

**A TOOL TO PRODUCE SPACES****THE BEGINNING**

UN-HÁBITAT defines an adequate shelter as:

*Adequate shelter as defined in the Habitat Agenda means more than a roof over one's head. It also means adequate privacy; adequate space; physical accessibility; adequate security; security of tenure; structural stability and durability; adequate lighting, heating and ventilation; adequate basic infrastructure, such as water-supply, sanitation and waste-management facilities; suitable environmental quality and health related factors; and adequate and accessible location with regard to work and basic facilities: all of which should be available at an affordable cost. Adequacy should be determined together with the people concerned, bearing in mind the prospect for gradual development.*

*(Habitat Agenda, 1996).*

**THE SITE CHOSEN****PHYSICAL CONTEXT**

Our proposal is situated in A Corunna, Spain, a town which used to have the biggest concentration of slums in the north of the country.

The plot is placed in the border between the councils of A Corunna, Oleiros and Culleredo. Limited by O Burgo estuary in North and East; in the South by Pasaxe Bridge and in the West by the Ferrol-A Corunna train railway.

It has a surface approximately 6.5Ha and it is fairly regular and flat, with 500 meters of coast front and 10 m of difference respect to the avenue of Passage.

Although it lacks of a defined urban planning, it is an area which presents a great opportunity for the growth of the city due to its natural and geographical characteristics and prime location in relation to city access: good connection with Pasaxe Bridge and Pasaxe Avenue, proximity to metropolitan scale equipment - City Hospitals, Santa María del Mar School, Santa Cristina beach - and amazing natural characteristics - the presence of the sea, maritime board, estuary views, flat surface easy to intervene.

Nowadays the current uses are not in agreement with its potential; there are only certain warehouses in activity (freezing and auto repair) and the ruins of the old canning factory and A Toxa soaps factory, where the slums of Portuguese communities and gipsy ethnic are based.

## SOCIAL CONTEXT

The settlements have their origin in the occupation of two industrial units, “Conserveira Celta” and “A Toxa”, twenty years ago.

The first settlement is the Conserveira Celta. There is a gypsy population of 56 people, who belong to the same family. They are organized like a matriarchal structure where the authority is “the grandmother”. They are out of their original place since twenty two years and they have conditioned an old industrial unit carefully. There is a public common space with asphalted access. Children of the village are provided school, but there is neither a tracing nor a control of the regularity presence. A number of inhabitants have the licence of shellfish capture from Xunta in the estuary, the rest of the inhabitants work in temporary jobs, collecting and selling scrap-metal at fairs. The slums eradication of chabolismo begins some time ago with the relocation of these families in care homes of several parts of the city.

The second settlement, “Portuguese camp”, is composed by shanty and trailers which are conditioned as home, but more degraded. A small amount of them has a bathroom and the hygienic habits in this collect are few. There is a public common space but is in bad state with mud, rubble and rubbish. The population is numerous (between 100 and 150 people per average) but very fluctuant (fairs, temporary jobs or trips). Previously, they lived into A Toxa unit, but it was declared in ruin with a collapsing danger (DOGA declaration recognized the existence of this settlement but without solution). Water and electricity are stolen.

It was identified a third group “Mercheros” some years ago. It hasn’t many data about population and they are in the worst conditions.

## REGULATIONS AND URBAN PLANNING

The land, where the slum is situated, is property of Banco Pastor -closer to the train rail- and the seaside belongs to Demarcacion de Costas - public administration that on charge on managing the seaside in Spain.

By the current PXOM -council urban master plan-, the plot is catalogued as urban land, which established the need of elaboration of an especial plan to order the land for private initiative with the following objectives: recuperate the image of the estuary, dismantle the storage unit and improve the road communication with Pedralonga.

## THE PROPOSAL

The big challenge of this project is not only that is the population really poor but also the property of the land is not theirs. Thereby, although they have been living there for more than 20 years, it is unsure that they will be willing to invest too much money in building a proper shelter.

This situation lead us to creating a Tool to Produce Spaces more than a prototype of house. The idea is that they can learn an easy and cheap way to build a dignified shelter with which they can create a new house or improve the existent one, also, in the event of a eviction they will be able to reproduce it in the new settle, furthermore they can spread this knowledge in other slums of the area.

The solution doesn't pass to give them a house because of being shanty we want to give them ways to obtain a house.

There are 5 ideas that lead our project:

**1. Auto-construction:** in a first stage, to reduce the budget for the construction process, but also to teach them a new skill that they can reproduce in the future. Beyond this, there is the need of highlight the sense of ownership and care of it. This auto construction easy and accessible will be a mechanism of participation focused on obtains a bigger identity.

**2. Adaptability:** to adapt to the needs of present life and to answer to the new family situations depending on each need. Furthermore our solution could be established in other places.

**3. Recycling:** the use of recycling materials for sustainability, of course, but also because it will reduce the cost of the project. In combination with these, the rest of the materials are easy to get and widely available, in order to facilitate the obtaining of them by the inhabitants.

**4. Cooperation:** The collective participation of the community will be essential in the construction for intertwined techniques and skills with popular knowledge. Furthermore, the influence of time will encourage the residents not only to use it to improve and extend their homes but also to create community buildings responding to their need.

**5. Spread:** being an easy and cheap Tool to Produce Spaces, based in self-construction it will be easily adopted for other slums in the area, improving the living conditions of their population.

The house is created by pieces in order to respond to the residents needs. The most complex piece is UNIT 0, which includes the kitchen and the bathroom. This unit is the warm core of a house, where the hygienic habits are more important. UNIT 1, UNIT 2 and UNIT 3 are the result of divide this area 0; they are just examples of the ways we can play with this puzzle, because we have as many different pieces as possible combinations of pallets.

The project starts with the specific needs of each family/inhabitants of a shelter. We -they and us, as architects- choose the best way to improve their homes, a new house, a new bedroom, a new kitchen... Then, together, we build it, they learn how to construct and how to reproduce it, we learn how we can adapt better our prototype to

their needs. Finally, one we all have participate in the construction of more than one UNIT, we are already prepare to spread the knowledge

## **THE DESIGN SOLUTION**

There are a lot of requirements for materials to be used in construction: durability, strength, stability, cleanliness, energy saving and thermal isolation. Furthermore we have to take into account the humans' perception and the possibilities of the community.

Wood can be planted and once used can be reused and recycled. This means energy savings, ecological balance and not hostile environmentally. It has low thermal conductivity making it a great insulator. Its durability is high if it's treated properly and the colour and texture of the surface makes it an attractive and warm material.

Wood will be perfect in our project! We are going to build with wood pallets, the European pallet, which is standardised in size (1200 x 800 mm) and strength.

Another material present in our project will be the polycarbonate. We use greenhouse pieces instead of windows because it is cheaper than the glass. The frame is in galvanized steel and the South wall, in transparent polycarbonate, will transform the *unit 0* into the main warm focal point.

All units have flat roof covered with a shelf-adhesive waterproof membrane. It will be overlap when we add more units.

### **The business plan and the budget.**

Where could we find materials?

For the insulation we use the EPS because it has an excellent thermal performance, a high compressive strength, outstanding impact absorption, it has a low weight, the imperviousness to moisture and it's 100% recyclable.

We find this rigid, plastic foam material in medical packing, which we can obtain for free from the hospital.

The European pallet, 1200 x 800 mm, standardised in size and strength, is used in transportation and storage of products so it will be easy to find.

Woman has an important paper to the join in the gypsy family. Her placement job will not be incompatible with the family and, in this case, they are going to supply an important activity in the construction. As humidity affects wood's characteristics, it should be treated with a protective varnish coating. Gypsy women collect fried oil to reuse it. They are working with Fundación Ronsel and the enterprise Reciflu and one of these tasks is to create a varnish with oil and solvent or diesel oil.

The interior furniture for the bathroom will be provided from other constructions in order to save money.

The approximate budget for the unit 0:

Total: 1877.43€

1. Foundations:

43 x Concrete bricks 0.4 x 0.2 x 0.15m ..... 0.76 €x 43 = 32.68€

2 x Wood board 0.15 x 5.05 x 0.03m ..... 18 €1.22 x 2.44 x 0.019m = 6.75€

2 x Wood board 3.69 x 0.15 x 0.03m ..... 18 €1.22 x 2.44 x 0.019 = 5€

2. Structure:

10 x Wood pillars 2.4 x 0.05 x 0.288m ..... 30€x 10 = 300€

10 x Wood frames 0.288 x 0.05 x 2.4 m ..... 30€x 10 = 300€

Nails ..... 2€100 u

3. Floor:

20 x European pallets 1200 x 800 x 144mm ..... 0 €

240 x Wood boards for fill the holes ..... 0 €

40 x Profile L 25/25/3mm ..... 1, 20€6m = 20€

Isolation between pallets: EPS 10mm ..... 0 €

Wood board 5.05 x 4 x 0.03m ..... 18 €1.22 x 2.44 x 0.019m = 216€

4. Roof:

European pallets 1200 x 800 x 144mm..... 0 €

240 x Wood boards for fill the holes ..... 0 €

Isolation between pallets: EPS 10mm .....0 €

Wood board 5.05 x 4 x 0.03m ..... 18 €1.22 x 2.44 x 0.019m = 216€

Waterproof membrane 5.05 x 4 x 0.03m ..... 4' 10 €m<sup>2</sup> = 82€

5. Faces:

60 x European pallets 1200 x 800 x 144mm..... 0 €

180 x Wood boards for fill the holes ..... 0 €

Isolation between pallets: EPS 10mm ..... 0 €

Wood finishing ..... 0€

Polycarbonate ..... 15€m<sup>2</sup> = 117€

6. Interior:

Door..... 80€

Kitchen furniture ..... 500 €

Bathroom furniture..... 0 €