Social Housing - Ipalogama

Sri Lanka / Ipalogama, Anuradhapura
8.0715806, 80.5469944
Client Name: The Government of Sri Lanka
Project website: www.rwpl.net
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Project Description

The 'Ranaviru Gammanaya' or loosely translated as 'Village for War heroes' in Ipalogama, Anuradhapura district is a social housing project. The site is located in the “dry” zone of north-central Sri Lanka. The Master Plan and Design of individual houses and other facility buildings such as Pre-School, Shopping Complex, Gymnasium, Bank etc. Built by the Ministry of Defence in cooperation with the Bank of Ceylon, is a housing scheme for military families, the project consists of 1620 housing units. The theme of the project was to build community through an emphasis on architecture, a highly efficient road network along with green alleys among the houses, the housing scheme is provided with necessary infrastructure facility to promote social sustenance in the scheme. Special emphasis was given to thermal comfort in the setting, through the zoning of activities and landscaping. The strategic approach to settlement planning and housing unit design, in consideration of microclimatic impacts is an exemplary feature of the project.

Building Details

Type of Building
Social Housing

Type of project
New building project

Site Area
8,093,713 m²

Number of Floors
1

Type of unit
C - 3BHK

Area of unit
75 m²

Type of unit
B - 2 BHK

Area of unit
75 m²

Type of unit
A - 3 BHK

Area of unit
80 m²

Gross floor area
80 m²

Net floor area
67 m²

Non Air-conditioned area

67 m²

Total Cost
EURO 1,151,400

Cost per m²
EURO

Year of completion
2007

Year of occupancy
2007

Project Team

Organisation
Rukshan Widyalankara (Pvt.) Ltd

Website
www.rwpl.net

General contractor
Sri Lanka Army

Structural Engineer
Rukshan Widyalankara (Pvt.) Ltd

Architech
Archt. Rukshan Widyalankara

Architect's profile
Rukshan Widyalankara (Pvt.) Ltd . (RWPL) is a Firm of Chartered Architects, Consulting Engineers, & Quantity Surveyors, and are Professionals in specialized disciplines, covering all facets of Design, Construction, and Project Management. RWPL is qualified to handle projects of any complexity, and has a wide and years of experience in different types of buildings, and related infrastructure facilities. The Practice has provided valuable studies and research; together with comprehensive advice on project related matters and complete design co-ordination, throughout the duration of contract.

Environmental Consultant
Prof. Rohinton Emmanuel

Energy Modeller
Prof. Rohinton Emmanuel

Climate Analysis

Describe the local climate
Bioclimatic recommendations based on Anuradhapura’s typical climate - Since temperatures and relative humidities are high, dehumidification is also necessary. This will involve the use of energy: no passive dehumidification technology exist at present.

Design Approach

Site integration
Master Plan and Design of individual houses and other facility buildings such as Pre-School, Shopping Complex, Gymnasium, Bank etc. Built by the Ministry of Defense in cooperation with the Bank of Ceylon, is a housing scheme for military families, the project consist of 1620 housing units. The theme of the project was to build community through emphasis on architecture, a highly efficient road network along with green alleys among the houses, the housing scheme is provided with necessary infrastructure facility to promote social sustenance in the scheme. Special emphasis was given to thermal comfort in the setting, through the zoning of activities and landscaping. Thermal studies in this regard was conducted by the University of Moratuwa, this enabled the design team to come up with the most suitable layout for the

scheme. The architecture is rather a mix of modern techniques and contemporary methods, to create energy efficient structures with increase lighting and ventilation. The use of local materials further promotes sustainable development.

Building design

The layout of the housing project was decided with the landscape design. The tree position was decided and designed at the very beginning to avoid heat gain to the building. At the same time planting position and series of plants and trees were positioned. shows that substantial improvement in thermal comfort is developed by manipulating the settlement geometry and by carefully controlling individual dwelling design. At the settlement-level, street orientation plays an important part. Other streets that are not thus oriented could benefit from the promotion of street level tree planting. Moderate sized evergreens will be sufficient for this purpose.

Special Feature

Natural Lighting

The preferred orientation of the housing unit is to orient the Main entrance facing South and the rear space to the north. Hence, these openings are toward north and south to avoid the direct sun. Different site positioning was designed considering shading from other buildings.

Water efficiency

The site is selected by considering the soil condition and the availability of the ground water. And also, the village was built the only single story buildings lesser amount of structural concerns. However, the thermal comfort and the cost were the main concerns while building this village.

Passive heating/cooling

The project is a large scale settlement on its own. Thus, the designers had the opportunity to generate its own microclimate characteristics in the approach to settlement design. Street orientation, staggered house layouts, surface cover and vegetation were strategies adopted for climate sensitive outdoors and homes.

Cost effective features

The project focuses on local material for economy.

Eco-friendly features

Green surface cover is a prominent consideration. A tree on each plot and street trees for shade is important.

Energy systems

Interior Lighting

Interior lighting use CFLs

Exterior Lighting

Exterior lighting is minimal and use CFLs. Street lighting independent of the individual houses use low energy lamps.

Ceiling Fans

Ceiling fans were provided at the users discretion in consideration of the low-cost approach.

Air-conditioning

n/a

Lift

n/a

Energy efficient systems

n/a

Energy efficient systems

Although PVs were an initial design consideration, cost and payback period at the time of implementation, caused the decision to be shelved.