



Fourth International Conference 2008 Building resilience: achieving effective post-disaster reconstruction

Student Competition

Wednesday 30 April – Friday 2 May 2008, Christchurch, New Zealand

introduction

Undergraduate and graduate students of architecture and related design fields are invited to participate in a competition that attempts to bring out innovative ideas to radically improve post-disaster reconstruction strategies for developing countries.

the context: conflicting views 1 and 2

1. The design of prefabricated “universal” emergency shelters for post disaster reconstruction in developing countries has been strongly criticized. Instead, it has been argued, that the best approach rests on assisted self-help, relying on social development through shared efforts. The practice of importing “prefabs” has been disqualified for not addressing the real needs of survivors, for resulting in expensive solutions, for not promoting the local long-term development of the affected communities, etc. It is, unfortunately, true that the remarkable failure of prefabricated emergency shelters during the seventies favoured a certain scepticism towards imported so-called “industrialized” solutions for the reconstruction of housing in developing countries. This reaction probably found its peak when Fred Cuny wrote in 1978:

“Let me emphasize this fact: new housing types are not needed. Every relief agency has a file cabinet full of bright ideas submitted by graduate students, industrial designers and architects, which offer the ultimate solution to the world’s housing problems. Thousands of designs and concepts have been drawn, some have been developed a, and even a few have made it to the field.”

2. However, less dogmatic approaches (Kellett and Franco, 1993; Stallen *et al.*, 1994) suggest that prefabrication of open systems of components can significantly contribute to low-income housing in the developing World. In fact, Stallen and co-workers argue that it is, indeed, possible to couple light systems of prefabrication with self-help initiatives. “The yardstick is”, they wrote, “to search for technologies which are economically advantageous, socially and culturally acceptable and which can be promoted technically and be applied with ease in the process of self-help/mutual-aid housing.” Kellett and Franco summarize this vision by bridging the usual gap between imported solutions and local participation: “The second objective [of the program CYTED in Latin America] is to identify integrated projects which combine innovative technology with high levels of [local] participation.”

Obviously it is naïve to consider that the problem of housing in developing countries (including post-disaster reconstruction, which is the concern here) is exclusively a technological (or “hard”) issue. Nor, in fact, is it just a design problem. The provision of infrastructure (sanitary systems, telephone, electricity, etc.), the distribution of land, the provision of community services (health centres, transportation, retail, policing, etc.) and the availability of sources of work (industries, commerce, employment opportunities, etc) are crucial “soft” factors for the success of any housing reconstruction program.

a comment

Rather than be considered as a constraint on the participation of building-sector professionals, a view of post-disaster reconstruction that accepts the hard and soft challenges, provides a context that requires rigorous organizational design coupled to technical/architectural/engineering design. Therefore, architectural design must be accompanied by an organisational design that articulates the participants and their roles, and the resources that are needed to provide socially acceptable reconstructed habitats.

the brief

The student competition invites participants to develop a balanced approach, reconciling technology and local participation in a post-disaster housing scenario. The projects must be explicit on how they promote the long-term development of the affected community while meeting the short or medium term requirements of providing shelter.

Participants are required to examine not only the technical aspects of housing reconstruction but also to present a scenario for an organisational design that articulates the participants, their actions, their resources and how they are made available. Solutions must consider the end-product (the dwellings, their adaptability and cultural suitability, etc.) and must also provide a response to process-related aspects such as: employment, logistics, financing, international aid and national responses, temporary shelter, etc., viewed as an integrated system.

A selected bibliography is provided below.

Individual approaches and different methodologies are welcome. However, as a reference, the following points should be considered:

1. Identify the context

- a. The students identify a working scenario (a recent disaster in a developing nation)
- b. The students examine the context of the disaster and explore the main factors that affect the reconstruction program.
- c. The students explore traditional forms of housing. They identify housing typologies, settlement patterns, traditional use of closed and open spaces, etc...
- d. The students examine the pre-disaster housing and urban typologies (the house units and the settlement patterns) as an articulated structure of constructive parts and components.

2. The technological approach

- a. The students evaluate the application of open system of components for **the partial or total** reconstruction of affected houses.
- b. The use of new technologies is compared with traditional practices in terms of costs, speed of construction, disaster resistant standards, etc.

- c. The students explore the potential use of prefabricated open systems of components as a tool to promote pre-occupancy flexibility and post-occupancy adaptability (typologies exist and can be exploited).

3. The organizational approach

The students present the organizational design suggested for each of the participants. The coordination of local and external resources must be described and tentative timelines must be suggested. The activities of the project include, for example: construction management activities, promotion, financing, training, information, etc.

presentation

All the information and analysis must be summarized on a maximum of four A3 (or 11" x 17") to be posted landscape (i.e. horizontally). Plastic protection for the paper sheets is recommended; they will be pinned up by the competition organizers.

The posters must include graphic descriptions of the proposed technique and brief text describing the scenario and the organizational design (organization charts, pert diagrams, etc. are suggested for the presentation of the organizational aspects).

If the proposed construction is to be developed as an evolutionary process, different stages of the process should be illustrated.

The posters can be written in English, French, Spanish or Italian.

The presentations will be posted for the full period of the conference. Time is provided for conference participants to visit the posters.

For more information about the student competition, please contact:

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Any competition participants who cannot come to New Zealand and attend the conference can send their projects to:

i-Rec Design Competition

Resilient Organisations Research Programme,
Department of Civil Engineering,
University of Canterbury,
Private Bag 4800,
Christchurch 8020,
New Zealand

schedule

Expression of interest and request for documentation: as soon as possible.
Deadline to receive the projects: April 19, 2008.

fees

The student's participation in the competition is free. Student participants can attend the conference-workshop at the reduced registration fee. If needed, the participants must assume the costs of courier delivery.

prizes

A jury will select one or a few projects for prizes. The prize will be defined upon the confirmation of the student's participation. An e-mail will be sent to participants with this information.

selected bibliography

References about disaster management and post-disaster housing theories:

Anderson, Mary, and Peter Woodrow. (1989). *Rising from the ashes: Development strategies in times of disaster.* Paris: UNESCO.

Davis, Ian. (1981). *Disasters and the small dwelling.* Oxford: Pergamon Press.

Davis, Ian. (1978). *Shelter after disaster.* Oxford: Oxford Polytechnic Press.

Hewitt, Keneth. (1997). *Regions of risk: A geographical introduction to disasters.* Harlow: Longman.

Lizarralde, Gonzalo, and Colin Davidson. (2001). "Models of Reconstruction Projects." I-Rec <<http://www.GRIF.UMontreal.ca/pages/modelframe.html>> Sept. 7.

Lizarralde, Gonzalo, and Colin Davidson. (2001) "Towards a pluralist approach in post-disaster housing reconstruction in developing countries." i-Rec <<http://www.GRIF.UMontreal.ca/pages/a2main.html>> Sept. 24.

Maskrey, Andrew. (1989). *Disaster mitigation: A community based approach.* Oxford: Oxfam.

UNDRO. (1993). *Shelter after disaster.* Geneva: Editorial of the Department of Humanitarian Affairs.

References about related low-cost housing and construction strategies in developing countries:

Abrams, Charles. (1964). *Man's struggle for shelter in an urbanising world.* Cambridge: MIT Press.

Harris, Richard. (1998). "A cranck's fate and the feting of a visionary: Reflections on the history of aided self-help housing." *Third World Planning Review* **20**.3, pp. ii-vii.

Keivani, Ramin, and Edmundo Werna. (2001). "Refocusing the housing debate in developing countries from a pluralist perspective." *Habitat International*. **25**: pp.191-208.

Kellett, Peter, and Federico Franco. (1993). "Technology for social housing in Latin America: an evaluation of the CYTED research and development program." *Habitat International* **17**.4: pp. 47-56.

Pugh, Cedric. (1997). "The changing roles of self-help in housing and urban policies, 1950-1996: Experience in developing countries." *Third World Planning Review* **19**.1: pp. 91-107.

Sivam, Alpand. (2001). "An approach to improved housing delivery in large cities of less developed countries." *Habitat International* **25**.1: pp. 99-113.

Stallen, Melanie, Yves Chabannes and Florian Steinberg. (1994). "Potentials of Prefabrication for Self-help and Mutual-aid Housing in developing countries." *Habitat International* **18**: pp. 13-39.

Ward, Peter M., (ed.). (1982). *Self-help housing: A critique*. London: Mansell Publishing Limited.

World Bank. (1994). *Logement: permettre aux marchés de fonctionner*. Washington: The World Bank.

World Bank. (1991). *Urban policy and economic development: An agenda for the 1990s, a World Bank policy paper*. Washington DC: The World Bank.

For a more extended bibliography, go to <http://www.GRIF.UMontreal.ca/pages/Bibliog.htm>