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## Media Release



### The architecture of spaces: meeting the vision for a new learning model

Sydney

WMK Architecture has delivered a truly innovative approach to school design with its brand new learning and social space at the heart of Northern Beaches Christian School (NBCS) in Terrey Hills. The new educational facility is a world-class, open space designed to enable personal, authentic, and customised teaching.

“Our aim is to make learning deep, engaging, relevant and fun,” said Stephen Harris, NBCS Principal. “We wanted a building that will inspire our students.”

WMK’s design comprises a sequence of multi-level pavilion buildings beneath a spectacular 3,000 square metre intelligent living canopy which generates energy, harvests rainwater, and cools the spaces below.

Under the soaring 11 metre high canopy, the notion of a classroom is superseded by indoor and outdoor collaborative spaces, designed for multiple learning modes and non-hierarchical interaction.

“Our goal was to reinvent the notion of what a school building should be and create an environment that actively shapes a new culture for learning,” said Greg Barnett, Managing Director, WMK Architecture.

The pavilions accommodate interactive learning spaces, laboratories, student support facilities, and reception and administration. A separate canteen under a ‘treehouse’ seating platform forms the centrepiece.

Balconies, seating nodes, oversized steps, and timber platforms are all wired for technology and allow for endless configurations beneath the canopy. The cafeteria creates a social meeting place and the outdoor stage and large screens complete the active, adaptable heart of the school.

“We’ve created an architecture of spaces – not just buildings – which define the heart of the school campus and lead the way for innovative learning in Australia and worldwide,” added Barnett.

The project is a highly successful collaboration of education and built environment vision, delivering a unique learning environment that identifies with the learning style of the next generation.

#### Ends

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#### For more information and photographs

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#### About WMK Architecture

With offices in Sydney, Melbourne and Brisbane, WMK is an award-winning architecture and interior design firm serving a wide spectrum of business and lifestyle clients. WMK has gained a reputation for delivering value and results through innovative design, responsive performance, and intelligent commercial solutions.

[wmkarchitecture.com](http://wmkarchitecture.com)

## 2. Project Background



## Project Background

### Vision

WMK's latest design in educational built environments for Northern Beaches Christian School [NBCS] signals the 'school of the future', delivering the school's far-reaching vision for a new learning paradigm that fosters self-directed learning.

Under a soaring 11m high, 3000m<sup>2</sup> canopy, the notion of a classroom is superseded by indoor and outdoor collaborative spaces designed for multiple learning modes and non-hierarchical interaction.

WMK collaborated closely with Northern Beaches Christian School's principal, Stephen Harris and leading educators to understand how the built environment could support and contribute to the new learning model that the school pioneers.

### Designed environment

WMK has created an overarching canopy structure that echoes the surrounding eucalypt trees, directing light and shade, with tapered, three-storey high concrete columns and steel roof trusses supporting a stepped semi-transparent roof. The scale of the canopy and the refined use of concrete and timber in the interconnecting pavilions, ramps and bridges beneath, evokes a sense of playfulness alongside grounded strength.

Three multi-level pavilion buildings sit beneath the canopy structure in a visually dynamic environment. The pavilions accommodate interactive learning spaces, science laboratory and student support facilities, and the main reception and administration. A canteen pod building takes centre place with its 'treehouse' platform anchored back to the learning spaces via a bridge.

Using balconies, seating nodes, oversized steps, and timber platforms - all wired for technology - WMK has created endless configurations for performing, learning and studying, fully utilising external space under the canopy. The centrally-located cafeteria pavilion creates a meeting place for students, teachers, parents and visitors alike and an outdoor stage and large screens complete the active, adaptable heart of the school.

### Sustainability

The canopy structure is also an intelligent 'living' structure which generates energy, harvests rainwater, and cools the spaces below. The column design reticulates rainwater to underground collection tanks and then can feed stored rainwater back up to the canopy misting system. WMK has designed for maximum use of natural light and ventilation, and windows and louvres in the building and canopy are automated to provide ventilation in direct response to climate conditions using a sophisticated Building Management System. The sustainability initiatives incorporated throughout the new built environment deliver beyond carbon saving and economic benefits however, engaging students in monitoring the resource efficiencies including waste, and leading the 'new normal' through active learning.

## **Learning spaces**

The buildings provide a careful mix of scaled spaces – from double height open learning areas that share teacher workspaces to intimate sanctuaries where small groups or individuals can work when they need a quiet space. Interestingly, WMK has designed a school environment using activity-based design principles usually developed for workspaces, with no restrictions on whether students or teachers use the space. This approach responds to important aspects of the school's learning model wherein students are entrusted to determine their own learning space and teachers are housed in the same shared spaces.

All learning spaces have been planned to overlook the outdoor canopy area, providing a visual link into and from class activity. Students' have their creative thinking on display in the new glazed and light-filled science lab, and this is also encouraged by the custom 'writable' tables, benches and walls. In the senior learning centre WMK's innovative pod stations and custom freeform worktables have proven a favourite for group thinking, oversized chairs encourage individual thought time, while window benches might suit the focussed laptop user.

The shared environment is reinforced in built form from the top down, with Principal Stephen Harris leading a 'no offices' approach and locating his workspace in the midst of the teachers' open-plan area. WMK has found that designing-in work transparency such as this, leads to increased knowledge transfer and is a key component of a healthy learning culture, bringing organisational benefits on many levels.

## **Leading education innovation**

The school's new buildings and structures provide a new education dimension that is not so much studying as knowledge cross-pollination in a vibrant, learning lifestyle, while still providing the guidance of a close school community.

It's still early days but students have taken instantly to the new environment, encouraged to discover favourite places to work and interact.

In a highly successful collaboration of education and built environment vision, the architectural design delivers a unique learning environment that identifies with the learning style of the next generation. Its focus is to engage young adults and re-shape our thinking about how school buildings can be used to actively promote better learning and prepare students for future work environments.

### 3. Project Fact Sheet





## Project Fact Sheet

### Key Facts

<b>Project Name</b>	Northern Beaches Christian School	<b>Address</b>	1 Echunga Road, Terrey Hills NSW 2084
<b>Project Type</b>	Education		
<b>Client</b>	Northern Beaches Christian School		
<b>Client Lead</b>	Stephen Harris, Principal		



### Project Details

<b>Project scope</b>	Stage 1 - Administration Building <ul style="list-style-type: none"> <li>&gt; Reception &amp; waiting, offices</li> <li>&gt; Parent teacher/staff areas, breakout</li> </ul> Stage 2 – Multi-modal learning environment <ul style="list-style-type: none"> <li>&gt; Student Services, Mezzanine &amp; Bathrooms</li> <li>&gt; Senior Learning Centre &amp; Science Lab</li> <li>&gt; Café, outdoor area and Treehouse</li> <li>&gt; Amphitheatre Seating &amp; Stage Area</li> </ul>		
<b>Construction start date</b>	December 2012	<b>Completion Date</b>	July 2015
<b>Size (area)</b>	Buildings: 1500m <sup>2</sup> Canopy: 3000m <sup>2</sup> Total floor area: approx. 4,000m <sup>2</sup>		
<b>Budget</b>	\$21 million		
<b>WMK Team</b>	<ul style="list-style-type: none"> <li>&gt; Greg Barnett, Managing Director</li> <li>&gt; John Andreas, Director - Design architect</li> <li>&gt; Laurie Day, Senior Project Leader</li> <li>&gt; Denisse Milton, Senior Interior Designer</li> </ul>		



<b>Project Manager</b>	EPM Projects Andrew Graham, Director Kathryn Cuno, Project Manager
<b>Other Consultants</b>	Cost Planning – MDA Australia, David Noble Structural - Woolacotts, Scott Clemmett ESD – ARUP, Tim Elgood Civil - Woolacotts, Clare Woods Landscape Architect - Taylor Brammer, Mathew Taylor Electrical - VOS GROUP, Janet Tam/Shane Mercer Mechanical - VOS GROUP, Peter Morton Hydraulic Engineer – Waterman AHW, David Tennent Access Consultant – Cheung Access, Christine Cheung Audio Visual – Auditoria, Scott Willsallen Traffic & Parking – McLaren Traffic Town Planning – Don Fox Planning, John McFadden Acoustics – Acoustic Studio, Peter Griffiths Kitchen Consultant – Cini Little Food Service, Peter White Underground Service - Cardno AUS Bushfire - Eco Logical David Peterson Land Surveyor – CMS Surveying BCA - Blackett Maguire & Goldsmith, Tony Heaslip Certifier – Vick Lilli & Partners, Vick Lilli & Mariusz Para
<b>Builder</b>	Stage 1 – Fugen Constructions Stage 2 – Cockram Constructions

## 2. ADDITIONAL DETAILS

### Key areas within the project

- a) Arrival portico
  - > Main arrival point
  - > Spotted Gum timber clad awning
  - > NCBS main signage located here
  
- b) Administration Building
  - > Main reception and flexible waiting area
  - > Administration offices
  - > Meeting rooms/parent teacher interview space
  - > Breakout kitchen
  
- c) Student Services (Ground and Lower Ground levels)
  - > Ground Floor – 2 x ‘Uptown’ meeting spaces, for 4 people each
  - > Lower Ground – 3 x ‘Downtown’ meeting spaces, for 4 people each

- d) Senior Learning Centre (Ground Level)
  - > Single large space for mixed teacher/student working
  - > 3 x teachers workpoints
  - > Freeform tables, window benches and meeting pods
  - > 2 x 'Idea' spaces, for 4 people each
  - > Balcony area for additional work area
  
- e) Science Room (Lower Ground level)
  - > Single large space with flexibility for use by 1 or more classes.
  - > Seating for approx. 30 persons with additional 44 stools
  - > 7 x Science benches
  - > 'All-writable' white surfaces to worktables, benches, walls
  
- f) 'Central Park' (café and outdoor area) - Lower Ground level
  - > Multi-purpose outdoor area located at the heart of the new facility (and heart of the school) for eating, meeting, learning, activities, individual or group study.
  - > Mixed use by primary and secondary students, staff and visitors
  - > Key design driver: to connect everyone to the centre of the school
  - > Seating for approx. 70
  - > Integrated timber benching wraps around the space for additional seating
  - > The Big Screen and smaller screens to play student video work
  - > Materials include: concrete flooring, walls and columns; spotted gum timber battens; 'Shadowclad timber cladding'; steel; acoustic ceilings
  - > Mixed use by primary and secondary students, staff and visitors
  
- g) 'Treehouse' (seating area above Central Park café) – Ground Level  
(connected bridge to Senior Learning Centre)
  - > Multi-purpose outdoor upper deck area for eating, meeting, learning, activities, individual or group study
  - > Mixed use by primary and secondary students, staff and visitors
  - > Planter boxes and vegetation run around the edge of the treehouse
  
- h) Times Square – (performance and outdoor area) – Ground Level
  - > Multi-purpose outdoor area for eating, meeting, learning, activities, individual or group study
  - > Mixed use by primary and secondary students, staff and visitors
  - > Stage area and sound system
  - > Two sets of multi-tier concrete step theatre seating

- > Materials include: concrete flooring, walls and columns; spotted gum timber battens; steel; acoustic ceilings

### **Architectural Features**

#### Canopy

- > Overall roof area approx. 3,000m<sup>2</sup>
- > 11m high
- > Steel trusses, stepped framing with translucent polycarb sheeting
- > Photovoltaic Panels – panels each 16m x 4m
- > Rainwater capture and misting system
- > High level glass louvres for ventilation and daylight ingress
- > Acoustic baffle detail for external noise control

#### Buildings

- > Automatic openable windows respond to temperature for breezes
- > Sustainable texture wall finishes
- > Overarching structure to maximise internal flexibility

#### 'Intelligent' Columns

- > Total of 21 pre-casted concrete columns, each 11m high, form a modular structural grid which defines the facility and allows for expansion over time.
- > Rectangular tapered form – 600x400mm base tapering to 400x400 at top,
- > Designed as 'intelligent columns' – reticulated services handling rainwater for recycling, misting spray over outdoor canopy areas; audio-visual, electrical and data services for flexible learning requirements

#### Ramps/Bridges

- > 3 ramps/bridges connecting various parts of the facility, including 'treehouse' in centre of the project, directly above the 'Central Park' canteen and marketplace.

### **Materials & Finishes**

#### External:

- > 'Raw materials', natural palette reflecting the surrounding bushland environment
- > Timber:
  - Recycled Spotted Gum with natural decking oil –Portico, wall cladding, timber seating, decking,
  - Shadow Clad - Café – environmentally sustainable, lightweight, durable, design flexibility, vertical grooved ply (dark chocolate colour)
- > Concrete:
  - Off Form and pre-cast concrete columns

- > Glazing:
  - Double glazing used predominantly
  - Auto louvres at high level temperature-activated
- > Steel truss

#### Interiors:

- > Flooring: Interface carpet tiles; Marmoleum
- > Ceilings: plywood panel and Decor Ply acoustic perforated plywood; Décor Lux acoustic perforated FC ceilings;
- > Joinery: FSC certified Eco-Core ply with timber veneer finish
- > Whiteboard to tops of tables in Science lab and Senior learning centre
- > Loose furniture (including custom pieces) by Zenith, Chairbiz, Schiavello
- > WMK collaborated with industrial designer/supplier 'Design by Them' to create bespoke and custom furniture

#### Sustainability

- > Natural ventilation and natural lighting
- > Operable automatic louvres and windows respond to climate
- > Canopy collects rain water and reticulates to underground collection tanks
- > Misting system at canopy level to relieve high temperatures
- > Photovoltaic cells on canopy roof generate electricity
- > Sophisticated Building Management System (BMS) used to control sustainability services
- > Material and finishes selections considered sustainability qualities

#### Comms, Data & Audio Visual

- > High power Wi-Fi enabled – all areas, indoor and external
- > Video display screens including very large format at Stage area and at Central Park (Market place)
- > Substantial comms room to accommodate computer equipment and racking needed to support the facility

#### Landscaping

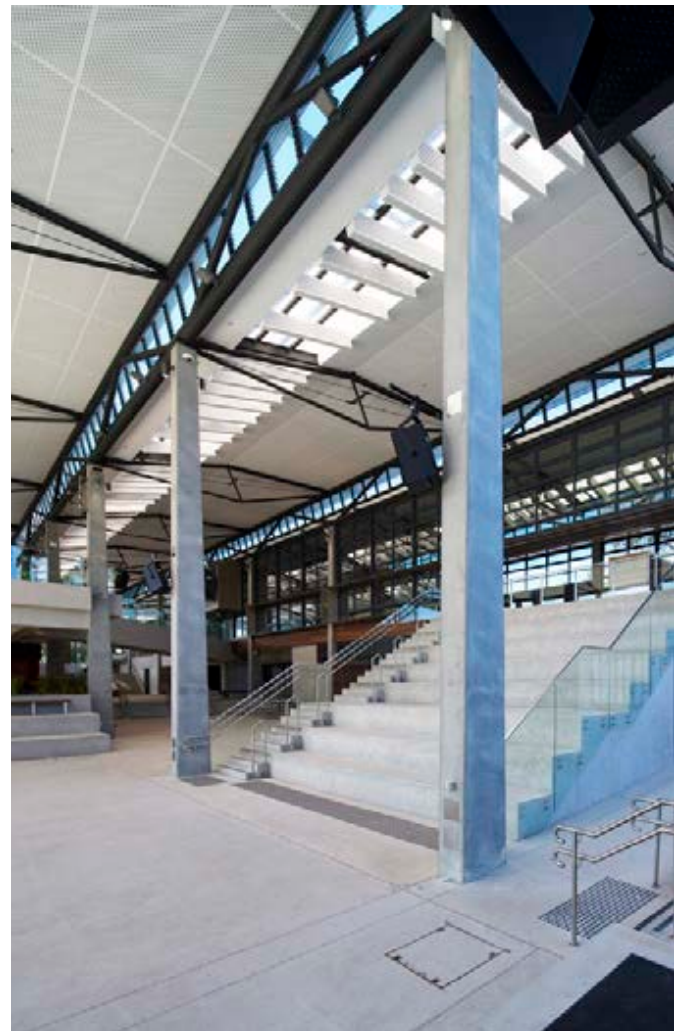
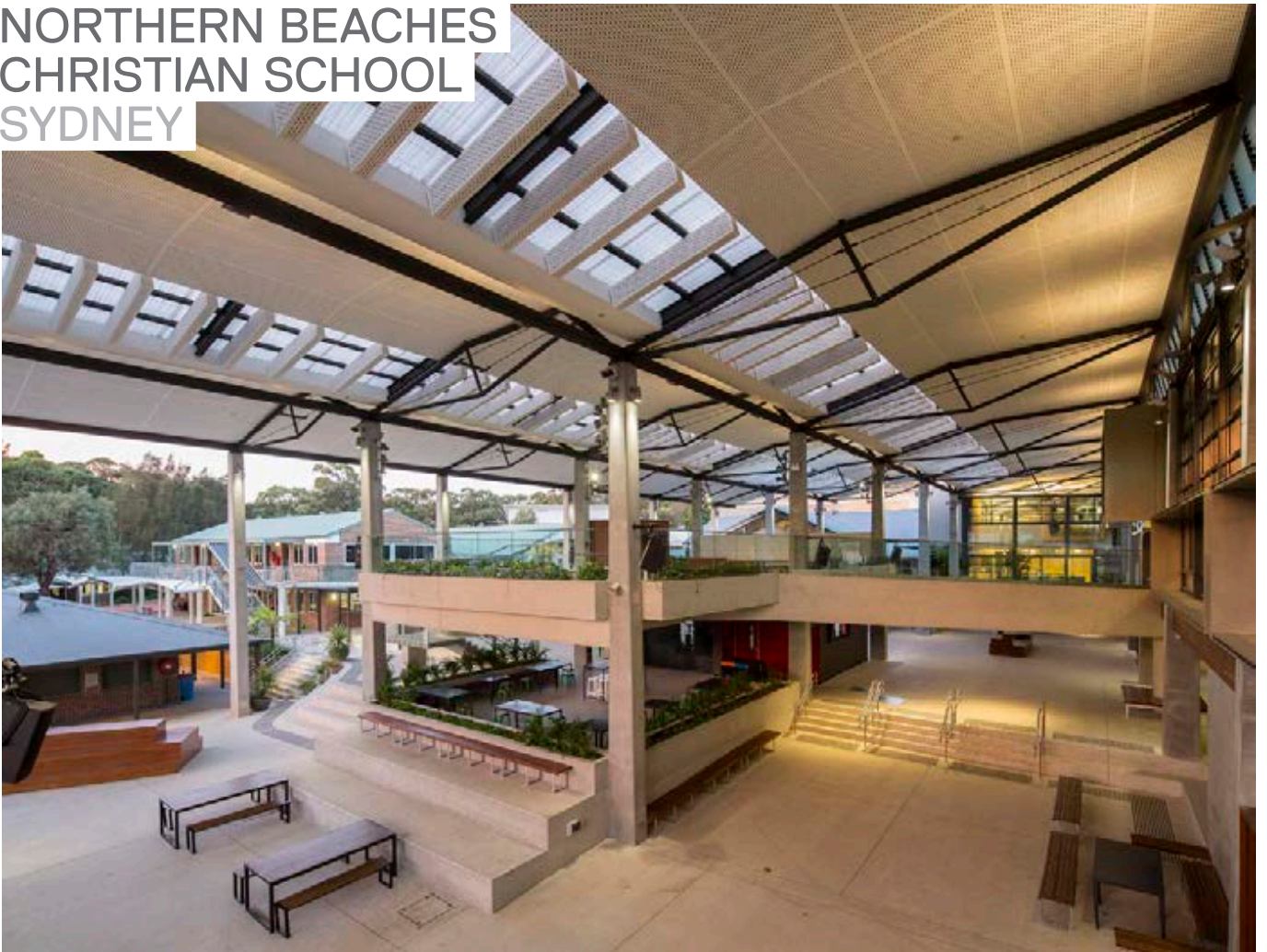
- > Combination of soft and hard landscaping which is integral to the architectural design.
- > A wide variety of native plants was selected for their suitability to the site and consistency with the local Duffys Forest ecological community of native species.

#### 4. Photography

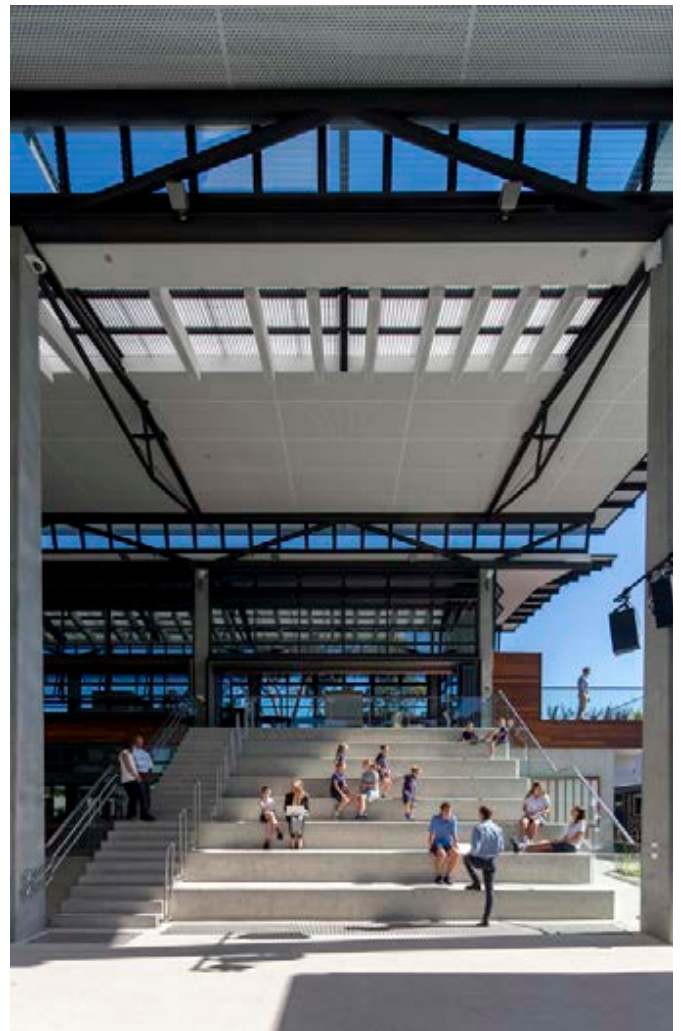
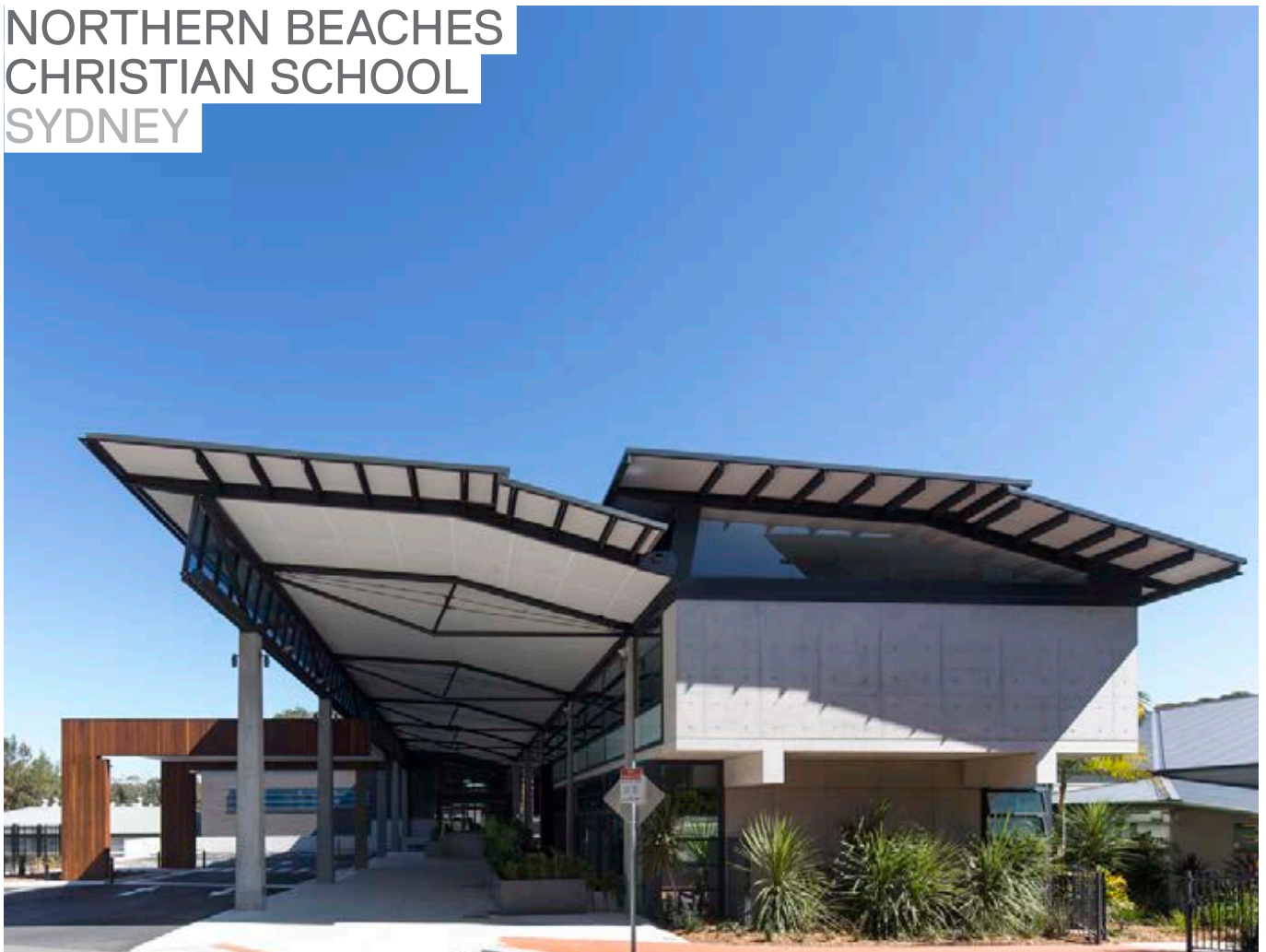
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High resolution images are available upon request.



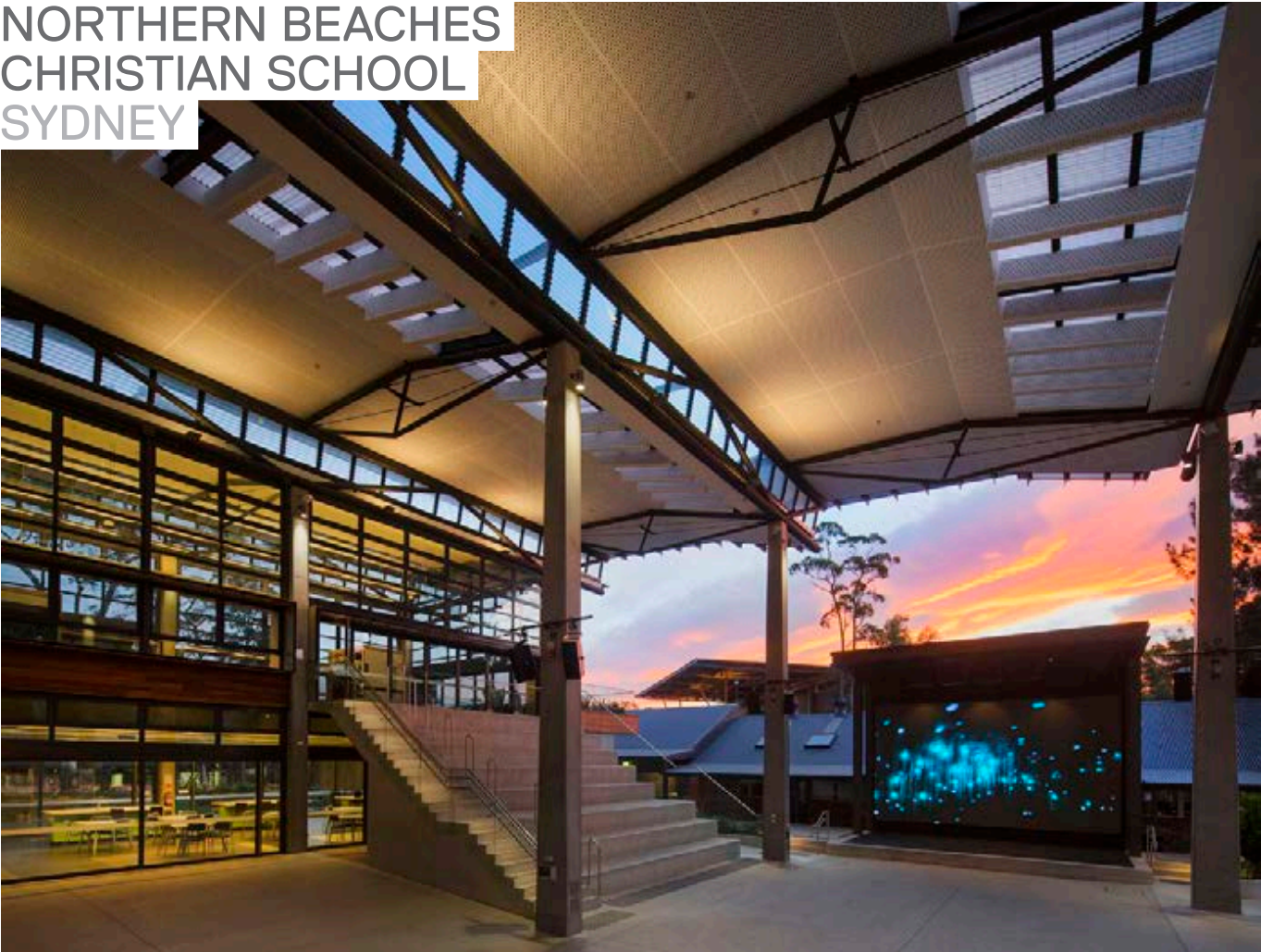
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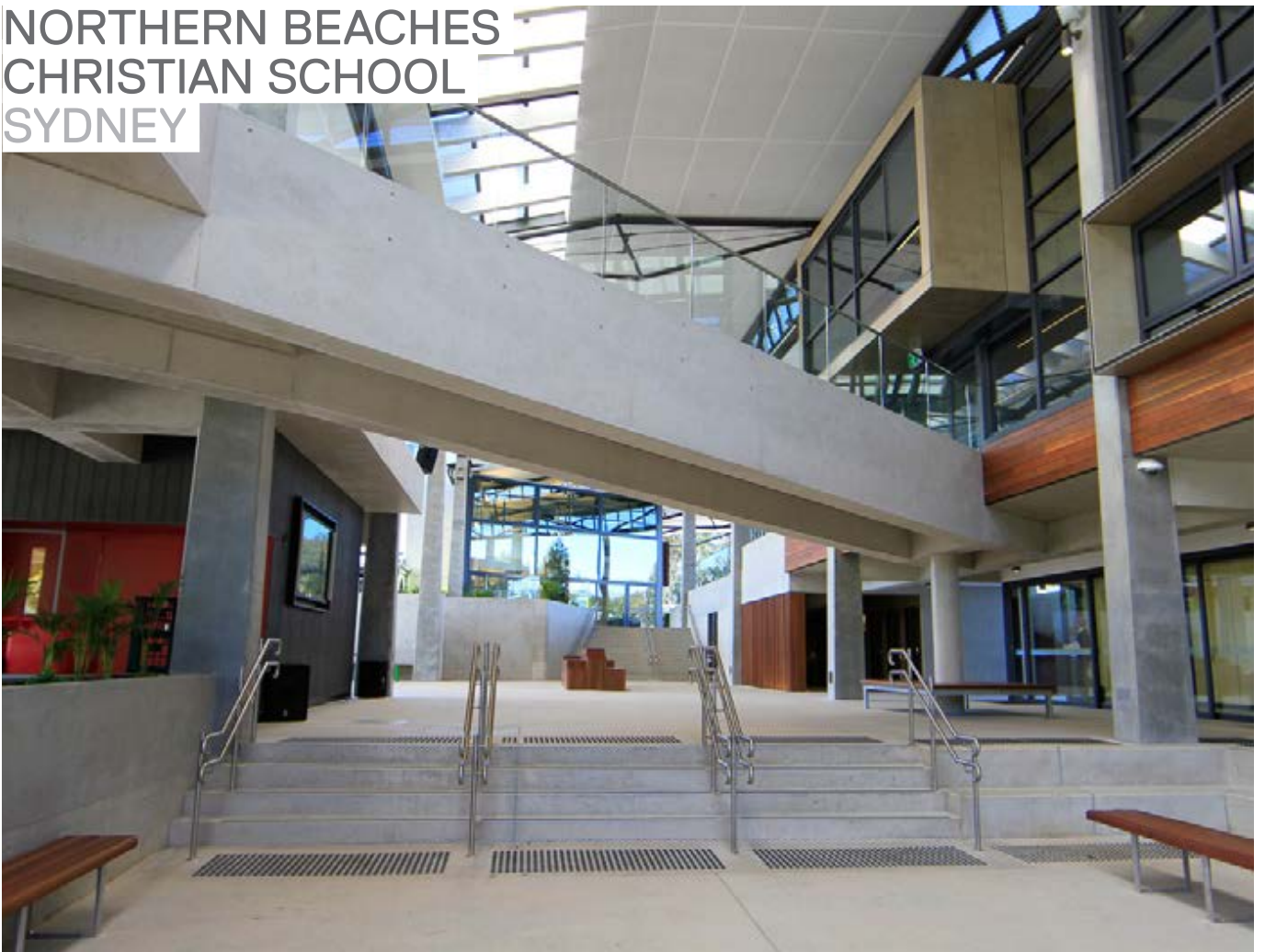




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