

# SATU BUMI

## A Specialist in GRC



# What makes a Good GRC Supplier.

1

## Credibility

- Customer references
- Past success

2

## Capability

- Large product engineering team
- Proven custom projects

3

## Capacity

- Ability to do large orders
- Ability to meet delivery dates

4

## Price

- Competitiveness
- Value for money

5

## Quality

- Adherence to standards
- Customer service

# Contents

## Introduction

Satu Bumi is a 100% owned Australian manufacturing company that uses advanced concrete technology, including Glass Fibre Reinforced Concrete (GRC), to create incredibly strong and durable precast concrete landscaping products and is a leader in the industry with this technology in the manufacture of GRC planters and GRC street furniture.

Satu Bumi has an intense focus on customer service and the manufacture of the highest quality GRC based landscaping products. From its inception in 2012, Satu Bumi has built its own large and efficient GRC factory in Indonesia, established a professional sales and marketing office in Australia and created a far-reaching distribution network that delivers GRC products to most regions of the world including the US, the UK, Ireland, Continental Europe, The Middle East, India, Southeast Asia, and Australasia.

Satu Bumi markets its CityScope Range of “commercial grade” GRC planters and GRC street furniture directly to the Australian commercial construction and landscaping markets. This distribution channel is focused on working with Australian based architects, landscape architects, project estimators, project managers, and professional landscaping companies that require GRC planters and street furniture that meet the specific design intent and value management expectations of their construction and landscaping projects.

This booklet has been created as a means of communicating Satu Bumi’s GRC knowledge and competency, and to provide relevant information that may assist its customers to make more informed decisions when procuring GRC planters and street furniture.

4 Our Capability Statement

5 How are GRC Planters Made

9 What are the Advantages of GRC Planters

11 Important GRC Planter Sourcing Considerations

15 Solutions Approach to Sourcing GRC Planters

18 The Importance of Project Management

20 Custom Made GRC Planters Don't Need to be Expensive

22 Order Delivery Roadmap

23 Case Study

# Our Capability Statement

Satu Bumi is a 100% Australian owned company that specialises in manufacturing Glass Fibre Reinforced Concrete (GRC) planters and street furniture. With a management office in Australia and a large purpose-built factory in Indonesia, Satu Bumi has the size, resources, and low-cost infrastructure to supply high-quality and competitively priced GRC planters and street furniture for commercial projects of any size.

By utilising the best raw materials available and adhering to international GRC manufacturing standards, Satu Bumi provides commercial-grade GRC planters and street furniture that are aesthetically appealing, fire resistant, waterproof, robust, and able to withstand long term exposure to harsh climatic conditions.

## What makes satu bumi different

### 1 Capacity

With around two hundred employees, ten thousand square meters of factory space, and a large catalogue of standard sized planters and street furniture, Satu Bumi is one of the largest manufacturers of GRC landscaping products in the Southern Hemisphere. Therefore, Satu Bumi has the capacity to deliver large volume-based orders to meet even the largest commercial landscaping projects.

### 2 Custom design competency

Satu Bumi's Product Engineering Division has around thirty-five full time staff, including six CAD drafts people, and a large team of mould makers that have the depth of experience required to make moulds for almost any custom GRC precast design requirement.

### 3 Solutions based approach

Satu Bumi's Australian customer support team has a solutions -based approach to the supply of GRC planters for commercial projects which sets it apart from most of its competitors, and includes the following key elements: -

- **Pre-ordering assistance** – to save you time and avoid mistakes
- **Product engineering** – for specifying custom projects
- **Access to a catalogue of GRC planters** – for faster delivery and lower unit costs
- **Large manufacturing facilities** – which provide:
  - Direct communication for greater ordering control

- Direct supply (i.e. no middleman) for better pricing and delivery control
- Large capacity for producing projects on time
- **Project management** – to ensure orders flow smoothly
- **Low transport costs** – using shipping container efficiencies and capital city port warehousing facilities

## Compliance with standards

Satu Bumi's manufacturing processes are based on, and in compliance with, the "Specification for the Manufacture, Curing, & Testing of Glassfibre Reinforced Concrete (GRC) Products" as defined by the "The International Glassfibre Reinforced Concrete Association" based in the UK.

Satu Bumi's GRC is also certified for both the AS 1530.03 and AS 1530.01 combustibility standards.

## Some of Satu Bumi's Customers

- Hacer Group
- Hamilton Marino
- Fytogreen Australia
- Landscape Solutions
- Kane Constructions
- Fresh Landscapes
- Living Landscapes
- John Holland
- Aspekt
- Kane
- COBILD
- PACE
- Hansen Yunchen
- Mainbrace
- Harris HMC
- Roberts Corp
- Buildcorp
- Ironside
- L.U. Simon
- Bloc
- Minicon
- ICON
- Buxton
- Maben
- Built
- Crema
- Richard Crookes
- Lend Lease
- Balmain & Co
- Hutchinson
- Multiplex
- Figurehead

# How are GRC Planters Made?

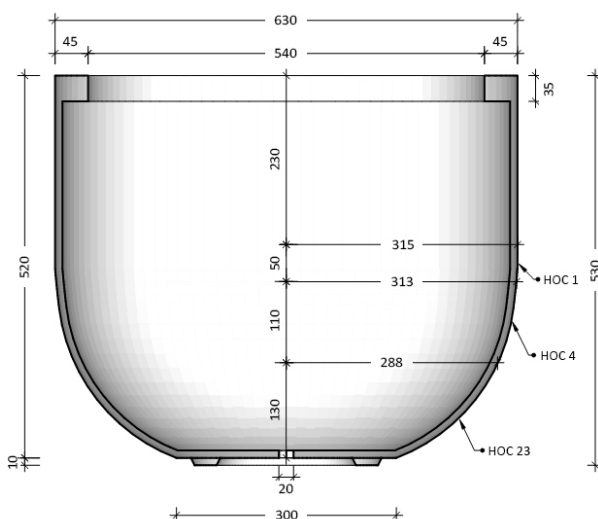
In their most basic sense, precast concrete products are made by filling moulds with a wet concrete mixture and allowing them to cure. However, with the evolution of GRC concrete technology, although concrete planters are still manufactured with the use of form moulds, they can now be made to be much harder, much stronger, more waterproof and more durable. All of which are essential elements in meeting the architectural, engineering and construction standards required for concrete planter boxes, troughs and pots used in commercial landscaping projects. In this article we give you a step by step guide to how we utilise GRC technology to produce concrete planters, troughs and pots.

## Precast GRC technology can be applied in two ways :-

- By adding chopped glass fibre reinforcement into a specialised premix concrete slurry before pouring or pumping it into a mould.
- By spraying a scientifically formulated concrete slurry mix into a mould using a specially designed concrete spray gun that also chops and blends glass fibre reinforcement into the slurry during the spraying process. This production method typically provides GRC with greater flexural strength than the method of pouring concrete slurry into a mould because the associate production process enables the glass fibers to be layered two dimensionally rather than three dimensionally.

Although GRC technology is an excellent material for the manufacture of very high-quality concrete planters, pots and other landscaping products, it is important to recognise that not all GRC is the same. Good GRC requires the use of the right quality raw materials, the right blending of those raw materials and the right production methodology. Cheap raw materials and undisciplined production practices need to be avoided because they more often than not result in GRC that cracks or breaks. Therefore, care should always be taken when sourcing GRC products to verify the credibility of the manufacturer.

The following is a step by step summary of how GRC products are actually made.



## Product Engineering for a GRC Planter

The following two considerations are essential elements in the product engineering of any GRC product: -

**Aesthetic appeal** - the dimensions of a well balanced and attractive GRC product don't come about by accident. They are created at the design stage.

**Structural Integrity** - GRC products generally have a practical purpose such as holding soil and water or for seating. Therefore, they need to be more than just visually attractive. They need to be engineered to be fit for purpose.

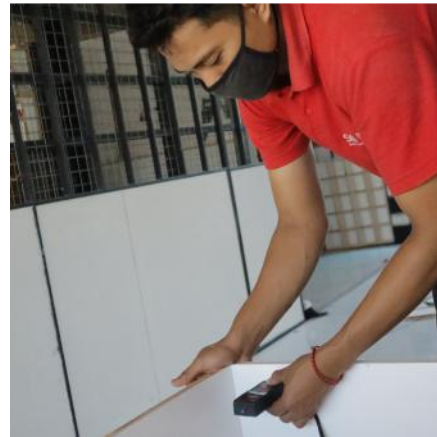
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Satu Bumi has a product engineering department that includes artisans, technicians, designers and CAD tools to produce world class GRC product designs that are both aesthetically appealing and engineered for the purpose for which they were intended.

## Making the Master for a GRC Planter

A master, sometimes called a plug, is an exact physical representation of a product's theoretical design as depicted in a CAD drawing. Masters are typically made from a number of different substances such as wood, miln, clay, or even concrete and form the framework upon which a precasting mould is made. Masters become damaged and are normally discarded once they have been used to make a mould.

Satu Bumi utilises CNC router technology in the making of masters because it provides a high level of precision. However, Satu Bumi also relies heavily on the artistic competence and experience of its master making team to get the highest quality masters possible.



## Making the Mould for a GRC Planter

Satu Bumi generally uses resin moulds which are made by applying many layers of gel coat, various gauges of fibreglass matting and high quality resin to the surface of a master to create a reverse image. However, depending on the type of mould required, Satu Bumi sometimes uses rubber or wood for moulds. In addition, a variety of optional textures can be imprinted into the walls of the moulds as part of the mould making process.

The quality of a mould can have a significant effect on the ultimate quality of a GRC casting. Therefore, Satu Bumi utilises high quality raw materials to ensure its precasting moulds are of a world class standard.



## Making GRC Planters

The actual GRC products are made by spraying or pouring a scientifically calibrated mixture of concrete and glass fibre slurry into moulds before demoulding and curing.

The high quality of Satu Bumi's GRC products is dependent on properly calibrated and maintained GRC production equipment, properly trained staff, high quality raw materials and industry standard production, monitoring and quality control practices.



## Finishing GRC Planters

The first step in the finishing process is to clean up any loose or sharp edges of the cast products subsequent to demoulding. After that, there is a significant number of optional stains and coatings that can be applied to the completed GRC casting including external sealants, internal sealants, graffiti protection, oxide colouring stains and specialty paints.

Satu Bumi achieves excellent finishing results because we have invested significantly in sourcing the best available finishing products and implementing industry standards based finishing processes.



## Staging Custom GRC Planters

Staging is Satu Bumi's final quality control process for custom planters that require a high level of precision, shop drawings compliance and pre-planned on-site interconnection.

During staging, apart from leveling and general final quality control, all measurements are checked against the shop drawings and the planters are staged against each other to ensure they fit together as intended. Finally, the planter numbering is checked to ensure it is in accordance with the project plan for installation management.



This part of the quality control process is essential for professional landscaping projects with custom planters.

## Packing GRC Planters

Appropriate packaging is an essential element in the preparation of GRC products for transportation to ensure they are not damaged between the factory and their ultimate destination. This is particularly important if the products need to be shipped over significant distances with the potential of several loadings and unloadings along the journey.

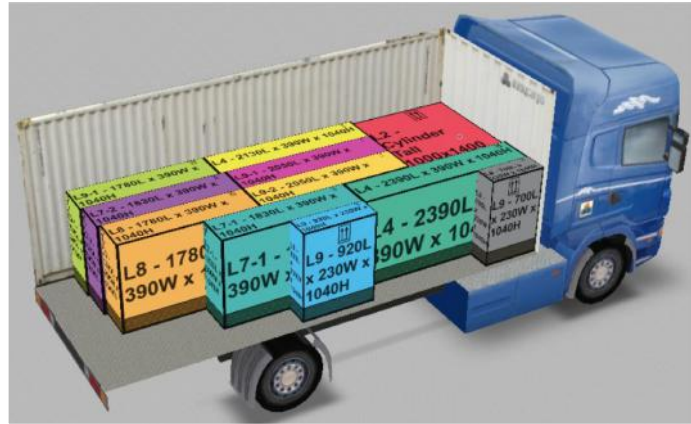
Satu Bumi offers both wood and cardboard packaging options depending on the shape and size of the products or the specific requirements of the customer.



## Transporting GRC Planters

Transportation is typically an important and expensive element in sourcing GRC products. Therefore: -

**For Wholesale Distributors:** - where possible, Satu Bumi's Distributor Range of products are designed for nesting and for efficient paletisation and containerisation. Also distributors have differently priced packaging options that include "clean skins packaging", "robust timber packaging", and "premium heavy duty cardboard and timber packaging".



**For Commercial Projects:** - all CityScape commercial orders are packaged in "premium heavy duty cardboard and timber packaging". In addition, all CityScape commercial orders for the Australian market are generally shipped from the factory to our warehouse facilities at the customer's nearest capital city port. Therefore, since our customers only pay for the transport from the port, Satu Bumi's transport charges are generally less expensive than the cost of interstate road transport from our Australian based competitors.



### Compliance with Industry Standards for Making GRC Products

Satu Bumi is committed to the application of industry standards in all aspects of our business where it is realistically possible, including compliance with the "Specification for the Manufacture, Curing & Testing of Glassfibre Reinforced Concrete (GRC) Products" produced by the International Glassfibre Reinforced Concrete Association (GRCA) in the UK.



# What are the Advantages of GRC Planters?

Glassfibre Reinforced Concrete is often referred to in different ways such as GRC, Glassfibre Reinforced Concrete or Lightweight Concrete. While the name can be interchangeable the fundamentals of well manufactured GRC remain the same and it is an amazing material for making high quality precast concrete planters.

## GRC is Thinner & Lighter

Glass Reinforced Concrete (GRC) is essentially concrete but differs from traditional concrete through the addition of alkaline resistant glass fibres that provide significant additional flexural and tensile strength. Therefore, due to the amazing properties of GRC, the walls of GRC planters can be made significantly thinner than what is required for traditional cast concrete planters to achieve the same or greater strength. Often manufactured to a wall thickness of around 1.5 to 2 cm, GRC planters can be much lighter than precast concrete products. This is where the term lightweight concrete comes from.

## GRC is Durable

The fantastic durability characteristics of concrete are well known and respected as evidenced by the extensive use of concrete in the construction industry over hundreds of years. This durability includes resistance to weather, water permeability, chemicals and fire. Glassfibre reinforced concrete does not readily burn or emit smoke when exposed to fire which makes GRC based pots and planters particularly suitable for high-rise buildings where fire performance requirements are critical.

## GRC is Versatile

Glass Reinforced Concrete (GRC) offers an unrivalled creativity and versatility in the development of new

product designs because it can be used to accurately reproduce almost any small or large product design and can be finished in a wide variety of textures and colours.



## GRC has Advantages Over Blockwork and Formwork

Project estimators, contract managers and project estimators are often faced with a decision to choose between GRC planters or some form of blockwork or formwork as part of the landscaping for their projects. Depending on the circumstances of the project, each of these options may be appropriate. However, the following is a summary of some of the key benefits of choosing GRC planters over blockwork/formwork planter boxes.

Continued on p. 10

1

### Independence to Slab - Waterproofing

Precast GRC planters do not form part of the building slab and therefore will not develop hairline cracks over time due to movement in the slab. This is possibly the most important benefit of precast GRC planters over blockwork and formwork because hairline cracks facilitate water leakage. And the last thing you want to have to do is remove all the vegetation and planting medium from a large blockwork planter to find an elusive crack that is enabling water leakage.

2

### Convenience & Flexibility

Since GRC planters are precast at a factory, they arrive at a landscaping site on a designated date ready to install. And this date can generally be changed if the project is either early or late. This flexibility can be very convenient when everyone is busy at the end of a project and the pressure is on to complete.

3

### Simplifying Project Management

Using prefabricated planters avoids the practical issues associate with scheduling and managing on-site tradesmen and the associate inconvenience of having their equipment and raw materials on site when there are all sorts of other tradesmen on site towards the end of a project.

4

### Consistent Planter Form

Professionally built mould mean that each product will retain an identical form with a high degree of detail in the finish.

5

### Quality - Waterproofing

Manufacturing off-site allows for the use of optimum conditions for producing the highest quality concrete planters. On-site concrete mixing is less controllable and does not always provide optimum concrete strength and density which are important, in conjunction with appropriate internal membrane tanking, in avoiding water leakage.

6

### Finishing Options

Satu Bumi's Product Engineering Team can work to the individual design intent of just about any project in the design and finish of planters. This means the available options for shape, colour, texture, and size of planters is much greater than what can generally be achieved with on-site blockwork or formwork.

7

### Comparatively Lightweight

GRC planters are very strong due to the inclusion of glass fiber reinforcement. Therefore, the walls of the planters can be made much thinner than blockwork and formwork to achieve similar strength. This enables GRC planters to be much lighter and more suitable to balconies and other areas where weight is an issue.

8

### Modularity

Precast GRC planters are modular. Therefore, unlike blockwork and formwork, they can be moved if the landscape requirements change over time.

# Important GRC Planter Sourcing Considerations

## 1. Outside planter boxes need to last

Commercial buildings are designed to last at least twenty years before requiring significant refurbishment. The investment economics simply don't make sense otherwise. Therefore, it stands to reason that the substantial elements of a commercial building landscaping or patio scaping should also be expected to stay intact, functional and reasonably appealing for at least a similar time frame. So, you need to choose planter boxes that are going to last. However, most planter boxes don't last!

Planter Boxes can be made from a seemingly endless array of different materials such as clay, plastics, fiberglass, metals, stone, wood, block-work and a wide variety of composites. And if made well, planter boxes from any of these materials can look great. But are they suitable for long term commercial projects when you consider the following:

- Clay, plastics and fiberglass breakdown with long term exposure to harsh weather conditions.
- Metals tend to be expensive and/or corrosive.
- Stone is heavy and tends to develop hair line cracks that facilitate water seepage.
- Wood is difficult to seal from water leaks and tends to rot.
- Block-work is heavy and susceptible to cracking which can lead to leakage from waterproofing membrane damage.
- Most of the composites with the word "poly" in their name haven't been around in the form of planter boxes long enough to know what they will look like in twenty years and their fire rating can be a real issue.

Continued on p. 12

### GRC Planters - Important Considerations when Sourcing

Choosing precast concrete planter boxes for commercial landscaping projects is easy, right? Well, maybe not as easy as it looks! But since planter boxes usually form a long term and highly visible element of most commercial building or landscaping projects, it's important to get your planter box decision right. Let's have a look at five things you should take into consideration.

- Outside planter boxes need to last - so which ones last?
- GRC suppliers are not all the same - so which suppliers are right for me?
- GRC manufacturers are not all the same - does it really matter?
- Not all GRC manufacturers are good manufacturers - so how can I tell the difference?
- Price is a factor but not the full story - so what do I need to know in addition to price?

To be blunt, none of these materials really stack up as an ideal raw material for the construction of long-term planter box solutions for outside commercial projects. So why use them? Alternatively, GRC (Glassfibre Reinforced Concrete) is fundamentally concrete with all the long lasting attributes that have made concrete one of the most popular and adaptive building materials for literally thousands of years. So, expecting GRC planters to last for twenty years is not too big an ask !

Concrete has been such a tremendously successful building material because it has great compressive strength, weather resistance and can be easily moulded to virtually any architectural shape. But planter boxes need more than that. This is where the GRC technology comes into play. Glass fibre reinforcement adds flexural and tensile strength which are essential elements in the construction of concrete planter boxes. And the practical result is that GRC planter boxes will last !

## 2. GRC Suppliers are not all the same

Planter box suppliers are either manufacturers or resellers of manufacturers' products. Both supply channels have their advantages and disadvantages. Either one could be suitable for your requirements so let's broadly summarise the key differences to minimise any confusion when you are talking with multiple potential planter box suppliers.

**A word of warning:** - By the very nature of a reseller's position in the market it is the role of a middleman. This is a valuable role in linking buyers to manufacturers but it is a service that comes with a layer of cost that is usually accounted for by either an increase in the reseller's sales prices or a reduction in the quality of their products. To avoid this issue, there are some resellers that promote their businesses in terms of "cutting out the middleman" to imply that if you buy from them you are buying directly from the factory. However, if they are not actually the manufacturer or a middleman it is difficult to understand what they actually are. Therefore, at least that part of their promotional material should be considered questionable.

Resellers can be good supply options if you are looking for fast delivery of relatively small to medium sized planter boxes, relatively small quantities of a planter box shape or you have little interest in tailored planter box solutions.

### Resellers typically

**Hold readily available stock**

but don't usually hold a large quantity of any item on hand because of limited warehouse space.

**Have competitive pricing**

but don't always stock the best quality products because their market is primarily driven by price.

**Hold a variety of different manufactures' products**

but usually import their products from factories that mass manufacture to a price point which often translates into a lower quality product, have limited, if any, ability to source tailored planter box designs to meet specific project requirements, and if they can source tailored designs, they have limited, if any, ability to commit to manufacturing delivery schedules.

**Specialise in small to medium sized products**

because the larger planter boxes are expensive to hold in stock and take up a lot of valuable storage space, and it is not economically viable to mass produce the larger form planter boxes for stock holding.

### Manufacturers typically

**Hold limited stock**

but can readily produce whatever quantity is required.

**Have competitive pricing**

but can manufacture to a higher or lower specification that will be reflected in the price.

**Control the manufacturing**

therefore, they can control production delivery commitments, and they can control their own commitment to quality.

**Have their own product range**

but are not restricted to that product range because they have the flexibility to manufacture what they like.

**Can provide tailored solutions**

because they have their own product engineering team.



Commercial projects often specify tailored sizes in different standard shapes such as narrow trough planters, tall square planters, cylinder planters, rectangle planters, square planters or even specialised architectural shapes, which are generally not available off the shelf from a reseller. Therefore, unless compromise is an option, a manufacturer will need to be involved either directly or through a reseller to a manufacturer.



### 3. GRC Manufacturers are not all the same

The all-inclusive term “GRC Manufacturer” covers several different types of manufacturers. Therefore, it may also be worthwhile having a broad understanding of the difference between the main ones.

#### “Job Shop” GRC manufacturers

Job Shop GRC manufacturers are typically small businesses, have limited factory floor space and are primarily geared for the manufacture of GRC products for specialised projects like building cladding and architectural structures. You can expect them to be comparatively expensive and not normally a good option for time-critical volume orders of precast GRC planters because they don't have the production capacity. However, they tend to know the technology well and make good quality GRC.

#### Local Australian GRC manufacturers

Local GRC planter manufacturers geared to produce both quality and volume are a rare commodity in Australia. The high factory overheads and staff costs in Australia must be recovered somehow and this will normally be reflected in their pricing. The

only way they can survive in the Australian market is to be good at what they do and charge accordingly. Therefore, the ones that survive tend to make high quality products at high prices.

#### Overseas GRC manufacturers

Australia imported over \$180 billion worth of goods and services last year. This is massive! So clearly the Australian market is recognising and benefiting from importing overseas products. Since GRC manufacturing is highly labour and floor-space intensive it is an ideal material to be manufactured in countries with a lower cost-base than Australia and this would typically be reflected in lower prices. So why wouldn't you buy your GRC planters from overseas? Well you would, if you had an overseas manufacturer that was able to produce a quality product on time. Therefore, the real issue here is finding the right overseas manufacturer and that is not an easy task.

#### Satu Bumi is a hybrid

Satu Bumi is unique in terms of this classification because it is a hybrid with its ownership, executive management, marketing and sales in Australia and its production facilities in Indonesia. This is a distinct market advantage since Satu Bumi has the stability of western management, capital and culture in conjunction with a low Indonesian cost infrastructure resulting in quality product, reliability, very competitive pricing and good customer service.

Although GRC manufacturers are not all the same, you can find a good GRC planter box supplier from any of the above categories. However, being able to categorise your potential suppliers will better prepare you to assess their suitability for your GRC planter projects.

Continued on p. 14

## 4. Not all GRC manufacturers are good GRC manufacturers

Manufacturers have a lot of distinct advantages over resellers. However, it shouldn't come as too much of a shock to hear that not all GRC manufacturers are good GRC manufacturers.

So, what do you need to do? Well, if you want to deal directly with a planter box manufacturer, the key is to find one that is committed to the use of quality raw materials and industry recognised manufacturing standards. The document on GRC manufacturing standards called "Specification for the Manufacture, Curing & Testing of Glassfibre Reinforced Concrete (GRC) Products" from The International Glassfibre Reinforced Concrete Association (GRCA) is an excellent summarised guide to the standards that are applicable to the manufacture of good GRC.

If a manufacturer cannot show a commitment to the use of quality raw materials and recognised manufacturing process standards, then move on and find another manufacturer. It's as simple as that. GRC is easy to make but good GRC is not and there should be no tolerance given on this issue if you are expecting to source GRC planters that last. There is no doubt that I am going to put Satu Bumi forward as a trustworthy manufacturer but there are also other GRC manufacturers that supply into the Australian market that do a good job. You just need to avoid the "GRC Cowboys" that cut corners to reduce manufacturing costs and there are plenty of them.

### Conclusion

The most valuable piece of advice you will ever find on the web about sourcing GRC planter boxes for commercial projects is to choose your GRC manufacturer carefully whether you are sourcing GRC planters through a re-seller or directly from the manufacturer.

## 5. Price is a factor but not the full story

It goes without saying that price will always be a factor in any commercial purchase. But when you are sourcing GRC planters be careful not to mix up the concept of price with value. There are plenty of war-stories of cheap GRC planters that have completely fallen apart or cracked because of poor quality raw materials or poor manufacturing practices. Be aware that not all GRC is good GRC.

When GRC planters cost less than the opposition there is generally a reason and you need to be careful it is not simply because of cost cutting from high volume producers. As you could imagine, when there are multiple layers of distribution between a manufacturer and yourself there are also the same multiple layers of on-cost. Therefore, to keep the end price competitive when re-sellers are involved, manufacturers at the front end of supply chains are under great pressure to keep their manufacturing costs down. This is often reflected in the poor quality of their products.



# A Solutions Approach to Sourcing GRC Planters

From a very broad perspective, GRC planters can be either sourced as a commodity or as a solution and both approaches can be appropriate depending on the circumstances. Let's have a closer look at each of these approaches.

1

## The Commodity Approach

the buyers have (or believe they have) a clear understanding of exactly what planters they are looking for.

2

## The Solutions Approach

the buyers are generally looking to source GRC planters for larger, more complex and/or more exacting projects.

3

## Satu Bumi's Solutions Approach

Satu Bumi has developed a "Solutions Approach" for the supply of GRC planters, at no additional cost, that provides a unique offering to the Australian market.

## The Commodity Approach

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With this approach to sourcing GRC planters, the buyers have (or believe they have) a clear understanding of exactly what planters they are looking for or their requirements and/or expectations are open to compromise on the planter sizing. The planters are basically seen as a

commodity and the selection and sourcing process is generally centred around price and availability. Therefore, this approach is typically well suited to smaller and/or less complex projects and the planters can be sourced from whoever has the appropriate stock on hand.

## The Solutions Approach

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With this approach to sourcing GRC planters, the buyers are generally looking to source GRC planters for larger, more complex and/or more exacting projects. Therefore, they are looking for a solution to the problem of managing the specification, costing, purchasing and delivery logistics for a project's specific GRC planter requirements. For this approach to be successful, it requires a greater level of communication, cooperation and project planning between the customer, the supplier and potentially with the manufacturer if it is different from the supplier.

The solutions approach integrates the supplier into a project by incorporating the supplier's responsibilities into a project plan and therefore adding the supplier's specific expertise and resources into the project. Let's face it, if you have a trusted supplier and it can provide valuable experience to a project, why not? This is good

project management methodology and can help to avoid last minute surprises in supply that can adversely impact completion dates. The installation of GRC planters is usually one of the last things that happens on a project. Therefore, late deliveries, damaged planters, miscalculated planter specifications or lack of delivery planning are all things you do not want to hear about at the back end of a project.

The complexity of sourcing and installing GRC planters on large projects can often be underestimated resulting in costly mistakes and project delays. Even experienced project managers and estimators are often not completely familiar with all the critical issues associated with getting GRC planters sized, sourced and delivered in accordance with a project's design intent and site logistics.

## Satu Bumi's Solutions Approach

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Satu Bumi has developed a "solutions approach" for the supply of GRC planters which includes the following six elements at no additional cost:

### Assistance in sizing and costing GRC planters

Satu Bumi's customer service team is available to provide quotation costings and practical suggestions that may not always be apparent to estimators that don't spend their whole life specifying GRC planters. Even on high-end projects,

it is always commercially healthy to have a balance between design intent, cost and practicality when sourcing GRC planters. However, without a clear understanding of the manufacturing options with GRC planters, it is not easy for estimators and project managers to efficiently estimate or source the best GRC planter options in terms of size, shape, finish and cost. Use of this service at the front end of a project can save a lot of time and be helpful in avoiding estimating mistakes.



### Product engineering for custom-made planters

As the manufacturer, Satu Bumi offers the services of a product engineering team with the expertise and experience to provide shop drawings, design suggestions and even samples for custom-made planters. This service cannot be provided by a distributor that is not also the manufacturer.

### Access to a catalogue of standard size GRC planters

Having produced GRC planters for years, Satu Bumi has built up an inventory of precast moulds for many GRC planter shapes and sizes that it makes available to its customers. Re-use of those moulds enables faster production turnaround and these standard shapes and sizes can be conveniently mixed and matched with any custom-made planters made by Satu Bumi.

### Direct communication with the manufacturer

The convenience of being able to talk directly to the manufacturer, particularly when custom-made GRC planters are involved, can improve the efficiency of most GRC planter supply projects.

### Direct supply from the manufacturer

Direct product supply from the manufacturer removes the on-cost of a middle-man and enables more competitive pricing.

### Project management on larger projects

Project management at the supplier end on larger GRC planter projects is often not considered and this can be a significant mistake. The logistics of supply for GRC planters on larger projects can be complicated and are often time critical because the planters are generally delivered towards the end of the project. Therefore, Satu Bumi offers the services of a project manager on all large projects to work directly with the customer's project manager to ensure that the supply process is efficient.

Satu Bumi's six element solutions approach to the supply of GRC planters is a unique offering to the Australian market and can provide significant benefits to its customers. It is relatively easy for a GRC planter supplier to take an order and arrange a delivery date for the supply of standard off-the-shelf GRC planters. However, once you throw in the complexity of large quantities of different sized planters and/or custom-made planters and the issue of delivery logistics, having a single project manager at the supply-end can be the difference between a smoothly run GRC planter installation and a mini-disaster.

## Conclusion

If you are sourcing a small number of GRC planters and you are comfortable to compromise on standard size planters, then treating the planters as a commodity is probably the best approach for you. Alternatively, if you have a large GRC planter project or you require custom-made GRC planters, you should seriously consider taking a solutions approach to the sourcing of the planters. However, whether you chose to use either the solutions approach or treat the GRC planters as a commodity, the selection of the right supplier is the most critical element in the whole sourcing process.



# The Importance of Project Management

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The advantages of the use of GRC technology in making commercial grade planters for large construction projects is well known. Nevertheless, getting them made properly for the intended purpose and delivered to suit a large project's specific site circumstances efficiently requires a certain amount of experience, planning and management. From a generic perspective, this is no great revelation. However, the project management element that relates to the supplier's side of a project is often underestimated and sometimes overlooked completely.

All large construction projects have project managers to manage the different segments of the project and one of them will be assigned the responsibility for the landscaping and/or the sourcing and installation of the GRC planters. However, the project manager will need more than a contact person at the GRC planter supplier end to nominate the timing of delivery and do the invoicing. It just makes sense on large GRC supply projects, particularly if there are multiple custom-made planters involved, that the supplier should be expected to provide a project manager for the same types of reasons that a project manager is required at the customer end.

A good supplier-end project manager will provide assistance and improved communication on the following issues: -

1

## At the product engineering stage

Confirmation on sizing options - standard sizes, custom-made sizes and tolerances  
Confirmation on finishing options - availability of colour processes and textures  
Confirmation on waterproofing options - internal, external and integrated

2

## At the manufacturing stage

Communication - on progress  
Staging - to ensure adjoining products match before they leave the factory  
Product packing - to suit the site installation logistics with lifting equipment

3

## At the delivery stage

Coordination - to ensure deliveries align with the project installation plan

4

## At the post installation stage

Defect management - nobody wants to admit it, but it does happen and must be managed

Sales, customer support, or business development staff can be great value in facilitating an order. We have very good ones in our business and so do a lot of our competitors. However, their focus is generally on the development of new opportunities not necessarily the management of current projects. Therefore, from a practical perspective, having a delineation on the supplier side that clearly identifies a post-order project manager for your project can provide better communication, a more controlled GRC planter installation and a lot less stress.

### Conclusion

If you are sourcing GRC planters for a large project, it may be a good idea to ask who the "project manager" is going to be at the supplier end and what responsibilities are assigned to that role. And if there is not going to be one or he/she is going to be the same person that completed the sale in the first place, it may be worth reconsidering the supplier you have selected.



*Example of the Installation of Very Large GRC Planters At the Sydney University by Landscape Solutions Where Purpose Built Packing and A Tailored Lifting Solution Were Utilized*

# Custom-Made GRC Planters Don't Need to be Expensive

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There is a great myth promulgated out in the GRC manufacturing world that custom-made GRC planters need to be very expensive. In some specific cases it is true, but it is not necessarily always the case. To explain this, let's have a look at some of the background issues that relate to the costing of custom-made GRC planters: -



## The difference between custom-made and standard size GRC planters

Generally, custom-made GRC planters require a specially made casting mould that will probably not be reusable. Therefore, the whole cost of the casting mould needs to be recovered by the manufacturer within the price of the custom-made GRC planter. On the other hand, a casting mould for a "standard size" GRC planter can be made to be reusable and therefore only a small portion of the initial cost of that mould needs to be recovered from each planter produced. So the way to keep the cost of custom-made GRC planters down is to minimise the labour and materials cost of making the custom mould.

## The different types of GRC casting moulds

GRC casting moulds can be made with many different materials such as steel, rubber, resin or wood but

they don't all cost the same to make or have the same life span. Steel is very expensive, and steel moulds have to be used many times over to recover their high cost. Rubber is expensive and although it is great for producing intricate detail, it is easily damaged and therefore typically not able to be reused a lot. Resin tends to be a good balance between cost and reusability and wood is the least expensive with the least reusability. The type of mould a manufacturer chooses to use will depend on the manufacturer's manufacturing process and competence in the material to be used.

## The manufacturing process used to make GRC planters

GRC manufacturers typically use either the spray-up or pour-casting method to produce GRC planters. With the spray-

up method, the planter casting moulds have open walls to which the GRC slurry is layered where as with the pour-casting method the planter casting moulds have double walls within which the GRC slurry is poured. The spray-up method generally produces a much stronger end product than the pour-casting method and the moulds are also much less expensive to make. GRC manufacturers that use the pour-casting method will generally avoid custom-made GRC planter options as much as possible because the double walled moulds are quite expensive to make and store.

Manufacturers often choose the pour-casting method to cast GRC planters because it requires less labour and expertise in the actual manufacturing process than the spray-up method.

### The cost of labour to make casting moulds

Making GRC casting moulds requires a high level of expertise and experience no matter which mould making method is used. Therefore, the labour cost in making them is very significant and will also vary based on the method used.

### The supplier's preference

GRC planter suppliers generally prefer customers to purchase planters from their "standard sizes" because the orders are easier to manage through the supply process and they don't need to worry about the cost of custom moulds. Therefore, there is a tendency for some suppliers to cost custom-made projects high to convince customers to compromise with a less suitable standard size. This is not always the case, but it is an issue to watch out for.

### Summary

Custom-made GRC planters will most likely be comparatively expensive if the manufacturer making them: -

- uses the pour casting production method
- makes the casting moulds out of either steel or rubber
- has high labour costs
- has a standard range of GRC planters that it would prefer you to purchase

Custom-made GRC planters will not be much dearer than standard sized planters if the manufacture making them: -

- uses the spray-up production process method
- makes the casting moulds out of either resin or wood
- has low labour costs

### Conclusion

It's pretty clear who is driving the myth that custom-made GRC planters need to be very expensive. It's the manufacturers, or the resellers for those manufacturers, that don't want you to order custom-made planters because their manufacturing processes, mould making methods and/or high labour costs make their custom-made prices uncompetitive. However, custom-made GRC planters do not need to be a lot more expensive than standard sized planters if you choose the right manufacturer.



# Order Delivery Roadmap for Commercial Projects

The delivery and installation of GRC planters and street furniture for a commercial project typically happens towards the back end of the project and can be time critical with regards to handover dates. However, since these items are not the focus of the project management of a construction project, the detail of the logistics relating to the sourcing and delivery of planters and street furniture can be easily overlooked. Therefore, this information sheet sets out a typical roadmap framework for what needs to be considered to ensure that the delivery of GRC planter and street furniture orders correlate with an overall project plan.

	Suggested Time Allowance for Completion	Accumulated Time from Commitment to Order
<b>Contractual Formalities</b> <ul style="list-style-type: none"> <li>Since the contractual terms are the basis of an order, care needs to be taken to ensure both parties are comfortable with their detail</li> <li>Shop drawings cannot commence prior to the receipt of a formal purchase order and the agreed deposit</li> </ul>	2 weeks	2 weeks
<b>Shop Drawings</b> <ul style="list-style-type: none"> <li>Since shop drawings will be carefully followed in the production process, care needs to be taken to ensure they fully reflect the customer's requirements</li> <li>Production cannot commence until the shop drawings are completed and formally approved by the customer</li> </ul>	4 weeks	6 weeks
<b>Production</b> <ul style="list-style-type: none"> <li>Satu Bumi manufactures to order because it typically does not hold inventory</li> <li>Production time can be impacted by the shape, size and finish required</li> </ul>	8 weeks	14 weeks
<b>Delivery</b> <ul style="list-style-type: none"> <li>Delivery dates are typically confirmed four weeks prior to delivery</li> <li>Full payment of the outstanding amount relating to an order typically triggers the delivery of that order to the relevant construction site</li> </ul>	4 weeks	18 weeks
<b>Delivery Delays</b> <ul style="list-style-type: none"> <li>Warehousing charges are accepted by Satu Bumi for the first two weeks of delays in deliveries requested by the customer</li> <li>Warehousing charges will be invoiced to the customer for delays in deliveries requested by the customer of greater than two weeks</li> </ul>		

Based on the above table, project managers should allow for at least eighteen weeks from the date a decision is made to purchase GRC products from Satu Bumi to ensure there are no supply side delays in the delivery of the order. However, consideration should be given to adding additional contingency time to the above roadmap format for projects that are large and/or have a significant amount of custom design or specialised finishing associated with them.

The following is a summary of the Satu Bumi - Information Sheets that will provide additional helpful information relevant to the above table: -

- Shop Drawings & Swatches
- Planter Design Options
- Coloured GRC
- Drainage Risers
- Hidden Fixing Options
- Lifting Options
- Planter Waterproofing
- Transport Options
- Installation & Product Care
- Extended Warranty Statement

Copies of Satu Bumi's information sheets can be readily accessed via the following page of Satu Bumi's web site:  
[www.satubumi.com.au/download-library](http://www.satubumi.com.au/download-library)

# CASE STUDY

Satu Bumi's capabilities to deliver highly customised GRC precast solutions

## INTRODUCTION

This case study has been prepared to highlight Satu Bumi's capabilities in working with its customers to provide highly customised and successful GRC landscaping solutions for commercial projects.

With around two hundred employees, ten thousand square meters of factory space, and a large catalogue of standard sized planters and street furniture, Satu Bumi is one of the largest manufacturers of GRC landscaping products in the Southern Hemisphere. Therefore, Satu Bumi's is easily able to demonstrate its capacity to fulfill very large volume-based orders. However, in addition to capacity, Satu Bumi's primary market differentiator is its capability to provide custom GRC landscaping solutions that meet the design intent of some of the most complex customised commercial landscaping projects.

Satu Bumi's focus on the provision of custom landscaping solutions is soundly underpinned by its Product Engineering Division which has thirty-five employees fully engaged in the pre-production stages of the development of custom GRC designs. This includes six full-time drafts-people that are focused on the design and ready-for-production CAD-based shop drawings for custom projects and a large team of mould makers that have the depth of experience required to make moulds for almost any GRC precast design requirement.

The following example project has been used to illustrate how Satu Bumi works with its customers to create highly customised and practical GRC landscaping solutions.

### Example Project – 511 Church Street

This example project was chosen for the case study because it

required the design and delivery of a range of highly customised GRC landscaping elements that showcased Satu Bumi's process driven customisation capabilities.

### Project Details

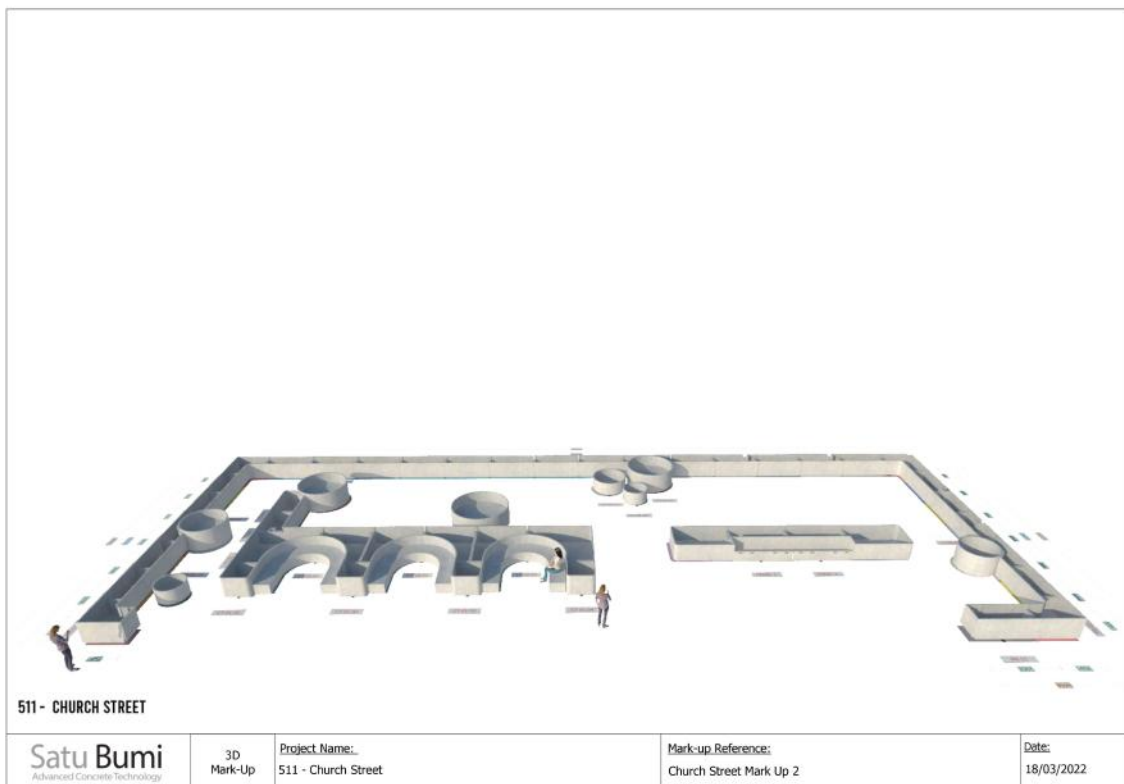
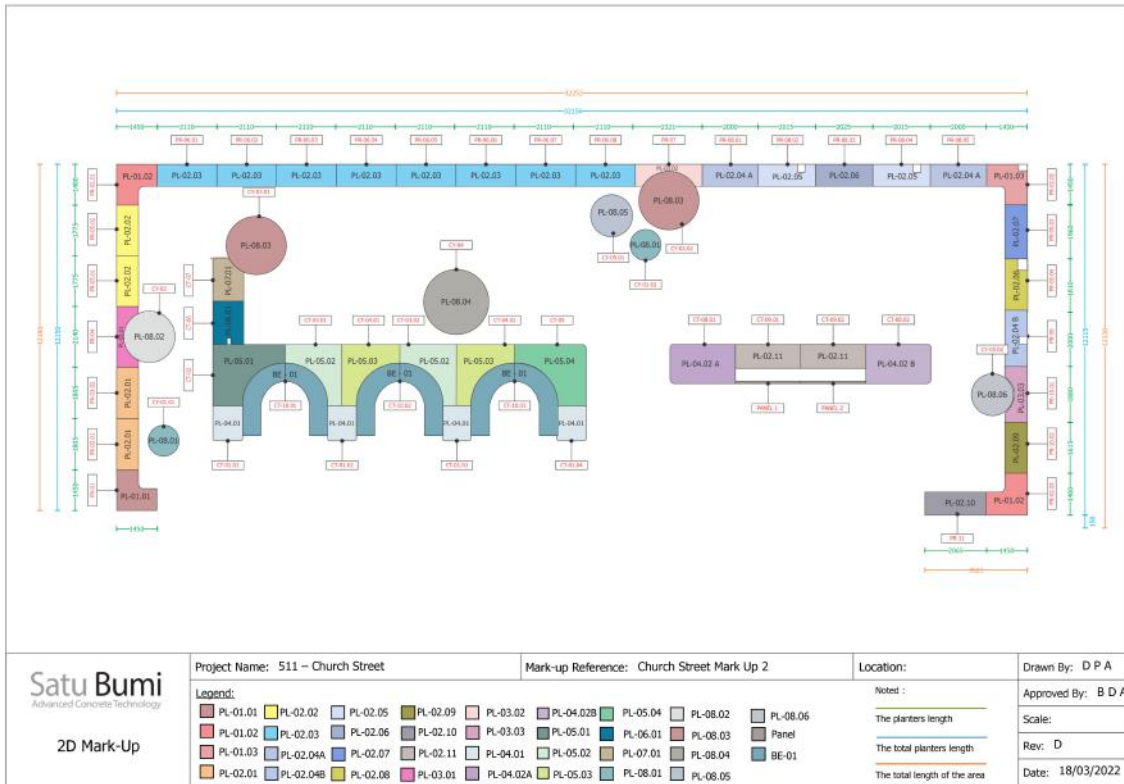
Address	: 511 Church Street, Richmond, Melbourne
Property Owner	: Cremorne Properties
Project Management	: Maben Group
Landscaper	: Living Landscapes

### Preliminary Quotation Stage

Upon request from the Maben Group, and based on pre-construction landscape architect's drawings, Satu Bumi's Geelong based Estimating Team provided a preliminary quotation for a highly customised GRC precast solution for the refurbishment of an outdoor social space at 511 Church Street, Richmond. The solution included several different shaped and sized GRC elements including standard rectangular shaped planters, standard cylindrical shaped planters, numerous custom shaped planters, bench seats and a barbeque section.

### Final Quotation Stage

Upon notification by the customer that Satu Bumi's preliminary quotation was competitive, and on the receipt of the customer's approved landscaping drawings, Satu Bumi's Estimating Team produced Satu Bumi's final quotation for the project. The final quotation was provided to the customer in conjunction with the following 2D and 3D markups which were produced by Satu Bumi's Production Engineering Team to ensure the deliverables for the project were clearly understood by all the relevant parties.



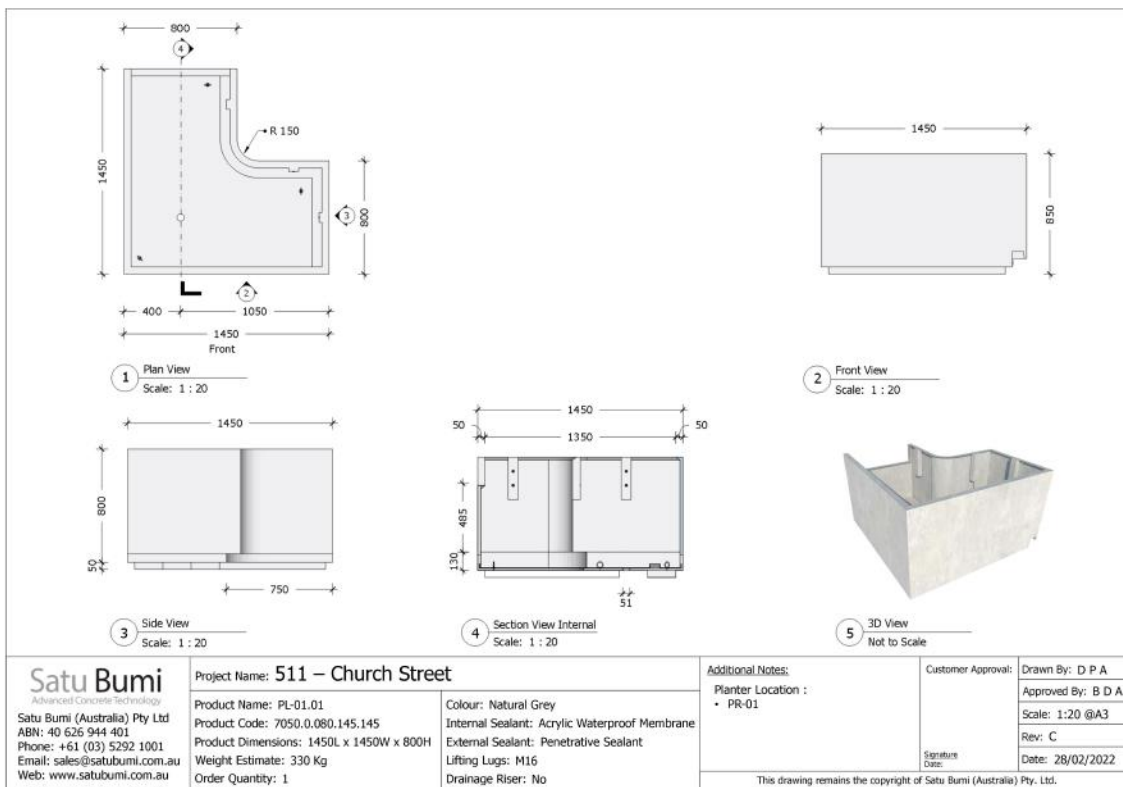
### Shop Drawings Stage

Upon the customer's approval of Satu Bumi's final quotation and agreement on the commercial terms for the project, Satu Bumi's Product Engineering Team completed a fifty-six-page set of detailed shop drawings that included each of the GRC elements on the project shown in the above mark-ups. These shop drawings then went through an iterative fine tuning and approval process in conjunction with the customer. Since these drawings would become the blueprint for the manufacturing process, they needed to be accurate to the finest detail. The following are examples from

the approved shop drawings that show some of the detail of the customised elements required for the project.

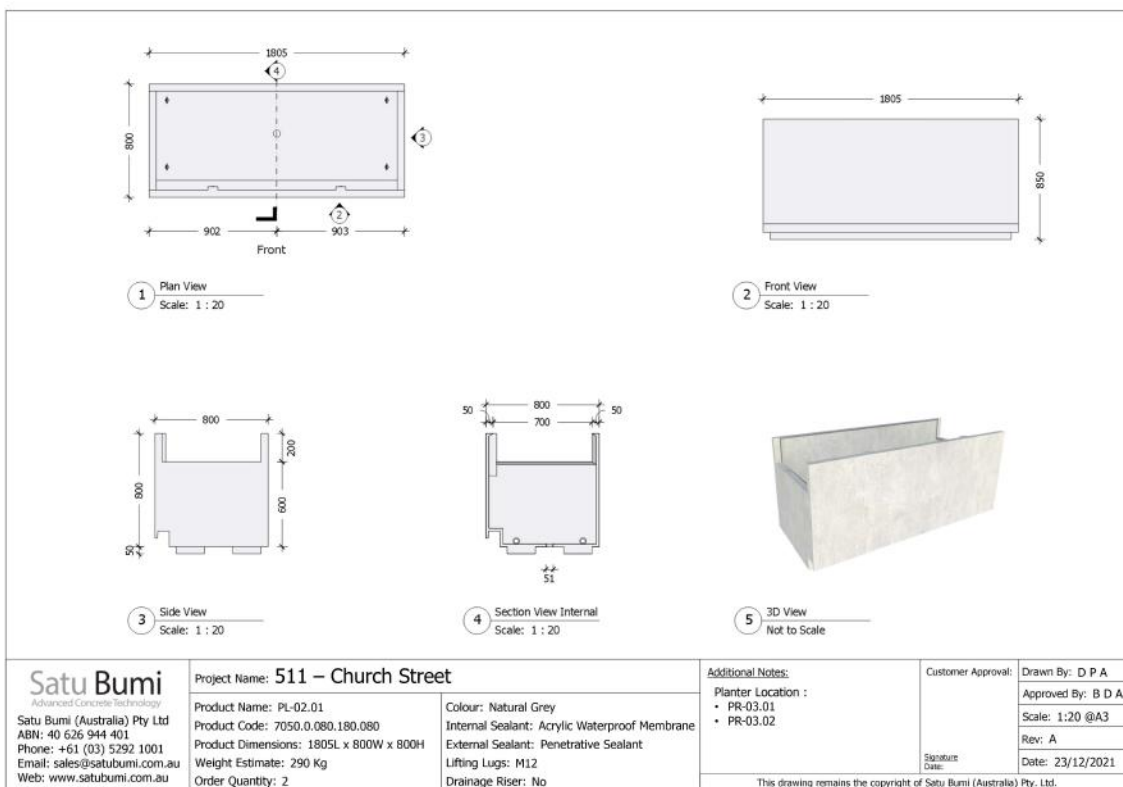
The first drawing highlights a corner-piece planter with several customised elements including a curved inner edge, ferrule reinforcement and imbedded ferrules for the subsequent attachment of a handrail. The ferrule reinforcement was included to provide the structural strength required to hold the handrail and the precise locations of the imbedded ferrules were crucial for the on-site attachment of the handrail after installation of the planters.





The second drawing highlights a rectangle planter with lowered side walls and a bottom edge lip on its front wall to accommodate the post-installation addition of mood lighting. After planting-up, the lowered side walls design for the adjoining planters gave the appearance of the top of the garden being continuous.

Each of the drawings also show the location of embedded lifting lugs for use with a crane during the on-site installation process. Some of the fifty-nine GRC elements required for the project weighed over half a ton and the use of lifting lugs assisted in avoiding damage when manoeuvring them into position.



## Manufacturing Stage

Upon final customer approval of the shop drawings, the manufacturing stage commenced and included the following substages:

- |  |   |
|--|---|
| <b>1</b> Sub Stage -1<br>Detailed pre-cast<br>mould making     | <b>4</b> Sub Stage -4<br>Demoulding and<br>finishing                    |
| <b>2</b> Sub Stage -2<br>Spraying up of the<br>moulds with GRC | <b>5</b> Sub Stage -5<br>Staging and<br>numbering                       |
| <b>3</b> Sub Stage -3<br>Curing                                | <b>6</b> Sub Stage -6<br>Packing ready<br>for containerised<br>shipping |

Each manufacturing substage included managed quality control processes and checkpoints to ensure the highest quality result. This included the staging of each of the adjoining GRC elements on a perfectly flat staging floor to ensure they were precisely matched and numbered so that they could be easily installed on-site using a Placement Roadmap provided by Satu Bumi.



One of the GRC elements during the manufacturing stage and after packing

## Delivery Stage

Upon final packing quality control, the products were shipped to Satu Bumi's warehousing facilities at the port of Melbourne where they were stored until the site was ready to receive them. After liaison between Satu Bumi's Administration Coordinator and the site project team, the products were loaded on a series of trucks and delivered to the site for installation.

## Installation Stage

The installation of all the GRC elements was managed by Living Landscapes which is one of Melbourne's leading landscaping companies. To assist in the installation process, Satu Bumi provided: -

- |   |
|---|
| <b>1</b> Document -1<br>An "Unpacking & Installation Guide", and                        |
| <b>2</b> Document -2<br>A "Placement Roadmap" for the location of each of the planters. |

## OUTCOME

Satu Bumi delivered a highly customised quality GRC landscaping solution on time and at a competitive price. Satu Bumi's processes from the preliminary quotation through to design, manufacture and delivery provided a smooth transition from start to finish which, in conjunction with the Maben Group and Living Landscapes, resulted in a successful landscaping project within which the GRC elements formed a major part.

- ✓ Delivered on time
- ✓ Competitively priced
- ✓ Commercial grade quality
- ✓ Met the architect's design intent

## CUSTOMERS' THOUGHTS

"The 511 Church Street deck was brought together with quality GRC products efficiently designed and supplied by Satu Bumi. The project required a mixture of rectangular perimeter planters, cylindrical tree planters, curved banquet seating and even a removable GRC wall for the BBQ area. Satu Bumi was hands on and extremely accommodating throughout the design and build to help deliver this key aspect of the project."

Daniel Castagnini – Maben Project Manager

"We are grateful for the excellent service, level of detail, and timely support provided by the team at Satu Bumi whilst they assisted us at 511 Church Street, Richmond. Satu Bumi has always maintained high quality products that are supplied to us for our projects to ensure our customers' satisfaction."

Chris Brenchley - Living Landscapes Director



511 CHURCH STREET, RICHMOND, MELBOURNE

# Satu Bumi<sup>®</sup>