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Sustainability by design: the challenge of shelter in post disaster reconstruction

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Abstract

The idea of ‘sustainability’ is embedded in academia as well as in practice. It has the promise of doing something today, which will support tomorrow’s generation. In practice it can be prescriptive, generalized and formulaic; which can hide the opportunity and superior value that can be achieved through “Sustainability by Design” (SbD)..... rather than sustainability by prescription. This paper looks at the particular context of post disaster reconstruction through 3 selected cases studies, namely i) The house design for Delmas 19 in Port au Prince following the Haiti Earthquake in 2010, ii) The provision of appropriate roofing assistance following the 2013 Typhoon Haiyan (Yolanda) in the Philippines, iii) The winterisation strategy of shelter (and non food items) following the 2014 Floods in Northern Afghanistan. The post disaster context by it’s nature requires “doing something today” but how will that “support tomorrow’s generation”? The case studies have been selected to underline the SbD approach in practice and how the link between these two was sought.

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Keywords: Sustainable; design; disaster; reconstruction

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1. Sustainability by design, the shelter challenge

The loss of housing in a disaster has impacts in many other areas. For example, it means a sudden loss of security and privacy. It means that the health of the family that lived in it could be compromised; and it means that education could be postponed (or at least interrupted) and that the economy around the neighbourhood could collapse. In addition, “informal” rebuilding could have detrimental impacts on the environment and resources, it may drive building materials and labour costs up and potentially pull quality and standards down. The social structures and cultural places and practices that were there before may not be after the disaster. The economics and livelihoods of the family can be affected by the need to replace the former house while at the same time continue paying off loans perhaps on the previous house or contents but now being unemployed. This may (by necessity) result in “women and children being forced to work in dangerous conditions to gain income and food, a social impact” (Wikipedia, 2014, 1). Consequently, the loss of housing or shelter is connected and can trigger other perhaps unexpected impacts well beyond the sole loss of a house. Nonetheless, the sustainable design of housing/shelter can seemingly have the opposite long lasting impacts as portrayed in the movie “The Shelter Effect” produced by the International Federation of the Red Cross Red Crescent Societies (IFRC) (IFRC, 2014). In that short video, changes such as raising the house by 2 steps, treating the timber for water flooding and putting a concrete floor under it had dramatic and positive outcomes in terms of safety, savings, livelihoods, water access, health and finally education and a school for the community, albeit over the subsequent years. This is the goal of sustainability that can be achieved through SbD.

2. Sustainability in disaster tools

The major sustainability tool for post disaster reconstruction is QSAND (Quantifying Sustainability in the Aftermath of Natural Disasters). It is a self-assessment tool to promote and inform sustainable approaches to relief, recovery and reconstruction after a natural disaster (QSAND, 2014). Its key objectives are:

- To guide and inform the decision-making process in a disaster-affected community, promoting more sustainable approaches to shelter and settlement activities.
- To provide a coordinated framework for identifying and, where relevant, assessing the sustainability of solutions in the relief, recovery and reconstruction of disaster-affected communities.

It sets up an apparent holistic approach across “eight categories within which sustainability issues relating to the reconstruction of a sustainable built environment are assessed” as shown in figure 1 below.



Fig.1. The QSAND Approach
Source: QSAND web page

Interestingly the QSAND approach includes “Cross-Cutting Issues” that should “achieve enhanced benefit in each of these categories”. However, as with many tools it essentially devalues design (and hence SbD) and suggests that it is the coordination of seemingly “set issues” that will produce a sustainable outcome.

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