GRC PORTFOLIO

A Diverse Architectural Material

RJE

Smarter
Engineering

Introduction

RJE Global has quickly developed into a name synonymous with quality, reliability & innovation. Our Head Office is located just south of Adelaide at Morphettville, with the main manufacturing plant at Lonsdale.

One of our core practices is the fabrication of GRC. This product is a lightweight Glass Reinforced Concrete, which is used as the primary cladding material for our Transportable Switchrooms, as well as creating facades with architectural features, sculptures and architectural furniture.

By further building upon our already strong foundations of design capabillities, key personnel within our team have helped guide our manufacturing facility to achieve a product of high quality.

GRC is a proven superior product in more ways than one, whether it be as part of an entire walling system or a decorative finish. It has many positive properties including; withstanding harsh environmental elements, being cast into both organic & geometric forms or to simply be utilised as a tile. The versatility of GRC leads to many innovative commercial & domestic applications.

Some key benefits of using GRC include:

- Light weight - fast installation & reduced loads on structure, which in turn leads to smaller footings, structural members & faster construction (just over a 10th of the weight of a precast equivalent).
- High strength - allows greater spans, a reduced number of supports with thinner sections & less joints. GRC has a hard and dense surface, is ductile & offers resistance to vandalism with good sound reflection.
- High impact resistance - minimizes breakages during transportation and erection.
- Durable - low maintenance, no corrosion or brittleness, not susceptible to UV and retains integrity overtime (50+ years).
- Choice of colour/texture - infinite shades of colour can be achieved using oxides in addition to different natural stone colours & textures.
- No steel reinforcement - the use of Alkali resistant glass provides strength and longevity.
- Easy installation & fixing - avoids problems encountered with wet fixed claddings. Can be dry fixed utilising engineered precast steel brackets.
- Complex shapes - GRC mix is more resistant to slump than normal concrete allowing it to be cast into large returns and more complex shapes.

RJE boast a GRC design and manufacturing crew with a wealth of experience directly responsible for some very diverse, successful and high profile GRC projects around Australia and globally. A selection of these projects are showcased in this portfolio.

Transportable Switchrooms & Substations

Initial concepts of substations to final design is achieved through 3D modelling using software such as Space Gas, Solidworks and Soildworks Simulation for Finite Element Analysis (FEA) and Beam Analysis.

By partnering GRC with a steel frame that we construct from modular parts, we cut down on manufacturing time for flat panels and increased accuracy. This method of construction is also a NATA approved 2hr fire rated product.

We can construct and transport switchrooms of up to 30m in length & 7m in width without difficulty. Challenging design briefs that have been met include cyclone ratings (up to category 5), snow loading, blast proof walls and corrosive environments (near and over sea).

Rendered image created in Solidworks

Bullnose Roof Example

Skillion Roof Example

Curved Roof Example

Facades

The Wave & Edge buildings on Gilles Street, Adelaide

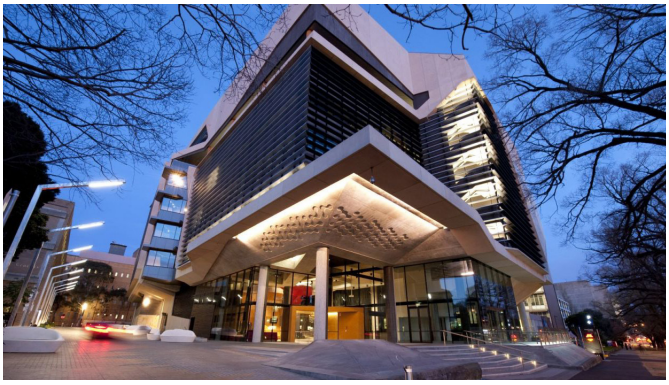
White GRC with titanium dioxide & opaque sealing coat. Brown GRC with chocolate coloured painted finish.

Chatswood Interchange

Black undulating panels with integral oxide colour hiding the slab edges of the platforms.

Melbourne Brain Centre, Parkville Campus, Kenneth Myer Building & Melbourne Brain Centre, Austin Campus, Victoria

The beige cladding consisted of a heavy sand mix, which was heavily acid etched to give a high rendered feel. Standard portland grey GRC was tilt washed with a debossed grain pattern (diagram of connectivity) or “brain pattern”.



Melbourne Brain Centre, Parkville Campus, Kenneth Myer Building

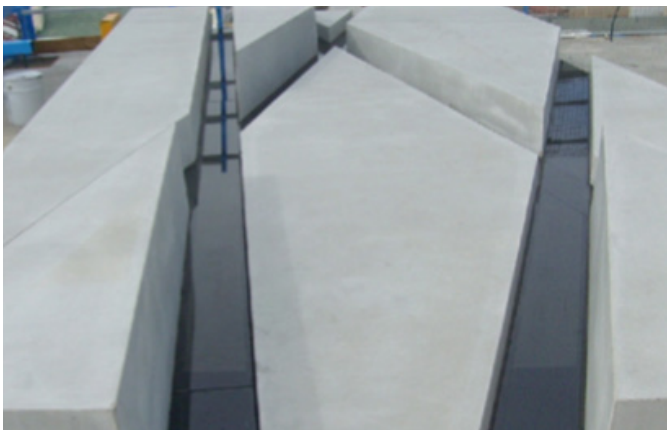
Melbourne Brain Centre, Austin Campus

Melbourne Brain Centre, Austin Campus

Close up of “brain pattern”

Ark Apartments, Hawthorn, Victoria

Off form GRC with glazing strips sealed in place.



Sculptures

Southern Vent, King Street Wharf, Sydney

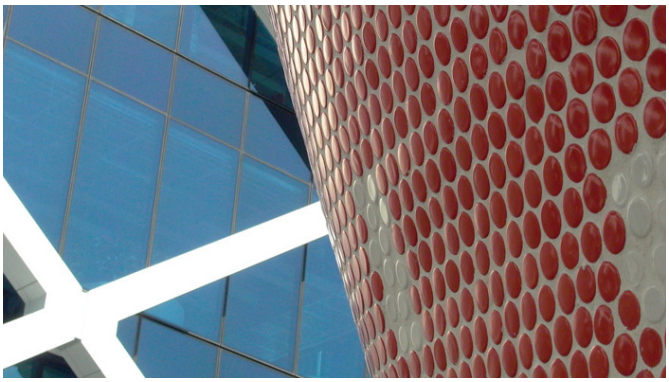
Integral colour foam filled GRC sandwich panel with black Alucobond cladding inside.

Hindmarsh Square, Adelaide

Free form GRC scupltures on steel skeletons. White GRC with a “gloved” render style finish.

Anemones King Street Wharf, Sydney

Freeform GRC on steel rod mesh skeletons.



Saint Mary & Anba Bishoy Orthodox Church Domes, Adelaide

Smooth mould finish interior, rendered hand finish exterior with no sub frame.

MONA Museum, Tasmania

GRC fish tank/exhibition case with stainless steel sub frame. Grey GRC with cast in exposed aggregate.

Architectural Furniture

Dubai GRC Planter Seats

Constructed in two halves then assembled with a pencil line quality joint on site. Finished with an automotive quality gloss paint finish.

Kitchen Islands/Benchtops
(Various Locations)

Portland grey GRC with returns & ribs incorporated on the underside for strength. cast in one piece to prevent any unslightly joints.

Outdoor Tables (Various locations)

Similar construction to the Kitchen Islands/ Benchtops: Portland grey GRC with returns & ribs incorporated for strength, mounted on hollow GRC segments.

Shower Tiles (Various locations)

12mm thick Portland grey GRC sprayed with a 5mm radius to the external edges.

Modular House

Ashbourne, SA

6 Star Energy Rating house constructed of GRC clad panels on steel frames erected in 3 “boxes” with skillion roof & Alucobond eaves.

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