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Cities of refuge

Architectural issues - precedents

images

IMAGES

01. Image of shack in Orange Farm (by author)
PREVI Housing competition was promoted by the Peruvian government and sponsored by the United Nations Development Program as an experimental project to find new solutions to the overwhelming urbanization of developing countries. PREVI deals with the issues of creating a high-density-low-rise urban complex with a continuous urban fabric with traffic separation (pedestrian/cars separation); the use of ‘clusters’, houses with open patios that allows vertical growth; and innovation in low-cost technology for mass housing based in prefab materials. The involvement of a selected group of Peruvian and international architects such as C. Alexander, F. Maki, Candilis-Josic-Woods, C. Correa, J. Stearling, Atelier 5, and A. Van Eyck, made this competition an interesting opportunity to test new urban ideas to address these problems.
All the schemes were designed to accommodate typological diversity which encourage distinction and identity in an urban environment. This allows for a wide range of people to coexist complementing each other and consequently, giving their own character to their neighbourhood causing their sense of belonging to increase over time.

One of PREV's competition requirements was for the ability of the design to develop in time to accommodate an increasing number of inhabitants and maintain its intrinsic spatial quality. It was also strongly suggested to orientate how the residents could expand their dwellings themselves. All of the proposals offered seamlessly increasing possibilities for incremental growth.

1. Plaza de Atelier 5, 1978
2. Escuela Kikutake-Maki, Charles Correa, 1976
5. Plaza de Atelier 5, 2003

(ARQ Essays and Documents 2003:73)
precedent studies
PREVI Lima: experimental design strategies
eamples / Atelier 5

Atelier 5’s design is based on a hierarchy of scale. Communal spaces are arranged along a privacy gradient from the private space of the individual home, the semi private at the threshold of housing, communal spaces and finally to the public realm.

Pedestrians and vehicles are separated limiting car access to certain areas. A series of green spaces and community facilities are linked together by pedestrian routes. A clear traffic route is set at the perimeter of the settlement.

The scheme is designed with a unifying centre which holds the civic centre of the settlement. These include links to sporting facilities and commercial functions. The scheme deals with creating a high density low rise typology clustered around communal public areas. This always allows one to orientate oneself within the settlement. (Jakob 1994:93)

Key Plan
- Green Spaces
- Pedestrian routes
- High density low rise
- Civic/ Commercial
- Recreational Facility
- Vehicle route

Urban design plan of Atelier 5’s Previ Housing (Jakob 1994:93)
precedent studies
PREVI Lima: experimental design strategies
eamples / Atelier 5

Atelier 5 makes use of an innovative prefabricated low cost system that is easy to erect. The system uses a series of ribbed prefabricated panels which are erected infilled on site for structural stability.

Prefabricated elements are transported to the area and are assembled on site. The scheme makes use of light elements of precast concrete. Houses are easy to assemble allowing for unskilled labour to contribute to the construction of the houses.

This also allows units to be quickly assembled to facilitate quick construction and saving on labour costs. (Jakob 1994:92)

Manual showing the the assembly of housing units employing prefabricated elements for ease of erection allowing for the use of unskilled labour. (Jakob 1994:92)
precedent studies
previ lima: experimental design strategies
drawings / Atelier 5

The units were constructed using prefabricated ribbed panels which could be erected on site. These ribs were then infilled with concrete for structural stability and made up the roofs, floors and walls of the unit. The sizes were modular allowing the units to grow. The plan was based on creating a series of thresholds and connecting courtyards for outdoor living with individual rooms connected by outdoor space. This allowed them to create a range of typologies and facilitate incremental growth.

Key Plan
- Circulation
- Terraces and courtyards
- Bedrooms
- Ablutions
- Dining room/kitchen
- Living room

Images
06. Drawings of Atelier 5’s Previ Housing scheme (Jakob 1994:92)
precedent studies - indore india
balkrishna doshi - aranya community housing 1989

Aranya is 6 kilometres from Indore and is designed to house a total population of 60,000 in 6500 dwellings, on a area of 85 hectares. In 1983, the Vastu-Shilpa Foundation was entrusted with preparing a master plan for the development of a new township in Aranya, situated along the Delhi-Bombay highway. This township was designed as a site and services project laid out in six sectors that converge on a central spine, known as the Central Business District. The plan was informal; the town centre consists of four clusters of shopping, residential and office complexes, and at the end of the central spine, two mixed-use clusters. In the residential clusters allowance was made for pedestrian pathways, play and service areas.

The design was based on the idealogical values of supporting the aspirations of the community, creating a sense of belonging, equity, flexibility and efficiency. The scheme therefore contains all the necessary amenities to sustain a community including shops, schools, medical centres as well as recreational and commercial functions. By creating common spaces, different groups of people can mix. The project promotes the much needed co-operation, neighborliness, tolerance and cohesive social relationships.

Key Plan

- Green Spaces
- Pedestrian streets linking public space
- High density low rise
- Civic/ Commercial ammenities
- Recreational Facility
- Vehicle route

Urban plan of Aranya community Housing (Vastu Shilpa Foundation 2005)
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Images of Aranya Community Housing scheme (Vastu Shilpa Foundation 2005)

Images showing vibrant street and diverse typologies (after: Vastu Shilpa Foundation 1995)
precendent studies - indore india
balkrishna doshi - aranya housing

Aranya is arranged in a hierarchical arrangement with the major commercial, community and recreational amenities at the centre. These are also spread throughout the neighbourhoods and are connected via pedestrian routes. There is also a clear separation of vehicular traffic and pedestrian routes. The pedestrian routes are based on non rectilinear arrangements to promote spontaneous human activities.

09. Drawings of Aranya Community Housing scheme (after: Vastu Shilpa Foundation 2005)
The design tries to create a functional and aesthetically pleasing environment. This is achieved through the non-linear nature of the pedestrian movement routes. This creates pockets for human interaction along the route. The street is no longer just a movement system but becomes publicly occupied space. These pockets also hold the potential for informal second economy activities such as manufacturing, repair, cooking and other commercial activities. These were considered and accommodated in the design.
A kit of building elements was developed and was used as a means to create a rich urban fabric. Variation is achieved through the use of a modular standardised plan to which elements can be added on to allow different permeantations. This allows for the users needs to be satisfied and creates an interesting street edge.

Street edges vary through the combination of different elements.

Combination of elements that can be applied differently (Vastu-Shilpa Foundation 1995)

11. Drawings of Aranya Community Housing scheme (after: Vastu Shilpa Foundation 2005)
precedent studies - Iquique Chile
alejandro aravena - elemental housing project

The project was the development and upgrade of an informal settlement in Fifth Monroy de Iquique (a city in the Chilean desert). It was developed to house 100 families where 80% of the families have between 2 to 5 people. The requirement was that the structure be low cost, with an emphasis on densification and allowing for progressive incremental growth.

Departing from the design of the single house, the row house or high rise a medium density a solution was developed that will allow for different stages of growth and adaptation to suit the needs of various families. Each module consists of two houses. The ground floor making a unit and a second duplex unit making up the first and second floor. Each block is in turn arranged around a communal courtyard.
precedent studies - Chile
alejandro aravena - elemental housing

The modules are divided into 2 sections: a ground floor unit and duplex unit above. The ground floor unit becomes the concrete platform onto which the duplex unit is built. The ground floor unit will have the benefit of a garden and patio while the duplex unit has the advantage of light and security.

The modular structure allows the users to adapt the structures and add additional space horizontally on the ground floor or built up vertically alongside the duplexes as they see fit to suit their finances and needs.

Image showing how the neighbourhood grows over time.

Image showing the modular system and its growth potentials (Elemental 2004)

13. Images of Elemental Housing scheme (Elemental 2004)
precedent studies - Belapur, New Bombay
charles correa - artistes village 1983 -1986

This project is located on six hectares of land about 2 km from the city centre of New Bombay. It is an explicit alternative to intensive urban living in India. It attempts to demonstrate how high densities (500 persons per hectare, including open spaces, schools, etc) can be easily achieved within the context of a low-rise typology.

It is different from other schemes due to its structured layout. Its objective is to combine middle and upper class income groups in a coherent manner. The site plan is generated by a hierarchy of community spaces, starting with a small shared courtyard 8m x 8m around which seven houses are grouped. Neighbourhoods are then formed around 12 x 12 m public courtyards and Community squares are finally formed at the centre of the scheme.

Key Plan
- Community square
- Public courtyards
- Semi private courtyards
- Parking
- Housing typologies

Diagrams showing the mixing of high and lower income brackets. (after Hassan Udin 1987)

Urban Layout showing hierarchy of public courtyards (after Hassan Udin 1987)
precedent studies - Belapur, New Bombay
charles correa - artistes village 1983-1986

Each house is on its own piece of land and do not share walls so they are truly incremental and can be extended independently. They also cover the whole social spectrum from low income families to upper income brackets yet still maintain the principals of equity and quality. There is also the use of local building materials and traditional building methods to further empower the community. These are grouped together to form clusters around community courtyards.