



MPAVILION

**EDUCATION
GUIDE**

2015 BY AMANDA LEVETE OF AL_A

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. You can visit the 2015 MPavilion by AL_A at the Docklands Park in Melbourne.

How to use this resource

This resource introduces the MPavilion initiative and focuses upon the 2015 edition by British architect Amanda Levete for the firm AL_A. 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: Amanda Leveté

Amanda Leveté is an acclaimed British architect and founder of London-based architecture firm AL_A. Leveté was born in Brigend, Wales, and left school at sixteen before studying at the Architectural Association School in London. After graduating, Leveté's first professional position was with Richard Rogers Partnership, before becoming a partner at Future Systems from 1989-2009, and establishing her own architectural practice in 2009.

Leveté is deeply invested in the idea of risk as a positive force within the architecture. The use of non-traditional materials and technologies is a hallmark of AL_A projects, as are experimental designs that involve much trial and error, and the risk of failure, along the path to success. Leveté believes in taking risks in order to create architecture that advances debate around how buildings can be conceived, constructed, and inhabited.

Leveté is influential on the current generation of emerging architects and has lectured throughout Britain, Europe and the USA. Leveté is a regular guest of radio broadcasts, has appeared on television, and contributes articles to Prospect and New Statesman magazines. AL_A has received significant honours, including two in 2018 from The Royal Institute of British Architects (RIBA), the London Building of the Year and the London Award.

Portrait of Amanda Leveté
(Image by Peter-Guenzel)

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 do they have in common with the AL_A MPavilion?

- Serpentine Pavilion
- Spanish Pavilion for the Brussels Exhibition, by Corrales and Vazquez Molezún
- Taoran Pavilion
- Royal Pavilion at Schloss Sanssouci

Key design: 2015 AL_A MPavilion

Taking the form of a collection of slender, plant-like structures, the 2015 MPavilion by AL_A is an unusual type of building. The pavilion comprises a conglomeration (meaning a group of separate elements brought together to form a single thing) of ninety-five closely grouped columns supporting forty-three horizontal, petal-like panels that interconnect with one another to create a complex, unwalled structure.

A key inspiration for design of the 2015 MPavilion is the Licuala Palm, or Australian Fan Palm, which is endemic (meaning native to a particular place) to Queensland's northern rainforests. Licuala palms grow in dense groups, and their broad, translucent, fan-like leaves overlap to create a delicate canopy that acts as a natural sanctuary from sun, heat and rain. The AL_A MPavilion adapts the palm's multi-part structural organisation to create a high-tech shelter, under which people can gather to socialise, relax and attend performances.

The AL_A MPavilion uses synthetic materials to simulate the experience of a natural palm canopy in two remarkable ways. Firstly, when the wind blows the flexible stalks of the Licuala Palm bend and then return to their upright position, adapting harmoniously to weather conditions. To recreate this dynamic, the upright columns that support the MPavilion roofing panels are made from carbon fibre, a material made of strong, thin crystalline filaments of carbon with a high level of resilience to flexure (meaning to flex or bend). This allows the columns to sway in the wind without cracking or breaking. Secondly, the broad, thin plates that form the roof of the pavilion are made from fibreglass, a plastic resin that is reinforced with glass fibres. Fibreglass was chosen because it can be manufactured in thin, translucent sheets that filter daylight to recreate the dappled light that one experiences beneath a natural canopy.



“I wanted to ... produce a design that speaks in response to the weather. Rooting the pavilion in its parkland setting, I looked to create the sensation of a forest canopy in the heart of the city that gives shelter to a program of events.”

—Amanda Levete, [architect's statement](#)

“The MPavilion’s real imprimatur is to experiment..”

—Naomi Milgrom AC, MPavilion founder and commissioner

[> Watch the video](#)

The word imprimatur means the function of a person or organisation to give permission for an activity to occur. Here Naomi Milgrom, the founder of MPavilion, is saying that the MPavilion program permits architects to explore experimental approaches. This is relevant to Milgrom’s choice to commission AL_A to design the 2015 MPavilion because Amanda Levete’s design ethos (guiding principle) is to experiment with her buildings. Levete considers risk not as something dangerous or negative, but as a positive opportunity to achieve something new and special.

Because the 2015 MPavilion employed high-tech materials in new and untested ways, AL_A chose to collaborate with engineering firm ARUP and plastic specialists MOULDcam. The choice to work with others was both a risk and an experiment because if any part of the collaboration failed then the pavilion would have been in danger of not being completed. However, if AL_A had not made this choice they would not have been able to realise their ambitious design. Because the architects were brave and took this risk, we can enjoy the result. In this way, the 2015 MPavilion embodies both AL_A’s positive attitude to risk, and MPavilion’s mission to support bold architectural experimentation.

Fascinating facts:

- Immediately after leaving school Amanda Levete wanted to be an artist and enrolled in the Hammersmith School of Art. However, once there she discovered architecture through reading and realised her true passion lay in designing buildings.



Image by John Gollings

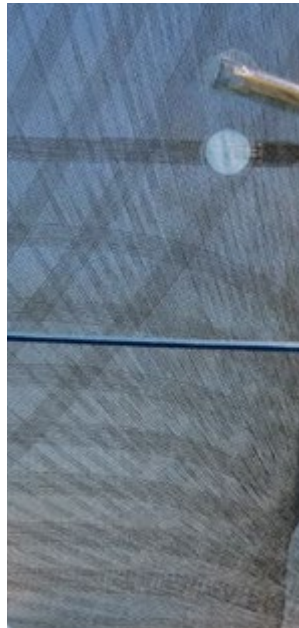
“..collectively, we have the ability to solve problems that we don’t even know exist. Using our powers of persuasion to advance the debate (is) part of the complex process of design, and it’s this that gives me a sense of purpose as an architect. It’s how we should reclaim, and learn to celebrate, risk in architecture.”

—Amanda Levete, AL_A,
on the changing role of risk in architecture

[> Watch the video](#)

The AL_A 2015 MPavilion design process

ALA_A began their design process by choosing an inspiration - tree canopies. They then researched different kinds of forest canopy, and collated images as visual references for their architectural concept. This is how they discovered the Licuala Palm, which became a key inspiration.



“(I was inspired because) a tree canopy is a natural place for people to gather. It’s a natural place for people to sit when they want shade, it’s a place to retreat to when it rains...”

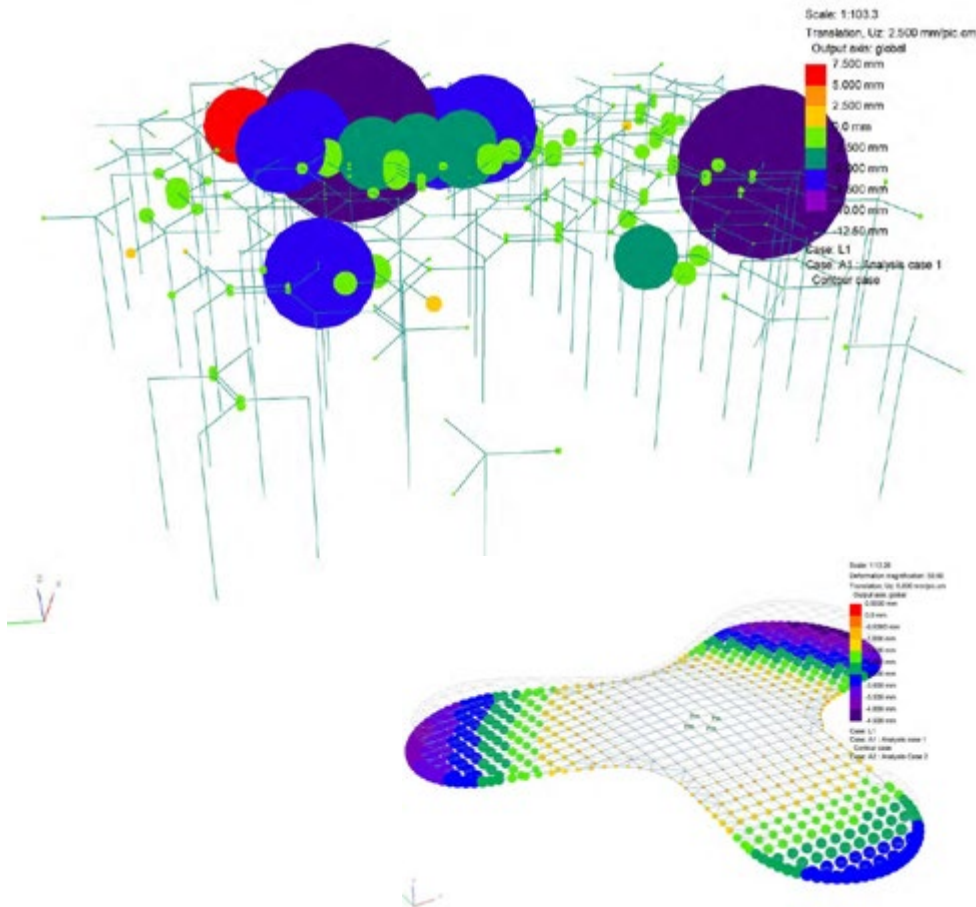
— Amanda Levete, on collaboration

[> Hear more](#)

AL_A then assembled a proposal to present to Naomi Milgrom for her approval and feedback. This document included digital renders to help communicate the idea for the design visually.

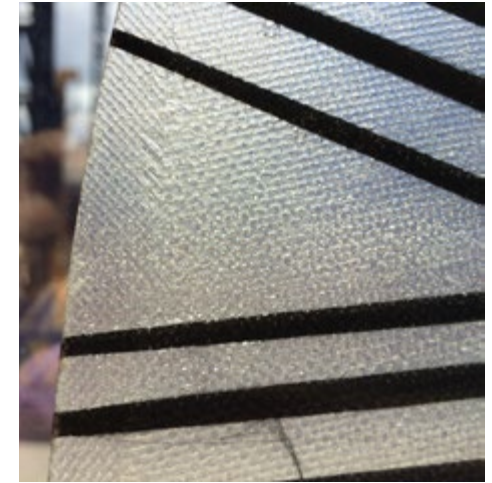
Engineering

Next, the design was shared with ARUP, an engineering company who generated diagrams to help understand how the structure would handle weight, weather and wind. You can see in this image how stress is represented using colour - the more stress is present the warmer the colour.



Physical prototypes

Physical prototypes were then made by collaborators MOULDcam, who specialise in plastics for architecture, sculpture and sailing. To achieve the strength, flexibility and thinness required by the roof panel design unique fibreglass panels were developed with strands of carbon fibre incorporated in a radiating pattern.



Testing

Once prototyping was finished and components had been produced, sections of the pavilion were assembled off-site so that any construction issues could be fixed and lighting could be tested.



Construction

Lastly, the pavilion was installed in the Queen Victoria Gardens where it remained for five months hosting performances, talks and a café.



Image by Timothy Burgess



Image by Rory Gardiner

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 MPavilions include the Melbourne Zoo, Monash University 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 2015 MPavilion can be visited in Docklands Park. This location was chosen because the open space of Docklands Park is similar to that of the Queen Victoria Gardens. This was important because the concept for the AL_A MPavilion relates to the experience of being within an expansive green forest, and so a large park is an appropriate context for its new home.



Image by Simon Terrill, from the photo essay 'A Second Life'

Inquiry questions:

1. Have you ever been in a building without walls before? Why would an architect want to create a building without walls?

2. The design of this MPavilion is inspired by a particular plant. What kinds of flora have a similar structure? Where can you see similarities between plants in the structure of this pavilion?

3. The architects wanted the 2015 MPavilion to have the appearance of dissolving into its surrounds. What are good reasons for creating this design, and what questions do you have? List three of each.

Activity:

The inspiration for the AL_A pavilion was the experience of being beneath a vast forest canopy. The architects researched different kinds of canopy and collected images to help them to arrive at their design.

Your task is to design your own pavilion using something from nature as your inspiration - think about geology, botany, topology and biology. For example, you might choose geology and base your design on the structure of crystals or rocks. This project can be done individually or in pairs.

Research your chosen inspiration and collect at least five images or if you are on an excursion look around you for something from your surroundings to use for inspiration - leaves, rocks or plants.

Now, draw your pavilion. Trial different ways of adapting the features of your inspiration into a pavilion. For example, if you chose a gum leaf, maybe your pavilion will curve like a gumleaf. Remember, pavilions can be wildly experimental so don't be limited by practicality. Choose the best drawing and add detail. Label different features of the building to show its scale, materials, and entrances and exits. Lastly, consider the materials your pavilion is built from, and how you can make it environmentally friendly.

Excursion tool kit:

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

Inquiry questions:

1. Amanda Levete values innovation and risk in architecture. What other buildings have you visited that you would describe as innovative or daring in their design?

2. What do you think is 'risky' about the AL_A design? Analyse the ways that MPavilion is both similar and different to a traditional building. List three observations for each category.

3. What is unique about the 2015 MPavilion? Write a five sentence mini-review of the design as if you were a journalist for an architecture journal. Convey your experience of the pavilion for your readers and present a point of view. Your review can be critical but your argument must be justified and balanced (i.e. not only opinion).

Activity:

An important part of architectural practice is being able to persuade others that your design is worth commissioning. First, describe what kind of MPavilion you would design if you were invited by Naomi Milgrom to propose an idea. Second, write three convincing reasons why your pavilion design should be commissioned. It is a good idea to think from the commissioners perspective, what do you think they will be unsure about? Target these features and build a succinct argument for each. Consider how you can maximise the sustainability of your design.

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:
([ACTDEP015](#); [ACTDEP025](#))

Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques.

Victorian curriculum links:

Design Technologies / Technologies and Society:
([VCDSTS023](#); [VCDSTS033](#))

Recognise and investigate the role of people in design and technologies occupations and explore factors, including sustainability, that impact on the design of solutions to meet community needs for future use.

Secondary school

Australian curriculum links:

Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment:
([ACTDEK034](#))

Investigating and selecting from a broad range of technologies – materials, systems, components, tools and equipment – when designing for a range of technologies contexts.

Victorian curriculum links:

Design and Technologies / Creating Designed Solutions / Evaluating:
([VCDSCD052](#); [VCDSCD063](#))

Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability and evaluate design ideas, processes and solutions against comprehensive criteria for success recognising the need for sustainability.

Extension materials

- [Amanda Levette discusses the 2015 AL_A MPavilion](#)
- [Footage showing the 2015 MPavilion at sunset](#)
- [AL_A associate architect Alex Bulygin discusses the 2015 MPavilion during construction](#)
- [Amanda Levette discusses risk in architecture, MPavilion and past ALA_A projects](#)

Planning your visit

The 2015 MPavilion is located at Docklands Park, 770 Collins Street, Melbourne, and is accessible 24 hours 7 days.

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 the MPavilion website: mpavilion.org

The full-to-bursting program of free events for the general public can also be accessed at mpavilion.org/program

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 can be visited at **The University of Melbourne, University Square, Carlton**

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

2017 MPavilion by Dutch architects Rem Koolhaas and David Gianotten of OMA can be visited at **Monash University, Clayton campus.**

2016 MPavilion by Indian architect Bijoy Jain for Studio Mumbai can be visited at the **Melbourne Zoo** (Ticketed admission).

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, September 2020.

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