

# P.O.D. \_\_\_\_\_

Private Ofgrid Development Industrial Overview

BoD and IOCP - Industrial E S #2018



## **P.O.D. - Private Off-Grid Development**

### **Overview**

P.O.D. or Private Ofgrid Development, propose a niche service to the Housing market. It can supply all types of demands in the prefabricated Housing segment. The concept came to fruition following a reflection on movable/modulable habitat, and taking in consideration workforce and logistic.

From 35 to 100m<sup>2</sup> (per unit) of sustainable and habitable functional living space made possible by the building functions of each panels. Materials for main frame can be sourced worldwide and interior composition can be selected by clients at order. Distribution takes place along the existing Housing market services and selected regional Architects.

Adaptability to environments is a must in Housing development. Today prefabricated account for 10 to 30% of Housing market from Europe to Japan. Japan remain the leader in prefabricated demand, India and Africa growth demands lead short term market demands. P.O.D. provides with a reliable solution for remote & Of Grid demand, and can be adapted to any usage or any terrain and environments types.

- **Answering immediate Ofgrid and remote housing demands**// Disaster relief due to environmental causes, Humanitarian settlement, of-grid hospital, schools and social housing.
- **Provide with a fast response to emergency demand**// Logistic compatibility present with a solution for global responses to allow displace populations to access immediate life sustainable housing.
- **Offers a sustainable solution for remote work camps**// Movable at will, the solution for remote work force living, offering comfort.
- **Carbon Neutral Housing**// The solution provides with carbon neutral housing specs, in its manufacturing, and usage, according to any life style and environment types.
- **Affordability and ownership**// the basic cost for a live-in P.O.D. unit is set at 28k\$. Ownership includes P.O.D. swap, P.O.D. relocation management. Rent and storage program and comes as extra cost.
- **Focus Clients**// States, Relieve Funds, Corporations, Social Platform, Humanitarian organizations, Army and Private Clients is the selected focus sales groups.



## Prefab Housing worldwide

Ongoing demands

Segmented market/ by no of people/

– slum 900m – remote suburb 600m – off grid 190m- . As per 2020 the demands will pass 2 billion Human's in need of Housing. The P.O.D. concept is suitable for answering a large portion of market demand.

Major issues

The Housing market worldwide have endured major issues for decades, ever higher cost of construction product, inflation, excessive debts, economic shortfall, and abuse of all sorts have made this most needed part of Human living difficult to access and to trust.

Prefab market

Infographic data's show a steady demands in prefabricated housing. This information needs understanding. It means that social norms have now better accepted the prefabricated solution, a growing interest worldwide.

P.O.D.'s market is estimated to be reaching from Emergency Relief to Private demands. The price and effectiveness on delivery together with its specific design and quality living options makes P.O.D. Design marketable to a wide range of Housing demands.





## **Advance design**

Overall design aim to answer with a qualitative system for immediate housing needs where it is needed. The specificities in the design are the facility to adapt to usage where needed. The concept was largely developed keeping in mind the transportable necessity hence the use of 4d volume inspiration offering better space/usage ratio. The advantage of the Panel Wall system is that change of panels in case of damage is cheap and fast.

The overall design uses Organic materials, the chosen types of products for the Panels Walls, offering insulation and a smooth finishing. Interior space allowance is made according to the purpose use of each P.O.D.'s.

## **Environment Kit - Concept Design**

Each environment's require specific living set-up and apparatuses. The P.O.D. Design allow for these specific implementation to be build-in and address the special issues each environments require. Introducing P.O.D. Design Environment Kit.

### **Urban kit -**

Earth urban area or urban agglomeration is a human settlement with high population density and infrastructure of built environment. Urban areas are created through urbanization and are categorized by urban morphology as cities, towns, conurbations or suburbs. Urban Earth; Inhabited by 2 thirds of Human Earth population// 4.5 to 5 billion Human lives in Urban area in condition extended from "high end" to slum constructions.

### **Beach kit -**

A **beach** is a dynamic **environment** located where land, sea, and air meet. It may be **defined** as a zone of unconsolidated sediment (i.e., loose materials) deposited by water, wind, or glaciers along the coast, between the low tideline and the next important landward change in topography or composition. Cost line is the prominent land space for Human living.  $\frac{3}{4}$  of Earth mega cities are within 200 kilometers from Seas and Oceans shores but less than 3% of Earth Human population lives on Seas and Oceans shores outside of Urban area. More than 80% of earth Human live within Beach Natural environments.



### **Jungle, Forest kit -**

**Earth is partially covered by Jungles**, Tropical forest thick with trees, other plants, and animals. **Jungles** — thick tropical forests — are full of life: birds, insects, reptiles, monkeys, and often gorillas and other animals. They're dangerous places, even for the animals that live there. This is why **jungle** also means any place that is risky or wild. Inhabited by a small percentage of Earth Human, Jungles extends over 1 third of Earth land mass.

**Forest on Earth** are complex ecosystems consisting mainly of trees that buffer the earth and support a myriad of life forms. The trees help create a special **environment** which, in turn, affects the kinds of animals and plants that can exist in the **forest**. ... Plants provide habitat to different types of organisms. Major mega cities have limits within Jungles and Forests but only .00023% of Earth Human lives in symbiosis with Jungles or Forests.

### **Desert, Extreme Hot - Extreme Cold kit -**

Earth deserts are large, dry, barren region, usually having sandy or rocky soil and little or no vegetation. Water lost to evaporation and transpiration in a **desert** exceeds the amount of precipitation; most **deserts** average less than 25 cm (9.75 inches) of precipitation each year, concentrated in short local bursts. Due to the development of new solar tech and waste management solution as well as advance farming model, Deserts of Earth are fast becoming the new living frontier. Yet outside of mega cities, a residual of Earth Human, sedentary or nomadic, population lives in Desert. An **Extreme Hot (E.C.) and Extreme Cold (E.C.) Environments** are Environments in which natural temperatures exceed Human life sustainable zone. Very special infrastructures are needed for Human's to lives in E.H. and E.C. Environments.

### **Mountain kit -**

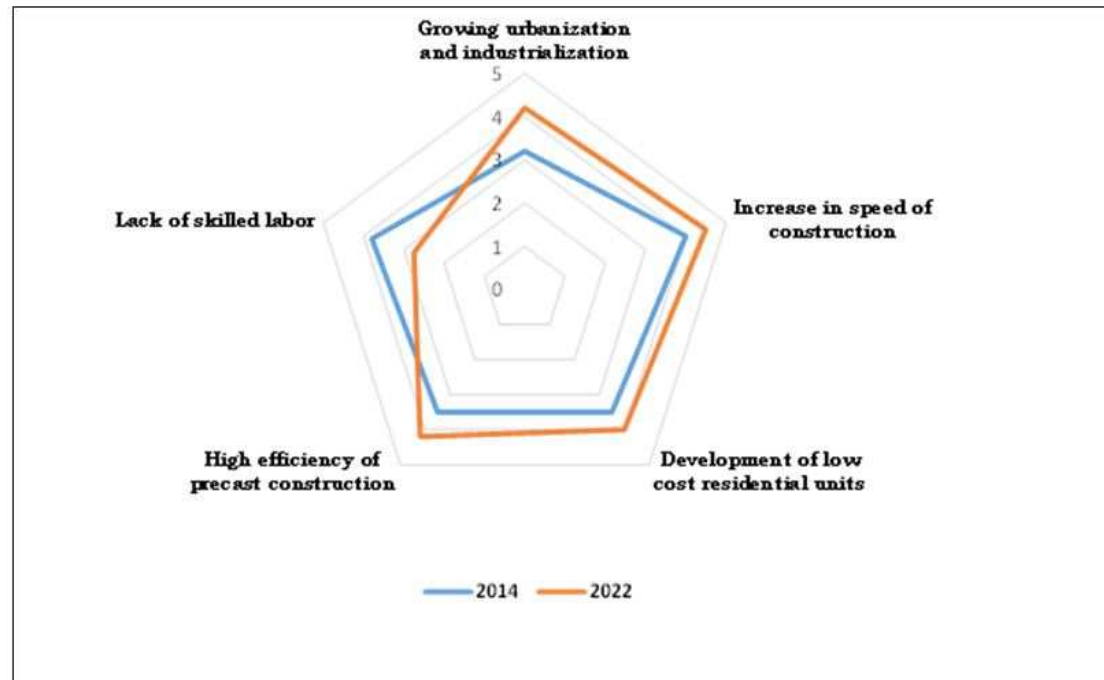
**Mountains of Earth** are large landform that rises above the surrounding land in a limited area, usually in the form of a peak. A **mountain** is generally steeper than a hill. **Mountains** are formed through tectonic forces or volcanism. Mountain living requires preparations, cold temperatures are expected. Higher up, the air is thinner, making it more **difficult** to get enough oxygen to allow your body to work **hard**. Steep slopes mean that growing food and building houses is also much more **difficult** higher up, the air is thinner, making it more **difficult** to get enough oxygen to allow your body to work **hard**. Steep slopes mean that growing food and building houses is also much more **difficult**. **Less than 5% of Earth Human lives in Mountain environments.**



## Workforce

Executive board, Operation team, early Sales and Customer Service have been part of the development and management is lead by the IOCP. In prevention of the ongoing crisis in construction labor force, the P.O.D. System is an off-Site labor based operation. The conditions of off-Site construction operations are offering sustainable work conditions.

The manufacturing of P.O.D.'s requires the general contractor package in workforce. Carpenters, Electricians, Plumber, Estimators, Managers, general outlook designers. The sales and market development are the points to address with a lead team in each franchise. These individuals have to be identified.





## Materials & techniques

### Materials

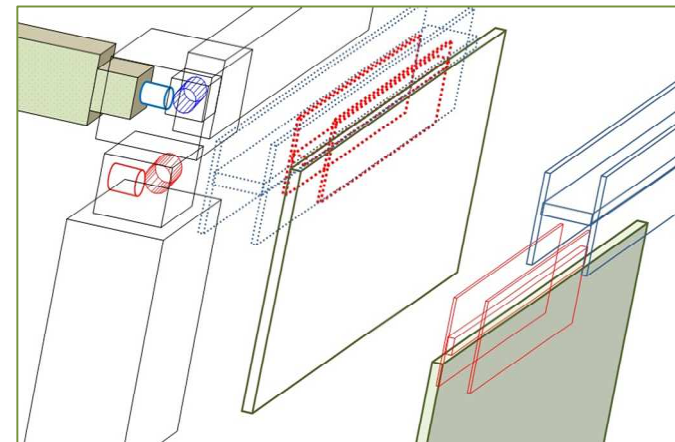
The main component of the P.O.D. Design is in its main frame (*pic1*). Special attention to the Metal quality and viability have been addressed, fire and seismic resistant composition, the main frame also inhabit the P.O.D. Control Panel as all P.O.D.'s are intelligent habitation. At the exception of concrete, any material can be use to dress the main frame. The main frame consists of nesting the central functions of the habitation, water filters, batteries, etc, as well as the strength infra structure. Use of hemp and other organic materials offer the best viability.



### Techniques

P.O.D. Design is unique in the making and assembly techniques. The main frame is a Metal assembly. Panel Walls and doors (*pic2*) offer modulare solution for all usage and the recycled and organic construction material markets have seen unprecedented development in the last 10 years validating the use for contemporary construction and design. This allow for the guaranty of supply on long term basis.

This is also good for establishing a low yet marketable price range for P.O.D. units. The basic P.O.D. Shell unit with a planed price of 28k\$ for a 100m<sup>2</sup> Shell with livable space inclusive of a solar roof to batteries, Water tank, capture & filter system and Biogas unit. Insulations design to fit all environments.





## **Logistic**

### One fit all

When folded, P.O.D.'s become transportable following the industrial container standard. The key elements stand in purpose design and living environments. One infrastructure fits all and it is in the functional designs and weather type that clients find their individual solutions. P.O.D.'s overall design was intended to suit the international logistic standard offering a delivering capacity anywhere on Earth.

### Service

The program involves a servicing solution including, P.O.D. management, relocation, P.O.D.'s share, as well as emergency and relief response.





### **P.O.D. Shell's offering.**

The standard P.O.D. Shell is delivered ready to allow immediate living, electrical and water network, P.O.D. control panels, Solar roofing with system & battery.

Interior design including number of walls, number of electrical and water points, on-demand interior fitting are not included in the Shell cost.

P.O.D. Core Shell Specification options	
Item	Options/specification
Original Shells	8ft GP :2440mm X 2438mm X 2896mm (Length, width, height) 20ft HQ:6058mm X 2438mm X 2896mm (Length, width, height) 40ft HQ: 12192mm X 2438mm X 2896mm (Length, width, height)
Insulation	Hemp :50mm, 75mm, 100mm, 150mm ( thickness)
Wall framing	Hemp Lime, Bio-resin/Metal studs
Finishing	Hemp Lime, Hemp Bio-resin Architectural-Fabric Organic-Agglomerated Ceramics Hardwood, Stone and metal
Electricity Capacity & Standard	P.O.D. system deliver 600kWh/Month - All Standard
Doors	Glass/Metaldoor Wood door, Copper door
Roofing	Solar tech soft or Solar tech hard roofing
Panel Windows	Hemp, Wood or Metal frame.



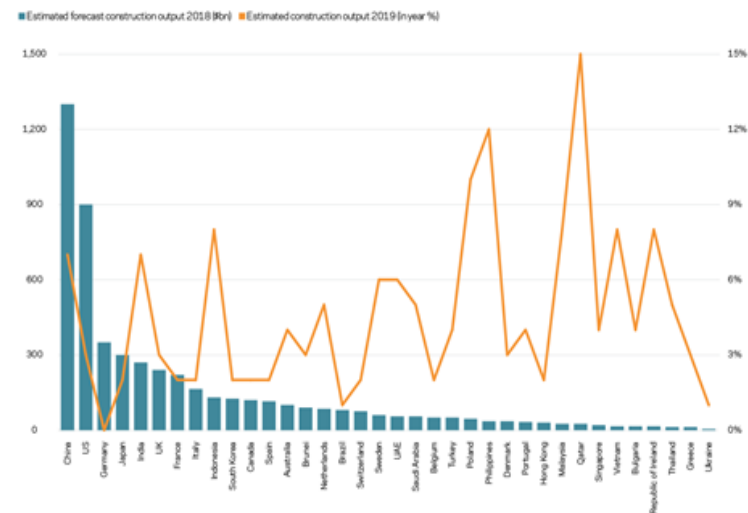
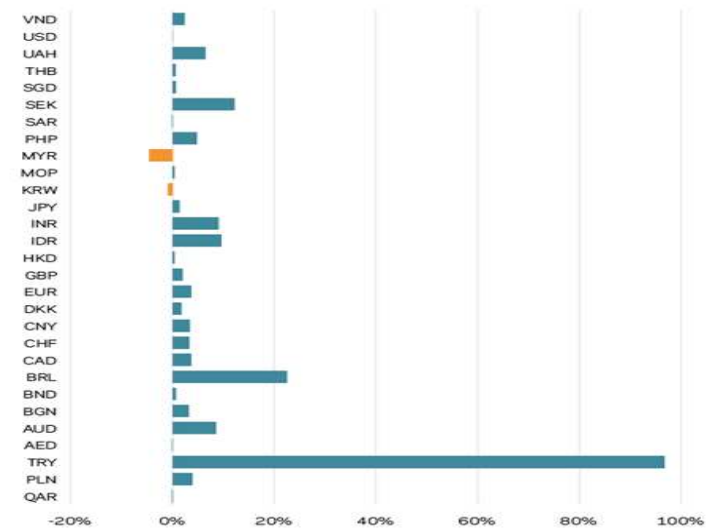
## cost/value assessment for building materials.

The choice of advance bio-organic alternative construction materials to develop the P.O.D. Design initiative pays off. The system offers a strong cost for value visibility and is in line with modern building standard.

### Currency movements

After mixed performance in 2017, the past year has seen a relatively strong performance of the US dollar. The US dollar index against a basket of other major currencies has gained more than 5% since the beginning of 2018 and the dollar has appreciated more than 6% against the euro, its most often traded counterpart. Moreover, the fact that there is a “net long” position in the dollar at the moment indicates that markets think the currency is more likely to strengthen further than to weaken.

- Oil: At \$70 (roughly £55) per barrel in August, it increased by approximately 50% in the year.
- Thermal coal: The price of thermal coal has increased by more than 30% in the year to about \$105 (roughly £82) per tone. As a key ingredient in the steel-making process, this can contribute to steel price inflation.
- Iron ore: The price of iron ore has risen 7% in the year to about \$70 (roughly £55) per tone. As a key ingredient in the steel-making process, this can contribute to steel price inflation.
- Copper: At about \$6,000 (roughly £4,660) per tone, copper prices have fallen by about 5% in the year to August.
- Timber: Timber prices have broadly risen by around 4% in the year.





**Thank you for your attention.**



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Private Of-Grid Development System

The HOB IOCP – the HOB Platform 2018#

