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This building presents a dramatically new 21st Century definition of a school.

- Dr John Mayfield Award for Educational Architecture, Australian Institute of Architects, SA 2019

ADELAIDE BOTANIC HIGH SCHOOL



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1. Executive Summary

Adelaide Botanic High School (ABHS) locates a STEM focused and contemporary vertical school in a beautiful parkland setting, combining science and nature in a connected learning environment.

The pedagogical vision that has driven the design fosters students as innovative and creative learners, providing young people with a range of experiences, ideas and perspectives.

The school is deeply integrated into an established education and cultural precinct in the north-east corner of the city, set within the Adelaide Park Lands and adjacent to the Botanic Garden, Zoo, universities and associated buildings along Frome Road.

ABHS has been conceived as a vertical high school with an 'active' atrium as the central community heart between the re-purposed and new buildings. It creates a multi-disciplinary vertical learning environment that allows a high degree of visual and physical connectivity between floors. The vertical nature of the building offers opportunities for collaboration and connection not available in a traditional school setting. Each floor comprises horizontal learning precincts made of connected timetabled and untimetabled learning environments, including general and specialist learning areas, learning commons, think tanks and teaching hubs. Contemporary spatial planning allows for spaces to be both flexible and multi-purpose, while still highly functional.

This is a technology rich environment with an emphasis on sustainability that is built right into the schools' design. Services are left exposed and the building's performance can be monitored in real time. An indicator panel signals when outdoor conditions are favourable to encourage students to open the window and let the fresh air in.

As the first vertical secondary school in South Australia, ABHS sets the benchmark for public education in the State. It has received three of the highest architectural awards in South Australia, in education, sustainability and interior design, and has been commended on the national stage. Recipient of the South Australian/Northern Territory branch of Learning Environments Australasia's 2019 Award, it has also informed the planning and design of new school developments and refurbishments across South Australia. ABHS brings together both pedagogical and design innovation to create a school for tomorrow today (the school motto).

Pedagogical innovations include the untimetabled learning commons on each level which support flexibility and interdisciplinary teaching, and the co-location of specialist teaching areas (rather than 'science blocks' for example), cementing the connectivity to other disciplines in close proximity.

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2. Scope and Value

Value: \$100,000,000 AUD

Scale: 16,500m²

Capacity: 1,500 students

Design period: 14 months

Construction period: 18 months

22 member educator stakeholder team:

Deb O'Riley DECD | Cezanne Green DECD | David Chadwick DECD | Martin Westwell Educator, Flinders University | Sue George-Duif Educator, DECD | Olivia O'Neil Educator, DECD | Susan Hyde Educator, DECD | Greg Petherick Education Director, DECD | Yvette Riley Secondary Learners Directorate | Katrina Elliott Strategic Design Directorate | Alex Semmens Strategic Design Directorate | Sarah Baker Secondary Learners Directorate | Gawain Duncan Secondary Learners Directorate | Craig Ottaway Seaford Secondary College | Mark A Williams Secondary Learners Directorate | Sharyn Schell Strategic Design Directorate | Anne Wilson Reynella East College | Roy Webb Seaford Secondary College | Sarah Baker Secondary Learners Directorate | Ryan Elliott Brighton Secondary College | Simon Brooks Mitcham Girls | Jayne Heath Professional Practices Directorate

45 member design team:

COX (Architecture): Adam Hannon | Patrick Ness | Zoe King | Justin Davis-Bishop | Chin Tan | Kirsty Dicker | Gianni Francisco | Patrick Scott | Peter Jamieson | Vi Truong | Coby Costi | Rachel Pargeter | Jonathon Kirby | DesignInc (Interiors): Wayne Dixon | Jennifer Drake | Craig Tonkin | Beth Hewett | Senem Sensan | Marie Clarie Redwood | TCL (Landscape): Damian Schultz | Kate Cullity | Richard Klening | Enoch Lieu | AECOM (Services): Ben Wildy | Mark Stefanac | James Flanagan | Oliver Winter | Derek Harris | Denis Rodrigues | John Aukland | Scott Johnson | Sian Wilmott | Ly Galanos | Brenton Burman | Richard Morrison | Simon Moore | KBR (Structural and Civil): Tim Nicholls | Stuart Bater | James Plant | Ian McLennan | Todd Henschke | Ned Dally | Patrick Vabolis | Boon Chua | Morris Pignata | RLB (Cost Manager): Andrew Suttie | Daniel Jones | Sam Martin | Alice Blackman | Gianni Troia

Commercial Kitchen



Active Atrium



Cafe





Sustainable Facade



Atri

Gallery & Touch-down

3. School and Community Engagement Describe the Community

Honouring the foundations of the past, ABHS have taken the best of today and built upwards. Long before the first plan was drawn, we asked: how can our school building create dynamic learning for every student? The answer: a purpose-built environment where the architecture informs and enhances every child's learning experience.

As there was not a school Principal or even a formed community for the first few years of the project, a process was developed to ensure stakeholders were authentically consulted. An extended team community was developed.

Extended Team: The Virtual School Community

The Extended Team comprised a range of subject matter experts and advisers. Members of the Extended Team were involved on a regular basis, often on specific activities to generate ideas, transfer knowledge and experience, enable deeper thinking, challenge thinking and provide feedback.

A critical component was a desire for the Core Team to engage with the 'school community'. The new school had no Principal, teachers or students and therefore a 'Virtual School Community' was formed to enable collaborative workshops to be conducted with Principles, educators, education specialists and students.

The designers, COX Architecture and DesignInc, ran a series of workshops to create a common understanding of what each space looked like and felt like. All design principles were agreed on early and the virtual school community representatives provided valuable advice and ideas at key times during the design phase.

The Extended Team included the following representatives:

Education Principal Reference Group - early engagement with three Principals and the Education Director for the region. The three Principals offered strong experience in STEM and secondary schooling, played a major involvement in the creation of the Education Brief, and they road tested the initial design ideas and signed off on the concept.

Educator Reference Group - engagement with a wider Education Team (30 leaders, educators and education administrators who are leading lights in their field were co-opted). They were engaged to work on space, pedagogy and curriculum to establish how spaces would work and plan the interrelationships and connectivity between them. They worked with the Core Team to build the design around the requirements for each space and ensure spaces were flexible and connected, and met the needs of teachers and students. Team members also assisted by undertaking several best practice site visits and applied learning from these sites to the project.

Professor Martin Westwall, Flinders

University - provided specialist advice and challenged the team with deeper thinking in the Learning of Science (STEM) and the Science of Learning - Cognitive Learning. Martin provided a valuable sounding board at key points in the design process including the development of the Education Brief.

Student Reference Group – a group of middle school students were chosen to represent the student community. They were involved in the critique of the design and school generally at key points in the design process. The design team said it was an empowering experience for the students.

ODASA – the Core Team presented the design to the Office for Design and Architecture SA (ODASA) as the new school would represent a significant civic building in the Adelaide CBD. ODASA's role was to ensure the best possible design outcome and to ensure stakeholder relationships were built through the process. ODASA undertook a design review panel process which involved workshops at key points to 'tease out' best outcomes and value. ODASA challenged the relationship of the "building outside the site" and stressed the importance of the inter-relationships and connectivity through the Precinct.

The Builders – through the ECI process two builders attended design meetings providing each team with a unique opportunity to understand the design philosophy firsthand. The Core Team was open to ideas and challenges put by the builders in relation to their building innovation and constructability expertise.

Identify Stakeholders

the nature of the new school project and fit the values and aspirations set by the government, namely the Department for Education and Child Development (DECD) and the Department of Planning, Transport and Infrastructure (DPTI) as project sponsors.

With an exciting and challenging vision comes a responsibility for government, designers and builders to work together in a truly collaborative manner.

The Core Team comprised a highperforming selection of professionals who were enthusiastic and fully committed to the success of the project. The team worked intensively together over the course of the design phase.

Team members created a well-functioning and supportive team environment, and fully appreciated the value experts, stakeholders and potential partners brought to the project. Team members developed a strong culture of critical collaboration built on trust, care, energy and enthusiasm.

The composition of the team needed to suit Critical collaborative evolved from a process of positive engagement and this enabled the Core Team to respond effectively to the many opportunities and challenges, and ultimately the vision for the new school.

> The project has involved collaboration with key State Government departments and agencies, local government bodies and numerous educational groups including senior school leaders who have served as Educational Advisers to the project in the initial absence of a School Principal or other senior school leaders.

Stakeholder Management Process

During the early design process COX worked Delivered under a Novated Design and closely with DPTI and DECD as client representative, key DECD stakeholders, and the Extended Team, developing concept and schematic design packages, writing the functional return brief and PPR documentation to clearly articulate and capture the scope of works for the project.

COX led the design team through a series of stakeholder and user group workshops to gain a detailed understanding of their requirements and incorporate into the functional return brief and PPR documentation. The project design was illustrated in 3D, documented and benchmarked against other 'vertical' school projects, and an assessment of scope was agreed with the project team, DECD and DPTI. The workshop process established a 'virtual school community' to document the CBD school aspirational and functional requirements. COX led the briefing and scoping process to explore the contemporary learning project opportunities high-quality finish both internally and and provide a 'best for project' design response.

COX engaged with the Adelaide City Council, State Commission Assessment Panel, ODASA, the Zoo, the Botanic Gardens, and other government and institution stakeholders to manage the design evolution and ensure the best project outcomes.

Construct (D+C) model, the project required an efficient, effective and collaborative approach to achieving high quality outcomes on budget whilst maintaining a challenging project program. COX and DesignInc worked closely with the appointed Cost Manager (RLB), DECD and DPTI to develop a live cost planning approach that corresponded to the briefing and early design and scoping stages. Early design phases established the ability for the school population to be increased from 1,000 to 1,250 students, which maximised the opportunity for the site to create the ideal sized school community.

The design was developed to 60% completion for D+C tender, with the design team then novated to Lendlease for the completion of the design and construction project phases. The project team worked in collaboration with the contractor to achieve best for project outcomes and ensure a externally.

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3. School and Community Engagement Challenges

The design and construction of Adelaide Botanic High School called for creativity and innovation to turn the many challenges into opportunities. The key challenges facing the design and development of the new school included:

- Maximising the school's CBD location
- Delivering the first of its type for Adelaide, a CBD vertical high school that encourages active travel choices
- Transforming and adaptively re-purposing the existing Reid Building, making best use of the existing building floorplate and structure and integrating additional floor space
- Managing a high profile project next door to major public, cultural and educational institutions, and set within the beautiful and unique Park Lands belt of Adelaide
- Responding to the Educational Brief to create a contemporary and multi-disciplinary learning environment
- Designing a school without a school community, resulting in creation of a 'virtual school community'

- Creating an environment that is flexible and can grow, and set the culture of the school with the first cohort of students – a rare opportunity
- Maintaining budget and program
- Establishing the new school as showcase public education in South Australia
- Transferring aspects of school design, pedagogy, educator learning and space planning to future education projects
- Sharing new learning environments and facilities with other schools who will have the opportunity to visit and engage with ABHS













Assets and Opportunities

- A site already deeply connected to the higher education precinct through two major Universities, North Terrace cultural precinct the Adelaide CBD
- A site embedded in the beautiful and unique landscape of the Adelaide Botanic Garden, Adelaide Park Lands, Adelaide Zoo and Riverbank Precinct
- The existing Reid Building formerly a traditional • University laboratory facility, was adapted and transformed into approximately half the total floor area of the completed school, with its structural form and modernist origins complementing and inspiring the new built form
- A government client with the vision and ambition to create a new benchmark for contemporary public learning environments in South Australia and beyond

- A deeply invested and engaged stakeholder group consisting of the some of the best minds in South Australian pedagogy
- A 'virtual school community' including the school's leadership team which was formed early in the process, building culture from the ground up
- Early involvement by the design team in planning and briefing stages created goodwill and trust with stakeholders
- Establishment of design principles that prioritised contemporary learning outcomes, and allowed the educational brief to be translated through the internal and external design

- Extensive planning and engagement phase created a truly collaborative project team: working with the client and the 'virtual school community' rather than for them
- A design team partnership providing technical and creative excellence, with a spirit of collaboration, innovation and shared idea generation
- Ongoing assessment and validation of key design principles by clients, designers, managers and builders to create a truly collaborative outcome













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3. School and Community Engagement Value of process and project to community at large

As a benchmark learning environment informing other projects in South Australia and nationally, the project can be said to advance the vertical school typology, demonstrating the opportunities and mitigating some of the challenges of this typology, namely connectivity between students, disciplines and educators, and between indoor and outdoor learning environments.

COX and DesignInc have addressed these challenges though an inside out approach, and by functional planning (central stair, learning commons, teaching hubs) to maximise opportunities for collaboration and interdisciplinary learning.

The result is a school that contributes to the community through the opportunities for students and families to engage with, connect with and explore the larger precinct around them. The contemporary pedagogy emphasises connected, interdisciplinary learning. The school has a stated goal that students will spend 20 per cent of their time engaging with the surrounding precinct, a goal that they have met and exceeded.

By their engagement with academia and through their involvement in research, the students of ABHS are contributing to their current and future community. Students are also engaged with the adjacent innovation precinct, Lot Fourteen. The focus on connected, interdisciplinary learning is breeding innovation and entrepreneurial skills from the ground up.





A key aspect of the school's design is the creation of a full-height atrium serving as the central public 'vertical' space and providing various settings and connections to adjoining spaces for formal and informal learning. This public network also functions as an events platform for use by the school, outside organisations and the broader community.

The forum on the ground floor, a public part of the school, reflects the integration with the education precinct and community.

The gym and cafe at ground level have external access to allow for community groups separate and secure access to suit out of hours events. A roof terrace on top of the gym provides an external events deck and social space extensive views to the adjacent Frome Park and Botanic Garden.





WOMAD Installation

The school, situated in the Adelaide Park Lands which are the heart of the city's cultural and festival celebrations, also contributes to the community in its involvement with these expressions of celebration, identity and pride. At the 2019 WOMAD Festival, for example, Year Nine students participated in the Ephemeral City installation with French artist Olivier Grossetête, building a gravity-defying tower out of recycled cardboard and tape, speaking French, exploring architectural design, material properties and experimenting with the laws of physics. Australia's Science Channel also broadcasted WOMAD in class from the school.



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4. Educational Environment Explain the educational vision and goals of the school

The educational brief offered an opportunity to create a contemporary public learning environment, and a 'vertical high school': the first of its type for South Australia. This school has been created as a benchmark institution – in terms of its pedagogical program, daily operation and physical design - to stimulate statewide advances across all government sector schools in South Australia.

The school's educational program strives to articulate the following vision:

- Intent on fostering students as innovative and creative learners with the capability to express these qualities as they progress beyond the school into further education or employment
- Intentionally designed to draw on the rich array of natural settings and municipal facilities in close physical proximity to the school
- Embedded within the fabric of city life, responding to and benefiting from the diversity of activity that naturally occurs in a major city centre
- Based on the belief that young people have a range of experiences, thoughts, ideas and perspectives that can enrich decision making processes and outcomes - this will help foster the school as a community of learners.
- Infused with the agility afforded by mobile, digital technology seamlessly integrated into the student experience to enable them to shape and engage with their learning environment

"Our focus is on trying to create people who are job makers, rather than job takers."

- Alistair Brown, Principal, ABHS



National & Global



	 International networks
	 Research partners
	 Sister schools and universities
	 Launch pad for local, national and international visitors
	 Benchmark learning environment
5	 World leaders in teaching and learning

Describe and illustrate how the environment supports the curriculum

A secondary school with a special focus on STEM education, the environment at Adelaide Botanic High School supports the curriculum by providing:

- Best-in-class specialist areas including fab labs and maker spaces, robotics and design technology labs and workshops
- Multi-purpose, connected General Learning Areas that facilitate crossdisciplinary teaching and learning
- Untimetabled Learning Commons for connection and collaboration
- Learning on display: with exposed structure and services and real-time visible monitoring of the building's performance, the building itself is a teaching tool
- In addition to STEM, provision for performing arts and physical health and wellbeing
- Emphasis on sustainability

Inside and out, the Adelaide Botanic High School architecture of learning is unrecognisable from what came before. Innovation, the guiding values of community, curiosity and excellence are the building blocks of Adelaide Botanic High School's unique DNA. Adelaide Botanic High School is in a unique position to not be hindered by the traditions of the past but instead draw on the very best of the past along with the latest research to shape learning that best meets the needs of today's young people.

The school motto "Tomorrow Today" is the foundation for curriculum planning at Adelaide Botanic High School. Traditionally the eight Australian Curriculum subjects have been taught separately with little connection between them. At Adelaide Botanic High School the Australian Curriculum subjects are taught in four purposefully connected learning areas:

- Global Perspectives
- STEM
- The Arts
- Lifestyle Choices

Two key ideas have informed developments in the design of new generation learning environments at ABHS.

First, the idea of an integrated 'learning landscape' is a valuable organising concept when viewing the layout of an educational institution. Learning opportunities are enhanced with greater connectivity between formal and informal learning spaces, as well as effective indoor and outdoor linkages. Breaking down the concept of the 'classroom box' as the primary place of learning in this way, more integrated and flexible environments promote individual responsibility for learning that can occur across a variety of places and times within the overall campus setting or beyond.

Secondly, unlike traditional classrooms (and schools) which prioritise the role of the teacher and the act of teaching, the design of contemporary learning environments prioritises student learning and the activities that students undertake to learn. In essence, they are designed to empower and enable students to take greater responsibility for their learning through choices and control over what they do to learn, where and when they do it in the formal learning space or beyond, and who they engage with on the task.

Essentially, learning environments are designed to energise learning to expand it beyond the prevailing mode of passive seating and note-taking, promoting physical movement, standing activity and the scope to undertake diverse tasks in spaces which are readily adaptable to the needs of the whole class, small groups or individuals. To this end classrooms may comprise a mix of furniture types, further breaking down the uniformity of the traditional school and offering students diversity and choice about their place in the setting.

"Students are exposed to the application of engineering principles and technology to building design, construction and operation. Learning from the built form will deliver intuitive, investigative, environmentally aware students who will shape our future communities."

- Andrew Suttie, Managing Director, RLB Australia

"[A] lighthouse school... a pathfinder for where education is going."

- Steven Marshall, South Australian Premier

4. Educational Environment Learning Spaces

An example of engagement during the design process: the learning spaces were the result of conversations with educators and students to articulate design needs, and the critique of the design by University faculty leaders and students.

The learning spaces include a interdisciplinary learning environment that allows a high degree of visual and physical connectivity between floors.

Pods located on both sides of each floor express the flexible learning program (e.g. 'Super Science Lab and Maker Spaces).

The floor layout design pictured alongside shows the grouping of specialist teaching spaces indicated in orange (Art, Design Technology, Digital Media and Science), and their relationships to the untimetabled learning commons in blue and to the flexible learning areas in purple.

After much discussion within the Core Team, educators and education experts, the model for the school co-locates two specialist teaching spaces next to each other, rather than having a block of four science labs in one location. This enables the two specialist teachers to learn from one another and team teach, whilst still enabling the connectivity to other disciplines in close proximity.



Interdisciplinary Learning – Connecting









Learning Commons

The learning common floor plan pictured alongside shows a number of the planning outcomes that are intended to encourage collaboration, but still allow explicit teaching.

All of the five learning areas have direct physical and visual access to the untimetabled learning common.

The common can support a variety of group sizes, teaching and learning activities, supported by flexible movable furniture.

The teacher prep area is embedded adjacent the common to allow direct access to educators by students.

If students or educators require individual or small group space that is acoustically private, each floor has a number of 'Think Tanks' which are bookable meeting spaces for use by all and owned by no-one. These can be seen at each end of the floorplan.

The learning pod is a demonstration and collaboration space that is open to the common, and glazed into the active atrium.



Interdisciplinary Learning – Learning Commons







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4. Educational Environment Describe and illustrate how the environment supports a variety of learning and teaching styles

Adelaide Botanic High School has been conceived as a vertical high school with an 'active' atrium as the central community heart between the repurposed and new buildings. It creates a multi-disciplinary vertical learning environment that allows a high degree of visual and physical connectivity between floors and across the central atrium void, where each floor can express its personality and program.

The vertical nature of the building offers opportunities for collaboration and connection which aren't normally available in a traditional school setting. Functions within the building are stacked with public spaces: Reception, Gallery, Library, Cafe and Gymnasium on the ground level, and the more private learning precincts and spaces on the upper levels.

Having the entire school housed under one roof enables disciplines to be interrelated in progressive ways. Disciplines can be spread across floor levels, yet visually linked; reinforcing the community learning model.

People must gather to learn, to create and to socialise. The vertical school begins with the ground plane and atrium, welcoming the public; it facilitates meeting areas and promotes a sense of coming together; a community area which is central; the heart of the school. The public level also allows surveillance of who is transitioning to the remaining school floors. The notion of the school rising from public functions to private learning spaces at the upper levels has been planned throughout.

The school features welcoming learning commons and flexible areas which double as social spaces; likely to be highly utilised during the winter season. One key factor in the layout of the school was the location of the gym, above it a roof terrace which due to the high density of the site – provides the school with a much needed large external space. A major highlight for the educational, social and recreational capacity of the school is its proximity to parklands, sporting grounds, green spaces and tertiary educational and social precincts.

Education spaces are shared and overlap. Learners can take charge of their environments in respectful ways. Common areas, maker spaces, think tank rooms, quiet rooms, sheltered and light filled rooms, spaces small and spaces large are strategically located over all floors; creating active and productive floor plates.

Differing functions ranging from gymnasiums to performing arts areas to small meeting rooms allow for large cohorts, small groups and individual learners. In addition, floors facilitate explicit teaching areas and areas for both teachers and learners to 'play' through education and demonstrate their ideas proudly. Spaces provide for performance, both spontaneous and staged, and both internal and external, giving rise to learning 'anywhere/any time'.

Pods on both sides express the learning program e.g. 'super science lab and maker spaces. A large timber stair and 'furniture piece' is used as a social space, for gatherings and community events. Internally the elevated public ground plane and the furniture piece act both as movement systems and places for students to meet and collaborate. Equitable access is provided for staff and students by means of multiple stairs and lifts within both buildings and the atrium.

A series of link bridges connect the two buildings through the central atrium to allow single floors to act as whole learning precincts. The learning spaces are themselves interconnected to encourage opportunity for shared teaching and for collaboration of students and staff. Specialist teaching spaces are distributed, but paired, allowing peer to peer learning by teachers. Flexible learning areas are mixed in with specialist teaching spaces, to enable the interdisciplinary approach.



Overall, the interior has the feel of a vertical village of learning areas surrounding a town square, all focused around a dynamic six storey atrium. This breathtaking skylit space, through which most walkways pass, also acts as centering element for internal learning areas.

- Dr John Mayfield Award for Educational Architecture, Australian Institute of Architects, SA 2019



Describe and illustrate how the environment is adaptable and flexible

Adelaide Botanic High School has been designed for flexibility, with the understanding that things will change and that the school must respond to that. This was a rare opportunity to set and grow a school culture from the ground up.

Visibility and a sense of openness is pertinent to the STEM approach of ABHS, and this is displayed in the interior planning, which eschews the traditional classroom model for a variety of different spaces that are flexible and reconfigurable, from small to large, quiet to loud, completely open to partially closed.

Flexible learning areas are mixed in with specialist teaching spaces, to enable the interdisciplinary approach. Learning commons are not timetabled spaces and are planned so they can be used in conjunction with the learning areas adjacent. Teachers are embedded within the learning commons, rather than separated away, providing greater access for students to teachers from every subject, fostering interdisciplinary teaching, learning and collaboration.

Other untimetabled spaces such as the Think Tanks (meeting rooms) Maker Spaces and the Forum Space on the ground floor allow students and educators multiple options for informal learning and teaching, and for group or individual studies, or for peer to peer presentations. These spaces are largely unstructured to give them the ability to change their functions over time.

Overall, the interior has the feel of a vertical village of learning areas surrounding a town square, all focused around a dynamic six storey atrium. This breathtaking skylit space, through which most walkways pass, also acts as centering element for internal learning areas.







There is a clear sense of the innovative pedagogical aims of the school cleverly interpreted through didactic and flexible learning environments.

- Robert Dickson Award for Interior Architecture, Australian Institute of Architects, SA 2019

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5. Physical Environment Describe and illustrate the physical attributes of the environment

The site is part of an established education and cultural precinct in the north-east corner of the city, set within the beautiful parklands and adjacent to the Botanic Garden, Adelaide Zoological Gardens, Botanic Park, Frome Park, major Universities and associated buildings along Frome Road. The six storey existing Reid building surrounded by open space, formed the extent of the site. Our challenge was to create a contemporary learning environment working with a traditional and cellular 'old-school' type building, that maximised its opportunity to embrace and celebrate its unique and significant parkland site.

The retained and reimagined Reid Building is an active participant in our design, providing the structural grid and floor level connectivity for a new building to the south of the site and central 'active atrium' which balances, interconnects and integrates old and new.

The existing floor level of the Reid Building (1.5m above natural ground) creates the opportunity for an elevated ground plane which folds into the surrounding landscape via a series of indoor and outdoor spaces, with numerous occupiable edges and seating nooks orientated to the surrounding landscape and gardens.







The adaptive reuse of the existing building stock is seamlessly integrated as is the interior vertical connectivity through the central amphitheatre space. Situated amongst the Park Lands, there are endless visual connections to the botanic surroundings taking full advantage of the unique site and the school's namesake.



- Robert Dickson Award for Interior Architecture, Australian Institute of Architects, SA 2019

Describe and illustrate how the facility fits within the larger context of the community

A feature of the school's design and operation is its deep integration into the broader precinct in which it is located, which includes key public education, and cultural facilities and its unique landscape setting. As a positive insertion into the existing precinct, Adelaide Botanic High School extends the capacity and opportunities for the community to engage with the precinct.

The school presence on Frome Road and the surrounding parkland precinct offered an opportunity to create a strong identity and represented the starting point of the legacy for the school community.

ABHS has create a public and civic identity to Frome Road with a town square and main entry to the school, giving a civic quality to the forecourt and educational buildings on a 'plinth', that also provide security for the school community.

As a showcase for South Australian education in the heart of the academic quarter, there is visible connection to other institutions in the precinct, the Universities of Adelaide and South Australia. As a touchdown point for the education precinct, the civic qualities and spaces of Adelaide Botanic High encourage community engagement.

The students themselves are ideally placed to engage with Adelaide's cultural precinct, regularly attending performances at the Festival Centre and completing units of work at the Art Gallery, State Library and Museum. They have participated in Adelaide's famous festival and WOMAD celebrations, creating art installations and engaging with global music and culture. These are enviable opportunities for young people.



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Adelaide Botanic is characterised and shaped by a reciprocal process of engagement linking it with the city. On the one hand, this comprises the benefit to the school from its active engagement with the city precinct and the ever-changing opportunities it presents to enrich the student learning program. On the other hand, it involves the positive contribution the school can make to the city and the wider community through the impact of its programs, the presence of its students and the opportunities for others to engage with the school.

Connectivity to the surrounding academic, innovation and cultural precinct is fundamental: The school's goal is that 20 per cent of student's learning will occur within the precinct, whether physically or virtually. Even during the pandemic lockdown, the precinct was engaging with the school and the school with it through Zoom and other tools. Year tens were involved with mentors from UniSA and Adelaide University, working with them and totally connected with them. We have heard from academics how invigorating and hopeful they have found working with these young people, giving them a sense of the potential coming through.

The school has also connected with the innovation hubs at Lot Fourteen, adjacent to the school and academic precinct. Myriota, local developers of micro satellites, an organisation with amazing intelligence within it, is engaging with Adelaide Botanic High School students and in the near future, equipment within the school will be used to develop a demonstration satellite. Researchers who came to the school and displayed one of their satellites told the students it cost \$150,000 to make. One of the students commented they could do cheaper, and now students and researchers are working together to make that happen.



















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5. Physical Environment

Describe and illustrate how the project inspires and motivates

"The vibe of the place is more like a university."



"We've not really understood how powerful the space is until we've moved into this building... A real game changer in the education world for us."

- Alistair Brown, Principal, ABHS

"When you come here and see the kids faces and the joy of their learning and their opportunity, it's really something to see."

- Deb O'Riley, Director, New Schools



"Lots of timber gives a nice calm atmosphere... The attention to detail is what makes Adelaide Botanic High School so special – every finish is amazing and that helps us to feel at home here."

– Teacher, ABHS



"I'm so lucky to be here and have the opportunity... This is such an incredible school."

- Student, ABHS







"The Zoo, the City, you can see the Botanic Gardens."



"It's done a great job in bringing everyone together."

- Student, ABHS

"I like how it's all quite open and from any floor you can see across the entire school."

- Student, ABHS



"The connectivity between our location, our school and our spaces is something that you just wouldn't get at any other school."

– Teacher, ABHS

It feels like something in the future: it feels like something that shouldn't be here yet, but at the same time it should be... We look up, and it's just like, whoa."

– Student, ABHS

– Student, ABHS







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6. Results of the Process and Project From an interview with Alistair Brown, Principal, Adelaide Botanic High School, July 2020

Explain how the project achieves educational Rather than one homogenous classroom, you goals and objectives

After 18 months in the building we are really now using it the way it was designed. It sounds strange, but class sizes average about ninety students and that means we have three or four teachers working with about ninety students in a learning area. The way that the building has been designed means that we can connect as a group within that single learning area, but then divide into smaller groups to respond to different needs. It means that if an explicit instruction is being given around a concept, but a small group are struggling with that concept, there is a teacher available to work with them. It's got that beautiful flexibility. We're seeing that the building provides us with the ability to hunker down into individual classes when we need to and to open up into larger spaces.

One of the things that has been beautifully designed is the sound quality – although there may be ninety students in a connected space, it can be busy, but not really loud and clattery. It means the students can work collaboratively, actively and productively while maintaining a workable environment.

There are also spaces for retreat built into the design - we call these node spaces. The open nature of the learning areas means teachers can continue to supervise, while students are able to retreat to quiet spaces when necessary for intensive study or respite from the busy environment (for example children with sensory processing difficulties).

have a series of spaces that can be used for a variety of things at any given time.

One of the challenges for any teacher is supervision, it's a duty of care. The visibility between the spaces means a teacher can be in an adjacent space, and still have that supervisory role. In this way, the design of the school supports student's agency and independence. From a teacher's perspective this transparency and connection also means that rather than the isolation that can be experienced by teachers in a traditional school, they are always connecting and collaborating with their peers. It also allows the school leadership to form teaching teams that balance the energy and passion of the younger teachers with the experience of established teachers to everyone's benefit.

Many traditional schools are focused on an ATAR based education (entrance marks for University) and we are seeing that that is not necessarily a precursor for success. Those people that can adapt, collaborate, work differently, do things differently are the people that thrive. We have seen that demonstrated in recent months through the pandemic. We will continue to have disruptive events and change, and the kids have got to be able to deal with it. Our focus is on trying to create people who are job makers, rather than job takers.

Explain how the project achieves school district and community goals

It would be hard for South Australia's Department for Education to design a school now that is lesser or goes backward from the design of Adelaide Botanic. You have only to look at the design of the three new schools currently underway in South Australia our students are very much connected and (Whyalla, Angle Vale and Aldinga) and although they are contextualised within their community, there are concepts like the active atrium and the connected learning spaces that have been incorporated. No longer can we design second rate learning environments for state education. When families are looking at not sending their children to local private schools, but instead sending them to Adelaide Botanic, we've lifted the standard of what we provide as a learning environment for young people. We are seeing a commitment from the Department, whether in a refurbishment or new build environment, to high-quality learning environment design, not just adding a couple of transportable classrooms out the back. More and more families are coming into our state schools now and seeing the quality of the learning environments and Adelaide Botanic has been a leader and a benchmark in very visible the strategies we have to work that way.

It's also allowing us as schools now to focus on the learning. As Principals, a lot of us spent a lot of our time trying to scrape up as much money as we could to make changes in our schools. We can now focus on the learning that occurs in those spaces. It has had a great flow on effect. As a school we see a role in working with the new schools that are being built around some of our learnings, even to the point where we are trying to engage some PHD research into our school that will inform that practice into the future.

Explain any unintended results and achievements of the process

From a cultural perspective, our young people and our staff have not been used to living in one house together. It has been interesting watching the dynamics of that growing. The longer-term effect of it is that feel a strong ownership of the building. So on the last day of each term, we generally do something different. Last term we had the school Big Band playing in the atrium as the kids left the school. But the number of kids who emailed me on the last day of term to ask what song we were playing and what we were doing - there's a real ownership of the space. It's like we're all living together in a big share house. And when you do that you have to learn how to get along with each other and you have to learn how to interact. I think Australians have become very used to having too much space, and not having to interact in that way, so it's actually teaching some tolerance. It's teaching how to get along with people, and when we don't, how do we deal with it? When we have a disagreement, it's a very public disagreement. But it also makes with our students around that.

Another thing we thought was going to be more challenging was the transport to and from school. Zero parking has not been an issue, and what we're seeing is the number of kids we are seeing riding to school, we're probably going to have to find more bike parking. We thought 180 was going to be enough – it's not.

7. Educational Specifications

The educational specification was developed
in collaboration with the educatorThe structure of the school day and the
educational program will be fundamentally
shaped by the school's prized city location
and the educational possibilities this affords
both teachers and students. For instance, the
typical duration of lessons will be extended

Excerpt from Return Brief

A school for the 21st century must necessarily challenge longstanding views about the purpose of a school and its physical form which have evolved over generations. The New CBD School will be a 'transformative place' intended to lead educational developments in South Australia and nationally, and to challenge our thinking about the nature of campus-based learning.

The New CBD School will place an explicit emphasis on 'learning', understood as a process involving active enquiry, discovery, collaboration, research, applied knowledge, innovation and entrepreneurship - which will be pursued through the school's focus on STEM programs and the areas of Science and Health studies.

It will be a place that is transparently connected to its immediate precinct, putting student learning on display by providing visibility into the building for passersby to create interest in its educational activities, whilst enabling views into formal learning spaces from within the building and offering views across the various levels of the building for visitors and occupants alike. In breaking down the traditional 'classroom box', it will also create opportunities to encounter students undertaking learning activity throughout the school's internal settings, around the perimeter of the school's external boundary and in the wider community as students engage with resources and undertake tasks away from the school.

The structure of the school day and the educational program will be fundamentally shaped by the school's prized city location and the educational possibilities this affords both teachers and students. For instance, the typical duration of lessons will be extended to optimise the numerous opportunities for classes and individuals to regularly depart and return to the school campus as required in order to engage with proximate facilities or to access the rich natural setting surrounding the school as a place of learning.

As an inclusive and dynamic learning community, the school will contribute to a vibrant and safer city through its active engagement with its precinct neighbours to initiate and host a range of extra curricula programs. For instance, the school can readily serve as a venue for arts and other cultural events; or function as a 'residential base' for remote school groups visiting Adelaide during term breaks.

As a 21st century learning environment in which the physical setting is integral to the learning process, the school is designed to extend the learning opportunities and enrich the student experience through the physical form and composition of its buildings, its internal settings and its external environment. At a campus level, the design of the school will generate a sense of journey for staff, students and visitors as they move between internal settings of various scale and purpose, but which are shaped by an overriding intention to invite occupation and use, and to promote curiosity about the activity of others. Student-directed, collaborative and discovery-based learning approaches will be implemented to create an inclusive learning community for all students, supported by adaptable formal and informal learning spaces designed to facilitate diversity in student learning activity. In addition, direct teacher-led practices will be enhanced by the availability of a wide mix of formal teaching settings for large and small groups. Mixed age-level classes and inter-disciplinary learning will be enabled in collaborative learning spaces designed to readily adapt to shifts in class numbers as well as the type and scale of learning activity.

It will be a school which enables teachers and students to occupy and use the spaces within it according to their specific needs and preferences at a particular moment in the school day, or for an extended duration during a week, a semester or regularly throughout the year. Overall, the suite of formal and informal learning spaces will:

- Support a wide range of learning activity, emphasising active, collaborative learning tasks
- Encourage innovative practices
- Seamlessly incorporate IT/AV technologies
- Enable ease of movement within areas by teachers and students
- Optimise available working surfaces on walls, etc.
- Be readily adaptable by users
- Readily accommodate variation in class size, disciplinary content or teaching methods

The school also will be connected digitally to a broad network of entities and resources creating a dynamic institution, seamlessly blending physical and digital environments, to further extend the opportunities for teachers and students. To this end, the school is conceived as an experimental platform enabling students and staff to work in new and various ways, both within the formal learning spaces and more broadly throughout the entire school campus, to build mediated collaborations, partnerships and shared activity across distance, time and educational institutions.

It is intended that the school will attract the best teachers into a culture that will promote the advancement of knowledge on effective pedagogy, as well as building close collaboration and interaction amongst students and staff. Key facilities, such as cafes, will be conceived as places to promote student-staff engagement and to serve as a stimulus for conversations on common interests. There will be a focus on professional development to improve teaching practice and possibilities to pursue pedagogical research in partnership with relevant tertiary bodies to advance the discourse on student learning. The school will also function in ways that encourage and showcase the teachers' regular involvement in practical activity, experiments and research outside of their normal classroom duties in order to present their professional knowledge and skills to students.

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8. Educational Brief and/or Educational Visioning Documents

The educational brief was developed in collaboration with the Extended Team, which provided an opportunity to create a contemporary learning environment that prioritised pedagogical program, daily operation and physical design to meet the needs of students, educators and the community.

Excerpt from Return Brief

The design of the New CBD School proceeds from the critical principle that learning happens in places that are integral to the nature of the learning experience and which generate the possibilities available to both the teachers and the students. It is a view of the teaching and learning process that recognizes the fundamental role of the built environment of the school campus as an active element in the pedagogy that is generated within it.

The physical setting for the new school will be integral to the nature of the pedagogical process, the teaching approaches adopted by the teachers and the quality of the student learning experience. The project offers a unique opportunity to create a 21st century school culture and the physical environment required to sustain its growth and development. The school will blend openplanned, flexible learning spaces with more discrete personal settings, whilst providing more public areas for social and recreational use. It will be a place that promotes the idea of 'travel' through the building in order for the full array of facilities and services to be revealed and accessed.

The New CBD School project aspires to create a cohesive learning environment in which the physical, social and pedagogical elements of a contemporary school are integrated to create a place that is comfortable, stimulating and functions as a continuously-evolving platform where teaching and learning is enacted with energy and imagination.

It will designed as a place to challenge our understanding of what a school is, what it means to both the students and the teachers and, most importantly, how it is perceived by, and connected to, the wider community.

Essentially, contemporary learning approaches prioritise the individual learning experience, aiming to shape opportunities and learning tasks to meet the personal capacities, needs and interest of each student at a specific moment in the individual's educational development. In particular, the new CBD High School is committed to a 21st century pedagogy which is about "Connecting, Creating, Communicating, Coordinating and Collaborating". Set against this pedagogical context, it is essential that the school is understood as an instrument, or educational tool, explicitly created to enable the students to 'connect, create, communicate, coordinate and collaborate'.

This integrated physical, social, cultural and technological context will offer the students a unique opportunity to develop intellectually and personally, being engaged in more authentic learning tasks directly related to their own lives and the lives of those around them.

Greater scope to participate within the wider The 'blended learning environment' in the world outside the regular school boundary requires a pedagogy that prioritises and develops the student's ability to 'observe', 'compare', 'evaluate', 'listen', 'empathise' and 'act'.

The school's location will also provide teachers with an enormous mix of educational resources and the possibility to teach in new and more engaging ways. The school's educational program and physical facilities must serve to attract teachers committed to initiating pedagogical processes which emphasise exploration, discovery, initiative, individual responsibility and collaboration both within and outside the school community.

A feature of the CBD High School's activity should be the establishment of a program(s) reflecting the practical application of its pedagogical approach and intended to positively intervene in the life of the central city precinct. For example, a project on the topic, 'Adelaide as a Healthy City' could take the form of a continuing program to map the life, or history, of specific elements of the city and its inhabitants. This would present students with many opportunities to develop a range of academic and practical skills (mapping, interviewing, surveys, photography, video & audio recording) reflecting the key 5 C's of 21st century learning, whilst creating a potentially valuable record for the wider community whose value would grow over time.

CBD High School, incorporating both 'oncampus' and 'off-campus' activity, will characterise the school's daily operation and will be critical to its physical design. Typically, in most schools learning excursions and activity undertaken away from the school campus is enacted as an occasional stimulus or 'special' event within the regular campusbased program.





In contrast to this scenario, and of critical importance for the CBD High School, it is essential that the 'learning activity' which will be transacted within the wider city boundary, and possibly in conjunction with other key municipal facilities, can be readily translated into the new school's built learning environments upon the students' return to the campus. Therefore, the school's formal classrooms and related informal learning environments must enable the robust, active, collaborative and explorative learning culture experienced by students off-campus to similarly prosper as the primary pedagogical mode within the school.

To enable this learning culture to flourish, formal classrooms must support student occupation and use of spaces in their preferred ways and enable physical movement within the space by teachers and students to promote greater collaboration and peer-to-peer learning. Critically, such physical environments enable the school to create more personalized, experiential learning for individuals to create a place that is more inclusive for all students.

In keeping with its 21st century pedagogy, the school will also need the capacity to engage with, and accommodate the participation of, relevant community, industry and professional groups whose presence within the campus will reinforce the dynamic nature of the school's learning program and contribute to the growth of the learning community generated within the school.

To complement this pedagogical approach, and to enrich the student learning experience and enhance the learning community within the school, the use of new technologies and telecommunication media must ensure that students will be provided with a seamless 'blended learning' environment, where direct person-person relationships are complemented by interaction with other individuals, communities, materials and learning activities remote from the school in time and space but accessed online.

The school will feature a suite of 'Learning Communities', each of which comprises a Learning Commons for large-group, mixed activity as well as a series of adjacent Learning Studios capable of accommodating regular class sizes for more discrete learning tasks. The 'Learning Communities' are designed to promote flexible use and to enable widespread visibility of student learning activity, and teaching practices, across floorspaces. The emphasis on adaptability ensures that the spaces can be occupied by students and various sized groups according to immediate needs.

The 'Learning Communities' will incorporation various IT/AV systems, optimize available 'working surfaces' for student and staff use throughout the environment, and feature furniture which enables active and collaborative learning approaches. The versatile landscape of learning environments that constitutes each 'Learning Community' is intended to support diverse use, including both formal and informal learning activity. Converged as a single entity these generous floor spaces also invite a variety of other uses, including for social activity as well as student accommodation during lunch and recess breaks on 'bad weather' days.

To this end, the school's educational program should be:

- Intent on fostering students as innovative and creative learners with the capacity to express these qualities as they progress beyond the school into further education or employment
- Intentionally designed to draw on the rich array of natural settings and municipal facilities in close physical proximity to the school
- Embedded within the fabric of city life, responding to and benefitting from the diversity of activity that naturally occurs in a major city centre
- Infused with the agility afforded by mobile, digital technology seamlessly integrated into the student experience to enable them to shape and engage with their learning environment

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