combination, with the water bore reaching downward and the Tazia-inspired tower reaching heavenward, the 2016 MPavilion achieves Jain's goal of creating a structure to connect the layers of earth, sky and heavens.

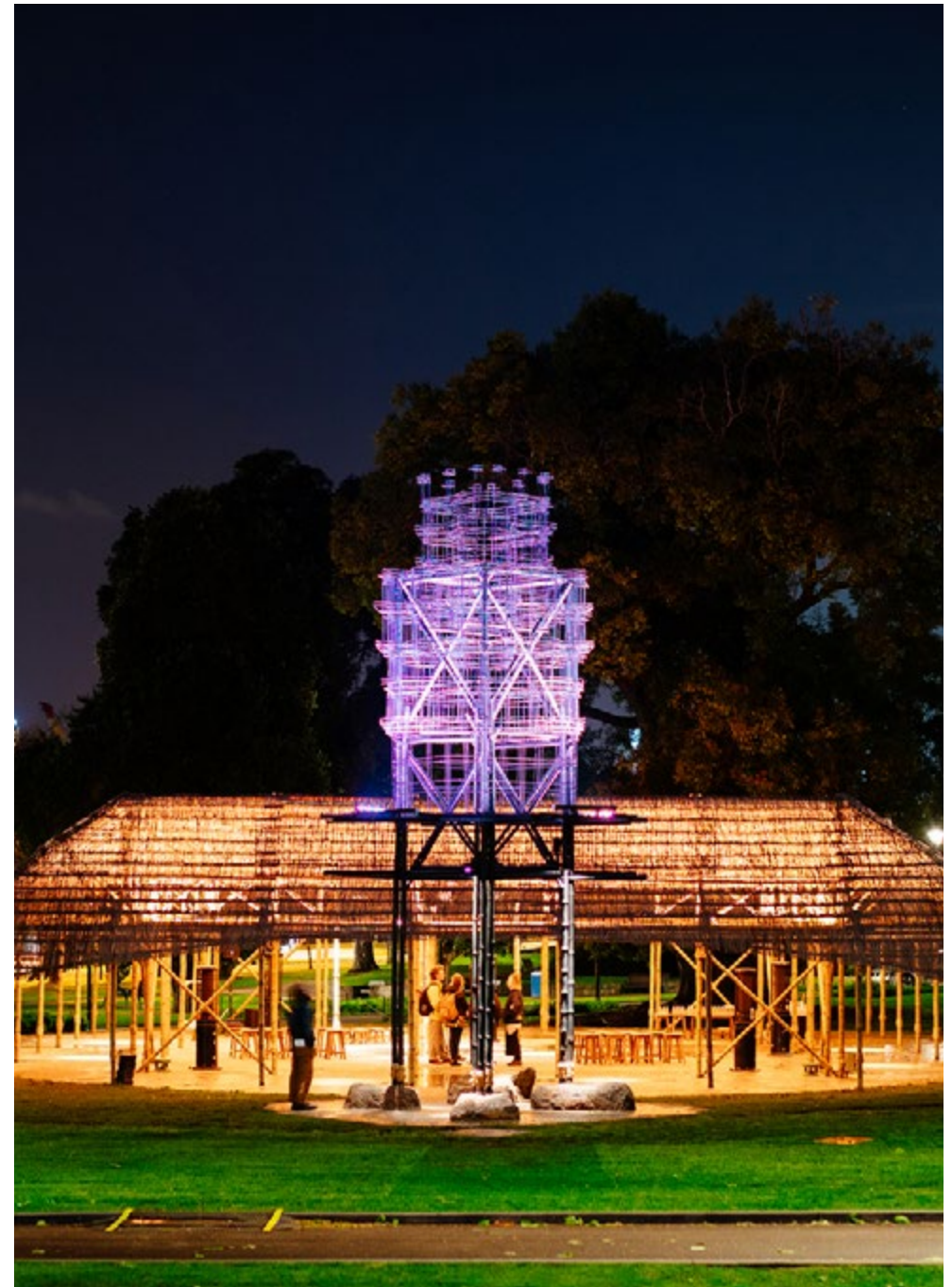


Image by Timothy Burgess

Another priority for Studio Mumbai was to ensure that the 2016 MPavilion reflected the combination of Indian and Australian contexts within its design, construction methods and materials.

This aim was achieved through the strategic combination of building materials and skills sourced from both India and Australia. The bamboo used in the pavilion was prepared by hand by craftspeople working at Studio Mumbai in India, and subsequently transported to Australia. And on the floor of the pavilion is a seamless, smooth floor of cool-grey basalt (also known as bluestone) which was sourced from a quarry in Port Fairy, Victoria. Additionally, the Australian builders who constructed the 2016 MPavilion were flown to India to learn directly from Studio Mumbai's craftspeople how to work with bamboo. In this way the materials, techniques and labour employed to create the pavilion tell a story of two origins coming together to produce one structure that is open for all to enjoy.

### Fascinating facts:

- Before studying to become an architect Bijoy Jain was a professional swimmer and in 1983, as a teenager, swam across the English Channel — a distance of approximately 21 miles (33.7 kilometres)!
- The structures of Tazia are traditionally painted with indigo — a natural deep-blue dye obtained from plants — for its insect repellent properties.



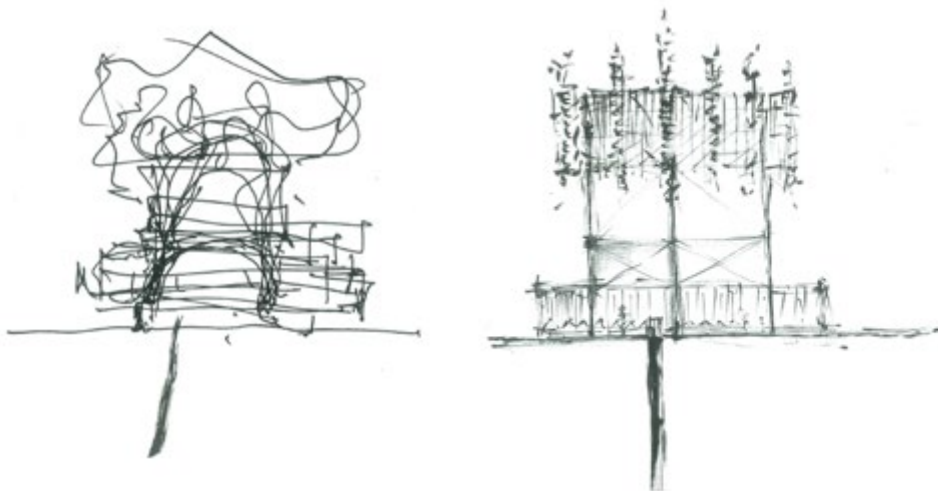
**Image:** Tazia procession passing through Jama Masjid on the occasion of Muharram in Delhi on February 9, 2006.

*Photograph: Ministry of Culture (GODL-India), [https://data.gov.in/sites/default/files/Gazette\\_Notification\\_OGDL.pdf](https://data.gov.in/sites/default/files/Gazette_Notification_OGDL.pdf), via Wikimedia Commons*

## The Studio Mumbai 2016 MPavilion design process

The studio Mumbai design process began with research. Bijoy Jain visited Australia in person and also read about the history of the Queen Victoria Gardens. Through his research he developed his idea to create a pavilion that would connect the site's multiple layers of history.

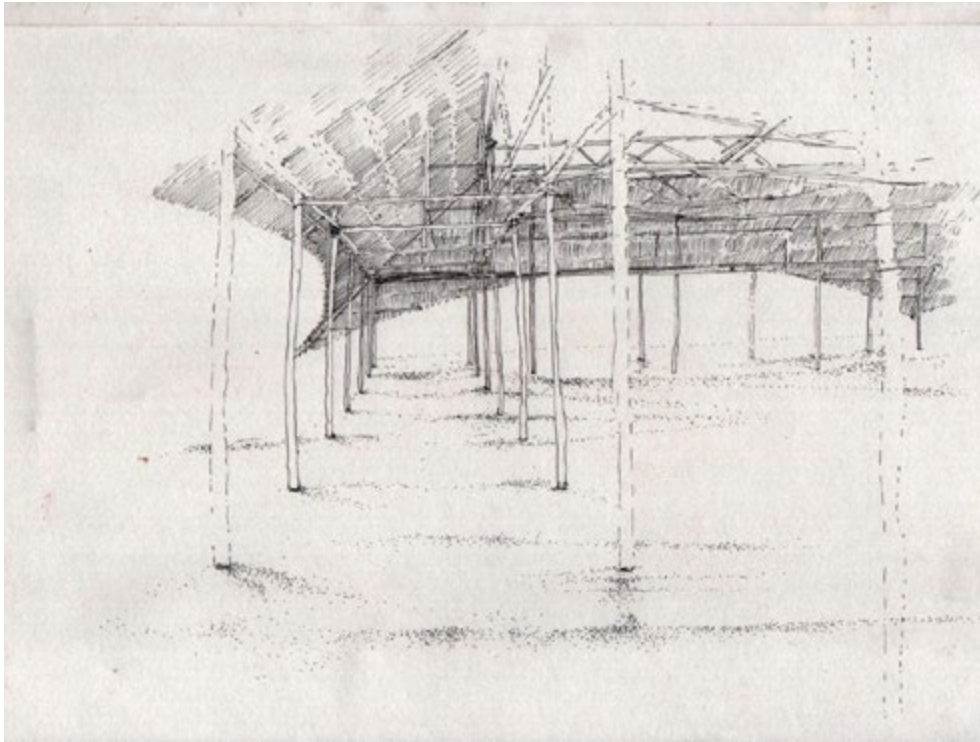
Next Jain generated some initial quick sketches using a brush tip marker — a special type of pen which allows for expressive, gestural mark making.



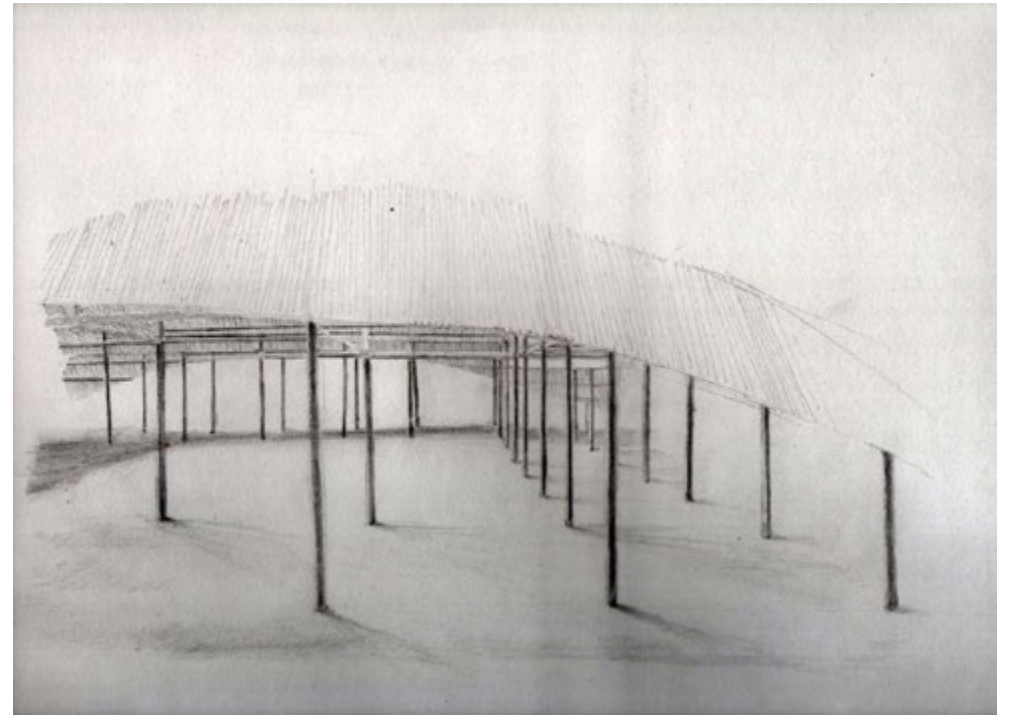
Images of Bijoy Jain's hand sketched plans for the MPavilion.

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These initial sketches were then refined with perspective and detail added through the process. Jain swapped from a gestural drawing style to a more controlled and realistic technique using pen and pencil.



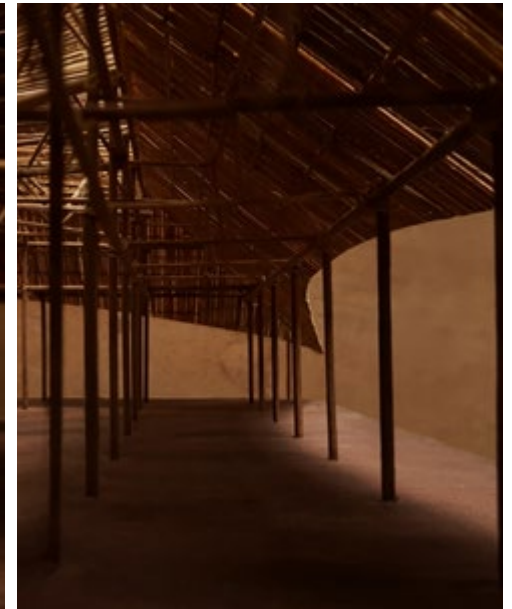
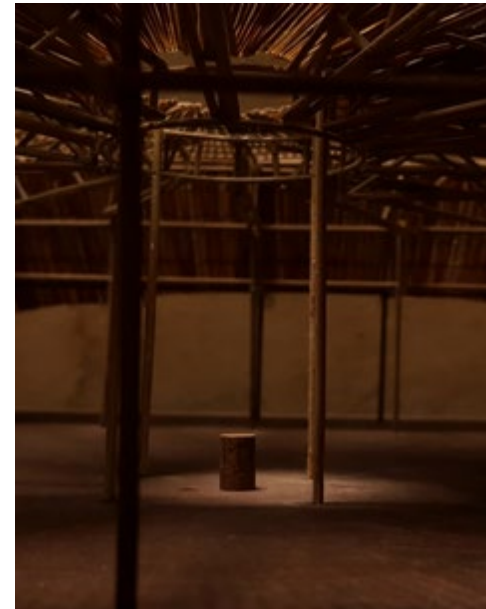
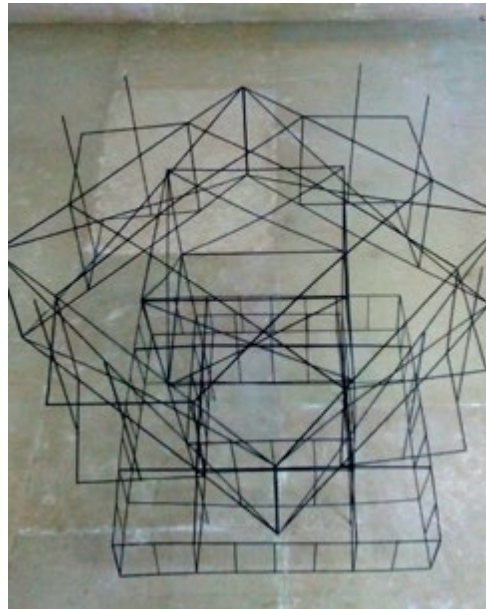
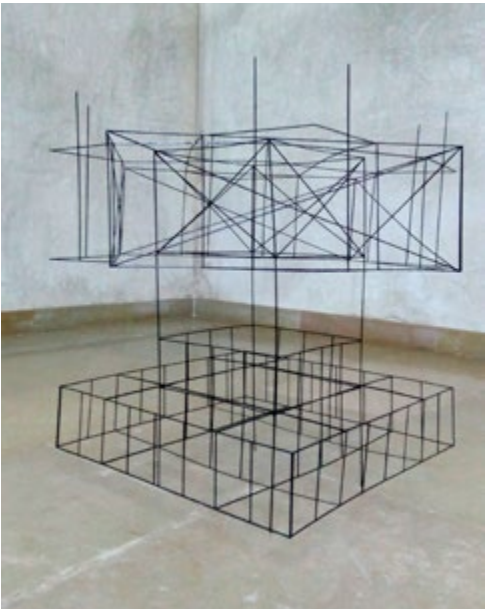
Images of Bijoy Jain's hand drawn plans for the MPavilion in pen and pencil.





## Models

The next stage of the experimental process involved trialing the design using scale models to get an idea of how the final structure would appear in three dimensions. During his time working at the firm of architect Richard Meier Bijoy Jain worked primarily making scale models of Meier's designs, and through that experience learnt the importance of model making for his own design process.



**'The idea of making models is very important because that's how I'm able to see three-dimensional spaces.'**

—Bijoy Jain, on the [importance of models for the development of Studio Mumbai designs](#)

## Engineering

The next step was to adapt a traditional ceremonial Tazia into a piece of architecture. To do this, Jain ordered a Tazia to be made from a town that is known for building them. Jain requested one that was eight metres high — twice the usual size. The Tazia was delivered to Studio Mumbai and from there material and engineering experimentation began.





Finally, a full-scale version of the 2016 MPavilion was built in Mumbai to test engineering and structural solutions. At this stage, the Melbourne-based builders were flown to Mumbai to learn traditional construction techniques for working with bamboo from Studio Mumbai's specialist construction crew. This enabled the Australian builders to bring new skills home to build the MPavilion in a way that was faithful to the origins of the pavilion.



The Studio Mumbai artisans prepared each piece of bamboo for shipping to Australia. This included stripping the timber by hand.

## Construction

Lastly, the pavilion was constructed in the Queen Victoria Gardens. This is when the Australian builders were able to put to use the traditional skills, such as rope tying, they had learnt in Mumbai.



Images by Alan Weedon



## Relocation

At the close of each season the current MPavilion is donated to a Victorian organisation, this is to make space for the next MPavilion. Interested organisations apply to 'adopt' each MPavilion and the most appropriate site is chosen. Recipients of past MPavilions include Monash University, the University of Melbourne and the Hellenic Museum. This strategy means that each previous MPavilion remains available to visit, and Melbourne has also gained an accessible collection of diverse architecture by leading architects.

The 2016 MPavilion can be visited at the Melbourne Zoo, in Parkville. This location was chosen because the Zoo is a site where people of all ages come together to experience nature.

Bijoy Jain was thrilled that this site was chosen, saying “the MPavilion was conceived as a space with the idea of man in nature and nature in man. It makes me happy to see the MPavilion in the setting of the zoo, as it has found its most ideal home.”

The 2016 MPavilion also resonates with its new home because it is constructed entirely from natural materials — primarily bamboo — and so compliments the densely planted grounds of the zoo.



Image by John Gollings

## Inquiry questions:

1. Have you ever been in a building that was built from bamboo before? Do you think bamboo lends the pavilion a different atmosphere than concrete or brick would?

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2. The 2016 MPavilion uses all natural building materials. What reasons would motivate an architect to use natural materials instead of standard ones like brick and concrete?

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3. Bijoy Jain wanted to create a pavilion that would give visitors a sense of connection to the earth below them and the sky above. Do you feel this connection? If so, how?

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## Activity:

The 2016 MPavilion by Bijoy Jain is largely inspired by Jain's desire to create a pavilion that would reflect the cultures of the country from which its design originated, India, and the culture of the place where it was to be built, Australia.

One way that Jain achieved this was by inviting the Australian builders of the 2016 MPavilion to Mumbai, to learn traditional skills from Indian builders and craftspeople. A second way that Jain achieved this aim was by combining Indian and Australian building materials — the bamboo used in the pavilion was specially selected and prepared in India and the bluestone used on its floor was quarried in Port Fairy, Victoria.

Your task is to design a pavilion that brings together Australian culture and the culture of another place by using materials and symbols of Australia and the other country you choose. First, make a list of typically Australian things — eucalyptus trees, boomerangs, and Koalas, for example — some will fall into the category of materials (like eucalyptus leaves and timber) and others will be symbols (like koalas). Then choose your other country to combine in your design and make a list of materials and/or symbols it is known for.

Combine your symbols and materials in an annotated (labelled) drawing that shows how the two cultures are combined in your design. Be highly imaginative, this does not need to be a realistic building. The more unexpected your combination of materials and symbols are the better.

### Excursion tool kit:

- Greylead pencils
- Coloured pencils
- Paper or visual diary
- Hats, sunscreen and water bottles

## Inquiry questions:

1. The use of natural materials and traditional building techniques is a hallmark of Studio Mumbai designs. Where do you think this approach is evident in the 2016 MPavilion?

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2. Bijoy Jain wanted his pavilion design to bring people and nature together by blurring the boundaries between the two categories. What are three ways that Jain has achieved this goal through his design? Consider both the form and materials of the pavilion.

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3. At the centre of the Studio Mumbai MPavilion is a large *oculus* — an opening to the sky. Have you seen another building with an oculus? Evaluate both the pros and cons of having this feature. Consider both practical and conceptual reasons for why the architect may have chosen to include this element of the design.

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## Activity:

To create his MPavilion Bijoy Jain exported both traditional materials and skills to Australia, ensuring Indian and Australian cultures were enmeshed in the final design. It was important to Jain the multiple cultures mixed in his pavilion so that there was a sense of shared experience, which would help a whole range of different people to feel welcome and comfortable in the pavilion.

Your task is to reverse the process. You are to take on the role of an Australian architect who has been commissioned to create a public pavilion in India. You will need to design a pavilion that somehow incorporates Australian culture within an Indian context. To do this, draw a plan for your pavilion and specify what materials, techniques and cultural inspirations your design will draw upon. Write a brief accompanying paragraph (100 words) that outlines your rationale and strategy for satisfying the brief.

## Excursion tool kit:

- Pens and pencils
- Loose leaf paper, digital device or visual diary
- Hats, sunscreen and water bottles

**Primary school**

**Australian curriculum links:**

Design and Technologies / Processes and Production Skills  
 + Knowledge & Understanding: ([ACTDEP017](#); [ACTDEP019](#))

- Evaluating, revising and selecting design ideas, based on criteria for success and including consideration of ethics, social values and sustainability
- Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use.

**Victorian curriculum links:**

Design Technologies / Technologies and Society: ([VCDSCD031](#); [VCDSTS033](#))

- Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment and communities.
- Investigate how people in design and technologies occupations address competing considerations, including sustainability, in the design of solutions for current and future use.

**Extension materials**

- [Time-lapse footage documenting the development of the 2016 Mpavilion at Studio Mumbai’s workshop in India](#)
- [Short film showing the 2016 MPavilion from above](#)
- [MPavilion commissioner Naomi Milgrom on her reasons for selecting Bijoy Jain to design the 2016 MPavilion](#)
- [A video showcasing the ‘Copper House’ by Studio Mumbai - winner of the BSI Swiss Architectural Award 2012](#)
- [The furniture and object designs of Studio Mumbai showcased on the Dezeen website](#)

**Secondary school**

**Australian curriculum links:**

Design and Technologies / Processes and Production Skills:  
 ([ACTDEP038](#); [ACTDEP048](#))

Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability

- Developing criteria for success to evaluate the success of designed solutions in terms of aesthetics, functionality and sustainability.
- Critique needs or opportunities to develop design briefs and investigate and select an increasingly sophisticated range of materials, systems, components, tools and equipment to develop design ideas.

**Victorian curriculum links:**

Design and Technologies / Technologies & Society / Technologies Contexts:  
 ([VCDSTC048](#); [VCDSTC059](#))

- Analyse ways to create designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment.
- Investigate and make judgements on how the characteristics and properties of materials, systems, components, tools and equipment can be combined to create designed solutions.



## Planning your visit

The 2016 MPavilion is located on the grounds of the Melbourne Zoo, Parkville. For venue information please [visit their website](#).

The MPavilion changes each year, and up until 2020 the location in the Queen Victoria Gardens remained the same. However, to account for Covid-19 restrictions an innovative new model has been developed for 2020 that will see all the previous MPavilions used as venues for artistic commissions and events. This is instead of a new MPavilion being built. The next MPavilion in the series will be commissioned for 2021.

You can plan your visit to coincide with education-centred events for students and teachers by checking [here](#).

The full-to-bursting program of free events for the general public can also be accessed [here](#).

## Next steps

All but one of the previous MPavilions have been relocated to new locations within Melbourne and are available for viewing, most at no cost.

**2019** MPavilion by Australian architect Glenn Murcutt is soon to be relocated to **The University of Melbourne, University Square, Carlton** in early 2021.

**2018** MPavilion by Spanish architect Carme Pinós is soon to be relocated, watch this space.

**2017** MPavilion by Rem Koolhaas and David Gianotten for OMA can be visited at the **Clayton Campus of Monash University, Melbourne**.

**2015** MPavilion by British architect Amanda Levete for AL\_A can be visited at **Docklands Park**.

**2014** MPavilion by Australian architect Sean Godsell can be visited at the **Hellenic Museum**.

## Acknowledgements

This resource was written and compiled by Andrew Atchison for MPavilion, February 2021.

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