Adaptable Portable
Modular housing for urban poor, Dhaka, Bangladesh

Taking on the challenge of how to house the urban poor, the project proposes a modular system of dwelling units for marginalized neighborhoods in the rapidly-growing city of Dhaka. The dwellings are easily adapted to the changing needs of their inhabitants and can help reduce eviction pressure on land in Dhaka which constantly squeezed out opportunities for informal settlements by offering a system that is both "adaptable" and "portable".

The jury applauds the author for her courage to take on one of the most difficult contemporary problems in city planning and urban design — the question of how to house the underprivileged masses in an age marked by growing discrepancies between rich and poor. Whereas many contemporary solutions exist, the submitted scheme incorporates the issues of impending eviction and eradication of informal settlements by offering a system that is both "adaptable" and "portable".

Sustainability concept

The fast pace of urbanization has produced considerable pressure on land in Dhaka which constantly squeezed out the service-providing population (monthly income USD 62-100/person) into areas with inadequate infrastructure and amenities, and sometimes poor security or tenure. During eviction, they lose their housing investment — a poor becomes poorer or homeless. The fast pace of urbanization has produced considerable pressure on land in Dhaka, which constantly squeezed out the service-providing population. Modular structures provide the user with the flexibility to make the unit adaptable/movable, easy connections, component scale, collapsible, adjustable-user control, operable components, veranda-frame construction, allows change in future, exchangeable multi-functional spaces, simplicity, legibility, loose-fit, scalable-local material, known techniques, modular unit, divisible/portable stored with any contextual change of Dhaka (affordable, daylight-windows and doors are re-locatable, adjustable roof allows ventilation)

These units can be arranged around a service block (shared toilet, bath, kitchen) any cluster configuration depending upon the site and context. Local industries and job opportunities may develop to produce modular components from bamboo and biodegradable recycled materials enabling users to build, maintain and repair their own units. Thus sustainable construction knowledge will disseminate among the users as well as sense of belonging will develop.

A multi-sited ethnographic study was conducted on four different low-income settlement areas of Dhaka (Korail slum, Kamrangirchar, Begunbari slum, Shonirakhra) to understand functional, cultural and psychological necessities of each community; develop a clear idea of personal finance, economic management, short- and long-term housing planning; conceptualize violated social and environmental issues and their consequences, and ensure community-people-participation in design.

Cost effective design solution tried to be achieved by reducing the cost of building materials; reducing the building time and considering involvement of the community in the building process. Energy conservation can be achieved through every stage of material lifecycle.

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Project data

Context: Architecture, building and civil engineering
Client: Low income population of Dhaka
Background: Research project

Summary and appraisal by the jury

The fast pace of urbanization has produced considerable pressure on land in Dhaka, which constantly squeezed out the service-providing population (monthly income USD 62-100/person) into areas with inadequate infrastructure and amenities, and sometimes poor security of tenure. During eviction, they lose their housing investment — a poor becomes poorer or homeless.

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Concrete, Roch, composite, Glass Fiber Reinforced Plastic (GFRP), bamboo, biodegradable recycled materials, etc. is both “adaptable” and “portable”.

Possible clusters, ensuring penetration of daylight and ventilation will be shown in design catalogs. Area of a unit has been determined from contextual and ergonomic study.

Mass production by using local manpower, technology, and material of adaptable-portable dwelling units, land owners or community will build the supporting frame and service block. Each family will build and plug in their own. These units can be arranged around a service block (shared toilet, bath, kitchen) any cluster configuration depending upon the site and context. Local industries and job opportunities may develop to produce modular components from bamboo and biodegradable recycled materials enabling users to build, maintain and repair their own units. Thus sustainable construction knowledge will disseminate among the users as well as sense of belonging will develop.

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