

UNDERWATER WORK BRINGS FLOOD RELIEF FOR SOUTH GIPPSLAND COMMUTERS

The \$30 million Cox Bridge Upgrade on the South Gippsland Highway at Sale required Cut & Fill to construct a new 3 kilometre elevated road platform and two bridges almost entirely on swamp and flood-plain.

PRINCIPAL CONTRACTOR : Cut & Fill Pty Ltd
PROJECT END VALUE : \$30 Million
COMPLETION : Jan 2013
SURVEYOR : Austec Surveying



Cut & Fill Pty Ltd have a depth of experience in the project management and construction of civil infrastructure works which deliver substantial improvements to the end user.

Their latest project is no different, with the Cox's Bridge Upgrade on the South Gippsland Highway - at Sale, shaping up as a new benchmark in road and bridge engineering.

Contracting to Vic Roads, Cut & Fill enthusiastically took on the technical and engineering challenges of a scope of works which required them to construct 3 kilometres of elevated road pavements and two bridges almost entirely on and over swamp and flood-plains. Even for one of Australia's largest construction companies, Cut & Fill were faced with multiple challenges.

The \$30 million project became necessary due to the existing alignment being susceptible to flooding, resulting in local motorists having to take a 60 kilometre detour in their commute between the towns of Longford and Sale just to get to and from work.

The frequency of the flooding was having a major impact on long-haul road freight costs through the area. Local industries found the impact on productivity difficult to maintain and the local workforce and community were fed up and very disgruntled with the continual and annual delays caused by the flooding.

"The single and most significant issue the project team faced," says Cut & Fill Project Manager, David Strelec, "was the fact that the site is almost entirely below the water table." A fact that proved a major challenge for us as the site flooded three times during the three year construction period.

"The worst site flood was the third one, in June of last year," Strelec said. "We were part way through lifting the 32m beams into place, when we were confronted with about a metre of floodwater across the entire site. We had a 200 tonne capacity crawler crane that had to be moved a kilometre to the end of the project and then we couldn't do anything except wait for 2 weeks."

The frustration of idle cranes and related downtime costs served to underline the local urgency to complete this Vic Roads project and gave Cut & Fill first hand experience of just how costly these local conditions have been for the region.

The engineering statistics on this project are mind-boggling. The new Cox's Bridge includes 30 spans (22 max. spans) with an overall length of 450 metres long. Whereas The Thomson River Bridge includes 35 spans (32m max span) with an overall length of 670 metres long, and was constructed entirely in swamp.

The real engineering magic happens underneath the concrete beams, and below the waterline. Each span requires two 16 tonne crossheads that were pre-cast, then craned and propped using an 80 tonne crane. The piers and pile cap were cast on site and rest on pre-cast concrete foundation piles that had earlier been driven into the swamp-bed, all work being completed under the water table and flood conditions.

Once the above-and-below-waterline support was in place, the 58 tonne concrete beams were hauled from the pre-cast yard (300 kilometres away in Kilmore), and then lifted into place at night. All this has been achieved while working around the logistics of not just

the frequent minor and major flood interruptions but also working in the vicinity of relocated utilities (HV electricity and high pressure gas transmission line).

While most of the numbers on this project are large, the entire on-site building task was completed by a workforce totalling a mere 30 construction personnel.

This three year construction represents stage 3 in the upgrade of South Gippsland Highway, and will result in a truly 'A' standard connection between Longford and Sale, minimising sharp bends, higher driver safety and far less propensity to flood.

The South Gippsland Highway upgrade is scheduled to be completed in January and opened by around February 2013.

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CREATING A PRESTIGIOUS ADDRESS

Wentworth Point is one of the most visionary redevelopments ever undertaken in one of Sydney's last undeveloped waterfront sites.

WENTWORTH POINT MARINAS / BILLBERGIA GROUP

The peninsula that is now Wentworth Point Marinas was until recently one of Sydney's secluded waterfront wastelands. Developer, Billbergia, was faced with turning what was historically an industrial eyesore, into one of Sydney's most prestigious addresses.

And although Billbergia has plenty of experience as a leading waterfront developer, the challenges at Wentworth Point were formidable.

As Project Manager, Joel Trehwella explains, "Because we worked only metres from the waterline, there's no way to excavate. Every time you dig even the smallest hole collapses."

Fortunately the previously existing industrial sheds sat on one enormous slab, which Billbergia used as starting point. "The slab's stability allowed for heavy machinery on the site. From there we could sink the 400 piers and the multiple concrete retaining walls to hold back the mud. We then sunk the 'shore-in boxes' where the builders went to work every day, creating what you now see rising above the site."

While so much of the high-tech construction know-how has gone into the necessary preparation below the surface, Trehwella is most proud of the result above ground.

"The architecture is truly ultra-modern," he says. "The facades, the pop-out winter gardens, the energy efficiency of every apartment – it really is a cutting edge project in every way."

The project has been given one of the highest environmental ratings in Australia, with residential apartments designed to

reduce heating and cooling energy consumption and reduce water usage.

"This has been achieved through the orientation of the apartments, to minimise direct heat in the living areas, maximise cross

flow ventilation and create viable solar energy and hot water generation."

Wentworth Point Marinas' apartments are also fitted with unique thermal break double glazing and acoustic dampening that Trehwella believes could be an Australian first. "But it was absolutely necessary with a nearby freeway and the westerly aspect of some balconies."

Billbergia's other major challenge came integrating the new residential facilities with existing rail, roads and shopping. This was further complicated by the close proximity of Sydney Olympic Park, which provides a real selling point for the

development once finished, but created specific difficulties during construction.

"The nearby mangroves are heritage listed," says Joel, "so the ecological regulation from Sydney Olympic Park Authority (SOPA) was some of the tightest we've encountered."

There could be no acids on the site. All paints used had to carry the highest environmental ratings. The project managers had to be constantly vigilant about anything that soaked into the soil or overflowed into the bay.

"There has been a lot of environmental damage in the general area before the Olympics," Trehwella says. "The whole area had an enormous clean-up for 2000. This particular area has not been too badly affected but SOPA's mandate is to maintain the ecological integrity of the whole area, so this site has been scrutinised more than any I've worked on in 21 years."

The project also features a pedestrian boulevard, 2 storeys in the air. "In many ways it's my favourite part of the project. It adds so much to the precinct. It's beautifully function. People will just use it without being aware of the design and construction that went into it,

but if you have an eye for it, you'll see how our architects solved the problems presented by the topography of the site."

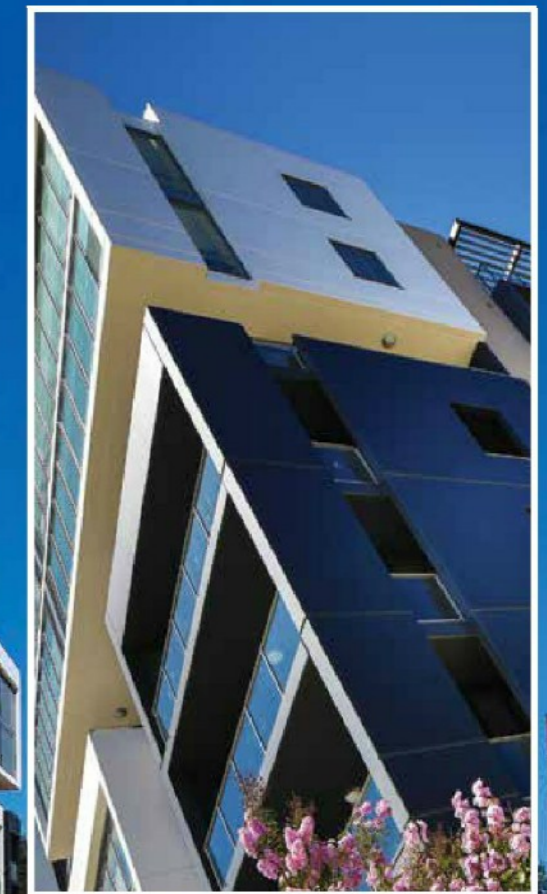
Wentworth Point is not the first Billbergia development in the Sydney Olympic precinct. They previously built Australia Towers and the lessons learned during that construction became valuable in the Wentworth Point build.

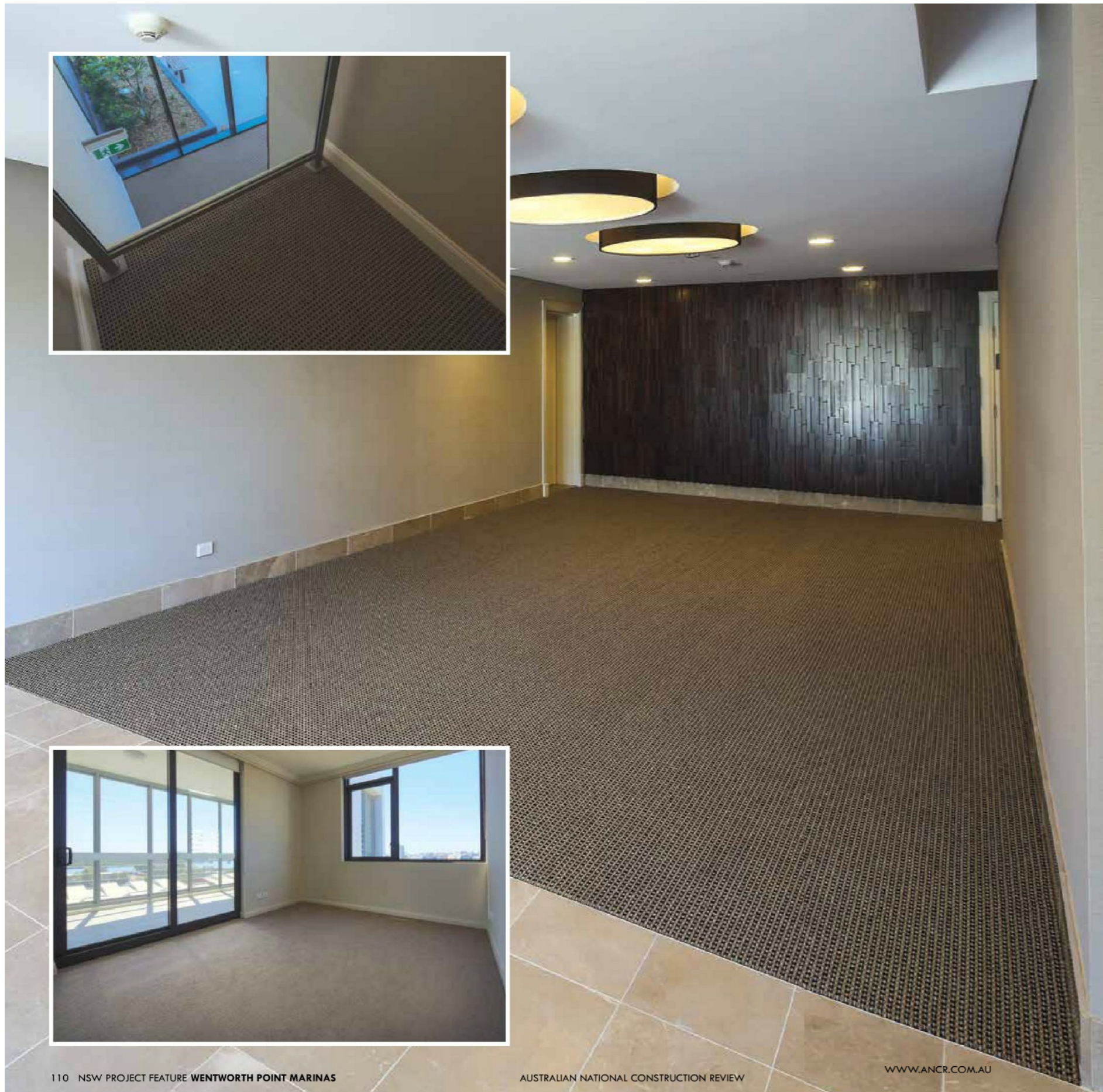
"With Australia Towers we learned so much about the ecological sensitivity of the area, which factored straight into Wentworth Point. That was one of the main reasons we completed such a complex project in just 17 months."

When residents move into Wentworth Point Marinas, they'll live in one of Sydney's most picturesque locations. But they'll probably be oblivious to the amount of care that went into its creation.

And that's exactly how Joel Trehwella believes it should be.

For more information contact Billbergia, Suite 101, 25 Angas Lane, Meadowbank NSW 2114, phone 02 8878 6900, fax 02 8878 6995, website www.billbergia.com.au





THE FINISHING TOUCH

It's a classic story of keeping a business going through hard times.

In 1980, Jeff Raines opened his carpet warehouse to the public in Botany, south of Sydney city. Numerous recessions, upswings, downturns and financial crises later, Raines Carpets has outlasted Governments, fashion trends and a lot of other Sydney carpet businesses.

"I put it down to a very simple philosophy," says David Raines, the Company's Executive Director. "And that is, I have always been absolutely fanatical about the customer."

Raines Carpets was implementing twenty-first century customer strategies long before 'customer management' and 'customer focus' became marketing buzz-words.

"For me," says David, "it has always been about what I call 'fit for purpose.' What I mean by that is, irrespective of what I would like to sell to a client, and irrespective of what the client might think is the best for their situation, I have always made a priority of convincing them and then delivering the best flooring for each and every client need."

David knows that not all clients are flooring experts and when confronted with an enormous choice, they sometimes might not even know what their real needs are; let alone what the best flooring solution might be.

And often, there are hidden issues that only become apparent once the job starts.

The Wentworth Point Marinas project is a typical case. The brief that Raines Carpets received from Billbergia Group was simply to provide flooring for all lobbies, hallways and apartments, and to make it flooring that will reflect the prestige of the development.

But Wentworth Point Marinas is a development with its own peculiar issues. For a start it is right on top of a salt water bay, with lobby doors that open straight out towards a harsh salty surrounding. Salt water in the air can be quite harsh on any flooring over time, and the wrong installation can result in early wear and the need for more frequent replacement of carpet.

The wear issue is exacerbated by the fact that Wentworth Point is a true marina and the residents are likely to be walking the halls and

lobbies straight off their boats. These areas are normally subjected to extreme wear through high traffic, sun and weather exposure as well as extra activity like heavy-duty deliveries, dragging and scuffing. But at Wentworth Point Marinas all common area carpet is exposed to excessive grit, and even marine odour issues.

"This means these high traffic areas are not only exposed to the usual wear and tear," says David, "but the sort of weather and traffic exposure at Wentworth Point can quickly erode not just the carpet, but can disintegrate underlay if the wrong one is chosen."

This is where David's fanatical approach to his 'fit for purpose' philosophy made a huge difference to Wentworth Point Marina.

"The common areas had to have carpet that combined excellent wear with a prestige look."

The solution was low loop pile carpets for corridors and lobbies, that are easy maintenance, highly resistant to staining, yet stunningly patterned.

"These carpets look and feel luxurious, but they are very tough wearing – they need to be," says David.

"The apartments however, needed a slightly different approach."

Wentworth Point Marinas apartments are laid with luxurious pure wool twist pile that looks incredible, feels plush and soft underfoot, but is still extremely hard wearing.

"You could sleep on this carpet – but it lasts a lifetime."

David ranks the Wentworth Point Marinas apartment flooring as some of the most luxurious he has ever supplied.

"It is certainly a high class carpet, this one," says David, "but it is absolutely the very best for this situation. It is one of those finishing touches to apartments that buyers here will expect."

For more information contact Raines Carpets, PO Box 648 Botany NSW 2019, phone 02 9316 8030, website www.rainescarpets.com.au

STATE-OF-THE-ART

The Verde Townsville Project constructed by Hutchinson Builders is a 12 level 5 Star GreenStar Office.

MAIN CONSTRUCTION COMPANY : Hutchinson Builders
CLIENT : Finders Street Tower Pty Ltd
PROJECT CONSTRUCTION END VALUE : \$44 Million Base Build. \$16 Million Fit Out.
COMPLETION : September 2013
ARCHITECT : ML Design
SURVEYOR : Mitchell Brandtman
STRUCTURAL/CIVIL ENGINEER : Robert Bird Group

Whether you're a university student in Sydney, Canberra or Northern Queensland, a tourist relaxing on Hayman Island, a grocery buyer in Sydney's northern beaches or just enjoying a cold one at Murrumba Downs Tavern, you've probably unknowingly benefited from the expertise of one of Australia's longest-standing construction companies.

In an industry where boom and bust take their toll, Hutchinson is definitely a survivor, celebrating 100 years in May 2012.

"Since the onset of the GFC we've actually grown

from about 900 staff to 1300," says Hutchinson services manager, Alan Tayt.

Mr Tayt laments that "construction in Queensland fell off a cliff in 2008," then Cyclone Larry devastated the coast. Hutchinson continued to grow through their mining construction ventures but remained busy on the Queensland coast, particularly in Townsville.

That's good news for a city where an estimated 2500 construction jobs were lost during 2011.

If ever an area had desperate need of new infrastructure, it was Townsville. Even as the largest city in northern Australia, Townsville found itself playing poor cousin to Brisbane and Cairns, whenever major developers thought about regional investment.

Governments wanted to decentralise but found an acute shortage of regional accommodation.

It was a chicken-and-egg problem:

Government and private firms wanted regional office space, but did not want to commit without seeing movement on construction. Builders did not want to take large risks without firm tenancy in place.

Despite the stalemate, numerous entities got together to create the momentum that would eventually lead to the

construction of Verde, Townsville's first 12 storey 5-star green-design office and commercial/ retail precinct.

Once three State Departments committed to occupying significant floor space, Hutchinson took over construction in early 2012. It was a moment that the original site purchaser, Stephen Gosling of Sterling Securities, described as a "coming of age" for Townsville. "Townsville is one of the fastest growing centres in the nation and clearly deserves projects of this quality and vision," he says. "The city is experiencing a boom in investment now as it recovers from national disasters and stressful international financial conditions. Sustainability is the new construction norm. It's a national priority and with a project like Verde, the city will play its part in moving sustainable decentralisation and construction many steps forward."

In December 2007, when the 4040 square metre site was first purchased for \$7.5 million, construction costs were projected at around \$53 million but will be closer to \$80 million when the tower opens in September 2013. Verde takes up 2500 square metres of the larger site, which is part of a massive \$80 billion revitalisation of Townsville CBD.

"Verde lifts the bar in terms of green standards for CBD high-rise," says Mayor, Les Tyell, "and will attract more government services and investment."

Under Hutchinson's eco-friendly design, Verde received top marks from NABER Environmental Rating Agency for use of

ozone sensitive materials, energy-reducing window glaze and high-efficiency noise abatement. Adding to Verde's environmental credentials are energy-efficient lighting plus rainwater retention and recycling.

NABERS also noted Hutchinson's installation of energy-saving air-conditioning, comprehensive waste reduction systems, sustainably sourced building materials and reduced greenhouse gas emissions at all points of construction.

Townsville MP Mandy Johnstone, says that Verde has 'turbocharged' the Townsville region. "This is part of a strategy to locate a huge number of Government public servants in the area. This kick-starts the local economy, not just construction, but retail and commercial sectors."

About 350 full time jobs have been created during the 18 month building phase.

Hutchinson will continue to be active in the region, with the \$40 million Ergon Townsville office block now also under construction. It will boast the same eco-friendly reputation that Verde has acquired, keeping Hutchinson top-of-the-list as Australia's leading environmentally-focussed builder, for at least another 100 years.

For more information contact Hutchinson Builders, 83-87 Duckworth Street Garbutt QLD 4814, PO Box 7261 Garbutt QLD 4814, phone 07 4755 8000, fax 07 4755 8055



QUALITY AND LOYALTY ABOVE ALL

“Verde Towers is probably the best managed project I’ve ever worked on,” says Queensland Reo Fixing manager, Washington Mendes.

“Once construction started, everything ran so smoothly. It is one of the few projects I’ve seen up close where the management were happy, the site owners were happy, the unions were happy, the workers were happy. It has been a pleasure to work on.”

In fact, according to Mr Mendes, a number of the managers from the various construction companies involved, recently quipped that they were sorry to see the construction coming to an end, such was the harmony on site.

It’s a great outcome for a project that had something of a chequered start. Queensland Reo Fixing actually quoted on the structural reinforcement of all the concrete, at least 4 years before work commenced. Both the tendering companies and Townsville locals were becoming exceedingly frustrated with the “hole in the ground on Flinders Street” but Mr Mendes believes that “it has all worked out very well, now we are so close to completion.”

Under the conditions of construction in North Queensland, it is important that project management is without unnecessary drama.

“There are enough things that can go wrong as it is,” says Mr Mendes.

The simple costs of construction in North Queensland tend to be higher than other parts of the country. In such a cyclone-prone area, building codes require around 10% more steel in all concrete reinforcement. This not only adds to the cost of the materials, but increases transport costs and the cost of placing the concrete into the structure. It also increases labour costs with the need for more experienced staff to get the coded ratios right.

The costs of labour in the region tend to also be higher, as compensation for the probability of extreme weather conditions. And those weather conditions themselves, particularly heavy rain, can add to costs by shutting down sites for anything up to 3 months at a time. “Meanwhile, workers continue to be paid,” says

Mr Mendes. “Extreme weather systems can destroy businesses. Cyclone Larry alone killed off many, many building projects in the area. Companies just folded.”

This makes companies like Queensland Reo Fixing both pioneers and survivors in such a difficult business environment. There is no cutting corners in North Queensland construction. Not in materials quality, and definitely, says Mr Mendes, in the area of industrial relations. “Professional relationships between management and workers, between construction company and the community, is key to success.”

For this reason, Queensland Reo Fixing has made a point of building a reputation in the sunshine state, of being strict on deadlines, budgets, timelines, planning and safety.

It is a company emphasis that has seen the steel and concrete reinforcement service company expand rapidly into such diverse areas as civil engineering projects, mining, prestressing slabs, formwork reinforcement, footings, piers, in situ wall reinforcing, stairs and lift wells. All that in just 15 years.

“It’s about getting good people – we have team members who have 40 years experience in this sort of work. You can’t find a substitute for that kind of experience.”

Mr Mendes says a project like Verde is gratifying from so many standpoints. “Obviously, it has been 12 months or more of solid work for our team. We’ve done everything on this project from footings to reinforcement of every floor, up to level 12 and the roof. It has been gratifying to see our workers enjoying the project. But more than that – you can feel the effect this project is having.”

With so many projects having been pulled in recent years, with the devastation of Cyclone Larry, with the impact of the GFC on investment up here, the locals are seeing something tangible, that really looks impressive.

For more information contact Queensland Reo Fixing, PO Box 85 Townsville QLD 4810, mobile 0405 613 851, website: www.qldreofixing.com.au



IN TRANSPORT, TIMING IS EVERYTHING

While Bruce McLean from McLean Transport is first to recognise that his role on a project as huge as South Gippsland Highway, is peripheral, he is very aware just how critical it is to the principal construction companies, that the transportation of materials is done right.

"It's a matter of timing," he says. "If the transport stuffs up, is running late or turns up with the wrong quantities, the whole project is basically going nowhere until transport gets it right."

So a project like the Longford-Sale VicRoad upgrade, and a principal construction company like Cut and Fill, absolutely rely on transport that never fails.

While being a transport company that prides itself on accurate on-time delivery to major construction projects, McLean Transport's equally sought-after competency is as a network hub for multiple transporters.



"With me," Bruce says, "a company like Cut and Fill can make one call. If I don't have all the trucks they require, I just get onto the network and it's sorted."

It's a strategy that has been working for McLean Transport for over 30 years, although Bruce is rather prone to self-deprecating humour. "I only got into large construction material transport because I was too stupid to know better."

But, as any professional driver will tell you, to survive in the transport game as a semi-trailer owner on Australian roads for over 30 years, you have to be anything but stupid.

The relationship between McLean Transport and the major players in this country's large construction industry, like Cut and Fill, has been key to delivering viable, safer and much needed infrastructure, like the South Gippsland Highway upgrade, to the Australian public.

So if you see Bruce McLean's semi en route to one of his current projects like Parson's Garden redevelopment in Canberra, or the Geelong Bypass, wave him through – timing is critical for all of us.

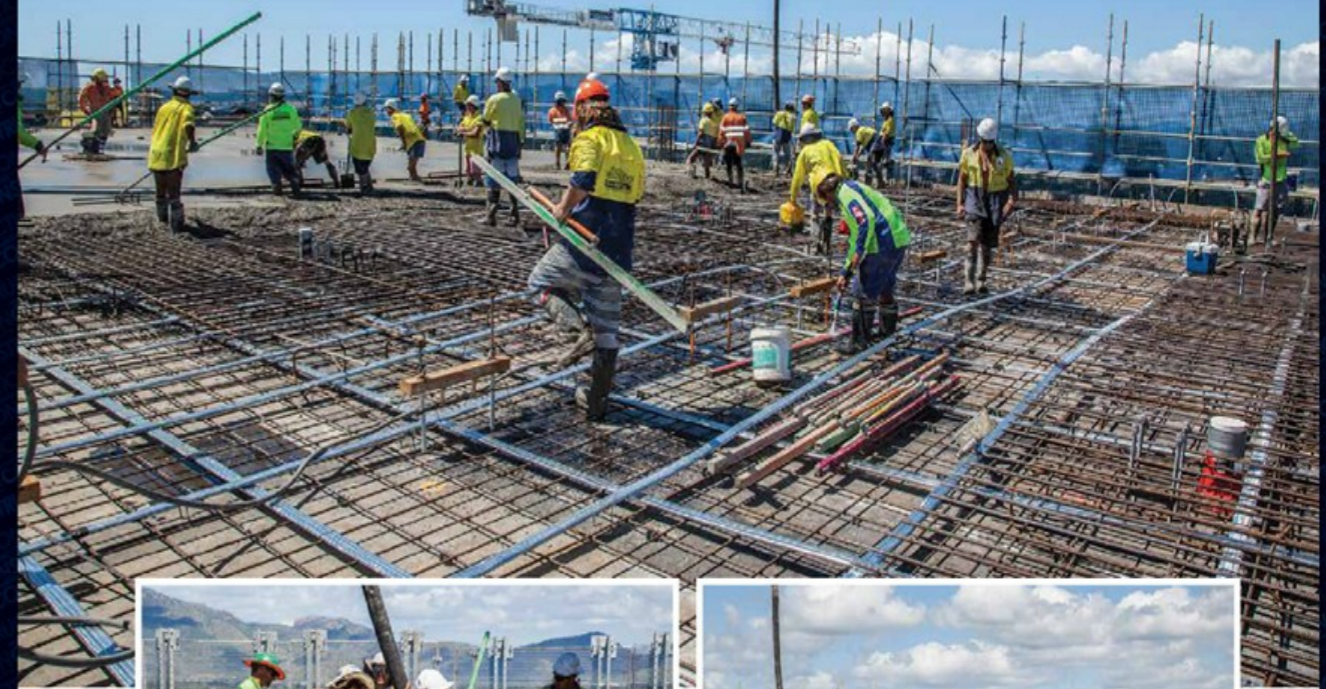
For more information contact B & A McLean, 475 Whitegate Road Pyalong VIC 3521, phone 0418 576 104, email: mclean475@westnet.com.au



96 VIC PROJECT FEATURE SOUTH GIPPSLAND HWY COX BRIDGE UPGRADE

AUSTRALIAN NATIONAL CONSTRUCTION REVIEW

A UNIQUE POUR FOR VERDE



Handling the logistics of pouring concrete 12 storeys off the ground is all in a typical day's work for Mick O'Rourke. Mick's company, O'Rourke Concrete Constructions has literally laid the foundation for some of North QLD's largest building projects over the last 17 years. And not just the foundations – each floor in each multi-level construction requires a concrete floor and support. It's not something that will get thought about much once the carpet goes down and the staff moves into the office space of the new Verde in Townsville.

"The Verde project is one of a kind," says Mick. "There's no other building like this – particularly in Northern Queensland."

Mick cites several issues which make Verde something very different in Australian construction. "You might be surprised to hear that the climate in Townsville poses peculiar problems when pouring concrete for a multi-storey building"

"The large fluctuations in temperature for example, create extreme stresses on concrete which have to be taken into account," says Mick. "The formulae for this pour at Verde are unique."

Complicating the pour was the desire for the Verde project managers to achieve Green Star rating. This meant a high proportion of reconstituted material.

The sheer amount of green-oriented equipment in the building used to recycle water, store rainwater, as well as create huge amounts of storage for diesel fuel, also presented extra challenges for O'Rourke. "All these storage areas have to be created and reinforced, especially in a climate of high temperature variation and cyclonic building codes. It complicates the formulae," says Mick. "In total, we poured about 9,000 cubic metres – that's a lot of concrete, poured dozens of metres off the ground. You get one chance, you take a lot of time, and it has to be right. Logistically, it was one of the greatest challenges O'Rourke Concrete Construction has faced."

As a Townsville local, Mick found it personally satisfying to have his company's name on the Verde project. "It creates a major commercial and Governmental hub. It's a huge economic boost."

For more information contact O'Rourke Concrete Constructions, 52 Powell Street Wulguru QLD 4811, phone 0438 893 416, email: ourourkeconstruction@bigpond.com

A GREEN STORM-PROOF SKIN FOR VERDE

Between the abundant sun and the extreme winds and storms of cyclone season, the striking facade of Verde Townsville has to be able to withstand elemental forces without compromising aesthetics. SGI Architectural supplied a brilliant, eco-friendly solution, with customised Alpolic® /fr cladding.

SGI worked closely with Brisbane-based facade fabricators ACLAD Pty Ltd who specifically engineered the project's Alpolic® /fr to withstand cyclonic wind loads.

Alpolic/fr is composed of a non-combustible mineral core sandwiched between two skins of 0.5mm thick aluminium. The result is a highly stable, lightweight and durable material that can be bent, curved or shaped to meet the requirements of any design. The lightness of the panels also makes for a rapid and safe installation process, which is a major bonus for builders.

SGI supplies Alpolic®/fr to projects around Australia, in a range of finishes including Solid, Metallic, Sparkling and Prismatic colours. There is also a new NaturArt Series featuring Stone, Timber, Metal and Abstract finishes, which have been created through the use of a unique image-transfer coating system.

The surface coatings for all SGI's Alpolic® /fr panels are based on a three coat, three bake Lumiflon based fluoropolymer paint system,

applied using a Die Cast system to ensure a uniform colour and a smooth, UV-resistant and low-maintenance finish. Alpolic® /fr also carries the Eco-Specifier tick, which makes it a positive benefit for Green Star projects like Verde, which was the first building in Townsville to achieve the Five Star Green Star certification, which recognises an extremely high level of sustainability in materials, methods and engineered systems.

For over 25 years SGI Architectural have been supplying quality building facades to the Australian Construction Industry including eco-friendly Alpolic fr Aluminium Composite Panels, Prodema Timber Composite Panels, Swisspearl Cement Composite Panels, Moeding Natural Clay Tile Facades, Eurobond Non-Combustible Rockwool Cored Sandwich Panels as well as Architectural Glass.

Other recent projects SGI Architectural have contributed their expertise and quality products to include Queensland Children's Hospital and Robina Hospital in Queensland; Fiona Stanley Hospital and Coekburn Community Health Centre in Western Australia; PEGS School in Victoria; and Randwick Racecourse, T2 Sydney Airport, Chifley Square and Top Ryde Shopping Centre in New South Wales.

For more information contact SGI Architectural Pty Ltd, Unit 31/5-7 Inglewood Place, Baulkham Hills NSW 2153, phone 02 9620-7988, website: www.sgi-architectural.com.au



STONE SPECTACULAR

Nothing adds beauty and prestige to the look of a project like sandstone. So, when looking for both the ultimate finish and expert installation for the building facades and walkway-garden areas of the Wentworth Point Marinas project, Billbergia Group sought out the experienced Stonemasons of Stone Alliance Partnership, who also sourced the perfect Sydney Basin sandstone.

Stone Alliance Partnership supplied all the external facades through Gosford Quarries. The soft patterned stone they installed had been carved from some of the most interesting sandstone obtained from the 250 kilometre band of ancient sediments that stretches from beyond Newcastle in the north, to the Illawarra in the south and the Blue Mountains in the west.

The stone was carefully chosen by Stone Alliance Partnership to both reflect and enhance the harbour-side setting. When secured to the building by mechanical pinning, the sandstone faces gave a distinctive personality to the Wentworth Point Marinas Apartments.

"This (mechanical pinning) absolutely guarantees the longevity of the façade," said Billbergia Project Manager, Joel Trewella.

"There are other ways to fix the façade to a wall – adhesives and so on. But these stone facings are too precious to muck around with. They're unique. You want these façades there forever, in all conditions. So hi-tech pinning is the only way to go." Stone Alliance Partnership went to great lengths in record time to make sure that Billbergia's brief was not only met, but exceeded. Their attention to detail included having the pins custom-manufactured, to ensure the luminous but gentle material will be enjoyed for many years to come.

A casual walk around the Wentworth Point Marinas reveals an abundance of locally sourced stone supplied and installed by Stone Alliance Partnership which gives solidity, structure and time-proof texture to the overall aesthetic of both the apartments and landscaping. These additional stone elements include all the stone for the perimeter of the precinct, and stunning granite which gives a stylish finish to the podium gardens on level three. The subtleties of both the granite and the sandstone contribute an important element to the overall prestige quality of the project.

For more information contact Stone Alliance Partnership, 6 Churchill Street Silverwater NSW 2128, phone 02 9648 4844, fax 02 9748 0278, email info@stonealliance.com.au