DM COMPOSITES

DMWALK™

GLENTHOMPSON PEDESTRIAN BRIDGE REPLACEMENT

PROJECT BACKGROUND

The township of Glenthompson, located approximately 40km west of Hamilton on the Glenelg Highway, relies on a small but vital pedestrian bridge between Station Street and McLeod Street. The bridge is not only a key connection for residents accessing the town centre but also an important link in the township's loop walking track.

The original bridge had reached the end of its service life and required full replacement. Southern Grampians Shire Council initiated the project under the 2024/25 infrastructure program, with a scope covering demolition of the old structure and design, supply, and construction of a modern replacement that would be safe, durable, and visually sympathetic to its rural setting.

LOCATION:

Glenthompson, VIC, Australia

CONSTRUCTION COMPLETION:

AUGUST 2025

DM COMPOSITES' ROLE

DM Composites was awarded the contract to deliver a complete FRP pedestrian bridge solution, from survey and design through to final construction.

Our responsibilities included:

- **Feature survey and geotechnical investigation.**
- **Design engineering in accordance with AS 2156.2 (Walking track infrastructure design), AS/NZS 1170 (structural actions), and AS 1657 (walkways and platforms).**
- **Preparation of detailed design drawings, BOQ, inspection and test plans (ITPs), and full certification.**
- **Demolition and removal of the existing timber structure.**
- **Supply and installation of a single-span FRP pedestrian bridge, including substructure, decking, handrails, and balustrades.**
- **Environmental and heritage management in line with Council's infrastructure and sustainability framework.**

DESIGN & TECHNICAL SOLUTION

The new FRP pedestrian bridge was engineered as a 10m span, 1.8m wide deck, 1.7m above the creek bed, designed to achieve a 50-year minimum service life with minimal maintenance.

Bridge Features:

- **Superstructure:** FRP hybrid girders and FRP joists engineered to meet structural loading requirements while reducing weight for ease of installation.
- **Decking:** FRP mini-mesh panels with anti-slip grit surface, UV-stabilised and resistant to rot, corrosion, and algae build-up.
- **Handrail System:** Full FRP balustrade with stanchions, top, mid and bottom rails, plus FRP vertical infill slats for both compliance and aesthetics.
- **Abutments:** Designed with screw piles (2 per side) as per geotechnical recommendations—accelerating installation and ensuring a stable foundation in soft soils.
- **Connections:** HDG steel fixings, bolts, and washers, ensuring durability in all-weather exposure.

ENVIRONMENTAL & SITE MANAGEMENT

The site presented significant challenges:

- Proximity to powerlines required careful cranage methodology and temporary exclusion zones for safety.
- Existing native vegetation imposed constraints on access and installation methods, with Council mandating “no-go zones” and temporary fencing.
- Muddy terrain during winter necessitated staged works, tracked machinery, and careful lay-down areas to avoid soil disturbance

Environmental management included strict sediment control, waste minimisation, and reinstatement of disturbed areas with native vegetation. All fuels and lubricants were stored in bunded areas with spill kits onsite.

CONSTRUCTION METHODOLOGY

- **Demolition & Site Prep:** Removal of the deteriorated timber bridge, clearance of debris, and excavation for abutments.
- **Piling & Abutments:** Installation of screw piles (two per side) into competent soils as identified in the geotech report, with pile caps formed in reinforced concrete.
- **Bridge Assembly:** FRP superstructure delivered in prefabricated modules, assembled and craned into place with temporary bracing and guying to manage erection loads.
- **Decking & Handrails:** Installation of mini-mesh FRP decking panels, bolted into joists, followed by FRP balustrades.
- **Finishing Works:** Reinstatement of approaches, removal of temporary works, site tidy-up, and replanting of any disturbed vegetation.

QUALITY ASSURANCE & CERTIFICATION

DM Composites implemented a robust QA framework:

- **Inspection & Test Plans (ITPs)** covering fabrication, installation, and erection procedures.
- **Non-destructive testing (NDT)** of critical structural elements.
- Dimension checks and torque tests on all bolted connections.
- Final certification by a **qualified structural engineer**, with as-built documentation handed over to Council

KEY CHALLENGES & SOLUTIONS

- **Powerline interference:** Managed through careful cranage planning, exclusion zones, and low-profile lifts.
- **Vegetation constraints:** Bridge alignment slightly adjusted and materials hand-carried in sections to avoid encroachment.
- **Muddy terrain (winter works):** Temporary mats and tracked vehicles reduced soil disturbance, while modular FRP components made installation faster.
- **Community safety:** Temporary signage, barriers, and traffic management ensured pedestrian safety during the works.

OUTCOMES & COMMUNITY BENEFIT

The new Glenthompson Pedestrian Bridge provides:

- Safe, reliable access between Station and McLeod Streets.
- An upgraded, low-maintenance FRP structure that eliminates the issues of rot, corrosion, and repainting cycles associated with timber and steel.
- Enhanced community amenity, contributing to the township's walking loop and encouraging active transport.
- A visually appealing structure that blends modern FRP technology with the rural setting.

BEFORE

AFTER

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