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A centre for the environment that practises what it preaches.



The McCormick Centre for the Environment, in Renmark, South Australia, is for public education of visitors and residents with an environmental mission. While the Centre will combine education and tourism facilities for visitors to this Murray River region, the building itself, innovative brainchild of Adelaide-based architects Phillips/Pilkington, is designed to incorporate a range of environmental initiatives. As the materials used were vital in helping to achieve this green ideal and the Centre's unusual design, the architects relied on Hyspan from futurebuild. Being a natural renewable resource with the advantages of specialist engineering, Hyspan LVL was the perfect fit.

continued inside



that practises what it preaches

[A centre for the environment that practises what it preaches] continued



Formed ten years ago, Phillips/Pilkington now have a reputation for design excellence across all projects, with a particular focus on tourism, community cultural facilities and regional work, and are committed to environmentally sustainable designs that respond to the surrounding culture and locality and to climatic conditions. Their aim is to give each project a real sense of place.

The McCormick Centre presented an opportunity to do just that. The Australian Landscape Trust and the District Council of Renmark Paringa wanted a visitors' centre that was educational but where environmental concerns were also an integral part of the building's design. Phillips/Pilkington took on this agenda and came up with a design that makes the most of natural light and energy sources, incorporating systems that almost solely depend on the surrounding conditions and landscape.

Some of the Centre's design and engineering features allow for energy efficient heating and cooling. These include the northern orientation of the long structure, running east west, with an overhang and verandah for summer shade but allowing in the winter sun. The building is also well insulated with minimal openings on the east and west ends and high insulation in the ceiling, walls and roof and a large internal thermal mass with

concrete slab floor and an eight metre high block-work wall that separates the north and south zones of the building. The roof is mounted with solar panels for winter space heating via radiator panels mounted on the walls. There is a gas boiler as backup too. For summer, as the temperatures soar in the 'hot country,' cooling is provided to all spaces by energy and water efficient evaporating cooling units.

Energy and water are also carefully conserved, with on-site rainwater tanks for fire fighting and toilet water requirements and a 'photovoltaic solar/electricity array' also mounted on the roof. The solar energy generator covers the power needs of the evaporating cooling units. Natural lighting is used wherever possible. To complete the environmental package, renewable laminated veneer lumber, Hyspan, was chosen for the structural frame.

The decision to use Hyspan was environmental, but also practical and economic. Architects, Phillips/Pilkington developed the LVL portal frame concept in consultation with Structural Engineer, John Bowley. Timberbuilt was then engaged to carry out the timber engineering design and to prefabricate and supply the complete structural system. The monopitch portal frames consisted of doubled sections of Hyspan LVL with rafters and columns jointed with concealed steel fin plates and steel dowels inserted into interference fit holes pre-drilled in circular patterns. On-site all that was required for assembly was for the components to be aligned and the tightly fitting dowels driven home. The base fixings on the portals were either enclosed in

steel shoes to protect the end grain of the timber where the portals were external, or used with concealed fin plates that lifted the portals clear off the floor, giving the whole structure a sense of lightness. The use of a prefabricated Hyspan system from Timberbuilt made construction quicker and ensured achievement of the Phillips/Pilkington vision.

According to Bruce Hutchings of Timberbuilt, this was an interesting project for the matching of the attributes of LVL with the architectural requirements. The hidden fin plate and dowelled moment connections for the portal frames imposed the need for extraordinarily tight tolerances for prefabrication. "In common with many other projects we take on, we needed to evolve special techniques that were both accurate and efficient," Bruce says. Tony Castellano, from Cox Constructions found the connections lined up without a problem. This is testament to Timberbuilt's prefabrication ingenuity and to the straightness and uniformity of Hyspan.

The Centre is now complete and due to open later this year. Incorporating a lecture theatre, a teaching laboratory and an exhibition space, it is set to become a multi-purpose education space for the Renmark and Murray River region, teaching school kids and others through immediate experience of the surrounding environment. In fact, the Australian Landscape Trust is in the process of developing a wetlands environment surrounding the building to be used for study. No doubt, the environmental features and innovative design of the building itself will be a part of the McCormick Centre experience.



Project Specifications:

Products:	Hyspan LVL by futurebuild
Architects:	Phillips/Pilkington
Structural Engineer:	John Bowley
Timber Engineering:	Timberbuilt - 03 9543 3733

