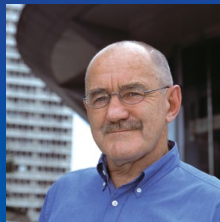


steelprofile

Architectural steel innovation with BHP Steel Limited

number 84, september 2003





002

Cyber Steel

Malaysia's technocrats conceived Cyberjaya as more than just a new city in a fast developing nation. They hope the next decade will see it become a template for life in a digital age. At its heart is a building unique in form and function. Robert Powell reports.



008

Meccano Magic

Andrew Coomer (pictured) left behind ten years of commercial architecture to take up the challenges of residential design. His first project was his own family home – and it's already an award winner.



016

Stadium Event

The \$280 million redevelopment of Brisbane's Suncorp Stadium has delivered more than a state of the art venue on a modest footprint. Its clever design has also created instant atmosphere and a great spectator experience.



024

Religious Conviction

More than ever before churches are in outreach mode, seeking to strengthen and broaden their community ties. It's more than a philosophical approach, indeed in some ways it begins with facilities. Sydney's new Warriewood Uniting Church shows how.

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(cover photograph) Materials blend to give this pavilion style Sydney home street appeal that endures as the play of light changes on its COLORBOND® Metallic steel cladding.

(this page) Brisbane's Suncorp Stadium puts spectators in a cauldron of emotion that makes use of steel clad grandstand roofing to concentrate the roar of a crowd positioned very close to the action.

002

Project Cyberjaya City
Command Centre, Malaysia

Architect Garis Architects Sdn. Bhd.

Building Owner Setia Haruman Sdn. Bhd.

Turnkey Contractor Landmarks Engineering
& Development Sdn. Bhd.

Perhaps nowhere in Malaysia is the country's effort to project itself into the technological future more evident than in Cyberjaya, a new-style city taking shape near Kuala Lumpur. In Cyberjaya, technology is paramount – and the structure known as the City Command Centre is a “smart building” of a different breed.

CYBER STEEL

Cyberjaya is Malaysia's first 'Intelligent City'. The Prime Minister, Dato Seri Dr Mahathir Mohamad launched the project in mid-1999 with Cyberjaya hailed as the Information Technology (IT) hub that would launch the country into the information age and fuel economic growth in the twenty first century.

Encompassing nearly 2,900 hectares, the new city 25 kilometres south of Kuala Lumpur is intended to be the nucleus of the so-called Multimedia Super Corridor (MSC), a growth area extending from the capital to the country's new International Airport (KLIA). Proclaimed 'the city of the future', Cyberjaya was designated as the location for numerous established IT based companies.

When Malaysia launched Cyberjaya as a home for technology companies, the thinking was simply this: if we build it, they will come. It hasn't quite worked like that because despite promises and praise for the city, very few multinationals have actually relocated themselves to Malaysia's technology city to carry out cutting-edge research.



Cyberjaya City Command Centre's distinctive roof includes a butterfly section designed to serve as a beacon, highlighting the building's central role in the digitally enhanced city's connectivity. The roof is clad in Clean COLORBOND® steel in the colour Aquamarine, rollformed in LYSAGHT KLIP-LOK® HI-TEN profile.



The architecture of the City Command Centre stands in contrast to neighbouring buildings in Cyberjaya.

Nevertheless there is an air of optimism among officials in Kuala Lumpur, who are now refashioning the technology hub into a focal point for multinationals' regional outsourcing centres. Cyberjaya is now promoting itself as a hub for back-of-house services. The hi-tech city is being reinvented to get a slice of the multinational firms' lucrative outsourcing pie. "We see it now as a services and outsourcing haven because we can offer companies high value, world-class communication and physical infrastructure, and low cost," a Multimedia

Development Corporation (MDC) official recently declared.

This future-proof city can also offer the services of the Cyberjaya City Command Centre, a building in form and function unlike any to be found in Australia.

The city of Cyberjaya was designed on the premise that it would be a place where man, nature and technology live together in harmony – a city featuring a blend of luxuriant tropical vegetation alongside the latest IT technology and modern infrastructure. The Cyberjaya City Command Centre

(CCC) was always envisaged as the 'nerve centre' of Cyberjaya and although the early vision of the city's function may now have been modified, the building is still expected to serve much the same function. It also functions as a visitor centre.

The CCC acts as a central hub to monitor, manage and implement key services. It is the 'brain' of the new city, providing management of traffic, utilities, community facilities, municipal services and public amenities through a seamless integration of systems and services.

By centralising information from various utilities the CCC offers a service to residents that will become the norm in the city. For example, the Supervisory Control and Data Acquisition (SCADA) system allows effective centralised coordination and management of billing, fault reporting, maintenance and monitoring of all services such as gas, water, sewerage, telephone and electricity.

This is a building to house the computing functions which also enables a range of education, health, security and entertainment services to be provided to the city's residents to enhance their lifestyles.

The customer service counter hasn't been completely banished from this new style of municipal administrative centre, but there is an expectation that many, perhaps a majority of transactions, will take place online or by other methods.

Residents will be able to access a variety of information from their homes or offices via the web. The CCC is a significant physical presence in Cyberjaya, but for many residents their interaction will be via a telephone service and interactive voice response (IVR) system, by interactive television and personal computers at home and office or by mobile data terminals in public areas.

The residential area of Cyberjaya is designed to provide 28,000 units of 'intelligent homes'. This will be low-density development comprising bungalows, link houses and condominiums. Residents have the option to link up with the Cyberjaya Network to enjoy services including information requests, emergency aid and security monitoring.

Cyberjaya CCC was conceptualized by Tang Hsiao Seak of Garis Architects Sdn Bhd, as a beacon in the new city. The roof form was thus extremely important. The whole building was, to quote

the architect, "covered with light steel roof planes utilising rectangular, oval and ovoid geometry transposed over the 'H' plan form". A prominent raised 'butterfly' roof was located above the core of the plan. At night it was intended that this roof form should be illuminated and be perceived as a beacon signifying the function of the CCC.

Meticulous detailing ensures the reading of lightness, sharpness and thinness of the steel roofing element, principally clad in Clean COLORBOND® steel rollformed in LYSAGHT KLIP-LOK® HI-TEN profile in the colour Aquamarine. Surrounding the beacon structure is light steel mesh.

Asked why he decided to use BHP Steel products the architect says that the company ensured that every architecture student at Sydney University received a complete set of product data and it has subsequently been an integral part of his design repertoire.

The arms of the H shaped plan were conceived as being open, extending out to the community and embracing the landscape. A user friendly, non-imposing solution was sought, although the brief had conflicting requirements for secure spaces in opposition to visitor-friendly spaces. The design attempts to break away from the box-like, facade-dominated architecture of some neighbouring buildings. Progression and sequencing of spaces are the principal concern in leading the public or visitors through various spaces – external, transitional & internal – that form the complex. Landscape and architecture are brought together in a network of experiential spaces reflective of the function of each space.



Roof forms provide a bold answer to the shelter and shade demands of Malaysia's climate.



The steel mesh surrounding the central part of the building's upper level conceals air handling units, water tanks for the sprinkler system and other mechanical equipment.



Energy efficient and sustainable solutions are explored and realised in the form of large overhanging roofs, sunshading devices, shading by trees, maximisation of daylight admittance through clerestory windows, the use of skylights and internal courtyards. Rainwater is recycled for

watering plants and at the same time the device for the collection of rainwater becomes a cascading water feature. (The detail used here is a reinterpretation of a detail the architect recalled from tin mines at Ipoh). The architect maximises the use of natural ventilation and uses a Building Automation

System (BAS) / Intelligent Building Management System (IBMS) to optimise efficiency and regulate power consumption.

The designer Tang Hsiao Seak is a graduate of Sydney University where he was influenced by the work of Glenn Murcutt and Richard Leplastrier and specifically by his design tutor Ken Maher. One can see in Tang's architecture an attention to detail and integration with landscape that is also a feature of Maher's oeuvre. The architect has designed a variety of internal and external building skins – some clear, some translucent and others opaque. The intention was, in addition to addressing the normal thermal,

acoustic and daylighting requirements, to also explore different ways of expressing function and evoking experience, and for the skins to act as visual cues for orientation and movement.

Colour was an important consideration in the design. The choice of COLORBOND® steel in the colour Aquamarine rollformed to LYSAGHT KLIP-LOK® HI-TEN profile was to signify the building growing from and being anchored in the landscape. The landscape colours interlock with and penetrate the built spaces via courtyards, terraces and floor, wall and ceiling finishes.

What is particularly refreshing about the Cyberjaya City Command Centre is that the architectural language is modern/tropical reflecting the hi-tech function of the building. It is not overloaded with the overt symbolism that is found on much of the work in Putrajaya, the new Federal Administrative Capital of Malaysia that adjoins Cyberjaya.

13,500 people already live, study or work in Cyberjaya. The city is a pleasant contrast to the congestion experienced in Kuala Lumpur for there are currently no traffic jams and parking is easy. The downside is that the city is somewhat deserted and lacks the street life associated with the capital.

The City Command Centre is presently working far below its design capacity. The main control room has three huge screens faced by an array of computers. Most of the computers are not yet manned and the screens convey a somewhat desultory picture of a city that has yet to make a major impact. The visitor centre, marketing and briefing centre, exhibition gallery, customer service and billing centre, and the extensive cafe will only become fully utilised by 2011 when Cyberjaya City grows to its projected working population of approximately 50,000 and a living population of over 120,000.

Robert Powell

Project:
Cyberjaya City Command Centre (CCC)
Selangor, Malaysia
Architect:
Garis Architects Sdn. Bhd.
Building Owner:
Setia Haruman Sdn. Bhd.
Project Manager:
Pengurusan Lebuhraya Berhad
Turnkey Contractor:
Landmarks Engineering & Development Sdn. Bhd.
Photography:
Paul Bradshaw



Water shed by the CCC's large roof areas becomes a cascading feature and an efficient plant watering mechanism.

Project Coomer Residence
Palm Beach, Sydney

Architect/Owner Andrew Coomer

Builder A.J. Anderson Builders

Engineer Tihanyi Consulting Engineers

MECCANO MAGIC

“The design was formulated to make construction very easy,” explains Sydney architect Andrew Coomer. “The builder spent about a month pre-cutting the recycled timber structure, with most timber posts and beams the same length due to the simplicity of design. He put all the steel roof beams up in a day and the roof went on within the week – it was just amazing. All up the house took seven months to build – pretty good for a one-off home. The builder called it a ‘Meccano set’ because of the way all the materials and structure bolted together – the hardwood posts, galvanised beams and the steel walls and roofs.”

Anyone given their first meccano set soon realises it’s easier to knock down what’s been done before and start again. That is just what Andrew Coomer did, but in his case he wasn’t playing with a toy, it was his family home.

This was to be the first home designed and built by recently-turned residential architect Andrew Coomer. After over ten years in commercial architecture Andrew Coomer decided to change direction – leaving his job, setting up his own Sydney Northern Beaches residential architecture firm and taking on his most challenging project first – his own home.

After initially poring over renovation plans and extension opportunities, Andrew decided it was easier to simply knock down his “square fibro box” and start again. And he didn’t hold back with his first “Meccano set”. He set about building his dream home on the 750 square metre Northern Beaches block – a site surrounded by Whale Beach to the east, Palm Beach to the north and Broken Bay to the west – and backing onto an open nature reserve.

It is not that Andrew didn’t have any knowledge, expectations or ideas about residential architecture. Glenn Murcutt was one of his lecturers during his university days and Andrew has always admired Richard Leplastrier’s houses, so he knew the work and conceptual approaches of “the acknowledged masters of residential architecture.”

Andrew Coomer brought to residential architecture – and his own house – a focus on the re-use of materials, of bringing a home to life and creating a place that suits an owner’s lifestyle and the surrounding environment.

“This is a house that has been designed for a traditional nuclear family, but the idea about the way that it goes together – the bolting and connecting – can be changed to suit different families,” he explains. “You can unbolt the structural sections, move them or add to them – I made it quite easy for that to be achieved. This house was designed for us, but that’s not to say somebody else may not change it to suit them. It’s not just about designing a



The front, northern pavilion showcases many of the architectural features of the home – the skillion roof, translucent glass louvres and COLORBOND® Metallic steel as cladding to give the home a sense of presence.



During the warmer months, large doors can give full benefit to the open plan living, dining and kitchen area.



rigid box that everyone is going to live within, it's about making the house work for you."

With this Meccano mindset, Andrew created a home that sits well with the site, selected materials that work with each other and designed a home that would suit his family. The result is an eye-catching treat, planted squarely between a three-storey fibro home and a two-storey brick box.

From the street the home sits within the site quite discreetly yet still grabs the attention of passers-by. "The feedback from the neighborhood has just been amazing, I'm still getting it, six months down the track," Andrew says. "I'll be out the front and people will walk past and want to talk about the house. There are a lot of brick and fibro boxes around, but nothing like this. And when you start to talk about how the house interacts with the environment, they automatically understand what you are talking about, because the house articulates so clearly."

"This whole idea of constructability was also important to me, to make it as simple as possible. It's a non-conventional house, there are no two ways about that, and I didn't want to frighten people away by the look of it, but once you explain to people how it goes together, they see the simplicity and the logic."

After abandoning plans to renovate the 'fibro box' that originally stood on the site, Andrew packed up his family and rented around the corner throughout the seven month construction period. This allowed him to visit the property almost every day – and to clear the site. But not everything from the old home went to waste. As well as using the existing foundations of the home as a basis from which to build, he re-used among other





things, the hardwood joists in the old home and crushed the decaying roof tiles to use for rubble drains.

The premise behind the new design is the creation of two offset pavilions with skillion roofs raked to maximise both light and living space. The first, northern pavilion has purposely been designed as the smaller of the two, minimising wind and sun shadow on the southern pavilion. It houses two children's bedrooms, separated by a bathroom. The larger main pavilion – nearly 20 metres long, and five and a half metres across, houses the master bedroom – with ensuite – and an open plan living area, with the kitchen, dining room and lounge room all working in together.

But it is the way this design has utilised a combination of materials to co-exist with the natural surroundings that makes this home so visually-impressive. Moreover it is the reliance on COLORBOND® Metallic steel on the northern and eastern walls of the home that gives the structure a sense of presence, a sense of being alive and unique. Part of BHP Steel's premium product range, COLORBOND® Metallic steel draws on the surrounding environment to create a subtle, yet dynamic look. The look of COLORBOND® Metallic steel changes depending on light and viewing angle. As light passes over the mica particles in the metallic finish, the appearance of the painted surface changes and a perception of depth is achieved.

"The steel cladding responds incredibly well to the environment and the colours around it and gives the house so much life," Andrew Coomer says. "The way the material works means you can see the colours changing with the sun whether it is morning or evening, summer or winter. It gives the house a certain life of its own."

The only wall that does not use COLORBOND® Metallic steel is the southern wall, a concrete block blade wall which anchors the home back into the site. The windows on this wall – which faces directly onto the neighbour's property – are translucent, creating the impression that there is something else beyond the walls of this home.

Interacting with this ever-changing look of the cladding is the use of large expanses of glass to let the light into the home as well as a heavy reliance on recycled hardwood – jarrah from a demolished wool store in Western Australia, complete with nail holes and bolt marks – "which gives the home character and a sense of history, a link back to the past," according to Andrew.

"The block is oriented east-west, which is not a great aspect thermally, so we had to run the house along the block to keep it facing north. Because of the length of the block the two pavilions had to be staggered to maximise winter sun penetration."

Sun control is achieved by large eaves on the two skillion roofs, made from COLORBOND® steel in the colour Woodland Grey™, that sit on each pavilion. The 15 degree pitch of the roofs allows sun and light to flood in during the winter months, but stops the hot summer sun on the door line. High translucent glass louvres run along the top on the north side of both pavilions, allowing for cross ventilation and circulation of the air, while large sliding glass doors enclose the main living

The honesty in construction sees structural features of the home used as internal design features with exposed galvanised structural steel beams and unconcealed hardwood joists throughout.





The COLORBOND® Metallic steel cladding continues into the entrance walkway/hallway which links the two offset pavilions.

area. This means the whole room can be opened during the warmer months, bringing the external decks inside and allowing the home and its occupants to further connect with the site.

The two pavilions are separated by a wide entrance walkway/hallway which can also be opened up with doors at either end, allowing access to the front, back and interior of the house. The cladding of the interior walls in this area – in the same COLORBOND® Metallic steel as the external walls – allows this area to function as an interior or exterior space depending on the weather. An open, slat timber ceiling increases this feeling of space and this treatment continues on a

timber slat stairwell which leads from this light-filled breezeway down to the lower level of the home. The lower level contains the garage, laundry – neatly tucked away in a side wall – and Andrew's home office, with large windows overlooking the backyard and the nearby nature reserve.

"I was particularly interested in keeping the cross sections of the house really thin," Andrew explains. "The thicker you make the house, the harder it is for cross ventilation and light to penetrate, so having the two pavilions means that problem can be solved quite easily. Having the gallery/breezeway area separating them also allows light into the middle of the house. There's no part of

the house where natural light and ventilation are excluded.

"For me the house had to connect to the environment, to adapt to whatever is happening outside. Whether it's blowing a gale or whether it's boiling hot or freezing cold the house has to respond to it. We are able to open up the northern side in summer to get the north-easterly breezes off the beach and can also close the south side in winter to block the winds from the south."

The expression of materials flows from outside to inside, a deliberate play by Andrew to ensure an honesty in construction. Ceilings pitch upwards with the roof to the northern side, ensuring



maximum light in the living area and offering a feeling of space within the home. The plasterboard ceiling is raised from anonymity by the repetitive galvanised structural steel rafters which run from the south across the ceiling and outside beyond the eaves. Stylish downlights also spot the ceiling and hardwood joists are frequently unconcealed.

The open plan kitchen, dining and lounge are left intentionally uncluttered to provide a sense of space and continue the theme of the house.

The block has also been landscaped sympathetically with the coastal environment, notably by the planting of a range of local species. Larger specimens have been established on the north side of the home to offer some privacy, because in the casual holiday atmosphere of Palm Beach, there are generally no fences or barriers between homes.

So now it's all done, and the accolades are coming through – including that of winning the BHP Steel COLORBOND® Metallic steel Creative Design Program.

As the winner, Andrew and his wife will fly to Dubai and stay in the world's only six star hotel, The Burj Al Arab. So, is there anything he would change?

"As an architect you are always looking at better ways of doing something. But this was my

first house and I have proved that my designs and ideas work. I really don't think there is anything I would change, either in terms of materials and finish or in how the house interacts with the environment.

"The palette of materials all worked well together, the strong look of steel – with its long spans and termite resistance – together with the softness of the timber and the openness of the glass. Architecture is solution-driven and every site is different. How the house responds to each site is going to be completely different in every case.

"I think when it's your first house you have all these ideas of what you want to do. And from my perspective it was also about showing people where I'm coming from as an architect and the things that are important to me. So I didn't hold back..."

Paul Cheal

Project:
Andrew Coomer Residence
– Palm Beach

Architect / Owner:
Andrew Coomer,
Tel: 61 2 9974 5816

Builder:
A.J. Anderson Builders

Landscape:
Coastal Care
Horticultural Services

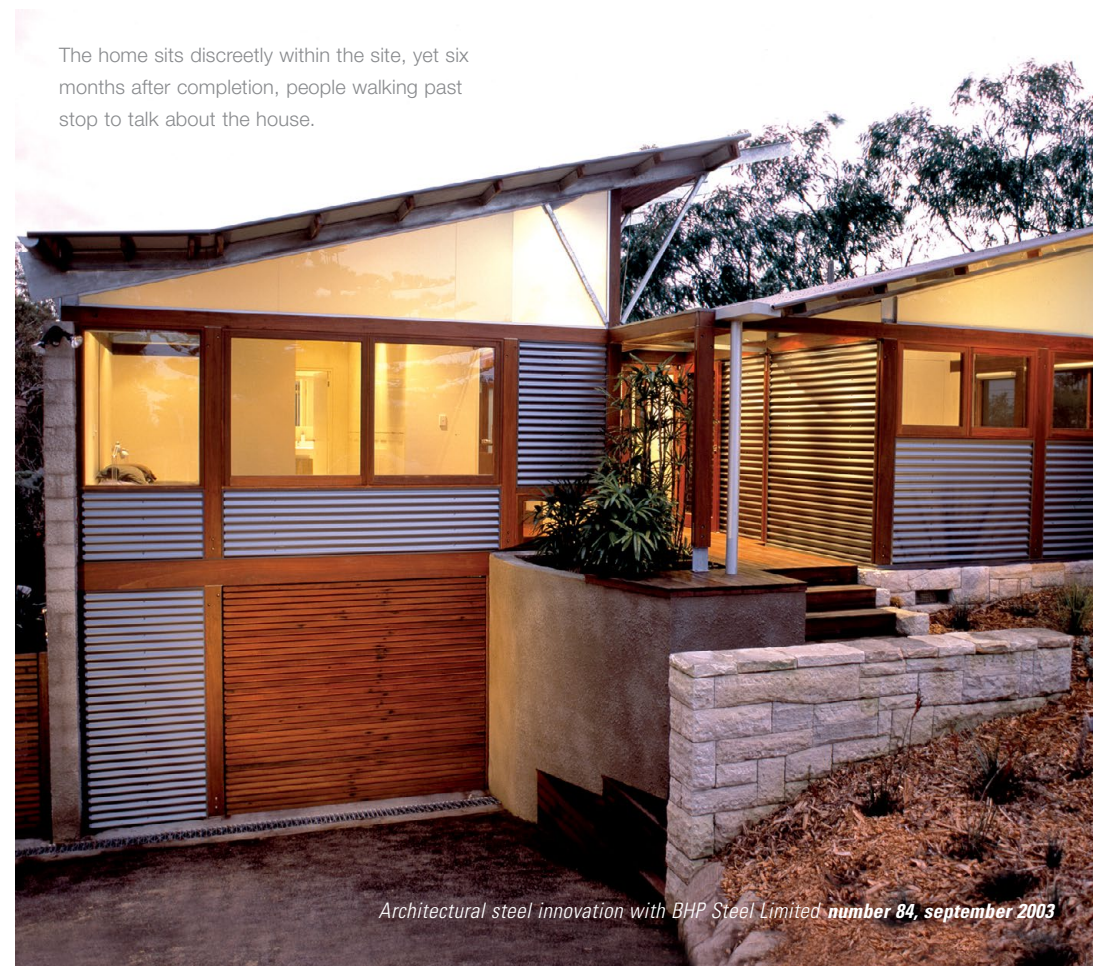
Engineer:
Tihanyi Consulting Engineers

Principal Steel Cladding:
Walling: COLORBOND®
Metallic Steel (Facade™)
Roofing: COLORBOND®
steel (Woodland Grey™)

Size:
Site area: 750m²
Floor Size: 300m²

Cost:
\$1700 per square metre

Photography:
Paul Bradshaw



The home sits discreetly within the site, yet six months after completion, people walking past stop to talk about the house.

016

Project	Suncorp Stadium, Lang Park, Milton, Brisbane
Architects	HOK Sport+Venue+Event/ PDT Architects
Construction	Lang Park Redevelopment Joint Venture (Multiplex and Watpac)

Brisbane's redeveloped Suncorp Stadium opened in June to an enthusiastic reception from fans and players. With a seating capacity of 52,500 the new facility is the headquarters of the Brisbane Broncos rugby league team and venue for several matches in the 2003 Rugby World Cup.

STADIUM EVENT

Already Suncorp Stadium has successfully hosted capacity crowds for a Rugby League State of Origin match and the August Australia vs South Africa Rugby Test.

The redeveloped venue has an integrated seating bowl instead of separate grandstands. It boasts extensive members' facilities, corporate suites, team merchandise shop, office space for the sporting codes and stadium management. There are 2,180 dining spaces, four corner terrace open air bars and over sixty food and bar outlets. Community facilities such as an indoor basketball/netball court, gym and crèche extend the building's usage beyond major sporting events. Such features have become the norm for state-of-the-art venues.

The choice of which venue to develop and the evolution of Suncorp from the home-grown Lang Park into a world-standard football stadium has not been without controversy. The client (State Government), architects (HOK Sport+Venue+Event in association with PDT Architects), building contractor (Multiplex and Watpac as the

Lang Park Redevelopment Joint Venture) and operator (Ogden IFC) have had to balance the often conflicting demands of sports organisations, players, fans, local residents and businesses.

Like the airport and the shopping mall, the stadium has become one of those hyper-real typeform spaces of the late modern world. Step off a plane into an air-conditioned airport

terminal, out of a dim car park into an over-lit mall crowded with cubicles of merchandise, or pass through a stadium's turnstiles to behold a playing pitch and crowd. Hamburg? Hong Kong? Los Angeles? You could be anywhere.

The total inward focus of the shopping mall, spatially and commercially, never allowed much room for architectural

expression or engineering prowess. But airports and stadia have increasingly become stakes in games of inter-metropolitan and international rivalry. Increasingly they have had to bear the weight of political aspirations and ambitions for regional economic regeneration, with an iconic visual presence being part of the package. Of course, Olympic stadia have for a long time been architectural

showpieces. But most sporting venues have until the last decade been unpretentious functional places. As sport has become more closely entwined with corporate sponsorship, the stadium has increasingly taken on civic status. HOK Sport+Venue+Event, with offices in London, Brisbane and Kansas City and more than forty stadium projects worldwide over the last decade,

A continuous floating roof clad in more than 21,000 square metres of COLORBOND® steel rollformed in LYSAGHT KLIP-LOK 700 HI-STRENGTH™ profile - solved the problem of linking an existing grandstand with three new ones.





The intense 'cauldron' atmosphere for which the old Lang Park was renowned, is retained in the redeveloped Suncorp Stadium - this via the seating configuration and the continuous roof.



has been a major contributor to the rising status and visual presence of the stadium.

No longer just a playing field and spectator stands, the stadium has become an integrated entity within the worlds of corporate entertainment and commodified leisure – with dining rooms, bars, members' lounges, corporate suites and tightly specified media facilities. Add in forecourts, purpose-built transport hubs, links to nearby urban facilities, and a stadium becomes a generator of major urban restructuring. This is very much the story of the redevelopment of Suncorp Stadium. But the price of this sophistication can be the kind of homogenisation cultural critics have labelled as hyper-reality.

The transformation of Suncorp Stadium had its genesis in 1998 when the Queensland government commissioned a study on stadium options for Brisbane. It was aware of growing competition from southern states as witnessed by Sydney's Olympics facilities such as Stadium Australia, the upgrades of the SCG, the MCG and Colonial Stadium in Melbourne.

The stadium study resulted in the decision to develop a rectangular pitch stadium specifically for football. Two sites were evaluated: the RNA showground and Suncorp Stadium. Suncorp won, a significant reason being that one third of the desired seating capacity could be provided by incorporating the western stand built in 1994.

Stadia are usually built on green or brown field sites, exacerbating their sense of 'anywhereness'. It's a different matter with the redevelopment of a site that is already knitted deep into existing urban fabric. Unlike Stadium Australia which was built over former landfill in a forgotten part of Sydney's western suburbs, Suncorp is right in the middle of a

residential and business area on the edge of Brisbane city.

Showy sculptural forms, towering projections and other expressive tropes of sports architecture were rejected by the architects. Alastair Richardson of HOK S+V+E explained that what they aimed for was a building that didn't look particularly like a stadium and that had a consistent profile on all sides.

"We didn't want structural expression extending beyond the roof, nor the roof itself to be structurally expressive. We didn't want massing or arches. We wanted to keep it low and didn't want it to dominate its context."

The extent to which Suncorp Stadium is not an iconic statement is therefore a measure of its success. This policy of restraint was partly a response to community consultation. Understandably, local residents did not want a monumentally overwhelming structure on their doorsteps. Minimising local environmental impacts has been an important theme of the whole project. Sports lighting is enclosed within the stadium, suspended on a gantry below the flat steel roof, thus minimising light spill into surrounding areas. A service road for heavy vehicles is located beneath the stadium to reduce noise and disruption to local roads.

Another important environmental requirement of the brief was



that no large-scale car park would be built on-site, which meant spectators would have to use public transport or walk.

To provide incentive, the cost of public transport is included in tickets and spectator parking is not permitted within a two kilometre radius of the stadium on event days. Instead of a car park, a new bus station was built at the southern end of the stadium, a pedestrian walkway to nearby Milton station was added and other pedestrian links were upgraded.

The continuous steel clad roof provides shelter for seventy percent of the seating, as well as containing noise breakout and light spill.

Members' and corporate facilities take advantage of large spaces with a naturally ventilated façade and adaptable sun protection systems.

Walkways are also being built over the arterial roads that had, over time, cut the stadium off from the city and created the perception of it being 'a long way out'. All of this represents significant urban restructuring, with some of the walkways still under development as part of the larger City West urban regeneration plan which aims to link the educational, sporting, cultural and residential precincts of Brisbane's inner western suburbs to the CBD.

For the building itself, the redevelopment was actually a partial rebuild. All but one of the four old grandstands were

demolished, with the western stand being retained. Steel has been used extensively – as framing for the grandstands and main structure (more than 1800 tonnes of steel columns) with only the corner sections in reinforced concrete. The continuous flat roof that links the four grandstands is a steel truss structure with roof cladding made from COLORBOND® steel in the colour Windspray™, rollformed in LYSAGHT KLIP-LOK 700 HI-STRENGTH™ profile. More than 21,000 square metres of COLORBOND® steel and 19,400 lineal metres of purlins in GALVSPAN® steel

made by BHP Steel was used for the stadium's roof.

The rectangular pitch has been mirrored by a rectangular structure. This could have appeared monolithic, but measures have been taken to counter this. The corner sections are glazed atria, while the façade is carefully layered to break down the scale of the building. Notable are the recycled timber slats (milled from ironbark and spotted gum sourced from former wharves) mounted on powder-coated steel frames to form giant screens. They are positioned in front of large glazed areas enclosing dining



and reception areas, assisting in minimising solar heat gain, thus reducing air conditioning loads.

Air conditioning was able to be eliminated in some of the spaces where it would normally be used, specifically, the corporate and members reception areas. This was achieved via the use of a ventilated facade that relies on 'the stack effect', the timber screens and additional sun blinds on the west façade.

Queensland's sub-tropical climate and outdoor lifestyle has informed the design of the whole facility. Inside the stadium are open air terraces and viewing galleries, outdoor barbecue grills and bars. The seating bowl itself has been designed to maximise cross ventilation of the seating area and pitch. In the upper tier, the corners have been left open, directing breezes around the seats, as well as visually breaking up the box-like form of the stadium.

Redevelopment of an existing urban environment always involves some erasure of the past in order to install the new. Ambivalence over naming reveals something of the tension between continuity and change. While Suncorp has had naming rights since it became a sponsor in 1994, the name 'Lang Park' is lodged in collective memory and refuses to die. This is because the place's history as a sporting precinct stretches back more than a century, when a recreation reserve was established on



former cemetery land to serve the growing working class population.

Facilities for tennis, cycling and athletics were added at different times. From the mid-1950s Lang Park increasingly became a Rugby

League venue and eventually, a closed football ground, with grandstands being added every few decades. The configuration of these stands brought spectators close to the field of play. The noise of the crowd

would bear down on the players – a boost for the home side and intimidating for visitors – giving Lang Park the nickname of ‘the cauldron’. Thus over time ‘Lang Park’ evolved organically, its meaning and cultural significance



for players and fans accumulating as it became the site of many memorable sporting clashes. The cauldron atmosphere was part of the distinctive character of Lang Park stadium that needed to carry over into the redevelopment. This has been achieved by creating a tight seating bowl that brings spectators much closer to the on-field action than any other Australian stadium of similar capacity.

The prospect of the stadium’s expansion may have been welcomed by fans and players, but it was a different story for local residents, who feared that increased spectator noise would plague their neighbourhood. So the need to manage noise was driven from contrary directions – retaining atmosphere for the fans while reducing impact on the neighbours. The successful design solution was a low, flat, continuous steel roof, forming a vast ‘verandah’ overlooking the pitch.

This continuous roof provides shelter from sun and rain for 70 percent of the seating. Furthermore, the opportunity that such a large roof area offers for rainwater collection has been used to good advantage. The roof water discharges into

box gutters which drain to a syphonic downpipe system that directs the water into two 200,000 litre steel tanks under the stadium, where it is drawn on for watering the pitch. This significantly reduces the facility’s draw on mains water supply.

The redeveloped Suncorp Stadium represents a culmination of the history of ‘Lang Park’. The slow organic process of development ended as soon as visions of redevelopment were sanctioned and master planning began. So while the cauldron atmosphere has been retained and enhanced to continue the Lang Park tradition, other demands of the project have irrevocably altered the place itself, despite promotional claims of minimising footprints and blending in with the surrounding area. Stadium design, at its most basic, is an architecture of crowd control. The need to provide rapid but safe ingress and egress for over 50,000 people has generated large concrete plazas to the north and south, which inevitably make the stadium an island.

The linear arrangement of palm trees and a few other crowd-

resistant species in the northern plaza hardly constitutes ‘parklands’ as claimed by promoters. On the other hand this plaza does connect well with the restaurant precinct of Caxton Street, and also provides access to the soon-to-be-opened public basket/netball court and gym in the stadium’s northwest corner. So perhaps like the Lang Park of old, the open space will gradually be taken over by different activities and the place will take on a life of its own.

Perhaps the most incongruous outcome of the public consultation process is the retention and restoration of a still functioning Church (Christ Church Milton) and some gravestones within the new precinct, just metres from the stadium itself. The stadium looms over the modest timber 1890s church and vicarage, (which used to be part of Chippendall Street that is no more) inescapably giving expression to the cliché that sport has become the religion of the modern age. But it is only a postmodern disposition that perceives this site-specific manifestation of the triumph of secularism as an ironic gesture – or perhaps sees no contradiction at all.

Anne-Marie Willis

The statue of rugby league great Wally Lewis was relocated from the old Lang Park venue to greet spectators arriving at Suncorp Stadium’s northern concourse.

- Project:** Suncorp Stadium
- Location:** Lang Park, Milton, Brisbane
- Client:** Queensland Government
- Architect:** HOK Sport+Venue+Event / PDT Architects
- Architectural design team:** Alastair Richardson, Alfred Laspina, David Johnston, Noel Park, Mike Tod, Suzanne Bosanquet, Mac Stirling, John Brown, and Richard Paternaude
- Transport/Pedestrian Planning:** Sinclair Knight Merz
- Civil engineer:** Arups
- Structural engineer:** Arups
- Hydraulic engineer:** McWilliam Consulting
- Mechanical Services:** Sinclair Knight Merz
- Acoustic Engineer:** Hyder
- Environmental:** Air Noise Environment
- Landscape:** Wilson Landscape Architects
- Construction:** Lang Park Redevelopment Joint Venture (Multiplex and Watpac)
- Site area:** 7.12 hectares
- Stadium gross floor area:** 85,000 m²
- Roof area:** 21,860 m²
- Seating capacity:** 52,500
- Cost:** \$280 million including bus station, elevated walkways, upgrade of existing rail station and pedestrian walkways and restoration of heritage church
- Principal steel components:** Building frame, roof truss, purlins (GALVSPAN® steel), roof deck. COLORBOND® steel in the colour Windspray™ rollformed in LYSAGHT KLIP-LOK 700 HI-STRENGTH™ profile.
- Photography:** Paul Bradshaw

Project Warriewood Uniting Church
Architect Malone Campbell-Allen Pty Ltd
Principal Building Contractor Crestway Constructions Pty Ltd

Sydney's northern peninsula has a striking new centre for worship and community gathering. Its regional Uniting Church involves much more than sharp style. It takes a progressively holistic approach that considers the spiritual, emotional and physical wellbeing of its congregation and local community.

RELIGIOUS CONVICTION

Australian church architecture is often in need of divine intervention. Neither fish nor fowl, it makes an unremarkable fit or liturgical presence. Classical and mystical religious imagery and iconography only travel so far in making people feel close to their place of worship. Architecture can reflect a more expansive attitude to make religion a relevant, regular experience.

Lucid examples of religious architecture are difficult to locate. Most are strong on the status of the big statement, but fall quickly away. There are though, some quite exquisite lightweight exceptions to the 'blandeure' – Peter Crone's Trinity Chapel in Melbourne (1993) Steel Profile no.45 and Heathwood Cardillo Wilson's St. Michael's Church in Brisbane (2001) SP no. 77, among the stand-outs.

The regional Uniting Church may not quite be revelation, but it does achieve a result not normally associated with generic church architecture. A principal pair of structures – church and community hall - provide immense relevance by being a part of, instead of apart from, the community fabric. It was

inevitable that the directness and integrity of contemporary residential design would eventually influence institutions such as the church – when it was understood that the regional environmental response was so much better than the pre-ordained transplant.

Stitched into its verdant bush setting on a 2.9-hectare site, the Pittwater church and its ancillary auditorium and community sport hall combine strong presence and site integration. Instead of being a beehive one day a week and then deserted the rest, the project consistently features in the life of the local community. All up it's an embracing variety of services on offer - church, community hall and auditorium, two manses and kindergarten.

Situated in the Warriewood Valley between the northern beaches and Ku-ring-gai Chase National Park, the church occupies a prime position. From its hilltop site, views east to the ocean are available. Elsewhere filtered bush views provide a restorative calm away from encroaching suburban development. Church attendances averaging around



500 and auditorium/hall at 700 usage levels vindicate the effort and planning to anticipate and capture community imagination.

The logical position for the church was obvious along the top of the spur at the east end. There is a natural platform in this position which is relatively flat and with few trees. This elevated position provided an optimum presence for the church, without it dominating

the site. Site entry was located at the south-east corner via Jubilee Avenue partly for safety reasons and also as it enabled reuse of an existing track as road. This reduced site impact and tree removal. The road winds its way up, skirting the base of the building, past the auditorium to the north, to gradually reveal the church. Entry via a courtyard and verandah at the west end is suitably low-key and business like.

A triangular shaped footprint and platform dictates the church plan. Scale was deliberately kept low to ensure the fine tree canopy on the north was maintained as an unbroken line and to screen the building from busy Mona Vale Road.

Project architects Malone Campbell-Allen have succeeded in creating a vigorous architectural expression with minimal means and modest budget. Design

Carefully sited along the ridge-line, the church breaks with the ponderous, institutional stereotype.



director Stephen Malone's ambition for "a fresh, vibrant, relaxed and non-institutional design," is achieved using a simple, direct architectural language. Coated steel is the essential language. A subtly-textured, lightweight envelope makes minimal intrusion along its ridge-line.

Site conditions were difficult enough and a series of test bores indicated poor sub-ground material. This confirmed the preference for a lightweight solution. There was concern about materials such as high brick walls and scaffolds creating brick and mortar debris damage to the delicate flora. The most economical solution was to pier the site to a stable bearing and use concrete only to the main level. Structure above this level is steel framed with walls clad in COLORBOND® steel in the colour Deep Ocean® and in ZINCALUME® steel, with both rollformed in STRAMIT CORRUGATED profile. The steel deck roof is clad in COLORBOND® steel in STRAMIT MONOCLAD profile in the colour Deep Ocean®.

"There was never a plan to overpower and dominate the site," says Malone, who says his client was ready to tip-toe, rather than stamp on the site. Was there

resistance to any lingering associations of steel's rural/ industrial vernacular? "None at all," he reports. "Quite frankly that surprised me even though I think the material really selected itself. It was plain to the church committee that they would get an enormous amount of building for their money and it would fit beautifully on this site.

"Steel was the bleedin' obvious choice for the church and auditorium. It was so easy to construct and of contemporary form. These are modern buildings and should be expressed as such. There has been a sea-change about this material. I don't think we could have pushed this through so easily a decade or more ago. There is a debt to all of the pioneers who have persevered and won the court battles and given steel the credibility it deserves," says Malone.

The level of material detailing is exemplary. Rainwater scoops express the process of water collection and recycling, while ZINCALUME® steel in LYSAGHT MINI-ORB® profile lines verandah soffits as a visual echo of the broader CUSTOM ORB® pattern.

Lofty, yet understated, the crisp wafer-like cladding system features COLORBOND® steel that appears as supremely pristine. The result is sharp, some might argue stark, geometric clarity. Both structures begin life well, being so elevated and sited to capture prevailing hinterland and ocean breezes. Both employ natural venting systems to use cool air which is circulated throughout before finally rising through their respective roof cavities. Energy-dependent cooling systems held little interest for architects and client. Provision has been made for gas heating.

Steel was central to building a site relationship. The main church building appears to be

knitted into its site, while the ancillary sports/auditorium is very much a stand alone. Each represented a different response and this is why they do not appear as Siamese twins.

Deep shading is created along the administrative wing by extended verandahs and tinted glazing, and thermal and energy efficiency appears uppermost in the architecture. The main north-facing elevation of the church receives generous dappled shade from the heavily treed site. The higher angled summer sun achieves higher

roof-top and ground coverage — thus the broad eaves to the north.

Part of the project challenge was the balance of natural light against bush and distant ocean views which can be enjoyed from the worship area. A high level continuous strip of glass helps the roof float and provides glimpses of the tree canopy.

Built across two levels, the church comprises seating for 500 worshippers and entry foyer seating for an additional 100. An informal function room has

seating for 100 and is connected to the kitchen and a large deck on the south. Functions are linked by a continuous verandah connecting to a porte cochere. Other facilities include contemplation room, creche, administration offices, toilets and stores. The lower level comprises a two-bedroom caretaker's flat, rooms for a music school and Sunday school. In addition there is an undercroft for youth activities. Malone explains the organic nature of church/community interaction.

"Modern churches need multi-purpose buildings to allow

(far left and bottom) The auditorium/community centre conveys a purposeful utility and uses colour to assist in the reduction of scale (below) A robust roof profile (STRAMIT MONOCLAD) on the church frames the central drum skylight.





(top and below) In 'sports hall' guise, the community centre is in constant use by schools. A mezzanine with roller blinds provides spatial flexibility and a window wall to the courts below. Light interior colours and reflective materials virtually eliminate the need for artificial lighting during the day.



traditional worship as well as informal meetings, meals, seminars, child care, youth facilities and aged care. This complex serves all of these. It is significant that the client requested an identifiable church, but not in an overt traditional sense.

"We attempted to maintain a cohesive scale by linking the secondary functions to the worship space by a large verandah with the entry at the end. Courtyard, verandah and decks allow the building to relate to the site, and are all well used. Worship space has a contemplative character, while serving modern church service needs related to use of amplified music, and adjustable lighting levels to suit reading, drama performance and liturgical dance."

Compared with the flamboyance of the church proper, the auditorium exudes a purposeful

utility. Designed for youth recreation as part of the church's outreach in the northern beaches area, the auditorium and hall was built for approximately \$800,000. This provides a full sized basketball court with a mezzanine gallery and recreation area. Change facilities, kitchen and toilets are also included. A steel portal frame with curved roof clad in COLORBOND® steel rollformed in STRAMIT MONOCLAD profile in the colour Deep Ocean® teams with steel framed walls clad in STRAMIT CORRUGATED profile to provide the building envelope.

Wall cladding is in two finishes to break scale - the lower coated in Deep Ocean® with the upper in ZINCALUME® steel. Triangular gussets with mesh infill support the roof overhangs at the primary frame centres and assist with sun control. Flooring is sprung timber on a concrete slab supported on

screw piles. Internal walls are lined to 2400mm with ply.

Site relationship required a sensitive response rather than ruthless bulldozing and excavation. Flora and fauna studies were undertaken in conjunction with the overall site planning. Every one of more than 1400 tree positions was plotted and the position of buildings and roads carefully considered, to retain and protect as much vegetation as possible.

Warriewood's Uniting Church is a bush vision amid encroaching suburbia. Strong religious community connections will inevitably follow such vivid, relevant engagement. This church and auditorium create fine spaces for contemplation, communion and performance.

Peter Hyatt

Project:

Warriewood Uniting Church

Architects:

Malone Campbell-Allen Pty Ltd

Size:

2,000m² approx.

Cost:

\$4 million (approx.)

Director in charge:

Stephen Malone

Tel: (02) 9436 3711

Structural engineer:

John Matheson and Associates

Principal building contractor:

Crestway Constructions Pty Ltd

Landscape Architect:

Stevens Landscape Design

Steel Fabricator:

Ferrcom Pty Ltd

Coated steel specified:

External treatments -

ZINCALUME® steel and

COLORBOND® steel in

the colour Deep Ocean®

in STRAMIT MONOCLAD,

STRAMIT CORRUGATED and

STRAMIT MINI CORRY profiles.

Roofing and cladding -

Axis Metal Roofing

Project:

Auditorium/sports hall

Size:

860m² approx

Cost:

\$800,000 (approx.)

Director in charge:

Stephen Malone

Structural engineer:

John Matheson and

Associates

Principal building

contractor:

Crestway Constructions Pty Ltd

Hydraulics:

Acor

Landscape Architect:

Stevens Landscape Design

Steel Fabricator:

Ferrcom Pty Ltd

Coated steel specified:

External treatments -

ZINCALUME® steel and

COLORBOND® steel in

the colour Deep Ocean®

in STRAMIT MONOCLAD,

STRAMIT CORRUGATED

and STRAMIT MINI CORRY

profiles.

Roofing and cladding -

Axis Metal Roofing

Photography:

Peter Hyatt

My inspiration

For me, inspiration is a very difficult thing to articulate, particularly in relation to my architecture. There are so many things that need to be understood to produce an adequate piece of architecture. To understand a site you need to use all senses to really connect with it, the lie of the land, the characteristics of the vegetation, the smells and the textures. You have to be able to listen and listen well. With every client there is always a story, a story that is so important to the outcome.

The way in which these issues are translated will determine the success of the work. I think it was Le Corbusier who wrote that

"a problem well stated finds its solution". I spend a lot of time trying to understand the nature of the problem and once you understand it, you know where to start.



Because this is the way I deal with architecture, my projects are very much solution driven and it is the 'economy' of the solution that is so important to me.

I guess ultimately what influences my work is maintaining respect for the natural environment. Perhaps this is what inspires me.

Andrew Coomer



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