

101

NOVEMBER 2008

ARCHITECTURAL
STEEL INNOVATION
WITH BLUESCOPE STEEL

STEEL PROFILE



BRENDAN J MENEY ARCHITECTS
ALICE SPRINGS WATER RECLAMATION PLANT

SUTERS PRIOR CHENEY
CAROLINE SPRINGS STADIUM

STUDIO 39
BOYNE TANNUM
MEMORIAL PARKLANDS

Welcome to *Steel Profile* magazine.

There have been many changes since our last issue. We've reinvigorated the design, freshened up the layouts, and revised the graphics and fonts to bring you what we believe is one of the leading, inspirational and opinion-forming steel architecture magazines available in Australia today.

But perhaps one of the most important evolutionary steps *Steel Profile* has taken recently is the introduction of a panel of architectural experts who select the projects to feature in the magazine.

Professor Tom Heneghan (Chair of Architecture at Sydney University), Adam Haddow (Director of SJB Architects), and Daniel Griffin (joint winner of the 2008 Australian Institute of Architects COLORBOND® steel Biennale Prize) have joined the newly-formed Editorial Advisory Panel.

Using their collective expertise, the panel – which also includes BlueScope Steel's National Market Development Manager, Manu Siitonen, and *Steel Profile's* new Associate Editor Rachael Bernstone – will handpick the most inspirational and innovative steel projects for publication in the magazine.

We're not finished there, however – *Steel Profile* has also developed a new website: www.steelprofile.com.au.

Steel Profile magazine remains the flagship architectural publication of BlueScope Steel, but the online element is designed as an active and complementary addition to the printed magazine, making it even more accessible to the wider architectural community.

Architects and designers can also submit their projects for consideration as potential articles in the magazine at www.steelprofile.com.au. So if you have a project that features ground-breaking or innovative use of steel, please click on the 'Submit your Project' button and upload the details.

Looking further ahead, we will develop specific tie-ins between www.steelprofile.com.au and the printed magazine to enhance the active correlation between the two mediums.

As you can see, we've been busy of late, and we're sure the changes mean that *Steel Profile* will remain a collectable point of reference. We hope you enjoy the issue.

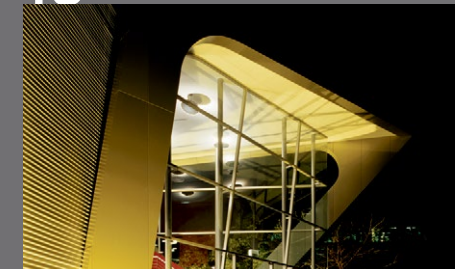
Steel Profile

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X really does marks the spot when it comes to the Albury Library Museum, a building that references the town's history while simultaneously making a bold and modern visual statement

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'Get your motor running, head out on the highway...' so the song goes. In Sydney's Lane Cove, this striking new HQ for Harley-Davidson proves that dynamic movement can work in a static building

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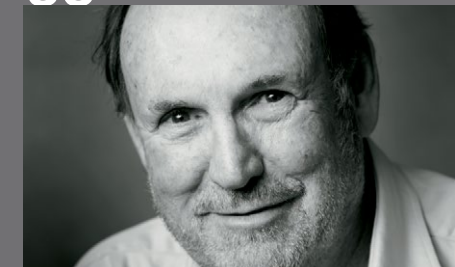
In a scene straight from the surface of Mars, a collection of curving, swooping buildings is providing Alice Springs with treated water for irrigated horticulture

25



The danger with sports halls is that, architecturally, they can be, well, a little dull. Not so at Caroline Springs, where layers of steel and a striking entrance make for a bold interpretation of the common stadium

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Lawrence Nield is not retiring. He's merely stepping back from his eponymous practice, BVN, to concentrate on just a few projects. But with a resume like his, we couldn't let this moment pass

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The Boyne Tannum Memorial Parklands is a place for reflection, a place for people to say goodbye. But so inspirational are its buildings and setting, it now receives enquiries about wedding ceremonies, too

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BLUESCOPE STEEL EDITOR Manu Siitonen MANAGING EDITOR Oliver Peagam ASSOCIATE EDITOR Rachael Bernstone

CONTRIBUTORS Rachael Bernstone, Stephen Crafti, Daniel Griffin, Margie Fraser, Adam Haddow, Tom Heneghan, Peter Hyatt, Glenn Morrison, Oliver Peagam ART DIRECTOR Natasha Krncevic CORRESPONDENCE Steel Profile, PO Box 961 Crows Nest NSW 1585 AUSTRALIA.

EMAIL info@steelprofile.com.au; rachael.bernstone@steelprofile.com.au Copyright © BlueScope Steel Limited ABN 16 000 011 058.

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MAKING HISTORY

The stakeholders involved in architectural projects can – and invariably do – make for a demanding group, but Albury city councillors knew what they wanted. And ARM delivered

Words **Stephen Crafti** Photography **Paul Bradshaw**



ARCHITECT Ashton Raggatt McDougall
PROJECT Albury Library Museum
LOCATION Albury, Victoria



ABOVE: The signage is an integral part of the building's bold statement

RIGHT: The 250 Grade XLERPLATE® steel fascia and columns subtly reference Albury's railway connections

FAR RIGHT: X marked the spot too much for some



Ashton Raggatt McDougall's (ARM) Albury Library Museum received several accolades at this year's Australian Institute of Architecture Awards (Victorian Chapter).

But unlike the award process, where projects are short-listed by jury members, the commission for the Albury Library Museum didn't involve a competition. Instead, the Albury city councillors made their own shortlist by travelling to various locations around Australia to visit public buildings that resonated with them. These buildings included ARM's cultural centre at Marion in South Australia, and the Southport Library in Queensland.

"The councillors thought the best process was to visit key libraries and museums and inspect the work that was out there," says ARM director Ian McDougall, who was surprised to get a phone call to submit schemes, without having previously presented anything. "It was the direct feedback they were after, from the communities at large."

The City of Albury had a masterplan for the designated site, connecting the central square with significant buildings in the precinct: the cathedral, post-office, courthouse, telegraph exchange and town hall, the last now operating as an art gallery.

"So we looked at several museums in Australia and overseas. We wanted to address the square, rather than turn our backs on it," says McDougall, who was also mindful of the historical buildings nearby.

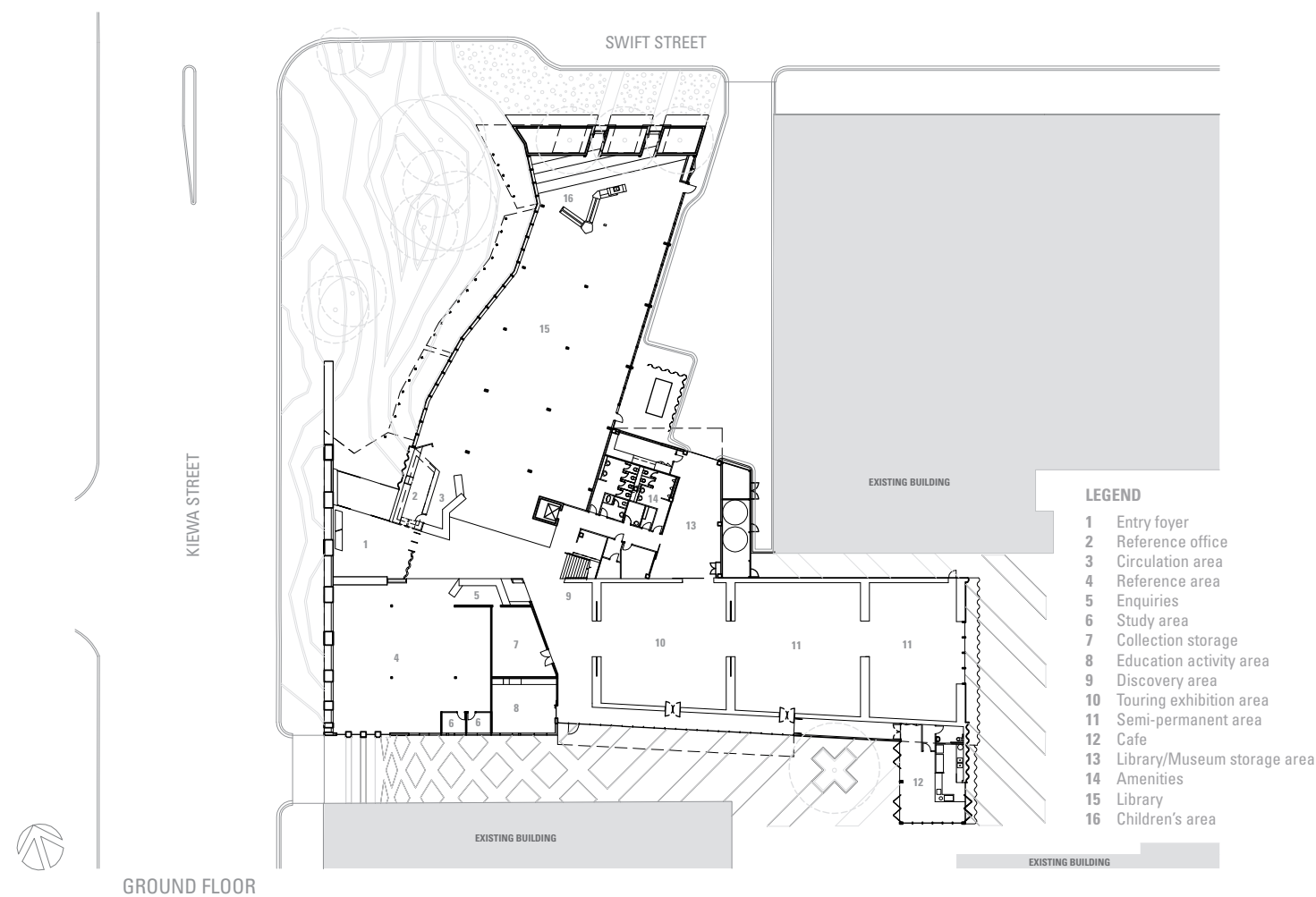
The architects also found inspiration in the region's Mechanics Institutes, established in the early 20th century. "We wanted to capture the local stories as well as the terrain, the city's river crossings, both road and railway," says McDougall. "With the old railway system, each state had a different gauge, so passengers would have to change every time the boundaries were crossed."

One of the first images to influence ARM's proposal was a 19th century bridge over the Murray River. Featuring cast-iron columns and lattice, the crisscross pattern was developed into one of the library museum's facades.

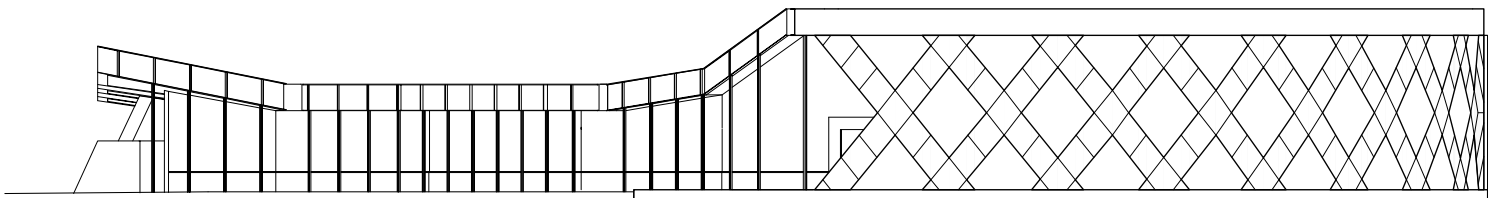
The original trains carrying goods interstate also played a part in the initial drawings, as images of old steel carriages remained in the minds of most locals. Whether displayed in the local museum or in a private photo album, these worn steel carriages are embedded in the psyche of the community. For the architects, the thought of not using steel would have undermined the design and sacrificed the importance of history in the delivery of this project. "The Museum is essentially a linear building, like a series of carriages," says McDougall. "We just couldn't have achieved the same effect using another material."

Three striking steel facades greet visitors approaching the building. Orientated to the northwest, these facades provide a civic quality to the corner of Swift and Kiewa Streets. Single-storey, this elevation is further anchored to the site by an over-scaled

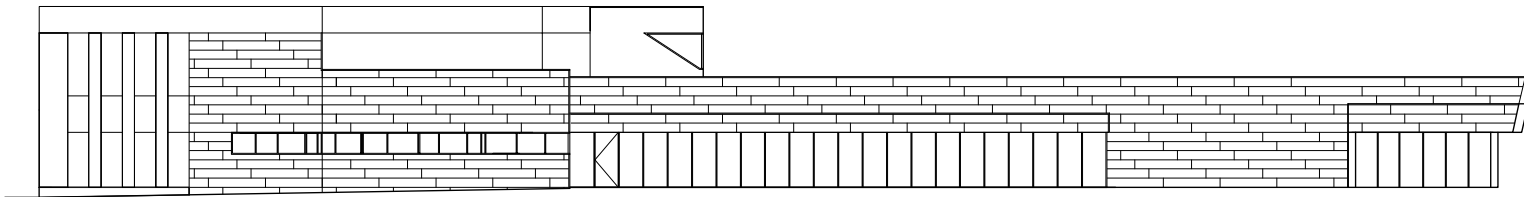
“Influenced by local buildings and the streetscape; the banks, levees and trees of the landscape; and the coved cornices of a railway carriage, the design also references the steel railway bridge over the Murray River”



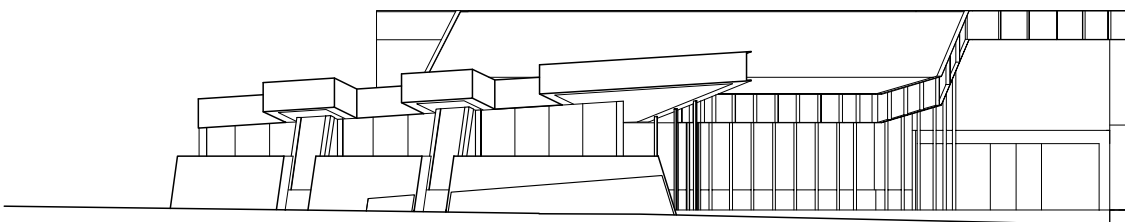
Viewed from on high, the design incorporates local stories and draws inspiration from 1920s arcades, regional Mechanics Institutes, and road and rail crossings over the Murray River



The west elevation features the oversized Xs which caused controversy among some locals, who compared them to signage for an adult bookshop. Happily, the community is now proud of them



Viewed from the south, the central windows look in toward the exhibition areas, with the cafe visible on the right



The north elevation details the indented steel 'track' that forms the building's fascia, as seen in the image opposite

PANEL SAYS

Typical of ARM's architecture, the Albury Library Museum draws inspiration from its surroundings to inform the design. The structure and skins celebrate context to create a sense of place, which is often neglected in regional projects.

Influenced by local buildings and the streetscape; the banks, levees and trees of the landscape; and the coved cornices of a railway carriage, the design also references the steel railway bridge over the Murray River. For these architects this is a more unambiguous gesture than their usual work, it's very direct in what it tries to express. It's an exhilarating structural form, only possible in steel.





concrete planter, evocative of a river bed. A covered walkway adjacent to a generous forecourt allows the journey to unfold. On the opposing corner, next to the entrance, is a series of over-scaled Xs, clad in aluminium and lined with orange aluminium.

“The X pattern is not dissimilar to the grand 19th century facades,” says McDougall, who created a less ornate facade, composed of timber and green anodised panels, to the side street.

Like all great buildings, not everything in the Library Museum is obvious. A cafe features giant corrugated steel profile walls in striations of green hues. Tent-like, they give the feel of a local carnival – a sense of “festivity” according to McDougall, who saw the cafe as integral to activating the library and museum.

“The curves are evocative of the river. But we also wanted to create some more intimate spaces in the library. We didn’t want the space to feel overwhelming,” says McDougall, who likens embedded ceiling lights to the lines on a freeway. Broad timber blades appear in the glazed building’s facade. “These blades deflect the western glare, but the timber creates a slightly rural feel,” he adds.

The building’s other arm houses the Museum, designed as an ‘A’-grade space to host travelling shows from Australia’s major cities. It features three interlocking galleries, all with state-of-the-art temperature control. And to maximise ceiling heights, and express the building’s steel deck roof made from LYSAGHT KLIP-LOK® 700, the soffit is simply painted black with lighting and services exposed.

Given the nearby historic steel railway bridge over the Murray River, there was no doubt steel would feature prominently in ARM’s design

The entrance to the library and museum features soaring volumes and a punchy reception area, with stained orange plywood ceilings. There’s also a strong sense of local history – one of the first vistas is a display of possum-skin coats and indigenous artifacts unique to the region.

While the library and museum share the same entry, each function is conceived in a different way. The library, for example, features an elongated space, articulated by modulated ceilings, varying in height from three to seven metres.

Given the nearby historic steel railway bridge over the Murray River, there was no doubt steel would feature prominently in ARM’s design. “The area has built a reputation for steel production,” says McDougall, who worked closely with local architect Kevin Poyner. “Our steel is manufactured off-site and is extremely quick to assemble. Kevin was able to explain to the builders that the design was achievable, even though some local builders were a little cynical when they first saw plans.”

The builders were highly skilled in working with steel, but many hadn’t seen steel worked into such

a contemporary design. “They were all extremely positive – and they weren’t afraid of a challenge,” remembers McDougall. “It’s just that when they think of creating a tent-like structure [like the cafe], they think of canvas rather than steel. But once it started to be assembled they could understand our intentions.”

Some locals were also puzzled by Ashton Raggatt McDougall’s proposal when it was first exhibited. Vilified in the local press before it even commenced, the process required some explanation on behalf of the architects. Les Tomich, now Chief Executive Officer for Albury Council, along with the Council, was committed to the scheme and together they took on the task of selling the idea to cynics.

The over-scaled Xs, for example, have been compared to signage for an adult bookshop, but the community is now proud of them. And rather than being viewed as a sleazy ‘R-rated corner’ of town, the Albury Library Museum is now the talk of the town, with both young and older members of the community gravitating to the centre.

The jury for the AIA Awards (for the category of the COLORBOND® Award for Steel Architecture) immediately recognised ARM’s masterful design.

“The scattershot of sources has been judiciously choreographed in a powerful and expressively unrestrained architectural ensemble,” it noted.

“A steel skeleton has been wrought to make its form, steel expressions such as the colonnade and fascia elements refer to both the delicate and heavy steel engineering associated with local rail bridge construction; [construction] fundamental to the development of the Albury region”. **SP**

OPPOSITE TOP: Eye-catching green and yellow corrugated wall cladding imparts a sense of fun to the cafe

BELOW AND LEFT: The functional interiors are as bold as the exterior; McDougall likens the ceiling lights to lines that define motorway lanes



PROJECT Albury Library Museum **CLIENT** Albury City Council **ARCHITECT** Ashton Raggatt McDougall **STRUCTURAL ENGINEER** Irwinconsult **BUILDER** Zauner Constructions
STEEL FABRICATOR Albury Steel Fabrications **CLADDING CONTRACTOR** Hadfield Roofing **PRINCIPAL STEEL COMPONENTS** LYSAGHT KLIP-LOK® 700 made from COLORBOND® steel in the colour Night Sky® (roof); 3mm and 20mm 250 Grade XLERPLATE® steel; structural steel beams and channels **BUILDINGS SIZE** 3,000 square metres **COST** \$8 million

HARLEY STREET

When one of America's most iconic brands planned its new Australian headquarters, the brief incorporated several tacit ideas. The notion of having "pride in your ride" was one of them...

Words **Oliver Peagam** Photography **Brett Boardman; Paul Bradshaw**

Thumb through the latest Harley-Davidson motorcycle brochure and you rapidly gain an understanding of what this most American of brands is all about.

The names given to these throaty thunderers are the first clue: Cross Bones, Fat Boy, Night Rod Special...

Then there's the scene-setting text in the brochure:

"Do you think you know what it's like? The irresistible pull forward; the detail to lose your soul in; the factory-forged custom; the frame geometry beneath all the art; the authenticity you can't get from anything else; the metal; the mountains of torque; the connection to something bigger..."

Torque aside, this description could have come straight from the design brief to build the Australian headquarters of this iconic US company.

"The original brief from Harley-Davidson was for a building that expressed the company," says architect Tony Owen, director of Tony Owen NDM.

"Harley stands for rebellion, freedom, the open road. But it also stands for beauty, iconic design, engineering, sexiness, raw power and all these great anti-establishment things – so that was, essentially, our brief.

"We had to come up with a building that said Harley-Davidson, and you can see that through the shape of the building – the triangular shape of the forks, for example, is expressed subtly in the front portal, so it [the bike's form] is suggested without actually being repeated."

Owen is fast establishing an architectural practice known for utilising the latest in 3-D modelling software and parametric tools from the very outset of the design process.

While this process may distinguish him from some of his peers, one look at the complex geometries of the centrepiece of the site – that piercing front portal frame which evokes the geometry of a Harley bike frame and forks – and it's clear why such a mathematical approach was required.

Located in Lane Cove, a northern suburb of Sydney, on the corner block of an as yet undeveloped



"Harley-Davidson stands for rebellion, freedom, the open road. But it also stands for beauty, iconic design, engineering, sexiness, raw power – that was, essentially, our brief"

40,000-square-metre business park, the building had to work not only specifically for Harley-Davidson (and, if it moved out, for another client, too), but act as a gateway to the business park, too.

In terms of appropriateness to place, the building couldn't have been more suited – the portal, sitting proud on the corner of the steeply sloping site, purposefully guides visitors into the business park. The building was also a test case for the design technology used.

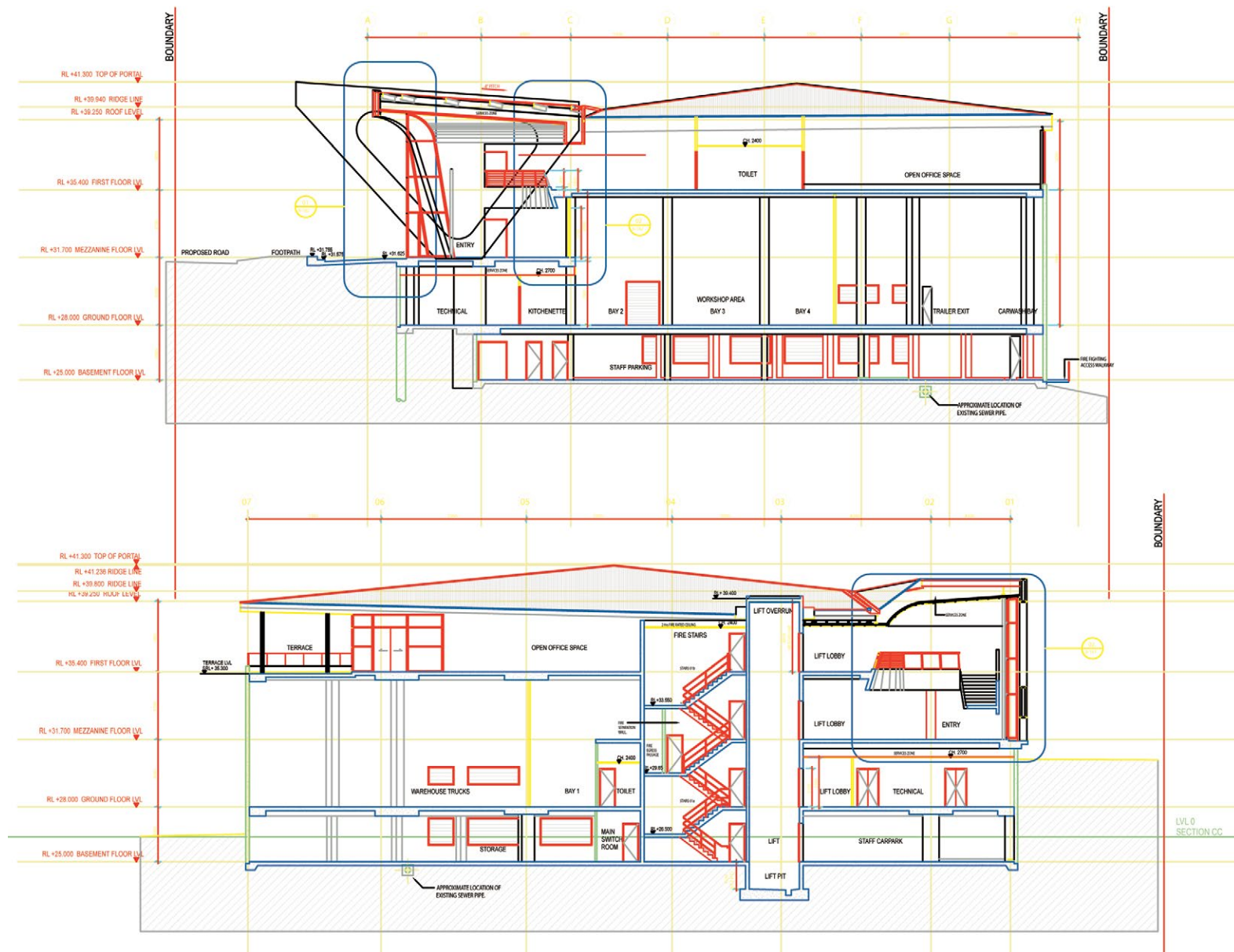
"We've got double curvatures, curvatures of the roof, of the ceiling, and it all comes together as a sculptural element," says Owen. "To get that to work geometrically it had to be done three-dimensionally. Now, as we move on to larger projects, we're using the same procedures, so it has been an important building for us on a number of levels.

"We experimented with different geometries to understand the spatial possibilities of our ideas, and how the forces working on the site influenced these movements. Because the geometry is complex, it was important to know how the structure interacted with the steel cladding. So by modelling every

THIS PAGE: Like a sort of modern-day, angular lighthouse, the steel-framed portal guides visitors into the business park

OPPOSITE: The voluminous entrance lobby means visitors can stand in one place and understand exactly what makes Harley tick: rumbling power, high-technology, the open road

ARCHITECT Tony Owen NDM – www.tonyowen.com.au
PROJECT Harley-Davidson HQ, Australia
LOCATION Lane Cove, Sydney, NSW



element of structure and facade, we knew how each piece related to each other.”

Another benefit of that process was that the cladding panels and steelwork could be manufactured in sequence, meaning the whole project was streamlined and effectively timed to come together easily.

Material choice was “rough and ready”, according to Owen. The steelwork forming the structure comprises BlueScope Steel trusses, with LYSAGHT TRIMDEK® made from ZINCALUME® steel crowning the building, and LYSAGHT SPANDEK® made from ZINCALUME® steel cladding the wall.

Steel was not only the most effective functional material for the site – the ease with which it can span, twist and curve far outweighed the cost and difficulties in attempting similar feats with timber and concrete – but it also resembled the chrome of the bikes, reflecting the shine and sexiness of the machines and, specifically, their engines.

But the jewel in this project is, undoubtedly, the ‘showroom’ portal on the corner, a clear reference

to the eagle logo of Harley-Davidson when viewed in context with its opposite ‘wing’. Its external Alpolc cladding adds definition, emphasising its role in bringing the building together, while also reflecting the complex geometry of those rumbling Harleys.

Inside, it manages to fuse a utilitarian space downstairs – big enough for a semi-trailer to drive into and out of – with a lifestyle brief upstairs complete with open-plan offices, conference rooms, break-out areas, red floors to reflect the striking fuel tank designs, white light lines on the ceiling that pay homage to the highway, and technical facilities to train mechanics.

“Harley-Davidson was over-the-moon, the clients were rapt,” says Owen. “It’s interesting: you think they are a bike company, a bit more brutal and hard-edged than this building might suggest. But their corporate profile in the brief was very sophisticated, and some of their buildings in America are very high quality – we had a lot to live up to.”

It’s clear Owen is also pleased with the outcome – or, to pinch a biking term, has “pride in his ride”. **SP**

PANEL SAYS

How can a building symbolise the values of its occupant? For the Harley-Davidson headquarters in Sydney’s Lane Cove, the architect was inspired by thoughts of freedom and speed. Using metallic materials – COLORBOND® steel and aluminium – to great effect, the building embodies ideas about the freedom of self expression and the open road.

On a landmark site, the building’s main entrance provides a bold statement about the emotion and efficiency of Harley-Davidson bikes. Referencing the geometry of engines, forks and frames, the design suggests movement and style in an elegant and aerodynamic way.

This was a comparatively cheap building, with a tight brief, that had to cover both function and form. Ninety per cent of the building is very standard in terms of materials and costing, but you put all the architectural flair where you can see it: the remaining 10 per cent.



PROJECT Harley-Davidson HQ, Australia **CLIENT** Demian Developments Pty Ltd
ARCHITECT Tony Owen NDM www.tonyowen.com.au **DESIGN TEAM** Tony Owen; Geoff Klimpsch; Joseph Fok; Frank Espana **STRUCTURAL ENGINEER** Australian Consulting Engineers **BUILDER** Demian Construction **STEEL FABRICATOR** Siaracorp Constructions **CLADDING CONTRACTOR** Stane Industries **PRINCIPAL STEEL COMPONENTS** LYSAGHT® Cee sections made from BlueScope Steel; LYSAGHT TRIMDEK® made from ZINCALUME® steel (roof); LYSAGHT SPANDEK® made from ZINCALUME® steel (wall cladding) **BUILDING SIZE** 2,500 square metres **COST** Circa \$3 million



ABOVE: North/south sections looking east (top) and west (below) detail the office and technical centre

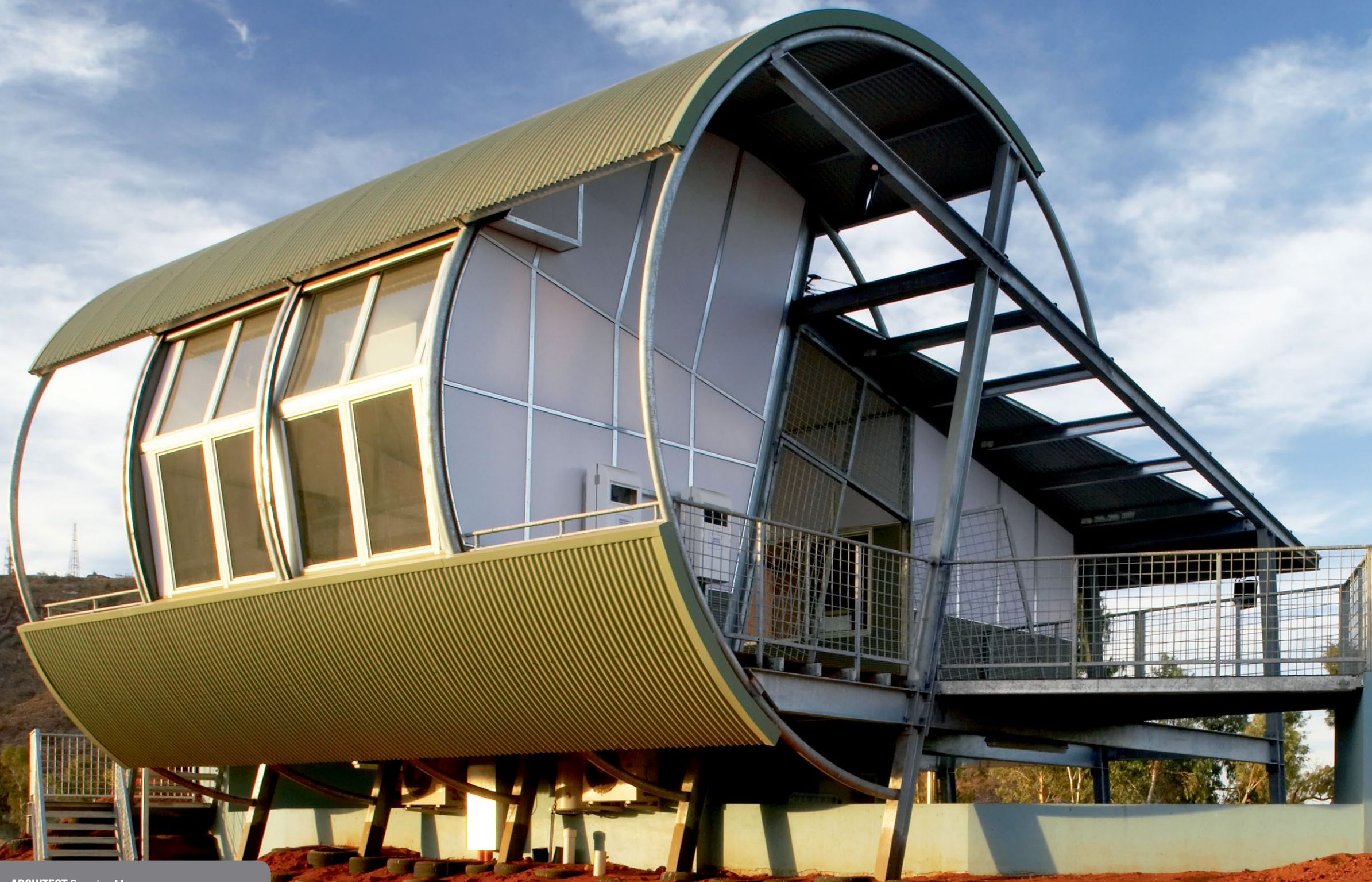
OPPOSITE TOP: LYSAGHT SPANDEK® cladding contrasts with the Alpolc cladding of the structural steel portal

OPPOSITE BELOW: The building’s wing-like structure mimics the eagle logo of Harley-Davidson

SHEDS WITH SOUL

Deep in red earth country lies this futuristic yet wholly functional group of buildings, curving, swooping and bending their way to provide Alice Springs with treated water for irrigation

Words **Glenn Morrison** Photography **Paul Bradshaw**



ARCHITECT Brendan Meney
PROJECT Alice Springs Water Reclamation Plant
LOCATION Alice Springs, Northern Territory



Sewage treatment plants can be a somewhat lacklustre and mechanical affair, perhaps best hidden away with other public utilities in a far corner of town. But a newly commissioned water reclamation plant in the Australian outback may have changed all that.

Nestled in the ancient quartz and sandstone of the Western MacDonnell Ranges in Australia's Red Centre are the Alice Springs sewage evaporation ponds. It is in this spectacular setting, and with these large expanses of open water, that the Power and Water Corporation – the Northern Territory's electricity, water and sewage services utility – treats the sewage effluent from Alice Springs' 24,500 people.

The presence of large water bodies in an otherwise arid landscape has made the area internationally known for its migratory waterbirds keen for a drink on their way across the country's dry interior.

But community concerns over leakage and overflows from the ponds into nearby waterways, as well as annual problems with mosquito breeding, forced Power and Water to rethink its approach and adopt a water recycling strategy.

The centrepiece of the strategy, the Alice Springs Water Reclamation Plant, was commissioned in May 2008. It aims to produce treated water for irrigated horticulture and to enhance community awareness of Power and Water's role.

More than eight years in the making, the project is an Australian first for its underground storage of recycled water in aquifers. For the buildings, the architect used curvilinear forms to harness the prevailing winds running across the evaporation ponds, driving natural ventilation and reducing reliance upon costly air conditioning.

Initially, Power and Water invested heavily to consult with the Alice Springs community and rehabilitate the adjacent Ilparpa Swamp, which

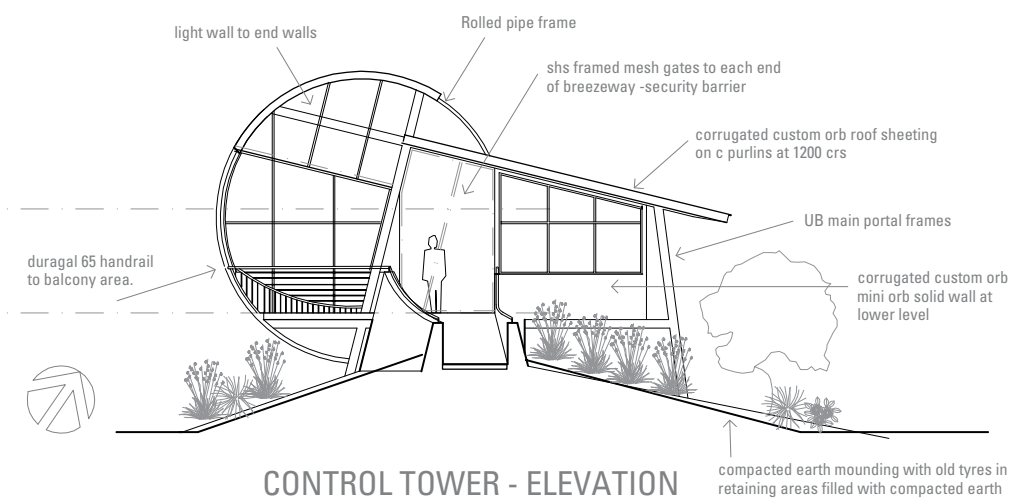
had become choked with exotic weed growth from the nutrient-rich effluent overflows.

By 2003, Power and Water committed \$6.3 million to the first stage of a water reuse project, which entailed storing treated effluent underground at the Arid Zone Research Institute (AZRI), six kilometres from the ponds, using a system called Saturated Aquifer Treatment (SAT). In August 2005, the NT Office of Environment and Heritage approved \$4.1 million for Stage 2, the design and construction of a treatment plant.

Power and Water had already consulted with engineers Arup Water in Adelaide, and they

ABOVE AND OPPOSITE: The raised control tower surveys the site purposefully, the angles of its structural steel in harmony with its smooth, curved skin. Its location makes full use of the main sightlines across the valley

The architect used curvilinear forms to harness the prevailing winds... driving natural ventilation and reducing reliance upon costly air conditioning

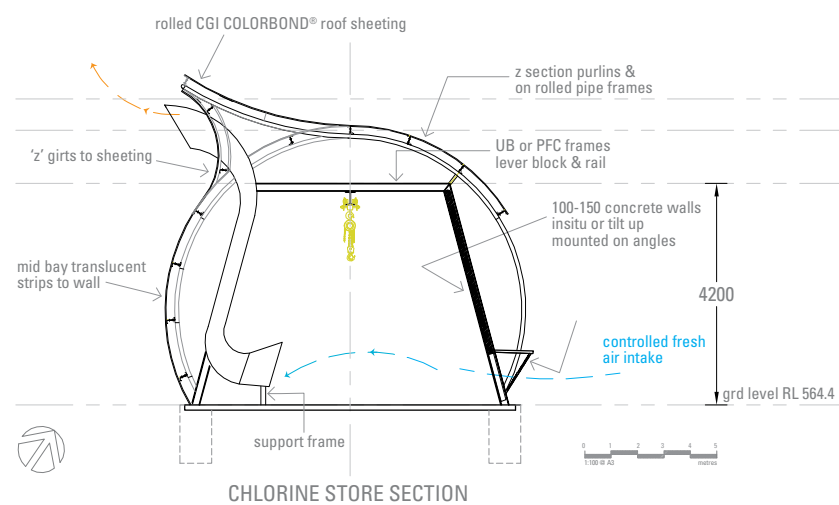


CONTROL TOWER - ELEVATION

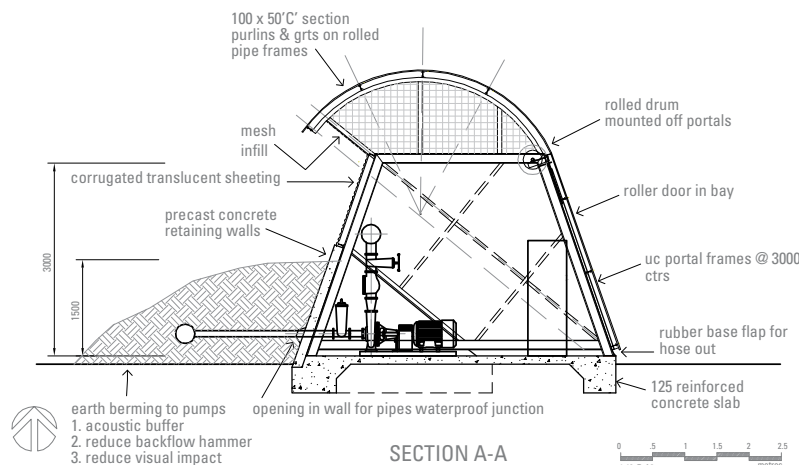


LEFT: The wave-like forms of both these ‘sheds’ is testament to the ease in which the steel could be rolled; cross-sections show mesh and translucent sheeting that allows visitors to view inside the buildings

LEFT AND BELOW: Aerial image shows sewage evaporation ponds and valley beyond; final site plan shows how these were utilised



CHLORINE STORE SECTION



SECTION A-A

suggested Alice Springs architect Brendan Meney should join the team. Meney swiftly discovered that, after years of public debate over its handling of water treatment in the town, it was not everyday architectural input Power and Water desired.

“We drove the architecture, with Arup Water engineers giving us input on the technical aspects,” Meney explains. “But part of that architectural input was to lift the plant’s image in terms of the importance of public utilities and how they are perceived.

“Power and Water was interested in a balance between providing a public service and value adding. I suggested part of the public education would be to have the public embrace the whole development as *their* infrastructure.”

Meney’s concept for the site, which cost about \$2.4m, impressed the architectural community for its novel take on industrial design. From the start Meney wanted the project to sit comfortably in its rugged landscape and went to great pains to give the buildings context.

“I picked up all the main view line axes across the valley, to give it some sort of physical link with the valley itself,” he says. “When you’re sitting in the control tower you can see these view lines. You’re not necessarily conscious of them, but they’re there.

“I was trying to give more meaning to why this plant is here and its relationship to the greater valley. I could have placed the buildings almost anywhere on the site. But I wanted the control tower to have a controlling position, to give it context.”

Water is drawn from the existing evaporation ponds and subjected to dissolved air flotation (DAF), chemical dosing and storage tank settling, before being pumped to final stage treatment at AZRI. The process required a separate building for the DAF, two storage buildings and a control tower, as well as associated civil works. Installation of a settling tank, mechanical plant and the SAT beds was performed under a separate contract.

“The layout was guided by the treatment process,” Meney says. “But it goes further through the creation of a public facility that aims to give something back to the community. Too often community infrastructure is relegated to being sheds without soul, because they are in an industrial context.”

Opening the site as a public attraction was also something Power and Water – and Meney – had firmly in mind. Visitors arriving at the site are led up a path traversing an earthen berm – constructed in part from recycled tyres – into the control tower. The buildings feature circular and part-circular exteriors, a hallmark of Meney’s innovative designs.

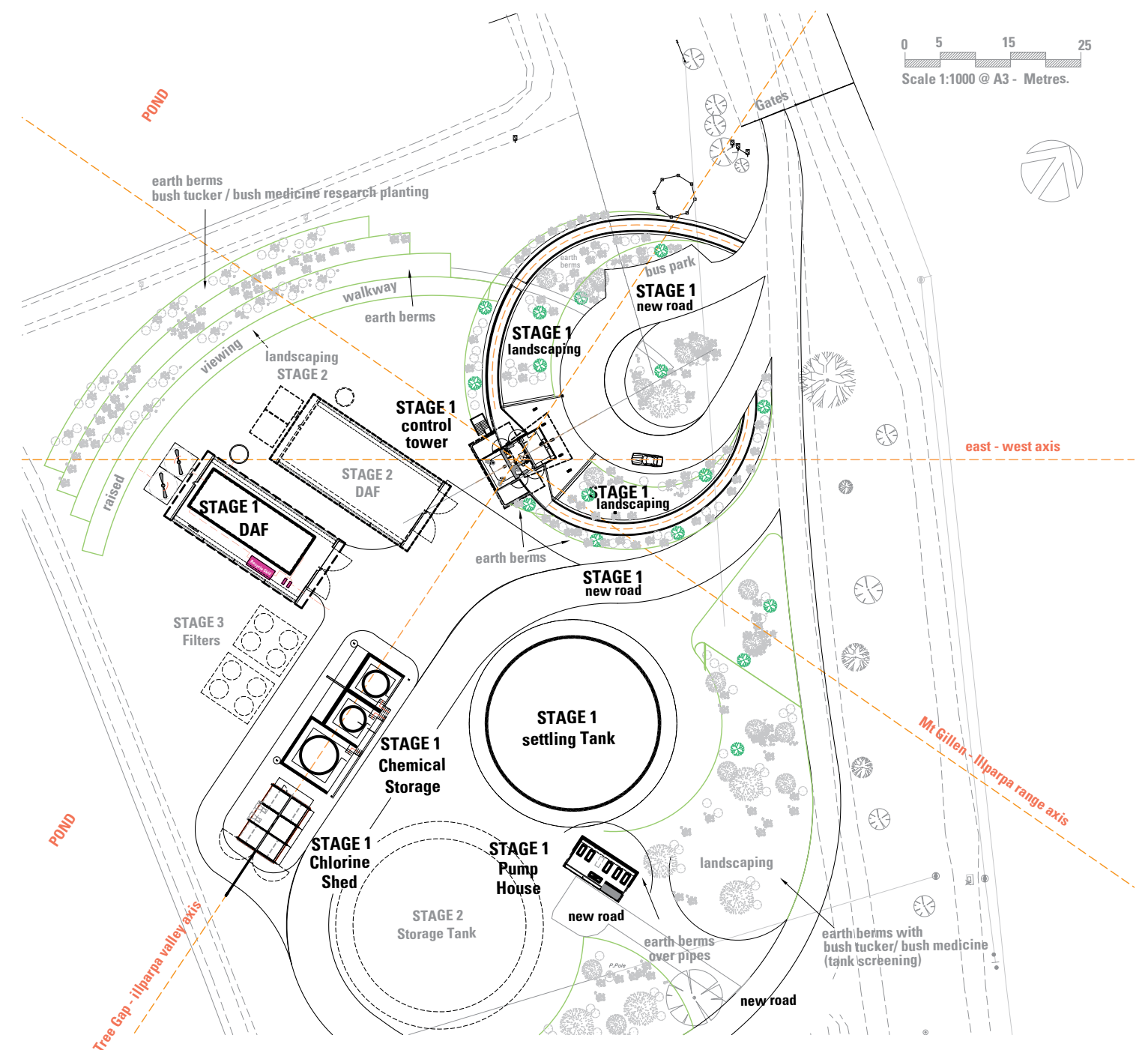
At concept stage he used 3-D computer software to model the preliminary designs, allowing him to quickly relay the ideas to the Power and Water management team.

COLORBOND® steel and LYSAGHT CUSTOM ORB® made from COLORBOND® steel clad the structures, ultimately winning Meney the COLORBOND® Award for Steel Architecture, as well as a commendation for Public Architecture at the AIA NT Architecture Awards in June. For the rolled curves, Meney says, the clear choice was LYSAGHT CUSTOM ORB®, because it can be easily rolled.

In its verdict, the awards jury said: “The architect has pursued a design which reinforces its industrial context in a poetic and cost-effective manner, utilising consistent curved LYSAGHT CUSTOM ORB® forms, angled portal frames and rolled pipe to create visual softness and movement rarely associated with this type of construction.”

And that was exactly the payoff Meney was looking for. “The costs could have been quite similar,” he says, “if we imported the same structurally designed sheds with straight walls and a roof. Instead, we have created sheds with soul.”

In all the buildings Meney used raked portal frames over spans up to 10.5 metres, manufactured from



PANEL SAYS

This project – an industrial facility that aims to conserve water in the desert – is brilliantly original, and deserves international as well as national recognition.

With its curved LYSAGHT CUSTOM ORB® forms and angled steel portal frames, the plant sets innovative environmental standards in waste processing and industrial building design, and offers community awareness and landscape research opportunities.

It's an example of how a purely pragmatic approach can be interpreted into something as poetic as the landscape.

OPPOSITE AND BELOW: The slinky design of the DAF shed utilises thermo-siphoning to provide natural ventilation. The solar reflector on one side generates heat to create thermals that draw in cool air from the other side, assisted by the 'skirt' at the rear

standard universal beams to pick up the rolled pipe, and angled props giving the shape needed on which to mount LYSAGHT® Cee and Zed purlins, to take the exterior cladding.

While clever use of LYSAGHT CUSTOM BLUE ORB® affects the structures' striking curves, it is Meney's use of translucent sheets and reinforcing mesh that gives visitors visual access to the inner workings in zones significant to the process.

Combating the Red Centre's relentless heat was another consideration. But the solution has become a standout feature of the design. The DAF building uses thermo-siphoning to provide natural ventilation, driven by a stainless steel solar reflector running the length of the structure and mounted near its peak.

"It acts as an awning to stop sun getting to the plant itself," Meney explains. "But it also generates heat on purpose, because the prevailing breezes come from the south across the ponds. We generate heat on one side, creating natural thermals on the roof top, inducing thermal cycling. This naturally draws the cooler air right through the building, with the shape of the building helping the flow. There is a skirt at the back to allow the air to come up underneath."

The control tower, which faces due west for operational reasons, is protected from the sun by roller door-style shutters made from COLORBOND® steel that close over glass windows overlooking the site.

Timber was ruled out from the start owing to environmental considerations, termite risk and the material's necessarily bulky joints. And though Meney's unique vision placed heavy creative demands on designers, he credits the use of steel and its flexibility – particularly the sheeting – as the deciding factor in the project's success.

"There are not many rolled beams in the building," says Meney. "We've done it using props, so we've kept the cost down that way. And we've rolled the

cladding, because it's not that costly to roll. It's more costly to roll the structural steel.

"It's often cheaper to roll pipe than to roll other structural members as well," he adds. "The difference is I've angled the portals inwards to give some of the buildings their shape. You immediately create all these raked walls. And then we used steel angles and rolled pipe to prop the purlins away from the main portals. That's quite economical."

All of this might have meant one big headache for the builder. Not so, says managing director of Probuild Phil Danby, who recalls it all going smoothly.

"Especially the control building," he says. "Brendan designed it so it wasn't a square box shed. The shop drawings were of good quality and it went together like a meccano set."

Alice Springs-based steel fabricator Ross Engineering went to great lengths to prepare the shop drawings and three-dimensional isometrics detailing every joint in the structural steel supply-install contract. Ross enjoyed Meney's expression of the portal frames in the skin of the building, which Meney says fitted his desire to make buildings more honest and transparent by exposing the structure with the form.

"It's not like our other building jobs," says Ross Engineering general manager Neil Ross. "The steel is still visible when you're done, which is great."

"The curved bits were rolled pipe, which we section-rolled ourselves. There were universal beams which had to be chopped back to profile, and the portal frames extended out and over cantilevered sections."

But it was the stainless steel reflector which issued Ross and his crew their greatest challenge.

"Basically we just had to sit down and nut it out. It was quite interesting to put up because of the unusual shapes."

The plant is now in full production, and feedback from Power and Water, and visitors, has been positive. Many believe the future opportunities for value-adding to the investment using the aquifer-stored water are huge.

There are visions for using the water for orchards, irrigated bush tucker and a localised food-growing industry near Alice Springs. As part of the site landscaping currently underway, horticulture research opportunities are being explored through Greening Australia.

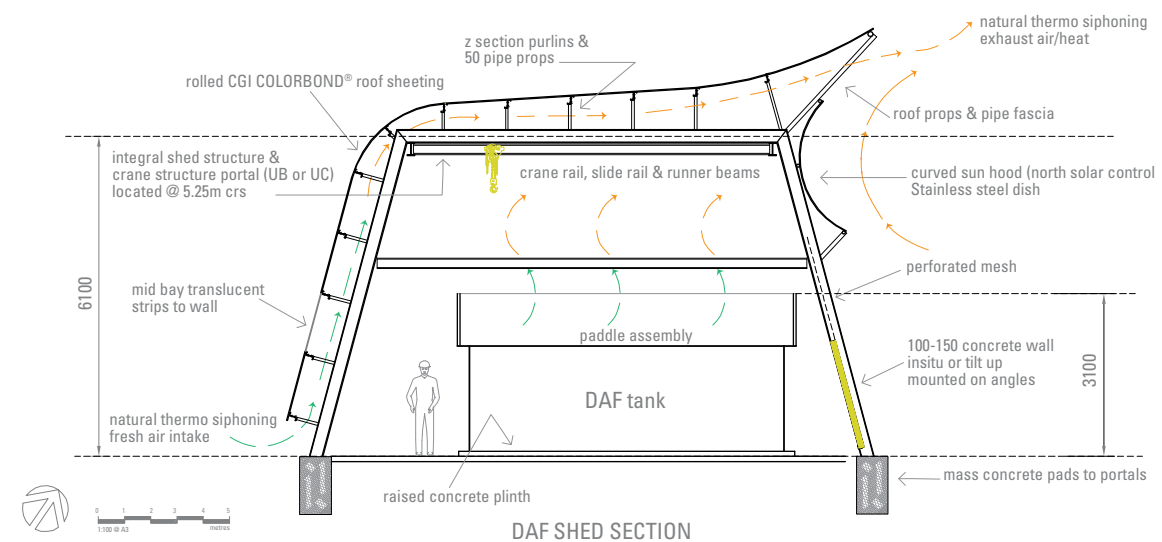
Meanwhile, Meney's vision has certainly been realised. The result is a sympathetic development that sits comfortably within the desert landscape it serves, one which breaks new ground in the design of public utilities and presents a refreshing take on the adaptability of steel. **SP**



Though Meney's unique vision placed heavy creative demands on designers, he credits the use of steel as the deciding factor in the project's success



www.steelprofile.com.au



PROJECT Alice Springs Water Reclamation Plant **CLIENT** Power and Water Corporation **ARCHITECT** Brendan J Meney Architects **STRUCTURAL ENGINEER** Arup NT **BUILDER** Probuild NT **STEEL FABRICATOR** Ross Engineering **CLADDING CONTRACTOR** Probuild NT **PRINCIPAL STEEL COMPONENTS** 30 tonnes of universal beams, structural channel, pipe, square and rectangular hollow sections; purlins including Z20019, C20019 and C10015; 0.60mm LYSAGHT CUSTOM BLUE ORB® made from COLORBOND® steel in Pale Eucalypt® and Headland®; 0.48mm LYSAGHT CUSTOM ORB® in COLORBOND® steel in Jasper®, Pale Eucalypt®; LYSAGHT MINI ORB® made from COLORBOND® steel in Jasper® **BUILDINGS SIZE** 1380 m² total: 700m² buildings and 680 m² storage tank **COST** \$2.4 million

ROCK OF AGES

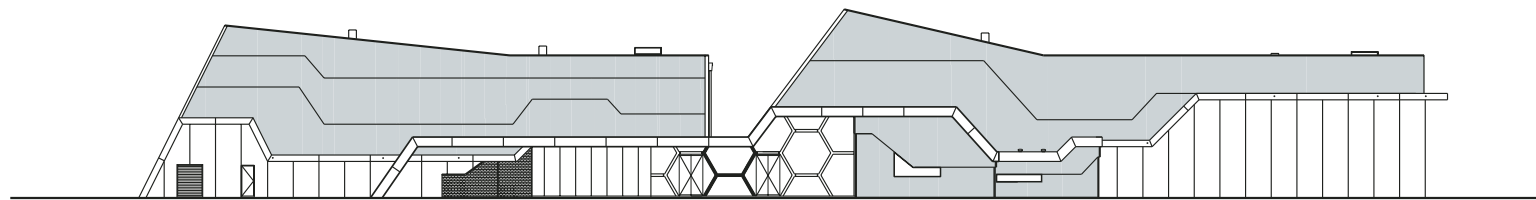
Creating a 'gateway' building for a new community requires much more than stakeholder input. It calls for vision, a splash of historical referencing, functionality and plenty of nerve...

Words **Stephen Crafti** Photography **Emma Cross (Gollings Studio); Paul Bradshaw**



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ARCHITECT Suters Prior Cheney Architects
PROJECT Caroline Springs Stadium
LOCATION Caroline Springs, Melbourne



This east elevation clearly shows the horizontal 'pipe' design in the centre of the two wings, a reminder of the site's proximity to Organ Pipes National Park

Developed in the 1990s, Caroline Springs is now a thriving residential community on the western outskirts of Melbourne. It's been used as a housing model for many developments across Victoria but, like most growing communities, not everything was in place from the outset.

It had schools, but no leisure centre or library for the entire community. A tree-lined boulevard leads into Caroline Springs, but there was no landmark building until now.

These days, there are two: the Caroline Springs library and a separate leisure centre directly behind it. Designed by Suters Prior Cheney Architects, the buildings signal a brave new architectural front for the estate.

"We wanted to create a gateway for Caroline Springs," says architect Mark van den Enden, Practice Design Manager for Suters Prior Cheney.

The leisure centre and library were commissioned by the Shire of Melton, with other key groups, including neighbouring schools, feeding into the brief. The starting point for the two buildings' design was the region's geography. One of the first jokes shared by client groups was that Caroline Springs was known for its 'rocks, rabbits and rubbish'. The word 'rock' provided an important starting point for the design of both buildings.

Sitting astride a basalt plain formed approximately one million years ago, the area is close to the Organ Pipes National Park. Known for its columnar basalt formations – which are pipe-like in appearance – the landscape has a poetic language.

"We wanted to celebrate this unique terrain, rather than bury it," says van den Enden. So instead of presenting the 'pipes' in a vertical manner, the architects presented them horizontally, creating a sculptural outcome in the process.

The library and leisure centre at Caroline Springs have created a new benchmark for architecture on the estate. And while most residents might not be up with the latest architectural trends, there is an obvious pride and visible pleasure from those using the facilities. Groups of schoolgirls break into laughter as they move between courts; mothers with children catch up on local news at the cafe.

While this combination of users appears destined for a mishap, the result is anything but chaotic.

"It's about delivering community services and activities to a broad range of people, both in terms of ages and cultural background," explains van den Enden, who looked deeply into the needs of the community, as well as the history of the region, before designing the complex. 🗑️

BELOW: The horizontal 'pipes' provide a bold statement at the building's east entry

OPPOSITE: The striking angled entry portal on the west facade emerges seamlessly from the terrain





TOP: Distinctive three-coloured cladding gives depth and movement to what might otherwise have been a grey box

ABOVE LEFT & RIGHT: The entrance foyer linking the two sports halls acts as a 'community trophy cabinet'

For the architects, steel was an obvious choice. "There's a tradition of using steel in Australia. It has that rural quality, that slight knock-about feel to it. And what better use than for a leisure centre where hundreds of teenagers can run havoc though a space," says van den Enden.

While the schools, shops and ancillary facilities were already in place, one of the area's largest office developments was still on the drawing-board when the architects prepared their schemes.

"In a sense, we were operating without a fully developed context. We didn't know exactly how many levels were planned for the office, [or how] its height would affect our vista," says van den Enden.

As the leisure centre and library are side by side, it was also important to create an architectural language common to both buildings. Two features that appear in both designs are hexagonal-shaped concrete columns and off-formed concrete walls. Rather than the hexagonal feature walls appearing uniform in depth, they are irregular.

"We wanted to simulate the organ-shaped profiles as they appear in nature, like grass growing through the cracks. The effect is random and slightly weathered," says van den Enden.

Students from nearby Caroline Springs Secondary College and Mowbray College will use the buildings, so the schools were part of the stakeholder groups, resulting in "lively discussions" during the consultation process.

Eventually, however, they reached consensus regarding the brief for the leisure centre. It needed to include a temporary performing arts facility (a separate building will eventually be provided), a facility to accommodate up to 400 students for speech nights, and importantly, acoustic separation from the sporting facilities, in particular from the noise of the two basketball courts. "People don't want to hear the sound of whistles blowing while listening to school assemblies," says van den Enden.

Suters Prior Cheney Architects also saw the leisure centre as a 'community trophy cabinet', a place where awards and trophies received by local clubs could be displayed. As a result, one of features of the centre is a vibrant display cabinet visible from the building's forecourt.

"The idea was to create shadow lines in the facade, or 'layers of unconformity'. It's similar to a geological phenomenon, where neither material is fully represented"

In a sense, the building itself functions as a trophy, visible from a much greater distance. Approximately 3,600 square metres in area, the centre features dramatic angled roofs, reaching up to 10 metres in height. The southern facade features aluminium three-stage fixed louvres for ventilation, with translucent polycarbonate creating the upper level of the facade. "We wanted to borrow southern light – on most days there's no need to turn on the lights," says van den Enden.

One of the most dramatic facades is to the west, where three separate layers of LYSAGHT CUSTOM ORB® made from COLORBOND® Metallic steel in the colours Citi®, Facade® and Axis® were used to add depth. To create greater perspective, these three different-coloured layers were attached to steel girts to create a stepping effect.

"The idea was to create shadow lines in the facade," explains van den Enden, who refers to them as 'layers of unconformity'. "It's similar to a geological phenomenon, where neither material is fully represented," he says.

While COLORBOND® Metallic steel provided the ideal material to express the architect's vision, it was also an appropriate medium to use in the building's construction.

"We needed a material that could accommodate the breadth of the building, up to 10 metres high with lengths up to 40 metres," says van den Enden, who was also looking for materials that were durable and strong aesthetically. "At sunset, the building takes on a pink glow," he adds. "During the day, it looks completely different."

Another reason for selecting COLORBOND® Metallic steel was the consistency of colour. "Each piece was manufactured off-site in a factory. If painters were brought on-site, you'd have to allow for the variation that comes with individual brushstrokes." To enhance the feathery appearance of the design, the three grey tones were arranged with the lightest, most reflective colour at the top of the building. ➤

PANEL SAYS

In a new suburb of Melbourne not renowned for its architectural merit, the Caroline Springs Stadium stands like a beacon in the landscape.

What could have been a boring rectangular box is transformed by the integration of details that reference the area's unusual geological features, namely the basalt columns found in nearby Organ Pipes National Park.

Applying steel in new and different ways gives added texture and shadow to the facade to produce a building that is, in the words of the architects: "More than a 'shed with feeling'."

In contrast to the layered western facade, the entrances on either side of the centre are firmly anchored to the ground. Honeycomb-shaped concrete columns defy the vertical structure, and vibrant red soffits create a sense of arrival on both fronts.

"We wanted the folding roofline [LYSAGHT KLIP-LOK® 700 made from COLORBOND® steel] to extend to the ground. It's part of the 'terrain'", says van den Enden. He also extended the COLORBOND® steel to shade the windows, both for sun protection and privacy.

Two dynamic elements in the foyer – an undulating acoustic plywood ceiling and the irregularly shaped reception counter – reference the inspiring landscape. Made of plywood, Marblo and detailed with built-in strip lighting, the reception counter, like the ceiling, expresses the geological formations unique to the area. Even the bathroom signage is conceived in a hexagonal shape. "Architects can get quite obsessive," says van den Enden, pointing out the hexagonal-shaped digital shapes on the glass walls leading to the foyer.

The basketball courts were also conceived as part of the geological formation, with the coloured plywood walls rising and falling like movement on the earth's surface. The coloured walls activate the space, and sounds are contained within the courts, (court 1 is used for speech nights and incorporates extendable seating for that purpose).

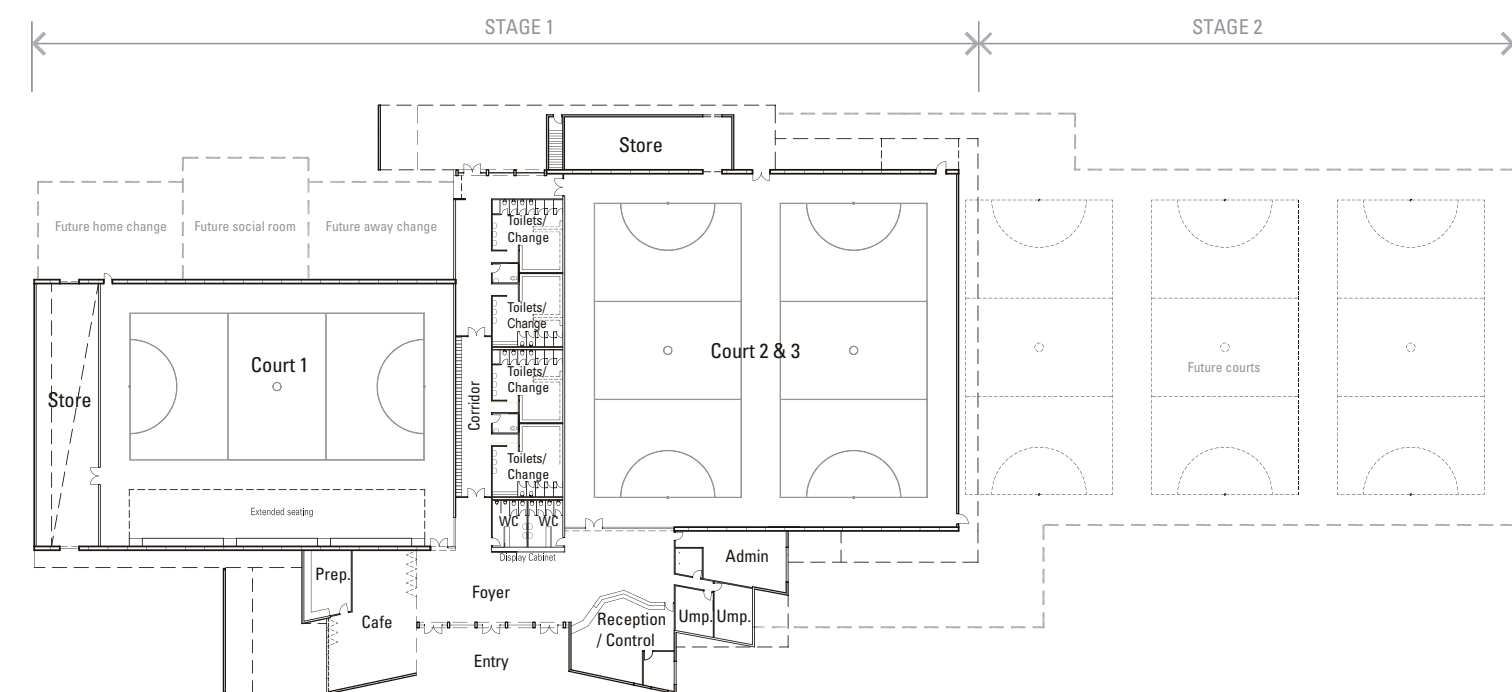
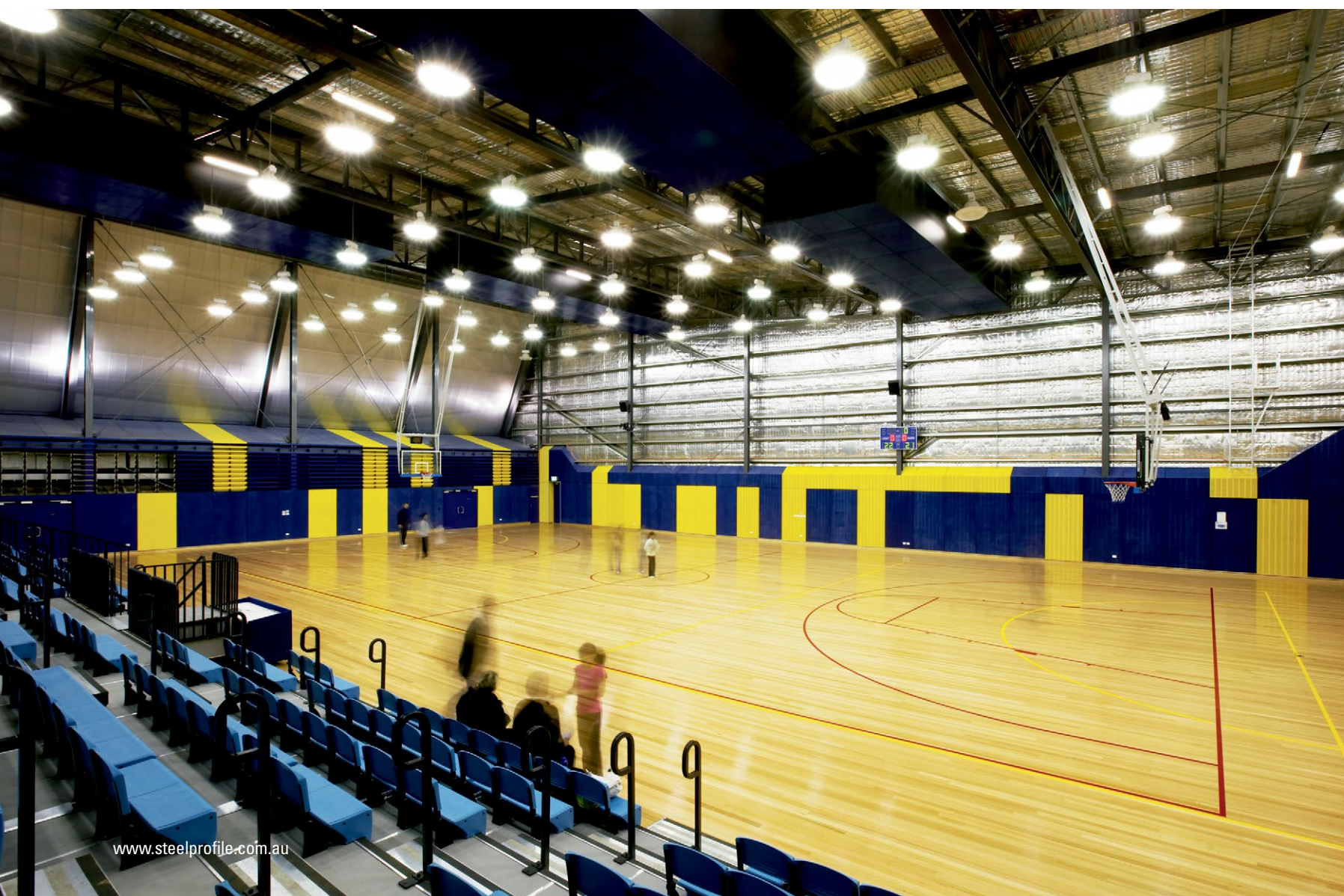
Taking inspiration from the local terrain demanded that the architects use 3D modelling programs in the initial stages of the design. That process helped to overcome one of the main concerns about how the future office building would impact on the design.

"It was important to see how the views should be framed. And with a brief to create a 'gateway' building, we didn't want it overshadowed," says van den Enden, who also used the modelling process to pitch the architect's vision to the community. "We had a barbecue for 500 people. Those who attended were selling our vision to others. They were just as excited by what lay ahead as we were," he adds.

Although the office building is now nearing completion, it pales in comparison to the new kids on the block. Motorists slow down at the entrance to Caroline Springs and locals are drawn to the buildings, like bees to honeycomb. What was jokingly referred to as 'rocks' has shaped up as the home of a monumental architectural icon. **SP**

OPPOSITE BELOW: Three more courts will be added to the centre in stage 2 of the development

BELOW: Wide spans provide the required height and space, while the simplicity of the steel structure makes the centre's planned future expansion easy



PROJECT Caroline Springs Stadium, Melbourne **CLIENT** Shire of Melton **ARCHITECT** Suters Prior Cheney Architects **PROJECT TEAM** Mark van den Enden, Stephen Cheney, Sam Chine, Graeme Christianson, Dianne Edlin, Alex Hotchin, Neil Zimmerman **STRUCTURAL ENGINEER** Browns Consulting **BUILDER** JA Dodd **CLADDING CONTRACTOR** Excel Links
PRINCIPAL STEEL COMPONENTS LYSAGHT CUSTOM ORB® made from COLORBOND® Metallic steel in the colours Citi®, Facade® and Axis®; LYSAGHT KLIP-LOK® 700 made from COLORBOND® steel **SIZE** 3,600 square metres **COST** \$8.75 million

LAWRENCE NIELD

A towering figure in Australian architecture for more than four decades, Professor Lawrence Nield's departure as founding principal at Bligh Voller Nield signals an historic shift for the practice he helped create almost 30 years ago.

The career of the master-planner for the Sydney Olympics and maker of quintessential forms – the latest at Beijing's Olympics – is hallmarked by an interest in architecture of the public, rather than private, realm.

His next 'big' project is a soccer stadium for Venice, where the assumption might be that it could eventually host water polo. Lawrence Nield creates buildings of optimism, but is gloomier about the influence of the Computer Age...

What would you regard as your design trademark?

I haven't set out to create one. There are similarities in projects, but each is driven by different clients and different sites. Whether I'm using steel, corrugated iron or brick, I believe in the fundamental importance of substance and materials, and getting those elements to speak.

One of your early projects was the Mt Druitt hospital, opened in 1982 by Queen Elizabeth, no less. How important was this project in the life of your practice?

That was my first project, having just started practice. It was an exercise in profiled metal and how it could go around corners with curves and louvres. It was technically very difficult, but we were able to create a building of great lightness – and light.

Who, or what experience, has been your greatest influence?

Adrian Stokes, the English writer and critic, and my Sydney University lecturer in art, Lloyd Rees, of course. The architect to the British Library, Colin St John Wilson, who was professor of architecture at Cambridge. Last, but not least, arguably the world's most famous architectural historian, Joseph Rykwert, who was also at Cambridge, was a very strong influence and supervisor of my thesis at Cambridge.

What are your architectural preoccupations?

I'm interested in housing people in schools,

universities and hospitals and sports stadia.

I'm not interested in trying to create the expensive, exquisite houses that fill the glossies.

How important is curiosity for an architect?

Call it curiosity or research, but it's something universities don't understand. There's curiosity in how a building comes together – and you need to be curious about how people will use and live in the building. As Churchill said: "We make our buildings and then they make us." There's that strange nexus that occurs all of the time. So there's wishing and finding that informs the process of design.

Isn't it ultimately about buildings that are uplifting, and that leave you feeling more optimistic than when you entered?

That's right. They're also a defence against chaos that should allow people to live their lives, and then there is the chance that they can be uplifting.

Has there been a most satisfying architectural moment?

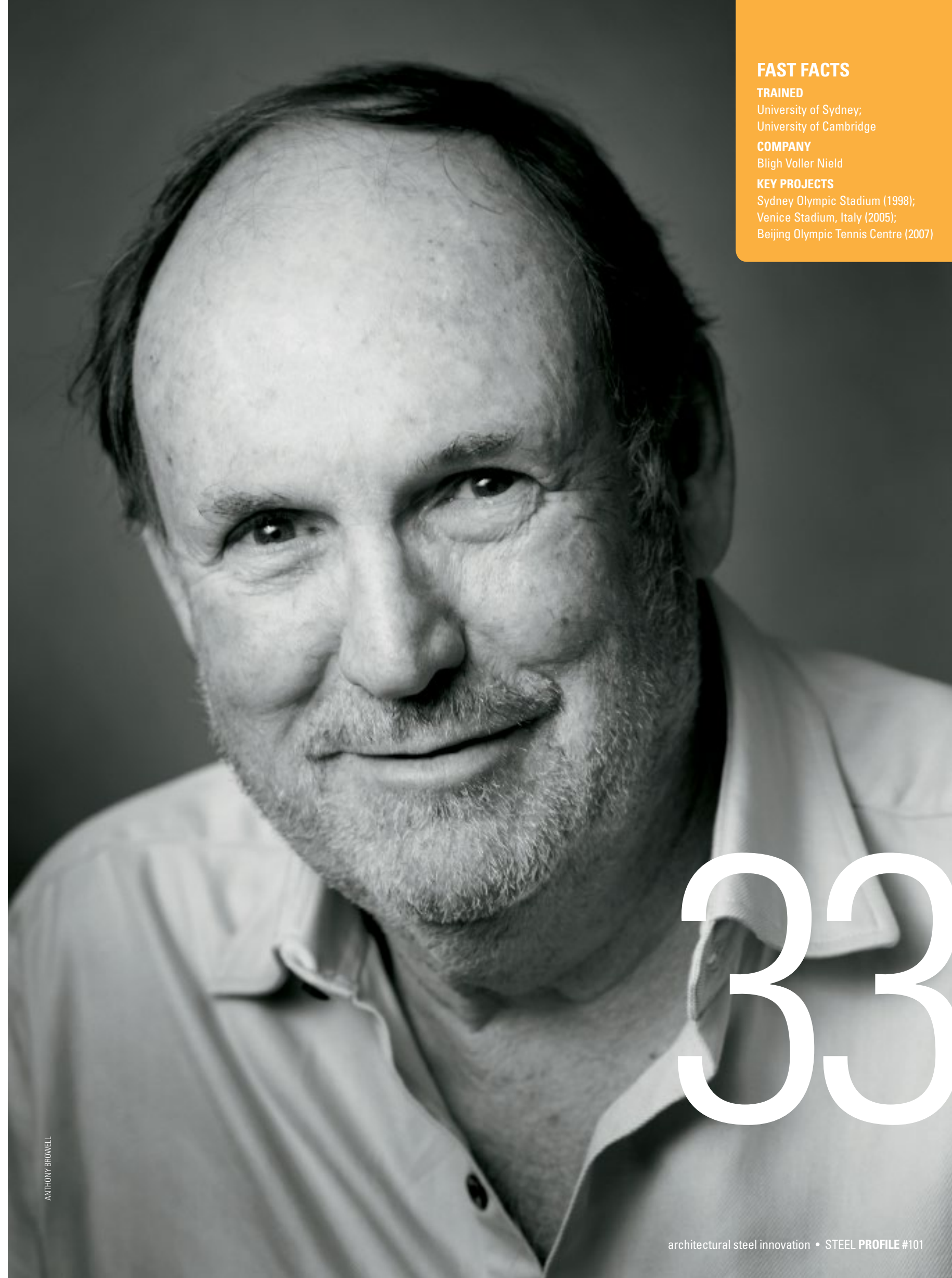
When you can refuse work, when you have enough work, and when your work is well known enough for you not to have to grasp and struggle with the client who is unsatisfactory. Being able to work with clients who you want to work with is important, but I've only been able to do that in the last six or seven years. It's taken 25 years to get to that stage. ➤

"There's curiosity in how a building comes together – and you need to be curious about how people will use and live in the building"

Construction of Nield's swansong project, Nouvo Stadio di Venezia (left), commenced in early 2008



3D VISUALISATIONS: BLIGH VOLLER NIELD



ANTHONY BROWELL

FAST FACTS

TRAINED

University of Sydney;
University of Cambridge

COMPANY

Bligh Voller Nield

KEY PROJECTS

Sydney Olympic Stadium (1998);
Venice Stadium, Italy (2005);
Beijing Olympic Tennis Centre (2007)

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“Steel is a very emotive material that has emerged from the traditions of the industrial revolution”

emotional strength that is a part of our indigenous white tradition. Materials acquire their meaning and strength from where they come from, and how they are assembled with appropriateness to place.

The past few decades have seen steel really re-emerge from simply lightweight utility to one of deeper, more complex significance...

Steel is a very emotive material that has emerged from the traditions of the industrial revolution. Its craft is similar to carpentry, and when used in profiled and cladding form, it gives it this immense strength. Only by understanding these materials can we begin to understand what is possible.

You played a pivotal role in the Sydney and Beijing Olympics with structures as diverse as the Homebush Tennis Centre and the Beijing rowing pavilion. How mindful are you of creating the monumental that retains the lightness of touch?

We evolved this almost universal language of steel at Homebush and carried this through to Beijing. Philip Cox designed the swimming pool at Homebush and it allowed us to use the language of steel all the way through. We also wanted it to be a piece of city as opposed to a sports park. Now at Homebush there are 8,000 people working there, and many more using the community sports facilities – there are so many people enjoying the place it’s just fantastic.

One of your favourite buildings is the Doge’s Palace in Venice...

It’s a remarkable building.

Which brings us nicely to the Venice stadium you’re doing – you have been working on this for three years now. How close is it?

Work begins in November of 2008. Working in Italy can be a slow process. David Chipperfield’s Island of the Dead has taken 10 years, and Santiago

Calatrava’s new bridge over the Canal Grande will have taken eight years. We’ve only been on this for three years.

What is the principal lesson you have learned from so many years in architecture?

To remain principled.

What about the most important quality you have imbued the practice with?

That’s a very important issue. There are real problems with a practice that has more than 200 architects. Every principal thinks that they are a great designer and we now have 12 principals. [It’s important to] keep the flame burning brightly as the primary aim and not do work that is going to stop that aim. My ex-practice is big enough now to not deal with work they shouldn’t deal with.

You’re stepping down as founding principal but not stepping out of architecture...

I’m not wanting to take up bowls and golf. I’m going on practising and writing. There’s also a lot of consulting work, and I have the Venice Football Stadium to follow up. While the architecture is essentially done there, getting it made so it’s not blurred is very important.

Are you optimistic about the next decade for architecture?

Not when I look at Dubai. There are some very good architects there, but to bring them all together to create a new civic richness just doesn’t seem to be happening as much as it should. Maybe I’m becoming a grumpy old man. **SP**

Interview by Peter Hyatt



University of the Sunshine Coast Library (1998, top), provides a transparent sub-tropical edge through a reorganisation of the building’s functions; Nield describes Mt Drutt hospital (1982, above) as an “exercise in profiled metal and how it could go round corners.”

Do you prefer to talk or do architecture?

I’m still of that generation that prefers to draw on yellow tracing paper. That’s all pretty old-fashioned and amusing for students now, but working that way gives me great pleasure. When I draw I can feel the architecture which I can’t on computer. There is a tendency to form an empathy with the computer image rather than with the person, and that makes it hard to develop the building in the richest possible way.

Phillip Johnson referred to this as ‘the crutch of pretty drawing’...

Well I agree with that completely. Call us old-fashioned, but the heart and soul of architecture is in the ability to empathise.

Do you like to be regarded as an agent provocateur?

If you read the report of the last national conference of the Australian Institute of Architects [in the July/August 2008 issue of *Architecture Australia*], the confrontation I had with Leon Van Schaik became known as a ‘slugfest’. About 600 people witnessed the event and that was very interesting.

You have a reputation as a bold seller of your designs. How important is it to know the difference between being self-opinionated and finding your own voice?

Well that’s a bit of a slow curved ball. It is very important that you have some sort of a basis for what you believe in. Architecture isn’t just about images. It has to develop from briefs, but also from history and above all from materiality. It’s vital that we understand why a particular material is used in a certain way.

How do you teach architects young and old to be courageous rather than to clamour after the superficial?

By giving them a strong understanding of history. Why does Sydney have a brick tradition going back to settlement for instance? It was because when settlers landed they found plenty of clay, and the wood they found was too hard to cut.

It took 30 years before they found the hoop pines of the Hunter Valley. This is a wonderful soft wood and so you then see this emergence of an architecture that came out of the hoop pine from near the Brisbane River. You then begin to understand a tradition that is still strong today.

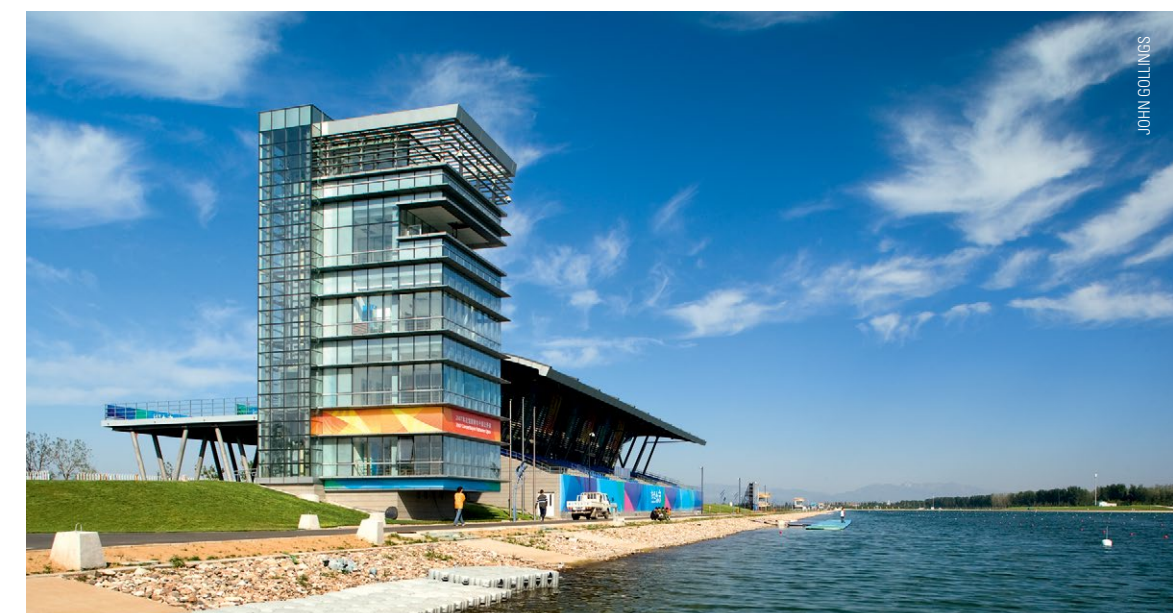
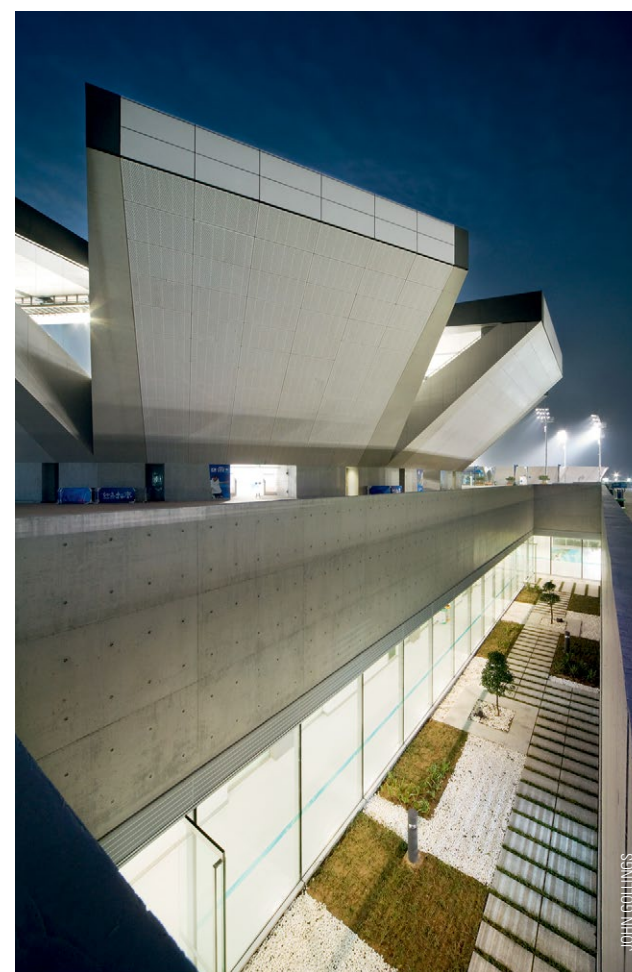
Has there been a time when building skins have ever been more interesting or important? Gehry’s Guggenheim showed the emergence of sustainable design as an art form and science in its own right. Gehry describes how he used 0.5mm thick titanium, yet Australia has been using that thickness on sheet steel for 150 years. Steel is capable of being rolled to such an incredible thinness to provide such a skin...

The invention of corrugated iron and its arrival in Australia coincided perfectly with the discovery and opening up of the Australian outback, woolsheds and lightweight buildings. It arrived by ship and was taken by paddle steamers and bullock carts – and that ease of transport saw it become ubiquitous.

Does steel provide that opportunity to subtract material yet add to the experience?

It has those strong traditions, but it has the ability to be used in an extraordinary way for floors and walls and roofs, so it is a material underpinned by that ➔

Nield developed a universal design language with his first Olympics projects at Homebush, Sydney, which carried through to the tennis centre (below) and rowing venue (below right) at the 20008 Beijing Olympics



BOYNE AGAIN

Faced with the difficult task of balancing the deferential and sombre with the uplifting, Studio 39 has produced an elegiac sequence of poetic buildings

Words **Margie Fraser** Photography **David Sandison**

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ARCHITECT Studio 39

PROJECT Boyne Tannum Memorial Parklands

LOCATION Boyne Island, Queensland



ABOVE & ABOVE RIGHT: ZINCALUME® steel provides a great stage for the ever-changing shadows created by the site's many trees

RIGHT: The structural steel subtly mirrors the surrounding landscape

FAR RIGHT: The initial concept sketch responded to the brief with a sensitive consideration of each building's proposed sightlines for occupants engaged in private reflection, and careful planning of access routes



Boyerne Tannum Memorial Parklands sits on an anabranch of the Boyne River, south of Gladstone in Queensland. For most of us, the word Boyne brings to mind the vast aluminium smelter which sits on the eponymous island. On his well documented trip along Australia's east coast in 1823, the explorer John Oxley named the Boyne River after that in Ireland which, 130-odd years earlier, saw a bloody battle between William III and James II. William III (of Orange) and his Protestant troops won the day.

It's hard to imagine that anything other than loyalist sympathies possessed Oxley to find similarities between the Irish spot and this. The coastal waters at the southern tip of the Great Barrier Reef are an unbelievable cerulean blue. Sandy stretches of flat land meet the sea, which fingers its way inland via myriad courses. The fringing sclerophyll forests have a peculiar rough and tumble charm and resonance far removed from Ireland's ordered emerald fields.

It is this natural bushland charm that is so beautifully harnessed and celebrated in Studio 39's design of the Boyne Tannum park. The six-hectare riverside site accommodates a cemetery, crematorium, chapel, tea pavilion and administration centre.

The land was sliced off the edge of an old grazing property near the small coastal town of Tannum

Sands. Next door, the beasts still wander. Within the precinct, old stands of Bloodwood, Ironbark and lemon-scented gums abound. A few magnificent ghost gums take on a grandfather status amongst the smaller fry. New plantings of grass trees, native grasses and eucalypts define gravel pathways and gathering zones, and an apron of green lawn surrounds the buildings before giving way to a browner local variety.

The Boyne anabranch takes a curving course below and around the site before it rejoins the main stream. A natural amphitheatre for the cluster of buildings is formed by the river and an adjacent hill. The ebb and flow of the tides is ever present, along with much birdsong. Designed to commemorate and grieve the dead, the place is powerfully alive.

Architects Don Marshall and Chad Brown embraced the client's concern that the landscape rather than the buildings should receive prominence in the design.

"The quality of the site was such that we wanted the landscape to dominate," says Marshall. "There was an obvious, beautiful vista straight up the anabranch, which drove our strategy, and we collaborated strongly with the landscape architects to achieve it."

Initially they conceived of one building, but then decided a cluster was more attuned to both mourning and the site.

"There are many sensitivities involved in attending a funeral service," says Marshall. "People don't want to feel they are on some sort of conveyor belt with the next service waiting outside to come through. Teasing apart the components of the process and separating the buildings into zones and functions allows it all to be more discreet. It also creates a linear progression through the site which assists in the grieving process."

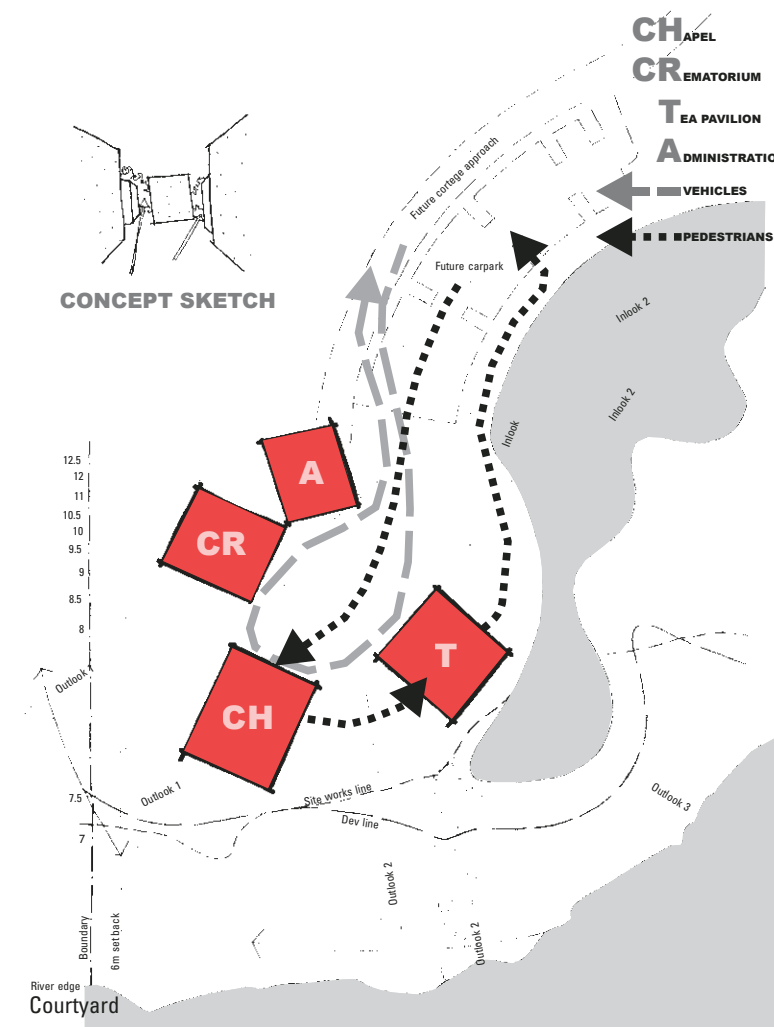
Saluting and celebrating the natural aspects of the location reminds mourners that death is also natural and part of a grander cycle. Landscape walls screen sections of the cluster on approach, and earth is mounded to partially hide some of the buildings.

The chapel takes up a dress circle position within the precinct, looking south-west along the straight broad reach of the river and to a mid-stream island. For those arriving from the downhill carpark, the building is the precinct's distinctive object, poised on a gentle rise above the water.

Essentially a transparent glass box designed for gazing outwards, the chapel is topped by a dramatic roof which lifts skywards towards the vista, and then wraps over and down the side of the building. The heft of the roof is belied by the delicacy with which it anchors to the ground at one point, striking a balletic pose in a gesture of protection and consolation. Originally the roof was to be copper, predicted to age to a greenish patina. When budgets did not stretch to copper, LYSAGHT SPANDEK® made from ZINCALUME® steel was selected in Woodland Grey® to blend with the surrounding colours.

"We're massive fans of Woodland Grey® in Studio 39," says Brown. "It suits the Australian landscape and we knew the sub-contractors would do a great job with the ZINCALUME® steel as it's easy to work with. And the shadows cast on it by the trees look amazing."

"The quality of the site was such that we wanted the landscape to dominate... There was an obvious, beautiful vista which drove our strategy"





ABOVE: The final site plan changed little from the initial concept sketch (see previous page)

BELOW: Weathered materials are juxtaposed against the ZINCALUME® steel, subtly referencing life's circle

OPPOSITE: Reflection ponds and meandering paths reinforce the site's contemplative atmosphere

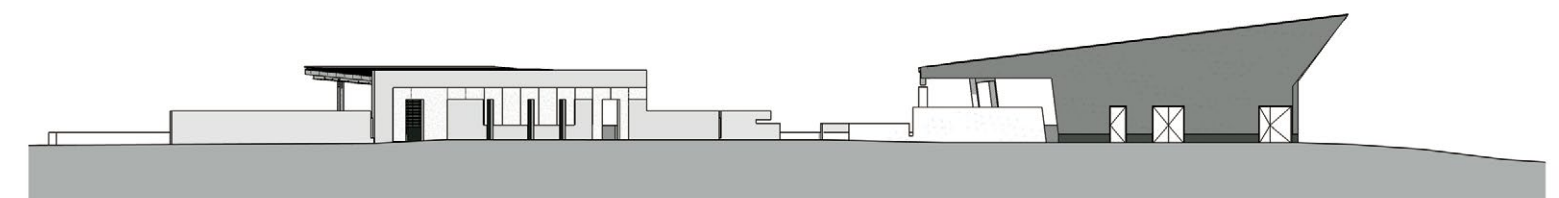


PANEL SAYS

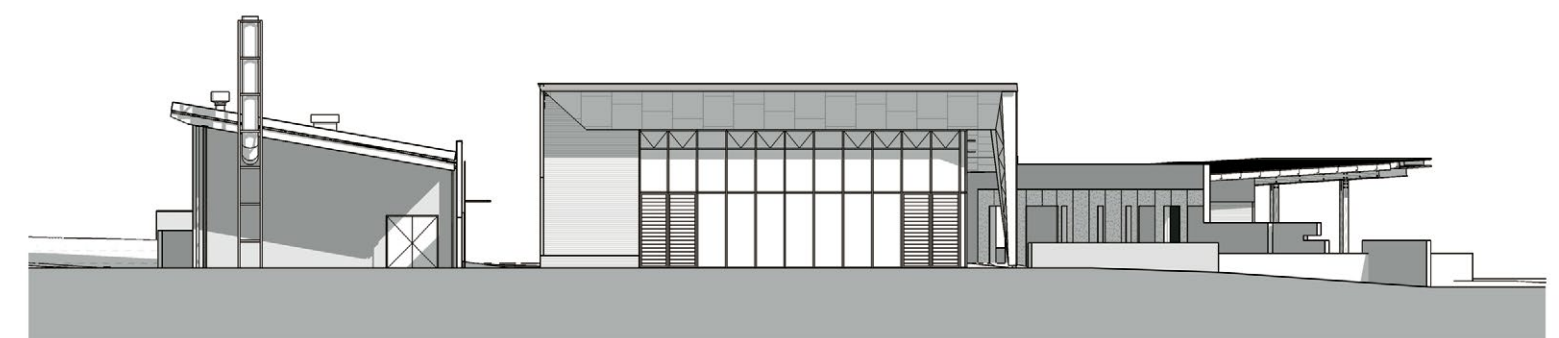
Landscape and function are the underlying forces that drove the design of this cluster of buildings, which are arranged in a considered manner to achieve harmony and create atmosphere for the ceremonial events that take place here.

The use of WR350 Grade XLERPLATE® steel on several of the structures provides a subtle hint about one of the architect's underlying messages: the integration of natural materials and decay. The procession of life and death is beautifully alluded to in these simple yet compelling structures.

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North-west elevation of the chapel on the left and the tea pavilion on the right



South-west elevation detailing the crematorium on the left, the chapel, and then the tea pavilion in the background



“There was a fine line to walk between creating something suitably deferential while not being too sombre ... We find the XLERPLATE® steel uplifting”



The design provided an extra challenge for the roof construction by specifying that the ridges follow the roof's slope and thus emphasise the shape of the folded form. The result is crisp and clean. Deep eaves allow for increased shade in the building, which is passively ventilated, as well as providing a forecourt where mourners can stand outside the chapel.

Large structural steel portal frames in the forecourt are twisted to skew the chapel off axis and give more prominence to the view beyond. The frames are clad in XLERPLATE® steel, which provides a continuous presence on the buildings around the site. The rusted red crust responds to the earth's rugged presence and colours. XLERPLATE® steel also forms an extra skin to the bagged blockwork walls of the administrative offices and tea pavilion, where it is cut into abstract colonnades that frame the structures' apertures.

“The rusted steel was another part of the palette of naturally ageing materials,” says Marshall. “There was a fine line to walk between creating something suitably deferential while not being too sombre. We've used the XLERPLATE® steel sparingly, and find it uplifting.”

Due to its position near a tidal stream, the XLERPLATE® steel took a mere three months to develop its protective red crust instead of the usual twelve. Other materials set to age gracefully are the recycled timbers which line the walls of the tea pavilion and chapel, and the impressively scaled posts which support the pavilion. Beyond the hardwood posts, the open pavilion has a cantilevered steel roof, a construction which the architects say the structural engineer was very keen to explore.

“There's a nice marrying of steel and hardwood in the tea pavilion, and of man-made and factory produced,” says Brown. “The recycled hardwood posts are bolted to the side of the steel, but then it takes off on its own for a bit.”

Another metaphor for the cycle of life and death, perhaps. The tea pavilion turns its back to the chapel and looks to a lawn cemetery and the river. Headstones take the form of rocks dotted around the bases of trees and along the winding paths. The Memorial Gardens have been in operation for a year. The local community has embraced it as a place for celebration and remembrance. Enquires for wedding ceremonies prove it is a destination which fully speaks of life's circle. **SP**

PROJECT Boyne Tannum Memorial Parklands **CLIENT** Calliope Shire Council (now Gladstone Regional Council) **ARCHITECT** Studio 39 **LANDSCAPE ARCHITECT** Tract **STRUCTURAL ENGINEER** Bligh Tanner **BUILDER** Woollam Constructions **STEEL FABRICATOR** Canel and Engineering **CLADDING CONTRACTOR** EB Plumbing **PRINCIPAL STEEL COMPONENTS** LYSAGHT SPANDEK® made from ZINCALUME® steel in Woodland Grey® (roof and walls); WR350 Grade XLERPLATE® steel (feature steel panelling) **SIZE** 4100 square metres



ABOVE LEFT: The view inside out clearly shows how the steel frame was designed to interact with the trees; LEFT & THIS PAGE: other material choices demonstrate sympathy with the landscape



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