FRP ENGINEERING

CASE STUDY

CORROSION-RESISTANT ACCESS, ENGINEERED TO LAST

A custom FRP handrail system delivering durable, low-maintenance access infrastructure in a harsh coastal environment.

THE PROJECT

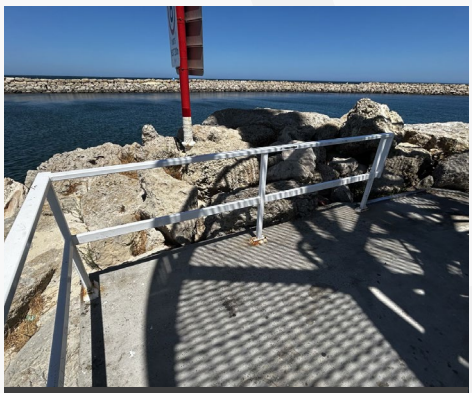
Project Category:	**Marine Infrastructure – Lighthouse Handrail Replacement**
Scope of Work:	**Design, fabrication and installation of approximately 75 linear metres of FRP handrails across lighthouse stairways, landings and perimeter walkways.**
Solution:	**A custom-engineered FRP handrail system utilising corrosion-resistant profiles, fixings and mounting components.**
Project Challenges:	**Replacing deteriorated metal handrails in an exposed marine environment while integrating with existing concrete structures and multiple access levels.**

THE SOLUTION:

The Hillary's Boat Harbour lighthouse required a durable handrail replacement solution following corrosion of its existing metal infrastructure. Constant exposure to salt spray, moisture and coastal winds had caused deterioration around handrail connections and mounting points.

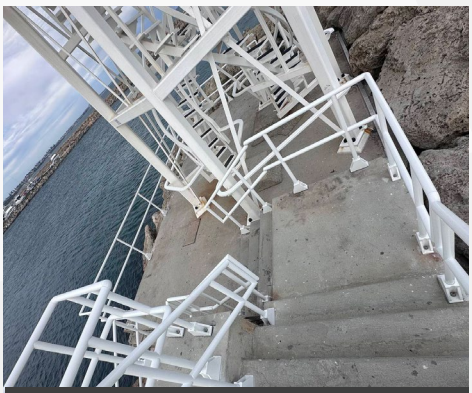
Following a detailed site assessment, FRP Engineering designed and installed a custom FRP handrail system suited to the existing stairways, landings and perimeter walkways. The corrosion-resistant solution provides long-term durability while reducing ongoing maintenance requirements.

BEFORE FRP:



Corroded Handrails and Ongoing Maintenance

AFTER FRP:



Corrosion-Resistant Access and Safety

Durable, Low-Maintenance Infrastructure

FRP ENGINEERING

LIGHTHOUSE HANDRAIL REPLACEMENT

CASE STUDY

THE FRP APPROACH:

Site Assessment & Design

Site inspection, detailed measurements and custom handrail configurations developed to suit existing concrete structures, access requirements and AS 1657 compliance.

Offsite Fabrication

FRP handrail profiles, connections and mounting components prefabricated to minimise onsite cutting, disruption and installation time.

Single- Lift Installation

Existing metal handrails removed and replaced with prefabricated FRP components over approximately five working days, ensuring an efficient installation process.

Final Inspection & Handover

Completed handrail system inspected to verify secure fixings, alignment, safety and compliance with project requirements.

THE FRP RESULT

Improved Safety

Deteriorated metal handrails were replaced with a durable FRP system, improving access infrastructure across stairways, landings and exposed walkways.

Efficient Installation

Prefabricated FRP components enabled approximately 75 linear metres of handrails to be installed within five working days.

Reduced Maintenance

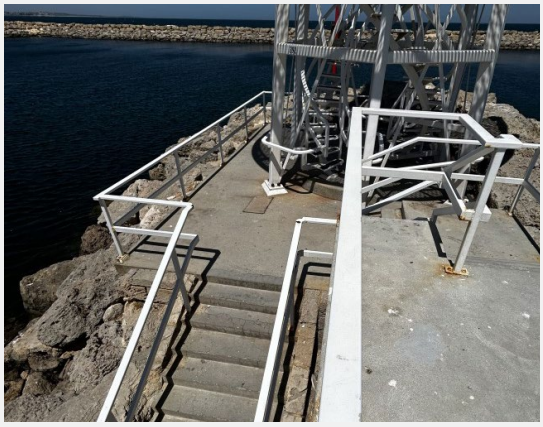
Corrosion-resistant FRP eliminates the need for ongoing rust treatment and protective repainting associated with conventional metal handrails.

Improved Coastal Access

Custom handrail configurations provide continuous protection across multiple access levels while integrating with existing lighthouse infrastructure.

Long-Term Durability

FRP materials offer excellent resistance to salt spray, moisture and harsh coastal conditions, providing a low-maintenance solution designed for long service life.



FRP PRODUCTS USED:

- Pultruded FRP Handrail Profiles
- FRP Handrail Posts
- FRP Rails and Connectors
- Corrosion-Resistant Fixings
- FRP Base Plates and Mounting Components

CONTACT US

For more information on our range, email us on enquiries@frpengineering.net or call us at (08) 9455 4343 to discover our range today!