DM COMPOSITES

DMWALK™

WANTIRNA BOARDWALKS

PROJECT CONTEXT

Parks Victoria undertook the upgrade and construction of pedestrian boardwalk infrastructure at Wantirna Trail, with the objective of improving public access while minimising long-term maintenance and environmental impact.
The projects were located within sensitive natural environments, requiring materials and systems that could withstand:

- Constant moisture exposure and potential flooding conditions
- High pedestrian usage (Class 3 track classification)
- Limited access for future maintenance

Traditional materials such as timber and steel presented durability and lifecycle challenges in these conditions. As a result, the project team explored FRP (Fibre Reinforced Polymer) systems as a long-term solution.

LOCATION:

High St Rd, Wantirna South (VIC)

CONSTRUCTION COMPLETION:

March 2026

DM COMPOSITES' ROLE

DM Composites was engaged to deliver a design and supply package for the complete FRP boardwalk system, ensuring the structure could be constructed efficiently while meeting all performance and compliance requirements.

Our role included:

Design & Engineering

- **Review of project requirements and existing design intent**
- **Structural design adaptation to FRP materials**
- **Engineering certification and recertification of the system**
- **Load compliance (3kPa UDL in accordance with AS 2156 Track Class 3)**

Detailed Documentation (IFC Level)

- **Full shop drawings including marking plans, framing layouts, and pile coordination**
- **Grating layouts and cutting schedules for site installation**
- **Connection detailing and fixing specifications (SS316 hardware throughout)**

Supply of FRP System

- **Pultruded FRP structural members (bearers, joists, kerb rails)**
- **30mm FRP mini-mesh grating decking system (DMGM301919)**
- **All associated fixings and proprietary components**

Technical Support

- **Ongoing coordination during construction**
- **Guidance on handling, cutting, drilling, and installation of FRP components**
- **Ensuring buildability and alignment with site conditions**

TECHNICAL DESIGN SOLUTION

The boardwalk systems were designed using pultruded FRP structural profiles and mini-mesh grating, delivering high durability in exposed environments.

From the Wartina Boardwalk IFC drawings:

- Decking System: 30mm FRP mini-mesh grating (DMGM301919)
- Design Load: 3 kPa UDL (AS 2156 Track Class 3)
- Resin System: Premium ISO resin for enhanced durability and UV resistance
- Design Life: 50 years (engineer-certified system)

The structural framing included:

- FRP PFC bearers (DMB-PFC-152 series)
- FRP joists (external and internal configurations)
- Integrated kerb rail system using FRP RHS members

All components were designed in accordance with Australian Standards and FRP industry guidelines, including ACMA and ASCE pre-standards for pultruded structures.

DESIGN APPROACH

As part of the design scope, DM Composites undertook:

1) Design Validation & Recertification

Existing concepts were reviewed and adapted to FRP, ensuring structural equivalency and compliance.

As noted in the drawings, DM is responsible for recertification of the original design using composite materials.

2) Detailed Shop Drawings (IFC Level)

Full marking plans were developed, including:

- Boardwalk geometry and levels
- Pile layouts and coordinates
- Framing layouts and member schedules
- Grating panel layouts and cutting plans

This ensured the boardwalks could be installed efficiently with minimal rework.

3) Modularisation & Supply Optimisation

FRP components were supplied in standard stock lengths, with cutting and drilling undertaken on site, reducing fabrication cost and improving logistics efficiency .

KEY CHALLENGES

Integration with Existing / Civil Works

The design had to align with piling layouts and civil tolerances, requiring tight coordination between structural design and site conditions.

Fast-tracked Installation

As a design & supply package, the system needed to be:

- Easy to install
- Clearly documented
- Tolerant to site variations

Material Behaviour

FRP requires different handling compared to steel or timber. The design accounted for:

- Thermal movement allowances
- Drilling and cutting requirements
- Protection and sealing of exposed fibres

Outcome

The Wantirna project delivered:

- Fully engineered FRP boardwalk systems ready for installation
- Accurate IFC documentation enabling efficient site execution
- Durable, corrosion-resistant infrastructure aligned with Parks Victoria requirements
- Reduced long-term maintenance compared to traditional materials

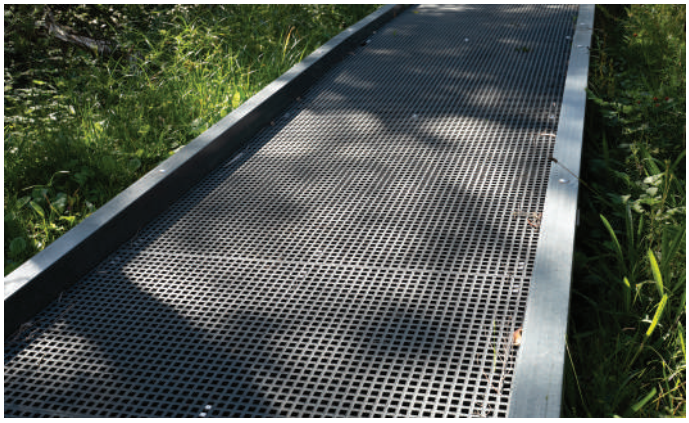
The projects demonstrate DM Composites' capability to deliver high-quality FRP packages that integrate seamlessly into any delivery models.

WHY DM COMPOSITES WAS SELECTED

DM Composites was engaged based on its ability to provide a complete, buildable FRP solution, not just material supply.

Key differentiators included:

- Proven experience converting traditional designs into FRP systems
- Strong in-house drafting and detailing capability (IFC-level output)
- Understanding of installation requirements
- Ability to supply a fully coordinated structural package
- Compliance with Australian Standards and long-term durability requirements



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