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1. Laying the decking on the strong sub-floor frame.
2. Airmail - protecting the environment by delivering prefab sections to within 6metres of the construction site.
3. The Boardwalk by keeping visitors off the fragile earth protect this significant cultural monument.

Impact was also a concern for the area's traditional owners, represented by the Murong Gialinga Aboriginal Corporation.

The artwork is in a national park just north of Mudgee, and consists of hand silhouettes, created by blowing ochre over a human hand. The hands are on a sandstone wall, protected from the weather by a sandstone overhang.

However, its popularity as a tourist attraction was beginning to destroy it.

"Dust, kicked up by people walking past, was deteriorating the work," James said.

"National Parks and Wildlife (Service) wanted to keep people a safe distance away

"They also wanted to make the site safer. Because of the decayed sandstone, it was a bit like walking on marbles and people could have slipped off the ledges (at the base of the art wall).

James decided the solution would be a timber boardwalk.

"Timber fits into the environment better than manufactured materials like concrete, steel and plastic," he said.

"It fits in with the trees and rocks and slopes and everything else in these natural surroundings."

But there were a few hurdles to overcome, between the concept and getting a completed article on-site.

One of the project requirements was that members of the Aboriginal community would help install it. Another was that the traditional owners wanted a minimal physical impact on the area and to be able to return things to their natural state at any time. A third constraint was the site itself - on the sloping side of a hill, with a crossfall.

"(The design challenge) was a matter of trying to make it easier to build because these people hadn't done this sort of thing before," James said.

"They were a bit worried they wouldn't have the skills to build it."

To overcome the problem, James designed modular units which were prefabricated at Gatton Sawmills (Outdoor Structures Australia) and then shipped to the site for installation. Each section is about three metres long, and close to identical to all others. Linked, they form a series of stairs, each dropping 150 mm.

The panels were delivered on-site by helicopter, to minimise impact on the site, and then carried by teams of men for the final five or six metres.

"Once we got the first one in position, the others just snapped into place," James said.

In deference to the need to protect the site, and to cause minimal disturbance if the boardwalk has to be removed in the future, the structure sits on top of the ground. Height-adjustable footplates spread the load and allow levelling.

However, James says the structure is completely stable, with its mass preventing it moving regardless of the antics of the people who use it.

"I used spotted gum for the decking and joists, which has a density of about 1.1 tonnes per cubic metre," James said. "It has a nice weight to it."

Each of the three-metre sections weighs about 200kg.

James said spotted gum was used for three reasons - its durability its availability and its impact resistance.

"The boardwalk runs under a decayed sandstone overhang. Pieces of the overhang do break off from time to time and, with a fall of seven or eight metres, could do some damage to a lighter timber," he said.

On the positive side, the overhang serves as a roof, which James says should almost double the boardwalk's life to about 50 years. **ATD**

# Cultural history saved by timber

Murong Gialinga Aboriginal Rock Art Boardwalk - Mudgee NSW

The "of nature" feel of timber was the reason it was selected to protect valuable Aboriginal rock art in Mudgee, NSW.

Brisbane-based engineer James Pierce said he wanted to design a boardwalk to keep people away from the artwork but caused minimal visual impact.

by David Kiefer

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