

White Rabbit

Home for marginalized children, Thane, India



Main authors

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Project data

Project group: Architecture, building and civil engineering
 Client: Community Outreach Programme (CORP)
 Project background: Public commission
 Planned start: December 2017

Summary and appraisal of the project by the jury

A home for 30 children, this building replaces their existing facility which tends to flood and lacks ventilation. The proposal reacts to the constrained site by leaving a void for ventilation at the back of the site, drawing air upward and providing indirect light. Terracotta louvers are envisioned as scaffolding for greenery that can help cool the interior and potentially provide a small business opportunity harvesting greens. The raised ground floor accommodates services for women and the elderly and the upper floors are reserved for the children and their caretakers. That this is mainly a space for children is reflected in the playful design sensitive to their scale and perception.

The jury was taken with the project's "Alice in Wonderland"-like approach which re-envisioned a small urban building through the eyes of children. In doing so, it also provides them with a dignified and comforting environment. The compact, quirky building form nevertheless achieves a feeling of spatial generosity through the inclusion of a central vertical void for circulation, light, and ventilation. The proposal goes beyond social sustainability to include passive building technology, innovating design measures, and a viable economic model. The next step towards implementation will need to be a further development of the project from compelling schematic design to a convincing translation into construction detailing.

Statements on the sustainability of the project by the author

Stacking/planning

The ground floor of the center is kept open to accommodate community activities for senior citizens, a crèche, women's development training etc. The space is planned like a veranda opening up to a private courtyard on the north side and partly opening up to adjoining lanes on the other 3 sides, shaded by first floor overhang. The middle floor dedicated to children's sleeping areas is more enclosed to create a secure and personal environment. Protected by a façade of operable nursery installed louvers on the south, recreational bands are provided towards the east and west with the north side opening up to the private courtyard below. The top floor houses all the storage spaces, study areas and caretaker's sleeping place. It shelters the children's living space underneath from direct sun.

The envelope – North South East West

The north facade is a dead wall shared with an adjoining house so all services are planned against it, keeping the remaining envelope open for ventilation. A vertical nursery is planted on the south to buffer the living areas from the scorching heat. It also functions as a small-scale industry yielding returns in the form of 15% of the center's maintenance cost. This nursery

is installed in adjustable terracotta louvers making it easy to access and maintain the plants. The sun shades, made out of thin folded plates of concrete, on the east and west are used as private recreational areas by converting them into play-stations, furniture etc, giving the center an additional 25m² of usable area. Central courtyard helps with passive cooling and natural light, reducing the operational energy load.

Construction efficiency

Wall in-fills consist of custom designed terracotta hollow blocks with one side left open to use as shelves. Fabricated by a terracotta factory in a neighboring slum, this new construction system helps to involve local artisans. The load bearing members (i.e. the columns, slabs, staircases etc.) are made out of fair faced concrete making it maintenance free and help consume the least amount of floor area compared to any other building material. A raft is used instead of isolated footings, creating an extra underground volume at the nominal cost of retaining peripheral walls, with this space used as a 55,000L rainwater harvesting tank. The courtyard and stairway leading to the first floor merge to form a playful stepped pavilion which acts as an extension of the community space.

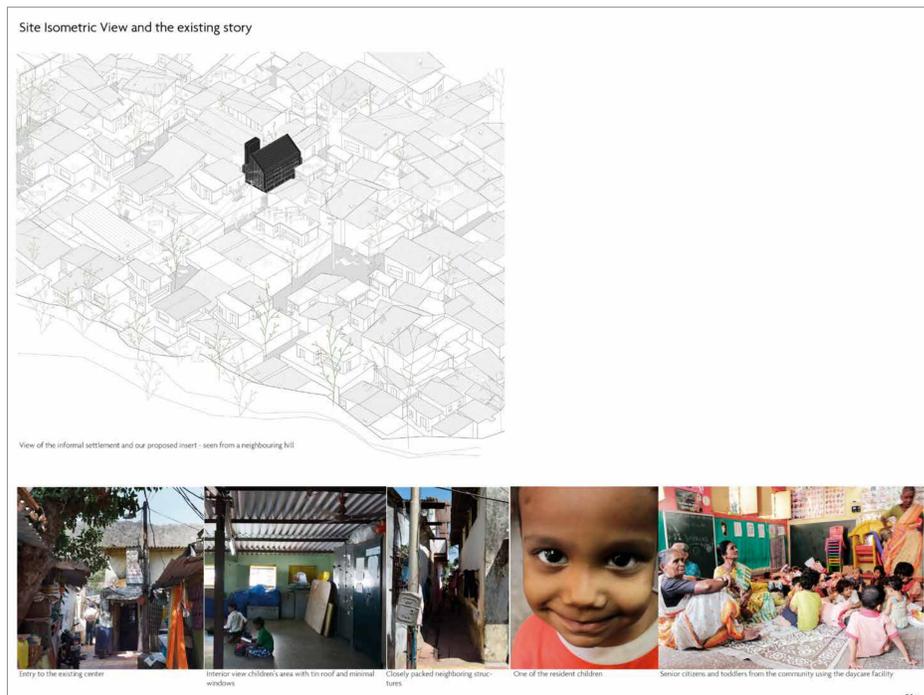


Image 1: Top: Isometric view of the informal settlement and our proposed insert – seen from a neighboring hill. Bottom: Existing scenario: the structure – its tin roof and lack of ventilation makes the summers unbearable and the monsoons flooding the ground floor. The design also does not provide for any open space and disregards basic necessities such as adequate light, storage, toilets and sleeping areas. Users – community center and children's home.



Image 2: Left: Front elevation (design proposes a new playful elevation that follows differing proportions to respond to the varying anthropometric needs of its users). Right: Section evolution diagram and site plan.

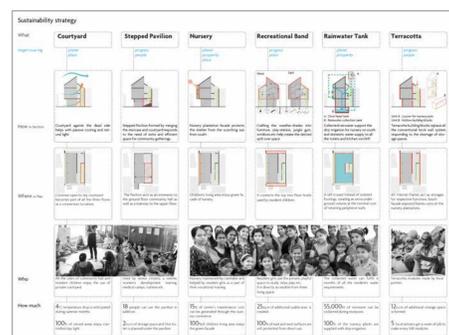


Image 3: Sustainability strategy addressing "target issues".



Image 4: Ground floor plan and first floor plan.

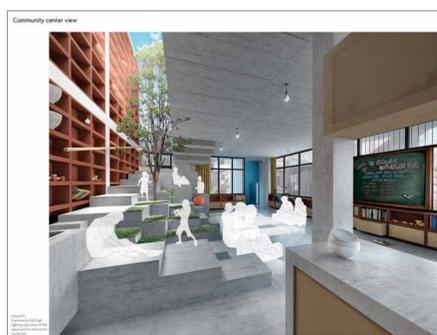


Image 5: Ground floor community center.



Image 6: Top floor plan and cross-section.

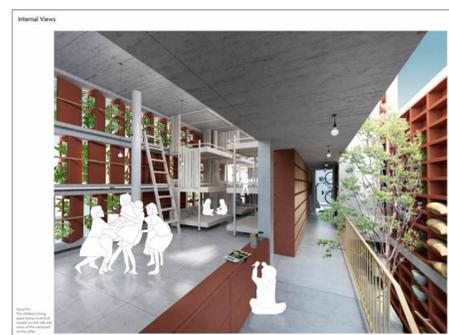


Image 7: The children's living space enjoys a vertical nursery on one side and views of the courtyard.

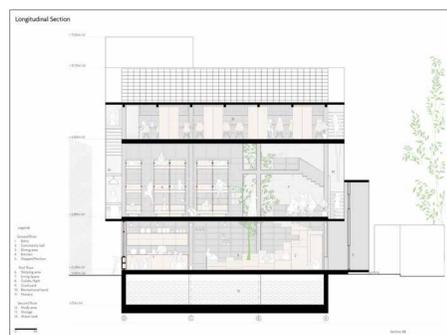


Image 8: Longitudinal section.

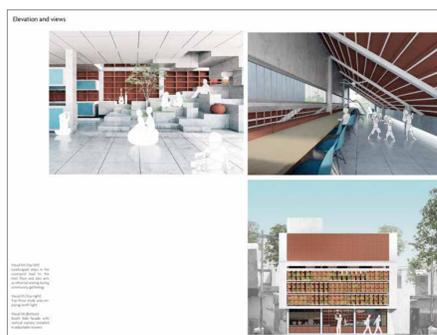


Image 9: Stepped pavilion, top floor internal space, south elevation.

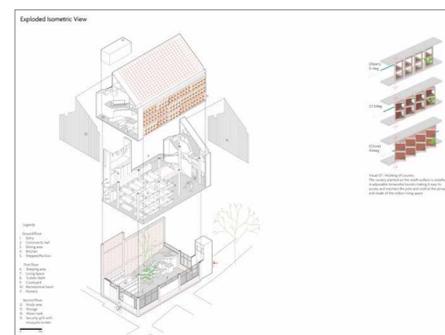


Image 10: Exploded isometric view.