

THE ROCKS

DISCOVERY

MUSEUM

NEW
for OLD

← The Rocks Discovery Museum project sensitively fuses past and present.

Heritage buildings add unique value and meaning to our cultural inheritance and history. Preservation, while incorporating contemporary conveniences, is all about adaptive reuse and innovative construction ideas.

Words by Tracey Hordern

Places of historical significance provide character to our cities and give us an important glimpse into our cultural past. Old buildings can be adaptively reused for a wide range of purposes, allowing the gap between old and new to be gracefully bridged.

Renewal of heritage buildings, especially in innovating the ways we rebuild, plays a major role in the sustainable development of our communities. As a nation Australia is at the forefront of reconstructive techniques.

However, as development pressures increase, it's our architects, designers and builders who are challenged to find innovative construction solutions, while sticking to the appropriate rules and regulations that exist to protect historic significance. The answer is found in employing construction innovations of the future and using them on buildings from the past.

The Australia Charter for the Conservation of Places of Cultural Significance (ICOMOS) sets the standard for industry practice and keeps the bar high.

Their philosophy concentrates on the importance of 'place'. Regardless of how skilfully a place may be captured on film or how evocatively it is described, there's no substitute for the experience of the actual physical location. It is, after all, the responsibility of all Australians to preserve the essence of place.

On the waterfront

Sydney's Rocks district buildings are presided over by the Sydney Harbour Foreshore Authority (SHFA). The vision for the future management of this beautiful waterfront suburb (and our country's historic birthplace) blends history and the local resident community, while still providing enjoyable experiences for visitors.

Niall Macken, Heritage and Design Manager at the SHFA, is quick to point out that while we call it 'adaptive reuse', most conservation and reconstruction work in Australia centres around the idea of old meets new.

"It is about understanding the place. This involves documentary and physical research into history and development, and why it is important," he explains. "We have to find viable uses which minimise impacts while providing or



improving services such as disability led access and managing the interface between old and new."

The Rocks Discovery Museum project is a successful example of fusing the past and present. "This project involved the conservation, adaptation and interpretation of three adjoining mid 19th century mercantile buildings - Samson's Cottage, Raphael's and McKellar's Stores - to display the museum's archaeology collections and interpret the maritime history of The Rocks," says Macken. "Our approach was to retain the significance and fabric of the original structures and insert a distinctive and reversible new layer of museum infrastructure."

Master strokes

The latest building in The Rocks to undergo comprehensive renewal is the iconic Museum of Contemporary Art (MCA). Construction began in June 2009, with completion expected in early 2012. The goal of the design, by highly regarded architect Sam Marshall in partnership with the NSW Government Architect, is to complement the existing heritage building and energise both The Rocks precinct and Circular Quay.

The updated MCA will mean people can enjoy its stellar >>

↑ Development of the iconic Museum of Contemporary Art aims to re-energise Circular Quay, Sydney.



“It is, after all, the responsibility of all Australians to preserve the essence of place.”

↑ Award winning innovation at Baroque Bistro, The Rocks.

location in a new rooftop cafe and sculpture terrace with spectacular views of the Opera House and harbour. Two new function spaces and a covered terrace will be created on the top level of the existing building - modern additions for a beautiful old building.

It is Marshall's belief that heritage buildings should never be reconstructed as such. "If they are, they lie to the observer that they are original," he says. "If their value is so important, their ruined remains should be stabilised and left untouched. If it does not have significant value, the building should be removed to make way for a contemporary building."

The architect also believes heritage buildings can be easily put to new use by introducing building works of a contemporary nature whereby the contrast creates a dialogue between the two that highlights the heritage value. "Quite often the display and interpretation of remains enriches the everyday use of the surrounding spaces," he adds.

According to Marshall, it isn't difficult to insert what is needed for a contemporary lifestyle into heritage buildings and to make them useful (which he claims assures their retention) as well as being respectful of the heritage. "There is a growing trend to respect buildings from the recent past, for instance from the 1950s to 1970s," he says. "We have lost some great buildings from that period but there is no doubt we have heritage and archaeological skills as good as any country."

Built to last

When it comes to refurbishing and reconstructing, specific construction techniques and practical construction considerations are crucial. As Macken highlights, some trades are not in common use and are reserved for historic buildings.

"For example, solid dimension stonework, rather than stone cladding, dressed lead work and 'lath and plaster' work are not much used apart from restoration projects," he reveals. "Many of the other trades require a higher degree of skill or patience for heritage buildings than for conventional new build, for example carpentry or joinery repairs to historic timberwork."

It's one thing to maintain the heritage elements of a building, but how does an architect or builder address the contemporary needs of those who live in or use the building?

"The first step is to identify what is most important about the place, and then develop an appropriate design concept for the adaptation around retaining this significance," Macken advises. "One of the tools conservation architects use as an all important reference is the Conservation Management Plan (CMP), which is tailored to a particular place and sets out the significant heritage aspects of that place and details the appropriate policies and strategies to manage these aspects so its values are retained."

Macken nominates 100 George Street, Sydney, the former Mariners' Church, as a good example of the CMP in action. In this instance, the SHFA worked to conserve the existing fabric and reinstate lost architectural features, in particular the sandstone elements, while incorporating a new lift, stairs and services within the building. The church had been built in

1859, with extensions added in 1909, 1927 and 1931. "The completed works safeguard the fabric of the building and provide a better opportunity to appreciate the church's original aesthetic worth and high level of craftsmanship, at the same time allowing for its ongoing use as a contemporary space," Macken adds. "During conservation works, the archaeological remains of the former Bethel Street, dating from 1860 and built over in 1907, were discovered beneath the building. The former street and wall were conserved and interpreted through a viewing window as part of the project."

Eco logic

Environmental benefits combined with energy savings and the social advantage of recycling a valued heritage place make the adaptive reuse of historic buildings an essential component of sustainable development. Adam Nykiel, Design Manager for the Energex Building in Brisbane's Newstead Riverpark, outlines some of the latest construction techniques that best translate to improved sustainability measures.

The relationship between sustainable construction techniques and the solution is linked by setting a desired sustainability goal. "Parameters have been benchmarked by a number of governing bodies without giving direct solutions promoting industry research and development," says Nykiel. "These relate to construction management techniques, indoor environment quality, energy saving systems, water conservation, high recycle content and low embodied energy materials, and reduction in emissions. The construction solutions to each of these can be as many and varied as the industry can support."

The question here is how much input do the construction team have in the design of a project?

Nykiel is adamant that, in a design and construct process, the construction team is instrumental in the successful delivery of a sustainable design. "Products and systems are constantly changing to meet new and often cutting edge concepts," he elaborates. "This often requires the team to implement a challenging product that was conceived on paper or provide an alternative updated product. As part of this process the construction team becomes highly involved with the design solution and physical outcome."

The need to achieve better sustainability has impacted on construction, says Nykiel. "Apart from the products and

Seeing green

There are some specific design considerations that add a sustainable edge to the reconstruction of heritage buildings. For instance:

- **Blackwater harvesting**
Where plants take sewerage from local systems and remove waste material to provide water for non potable use in the building.
- **Efficient air conditioning systems**
State of the art designs and floor versus rooftop systems cut CO₂ emissions, while increasing cool comfort for occupants.
- **Optimised façades**
High performance façades have low-e double glazing and external shading to guard against solar heat and glare while keeping high internal daylight levels.
- **Sustainable material selection**
Steel-like material sourced from recycled products; cement replaced by industrial waste products; reduced PVC use; low-VOC paints, carpets, glues and adhesives; and old growth timber.
- **Water saving devices**
Rainwater is harvested for toilet flushing and landscape irrigation; air conditioning condensation and fire system test water are collected and stored for reuse.

systems implemented during construction, a construction team needs to use and handle materials in different ways from traditional techniques," he suggests. "If you take waste management as an example, a construction team would now follow a waste management plan that facilitates the reduction of construction waste to landfill."

Benchmarks have been set whereby a total of 80 per cent of waste by weight is reused or recycled. Another area is controlling the materials being used on the project requiring management systems that are not normally in place.

"A good example of this would be the rating of a timber product that means that it has a chain of custody certificate guaranteeing its source is from a recycled product, and each set of hands it has passed through to implementation is recorded and can be proved," Nykiel says. "This encourages the specification of reused timber that has certified environmentally responsible forest management practices." •

Winning ways

Innovative trends that unite good conservation work and adaptive reuse with sustainable design are yielding results that scoop awards. Macken says there have been recent projects in New South Wales whereby heritage buildings have received 5 and 6 Star Green Star ratings. "Number 88 George Street, in The Rocks, was acknowledged by the Green Building Council as the first State Heritage Listed building to be awarded a 5 Star Green Star office design rating," he explains.

The former Bushell's warehouse, on the corner of George Street and Hickson Road in the Sydney CBD, built in 1886 and extended in 1912, was adapted by the SHFA for commercial offices, with a cafe, modern restaurant and bar, aptly named Baroque and outdoor seating on the ground floor.

"It represents a benchmark for the ecologically sustainable upgrade of culturally significant buildings and serves as an example of SHFA's commitment to meet targets to reduce its carbon emissions," Macken adds.

Although Australia has emerged as a genuine global pioneer and is the custodian of an ever growing list of projects that have gained 'World Leader' certification, progress towards sustainability continues to be governed via a voluntary system. Sustainable organisations in other countries are backed up by government regulation in many instances, and this is a direction we are headed in. And as Nykiel says: "The level of innovation shown in design and construction techniques in Australia is paving the way for the future."