VISION

ISSUE 51

FLYING HIGH

Royal Flying Doctor Service Headquarters, Adelaide

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Nautilus Centre, Concordia College, Adelaide

Viridian we ♡ glass

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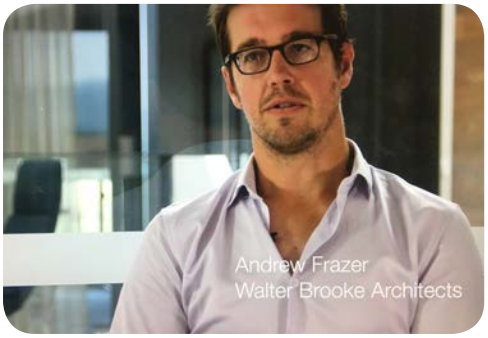
04 FLYING HIGH

Royal Flying Doctor Service Headquarters, Adelaide

What better way to help celebrate and promote new headquarters for the Royal Flying Doctor Service than to improve public visibility and workplace in a single sweep?

With a fleet of high performance aircraft and staff at its disposal, the aero-medical service required a new more efficient and streamlined base to conduct service operations.

The RFDS's new national headquarters in Adelaide is hallmarked by brilliant transparency and staff/patient amenity. Viridian double glazed unit ThermoTech™ provides the means for vastly improved operational clarity and efficiency.



WATCH ARCHITECT ANDREW FRAZER IN CONVERSATION

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LINES OF SIGHT

Nautilus Centre, Concordia College, Adelaide

Flowing circulation, deep light and collegiate learning spaces comprise Russell and Yelland's Nautilus Centre for Concordia College. An elegant envelope featuring concrete fins and structural glazing are part of the ensemble designed for student interaction and discovery.

Viridian's ComfortPlus™ is used with aplomb to celebrate the centre, located in suburban Highgate, a few kilometres south of the Adelaide CBD. Juxtaposed with the school's historic origins, the centre's modernity contrasts in thoroughly contemporary ways. 'Mirrored' across a grassy quadrangle, old and new provide a positive contrast of styles, eras and aspirations.

WATCH ARCHITECT HARIKLIA PONTIKINAS IN CONVERSATION

FLYING HIGH

WATCH ARCHITECT
ANDREW FRAZER
IN CONVERSATION

Architecture is one standout way for an organisation to create or confirm public presence. The Royal Flying Doctor Service's (RFDS) new national headquarters in Adelaide is a millennial update for a history-steeped organisation.

And it's one that cures old accommodation ailments where corporate services and emergency crews functioned separately.

Designed by Walter Brooke architects, the new facility is nerve centre and mother ship for the RFDS's entire aero-medical fleet. Separate from the main airport infrastructure, many of the RFDS's fleet of jet and propeller craft are housed, maintained and operated here.

The RFDS fleet of 71 aircraft covered almost 27 million kms. in 2017 and were part of the organisation's connection with 335,000 patients.

While so many airport structures are little more than utilitarian boxes, or acrobatic geometry, the RFDS's home of steel and glass is all faceted, crisp necessity. Contributing hugely to its form and function, Viridian double glazed units provide deft connection to place in ways large and small.

References to the usual airport motifs of flight are handsomely restrained across its 5,200sq.m. that spans two levels.

Principal among these is a 2,100sq.m. workshop fitted hangar for up to six aircraft and bespoke office space of 900sq.m. over two levels. Completing the services are patient transfer and care facilities with adjoining ambulance bays, crew sleeping quarters and associated staff and visitor car parking.

PROJECT
Royal Flying Doctor Service Headquarters, Adelaide Airport

ARCHITECTS
Walter Brooke

PRINCIPAL GLAZING
Viridian ThermoTech™, SolTech™, VLam™, VTough™ & SpectraSeraphic™

TEXT, IMAGES & FILM
Peter & Jenny Hyatt

Rather than squeeze occupancy into a pre-determined flighty form, the design is shaped by a practical, disciplined program. And instead of antiseptic, astringent spaces, interiors offer generosity with full height central atrium, clerestory, glass-walled meeting rooms and timber lined voids.

The foyer/atrium space encourages visitors to engage with, and be educated about, RFDS culture and operations. Glimpses of aircraft in the hangar or flying in and out, ambulances driving by, and an architectural connection to the sky and land through the floating glass skylight over the atrium stairs, are all vital components of this connective and cohesive aspect of design.

Vision's Peter Hyatt met with project architect Andrew Frazer of Walter Brooke to discuss a project requiring technical excellence and empathy:

VISION **A project highlight?**

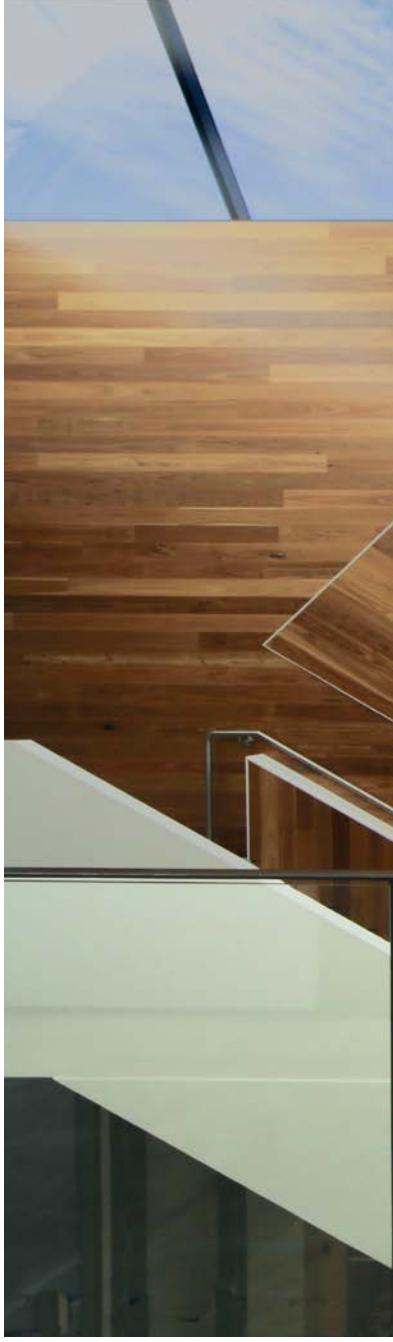
ANDREW FRAZER One is the main entry foyer viewed from the ground floor. There was a focus on giving visitors an impression of what RFDS was all about just by entering the building.

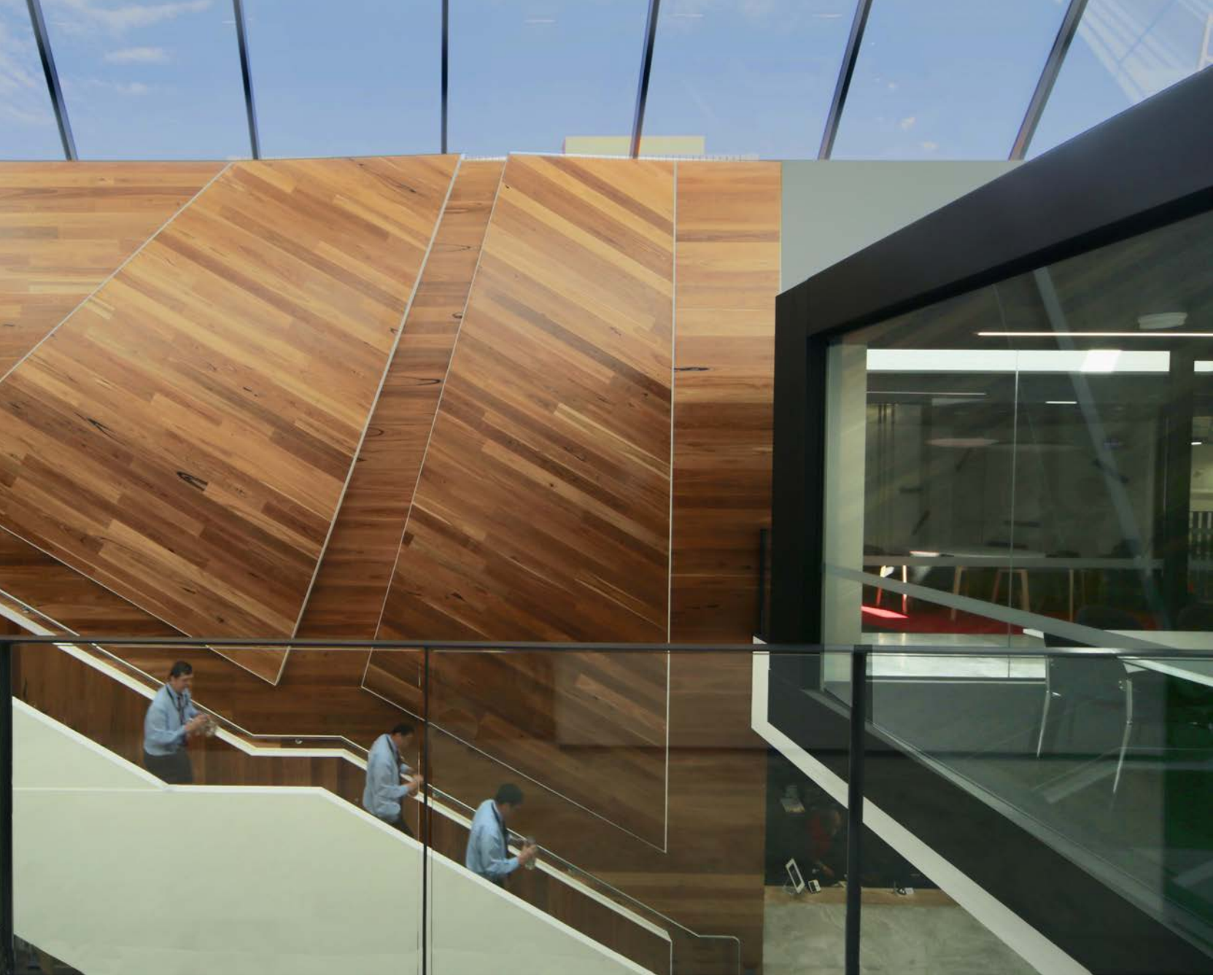
There is a work-in-progress quality with such high visibility throughout.

You walk in and see everything. You see the RFDS aircraft and staff at work. You can look out to the apron and the main Adelaide airport control tower. You can also look up through the atrium and see the sky. They are the main three aspects and it was about selling RFDS.

A regular challenge for architects is to prioritise levels of transparency.

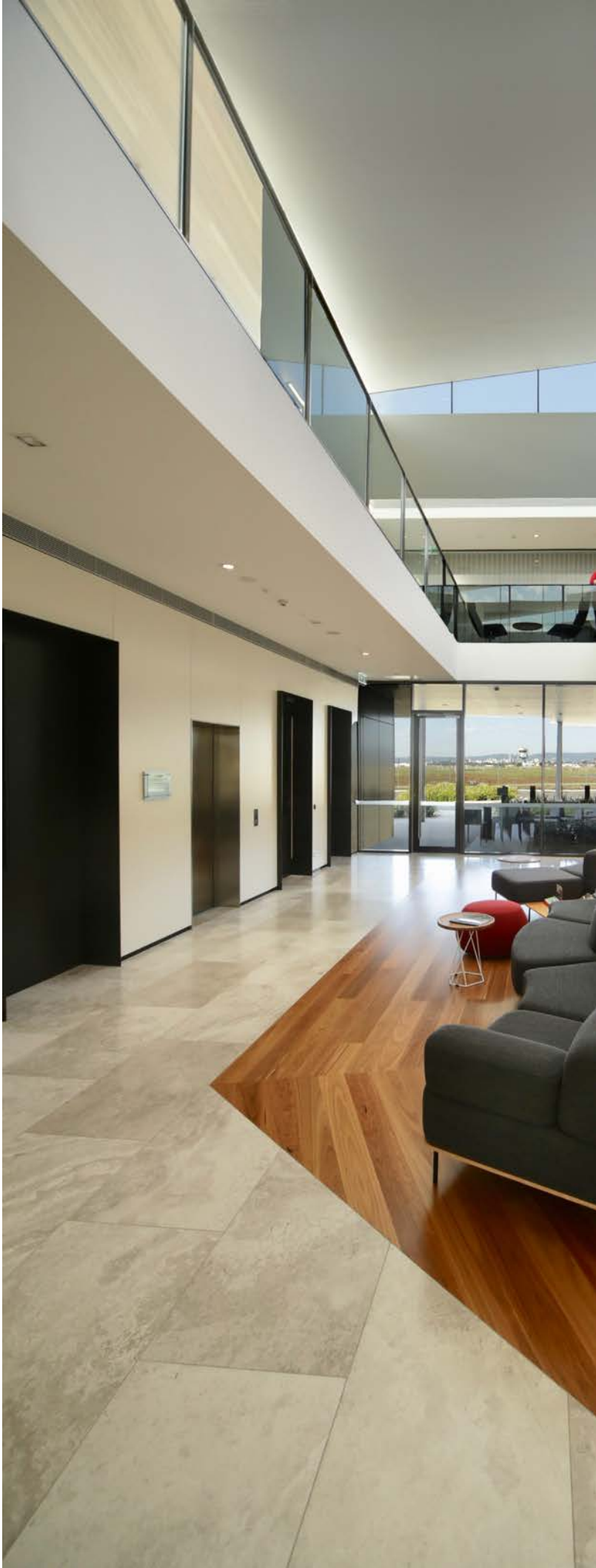
That was a key aspect here. The organisation was previously split into different building sites. There was a cultural shift in bringing people together. While there's a slight disconnect between operations and administration, visitors can see through the hangar what the operational people are doing – and vice versa. It was all about transparency and making the building visually open.

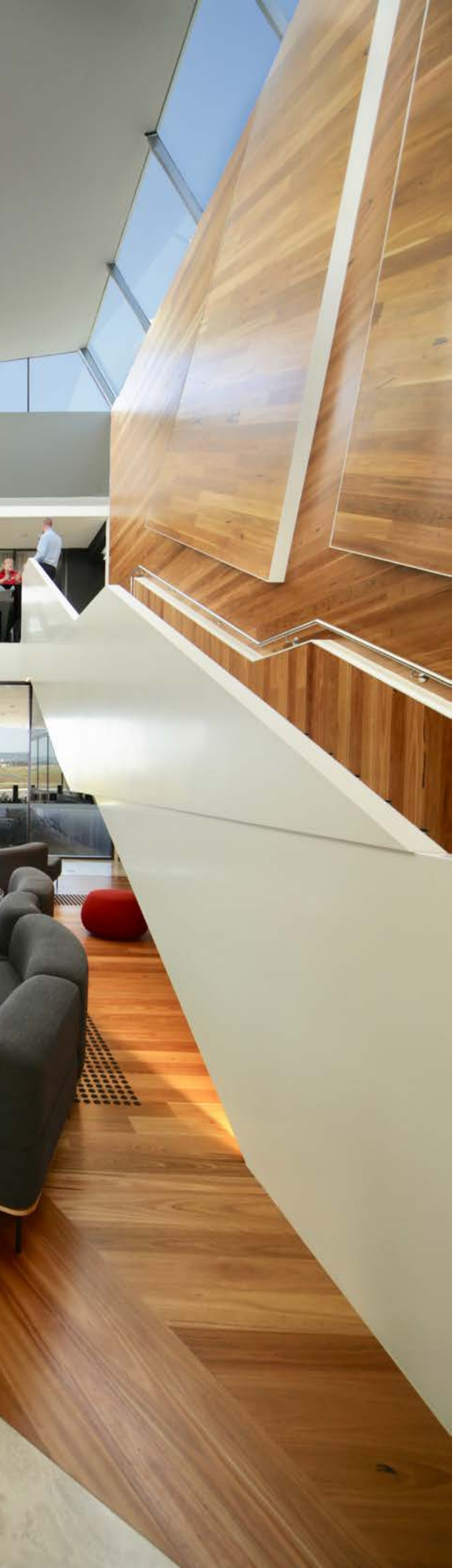




"There was a focus on giving visitors an impression of what RFDS was all about just by entering the building."

ANDREW FRAZER, ARCHITECT





This even flows through to the large screens throughout that inform everyone exactly where aircraft are right across Australia at any given point.
That's right, those screens show every aircraft in position in Australia real time and there are countdown clocks when there's an emergency and response time. This design was all about patient care. That was the key driver. Anything the building could do to facilitate patient care and make that operation happen as quickly as possible, letting people do their jobs as well as possible was key.

Has working on this project made you a better architect?
It's given me an appreciation of so many different operations and combining those areas of expertise in one building. You learn something new on every project and this was unique where you have aircraft, engineers, nurses, doctors and administration in one facility all working together.

Is there a parallel in the architecture as a healthy, stimulating environment produced by an uplifting building and workplace?
There's distant views and a lot of natural light falling into the building. Most staff have that view whether they're in an office or open plan environment. Even the centrally located meeting room offers views towards the airport apron.

What were the big questions posed to you as architect?
Patient care. The focus from the CEO, John Lynch was "How can we get an emergency patient to a hospital and then back to their home as quickly and as comfortably as possible?" It was all about avoiding bad patient circulation from that moment of arrival.

"Visitors can see through the hangar what the operational people are doing – and vice versa. It was all about transparency and making the building visually open."

ANDREW FRAZER, ARCHITECT


Royal Flying
Doctor Service

"There's distant views and a lot of natural light falling into the building. Most staff have that view whether they're in an office, or open plan environment."

ANDREW FRAZER, ARCHITECT

This is way beyond most airport boxes.
It is and that was based on patient care and staff being able to move from one part of the building to the other in a seamless manner. You will see circulation is quite prominent in the building, with a lot of natural light and the relationship of space. Everything is really trying to be as transparent and open as possible with good circulation where people can get from A to B very quickly. That was a huge focus.

How does glass help achieve your objectives of public interface – between city and outback?
Administrative staff who overlook the apron have a 180 degree view for visual awareness when a plane's arriving or leaving. It's the same at ground floor from the nurse stations and patient care area. Double-glazing is strategically placed to allow that to happen. It forms the main, north-facing curtain wall on a slight incline with shading devices every 500 mm. There are slot windows on the west and they're made more prominent on the east and south. These are also double-glazed for thermal and acoustic reasons, given it's part of an airport.

That's the envelope...what about internally? Glazing quite dramatically de-materialises your interiors.
Internal glass makes the building as transparent as possible. In this meeting room all four walls are glass with views to the apron and beyond. The policy here is open doors so it was really important that we sort of break down those barriers between open plan work-stations and offices. Most of the main rooms are surrounded by glass to keep that transparency.

"The RFDS's home of steel and glass is all faceted, crisp necessity. "

VISION

PROJECT
Royal Flying Doctor Service Headquarters, Adelaide Airport

CLIENT
Royal Flying Doctor Service

ARCHITECTS
Walter Brooke

STRUCTURAL ENGINEER
Wallbridge and Gilbert

ENGINEER
Wallbridge Gilbert Aztec

BUILDER
Sarah Constructions

WINDOW SUPPLIER/INSTALLER
Dickson Glass

GLASS SUPPLIER
Viridian

PRINCIPAL GLAZING
Viridian ThermoTech™ using SolTech™ Neutral & VLam™ Clear

Spandrel Viridian ThermoTech™ using VTough™ Clear & SpectraSeraphic™

Viridian ThermoTech™ using VLam™ Clear

Viridian VTough™ Clear Custom Laminate

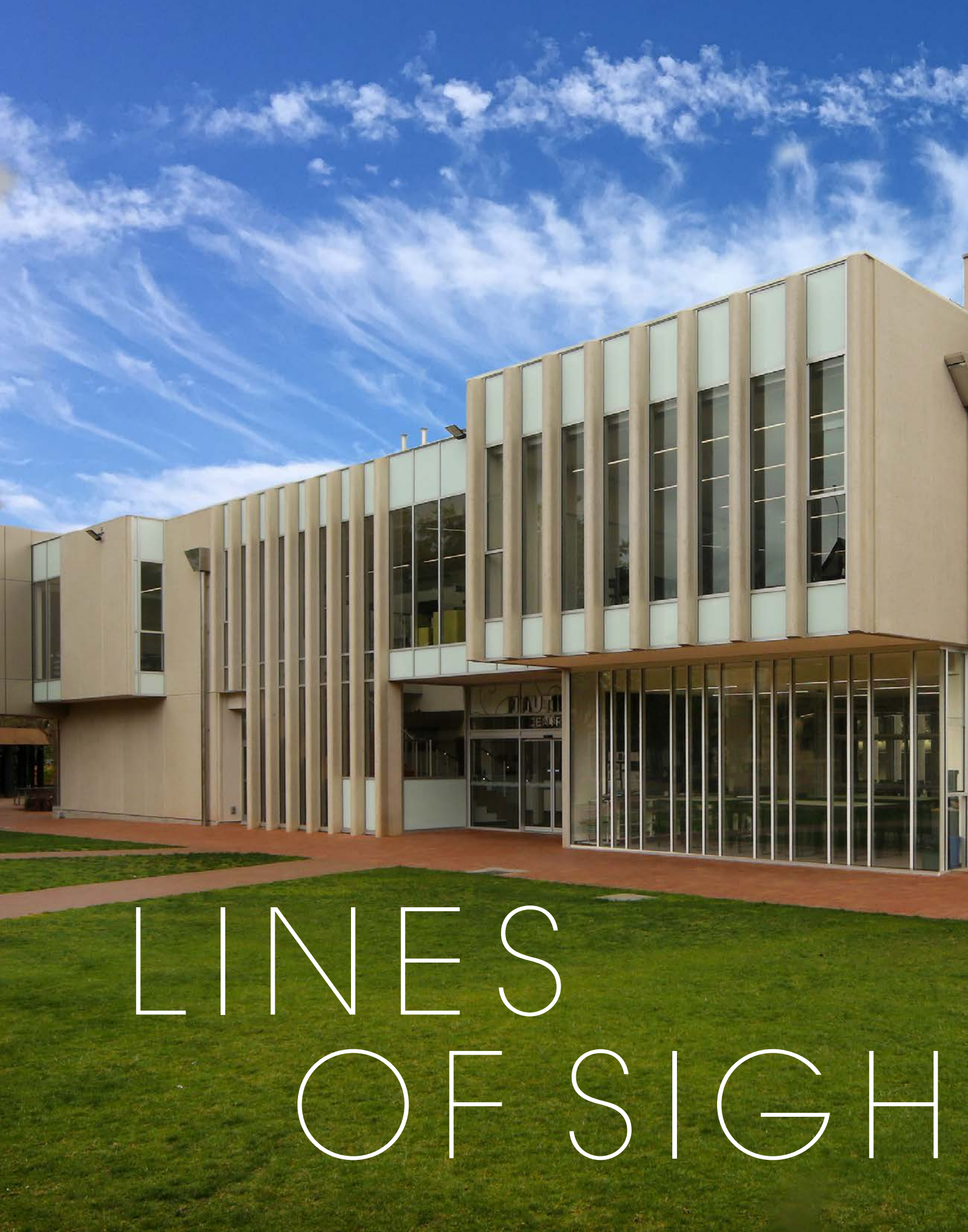
Viridian SolTech™ & SpectraSeraphic™

Were discussions held with Viridian about how and where glass might be used?
They were really involved in understanding the structural glass makeup – especially where we used toughened and laminate on that front elevation. There was involvement as to how we did the spandrel zones. Where colour-backed glass is used we've done so behind double-glazed units for as much transparency even where there are spandrels. There was input for sure even to the glass that's above us here, we had to use a particular tough laminate glass given it's a roof skylight.

What are the main technical issues and achievements?
Finding glass that achieved both thermal requirements and the acoustic requirements is always a balance. The team got that right from the input that's been received, so that was an important aspect. The main curtain wall is on a 10 degree incline and part of the glazing make-up, but one of the key issues is the challenges of transparency and acoustics.

If it's not the door handle, or hand- rail, it's the slot window that can make a difference. Those details are what form the big picture.
That's true and for instance glazing in the main meeting rooms has no joins. It was important to keep that glass as one large piece. It was done to keep the integrity of the outlook towards the Adelaide control tower, main runway and the ambulance space. This meant the glass had a particular focus and prominence in this respect and outlay.

What if your client had been an IT company for instance. How would that design have differed?
The RFDS had a lot to do with the design by giving the architect that sense of flexibility. And they had trust in us to do something that achieves their outcomes. You definitely don't see atrium spaces with big volumes in the center of most buildings, but that's been done to connect ground and upper floor with an interconnecting stair. It's part of that visual awareness of everyone around you within the organisation.



LINES OF SIGH

WATCH ARCHITECT
HARIKLIA PONTIKINAS
IN CONVERSATION

Educational architecture has moved ahead in leaps and bounds over the past few decades. The trickle down effect of tertiary construction has become a torrent at secondary and primary levels.

The need for education to remain relevant and competitive is white hot.

While many established school buildings are gloomy, the best of the new variety take students and staff to a much better place. Adelaide's Concordia College is further evidence of changing times.

The College's Nautilus Centre is stage, art studio, laboratory and sanctuary rolled seamlessly into one.

Central to its design for senior level students, Viridian's performance glazing gives voice to the architecture – and 1300 strong student body – to discover its full potential. Dissolved structure, concrete vertical fins towards the quadrangle and double-height glazing reveal a design narrative tuned to its setting. The result is a robust elegance. Key elevations reveal and shape views to optimise circumstance while the interiors encourage a relaxed informality.

Contrasting the historic sandstone foundation school (c.1905) the Nautilus Centre is the sharp-looking descendant. Replacing a worn 1960s teaching block, the Nautilus Centre is pitched towards the College's ethos linking the Sciences and Arts.

The central grassy quadrangle is thankfully kept intact rather than grabbed as an easy 'space' option. Preservation of this 'neutral' space is a reward for all perimeter buildings.

PROJECT
Nautilus Centre, Concordia College, Adelaide

ARCHITECTS
Russell and Yelland Architects

PRINCIPAL GLAZING
Viridian ComfortPlus™ Clear
& SpectraPrism™ White

TEXT, IMAGES & FILM
Peter & Jenny Hyatt

"We were able to meet stringent energy ratings which is a testament to the types of glass used throughout and double-glazing technology."

HARIKLIA PONTIKINAS, ARCHITECT

Vision's Peter Hyatt met with Russell and Yelland's project architect Hariklia Pontikinas to discuss the Nautilus Centre:

VISION **What were the key design drivers?**

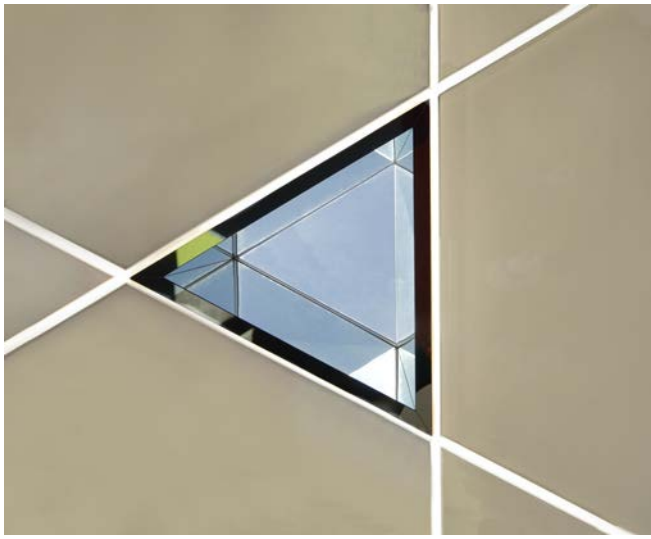
HARIKLIA PONTIKINAS The brief was for a design to encourage wonder, inquiry, discovery and innovation. Those are reflected not just in new learning opportunities, but in the fabric of the building itself. The new facility demonstrates mathematical, scientific and artistic principles such as the Fibonacci series, the earth's rotation displayed by a Foucault pendulum in the main stairwell, and various sculptural exhibits built into the indoor and outdoor learning environment.

This building really needs to multi-task!

The centre is designed to provide an immersive STEAM-based learning environment in which science, technology, engineering, art and mathematics come together. Large sliding glass door panels, collaborative shared learning areas, serviced flexible learning areas and seamless transitions between indoor and outdoor learning spaces all combine to encourage inter-disciplinary learning and collaboration.

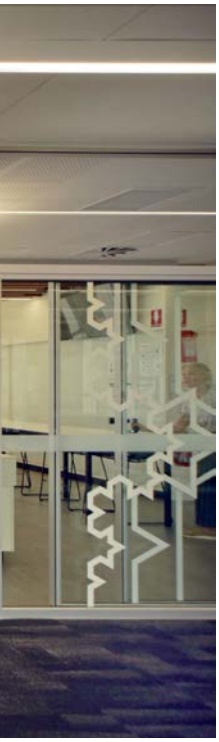
How did you settle on your material palette?

Precast concrete acknowledges the heritage stone buildings facing the main quadrangle. Vertical concrete fins articulate the facades and direct views into and out from the building. The art courtyard to the east opens up views of the original buildings from the street and provides sheltered student work and relaxation areas, while the studio lab on the south-west corner acts as a picture frame for the activities within. Glass is crucial throughout to achieve legibility of form and function. Glass drastically cuts the need for artificial lighting and fills the building along its main east west axis.



“The building should make learning visible internally and from both quadrangle and street.”

HARIKLIA PONTIKINAS, ARCHITECT



What about key objectives?
The building should make learning visible internally and from both quadrangle and street. The building should act as a teacher, embedding cues to different scientific, artistic and mathematical concepts to spark the curiosity of students.

The Nautilus Centre is pretty anti-silo study in that it promotes a real bond between the Arts Sciences and Humanities.
The rationale for a new building rather than refurbishment came from the desire to change the pedagogy and link subjects across the curriculum. Feedback from staff and students suggests this has already occurred – teachers are exploring new ways of delivering curriculum, students are encouraged to work differently, and on our many visits since occupation we see students working in many different learning modes.

Were there any concerns about a design as too revealing or 'open'?
Any concerns the building might be too open and transparent have not been borne out in practise. The turret design in the laboratories is working well because it allows different configurations of tables to suit the activity being undertaken. Staff and students are already using the AV installations to allow more flexible presentation methods with the large touchscreens giving more options for display and interaction. Art now has a large, sun-filled studio with direct links to design spaces and a new outdoor courtyard.

"...seamless transitions between indoor and outdoor learning spaces all combine to encourage inter-disciplinary learning and collaboration."

HARIKLIA PONTIKINAS, ARCHITECT

“The building should act as a teacher, embedding cues to different scientific, artistic and mathematical concepts to spark the curiosity of students.”

HARIKLIA PONTIKINAS, ARCHITECT

What about air and light flow?
Feedback on the indoor environment quality is positive, with the air-to-air heat exchange systems providing much higher levels of fresh air, eliminating the problems with chemical smells. The extensive daylight penetration deep into the building almost eliminates the need for artificial light, but at the same time areas such as physics can be totally blacked out for light experiments.

What were some of the established buildings on which you based your design?
The school couldn't find a comparable exemplar project. The mix of spaces, need for flexibility and visible learning has resulted in a transparent building. Being able to easily reconfigure laboratories and other learning spaces is also a huge benefit.

How does the Italian mathematician Fibonacci's work from the middle ages provide inspiration?
The brief objective to use the building as a teaching tool resulted in deliberate choices of materials, colours, patterns and spatial sequences to embed different concepts within the building fabric. The Fibonacci series appears in carpets, ceilings, lighting, the blue lounge at the top of the stairs, and even in the commissioned artwork. The Mandelbrot set is revealed as sliding door panels stack, while the unique Foucault pendulum in the atrium was designed and built as a research project by the school community.

"Key elevations reveal and shape views to optimise circumstance while the interiors encourage a relaxed informality."

HARIKLIA PONTIKINAS, ARCHITECT

Each elevation is specific and responsive to its opportunity. To the south-west for instance you use glass to open up to the treed courtyard area and allow fantastic vision into those chemistry classrooms.
That's true. Apart from a practical purpose to that of bringing plenty of indirect and direct light into those rooms it makes a beautiful connection with the specimen eucalypt and heightens that whole feeling of connection whether students are inside or out.

And were there surprises using glass so extensively throughout in large and quite detailed ways?
Well we were able to meet stringent energy ratings which is a testament to the types of glass used throughout and double-glazing technology. The printed elements and motifs on the glazing are subtle artworks in their own way and hopefully echo that artistic and scientific function of the building.

PROJECT
Nautilus Centre, Concordia College, Adelaide

ARCHITECTS
Russell and Yelland Architects

BUILDER
Badge Constructions

ENGINEER
Wallbridge Gillbert Aztec

WINDOW INSTALLER/GLAZIER
ALUCO

PRINCIPAL GLAZING
Viridian ComfortPlus™ Clear & SpectraPrism™ White

“The studio lab on the south-west corner acts as a picture frame for the activities within. Glass is crucial throughout to achieve legibility of form and function.”

HARIKLIA PONTIKINAS, ARCHITECT

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