VISION

SKYWALKER

Macquarie Group Global Headquarters,
Martin Place, Sydney

UP CLOSE & PERSONAL

Melbourne Zoo, Parkville, VIC

Viridian™
New World Glass

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04

SKYWALKER

Macquarie Group Global Headquarters,
Martin Place, Sydney

Inspired glazing sets the tone for the interior of Macquarie Group global headquarters. Skybridges star amongst the feature elements of a re-working of this aged, former bank that is now not only high-tech but fully considerate to the well-being and outlook of its employees.

VISION welcomes project submissions to our editorial team, please submit ideas and projects clicking the icon above.

18 UP CLOSE & PERSONAL

Melbourne Zoo, Parkville, VIC

Visitors to Melbourne's new Lion Gorge are only centimetres from danger and yet incredibly safe thanks to the strength and clarity of Viridian glazing which heightens their experience.

SKY WALKER

A futuristic vision and grand heritage might appear an unlikely marriage, but Macquarie Group's global headquarters in Sydney's historic Martin Place sparkles with authenticity and relationship to place. Glass and steel deliver a lustrous counterpoint to this grand former Savings Bank. A new glass bonnet and Viridian glass footbridges are among the jewels that transform a jaded, 20th century classic into a 21st century masterpiece.

Macquarie Group Global Headquarters
Martin Place, Sydney

ARCHITECTS
Johnson Pilton Walker

PRINCIPAL GLAZING RESOURCE
Viridian Custom Laminate
Incorporating Seraphic

TEXT, IMAGES & FILM
Peter & Jenny Hyatt

Translucent glazing with edge lighting emphasizes a crystal-like, floating delicacy to the sky-bridges.

At a mere 12-storeys, it should barely register amongst the corporate strut and muscle on almost every corner of Sydney's financial hub. But star it does. The bank's new home at 50 Martin Place, near the avenue's eastern edge, exhibits a subdued, calm brilliance. Outwardly almost unchanged since its opening in 1928 as the Government Savings Bank, only a new roof hints at the liberation within.

The result is a tour de force of glass, steel and structural clarity. Architects Johnson Pilton Walker's design is a stellar blend of new and old, light and shadow. Its vision, along with a receptive client/build team adds a human modernity to the gravity of banker's marble. Such reinvention sees daylight wash throughout its broad floor-plates with the rejuvenating qualities of a crystal spring. For the building's workers, this converts to a workplace like few others.

Project precedents include Foster Associates' Reichstag Parliament in Berlin, the École des Beaux-Arts and Grand Palais in Paris.

Project architects Matthew Morel and Walter Brindle of JPW speak with Vision editor Peter Hyatt about the transformation of a grand design into a great one:

PH **What attracted Macquarie to this, of all the city's buildings?**

MM Macquarie had a clear commitment to the CBD and Martin Place. They view it as the financial heart of Sydney and recognized how this heritage building had all of the right bones with such big floor plates, the side core and the central atrium. They came to us with a very exciting vision for the building based on their reputation for workplace innovation.

PH **How quickly did the concept materialize?**

MM The bones of the scheme emerged quite quickly. We wanted to maximise the experience of that wonderful heritage banking chamber, as a reception and entry area. The nine levels within the existing building are cutting-edge offices around a central atrium. It was important to Macquarie that the roof make a statement and express itself to the surrounding city.

PH **It's quite an achievement to bring such an old building up to current day performance standards.**

WB The project is a 6 Star Green Star building and a great example of converting a building almost 100 years old to demonstrate design leadership and sustainability. The glass footbridges are a part of that equation of bringing daylight into the building.

MM When opened in the 1920s, this was one of Australia's most expensive buildings. The Government Savings Bank was the second-largest bank in the British Empire and it was one of the world's largest banking chambers. The architects used an historical style, but in many ways they were very innovative. It was among the first reinforced concrete buildings in Australia to that height and the terracotta tiles are integral form-work for the structural walls. There is a lot of innovation in servicing the building. I hope we have continued that tradition.

PH **Were you concerned your design might test Macquarie's budget?**

MM The building was delivered for a very reasonable budget and very tight time-frame. That is due to a very experienced, talented and collaborative team including Macquarie, Savills, TKD Architects, TTW, ourselves and Multiplex of course.

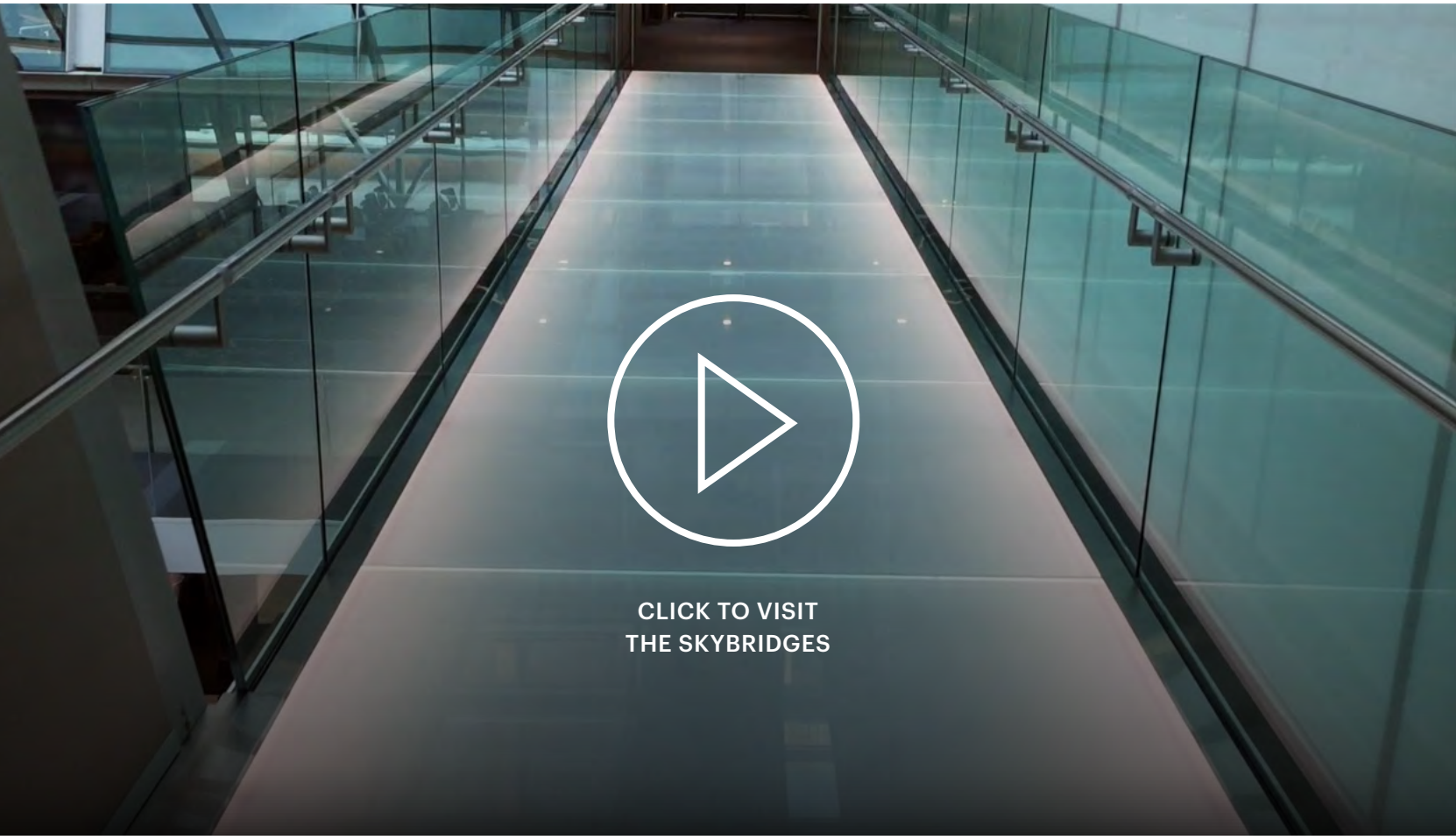
PH **The glass footbridges encapsulate a futuristic workplace. Are they people friendly in daily use?**

MM They're very important and an exciting part of the atrium. The original building had at its centre a light-well and was open to the weather with a glass cover at the bottom over a stained glass roof to the banking chamber. When the building was refurbished in the 1990s, that light-well was turned into an atrium. You only have to see them in use to appreciate how important they are to circulation.

PH **And the atrium really is the new building core rather than the usual lifts shaft, fire stairs and services?**

MM Macquarie felt the building was ideal for them in terms of floor plate size, natural light and outlook on three sides, a side core and a central atrium. They felt the

The footbridges heighten the sense of sublime spectacle.


CLICK TO VISIT
THE SKYBRIDGES

YOU CAN SEE THAT AT DIFFERENT TIMES OF THE DAY GLASS BECOMES THIS WONDERFUL, LUMINOUS SURFACE THAT YOU EITHER WALK UNDER, OR ON. IT CREATES UNEXPECTED LIGHT AND SHADOW.

Matthew Morel, Architect

atrium needed to be wider to bring in more natural light and improve workplace connectivity. The atrium is now really the workplace heart.

PH **How important is the strength and delicacy of the footbridges?**

MM On the upper levels, the client and conference spaces within the roof and foot-bridges form an important part of the circulation pattern and arrival sequence. Visitors arrive from the glass lifts onto the glass bridges. There they look into the atrium and can see the way the whole organization fills the building. Those footbridges needed to be designed in a way that minimized their impact on natural light falling down into the atrium.

PH **Those footbridges are expressed as a pair of translucent glass bands as opposed to clear glazing. Was vertigo an issue in that choice?**

MM There were a lot of considerations in selecting Viridian translucent glass. Vertigo was one, but also visual privacy for people standing on the bridges. Slip resistance and ease of cleaning influenced the decision. We also wanted large sections of glass to minimize joints and to edge-light the glass. All of those parts required extensive testing.

PH **Because you're not always certain how it will appear or perform when installed?**

WB Their position in the atrium means they very strongly dictate the character of the atrium. Light transmission, clarity and color transmission become very important. You can see how critical that beautifully light, crystalline bridge exists at the end of everyone's atrium vista.

PH **How did Viridian contribute to the process?**

MM Viridian was very cooperative with all of the product samples needed; all the different types of frits, build-ups, types of glass. I believe in the end we selected a frit for the top surface that was a combination of two different patterns and thicknesses.

WB The glass testing was absolutely fantastic to the point where we were able to test a vast array of frits and finishes. There is a significant amount of testing required for frit, light transmission, side-lighting and so on. The list of samples were quite exhaustive, and these aren't small squares either. We're talking 12 mm. thick sheets and up to 300 x 300 mm. Viridian was a very obliging, willing supplier. The overall glass bridge build-up required a custom laminate make up.

PH **The footbridges contribute to a feathering of the interior edges and become a transition zone.**

MM The glass bridges are part of the roof structure that uses the existing building rooftop as its base. We wanted the roof to sit quietly and to use unified steel and glass.

PH **Were there moments in the project where the glazing presented Herculean problems?**

MM There's a long process starting with design drawings. There are a lot of people involved. Steel specialists, glass specialists, structural and façade engineers. There are a lot of people bringing their skills and experience and ability to the design. There were a lot of vigorous discussions along the way, but I think the process was good.

WB There's a certain inevitability about the need for glass for this particular use that helped people to get on board very easily. Our team really supported this idea right from the beginning.

PH **Glass can create many incidental moments that no amount of CAD drawing, or computer renderings anticipate. Have you experienced those?**

MM You're right. These types of glass types respond in really interesting ways to changing light. You can see that at different times of the day glass becomes this wonderful, luminous surface that you either walk under, or on. It creates unexpected light and shadow.

A new atrium and staircase - amongst other features - allow the footbridges to deftly span the void without structural or visual clutter.

PH **While this appears simple, it's incredibly sophisticated with all of that faceting and chiseling to achieve such apparent simplicity.**

MM They're very spare footbridges. The structural steel is exposed of course. and the surface is glass. There's no lining. Nothing's concealed. Glass balustrades, stainless steel handrails. They're not just visually light, but physically light and spare. Less obvious during the day is the edge lighting in the evening. They change character from catching sunlight and become an illuminated surface within the larger scheme of the roof. That's another great aspect of the bridges.

PH **Technology is changing and the new work environment is encouraging greater physical interaction and to use our legs more than the desk-bound workforce of even a generation ago.**

WB That's right. Aside from those informal elements that relate to the workplace, the bridges are also an essential part of the arrival sequence. Glass lifts deliver staff and visitors from the atrium. They place you out on this bridge. You've toured your way up through the building from the glass lifts and from the most original and precious heritage jewel downstairs


A
A
B

and then arrive in a place that is innately forward-looking. It's very delicate but it's incredibly strong, and that's your arrival moment. That's not just about expressing the honesty of the materials and methods of construction, but also to a certain extent, the outlook of the organization that occupies the building.

PH **Was the project an especially demanding one?**

MM I can recognize where everybody was pushed to try something new, to innovate, to find a challenging, clever solution to difficult problems. It's not about opulent or expensive solutions, but clever, innovative solutions. That's true of the steel, that's true of the lifts, it's true of the services, it's true of the structure, and it's definitely true everywhere in the glass.

PH **Do you have a project highlight?**

WB When the big reveal happened; when the protective plywood was removed and the quality of the space emerged underneath, particularly in the lift lobby on level 10 and the atrium fell away below. When we finally unveiled the entire roof and entire interior in place, that real jewel sparkle and special quality of light was absolutely magnificent.

PROJECT
Macquarie Group Headquarters, Martin Place, NSW

CLIENT
Macquarie Group

ARCHITECTS
Johnson Pilton Walker

BUILDER
Brookfield Multiplex

QUANTITY SURVEYOR
MBM

PROJECT MANAGEMENT
Savills

FOOTBRIDGE GLAZING
Viridian

FOOTBRIDGES INSTALLER
Gleco Enterprises

PRINCIPAL GLAZING PRODUCTS
Viridian Custom Laminate incorporating Seraphic

PROJECT CONSULTANT TEAM: INTERIOR FITOUT OFFICE LEVELS 1-9
BVN Donovan Hill, Clive Wilkinson Architects

HERITAGE ARCHITECT
TKDA

STRUCTURE
TTW Taylor Thomson Whitting

MECHANICAL, ELECTRICAL, HYDRAULIC & FIRE SERVICES, ESD, FIRE ENGINEERING
ARUP

BCA CONSULTANT
Steve Watson & Partners

VIRIDIAN ACCOUNT MANAGER
Rick Perez

CORE PRODUCTS | ENERGY | NOISE | CLEAR VISION | DECORATIVE | BUSHFIRE | STRUCTURAL | STORM | SECURITY

UP CLOSE & PERSONAL

An enthusiastic audience observes the lions through the lower set of enclosure windows around the perimeter.

Lion Gorge Melbourne Zoo
Parkville, VIC

ARCHITECTS
OLA Studio

PRINCIPAL GLAZING PRODUCTS
Viridian custom laminate incorporating SuperClear™ TC and EnergyTech™ Clear

TEXT, IMAGES & FILM
Peter & Jenny Hyatt

Super tough, super clear and super engaging, Melbourne Zoo's new lion and wild African dog enclosures heighten the experience between human and beast. To achieve the required connection, 19 weighty panels of Viridian's custom super tough, SuperClear™ were needed for a result that virtually disappears into its setting.

Melbourne Zoo's recent upgrading results in two stand-out exhibits for lemurs and lions. Coincidentally, both have been created by the small, but design driven architecture practice OLA. Hardly surprising either, that the firm collaborated on this project with landscape architects Urban Initiatives and interpretive designers Arterial Design.

The buzzword 'interactive' seems to be the buzz in both enclosures – lemurs allowed to romp around and among visitors, while the lions and adjacent wild African dogs move at a safe, but often very close proximity to visitors. A streamlined combination of steel mesh and Viridian SuperClear™ create an unobtrusive, quite seamless link between visitor and beast. Encounter rather than enclosure seems to capture the design spirit. The lions' natural habitat it may not be, but superior to many zoos for sure.

Striking the balance of animal privacy and patron entertainment is a test. OLA and team with Melbourne Zoo just about perfect the process. A winding path wraps around multiple display 'windows' to provide framed views into the lion habitat, African wild dog and soon to be occupied, crocodile enclosure. Visitors and lions seeking respite from the elements can easily find shelter and private space.


DIGEST-
ED

WE THINK A CONTEMPORARY ARCHITECTURAL APPROACH HELPS TO EXPLAIN THE REALITY OF THE CONSERVATION ISSUES AT HAND.

Phil Snowdon, Architect

Phil Snowdon, principal at OLA architects spoke with Peter Hyatt about creating a habitat respectful to lions and wild dogs, yet thrilling and revealing for visitors:

PH **You're quickly becoming a zoo enclosure expert. Or should that be an expert at animal and people environments?**

PS That's a good question. We're becoming expert in working with zoos who probably spend more time thinking about the enclosures than we do. As architects our focus is on the buildings that educate and entertain visitors. The landscape architects and interpretive designers focus more on the enclosures and visitor interaction. Together we assemble the complete experience.

The lion enclosure is by necessity vastly different from the lemur enclosure. What are the similarities and differences?
Part of what we try to achieve is a feeling of immersion into an experience and another part is to create the opportunity for people to make a real and emotional connection with wildlife and nature. The Lemurs is a walk-through facility so immersion was reasonably simple. The emotional connection is amplified because of the unique and other-worldly nature of the exhibit. At Lion Gorge, obviously, we're not doing a walk through. Immersion is achieved by creating an over-arching theme of animals and visitors sharing a waterhole, and an architectural "refuge tree" for visitor's to retreat to. The connection is largely through the unexpected proximity to the large predators, thanks in large part to the use of glass.

Typically we don't associate architecture with such places. In the past it has been a grill or wire fence between visitors and animals. Architecture is being absorbed and made integral. What does this provide?
Built environments have been a part of exhibits for a long time but often disguised as mud, or rock-faces or themed to visually link the exhibit to a pre-conceived idea of primitive architecture of a region. We think a contemporary architectural approach helps to explain the reality of the conservation issues at hand. Architecture can become part of the education process and tool to help us better understand how to conserve various species.

How does sustainability influence the design?
We re-used over 95% of the demolished material from the previous exhibit and there's an array of solar panels on the roof that help it to be energy-neutral. The air conditioning is pretty much driven by the solar panels and all the other services are driven by the solar panels.

The louvered windows facilitate natural airflow. We handled that with orientation, screening and use of the surrounding landscape features.

What role does glass play in this particular solution, having a virtually invisible barrier as alternative to grills or steel mesh and cages?
You might not experience all of the scent, sound, or smell through the glass, but you get such a complete visual connection. The animals will come right up to visitors. People will feel like they can touch the animal. Enabling that all-important emotional connection. We have mesh at other viewing points so there is the other experience as well, but it isn't as spectacular or confronting.

The lemur enclosure for example is incredibly interactive. You obviously have created an interactive lion enclosure without risk of losing life or limb, or compromising animal quality of life.
Glass plays a big part of that solution. It allows for moments where the fenced enclosure is not obvious, showcasing the primal qualities of the top end predator's on exhibit.

What were the major design challenges?
Setting the glass as a barrier to the impact of a fully grown lion was probably the biggest challenge. We had a facade engineer calculate the impact of a lion running full steam into the glass. This resulted in Viridian manufacturing a custom make up of various sheets of interlayers and glass. The visitor cannot read the thickness and so we hope they will feel a little vulnerable at times.

It's set on an incline?
In the education centre, the glazing at the top is set on an incline outwards at the top so that any reflection is towards the ceiling which is the darkest space and doesn't affect the view out towards the lions.

What do you hope your architecture brings to the landscape, visitors and interests of the animals?
We hope that the architecture is interpreted as an integral part of the whole Lion Gorge experience. It is intended to contribute to how people interact with the exhibit and allow them to come away with the key conservation message the zoo has for the precinct.

WE HAD A FACADE ENG
CALCULATE THE IMPAC
A LION RUNNING FULL STEA
THE GLASS. THIS RESULTED IN
MANUFACTURING A CUSTOM
OF VARIOUS SHEETS OF INTE
AND GLASS.

Phil Snowdon, Architect

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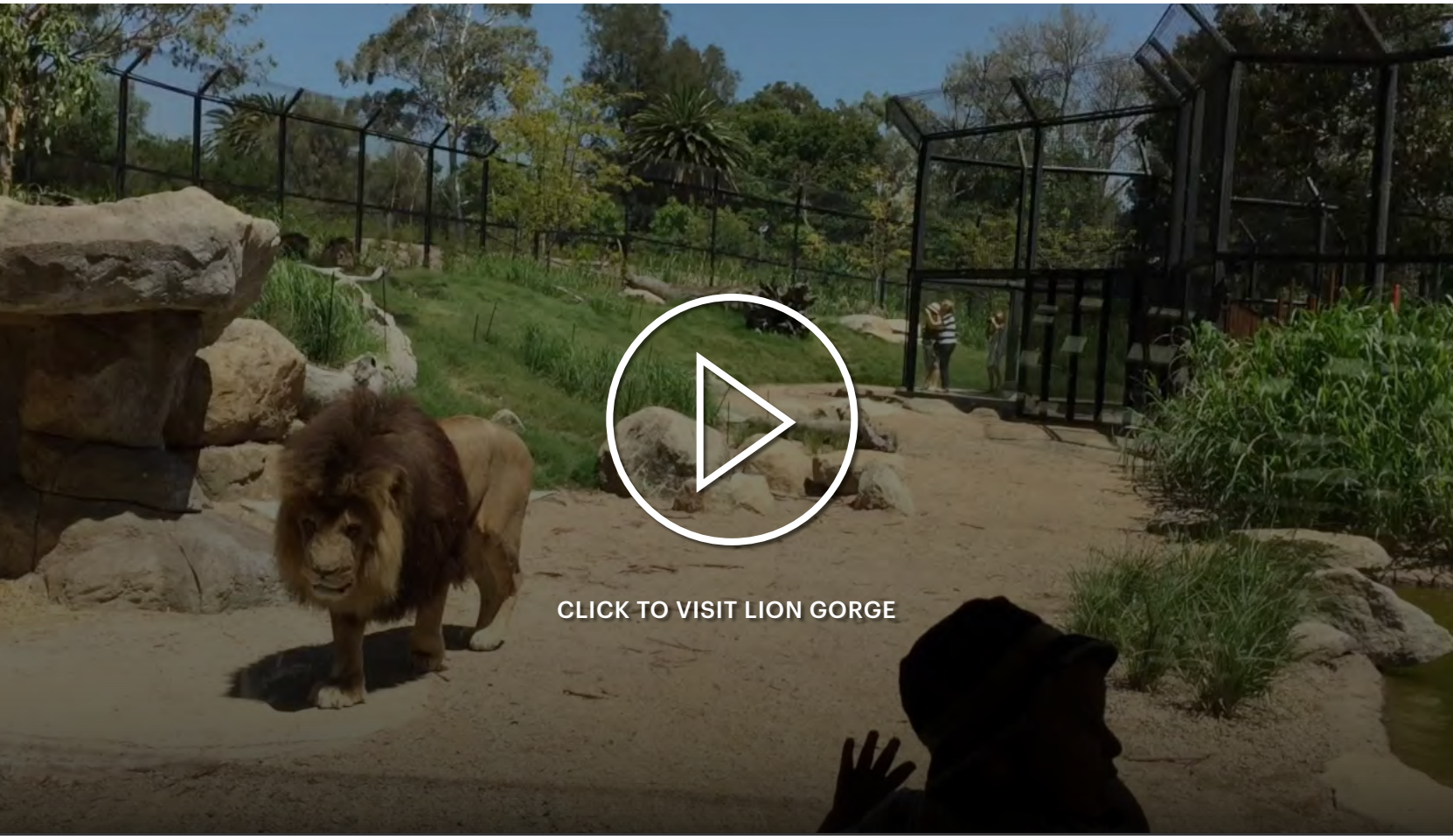
AM INTO
I VIRIDIAN
M MAKE UP
ERLAYERS

The education and observation centre grows from the composite structure of lightweight, laminated timbers, steel and Viridian glazing to provide a virtually uninterrupted vista.


BLUE ENGINE

THERE WERE A COUPLE OF INTERESTING MOMENTS AT THE FACILITY OPENING. THE LIONS THOUGHT THEY HAD A FREE FEED WHEN THEY SAW PEOPLE BEHIND THE GLASS.

Phil Snowdon, Architect


CLICK TO VISIT LION GORGE

THE WINDOWS ARE BIG.
THEY WEIGH AROUND 750 KG EACH
– ROUGHLY THREE TIMES THE WEIGHT
OF EACH OF THE THREE LIONS
WHO LIVE THERE.

Phil Snowdon, Architect

What is the role of natural light and breeze within your design?
The building has large areas of glass and also a translucent cladding material and designed to have the natural ambience of being under a tree. There's efficient evaporative air conditioning that requires natural ventilation while in use. The high level glazing can be opened up for ample cross-ventilation.

Any issues working with such large, weighty glass on this scale?
The windows are big. They weigh around 750 kg. each – roughly three times the weight of each of the three lions who live there. The builders spent considerable time working out how to install the glass and assisted us in detailing the glass fixing. The frames are all custom-made steel and the glass panels were craned in over the building and finally fixed in place manually.

What level of research is required for such an exhibit?
Generally we spend a lot of time researching each species to find out how they live, and how each animal will cope with different environments and we rely heavily on the zoo's experience and direction. We have a Life Sciences expert in our design team who has worked in zoos for many years to help us with important briefing information.

A tasty menu, seemingly within easy reach?
Definitely. There were a couple of interesting moments at the facility opening. The lions thought they had a free feed when they saw people behind the glass. They seem especially attracted to little kids who gave a great reaction.


SAVING THE
WORLD'S MOST
ENDANGERED
CROCODILE

Glass is the material that can be made to barely exist because of its high transparency. It permits occupants to 'shift' or transport to another place. Many materials are decorative, or they exist to make much more of a 'solid' statement.
That's true. It can have a far greater purpose than that thing to look through. Here it is critical to the whole place coming alive and acting as a truly interactive attraction. Glass heightens that immediate environment in a way impossible with almost any other material.

Is there an aspect of this project that gives you a particular satisfaction?
Seeing people enjoy and engage with the space and really getting excited about being up so close to the lions. We believe the zoo's visitor numbers are up by about 7,000 through January – a figure hopefully directly related to the new exhibit.

PROJECT
Lion Gorge Melbourne Zoo

CLIENT
Melbourne Zoo

ARCHITECTS
OLA Studio

LANDSCAPE ARCHITECTS
Urban Initiatives

INTERPRETIVE DESIGNERS
Arterial Design

PROJECT ENGINEER
Kersulting and Design Brief

BUILDER
Lloyd Group

FAÇADE ENGINEERS
Facade Engineering

WINDOW SUPPLIER/INSTALLER
TechGlass – Shane Mullen

GLASS SUPPLIER
Viridian

PRINCIPAL GLAZING PRODUCTS
Viridian custom laminate incorporating SuperClear™ TC and EnergyTech™ Clear

TOTAL PROJECT COST
$5.4 million

VIRIDIAN GLAZING MANAGER
Iain Kennedy

VIRIDIAN (Australia)

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Mildura (03) 5021 2921
Morwell (03) 5134 3586

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Text, Photography & Film
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www.hyattgallery.com.au

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Nexus Designs
www.nexusdesigns.com.au

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