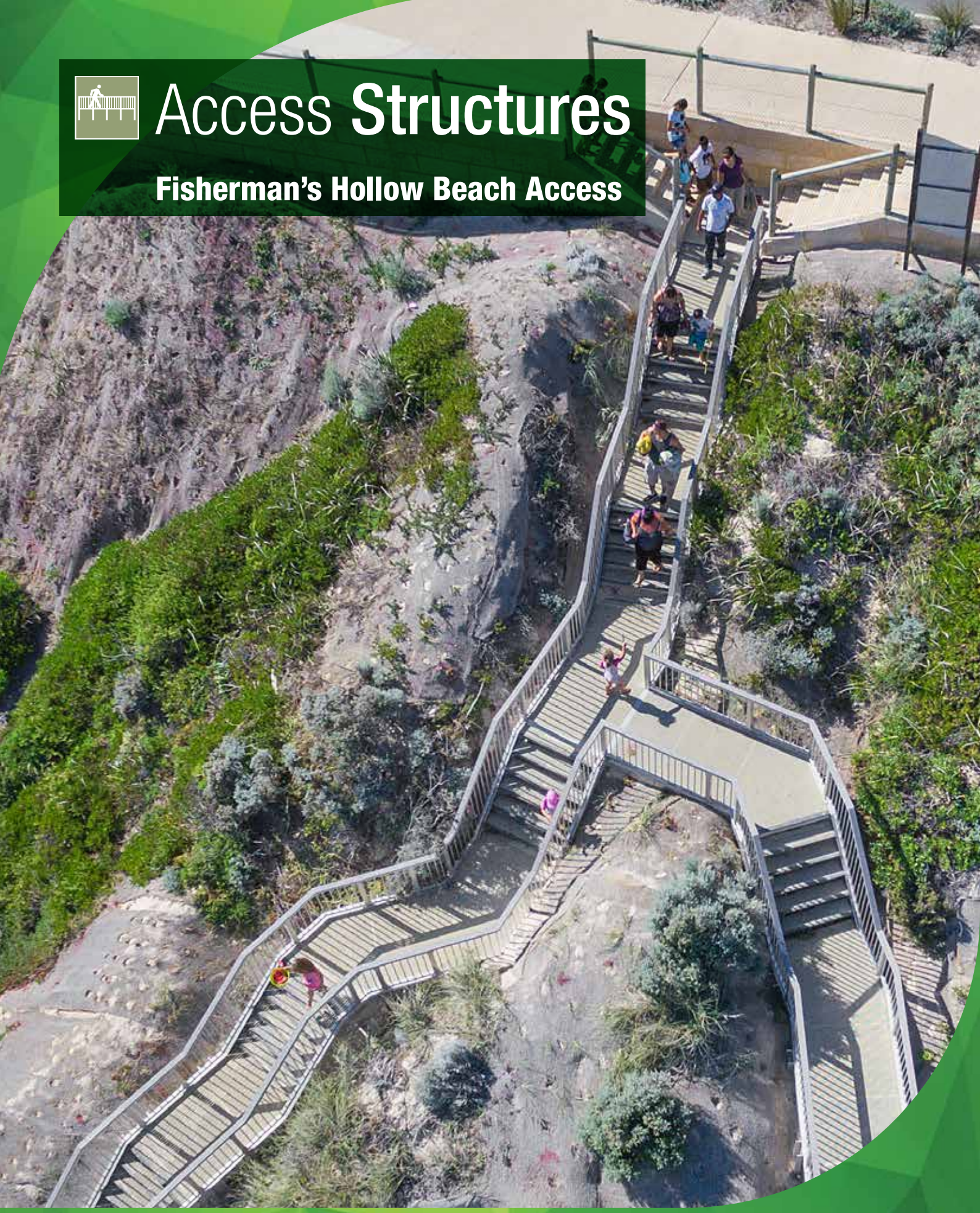
Access **Structures**

Fisherman's Hollow Beach Access



Case study

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open space structures & solutions

Customer
City of Wanneroo, Western Australia

Product
Public beach access staircase

Project
Fisherman's Hollow, Brazier Road, Yanchep

Designer
Landmark Products

Case study

Overview

Fisherman's Hollow is a popular enclosed swimming spot in the suburb of Yanchep, bordered by the beach and a 600 m beach-rock reef just off shore. It is frequented by members of public, walking their dogs and fitness groups, among others.

The City of Wanneroo went to tender, seeking the upgrade of this facility. Through offering a superior product and service, Landmark secured the project, and ultimately designed, manufactured and installed a beach access structure boasting a 100-year life-span.

The beach access is now heavily used by the public, and will require far less maintenance than the previous concrete structure. It balances the practical requirements while blending seamlessly into the environment.

Challenges

Beach access at the Fisherman's Hollow site was previously via a disjointed set of concrete steps (see right), which were susceptible to a constant build-up for wind-driven sand (from regular high winds in the afternoon) and overgrowth by shrubs.

The project included the demolition and removal of this legacy structure.

The City of Wanneroo sought to use recycled material for the construction of the new structure, and there were also cultural considerations due to the site's indigenous heritage.

Construction was preferred in the cooler months, when there is less foot traffic to avoid as much disruption as possible.

Our solution

Landmark Products' Design team worked with the engineers at the City of Wanneroo and their consultants to deliver on the specifications of the tender.

From the top of the new staircase to its lowest section is 6.6 metres. It was decided to follow the footprint of the previous structure, straddling the dunes, and build two beach access points at the bottom, branching from the single access point at the top

The access at the top joined to an existing staircase.

Factors that impacted on the selection of design and materials included:

- The high corrosive nature of the site
- The unstable nature of the location
- Leaving minimal disruption to the site during and after installation
- Seeking to reduce sand and shrub build-up in and around the finished project.

The risen, supported nature of the structure was the key factor which defined it from the previous staircase, which addressed the issue of sand built-up.

Footings

The structure is secured to the dune by 40 diamond pier footings, the ideal solution for structures built on sand, combining strength with flexibility.

No heavy machinery is required to install the diamond piers, leading to far less site disturbance (of vegetation and noise) than needed for other types of footings, such as traditional concrete.

In the event of significant sand loss due to cyclone, diamond piers can easily be removed to allow the structure and footings to be adjusted accordingly.

Risers

The staircase uses FRP (Fibre Reinforced Plastic) mini-mesh decking throughout, allowing sand to pass through, giving a crisp finished look, and is also slip and rot resistant.

The 40 risers and five landings are manufactured from recycled plastic, thus fulfilling this requirement of the tender, and they also enjoy a far longer life-cycle than timber.

There risers were delivered to the site pre-cut to size, and secured by stainless steel anti-vandal bolts.

Sub-frame structure

Aluminium is the obvious choice for coastal areas due to its resistance to salt-induced corrosion. The sub-frame structure and balustrades, including beams and grating supports, were delivered in pre-fabricated panels, assembled on site.

The balustrades were finished off with Modwood caprails, giving a clean and softer finish.

Installation

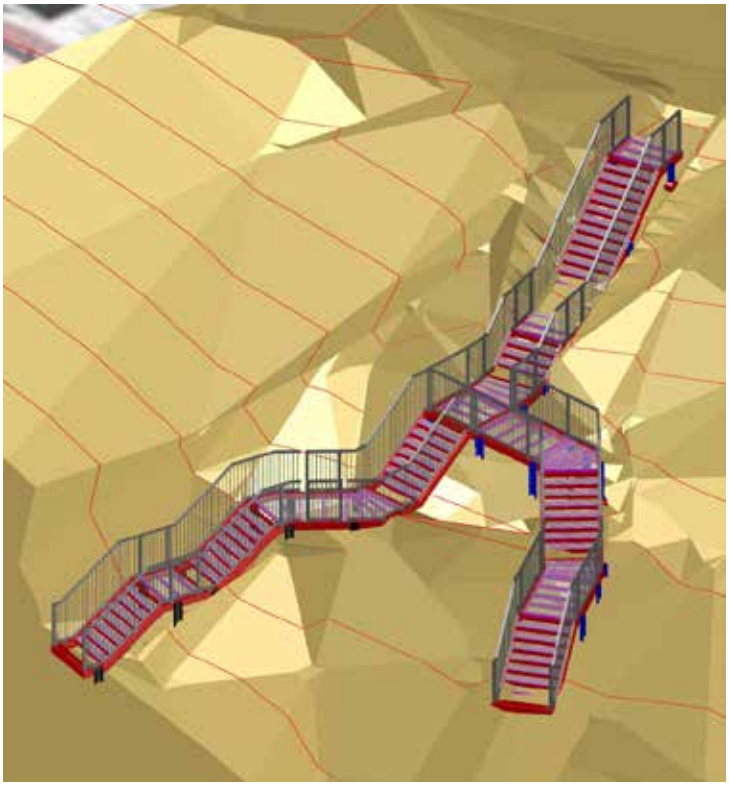
The structure was installed and project managed by Landmark Products' Western Australian operation. From start to finish, including the demolition and removal of the previous structure, took four weeks, during which time, pedestrians were directed to an alternate beach access to the north.

The new structure was joined to an existing staircase at the top of the dunes.

As part of the service, Landmark Products assisted the City of Wanneroo with all relevant compliance requirements, including:

- Development Approval,
- Building Permit
- Clearing Permit
- Archeologist inspection during construction
- Aboriginal Heritage site managmenet during construction

Design: Upon being awarded the tender, the entire design was managed by the Landmark Products' in-house design team, in consultation with the City of Wanneroo.



Site: The site presents all the inherit challenges of seaside, sand-based construction sites, with the added challenge of frequent high afternoon winds, which causes sand built-ups.

Outcome: The City of Wanneroo are delighted with the end results, as are the frequent users of the staircase who access the popular protected swimming spot of Fisherman's Hollow. The site now requires less maintenance and upkeep from the Council.

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