



Weathering the storm



ROGER HUNT meets architect Carlos Vasquez of UNICEF to discuss his ethos of ‘addressing the social injustice of climate change’.

Based at UNICEF’s New York office, Carlos Vasquez is an architect operating at the sharp end of sustainability. His role is to work with communities in developing countries affected by extreme weather patterns and to help them build robust schools and homes so they can withstand natural disasters such as cyclones and floods. At the same time, these buildings must have the lowest carbon footprint possible so as to reduce their impact on the local environment and ensure that they do not contribute further to climate change – objectives which help give perspective to the challenges faced by UK housebuilders.

UNICEF focuses on children and child rights, with a presence in more than 190 countries and territories. Vasquez’s first project for the charity began when he was asked to write a chapter relating to design and

planning in a UNICEF publication on the child friendly school. It was a pivotal but perhaps predetermined moment in his life.

Vasquez was born and raised in Chile. “When I was seven there was the military coup. There was a big legacy of social consciousness and it was pretty much part of the culture that you always helped people that needed help.” He also liked to build things. “I realised there was something called architecture and decided early on that I wanted to be an architect; then we left Chile and moved to New York.”

Having gained a place in the School of Architecture at Pratt University, he found a generation of teachers, many from the UK and Italy, who had a strong sense of social purpose. “In the studio, rather than designing a hotel, I did a homeless shelter. I began to volunteer in a homeless shelter in Brooklyn and was working



in a soup kitchen in the Bronx. When I graduated I decided to work for an office that was doing social housing in New York.”

He then designed several schools and a clinic for single mothers with HIV in the Bronx before going to Rwanda in 1994 to document the genocide. In 2001 he visited North Africa and witnessed how people were already living with the effects of environmental damage, despite living low carbon lifestyles and using little energy. His professional life since has been geared to helping

“address the social injustice of climate change” and its impact on the environment and communities.

Following the 2004 tsunami, Vasquez went to Thailand for UNICEF. “The objective was to design a child friendly school model but, after two weeks in the country, he conclude that what was needed most were toilets. “Sanitation was the issue and globally sanitation is the issue.”

This is typical of the lateral thinking Vasquez brings to architecture. Knowing that



TOP Carlos Vasquez | **BOTTOM LEFT** Men cut lumber for building in Mozambique | **BOTTOM RIGHT** Building with compressed earth blocks





ECOHOUSE



THIS PAGE

TOP Ten-year-old Ayesha (second from left) helps her family reconstruct their home, which collapsed during floods, in Waruki Kili Village of Tank District, Khyber-Pakhtunkhwa Province, Pakistan **BOTTOM** Typical school that is elevated three to five feet off the ground based on recorded flood level

OPPOSITE PAGE

TOP LEFT Adequate access to water and sanitation is a key consideration **TOP RIGHT** Nine-year-old Sadiqa carries building material in a bowl on her head, in her flood-damaged home in Waruki Kili Village of Tank District, Khyber-Pakhtunkhwa Province, Pakistan. Her house was reduced to rubble by the floods. She is now helping her family rebuild **BOTTOM** Training session in building and block technology



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deforestation is a major problem in Asia – leading to habitat loss, land erosion, landslides and, where trees are replanted, a monoculture and the destruction of the eco system – he looked for an alternative to timber as a building material. Compressed earth blocks offering a zero carbon footprint provided the answer. These are made using local earth and sand and a small amount of water. To improve the strength, a little cement might be added, “even so, one bag goes a long way”. These bricks are interlocking. “There is no mortar at all so you’re

further reducing the need for water and cement. To protect the wall from rain you extend the roof with an overhang of about a metre,” says Vasquez. He believes that a structure must ‘speak’ of the local community. “I first need to understand the culture, how they build, what materials are available, what people are able to do with their hands. Only then am I able to develop some kind of framework as to what the building should look like; it will be born out of the place. I cannot arrive with a preconceived idea, except that I

want it to be effective, healthy and protecting of the child.” Many of the solutions employed come from the same ‘toolkit’ used by UK architects. For Vasquez, the correct orientation of a building is a huge asset and crucial to design. “Natural light, the orientation to the sun, how to capture the wind flow to maximise cross ventilation to keep temperatures down; it doesn’t cost you more money.” Community engagement is another important factor. “When I do a project in the field, the more local people I can engage in the process,

the more chances I have to transfer some information that they can take home with them. If we’re building a school with compressed earth blocks, my goal is not only to get the school built but for at least one person in the community to learn how to do it. Then they can begin to build their own homes and stop using fired bricks or wood. “It’s not just educating people, it’s including them in the process. I’m there for a limited amount of time and I want them to see that it belongs to them, ownership is very important. When people feel they are part of something they’re willing to take the responsibility.” On the subject of solar panels and wind turbines, Vasquez says that, although these are generally included in a scheme, there is rarely the luxury of enough money to install them. He tries to make the buildings as sustainable and as green as possible with what is available in a particular place. Even so, he emphasises the need to have a masterplan that includes all the elements. “In Liberia we built a school, but the grid had not yet arrived at the town, so we did a cost analysis which showed it would cost a little over one per cent to have the buildings wired in case electricity did come to town. Understanding that and improving something at the design level doesn’t cost you a lot of money. For example, to make a building suitable for disabled access at the design stage will cost



you one per cent of the overall cost; if you want to retrofit the building it will cost you 30 per cent of the total cost."

Interestingly, Vasquez says that what he take from developed countries to developing countries is not necessarily building techniques. "Here we have an extremely rigid construction administration process which in many places around the world doesn't exist. By bringing that element of practice into the construction of buildings we are guaranteeing an effective result."

He believes that many of the buildings that have collapsed during cyclones did so simply because no one was there to make sure that what was on the drawings was actually built. He has witnessed things like rafters and walls not being attached to one another because a simple hook was never put in place.

Another example is the roof sheets. "Normally they're fixed with nails but, with the negative pressure of cyclones, these just pull out," says Vasquez. "If you use screws the chances of them flying away diminish almost to zero – it's simple things like that which make the difference."

UNICEF is keen to work with UK housebuilders on its climate change initiative which enables investment in adaptation projects as a credible response to businesses' carbon consumption: www.unicef.org.uk
Read Roger Hunt's blog: www.huntwriter.com or follow him: [www.twitter.com/huntwriter](https://twitter.com/huntwriter)