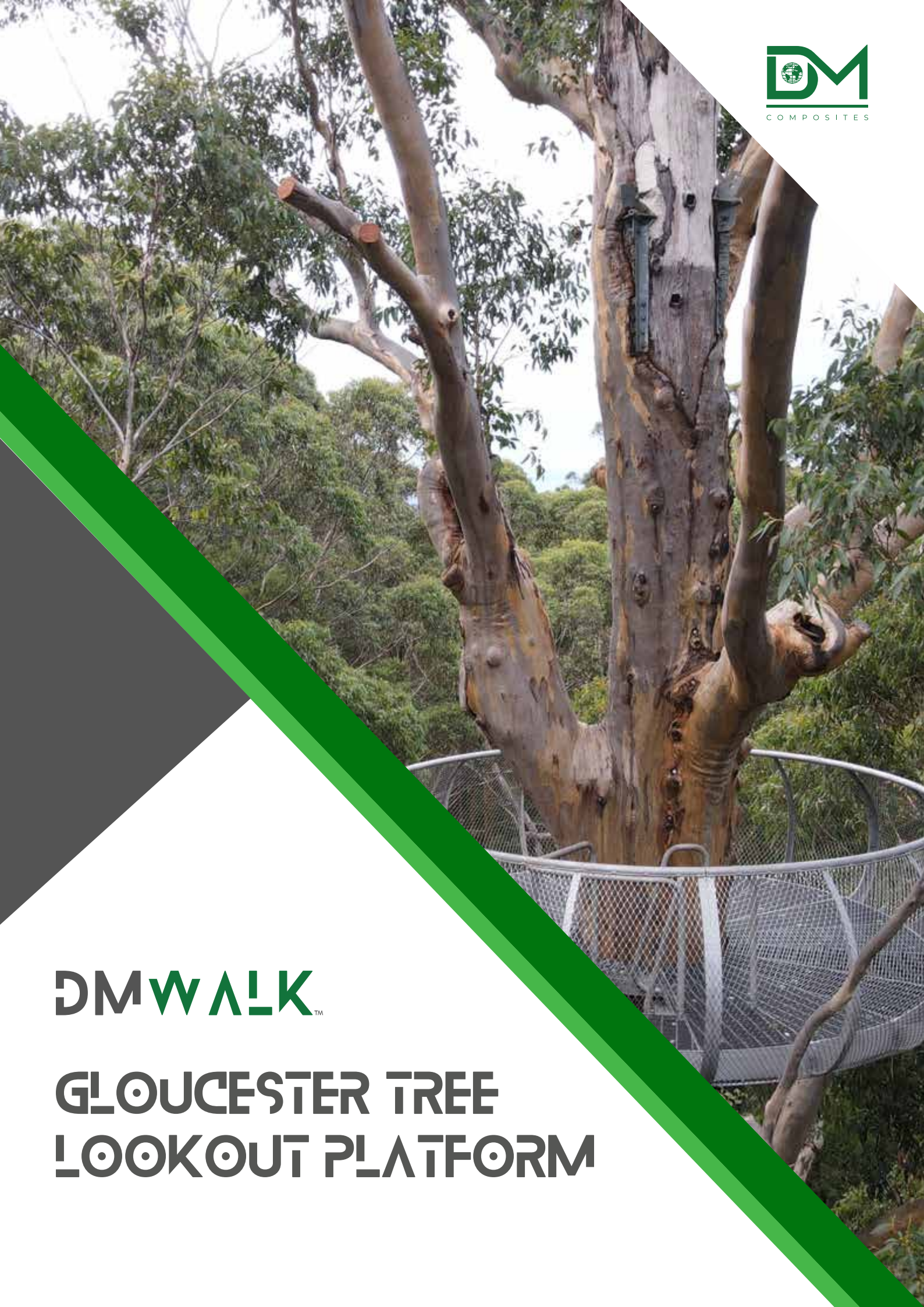


DM COMPOSITES

DMWALK™

# GLOUCESTER TREE LOOKOUT PLATFORM

## PROJECT OVERVIEW

The Gloucester Tree is one of Western Australia's most recognisable tourism landmarks, historically used as a fire lookout and later opened to the public as a climbing attraction.

Following structural deterioration identified in 2023, the upper section of the tree was decommissioned and a new platform was required to:

- Provide safe public access into the canopy
- Reduce structural stress on the living tree
- Extend the life of a 300+ year-old karri tree

DM Composites was engaged for the design and supply of prefabricated platform components, with Precision Contracting appointed as the principal contractor responsible for the construction and installation of the project.



**LOCATION:**

Pemberton (WA)

**CONSTRUCTION COMPLETION:**

July 2026



## DESIGN & SUPPLY SCOPE

- Structural design verification and certification of FRP system
- Detailed shop drawings and fabrication documentation
- Supply of:
  - o FRP grating decking system
  - o 2205 Duplex structural framing components
  - o 316 Stainless Steel Balustrade and mesh infill system
  - o Fixings and proprietary connection systems

**All works were delivered in accordance with DBCA design documentation and Australian Standards.**







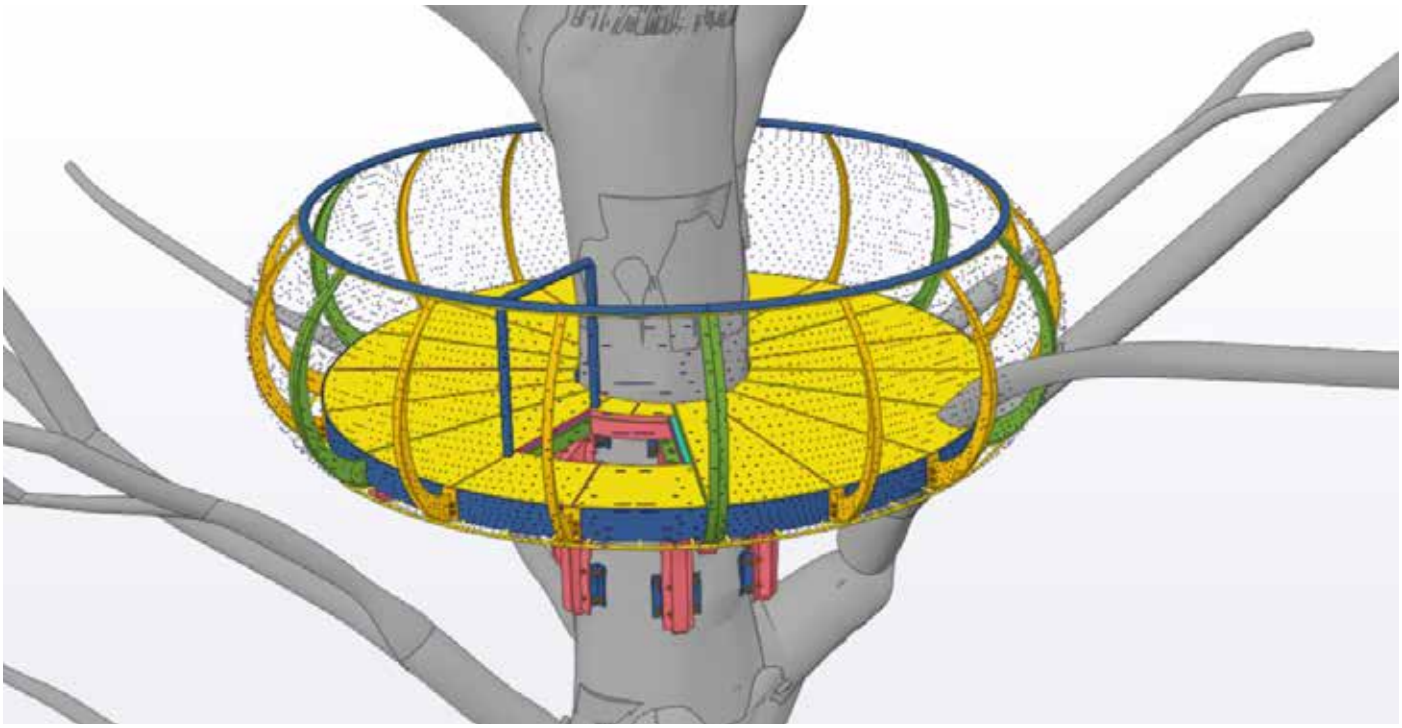
# ENGINEERING & DESIGN CHALLENGES

## 1. Designing Around a Living Structure

Unlike conventional structures, the platform had to interface with a living, growing tree:

- Variable trunk geometry required custom templated brackets
- No rigid constraint allowed — system designed to accommodate future tree growth
- Controlled offset between structure and trunk to prevent damage

The platform framing design was developed using the tree's 3D profile and available site measurements to accommodate its unique geometry.



## 2. Circular Modular Platform Geometry

The structure consists of a fully circular, segmented platform system:

- Approx. 4.4m overall diameter
- Designed and fabricated in four modular segments for efficient transportation.
- Integrated access hatch aligned with existing climbing pegs
- Radial framing system distributing loads evenly around the tree

The modular design enabled precise off-site fabrication and efficient transportation while maintaining tight dimensional tolerances.

## 3. Sturdy Structural Solution

Duplex 2205 selected for:

- Extreme Corrosion resistance in outdoor environment

Design loads included:

- 4.0 kPa live load (public access)
- Wind loading to AS/NZS 1170 (Region A1)



## 4. Hybrid FRP + Duplex Stainless Steel System

The final system combined:

- Rectangular mesh FRP grating (38mm anti-slip) for decking
- Duplex 2205 stainless steel for primary structural framing
- Stainless steel mesh balustrades for safety

Key benefits:

- Long-term durability in outdoor environment
- Minimal maintenance requirements
- Compatibility between FRP and stainless fixings to avoid galvanic corrosion

### 5. Precision Fabrication & Tolerances

Given the circular geometry and site constraints:

- Tight fabrication tolerances (±2–4mm across components)
- Pre-rolled steel members to match curved geometry
- Coordinated connection detailing between:
  - FRP panels
  - Structural frame
  - Balustrade system

The components were detailed and prefabricated off-site to maintain dimensional accuracy, material consistency and compatibility between the structural elements.







## ENVIRONMENTAL & DESIGN CONSIDERATIONS

The design and supply of the platform components required consideration of the Gloucester Tree's unique geometry and the surrounding protected forest environment.

Key design considerations included:

Accommodating the natural geometry and future growth of the living tree.

Minimising additional structural loading on the existing tree.

Incorporating durable, corrosion-resistant materials.

Developing a modular system suitable for off-site fabrication and transportation.

Providing connection details compatible with the specified structural components.

The design approach focused on structural efficiency, material durability and compatibility with the project's environmental requirements.

## OUTCOME

Completed the design and supply of prefabricated components for the Gloucester Tree Lookout Platform.

Supplied an FRP and stainless steel platform system designed to accommodate the tree's unique geometry.

Provided modular structural components intended to support efficient transportation and assembly by the appointed contractor.

Demonstrated the application of FRP and stainless steel materials in a specialised, environmentally sensitive project.

## KEY TAKEAWAYS

Specialised design and supply capabilities for complex structural systems.

Experience developing prefabricated components for environmentally sensitive applications.

Technical expertise in hybrid FRP and stainless steel systems.

Ability to provide customised material solutions for non-standard project requirements.



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