

## **SUBMISSION to the \$300 House Project**

The following proposal was submitted to the \$300 House by **Javier Tenorio** and **Fernando Garcia-Landois** – employees of **Owen-Corning**.

The format used is self explanatory, and we expect other submissions to follow a similar format.

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# ***SUBMISSION TO THE \$300 HOUSE PROJECT*** **Designing Sustainability and Safety into a \$300 House**

by *JAVIER TENORIO and FERNANDO GARCIA-LANDOIS*

The present publication proposes an estimated \$358 US dollar house based on an optimized design and the satisfaction of basic home owners requirements. The final design only considers material cost (labor is not included). This design meets minimum house requirements and could include for another \$90 dollars a mattress, a cooking grill, a desk and a couple of drawers.

Even though the presented design limits people movement inside the house because of its peculiar shape it also brings enough space for sitting activities and warranted waterproofing.

The present design proposal differentiates 6 stages:

1. essential house areas definition
2. customer needs approach
3. design association for needs
4. a design proposal
5. proposed materials
6. costs and conclusions.

## **1. House Areas**

To understand minimum house requirements, a basic low-income house was divided into sections in order to understand its independent features in which the design should be working on. The house should focus on the essentials: walls, roof, floor, windows and windows.

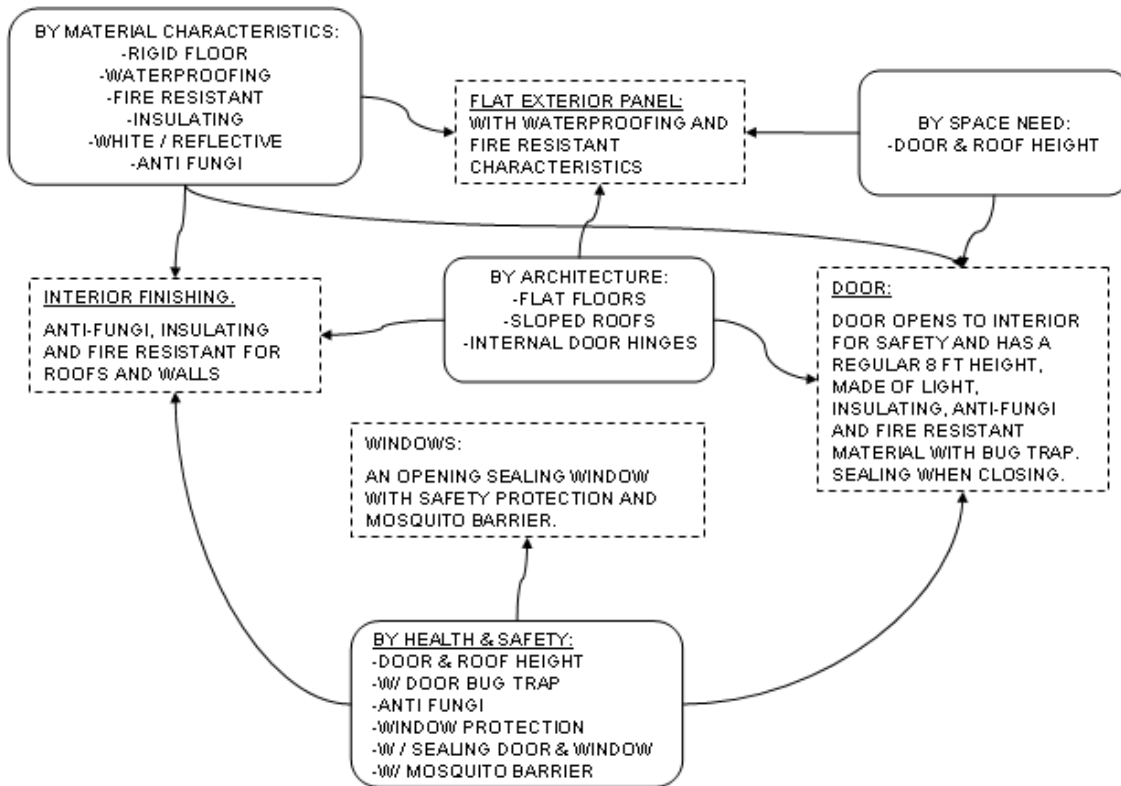
## **2. Customer Needs**

Minimum customer needs are basic needs for every house sold in every market, a house should at least have structuralism, be weather-proofing, bring safety to home owner, have lighting as much as it could have and bring comfort to home owner.

<b>Area</b>	<b>Floor</b>	<b>Walls</b>	<b>Roof</b>	<b>Windows</b>	<b>Door</b>
<b>Weather-proofing</b>	WATER PROOFING	WATER PROOFING	WATER PROOFING / SLOPED	SEALED WINDOWS	SEALED DOOR
<b>Safety / Health</b>	RIGID FLAT FLOOR	FIRE RESISTANT ANTI FUNGI	FIRE RESISTANT ANTI FUNGI	OPPENING / CLOSING WINDOW	INTERNAL HINGES
<b>Natural Lighting</b>	REFLECTIVE	WHITE / REFLECTIVE	WHITE / REFLECTIVE	ROOF WINDOWS	WHITE / REFLECTIVE INTERIOR
<b>Comfort</b>	INSULATION	INSULATION	INSULATION / HEIGHT	W/ MOSQUITO BARRIER	INSULATION / HEIGHT

### 3. Design Association

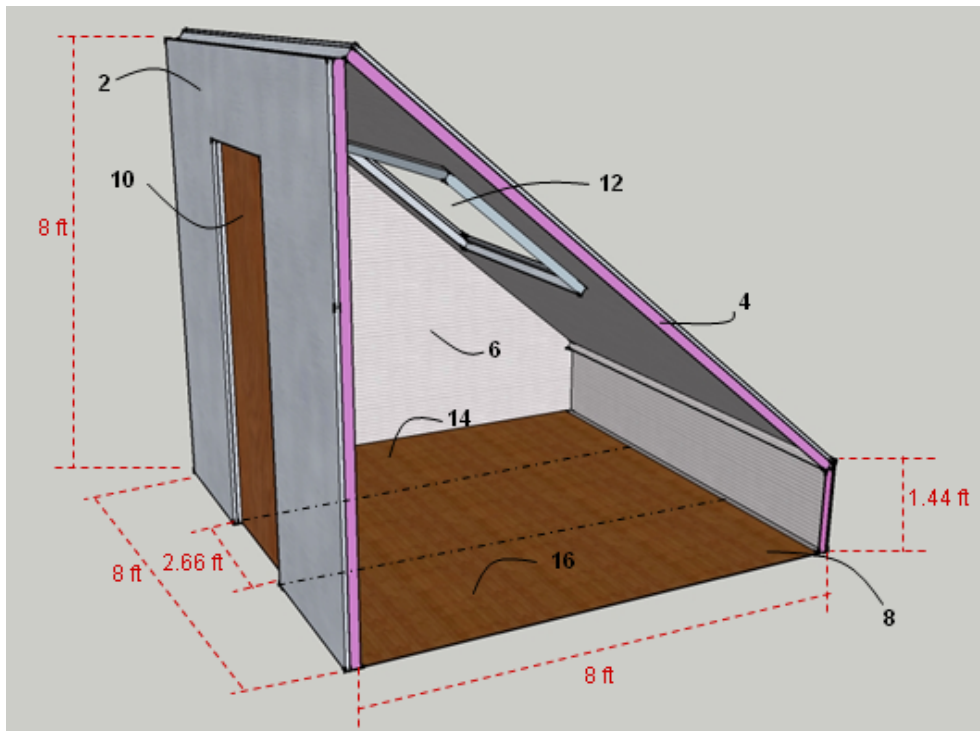
From the characteristics that resulted in the customer needs table, they are associated by different categories in order to have several designing options and therefore make the design easier to draft.



#### 4. Design Proposal

Considering the requirements, the proposed house design includes a metallic structure of welded PTR (1) for the house structuralism, roof an walls from a pre-made exterior aluminum panel (2) consisting of two aluminum cover sheets of a corrosion resistant material with an interior fiberglass insulation (4) with a reinforced polypropylene facing (6), an osb floor (8) and door (10) and an window with a mosquito barrier (12).

This design will allow an area for an individual mattress or bed (14) and another one for a cooking grill, drawers and a small table or desk (16).



## 5. Materials and Costs

Material	Unit	Cost / Unit	Qty	Total
Metallic structure of PTR 1" X 1" welded Cal. 16	LF	\$ 0.51	122.64	\$ 62.00
Pre made exterior aluminum panel consisting of two aluminum cover sheets of corrosion resistant and with a core of low density	SF	\$ 0.72	222.32	\$ 160.00
Owens Corning Fiberglass Insulation with reinforcement polypropylene facing	SF	\$ 0.27	222.32	\$ 60.00
Oriented strand board, also known as OSB or wafer board of 7/16" for the floor	pc	\$ 8.00	2.00	\$ 16.00
Prefinished exposed fasteners with a silicon sealant to match the exterior panel.	LF	\$ 0.15	122.64	\$ 18.00
Door made of OSB 7/16" of 2.66 feet by 6.56 feet	pc	\$ 12.00	1.00	\$ 12.00
Opening sealing window with a safety protection and mosquito barrier 2.67 feet by 5.34 feet	pc	\$ 30.00	1.00	\$ 30.00

<b>TOTAL COST</b>	<b>\$ 358.00</b>
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### Extras

Individual mattress	unit	\$ 40.00	1.00	\$ 40.00
Infrared quartz toaster for cooking or re-heating	unit	\$ 20.00	1.00	\$ 20.00
4 -Drawers	unit	\$ 20.00	1.00	\$ 20.00
2.67 feet by 5.34 feet Desk	unit	\$ 10.00	1.00	\$ 10.00

<b>Cost</b>	<b>\$ 90.00</b>
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## **6. Conclusion**

This proposed design could meet a \$358 dollar house structure which would allow people to satisfy basic housing for an affordable price. The stretching of the design will be evaluated to consider extra space vs. cost.

Open issues should be next steps on this design to assure its compliance with safety minimum requirements and weather proofing under extreme conditions.

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