

# TECHNICAL DATA SHEET

## ECO-GREEN MODELS COLLECTION

**Wonderful Structures** designs and manufactures biophilic construction systems. Our core technologies are based on different patents of invention that use advanced composites, innovative technologies, and scalable manufacturing. Our products are currently sold in 25 countries.

Here we present the general technical information of the **Eco-Green Technology** and the basic information of the different models, which will give you a better understanding of what we offer.

	Interior Area	Assembly Time	Required Team	Container Occupancy	Production Time
<b>Royal Cabin</b>	33.27 m <sup>2</sup> 358.1 Ft <sup>2</sup>	2 days	3 people	0.33	2 weeks
<b>Suite Single</b>	33.40 m <sup>2</sup> 359.5 Ft <sup>2</sup>	2 days	3 people	0.40	2 weeks
<b>Suite Double</b>	81.50 m <sup>2</sup> 877.3 Ft <sup>2</sup>	3 days	3 people	0.80	3 weeks
<b>Deluxe Cabin</b>	45.27 m <sup>2</sup> 487.3 Ft <sup>2</sup>	3 days	3 people	0.60	2 weeks
<b>Terranova 1 BD</b>	102.86 m <sup>2</sup> 1,107.2 Ft <sup>2</sup>	4 days	4 people	0.90	3 weeks
<b>Terranova 2 BD</b>	148.00 m <sup>2</sup> 1,593 Ft <sup>2</sup>	5 days	4 people	1.50	4 weeks
<b>Terranova 2 BD + Garage</b>	178.15 m <sup>2</sup> 1,917.59 Ft <sup>2</sup>	5 days	4 people	1.50	4 weeks
<b>Terranova 3 BD</b>	163 m <sup>2</sup> 1,754.51 Ft <sup>2</sup>	6 days	5 people	1.65	5 weeks
<b>Terranova 3 BD + Garage</b>	193.41 m <sup>2</sup> 2,081.8 Ft <sup>2</sup>	6 days	5 people	1.65	5 weeks
<b>Royale</b>	163.95 m <sup>2</sup> 1,764.74 Ft <sup>2</sup>	6 days	5 people	1.65	5 weeks
<b>Murano</b>	280 m <sup>2</sup> 3,014.30 Ft <sup>2</sup>	7 days	6 people	2.00	6 weeks
<b>Santorini</b>	307.49 m <sup>2</sup> 3,309.79 Ft	8 days	6 people	2.50	6 weeks
<b>Modular Rental Stage A</b>	173 m <sup>2</sup> 1,862.3 Ft <sup>2</sup>	6 days	5 people	2.00	4 weeks
<b>Modular Rental Stage B</b>	256 m <sup>2</sup> 2,755.7 Ft <sup>2</sup>	8 days	5 people	2.90	5 weeks
<b>Modular Rental Stage C</b>	339 m <sup>2</sup> 3,649.1 Ft <sup>2</sup>	10 days	5 people	3.80	6 weeks

Our **Eco-Green Homes** are a construction technology, we provide the modular system, not a finished house. To get a turnkey price, you must consult a local builder. We offer certified training for your local builder.

### WHAT IS INCLUDED AND NOT INCLUDED

**Prices include:** FRP shell components, galvanized nuts, bolts, and expansion bolts. generic building dossier, which includes structural memories, material properties, fire code compliance and waterproofing test report and engineering for the technology, Floor Plans Set, assembly guide, construction manual and repair kit.

**Prices do not include:** The installation of the foundation, Retention Walls, electrical, plumbing, HVAC, doors and windows, interior floors, walls, cabinets, fixtures and appliances, water sealants, insulation, soil and garden coverings.

### CUSTOM DESIGN

If you want to modify any of our designs or want a custom design, we will gladly attend your request for any design you have in mind.



Domed structures are the strongest human shelter ever conceived. The symmetrical shape allows domes to evenly and efficiently distribute the weight and stress along the entire structure.



### UNDERSTANDING OUR PATENTED EARTH SHELTERED FRAMING TECHNOLOGY

Wonderful Structures is a patented and revolutionary construction system for Earth-Sheltered Homes made with cutting-edge polymeric compounds and aerospace technology which offers the ability to live integrated in nature, with total comfort and high energy savings at very affordable prices.

Our “elevational” berm design layouts consist of an exposed elevation or face of the house, which usually faces south, to allow the sun to light and heat the interior, while soil covers the other sides and roof to protect and insulate the unit. The floor plans are arranged to allow common areas and bedrooms to share heat and light from the southern exposure.

The earth surrounding the house provides excellent soundproofing, protects against the impact of extreme outdoor temperatures, requires less outside maintenance, blends into the landscape more harmoniously than conventional homes, and offers exceptional protection against high winds, hailstorms, and natural disasters.

The inside of the house is constructed to take advantage of the solar gain and alternative energy efficiency, along with providing the convenience of traditional construction.



## ADVANCED MODULAR TECHNOLOGY

Completely waterproof, with clean spaces, **Eco-Green Homes** are built with modular components manufactured with the latest generation of fiber reinforced polymer technology. The structures offer infinite design possibilities, comfort, quick assembly, and total security based on professional engineering and construction level.

We combine technologies, materials and construction methods that are fast, efficient, renewable, waste-reducing; to create uniquely beautiful and futuristic designs that blur the lines between inside and out.



### GREEN ARCHITECTURE

Composed with recycled material and natural resins.



### CUSTOMIZABLE INTERIOR WALL FINISH

From cozy to elegant, you can paint, apply wallpaper, or any other material if desired.



### NATURAL LIGHTING INTERIOR WALL FINISH

Large openings draw in light to reflect on curved surfaces to provide bright interiors.



### MOISTURE FREE

Insulated using earth and water sealed to create a completely dry interior.



### HIGH STRENGTH STRUCTURES

Compliant with all International building codes.



### ENDLESS DESIGN POSSIBILITIES INTERIOR WALL FINISH

Create your own dream home configuration.

## SPECIAL QUALITIES



HIGH QUALITY MATERIALS



FIRE RESISTANT



WATER RESISTANT



NON-CORROSIVE

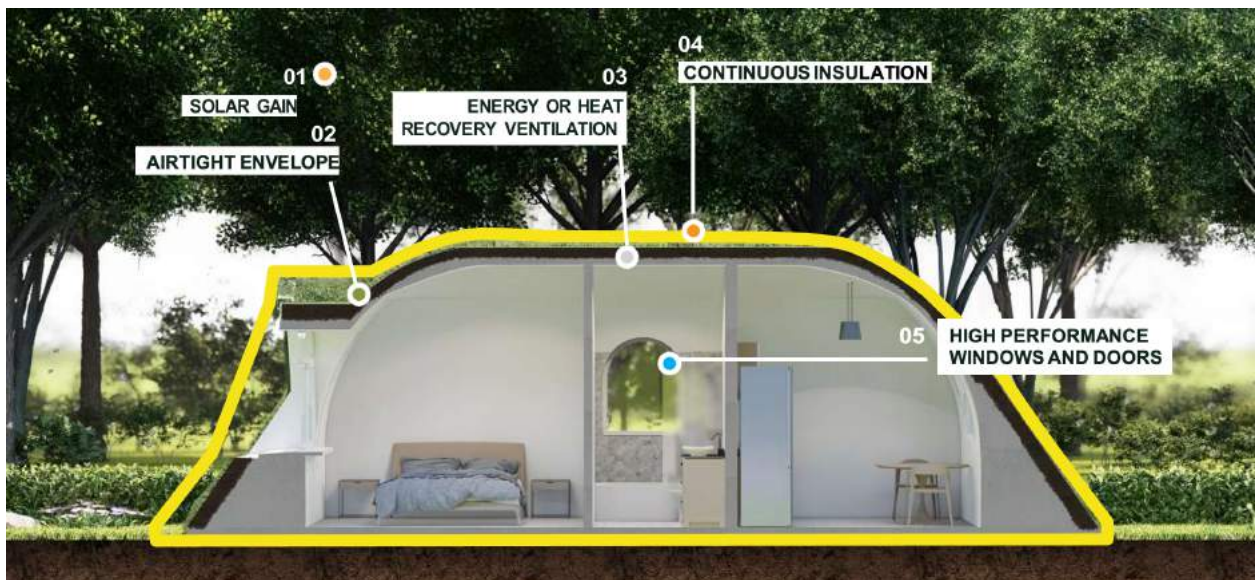
100%

NON-TOXIC



PRODUCE NO EMISSIONS

## WHAT MAKES A HOME ENERGY-EFFICIENT?



## SYSTEM ADVANTAGES

### SUMMER

- Minimizes impact in hotter seasons and climates.
- Prevents loss of conditioned and infiltration of outside air
- Recovers heat or energy from the outgoing air and transfers it to fresh, incoming air. This allows the incoming air to match the temperature of air circulating through the home.
- Special coatings reflect infrared light, keeping heat outside in summer.

### WINTER

- Uses the sun`s energy for heating purposes.
- Minimal heat loss in the winter, energy efficient comfort all year long, maximizing energy efficiency while lowering utility costs.
- Slabs can be insulated to increase R-values.
- Install specialized windows to reflect infrared light, keep heat inside during winters and reflect damaging ultraviolet light that protects interior furnishing from fading.

### TECHNOLOGY BENEFITS

- Factory modules made with long-lasting fiber reinforced polymers for increased lifecycle cost savings.
- Modules are manufactured in a high technology factory, where we develop each piece of the systems giving significant construction benefits.
- Modular construction system reduces build times by 30%-60%, lessens the likelihood of construction defects and offers designers and architects extensive creative flexibility.
- On-site work is reduced by 40% to 60% which benefits labor, material storage and overall construction costs.
- Low operational and maintenance costs to ensure a high ROI for the hospitality provider.
- Integrates with nature for low visual and construction impact in surrounding ecosystem.
- The systems withstand all weather conditions and can be optimized for maximum performance in all climate zones and all seasons.
- Fully integrates with Passive House Standards - a set of high energy efficiency methods and practices that reduce a building`s ecological footprint.
- Designed to be shipped anywhere since the modules can be handled as standard freight and transported on container vessels to any port in the world.



## GREEN ROOFS

An extensive green roof is a completely natural form of roof covering that uses a low-maintenance planting scheme consisting of hardy, drought-resistant plants. The plants used must be self-regenerating, predominantly short growing, densely planted, and exhibit a high degree of adaptability to survive in relatively extreme climatic conditions (drought, sun, wind, etc.). Ideally, when choosing the plants, regional variations and local climatic conditions must be considered.

The plants selected should require minimal moisture and demand little from the substrate in the way of nutrients. In general, irrigation systems are unnecessary for extensive installations, although irrigation may be required during the early stages to support germination and initial growth. An extensive green roof is chosen primarily for aesthetic and ecological reasons and as such, is not designed to be walked upon, except for occasional maintenance and control purposes.



### FEATURES OF AN EXTENSIVE GREEN ROOF:

- Vegetation design possibilities constrained by localized plant selection.
- Low maintenance - less than two inspections per year
- Shallow composition depth - 77mm and up
- Minimal dead load - starting at 35 kg/m<sup>2</sup> including plants.
- Economical installation and maintenance

## WINDOWS AND FACADES

Although windows and doors are not included with the order, **Eco-Green Homes** facade designs are compatible with a broad variety of doors and windows to satisfy any performance, style, impact resistance, energy star compliance, noise reduction, target U-Factor or Solar Heat Gain Coefficient needs, so buyers can choose the options that suits their needs the best.

Our window openings can support most systems including stationary, single hung, double hung, casement, gliding, sliding, awning or hinged, or any combination; and all types of materials including wood, aluminum, fiberglass and or composites. All designs can also use storefront type panoramic windows.

We provide plans for a myriad of facade designs that allow builders to customize their project with a distinct look of their choice.



PANORAMIC



STANDARD

## ORDERING & BUILDING PROCESS



### 01. CHOOSE THE RIGHT MODEL FOR YOUR LAND

- Purchase the land to build on.
- Discuss permitting with your local building department. We can help with technical documents.
- Make sure your financing is in place.
- Final price varies depending on your country, the cost of labor, and shipping.

### 02. PLACE YOUR ORDER

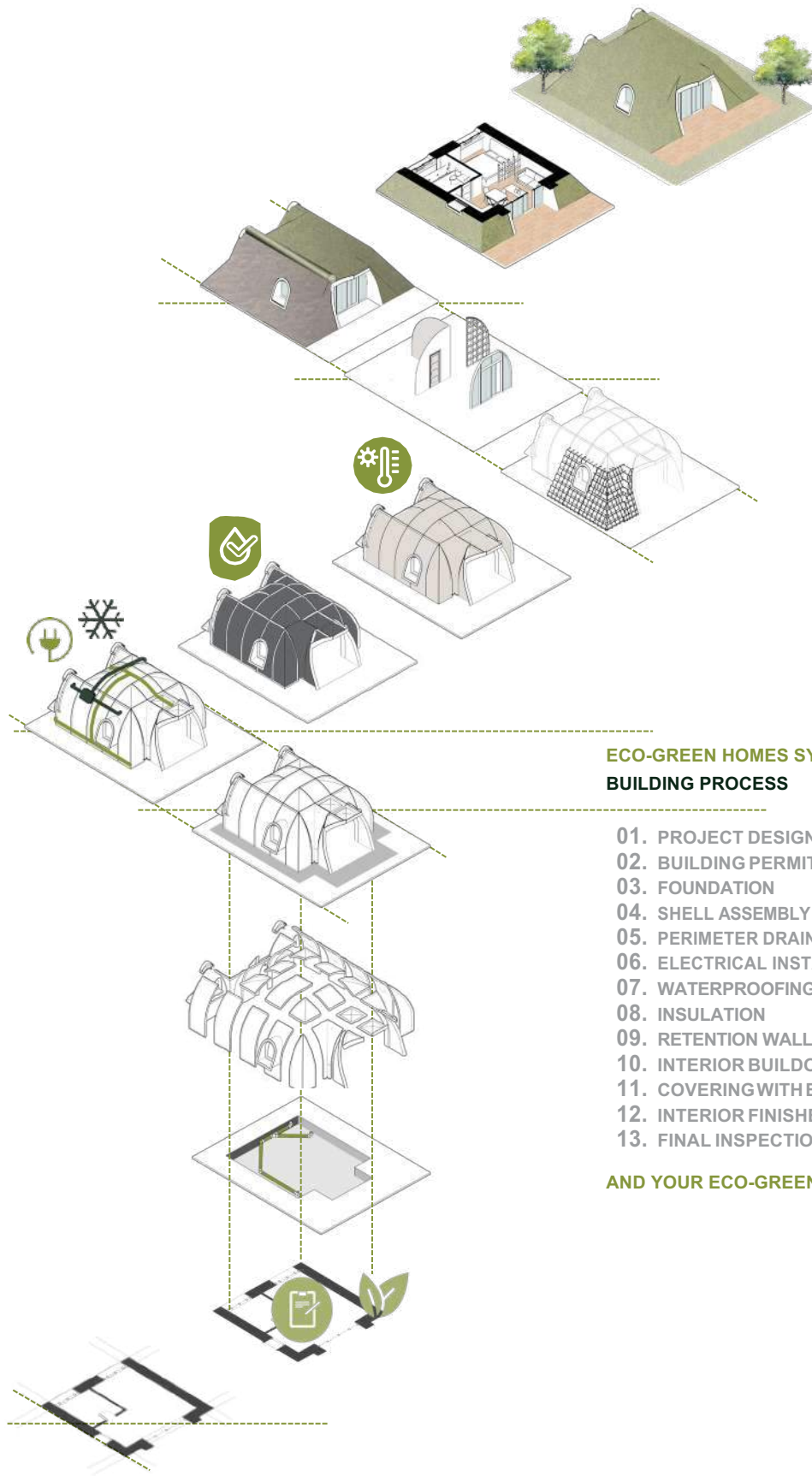
- We provide the framing system with the assembly fixtures and the construction documents.
- We begin production when you place your 50% deposit.
- Expect to receive the order delivered to your building site in about 2-3 months.

### 03. DREAMS COME TRUE

- Work with a local builder who can install the foundation to code for your area.
- Have one of our trainers assist your contractor, or we can refer a Certified Builder to assemble the shell.
- Select your finishings and choose the plant you want to cover your roof with and..... ENJOY!

Construction technology to  
make your projects a reality.





**ECO-GREEN HOMES SYSTEM  
BUILDING PROCESS**

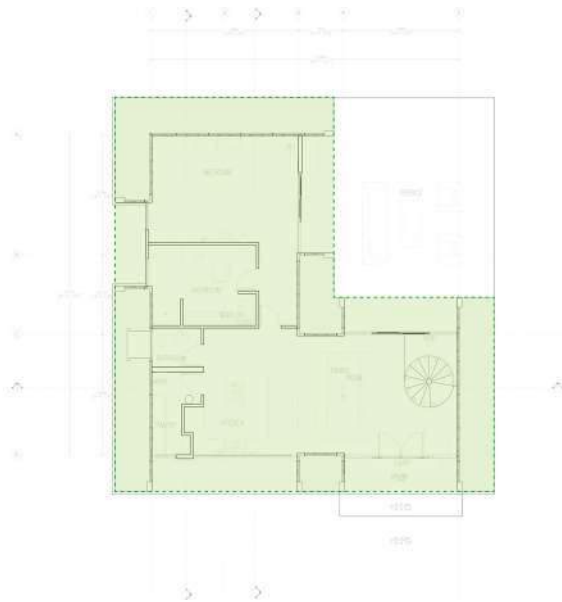
01. PROJECT DESIGN
02. BUILDING PERMITS & GROWTH CONTRACT
03. FOUNDATION
04. SHELL ASSEMBLY
05. PERIMETER DRAINAGES
06. ELECTRICAL INSTALLATIONS AND AIR CONDITIONING
07. WATERPROOFING
08. INSULATION
09. RETENTION WALLS SYSTEM
10. INTERIOR BUILDOUT, DOORS & WINDOWS
11. COVERING WITH EARTH AND OUTDOOR GARDENS
12. INTERIOR FINISHES AND DECORATION
13. FINAL INSPECTIONS

**AND YOUR ECO-GREEN HOME IS FINISHED**

## MEASUREMENTS INFORMATION

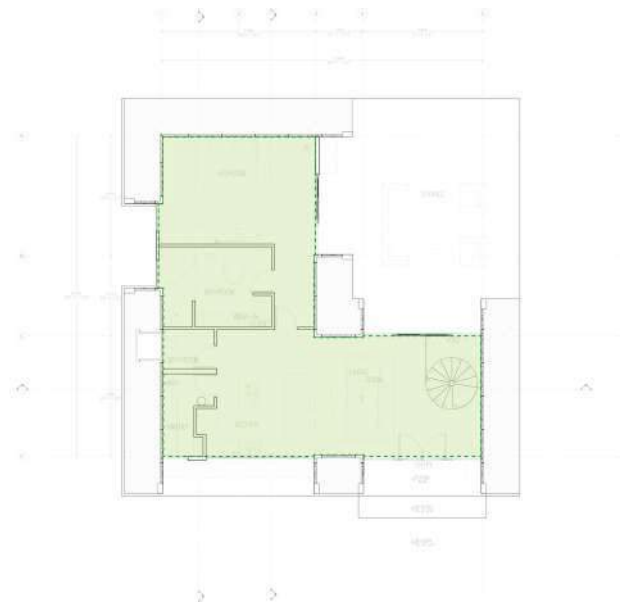
### CONSTRUCTED AREA

This area represents the total building percentages, which include the Instant buttress/Geofoam/grass area, which is essential on the lot measurements to avoid complications on dimensions.



### USABLE AREA

This area represents the sum of all internal areas available on the model for every space specified on the plan.



## DESIGNER READY

You decide how special your project will be, choose your model, find your local builder, and design your dream home.

**Eco-Green Homes** offers a blank canvas to materialize your vision, we believe that our technology can open new frontiers of creativity. Which offers you the opportunity to create an interior space according to your needs, taste, and budget.



**SUITABLE CLIMATES:**

Suitable for all climates and latitudes, including tropics, deserts, and tundras (Snow)

**FIRE AND EXPOSURE DATA**

Flash Point Material is classified as nonflammable.

Ignition Temperature: typically 650°F or higher for FRP panels.

Extinguishing Media: Water, CO<sub>2</sub>, dry chemical.

**Fire Fighting Procedures**

Use media best suited to fire environment. Use water to cool fire-exposed containers and to flush spills from ignition sources. Use self-contained breathing apparatus for large scale fires.

**Unusual Fire or Explosion Hazards**

With other building materials, combustion will yield toxic materials such as carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>) and may also yield aliphatic and aromatic hydrocarbons and halogenated compounds. Fabricating, cutting, drilling, etc., may produce a class ST-1 dust. Safety precautions and ventilation requirements recommended by NFPA- 68 should be followed.

**REACTIVITY DATA****Stability and Incompatibility**

Stable under normal use conditions. Hazardous polymerization will not occur. Avoid contact with alkali, strong mineral acid, or other oxidizers.

**Hazardous Decomposition Products**

See information in Fire and Explosion Data above.

**PERSONAL PROTECTION INFORMATION****Respiratory Protection**

Use adequate ventilation to control dust when machining, cutting, drilling, etc. Cover nose and mouth with mask approved by NIOSH/OSHA.

**Eye Protection**

Use goggles or safety glasses when machining, cutting, drilling, etc. Have eye washes available.

**Skin Protection**

Wear protective gloves, long pants, and long sleeves when machining, cutting, drilling, etc. Wash skin with soap and water after handling. Wash dusty work clothes separately.

**CORROSION RESISTANCE:**

High resistance to corrosion and oxidation (rust). Materials are highly durable in all environments and climates.

**THERMAL TRANSFER COEFFICIENT:**

The technology has high insulating properties and low thermal conductivity (heat transfer coefficient of 0.05 W / Km). Energy consumption for heating and cooling is low.

**SOUND TRANSMISSION COEFFICIENT:**

The technology has good soundproofing parameters, the Noise Reduction Coefficient (NRC) is 16 dB.

**HAZARDS IDENTIFICATION****Threshold Limit Value (TLV)**

Fabricating, cutting, drilling, etc. of FRP may produce dust, which should be controlled. Particulate level should not exceed the following OSHA standard: TWA 15 mg/m<sup>3</sup> (Total Dust) and TWA 5 mg/m<sup>3</sup> (Respirable Particulate).

**Primary Route of Entry**

Inhalation of or skin contact with dust.

**WATERPROOFING:**

The **Eco-Green Technology** include precision sealing fins, which makes the technology 100% waterproof, resistant to all types of weather, from deserts with high temperatures, to areas of extreme cold and perpetual snow.

**COLORS:** White color inside – Green color outside.

