Appendix 26

Powerhouse Fast-track Application

One Mile Walking Track Elevated Fibreglass Track Quotation

Prepared by Wagners CFT

Mark Baker
Sales, New Zealand

Scott Brown
Estimator, Australia

15 December 2025

WAGNERS

- CONSTRUCTION MATERIALS
- TRANSPORT SERVICES
- CEMENT, FLYASH & LIME
- PRECAST CONCRETE
- REINFORCING STEEL
- COMPOSITE FIBRE TECHNOLOGIES

HEAD OFFICE:
1 AIRPORT DRIVE
1511 TOOWOOMBA CECIL PLAINS ROAD
WELLCAMP QLD 4350

POSTAL ADDRESS:
PO BOX 151 DRAYTON NORTH QLD 4350

INT. PREFIX NUMBER
TELEPHONE: (617) 4637 7777

EMAIL: cftsales@wagner.com.au

Certified System
Quality
ISO 9001
SAI GLOBAL

WAGNERS HOLDING NZ LIMITED
NZBN 94 290 476 757 66

Monday, 27 January 2025

ADDRESSED TO:
Bowen Peak Limited
Guy Hingston

25-019 WCFT Budget Estimate for the Design and Supply of the Bowen Boardwalk and Stairs

Wagners Composite Fibre Technologies (WCFT) are pleased to present the following Budget Estimate for the Detailed Design and Supply of the Bowen Boardwalk and Stairs.

WCFT – Royal Auckland Pedestrian Bridge, NZ

Wagners is an ISO 9001:2015 accredited company with over 15 years' experience design, manufacturing and installing composite structures in Australia and around the world.

Price Summary

- Detailed Design and Certification of Structures
- WCFT Structural Members
- WCFT 30mm Mini Mesh Decking

Item	Description	Unit	Qty	Rate	Total
1.00	**Stage One**				
1.01	WCFT Stairs 250m x 1.5m	m2	375	$ 2,288.25	$ 858,093.75
1.02	WCFT Boardwalk 250m x 2.4m	m2	600	$ 1,002.95	$ 601,770.00
				Stage 1 Total	**$ 1,459,863.75**
2.00	**Stage Two**				
2.01	WCFT Stairs 750m x 1.5m	m2	1125	$ 2,402.66	$ 2,702,995.31
2.02	WCFT Boardwalk 750m x 2.4m	m2	1800	$ 1,053.10	$ 1,895,575.50
				Stage 2 Total	**$ 4,598,570.81**
3.00	**Predator Free Fencing 8.7km**				
3.01	WCFT 178 Posts @ 3,000mm	each	2901	$ 320.55	$ 929,915.55
				Predator Free Fencing	**$ 929,915.55**
4.00	**Option Items**				
4.01	Stage 1 WCFT Poles (4m High, Anchor Base)	each	34	$ 1,730.00	
4.02	Stage 2 WCFT Poles (4m High, Anchor Base)	each	100	$ 1,816.50	
4.03	Stage 1 WCFT Poles (4m High, Direct Bury)	each	34	$ 1,230.00	
4.04	Stage 2 WCFT Poles (4m High, Direct Bury)	each	100	$ 1,291.50	
				Option Items	**TBC**

Important Notes

- *All prices above are in $NZD.*
- *Boardwalk and Stair Piles have been estimated as bolted to concrete footings at 3,000mm spacings and assume a maximum elevation of 1,000mm above ground. Should geotechnical investigation (by others) and detailed design indicate this option be unsuitable a requote will be required.*
- *The Predator Free Fencing Post are assumed to be cast 500mm into the ground. Should geotechnical investigation (by others) and detailed design indicate this option be unsuitable a requote will be required.*

Estimate Inclusions:

- 7 Year Warranty on WCFT Elements
- Detailed Design and Certification of WCFT Structure
  - 100 Year Design Life
  - Design in Accoradance with AS2156 Walking Track Class 3
    - Deflection Criteria L/250
  - 3kPa Live Load, 1.4kN Point Load
- WCFT Stairs
  - WCFT Piles, Bearers and Joists
  - WCFT Handrails, Top and Bottom Rails (one side)
  - 90x40 Recycled Plastic Kickrails (one side)
  - 30mm Mini Mesh Decking and Stair Treads
  - All Associated 316 Grade Stainless Steel Connection Hardware
  - Delivery to Queenstown, NZ
- WCFT Boardwalk
  - WCFT Piles, Bearers and Joists
  - WCFT Handrails, Top and Bottom Rails (one side)
  - 90x40 Recycled Plastic Kickrails (one side)
  - 30mm Mini Mesh Decking
  - All Associated 316 Grade Stainless Steel Connection Hardware
  - Delivery to Queenstown, NZ
- WCFT Predator Free Fencing
  - WCFT 178 Piles
  - Delivery to Queenstown, NZ

Estimate Exclusions

- GST
- As Built Certification
- Site Principal Responsibilities
- Design or Supply of Concrete Approach Pathways
- Unloading Onsite or Costs Incurred Due to Delays
- Crane or Forklift Hire for Unloading Onsite
- Installation or Any Works Onsite Whatsoever
- Geotechnical Investigations, Reporting or Associated Costs
- Site Survey, Setout or Associated Costs
- Ecological or Environmental Studies or Works
- Arborist Reviews, Reporting or Associated Works
- Flood, Hydrological or Wave Load Studies or Associated Design considerations
- Pre-Drilling or Inserting of Members
- Prefabrication or Assembly of Structural Segments
- Plantation, Vegetation or Landscaping Works
- Rip Rapping, Rock Protection or Retaining Walls
- Drainage Infrastructure, Erosion Control or Slope Stability Analysis
- Traffic or Pedestrian Control or Management
- Location / Relocation or Existing Services
- Permits and Approvals
- Lighting or Electrical Infrastructure
- Signage, Line Marking or Tactile Indicators
- Any items other than the WCFT 178 CHS for the Predator Free Fence (Woven Wire, Galvanized Iron Hat etc)
- Contractual or Locked in Pricing (Budget Estimate Only)
- Anything Else Not Specifically Mentioned in “Inclusions” Above

Chesterhope Bridge Clip-On, New Zealand

The FRP Design Methodology is Based on the Following:

- FRP design is undertaken to EUROCOMP design code by John L Clarke and rigorous in-house testing by WCFT overseen by Third Party Certifying Engineering Consultants.
- The design of FRP structures follows the same logic as any other material whether it is concrete, steel or timber. There will be a structural 3D model that we apply dead, live, wind, water, thermal and earthquake loads too (where applicable). We also model for pedestrian induced excitation using Strand7 FEA software.
- FRP structures are typically deflection and vibration driven due to their inherent low modulus of elasticity.
- Ultimate strength design of FRP structures is more focused around connection capacities. Members that are highly stressed are designed to ULS methodology by using WCFT member bending and compression capacities for their appropriate effective lengths. Combined actions are also considered.
- Bolted connections have undergone ULS testing to AS/NZS 1170.0 and fatigue testing to 2 million cycles with ULS spike loading every 100k cycles. The bolts typically fail before the FRP shows signs of failure.
- Typically, anything that cannot be calculated with modelling or theoretical calculations has been verified with testing.
- Factors of safety on FRP members are larger than other materials. Short term reduction factor is 0.79 and long-term factor is 0.32 to account for creep rupture effects.

WCFT – Shaws Bay Boardwalk NSW

Why Choose a Wagners Composite Fibre Technology Solution?

We have supplied girder bridges across Australia from the sweltering tropics to the burning deserts. Our composite structures are uniquely suited to withstand the harshest environments while providing a low maintenance, long life asset to the local community. Our materials are perfect for costal, marine and environmentally sensitive areas. From tidal flood plains and protected mangrove swamps to alkaline desert and corrosive mining facilities, our structures have proven time and again their unique durability and strength. Possessing a full in-house design and certification team, we will work hand in hand with your staff to ensure a robust, aesthetically pleasing pedestrian asset that will provide decades of service.

ADVANTAGES OF OUR PEDESTRIAN BRIDGES:

- Low Maintenance
- Long Life Span
- Will not Rust, Rot or Corrode
- Termite Proof
- Light Weight
- Quick and Easy Installation *(Modularized Design)*
- Prefabrication and Scheduled Works Delivery
- Inert, Environmentally Stable Material
- Environmentally Friendly

Mass – Fibre Reinforced Polymer

Fibre Reinforced Polymer is light weight by design and in comparison, to hardwood timber, is a 1/3rd of the weight. The lightweight nature of the products makes for easy shipping, handling and moving on site, and greatly reduces risk on site and injuries due to heavy lifting. It also has an impact on the requirement for large machinery and installation times as less employees are required to handle the product. All FRP is not manufactured equally and to the same standards and quality. Wagners prides itself in being the only Australian manufacture of structural FRP SHS.

Longevity of Structure – Design Life and Durability of Wagners CFT

Glass fibre composite or fibre reinforced polymer (FRP) materials offer high strength, low weight, and long service lives as they are not prone to corrosion, rot or shrinkage as other materials more traditionally used by civil industry. The high salinity of the swampland region waters, and frequently expected inundation means that traditional framing materials, such as galvanised steel and timber, are not viable options. By using composite materials, the asset owner can virtually eliminate their ongoing maintenance costs and therefore significantly reduce the whole of life costs for the project.

A life cycle cost analysis performed by a local council found that the use of fibre composites for boardwalk superstructures can effectively half the 50-year whole of life costs when compared to hardwood timber, and lower costs by almost 50% when compared to steel. The FRP materials used were manufactured using the pultrusion process creating sections that are geometrically similar to rolled-steel rectangular hollow sections (RHS). This process combines a vinyl ester resin with an ECR-type (corrosion resistant) glass, resulting in high-strength structural components that are not prone to rot, corrosion or shrinkage. An additional polyester external veil and 2-pack paint is added to further increase its UV resistance and durability

Features and Benefits

- Durable – Will not Rot, Rust, Erode or Decay
- Light Weight
- Easier to Work with than Timber
- Low Maintenance
- Low-Cost Installations
- 75-100 Year Lifecycle

Wagners Background

Fibre reinforced polymers have proven themselves as the material of choice in high performance applications such as the Aerospace and Marine industries. As the use of Fibre reinforced polymers have become more common their benefits have been realised by other industries and their use and acceptance by civil engineers has greatly increased in recent years. Fibre reinforced polymers offer high strength, low weight, and long service lives as they are not prone to corrosion, rot or shrinkage unlike other materials more traditionally used by the construction industry. Wagners CFT is expanding the use of fibre reinforced polymers in Australia and throughout the World, exporting products from Toowoomba Queensland to locations such as the United States, Russia, and Malaysia.

Wagners use the 'Pultrusion Process' to manufacture structural FRP sections. These sections are similar in geometry and shape to traditional cold-formed steel 'RHS' sections but are made from glass fibre and vinyl ester resins. The material combination has been chosen by Wagners to provide the best structural solution for an economical cost. Electrical-Corrosion Resistant (ECR) Type Glass has been selected as the initial building block for all Wagners FRP products. This high-grade material has been selected for its impressive strength performance and workability. ECR Type Glass is also widely reported as having excellent chemical resistant characteristics. To bind the glass fibre together, Wagners uses Vinyl Ester (VE) resin. VE resin has been selected over unsaturated polyester and epoxy resins because it provides strength and chemical resistant properties similar to epoxy resin to a significant cost advantage. In general, Wagners does not recommend the use of polyester resins for structural applications.

Current applications of the Wagners composite fibre products include:

- Power Pole Cross arms
- Boardwalks and Pedestrian Bridges
- Road Bridges
- Pontoons and Jetties
- Various Mine Structures
- Piping, Casing & Tubing
- Reinforcing (Rebar)

Ocala Wetlands Boardwalk, Florida, USA

FRP Sections

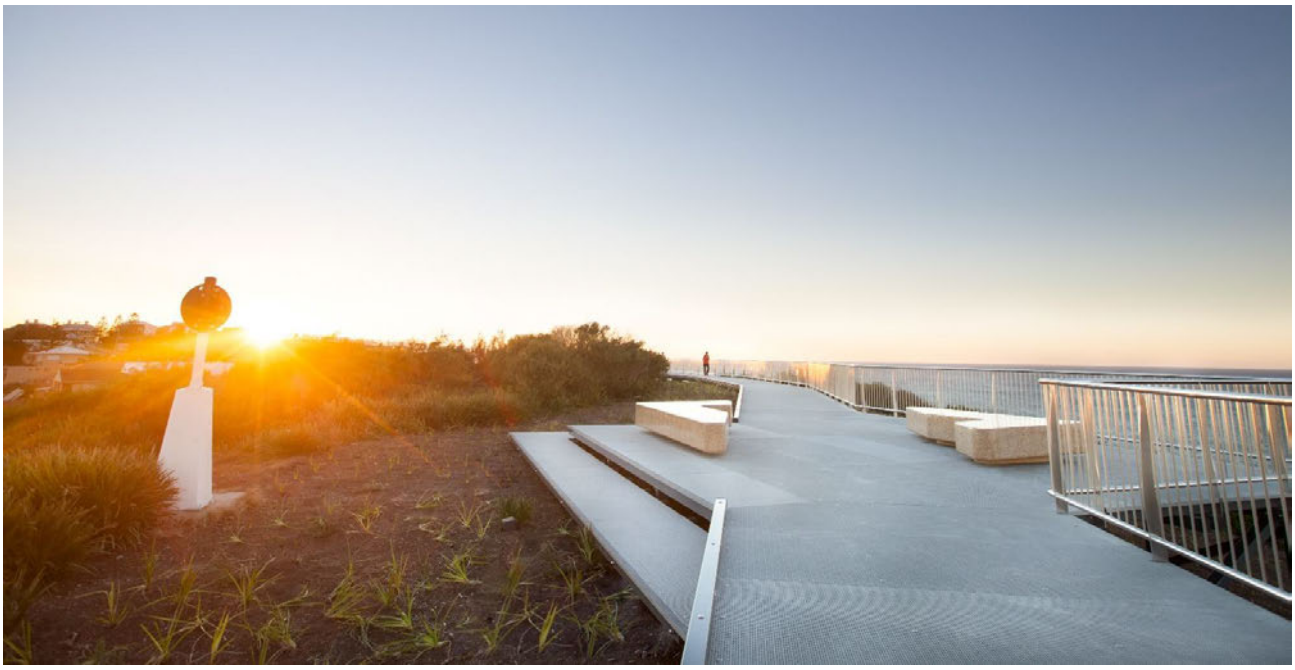
The Wagners CFT pultruded Fibre Reinforced Polymer (FRP) products have many inherent environmental advantages.
These include:

- Low Embodied Energy
- Thermal Insulator – Conserves Energy While Reducing Operating Costs
- Durable – Longer Life Cycle Reduces Maintenance and Replacement Costs

Wagners CFT's pultruded FRP products are currently used as substitutes for hardwood in marine and other corrosive environments where they offer longer life with no detrimental impact on these environments. With hardwood forests in decline around the world, the use of fibre reinforced polymer products in these applications will help preserve this important natural resource.

The same benefits apply to the use of Wagners pultruded FRP products in place of steel, aluminium and reinforced concrete. Key findings of a cradle-to-grave life cycle analysis by Kara and Manmek (2009) from the Life Cycle Engineering & Management Research Group at The University of New South Wales were: "In general, the life cycle of the fibre reinforced polymer products have significantly lower embodied energy than the traditional products. The embodied energy of each life cycle stage of the composite products is given as follows:

- **Material Stage**: Fibre reinforced polymer products have significantly lower embodied energy during their material stage the traditional product. This is large due to the traditional materials require a relatively high amount of energy during their extraction process.
- **Manufacturing Process**: Most of the fibre reinforced polymer products have higher embodied energy than the traditional products during the manufacturing process stage.
- **Usage Stage**: Fibre reinforced polymer products perform significantly better than the traditional products at the usage stage. This is owing to their lightweight and corrosive resistance properties.



Memorial Walk, Newcastle, NSW

Previous Projects – Royal Auckland Golf Bridge (A2)

Client:	Royal Auckland Golf Bridge
Location:	Auckland, New Zealand
Dimensions:	45.5m Long x 3.55m Wide
Brief:	Wagners Design Supplied the Royal Auckland Golf Bridge multiple sections, spanning 45.5m and using Top-Down construction methodology to complete the project in challenging terrain.
Reference	Craig Langsford Email: s 9(2)(a) Phone: s 9(2)(a)

Previous Projects – Townsville Stadium Boardwalk

Client:	Watpac
Location:	Queensland, Australia
Dimensions:	180.0m Long x 4.0m Wide
Brief:	The design intention of the Townsville Stadium boardwalk was to create an aesthetically pleasing pedestrian link that encircled the newly constructed Townsville Stadium. Additionally, the boardwalk had to be utilized to traverse rough terrain in the region surrounding the stadium.
Reference	Watpac- Glen Watson Project Manager Email: s 9(2)(a) Phone: s 9(2)(a)

Previous Projects – Ocala Wetlands Boardwalk

Client:	City of Ocala
Location:	Florida, USA
Dimensions:	Boardwalk 1 – 128m Long, Boardwalk 2 – 220m Long, Boardwalk 3 – 112m Long
Brief:	Wagners Design and Supplied the Ocala Wetlands Boardwalk system which included 3 boardwalks of varying lengths and 3 Jetty Platforms. The Ocala Wetland Recharge Park features educational kiosks, 2.5 miles of walking trails, and scenic boardwalks. The park opened on September 21, 2020
Reference	Richard Castillo- Capital Project Manager Email: s 9(2)(a) Phone: s 9(2)(a)

WAGNERS STANDARD TERMS & CONDITIONS

Placement of Orders:

All orders are to be sent to cftsales@wagner.com.au with a copy to the relevant estimator and sales representative.

Payment Terms:

Prior to any orders being placed a credit application will have to be completed and reviewed.
Payment terms are net 30 days from date of invoice in accordance with the building & construction industry payment act, if satisfactory open account credit is established Wagner CFT reserves the right to revoke or modify any credit at its sole discretion. Click here to download the Credit application, which will set as per the month AU Dollar value, where this value is exceeded adjustment to order will be made to maintain limits.

A hard copy of this form will need to be mailed to Wagners (PO BOX 151, Drayton North, QLD 4350)
Works will not proceed until this application is processed, please allow for this in your programming. Note that if terms are already established on a previous project, this application does not need to be completed.
(Council credit application form)

If no credit account is in place with Wagners full payment upfront with placement of order.
Title in the goods will not pass to you until full payment is received.

Progress Payments:

This quote is based on the following payment schedule:

- *At award of contract - 10% of Project sum.*
- *Design completion – 10% of the contract sum or the full design amount specifically listed in the quote*
- *Monthly Progress Claims – Wagner's will invoice monthly for works as fabricated. This includes works in progress and not yet delivered to site.*

Title in the goods will not pass to you until full payment is received.

Goods Fit for Purpose:

Whilst all care has been taken to ensure that the items quoted are those intended for use, Wagners will not be held liable for any errors not brought to their attention prior to receipt of your order. Please be sure to check that quoted items are as required according to your email and the engineer's design.

***Colour**:*

Please ensure that colour is specified at time of order. Codes can be obtained from this colour chart. Please Note there may be shade variations from batch mixes. Colours such as yellow and midnight blue will attract additional charges.

***Optional Offer to Provide a Supervisor**:*

Wagners would be pleased to offer a supervisor to train your team, if required, at the rate shown below; Wagners standard recommendation is to allow 1 week if this is your first time using our system.

1. *Day rate of $750 per day*
2. *Expenses (Return airfares to nearest airport from Brisbane, hire car and accommodation, where applicable)*

Qualifications:

Supply agreement to be in accordance with the Brief and Design documentation, or except as otherwise agreed in Contract.

Delivery of WCFT Members:

Expected delivery of Wagners Manufactured Composite Fibre Material is generally 6 weeks from date of confirmation of design details for Australian locations, if you already have credit terms with Wagner CFT. Decking material can take up to 12 weeks from confirmation of design details dependant on the type chosen. Lead times for International orders will vary pending shipping lines, port delays and freight carriers schedules.

Wagners CFT take no responsibility for delays caused by International shipping, and will not be held liable to penalties or damages caused by freight delays.

Once the Composite Fibre Material has been delivered, you will have 14 days to inspect and accept the goods. If you do not give written notice by the end of this 14-day period that the goods supplied have not been manufactured in accordance with the Brief and Design documentation (or otherwise as agreed in the Contract) including details of why the goods are not accepted, then you will be forever barred from making any claim against Wagners CFT arising out of the manufacture and supply of the goods (insofar as is permitted by law) and Wagners CFT will not be liable for any claim made by you.

Threaded Rod:

Threaded rod may be supplied over length and is expected to be cut, on site at no cost to Wagner's.

Validity:

If this Tender is not accepted in writing within 30 days from the date of tender, the prices quoted may be subject to revision unless otherwise specified.

Indemnity / Liability:

The Contractor shall indemnify the Customer for loss or damage to the Customer's property and liability for death and injury to persons caused directly by a breach of this contract or negligence of the Contractor. The Contractor's liability shall be reduced to the extent that loss or liability is caused or contributed to by any act, error or omission of the Customer, its agents or other contractors.

No party shall be liable (including without limitation under any indemnity) to the other in any circumstances (under this contract or otherwise) for any consequential loss including without limitation, loss of profits.

Contract Conditions:

Where applicable, this offer is based on the assumption that mutual agreement will be reached, particularly with regard to contract terms & conditions, payment conditions and if necessary, proposed working hours.

Final Design:

This quote is based on initial tender drawings, if there are significant changes required in the final design this will constitute a variation.

Quantities:

Wagner's endeavours to maintain prices at competitive levels, and as such our standard price lists are based on a certain level of production efficiency through our workshop. Small orders however do not allow these efficiencies to be achieved so the following additional charges can apply to your order:

1) *A fee of $100 admin applies for orders less than $1000*
2) *For orders less than 50m of pultrusion in a non-standard colour a surcharge of $50 applies*

Damages / Liquidated Damages:

Shall not apply.

Tooling:

Wagners have not allowed for any specialist tooling in the above proposal (unless explicitly stated). Wagners can supply the following tooling items as follows:

- *WCFT Drill Jig and Bits $ 650.00 (Buy) or $ 50.00 (weekly hire)*
- *WCFT End Cap Groover $ 300.00 (Buy) or $ 20.00 (weekly hire)*
- *Diamond Cutting Discs (4'') $ 72.00 (Buy)*

The maximum hire cost will equal the buy rate, return cost of the tooling is at the contractor's expense.

Consumable Items:

Wagners has not allowed for the supply of any consumable items such as packers, Enduroseal, Sikaflex etc. Pricing of these items are available upon request.

Storage:

Wagners have allowed for 2 weeks of storage for the items as listed above. Should storage of these items exceed this time limit at no fault of Wagners, a storage fee of 2% of the contract sum will be charged weekly until goods are shipped.

Thank you for your enquiry. We look forward to hearing back from you on our proposal. Please do not hesitate to contact me if you require further assistance.

Yours faithfully,

Scott Brown| Estimator | Wagners CFT

11 Ballera Court 1511 Toowoomba-Cecil Plains Road Wellcamp Business Park, Toowoomba QLD 4350
PO Box 151 Drayton North QLD 4350
Ph: s 9(2)(a) | *Mob:* s 9(2)(a)
Web: www.wagner.com.au | Email: s 9(2)(a) | *Customer Feedback: Click Here*