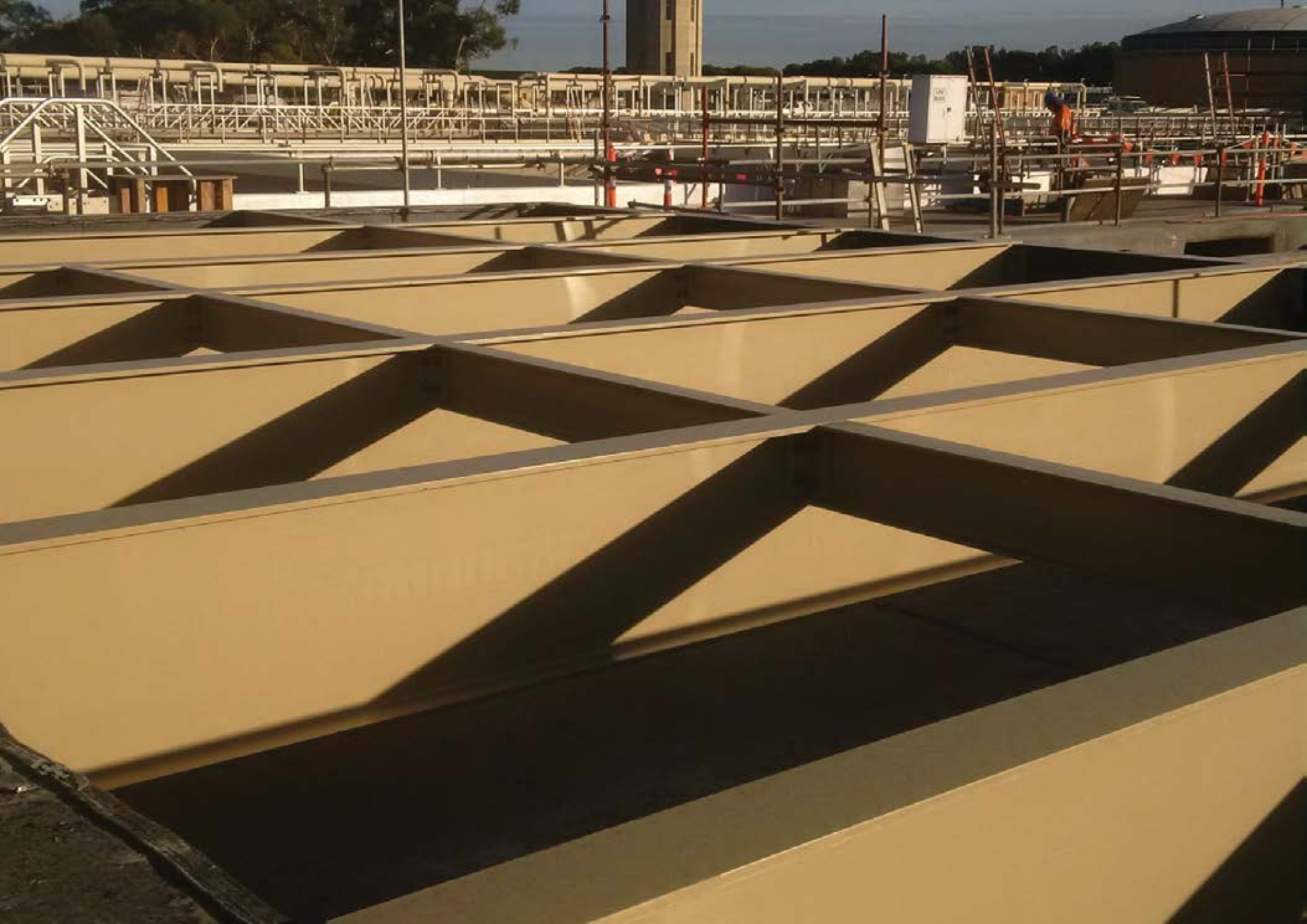
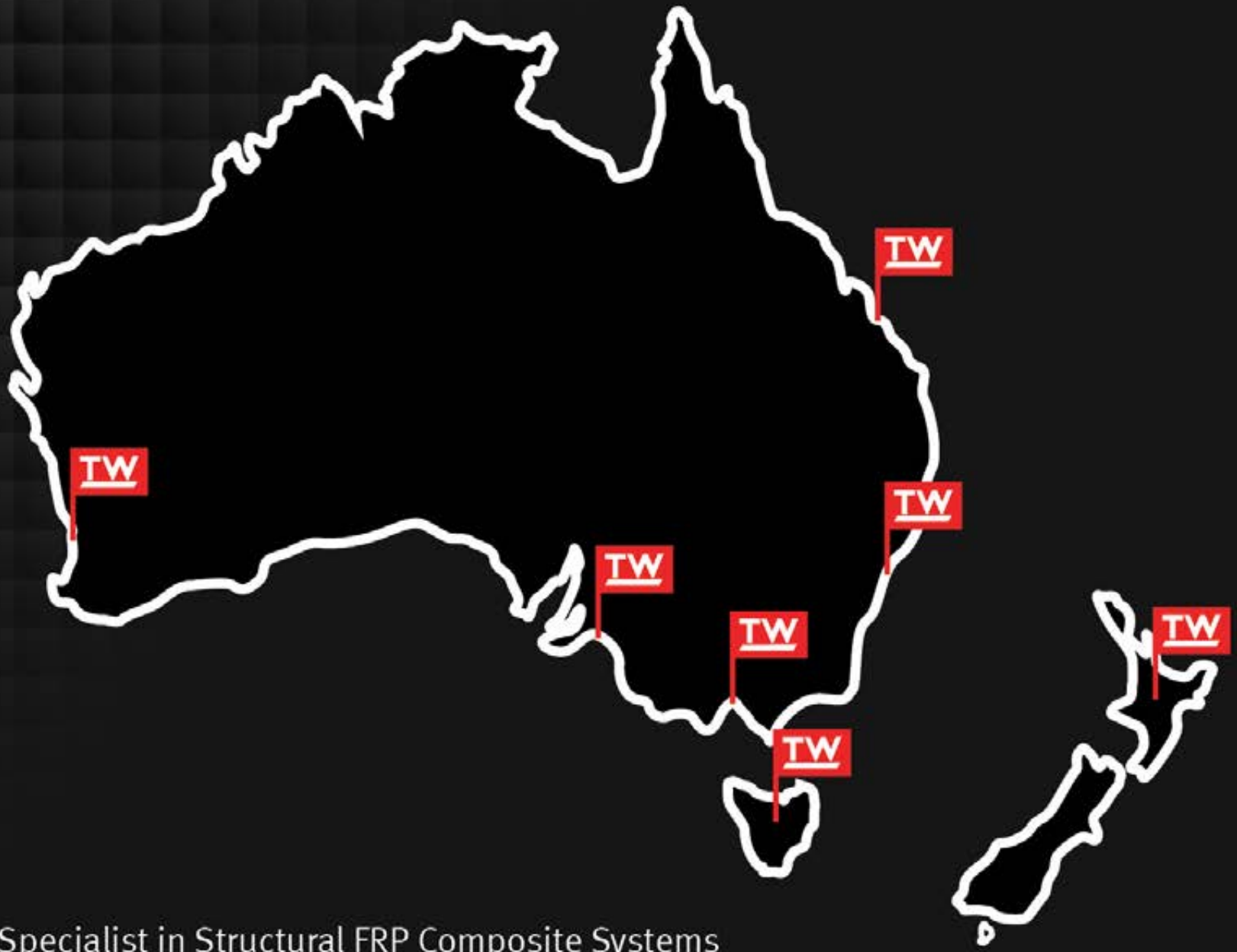
TREADWELL™

COMPLETE **"Fit & Forget"** SOLUTIONS

ENGINEERING THE FUTURE IN COMPOSITES



Introducing Treadwell



A Leading Global Specialist in Structural FRP Composite Systems
Offering Complete Design, Engineering and Fabrication Solutions

OUR CLIENTS


JBS


bam
CLOUGH


MINARA
RESOURCES


mpa
PROJECTS


bp


ConocoPhillips


CSBP


RioTinto


LAING O'ROURKE


Chevron


SP AusNet


BARRICK
NORTH AMERICA


impact
fertilisers


Cargill


bhpbilliton
resourcing the future


NSW
GOVERNMENT
Public Works
NSW Water Solutions


TASMANIA
PARKS & WILDLIFE SERVICE


LEIGHTON


Comdain
infrastructure


John
Holland


BASF


Wesfarmers Chemicals,
Energy & Fertilisers


ALCOA


CoogeeChemicals


Incitec Pivot


ExxonMobil


ORICA


DOW

THE TEAM

LACHLAN BUTCHER
National Director

GREG BUTCHER
Business Development Director

EUAN BUTCHER
Operations Director

VALERIE BUTCHER
Financial Controller

BEN BUTCHER
Technical Project Manager

MATTHEW SUTHERLAND
Business Development Executive

BRAD CHURCHMAN
Business Development Executive

DAVID FLINTOFF
Business Development Executive

ASHLEY BUTCHER
Operations Coordinator

PHIL BENNETT
Supply Chain & HSEQ Coordinator

MALCOLM TIGGEMAN
Quality Assurance Engineer

MARTIN CHURCHMAN
Project Coordinator

OUR COMMITMENT

JON BUTCHER
Managing Director

Our Secret

Treadwell has been applying excellence in engineering, design and execution in the Fibreglass Reinforced Plastic (FRP) Structural Materials Industry for several decades and is now the largest stocklist and fabricator in the region.

At Treadwell, we believe that the FRP sector is poised for evolution into new and previously uncharted territories. As a result of this expansion of applications its many benefits will prove to provide a return on investment previously unequalled by homogeneous products or metallic alternatives.

For several decades we have been applying excellence in engineering and design to achieve time and cost saving FRP solutions for clients across an extensive scope of industries. Our expertise, developed in the anti-slip industry during the early 1990's, has expanded to offer complete structural and walkway solutions which are now present in Water and Waste Water Treatment, Marine and Shipping, Public Infrastructure and Mining and Minerals to name only a few.

We are continuing to cultivate a strong culture of originality and ingenuity so that we remain 'The Innovators in FRP Technology'. Let us help you overcome the limitations of traditional materials.

Our Purpose

At Treadwell we are constantly working to maintain our lead in the competitive and fast evolving FRP products industry. By persistently providing you with revolutionary solutions in FRP we have committed ourselves to helping you avoid the unnecessary challenges that are promoted by using more primitive alternatives. With this level of engagement we are actively developing and fabricating ground-breaking FRP solutions can be applied to save you cost and time.

Our Pledge

With a powerful concentration on growth the Treadwell attitude is built around **commitment to excellence, constant innovation, honesty and integrity** and **a strong focus on safety**. With these compelling principles guiding us every step of the way to excellence we help corporations and individuals like you develop and flourish.

FRP COMPOSITES

Corrosion, Rust & Rot Proof

Treadwell's Superior Resin Systems offers exceptional resistance to acids, salts and alkalis and are totally rot and termite proof.

No Protective Coating Required

Treadwell's unique surface finishing system which ensures UV stability in exposed applications means there is no need for costly surface treatment.

Long Term Cost Benefits over time

Long service life, minimal maintenance costs and low installation costs all combine to provide a very competitive solution over time.

Virtually Maintenance Free

The need for very little maintenance doubtlessly makes RailEX™ the most favourable industrial handrail choice in today's world where continual maintenance is both difficult to manage and very costly.

Lightweight, High Strength & Easy to Install

This system is very lightweight, and therefore very manageable. FRP has specific gravity one quarter that of steel and two thirds thatof aluminium.

No Hot Work or Welding Required

FRP is very simply modified or fabricated in the field with easy to use hand tools and can be done without thehassle of first needing to obtain hot work permits.

Non-Conductive & Transparent to RF Transmission

Transparency to radiofrequency transmission and FRP's non-conductivity make this system ideal for applications exposed to strong currents and frequencies.

Competitive vs. Traditional Alternatives

FRP is both constructed from a more economical sound raw material base than metallic alternatives and it is far more structurally sound when compared to timber or other plastic alternatives.

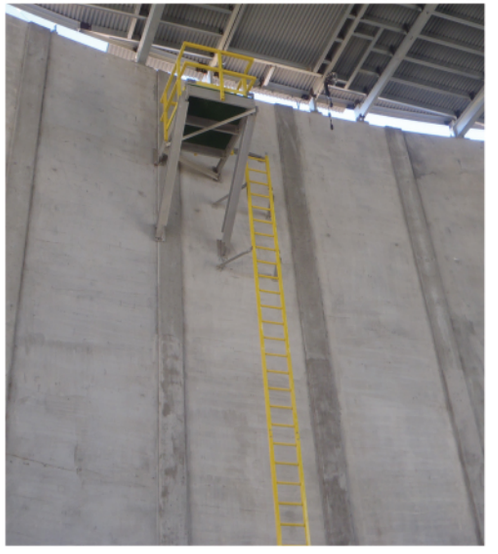
FRP Structural Sections, Grating and Handrail Staircase

GratEX® FRP Mini-Mesh Boardwalk

Treadwell FRP Structural Sections and Grating Boat Landing

ACCESS SYSTEMS

FRP Grating | FRP Handrail | FRP Ladders



The safe access and egress of personnel is one of the biggest challenges faced across all industries in todays' OH&S focused environments. To help you overcome this, ACCESS SYSTEMS products have been developed using Fibreglass Reinforced Plastic composites to provide light weight, non-conductive, hardwearing, anti-slip access solutions.

ACCESS SYSTEMS products offer huge flexibility in design and engineering, which means that the Treadwell Team is empowered to help you overcome the obstacles and challenges in your particular industry.

The **ACCESS SYSTEMS** range consists of:

GratEX® is our popular range of moulded FRP grating solutions which feature bi-directional strength characteristics and offers versatility unparalleled by other products in its field.

GridEX® is our pultruded FRP grating range which provides fantastic uni-directional strength and higher point loading capabilities.

MoultrEX® is a superb combination of the characteristics offered in both GratEX® and GridEX® products that ensures a fibreglass grating system with high point loading and bi-directional strength.

RailEX® is our patented fibreglass handrail system that is fully compliant with AS1657 and can be designed to suit any structure using our unique adjustable fittings.

LadderEX® is the superior alternative to metallic ladders and cage systems, providing excellent corrosion resistance and electrical transparency.

Treadwell has developed a full range of product and design guides that are the ultimate tool in solving you personnel access challenges. The guides can be obtained for free at www.treadwellgroup.com.au.

ArchitEX™
Structural Profiles & Structures

ArchitEX™ is Treadwell's trademark range of premium pultruded FRP structural shapes and plates. These sections can be used to create structures and buildings entirely from FRP – see examples on to the left.

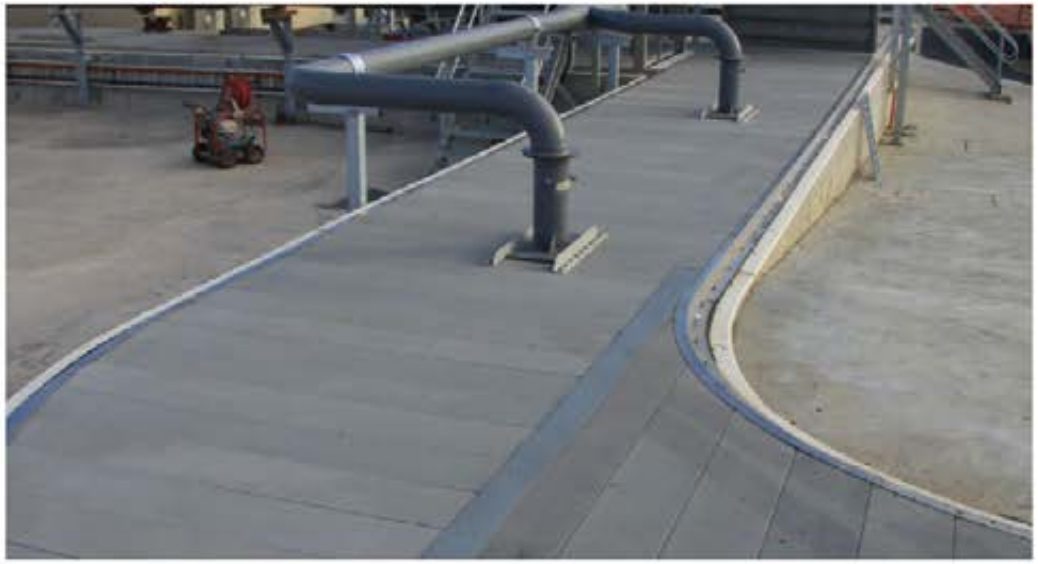
To ensure the best optimisation of the FRP products Treadwell has, our staff and registered professional engineers, are highly experienced in the unique design requirements of FRP structures and systems. With this extensive experience in joint design, stress analysis and the fabrication procedures of composite assemblies, engineering, design and fabrication by the Treadwell Team represents the ultimate word in FRP structures.

Advanced composite technology ensures that the ArchitEX™ products and structures will endure a protracted life span with minimal maintenance. By combining the massive tensile strength of glass with the durability of plastics, FRP composites have unique physical and chemical properties that inhibit even the harshest of destructive elements. This desirable trait makes ArchitEX™ FRP Profiles optimal for applications where there is a strong, corrosive chemical presence or where the product is likely to be exposed to prolonged periods of weathering.

Treadwell holds the largest inventory of beams, columns, plate, angle, channels and hollow sections in locations throughout the region to ensure rapid and accurate distribution on demand. While our stock of ArchitEX™ profiles is exhaustive, some unique applications require new or redesigned profiles – Treadwell FRP profiles allow you to do this.

ArchitEX™ products are an ever rapidly evolving and expanding range. If you require further information regarding FRP profiles and structure design, our comprehensive ArchitEX™ Structural Design Guide is the ultimate tool for you. The guide includes a complete list of all the profiles that are currently available, deflections tables, information on relevant constraints, plus much more engineering data that has been collated into one all-encompassing volume. Request you copy today – CALL 1800 246 800 OR VISIT www.treadwellgroup.com.au.

EcoEX™
Water & Waste Water Products



EcoEX™ FRP products represent a significant and important advancement in odour control systems, particularly relating to the specific processes that are utilised in water and waste water treatment operations. The range includes fibreglass tank covers, ducting and baffle walling.

Fabricated fully from high strength FRP components, the **EcoEX™** range is entirely corrosion resistant and offers unparalleled performance in corrosive environments.

The **EcoEX™** tank cover systems are designed with a low flat profile, flat profile and incorporated access hatches. The cover system panels interlock to provide secure and simple installation and also ensuring a firm seal.

EcoEX™ FRP ducting systems are fully customisable and compliment the fibreglass tank cover systems very well. Due to the lightweight nature of FRP, the installation of ducting is hugely simplified and it is easier to handle and fabricated in larger sections.

EcoEX™ baffle walls offer a longer lifespan than concrete, steel or aluminium alternatives while also saving up to 90% of space in a tank that would otherwise be occupied by a 150mm - 200mm thick concrete wall. FRP baffle walling systems are also easily reconfigured to accommodate changes in flow requirements etc.

Applications where **EcoEX™** FRP tank covers, baffle walling and odour control systems might be used are:

- Odour Control
- VOC Emission Control
- Splash Control
- UV Screen/Algae Barrier
- Improved Aesthetics

EnviroTREAD™
Recreational Public Infrastructure

EnviroTREAD™ is Treadwell's Benchmark FRP Composite System for Recreational Public Infrastructure. This system is widely used for boardwalks, jetties, beach access staircases and viewing platforms to name a few.

The EnviroTREAD™ System is comprised of a vast range of composite products. This allows the team at Treadwell to assist in overcoming any issues or challenges that may arise in your projects.

The EnviroTREAD™ System consists of:

GratEX® is our popular range of moulded FRP grating solutions which feature bi-directional strength characteristics and offers versatility unparalleled by other products in its field.

MoultrEX® is a superb combination of the characteristics offered in both GratEX® and GridEX® products that ensures a fibreglass grating system with high point loading and bi-directional strength.

Millboard Outdoor Flooring offers the excellent look and feel of traditional hardwood timber and has the key benefits of the FRP Grating such as longevity of life, and rot and rust resistant.

ArchitEX™ is our premium range of Pultruded FRP Structural Sections.

Treadwell has recently developed version2 of the EnviroTREAD™ System Overview. Please contact us at 1800 246 800 for more information.

EXduro™
Cable & Instrumentation Management

EXduro™ FRP systems are the logical solution to every cable, pipework and instrumentation management challenge.

Made from highly corrosion resistant FRP composites, EXduro™ is ideal for highly corrosive areas. Treadwell's systems have mainly been implemented in water and waste water treatment plants with huge success and in other areas such as mining, chemical and petro-chemical operations.

FRP Cable Management Systems

The EXduro™ Cable Tray and Ladder ranges are replete with a full range of splice plates and covers – also fully constructed from FRP. Because of being entirely fabricated from fibreglass, with the exception of the fixings, this product requires very minimal maintenance even when in the harshest of conditions.

FRP Instrumentation Management

Produced using high quality vinylester resin, the FRP EXduro™ Instrumentation Management Systems do not rust, rot or corrode. As these systems are non-metallic and non-conductive, this makes them extremely simple to implement in environments with strong electrical or magnetic presence.

FRP Support Systems

The EXduro™ pipe support system incorporates double and single fibreglass cantilever and pipe supports with a full range of FRP clamps and clips to ensure simple and rapid installation.

The Treadwell Team has completed multiple successful projects using the composite EXduro™ system. To better understand how EXduro™ products can be applied to your operation contact Treadwell today or visit www.treadwellgroup.com.au .

SAFE-SERIES™
INDUSTRIAL ANTI-SLIP SOLUTIONS

The Treadwell SAFE-SERIES™ Industrial Anti-Slip Solutions range includes robust products and problem solving systems for all situations where slipping or tripping is a hazard. There are three main categories within the SAFE-SERIES™ anti-slip range: stairs, ladders and decks or platforms.

All products are offered with a choice of either Treadwell's unparalleled FRP substrate or metallic substrates which can be galvanised steel, stainless steel or aluminium. The FRP substrate is set apart from its metallic counterparts in the way that the anti-slip grit compound can be fully impregnated into the surface. This means that the issue of delamination, which is so prevalent in metal substrates, is overcomed, providing a much safer and more reliable service life.

FRP also proves major benefits and cost savings because of its superior resistance to prolonged exposure to corrosive chemicals and weathering. In fact, based on in-situ tests undertaken in an Australian ammonia production facility, Treadwell's FRP substrate can last up to five times longer than its metal backed equivalent.

Stair-SAFE® includes a complete range of stair nosing and stair tread products, all of which are manufactured to Treadwell's unique and ergonomic profiles designed to improve longevity.

The **Rung-SAFE®** brand consists of a broad range of rung covers and capping, most popularly supplied with an FRP substrate. The rung covers and capping utilise the same heavy duty grit systems as the Stair-SAFE products which have excellent slip negation properties but at the same time are not so harsh as to damage bare hands.

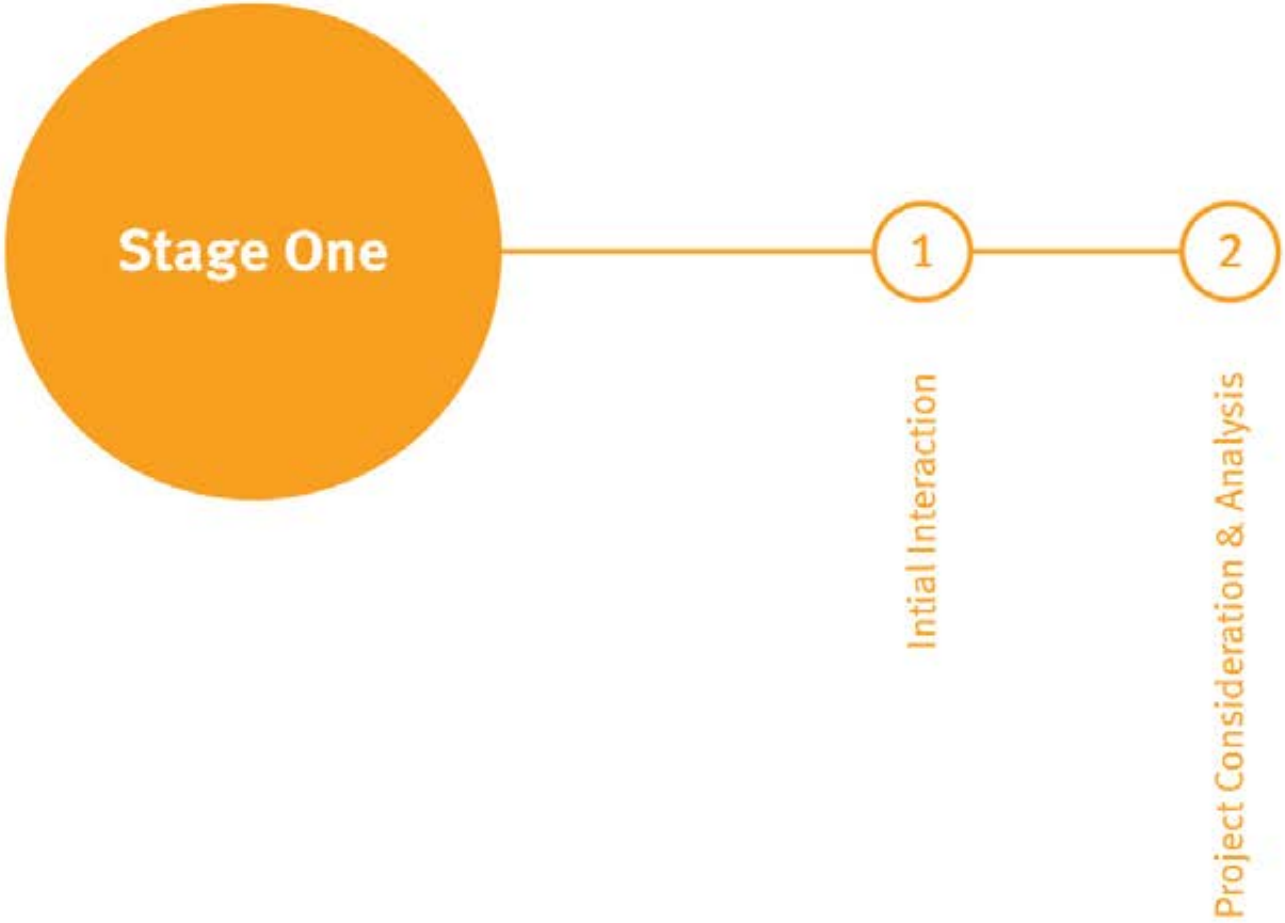
Deck-SAFE® is a range of lightweight, flexible and adaptable anti-slip decking products. These products are designed to be applied in areas where the presence of oil or other liquids have seriously increased the risk of slips, trips and falls. The simple but effective application of this product in any circumstance is guaranteed to increase the safety rating of such.

Treadwell also offers a full range of fixings and fittings to ensure ease of installation and application. For more detail on working with this product, ancillary items and fixing methods, check out our SAFE-SERIES™ Anti-Slip Product Guide.

2

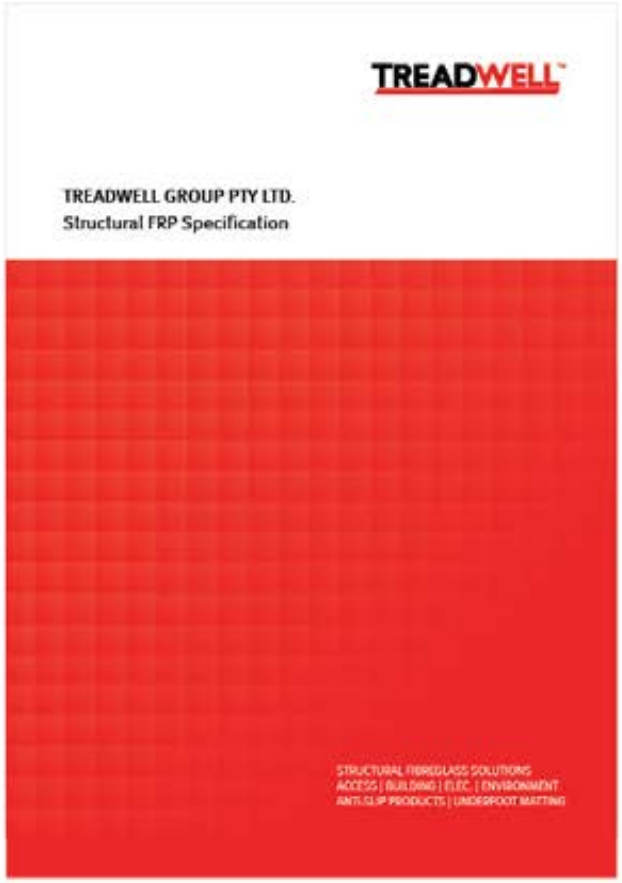
Our Design & Process Approaches

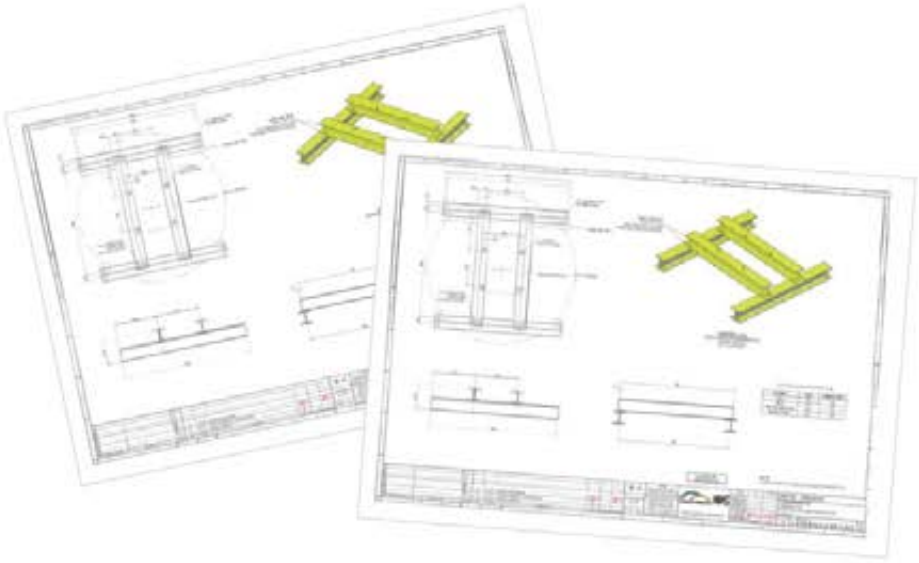
Strategy & Design Phase



1 Intial Interaction

- Engage with design, development and project team
- Discuss potential projects
- Demonstrate the FRP integration benefits
- Illustrate previous FRP integration in similar situation

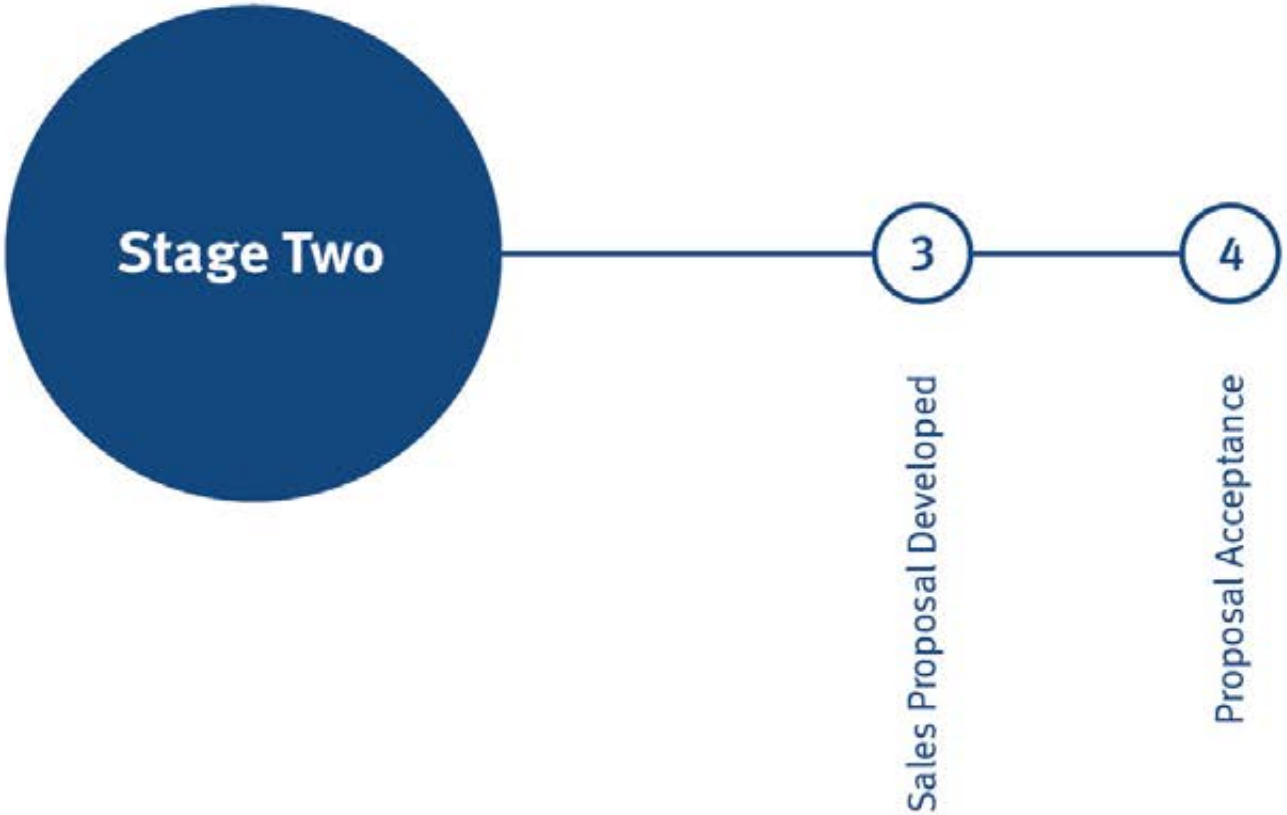


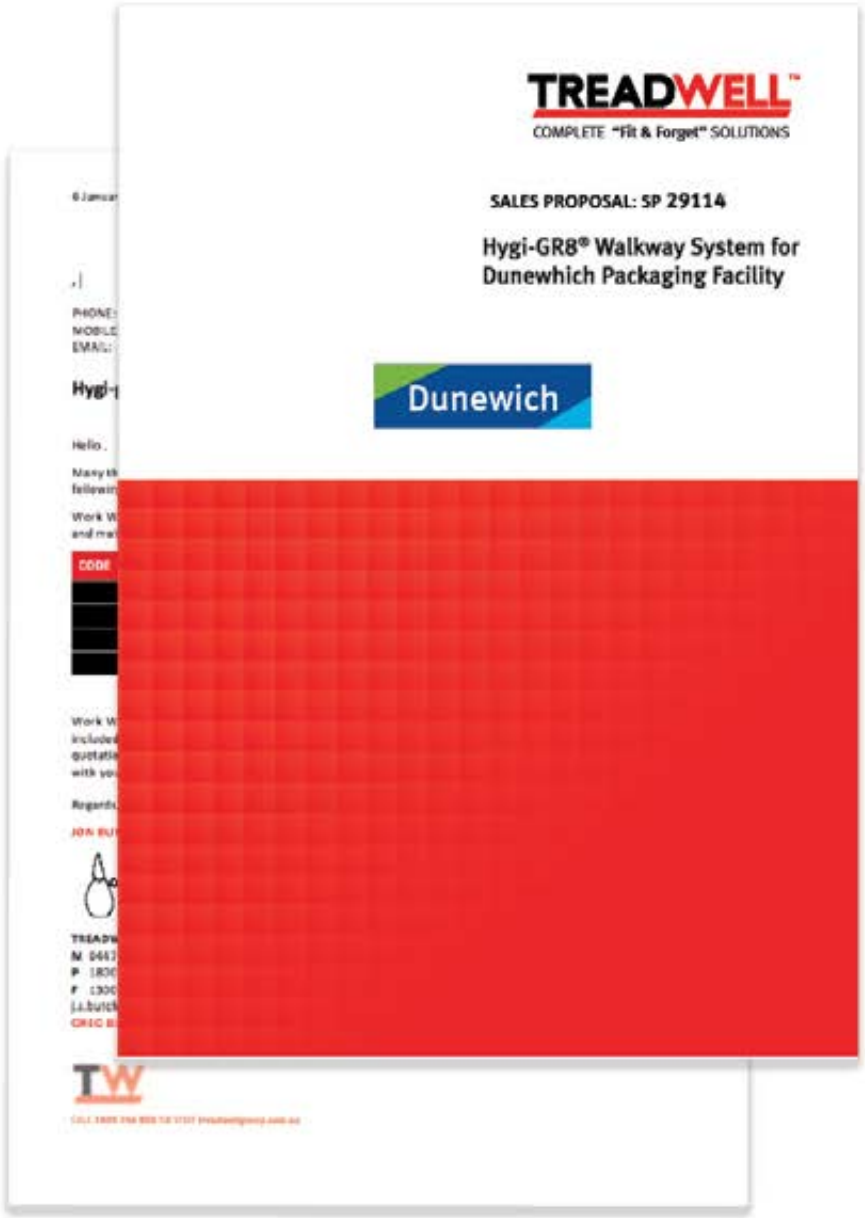


2 Project Consideration & Analysis

- Specific project is defined
- Unique concept design developed
- Site visited
- Constraints developed by project management team
- Products specified to achieve ultimate outcome

Concept Design





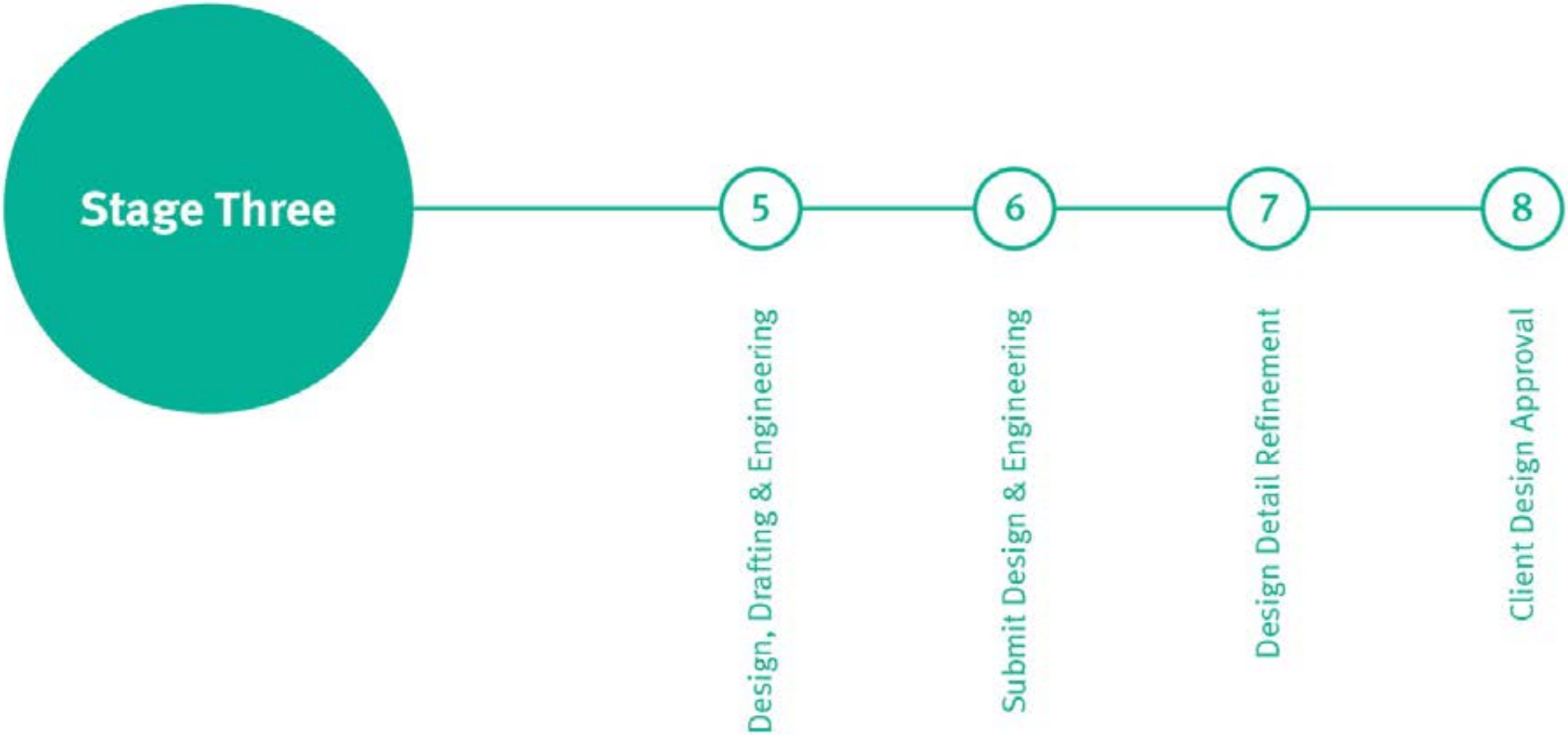
3 Sales Proposal Developed

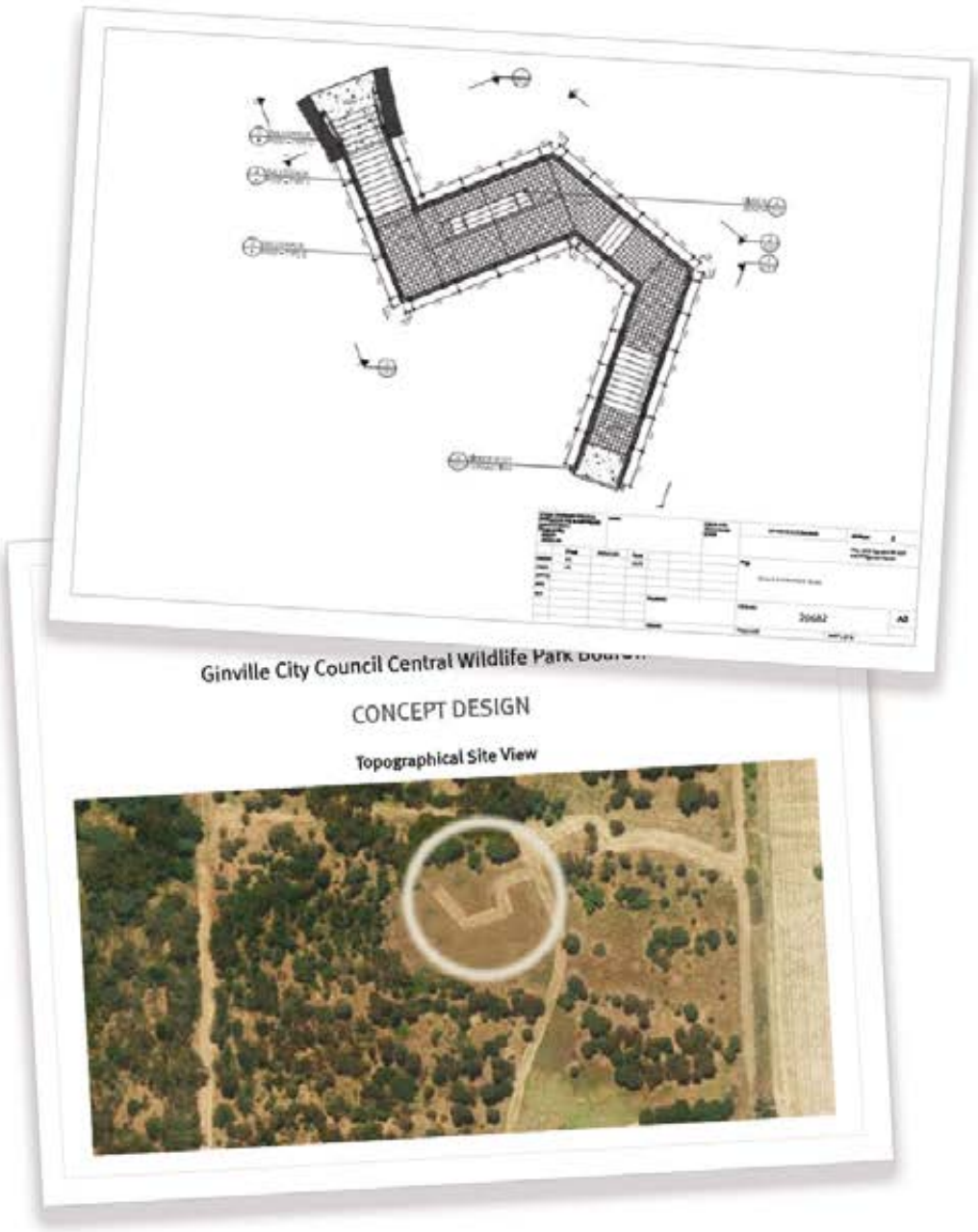
- Constraints and specifications considered in conjunction with desired outcomes
- Estimation of lead time and cost obtained based on design
- Proposal and Estimation Package submitted

4 Proposal Acceptance

- Client concept review
- Client liaison regarding variations before sign-off
- Proposal and Estimation package signed off as accepted

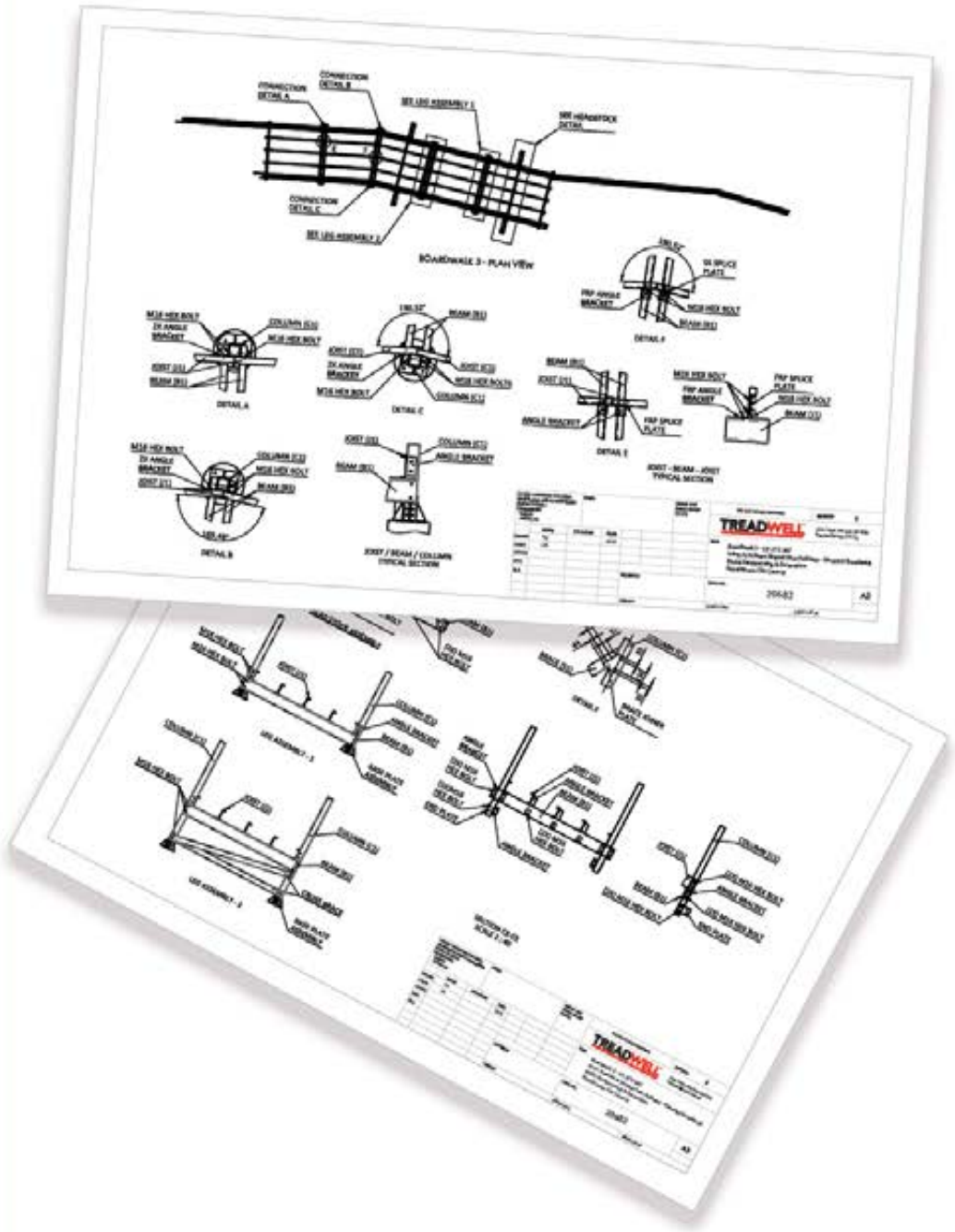
Design, Engineering & Documentation





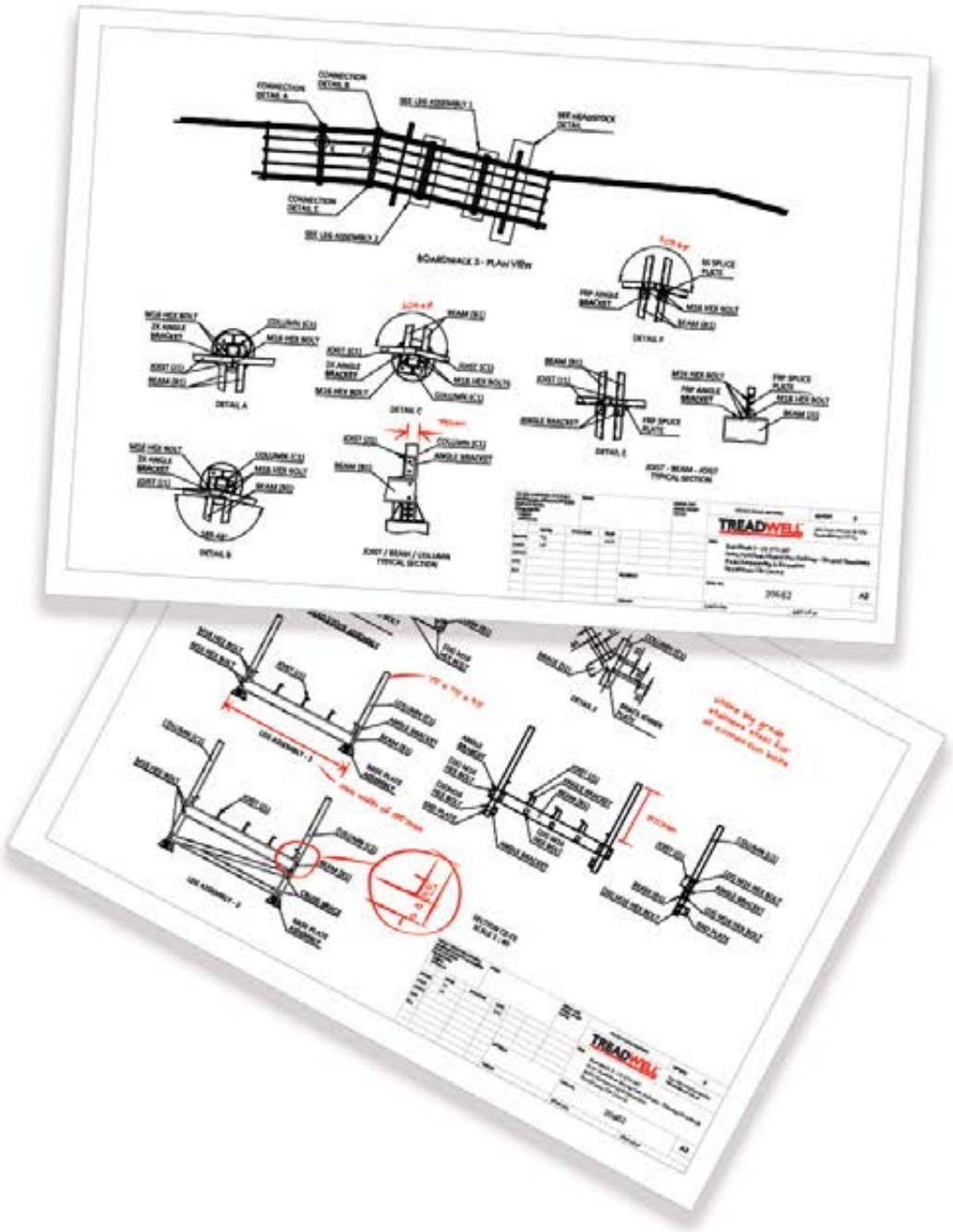
5 Design, Drafting & Engineering

- Concept design analysed
- Design staff develop design
- Details incorporated into design
- Design is analysed and developed in conjunction with Engineering
- Engineering calculations
- Engineered design is drafted



6 Submit Design & Engineering

- Final drafts submitted to Treadwell Engineer for approval
- Initial design submitted to client for perusal



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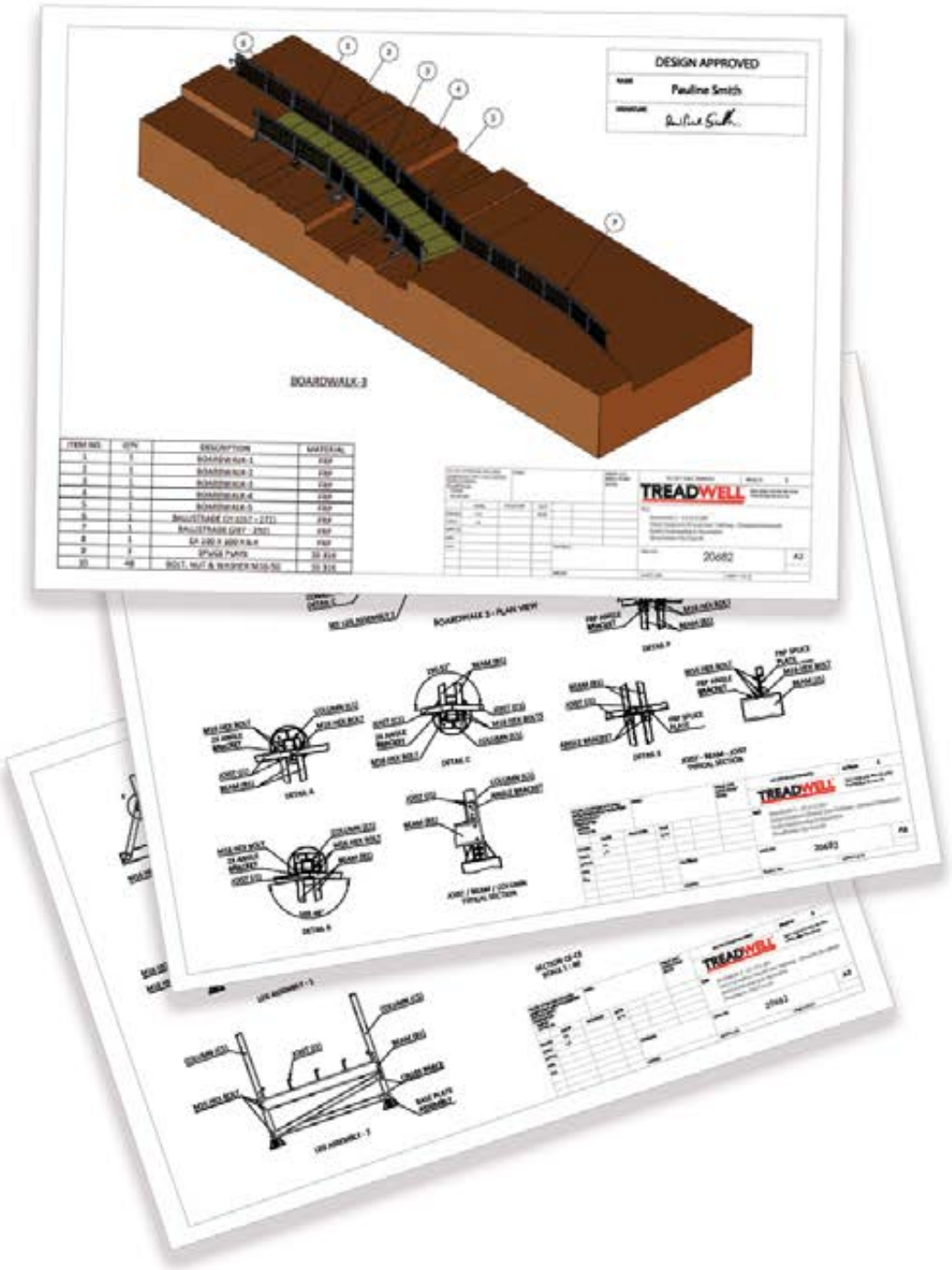
Design Detail Refinement

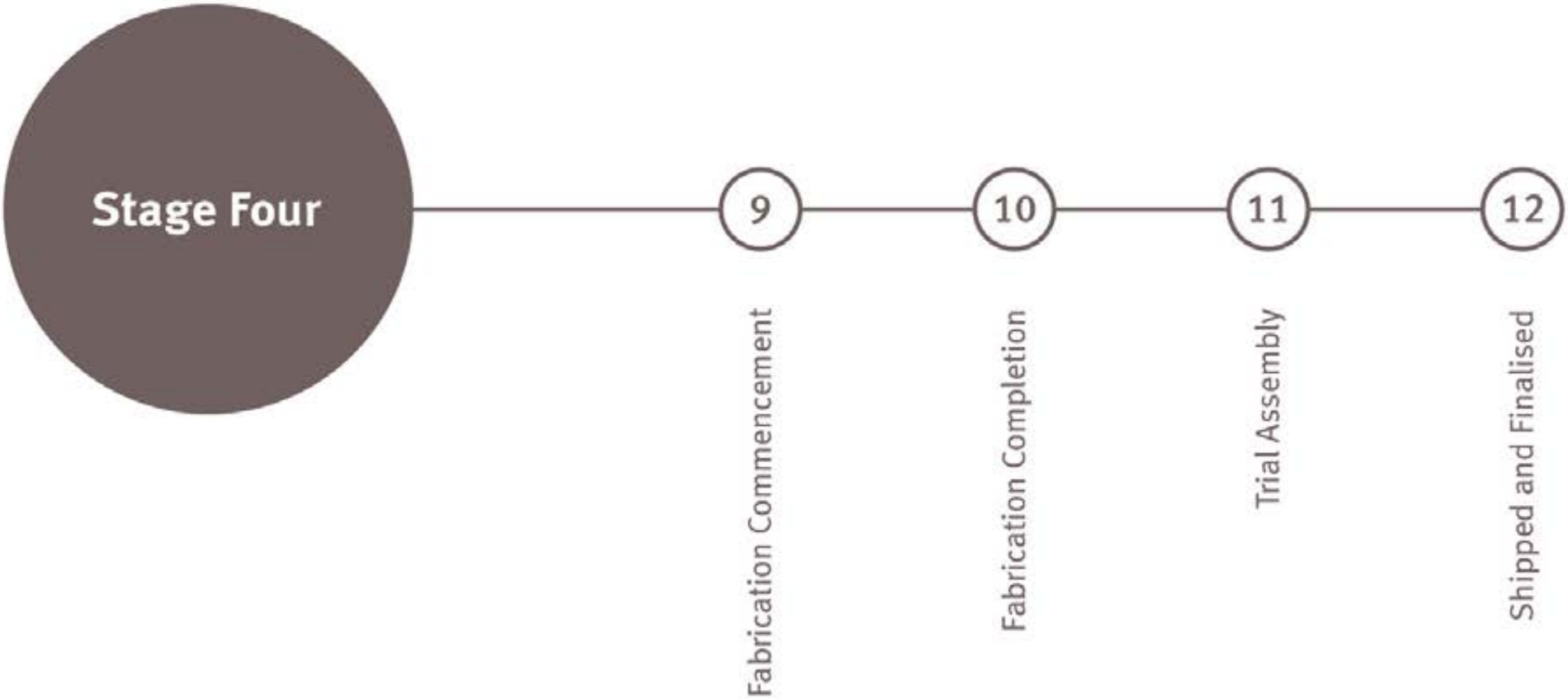
- Client reviews design alongside expectations
- Client suggests relevant alterations to design
- Design Team refines drawings per client requirements
- Additional engineering undertaken where necessary

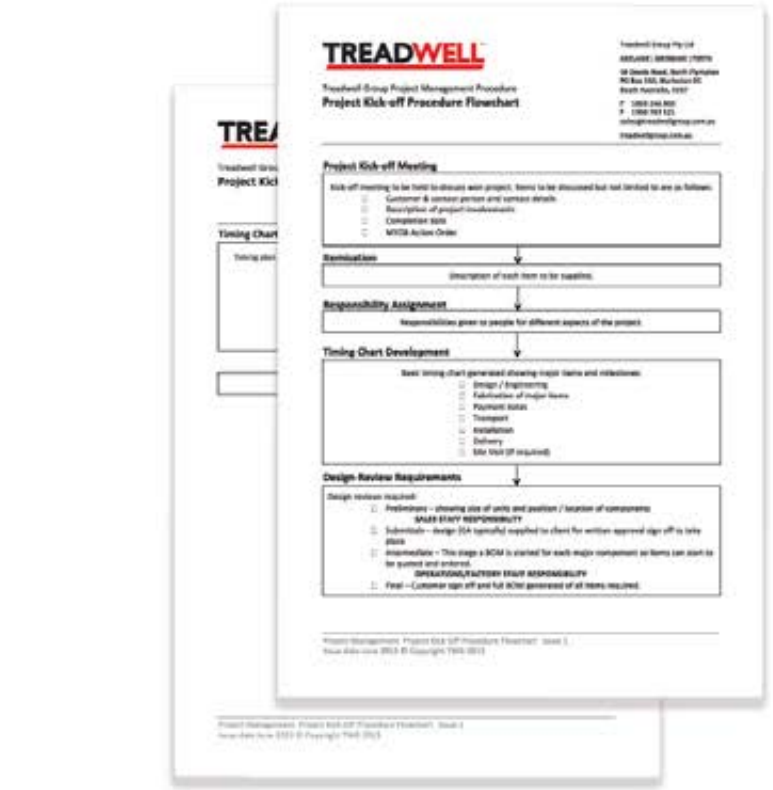


8 Client Design Approval

- Client reviews Issued For Approval (IFA) Drawings
- Client sign-off/acceptance of IFA design
- NOTE: Until this section is complete, lead times and fabrication is not commenced.

Manufacturing & Fabrication




TREADWELL

Treadwell Group Project Management Procedure

Project Kick-off Procedure Flowchart

Project Kick-off Meeting

Kick-off meeting to be held to discuss work project. Items to be discussed but not limited to are as follows:

- Customer & contact person and contact details
- Description of project involvements
- Completion date
- MYOB Action Order

Itemisation

Description of each item to be supplied.

Responsibility Assignment

Responsibilities given to people for different aspects of the project

Timing Chart Development

Basic timing chart generated showing major items and milestones

- Design / Engineering
- Fabrication of major items
- Payment dates
- Transport
- Installation
- Delivery
- Site Visit (if required)

Design Review Requirements

Design reviews required:

- Preliminary – showing size of units and position / location of components
  SALES STAFF RESPONSIBILITY
- Submittals – design (GA typically) supplied to client for written approval sign off to take place
- Intermediate – This stage a BOM is started for each major component so items can start to be quoted and ordered.
  OPERATIONS/FACTORY STAFF RESPONSIBILITY
- Final – Customer sign off and full BOM generated of all items required.

Project Management: Project Kick-off Procedure Flowchart: Issue 1

Issue date June 2013 © Copyright TWG 2013

9 Fabrication Commencement

- Lead time commenced
- Design submitted to Operations Team
- Design and Bill Of Materials (BOM) analysed
- Revised BOM submitted to Purchasing Department
- Design released to fabrication in stages
- Design undergoes further minor development within production


TREADWELL

WWM WORK WELL MATS ACCESS SYSTEMS TREADSAFE ArchitEX EcoEX EXduro

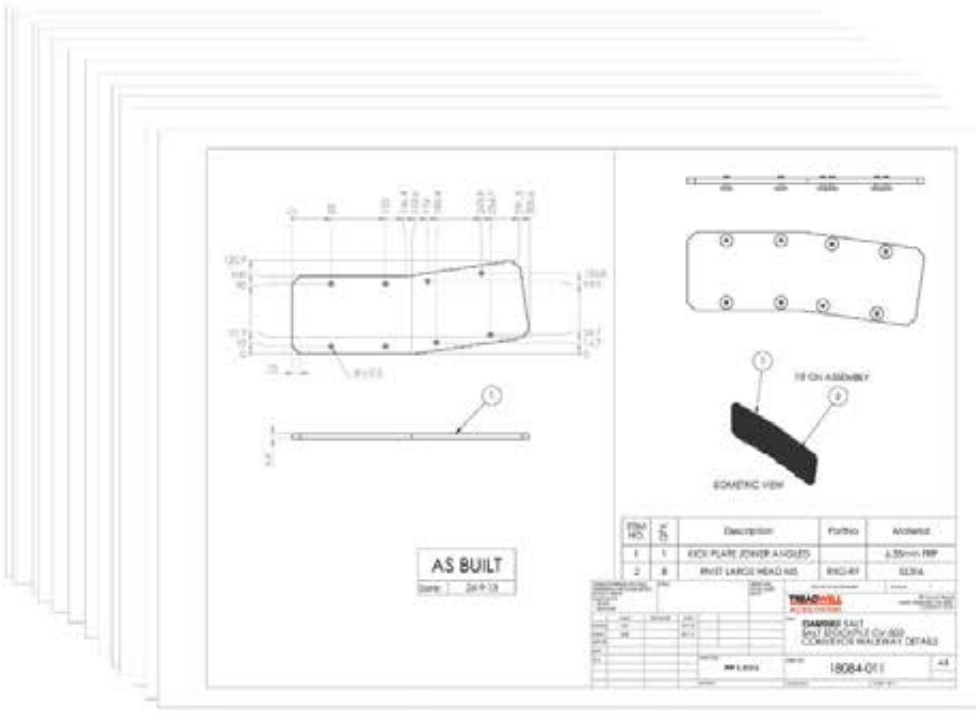
ACTION ORDER 21499-A

10 Fabrication Completion

- The fabrication of all components are completed
- Any changes to design are updated on drafts
- Alterations to drafts are approved by engineering

11 Trial Assembly

- All components assembled
- Clashes identified and alterations suggested
- Design update to reflect AS BUILT status




TREADWELL

WWM WORK WELL MATS ACCESS SYSTEMS TREADSAFE ArchitEX EcoEX EXduro

PACKING SLIP 21499-A

CODE	QTY ORDERED	DESCRIPTION	QTY DISPATCHED

CUSTOMER COPY

12 Shipping & Delivery

- Structure is disassembled in preparation for packing
- As Built drawings are finalised and signed off by production
- All products necessary for the installation of this turnkey system are packaged
- Shipped to meet deadline – ON TIME, IN FULL

Our Capability & Project Showcase


10

CASE STUDY 1

EcoEX™ Fibreglass Odour Control Cover System for Sewer Trunk Way

Treadwell's EcoEX™ division focuses on the design and supply of complete odour control systems including odour control cover and ducting.

In this instance, Treadwell was approached to provide a turn-key package for a sewer trunk way access point cover. Typically, an EcoEX™ Sureline Odour Cover would be fixed in place incorporating a single or multiple access hatch. What made this project unique was the requirement for access to the entire trunk way, which meant a fully removable cover. The team liaised with the client extensively and undertook multiple site meetings to ensure that the end result would meet the specifications.

A solution was developed and put forward by the Treadwell design team that comprised of a four piece FRP cover system with a unique, tamper-proof locking mechanism. The FRP cover panels are now easily removed or replaced by two personnel even though they are larger than the original six concrete cover blocks that had to be removed using a crane, adding to cost, time and safety risk.

The tamper proof locking mechanism is fabricated from high quality stainless steel, meaning the utility provider can leave the cover as accessible by the public without the added expense of a security fence around the site.

Treadwell EcoEX™ products are backed by extensive experience in this industry and years of development. Other sites that have utilised the EcoEX™ FRP tank cover systems to great advantage are Black Rock Sewage Treatment Plant, Wagga Wagga Sewerage Treatment Plant and Proserpine and Cannonvale Wastewater Treatment Plants.

CASE STUDY 2

GratEX® Zero Maintenance Boardwalk and Viewing Platform Deck Solution

In an untouched natural landscape, GratEX® offered the perfect zero maintenance alternative to homogenous decking products. Unobtrusively fitting into the existing features of the landscape, the GratEX® Decking on this boardwalk will continue to provide safe and secure footing for many years to those who wish to experience the natural beauty of this area.

Contrasting cleverly with the raw steel beams, the GratEX® product offered simple and economical installation. The unique, bi-directional properties of GratEX® allow for a broad scope when designing as the product can be cut to almost any shape without requiring additional support. Also to be considered is the light comparatively light weight of FRP which ensured rapid and cost effective installation.

Treadwell offers a full in-house engineering and drafting service which is skilled in optimising grating panel layouts for the most efficient use of product. This valuable resource is backed up by our experienced fabrication team.

All GratEX® FRP Grating products can be fastened securely and easily by utilising the appropriate installation fastening method which can be selected from Treadwell's broad offering of proprietary clip systems. To ensure that the varied and stringent colour schemes of recreational public infrastructure projects are accommodated, Treadwell's FRP can be colour matched on top of being available in standard colours.

GratEX® FRP mesh products are designed to offer a safe and slip-free surface in all environments and weather conditions. This, and the extremely flexible design tolerances that are afforded by the bi-directional load bearing bars, means that GratEX® products can be adapted to meet a huge variety of challenges.

For additional information on Treadwell's extensive range of FRP Grating and Clip Systems, visit www.treadwellgroup.com.au or call 1800 246 800 and receive a complimentary copy of our ACCESS SYSTEMS Product Guide, which covers Treadwell's Grating Systems and possible applications exhaustively.

CASE STUDY 3

ArchitEX™ Corrosion Resistant Winch Tower Construction

Treadwell was approached by a major Australian solar salt producer to design and then construct a corrosion resistant winch tower to support a 1200mm diameter brine discharge pipe. The structure was to be situated in a discharge creek and needed to be capable of withstanding extended periods of partial submersion in hyper-saline water.

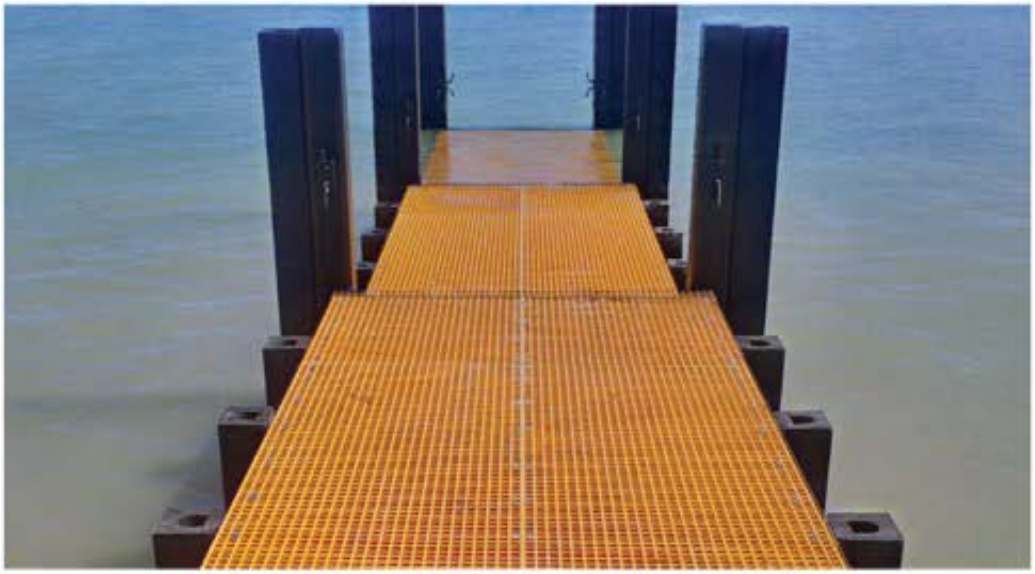
To overcome significant corrosion issues and ensure that stringent weight restrictions were not exceeded, ArchitEX™ FRP Square Hollow Sections, Beams and Equal Angle profiles were used exclusively. Being located on the remote and cyclone prone west coast of Australia, there were stringent structural specifications to satisfy in order for the tower to be able to withstand cyclonic wind loading forces.

Our client's engineering team worked in close conjunction with our FRP design and development personnel throughout the whole project to build a lightweight, corrosion resistant and cyclone rated structure that was capable of supporting a heavy duty winch with a S.W.L. of 5 tonnes. The resulting construction consisted of all members being fibreglass, mechanically fastened using 316 grade stainless steel bracketry and fixings.

As it was necessary to have personnel access the winch, a bridge section was developed to span the 7metres between a bank of earth and the tower. GratEX® was used to make certain that all personnel accessing the tower would have a safe and secure footing in conjunction with RailEX®, Treadwell's proprietary FRP hand railing system – achieving conformance with AS 1657.

The structure was fully trial assembled and then partially dismantled before being packed into modules to be transported by Treadwell on time and in full.

CASE STUDY 4



ArchitEX™ and GratEX® Jetty and Boat Landing Reconstruction

Treadwell's FRP structural sections and grating systems have been installed at Blackfellows Caves, South Australia, to provide a corrosion resistant and low maintenance jetty and boat landing.

The complete solution that was provided by Treadwell included a comprehensive design and engineering process. Included in the development of the design was a complete set of drafts and an exhaustive bill of materials (BOM) which ensured rapid and efficient installation onsite by the third party. ArchitEX™ and GratEX® products were supplied per the specifications developed in the design and BOM.

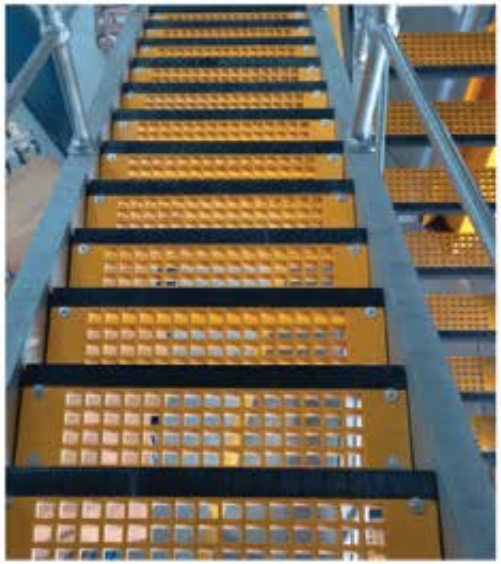
As well as the long term benefits associated with using FRP, the installation team experienced the ease in which Treadwell FRP products can be handled due to the lightweight properties of composite plastics. Installations in environments like this are hugely simplified by using a lightweight and easily manoeuvred product like FRP.

The ArchitEX™ and GratEX® colour range is expansive and offers the possibility of matching any colour. The full colouration process, combined with a robust and attractive polyurethane coating which doubles as a sealant and further colouration, means that Treadwell's FRP structures have exterior protection that is impervious to corrosive coastal conditions and, as a result, will remain looking great.

The Blackfellows Caves boat landing is only one of many similar projects that have been fabricated successfully and professionally by Treadwell Group. If you are interested in utilising FRP in the design of a structure, contact Treadwell on 1800 246 800, or access a wealth of information at www.treadwellgroup.com.au. If you require more extensive data and guidance, Treadwell is only too happy supply you with one of our various product design guides which cover applications, loadings and specifications for each FRP product in absolute detail.


ELECTRICAL

CASE STUDY 5



GratEX® FRP Hygi-GR8® Grating and Treads Installed in Food Processing Plant

When a major fruit processer took steps to expand operations and profitability by installing a modern, state of the art, fruit portion cup processing line, they required extensive walkway and stairway systems to complement it.

As a part of the advancement in production facilities, our client also wished to solve the hygiene issue that was present when dropped produce fell through the grating and became entrapped on top of the support members. Treadwell had already developed the perfect solution to this ongoing cleaning challenge, the GratEX® FRP Hygi-GR8®, having proved itself many times previously in similar applications, was immediately the obvious solution.

The Hygi-GR8® system is unique and universally adaptable, designed to prevent the possibility of objects falling through grating onto support members or brackets thus making cleaning an easier and far more efficient process. This is achieved through the careful layout of Hygi-GR8® panels that incorporate a solid top section of customisable width around the edge of each panel so that the beams that make up the substructure are covered by the solid band.

The install was complete when the Hygi-GR8® Tread Kits were installed on all stairways. The Hygi-GR8® Tread follows similar principles to achieve maximum flexibility for a huge variety of applications and to surpass stringent hygiene standards.

Today, the GratEX® FRP Hygi-GR8®system is installed in multiple food processing plants across Australasia, providing hygienic and safe walkways, stairways and drain grates.

CASE STUDY 6

EXduro™ FRP Stands Support Desalination Plant Instrumentation

When the Water Corporation of Western Australia was initiating the construction of the Southern Seawater Desalination Plant at Binningup, it was necessary to find a solution for the support and arrangement of the many instruments, gauges and displays that were essential for the complex reverse osmosis equipment.

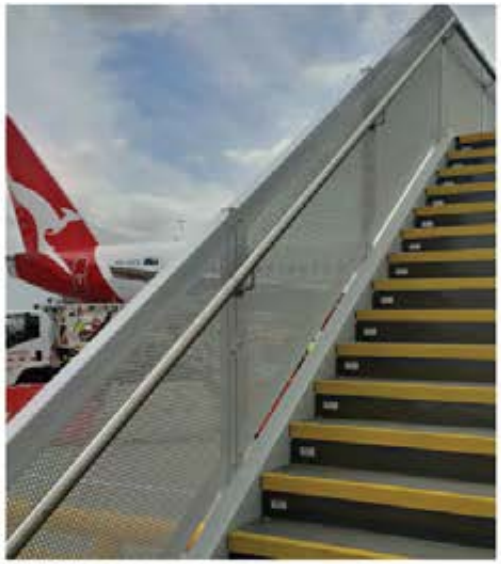
EXduro™, Treadwell's versatile and comprehensive FRP Instrumentation and Cable Support System, was ideal for the complex and varied application presented by the Binningup desalination plant. The FRP construction of the stands makes them extremely sturdy and corrosion resistant.

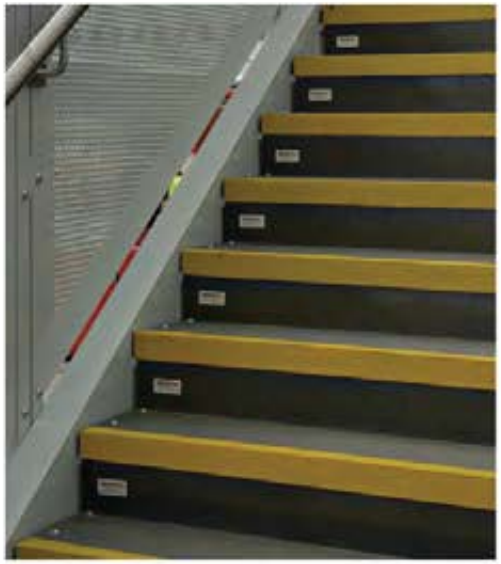
Additionally, fibreglass offers electrical transparency and zero conductivity, which is beneficial or even necessary in some major chemical or electrical plants.

The plant used a broad selection of stand configurations including both square and round profiles. The different stand configurations were designed to support single, double or triple displays and/or controls.

The maintenance team at the Southern Seawater Desalination Plant can now look forward to a long and maintenance free service life of the EXduro™, which will most probably outlast a lot of the components that surround them.

CASE STUDY 7





GridEX® FRP Solid Surface Treads and Risers for Terminal Boarding Gates

Typically, boarding gate stair treads have been constructed from pre-cast concrete, an expensive and weighty option. Qantas wanted an alternative that was lightweight, would offer superior aesthetic properties and consequentially much cheaper to install. They engaged a corporate architectural and design firm who in turn approached Treadwell.

The Treadwell team is experienced and accustomed to handling new challenges and readily took on the challenge of finding something safe (anti-slip), aesthetically pleasing, lightweight, weather resistant and sturdy to replace the concrete system. Given that the stairs were relatively wide at 1500mm, it was obvious that pultruded grating would have to be used as a substrate due to its superior spanning ability.

The team developed a unique hybrid product that incorporated Deck-SAFE® and Stair-SAFE® products moulded to a GridEX® substrate, forming a one piece construction tread and riser. With a huge weight reduction over the concrete alternative, the installers enjoyed ease of installation without incurring the costly fees of heavy lifting equipment or safety risks associated with weightier products.

To ensure maximum resistance to weathering and UV exposure, the product is finished with an attractive grey polyurethane coating that incorporates a high visibility yellow nosing. The FRP staircases are set to provide a long and maintenance free service life.

CASE STUDY 8

EnviroTREAD™ FRP Composite Beach Access Boardwalk Reconstruction

Treadwell's EnviroTREAD™ FRP Composite Boardwalk System has been installed at Snapper Point, South Australia, to provide a zero maintenance and corrosion resistant solution after the original timber structure was damaged by a large storm.

Treadwell was engaged by an established and reputable construction company to provide a fully engineered composite solution for the council. The package was inclusive of a detailed design, 3rd party engineering and supply of the complete structure and associated ancillary materials. This level of detail provided peace of mind and ease of installation for all parties involved.

Site access for this structure was somewhat limited with the only access being 200 metres north. This meant that all the materials had to be transported by a 5 tonne excavator. Because of the light weight benefits associated with FRP, this was able to be completed in a fraction of the time compared to alternative materials (i.e. timber or steel).

The EnviroTREAD™ FRP Boardwalk System offers infinite options for customisation to suit each and every application. This particular project required custom colours for all materials and also pedestrian grade (wet, barefoot friendly) Anti-Slip Surface on the grating.

The Snapper Point Beach Access Boardwalk is one of the many projects that has been delivered in full and within the required contractual timeframes.

If you are interested in utilising FRP in the design of a structure, contact Treadwell on 1800 246 800, or access a wealth of information at www.treadwellcomposites.com . If you require more extensive data and guidance Treadwell is only too happy to supply you with one of our various product design guides, which covers applications, loadings and specifications for each FRP product in absolute detail.

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