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## From drawing-board to Jungle

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**Our research and development department has been working on a shelter solution in accordance with the requirement of improving logistics, installation, flexibility, the use of natural resources and, above all, the improvement of living conditions. In the end we went back to more traditional architectural systems, combining them with advanced technological materials.**

Our company learnt two things in particular from our first couple of experiences of dealing with shelter in displacement. Firstly, we became aware of the complications that exist around access to decent accommodation, making it inaccessible for much of the population. Secondly, we realised that the accumulated knowledge regarding sustainable construction – that is, construction that makes use of local materials and is respectful of the environment – has been losing ground to a non-sustainable model. This is what prompted us to accept the challenge of bringing back many of these forgotten aspects and how Suricatta Systems emerged as a multidisciplinary project offering a housing solution that can improve the living conditions of people affected by forced displacement.

The first experience was in 2011 when an earthquake shook the southern Spanish city of Lorca. Urbana IDR (a company specialising in building renovation, repairs and maintenance) sent a team to inspect, reinforce and/or evacuate the homes affected and buildings that are part of the city's architectural heritage. That work led to contacts with the non-governmental organisation (NGO) Bomberos en Acción (Firefighters in Action), which some months later invited us to participate in a shelter construction project

in Haiti. That was the second experience, during which we had the opportunity to verify in situ the conditions in which those affected find themselves, as well as to learn about the difficult working conditions that assistance agencies have to face.

The temporary structures that are generally used do not meet the multiple programmatic, cultural and environmental needs that exist in displacement situations and unfortunately the majority of settlements that are set up as temporary settlements end up becoming permanent. In the best case, the solution for these more permanent settlements is to replace the tents with metal containers which are costly, difficult to transport and install, and require additional equipment and facilities in order to provide a minimum quality of life. We found that there is no comprehensive solution for



'Learning for unity and understanding' at Adult Learning Centre, Dunkirk.

addressing the multiple challenges that designers face. We came across plenty of ideas, impressive projects and images in digital format, but only a few have crossed the barrier to become reality.

So we set ourselves some very demanding goals in terms of improving logistics, installation, flexibility, the use of natural resources and, above all, the improvement of living conditions. Over the past few years we have been working towards a solution in accordance with these requirements – and this has in the end involved going back to more traditional architectural systems and combining them with advanced technological materials.

We focused first on developing accommodation for refugee camps (2013), then accommodation for troops, doctors and personnel on peace missions (2014), leading finally to a modular architectural solution (2015). During this period we received support from both public and private organisations. Collaborators in the actual development include the University of Alicante's Department of Civil Engineering on the design, structural analysis and testing, and AIMPLAS (Technological Plastics Institute) which provided technical assistance in materials, processes and suppliers.

### Implementation and adaptation

SURI – Shelter Units for Rapid Installation – is a low-cost modular housing product, conceived with sustainability in mind, allowing communities to be set up quickly and with a view to their being long-lasting. It is designed to ensure good living conditions from the outset, being structurally robust, waterproof, insulated, ventilated and with natural lighting. It can be easily adapted to the environment as a temporary solution or become a permanent home. It is lightweight, easy to transport and quick to assemble, energy-efficient, versatile and removable, allowing re-use over time.

We have now taken this outside the sphere of our main activity into the humanitarian aid sector. Finding that the major organisations are generally not open to small and innovative contributions, especially from

outside the sector, we carried out the first implementation of our design in this sector at the now defunct 'Jungle' camp in Calais, where it was used as a shelter for orphaned children by a small local non-governmental organisation, Jersey Builders for Refugees (JBR). The harsh weather conditions required us to adapt the interior with a waterproof, insulating and breathable winterisation kit, improving the thermal behaviour of the unit, thereby reducing heat loss and problems related to humidity and mud, and increasing comfort for the residents.

During the installation of the first units in Calais we monitored them closely as it was the first time they had been used in a humanitarian setting. JBR reported on how they had been employed by the users and later – as the product was well received – JBR contacted us again to develop a language learning centre in the La Linière camp in Dunkirk. On this occasion, two shelters were installed, connected at right angles to create a space that would accommodate two groups of 15 people each. Given that the weather conditions are very similar to those in Calais, we included the winterisation kit, in this case surfacing the interior of the vertical walls with blackboards for teaching.

In order to monitor the installation's performance and its suitability for the users, we have maintained contact with those in charge of running the centre and we have visited the site to check its condition and obtain reports from both the teaching team and the students. We are currently developing different projects with several NGOs as a result of the visibility the product gained following its implementation in the camps in the north of France and the lessons we learned in designing and implementing these solutions.

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