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GALVANIZED STEEL: PRACTICAL, DURABLE, RELIABLE AND PROVEN

REBUILDING A COMMUNITY

MIDLAND REDEVELOPMENT AND WOODBRIDGE LAKES – MIDLAND, WA

68
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In this issue

Introduction – The Importance of History to the Future

Midland: The Historical Heart and Soul of the WA Railway Industry

Midland Redevelopment Authority – The Beginning

Woodbridge Lakes and the Coal Dam

Don't Forget Sustainability and the Environment!

The use of Galvanized Steel in Woodbridge Lakes and the Midland Area

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THE IMPORTANCE OF HISTORY TO THE FUTURE

History and the past: most would acknowledge their importance. The importance of the past is that what has been done previously can be seen and its success easily measured. It may seem obvious to look to the past before doing things now or planning for the future and the built environment is no different.

However, often lessons are not learnt from the past and we can fall into the trap of using a material unproven in real life just because it is "new". Just as in our everyday lives, we look to the newest thing, the latest thing, the "in" thing. This is not necessarily a negative prospect as it encourages innovation, but just because something is old, doesn't mean it cannot be used in innovative and exciting ways and still provide the security that can only be achieved by long-term proven past performance.

Galvanized steel is an "old" material being used in ever-increasingly modern and innovative ways. Engineers, architects and specifiers are realizing that the proven performance, durability and sustainability of galvanized steel give them greater flexibility in their designs because they have the security of proven performance.

Galvanizing has been in existence for around 170 years and it has been used in Australia for almost as long. There are galvanized telegraph poles in far north Queensland that are around 130 years old and they are still in such good condition that some cheeky locals often take them down and use them for other structural applications – the ultimate in recycling.

"Recycling" and "sustainability" may be new buzz words for many materials and in many industries, but in galvanizing it is par for the course. Both steel and zinc (the components of galvanized steel) are 100% recyclable. It is not a well-known fact, but zinc is one of the few materials that can be recycled indefinitely without any loss of superior performance qualities.

Approximately 30% of the zinc produced globally comes from recycling. The only reason this figure isn't higher is because

Story continued on page 2

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THE IMPORTANCE OF HISTORY TO THE FUTURE

the durability of galvanized steel and other zinc products means they remain in service for much longer than other materials and therefore have not been returned yet. Eventually, for example, some of those 80 year old electricity transmission towers scattered around Australia may come back to industry for recycling, but in the meantime, it's comforting to know that something paid for by the community so long ago is still performing as intended with a minimum of maintenance and cost. Probably the best figure to be reminded of is that over 80% of the zinc *available* for recycling *is* recycled. The industry can only recycle what is sent back and it's doubtful that hundreds of asset owners are going to give back their galvanized steel when it's still performing so well, regardless of how old it is!

This edition of *galvanize* looks at the acknowledgement of the past in the midst of renewal. The Midland Redevelopment Authority in Western Australia is working on an ambitious and successful plan to regenerate and reinvigorate a community while also respecting the history of the area.

Midland: The Historical Heart and Soul of the WA Railway Industry

Midland is a suburb 19km north-east of Perth that was founded in the 1890's goldrush. The town itself has also traditionally been a hub for the surrounding rural communities.

Midland has traditionally been a blue collar town whose employment and focus was centred on the former Railway Workshops. These were the economic centre of the region for 90 years and the Workshops are on the Heritage Council of WA's Register of Heritage Places. The Midland Redevelopment Authority's (MRA) offices are actually housed in the award-winning restoration of the Railway Institute and Technical School Building.

At its peak, Midland was the WA's rail industry centre. Innumerable apprentices and cadets were trained and schooled at the Workshops to become tradespeople and professionals in their chosen fields. The Railway Workshops define Midland and are a significant part of its identity and the redevelopment of the area takes this into account.

The main aim of the Midland redevelopment is to restore and grow the area into a vibrant, diverse and thriving community. This is being achieved through the work of the MRA with the continuing support of the local community, the City of Swan and the WA government.

The MRA respects the importance of creating a place with a strong sense of identity where local residents can be proud of the area they live, work and play in. Overarching all of this strategy, is that even in its regeneration, Midland has a history it can be proud of.



Midland: The Historical Heart and Soul of the WA Railway Industry

Midland Redevelopment Authority – The Beginning

The redevelopment of Midland is a truly community driven project. After the closure of the Railway Workshops in 1994, the community felt that there was a "hole": in employment, purpose and focus. The residents of Midland wanted to revitalize the area and make it a place where, once again, people could feel proud of living and working there. In 1997, a 5 day Midland Charrette was held. This involved hundreds of local residents working with a large design team to look at the planning issues facing Midland and also to look at the possible redevelopment opportunities for the area. The Charrette led to the formation of the Midland Redevelopment Authority (MRA).

In July 2000, the first draft concept plan identified the Coal Dam as an area with the potential for housing and development. Ultimately, this potential grew to the stage where the area around the iconic Coal Dam was considered suitable for a prestigious dress circle housing development. The community was continually engaged through a Community Reference Group that would review information and provide grassroots feedback to the MRA.

Annelise Safstrom is the Director Planning for the MRA. "We are creating a mix of uses and diversity of demographics. Such an estate helps the image of Midland as somewhere attractive to live." It was also imperative that the history of the area be preserved as the Railway Workshop site is listed on the Heritage Register. "Restoration and reuse of as much of the existing infrastructure as possible was a priority," she says. "Through consultation with the community, trust has been established and we are now charged with getting on with the job of reinvigorating Midland."

At the time, it was possibly considered a somewhat risky proposition to develop such an estate in Midland, however, the plan was put in place and with the help of the WA government, community of Midland and Council of Swan, the MRA got on with the process.

And so, Woodbridge Lakes was born...



A great way to live at Woodbridge Lakes



Woodbridge Lakes and the Coal Dam

Woodbridge Lakes is the first medium density estate of two-storey houses on small lots in Midland. It sits on the western edge of the former Midland Railway Workshops Site. The focus of Woodbridge Lakes is the historic Coal Dam and surrounding reserves and bush land.

The Coal Dam is a large reservoir of about 1 ha that was originally built in about 1895. In 1947, the Coal Dam started to be used as a convenient underwater storage area for the Collie coal that was used as fuel for steam locomotives. Once mined, Collie coal can deteriorate quickly in the atmosphere and become highly combustible, making it a volatile material to store safely. In fact, legend has it that Collie coal was first discovered by a stockman, George Marsh, in 1883. At the end of a long day minding sheep along the Collie River, he was getting ready to prepare dinner. To help support some of his cooking utensils next to the fire, he used some black "stones" that were lying around when, much to his surprise, they caught fire! The proximity of the Coal Dam to the Railway Workshops made it a convenient storage facility for the coal. It could be kept underwater safely for as long as needed, and then extracted for use as required. With the decline of steam locomotives, the dam was eventually decommissioned as a storage facility in 1971 and it was then used to capture and store effluent wastewater from the Railway workshop.

The remediation of the Coal Dam was obviously one of the main priorities and challenges facing the MRA. After being used for various industrial activities over 90 years, the Coal Dam was severely contaminated with a variety of materials including coal dust, sludge and hydrocarbons. The contaminants were dredged from the dam and its natural catchment is now supplemented by bore water which has had a positive impact on the water quality. The dam also collects stormwater runoff from the Woodbridge Lakes subdivision and the water is used for irrigation purposes. The Coal Dam is now a thriving wetland with various water birds and tortoises calling it home. It is also part of an aesthetically pleasing area with surrounding parks and bush land where residents can enjoy the outdoors and meet for barbecues and picnics.

Don't Forget Sustainability and the Environment!

As mentioned above, the stormwater from the Woodbridge Lakes development runs through a series of sediment and pollution traps and is eventually captured in the Coal Dam and contributes to the irrigation of the site and surrounding areas. However, that is not where the environmentally responsible design practices end.

The Woodbridge Lakes development is strongly committed to the incorporation of Ecologically Sustainable Design principles (ESD). This means encouraging the design of homes that are environmentally friendly. This includes attention to energy efficiency, the use of appropriate construction materials, durability, water conservation and harvesting and suitable landscaping.

The design guidelines also ensure that the character and history of the Railway Workshops heritage area is acknowledged. These guidelines encourage the use of materials that complement the area's history.

ESD is not restricted to Woodbridge Lakes, the whole Midland Redevelopment is looked at in this way. "Part of the big picture is to make the town centre a mixed-use walkable environment," says Annelise Safstrom. "That way we reduce dependence on driving within the town and we can reduce traffic and emissions while maximizing the community feel."

The use of Galvanized Steel in Woodbridge Lakes and the Midland Area

It makes sense that in a community dominated by the Midland Railway Workshops that an iconic Australian utilitarian and durable material such as galvanized steel is used extensively throughout the built environment around the Coal Dam and Woodbridge Lakes. Galvanized steel is a common sight throughout Australia's landscape and it fits in well with the "bushy" feel of the whole precinct. Many old trees were retained and it gives the recently regenerated area an established appearance.

Chris Byrne, a Landscape Architect with Urbis, says, "Given the finish and appearance of galvanized steel, it was really the only option as it fits in well with the history and uses of the site."

Story continued on back page



Top: Railway tracks in the Coal Dam Above: Galvanized steel viewing platform

The boardwalk that runs around the Coal Dam is made up entirely of galvanized steel and timber and fits in well with the aesthetics of the area. In some areas, the galvanized columns and structural steel are actually in the Coal Dam itself so a building material with superior corrosion resistance is the only option to realize the vision of the designers.

Again, Chris Byrne says that, "We were thinking long-term and trying to tie in the aesthetics of the site with the permanence of galvanized steel. Using other materials would have detracted from our vision or not provided the feel we wanted for the area."

The fact that most of the steelwork is in public areas means that it needs to be robust as it is in constant contact with users of the facilities. Galvanized steel is actually harder than the base steel it protects so the designers can be sure that the steelwork is getting the best possible protection for the longest amount of time. Also, because galvanized steel is a building material where the protective coating is an alloy of the base steel and therefore metallurgically bonded to it, there is no risk of the coating being removed by impact or abrasion and flaking off into the water. This is an important consideration not only for reducing the maintenance burden, but also because the dam now provides a habitat for various wildlife.

There are other innovative uses of galvanized steel besides practical structural applications. Not quite in the Woodbridge Lakes development, but scattered around the Railway Workshops precinct are several interesting artworks, many of them using galvanized steel. Local artist Kath Wheatley was commissioned to produce public art for the precinct and she struck upon the idea of street signs that look like people. Many of the materials used in creating the galvanized "people" were actually appropriated from the Workshops themselves, a neat twist on recycling and preserving the history of the area.

"Galvanized steel is so endemic in our society," says Chris Byrne. "It's everywhere in the built environment either in rural areas or inner city. It's reliable and functional and has an agreeable aesthetic."

Chris also likes the way galvanized steel ages. "I think the patina of age on galvanized steel is an attractive feature. It's like limestone, particularly in Fremantle, where the older it gets, the better it looks. Galvanizing is like that – it looks better every day."



Galvanized steel "workers" at the Railyards

Conclusion

The Woodbridge Lakes development and the regeneration of the Midland Railway Workshops area show how visionary thinking and community involvement can produce successful results. An area that had become depressed over the closing of the workshops and the attendant unemployment and loss of economic input is being revived through innovative planning and design. In fact, the region is one of the fastest growing areas in Australia. Woodbridge Lakes now has houses valued in the million dollar bracket. This has helped to change the perception of Midland and creates a momentum to help continue the redevelopment of the region.

The creation of the built environment is not just about structures – it's about people and helping them to feel comfortable and secure. The Midland Redevelopment achieves this in an impressive way.

Whoever said you couldn't teach an old dog new tricks has obviously never used Australian galvanized steel or taken a walk around the impressive development at Woodbridge Lakes. That's why galvanized steel and Woodbridge Lakes work so well together – they both have a rich history, but they also have a bright future.

Awards

Landscape Design and Irrigation 2006

Awards of Excellence

Australian Institute of Landscape Architects

- Category: Public Open Space Design
Awarded to Tract (now Urbis) for Coal Dam Park
- Category: Heritage Landscape Design
Awarded to Tract (now Urbis) for Coal Dam Park
- Category: Environment
Certificate of Commendation awarded to Tract (now Urbis) for Coal Dam Park

Australian Institute of Landscape Architects WA 2006

- Commendation Award for Design in Landscape Architecture
Awarded to Tract (now Urbis) for Coal Dam Park

Urban Development Institute of Australia (Western Australia)

Awards for Excellence

Residential Development less than 150 Lots

- Midland Redevelopment Authority for Woodbridge Lakes
- Rising Star
- Midland Redevelopment Authority for Woodbridge Lakes

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For further information on the Midland Redevelopment please visit:
www.mra.wa.gov.au

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