# A viable solution for delivery of affordable and resilient mass housing

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STAR PANEL HOMES by SunSino



### About Sun Sino Solutions & Edward Viner:

\* Investors \* Facilitators \* Representatives

Sustainable & innovative products for the building industry

Established in China since 2006

First major modular project delivered in 2012

Family roots in Jamaica

### **Definitions:**

Affordable:

Low- to middle-income groups

≤ 30% of household income

Modular:

Off-site built sections (modules) manufacturing, precision engineering, and rapid on-site assembly

Panelized - walls/floors/roof panels assembled on-site Volumetric - preassembled fully fit-out rooms

## In Jamaica there's an estimated:

Pre-hurricane backlog of 190,000 new housing units

Annual demand 15,000 – 20,000 new units with current supply rate of approx. 5,000

Estimated >150,000 pre-qualified buyers

### The Problem:

Productivity in traditional construction methods that can't match demand

### **COUPLED WITH**

Lack of fast, scalable housing solutions which meet the public's desire for concrete-like structures able to withstand Category 5 hurricanes

## Why the problem exists and is worsening:

Sector not profitable enough to attract the private sector

Rising costs of construction

**Productivity vs demand** – developers delivering 300 units p.a.

Bureaucracy

Government policy

Cost of financing

## What is being done to resolve the problem:

NHT incentive programs for developers:

Guaranteed Purchase Program, Developers Program

NHT encouraging new building system solutions:

New System Builders R&D Program

### The solution:

- ✓ Think differently collaborative approach, leaders and entrepreneurs
- ✓ Modular construction for speed and sustainability
- ✓ Create local new industry jobs new ways to build fast and at scale
- ✓ China manufacturing for speed, scale and cost optimization
- ✓ Local manufacturing for flexibility, reduced risk and local jobs
- ✓ More enterprise scale developers and contractors
- ✓ Innovative financing UKEF
- ✓ Change government policy GCT & duty, provide infrastructure, SEZ sites

### Mission:

Provide ready-to-build, fast assembly, resilient houses to enable governments, developers & contractors to quickly deliver affordable housing projects at scale

## Our product part of the solution:

## **STAR PANEL HOMES**

Manufacturer of affordable mass housing for disaster prone regions

\* Concrete looks \* Future performance \*

Accelerating the Future of Housing

### Manufacturer:

Superstructure STAR PANEL Building System (SPBS)

Ownership of Intellectual Property

Responsibility for product development, quality control, warranties and supply chain

### STAR PANEL HOMES

Pre-engineered ranges of **fast & ready-to-assemble**, easy-to-purchase, sustainable houses, using a panelized **unique** modular building system

Manufactured in China for scale, speed & cost optimization annual capacity equivalent to  $2000 \times 2$ -bed/1 bath units

USP: a fast, resilient and scalable supply solution for mass housing

### 6 differentiators which create our competitive advantage:

#### 1. SCALE OF DELIVERY CAPABILITY

Up to 10 fold increase in delivery capacity

#### 2. IMPROVED PRODUCTIVITY

Faster & more precise construction (a 2-bedroom house can be under roof in one day); reduces waste, reduces rework

#### 3. VIABLE PRICING

Most modular housing solutions cost more than traditional build

#### 4. PATENTED BUILDING SYSTEM

Our "Intel Inside"; extendible & compatible with concrete block

#### 5. BETTER HOMES

Resilient, longer life, more energy efficient, lower maintenance

#### 6. A COMPLETE HOUSE SOLUTION

Envelope or Complete house with interior packs with optional modular bathrooms

## STAR PANEL Building System (SPBS) overview



2-storey 2,500 sq.ft. house

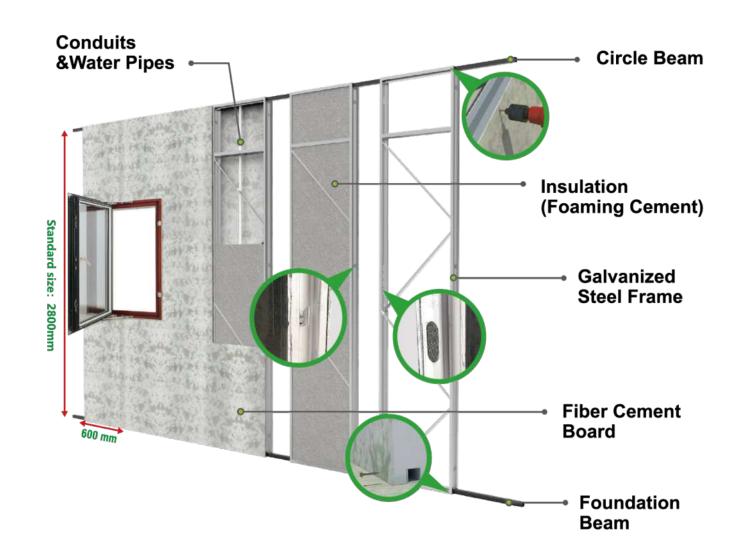
Superstructure completed in 5 days Finished in further 5 weeks with bathrooms and kitchen



418 sq.ft. 1-bedroom house – skilled crew can have under roof in half a day

A typical 2-bed /1-bath unit under roof in 1 day

## STAR PANEL Building System (SPBS)





## **STAR PANEL Building System (SPBS)**







Wall panels with sealed joints and factory pre-fabricated steel A-frames, purlins and beams

Roof panels



Panel cross-section view



Lightweight easy to handle



Pre-fitted electrical conduits and water pipes



Cut-out for windows & doors



Efficient for storage and shipment

### **STAR PANEL Building System - Advantages**

#### **SUPER FAST CONSTRUCTION SPEED:**

- $\circ$  1 man day = 8 10m<sup>2</sup>
- Easy to carry 50kg & 80kg/sqm
- Electrical conduits and plumbing can be pre-installed in panels
- Quicker finishing painted, textured, tiled, drywalled, etc.

#### STRONG & SOLID IN APPEARANCE:

Good for countries with cultural attachment to concrete

#### **EASILY EXTENDABLE:**

Extend with block and steel or Star Panel

**EFFICIENT FOR CONTAINER SHIPMENT, STORAGE & HANDLING** 

## High Performance:

- ✓ Withstand Cat. 5 hurricane & level-8 earthquake
- ✓ Internationally tested Florida Building Code (Miami Dade)
  Survived a tornado in Panama
- ✓ Class A fire rating
- ✓ Near-zero water absorption no deformation or damage
- ✓ Thermal resistance > 1 metre of solid concrete
- ✓ Sound insulation of 40Db
- ✓ Longer life than concrete buildings
- ✓ Pest, rot and mould free
- ✓ Bulletproof (to common handguns & shotguns)







Philippine Police ballistics test

### Some comments from those who have visited the Monymusk sample house:

"Enlightening.....a thousand times better than the videos and presentations" Andrew Girod, Selective Homes

"We could feel the temperature difference between the outside and inside" Dayton Brown and Karl Vendryes

"Strong, durable, aesthetically pleasing & easily modified using conventional materials" Paul Harris, Property Consultants Ltd

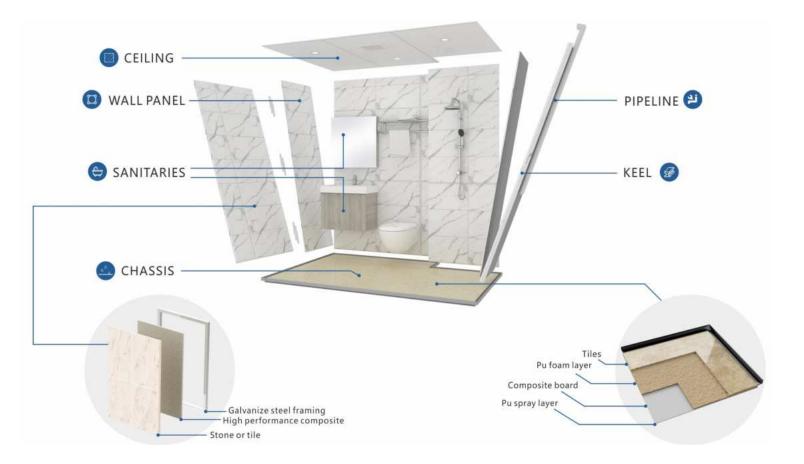
"Game-changing for the future of housing"

Chris Jones, Aquatic Solutions & Innovations

#### **STAR PANEL Modular Bathrooms**

2 workers, 4 hours to finish the flat-pack 8 step assembly and installation

\* one-stop service \* pre-installed pipes and wires \* no leakage \* easy maintenance \*



### **SPH Extras**... Examples



Ultra-realistic, high performance, time saving, Artificial Exterior Cladding Board



Soundproof and fireproof
Bamboo Wood Fibreboard.
Time saving - no need to use gypsum and paint

### **SPBS Project Showcase**



MALAYSIA 108 town houses



JAMAICA Monymusk sample house (during construction)



MEXICO 120 villas



**Selective Homes** Managing Director

### Product Range:

#### STANDARD RANGES OF AFFORDABLE HOUSING BEING DEVELOPED:

- Low income: 1 & 2-bed/1 bath; row houses limited options to personalize
- Median income: 2 & 3-bed /2 bath; townhouses options to personalize

#### **CUSTOMER OWN DESIGNS:**

- Can optimize for cost and speed of installation
- Flexible design capability







## Economic complete house price standard inclusions:

- ✓ PVC windows
- ✓ Steel security entrance door, composite interior doors
- ✓ Ceramic tile for floors and bathroom walls
- ✓ Bathroom: ceramic toilet, basin, 2 head sprinkler shower, bath
- ✓ Kitchen: quartz countertop, melamine cabinet, s/steel sink & faucet
- ✓ Accessories for all connections
- ✓ Plaster, undercoat, anti-crack mesh & mortar, latex wall paints
- ✓ Gypsum board ceiling

## Pricing guide:

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Eg. 2-bed/1-bath (MOQ 30units):
       695 sq.ft - pitched aluminium insulated roof
       CIF Jamaica: USD 26,900 / JMD 4.33mil
       Including duty and GCT: USD 32,800 / JMD 5.28mil
        585 sq.ft - Star Panel flat roof engineered for second storey
       CIF Jamaica: USD 28,300 / JMD 4.56mil
        Including duty and GCT: USD 34,525 / JMD 5.56mil
Eg. 1-bed/1-bath (MOQ 50units):
       418 sq.ft - Star Panel flat roof:
       CIF Jamaica: USD 19,500 / JMD 3.14mil
       Including duty and GCT: USD 23,790 / JMD 3.83mil
       Additional Costs not included:
       Inland logistics & Construction (foundation, houses assembly and fit-out)
       Maximum JMD 3.8mil assuming construction outsourced
```

## Sustainability:

### Transformative advancement in sustainable construction compared to concrete

#### **Star Panel materials**

- Galvanized steel "high" sustainable material
- Fiber cement board "moderate" sustainable material
- Lightweight concrete infill "moderate" sustainable material

Using shipping containers as extra dwelling space can reduce carbon footprint by 33%

#### **Environmental** benefits

- 60% smaller carbon footprint
- 75% less construction waste
- 70% reduction in resource use
- Zero VOC emissions
- Superior energy efficiency

#### **Economic Advantages**

- 44% faster construction
- 65% lower maintenance costs
- 60% energy cost reduction
- Extended lifecycle
- Better value retention

#### **Social Impact**

- Healthier living environment
- Reduced community disruption
- Better occupant comfort
- Improved air quality
- Enhanced durability

### Where are we now?

- ✓ BSJ: Approved for single storey house 2-storey expected February
- ✓ NHT: Star Panel Building System approved for Technical compliance Construction approval for the sample unit (Dec/Jan)
- Ready to take for orders!
- ✓ A hurricane relief donation today: 1-bedroom house

# Thanks for your attention

https://starpanel.house - COMING SOON

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