Rehabilitation of Andhra Pradesh Cyclone Victims

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Background

A cyclone system internationally named 07B started at Bay of Bengal on 3rd November 1996 with initial wind speed of 25 knots (46 kmph) and picked up speed crossing the Andhra Coast south of Kakinada At the time of land fall the wind speed recorded were of the order of 120 knots (221 kmph)

The cyclone which in fact became hurricane, therefore, was of a very severe intensity resulting in massive devastation in the coastal districts of East and West Godavari causing huge loss to the life and crops and disruption of communication lines, electricity supply and to transport system. The total damaged housing stock was of the order of 4.33 lac units in East Godavari district and 2.15 lac units in West Godavari district.

HUDCO Support

Considering the magnitude of the problem, the State Government approached HUDCO to provide support to reconstruct houses in villages of the most severely affected four districts viz. East Godavari, West Godavari, Parkasam and Cuddapa.

HUDCO has been assisting for providing support for reconstruction of houses for cyclone victims. HUDCO has so far assisted the rehabilitation of more than 152634 Dwelling Units in cyclone affected areas at a total, project cost of Rs. 253.61 Crores with HUDCO loan assistance of Rs.148 72 Crores. In addition, for the recent cyclone and flood in Andhra Pradesh, HUDCO has offered a package of assistance to the extent of Rs. 190 crores for reconstruction, repairs and rehabilitation programmes.

HUDCO also provided the support in the form of planning

Building Centre

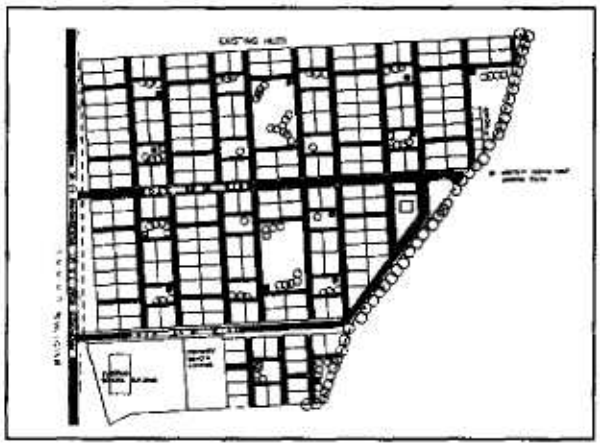
Planning and Design Support - Village - Vadapalem

Two alternatives were worked out for the proposed layout plan of village Vadapalem for discussing with the beneficiaries. One of the alternatives was accepted by the beneficiaries.

In the final layout plan, 214 housing units (Average plot area 68 25 sq.mt.) have been planned on a site area of about 2 96 Hect., achieving the net density of 72 units/ A cluster consisting of 344 units has been formed by way of keeping the plots in row pattern in two directions.

Layout Plan of Village Vadapalem

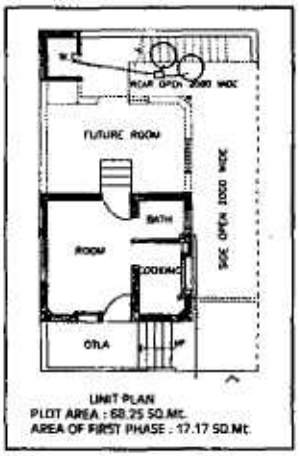
Most of the plots are placed in North-South orientation, keeping in view the wind direction as well as comfort conditions in the region. Prevailing wind direction is NE/ SW Hence smaller dimension of the plot is kept facing the wind direction in order to protect the larger surface area of the house from the cyclone winds. Hierarchy of the open spaces has been maintained. Smaller open spaces are provided at cluster level while bigger open spaces are provided centrally at layout level. Smaller open spaces can be used by the residents of the cluster for day-to-day outdoor activities like drying of clothes, interaction between the residents, children playing space etc, while larger bigger central open spaces will be used for community functions/ playgrounds etc. Community facilities such as School, Community hall, Public Health Centre, Shops etc. have been provided at appropriate locations as per the requirements of the population of the proposed scheme.



Layout Plan

Continuous flow of open space connected through the pedestrian pathways has been maintained in the wind direction in order to have smooth/clear wind movements at the time of future cyclone, if any In case the direction of wind changes during the cyclone, the path ways proposed in other direction will help in channeling the wind flow. Larger as well as smaller open spaces provided in the layout plan, can be used as temporary shelter at the time of future cyclone, if any. Vehicular as well as pedestrian traffic has been well segregated by way of providing a loop road for vehicular traffic, while all the pedestrian pathways are originated through this loop All the houses are accessible through the pedestrian pathways only

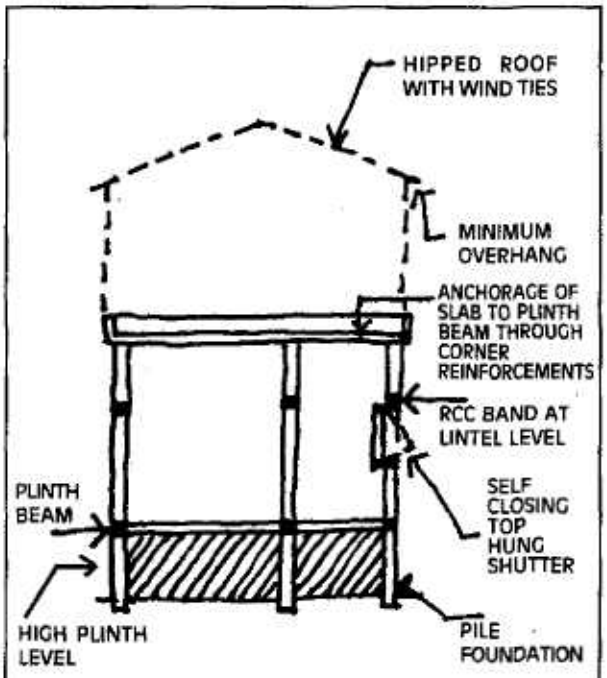
The Dwelling Unit Design



Two design alternatives were prepared by HUDCO Design and Development Wing, considering the design principles for cyclone affected areas as well as living style, habits and requirements of the beneficiaries. The plan and shape of the building units has been kept as simple as possible. Detached units have been planned in order to have clear wind movements between the two units. The corners are proposed to be either rounded off or chamfered, so that at the time of cyclone, the wind is channeled smoothly and as a result wind effects gets reduced.

As per the requirements and preference of the beneficiaries, the principles of VASTU have been adopted in unit design, more open space has been left in North and East in comparison to South and West direction. Even the placement of habitable room, kitchen, toilet, store etc. are as per VASTU principles. Although one side setback has been left in each plot, advantage of both side open space is achieved due to placement of the units as per VASTU principle.

Sunken windows have been provided in order to avoid projected sunshades over windows so that no damage is there due to projected sunshades during cyclone. Flat roof has been provided with proper anchorage with the plinth by way of reinforcing all the corners of the building. Twin leach pit latrine system has been provided in individual dwelling units in order to reduce the cost of sewerage/ sanitation. Community handpumps are provided for the water supply.



CYCLONE RESISTANT STRUCTURAL ELEMENTS

Role of Building Centres

A. Latur Rehabilitation Project

HUDCO adopted a comprehensive approach in dealing with the earthquake rehabilitation based on community participation, grass root planning and design with skill upgradation and employment generation throug Building Centres.

HUDCO supported the establishment of 10 Special Building Centres in Latur and Osmanabad and also assisted with the Govt. of India, KfW and HUDCO grant support.

These centres promoted construction activity and generated employment through training programmes for building construction artisans, labourers and unemployed youth. These centres supplied cost effective building materials to the construction sites and educated people with respect to earthquake resistant technology.

Awas Vikas Sansthan of Rajasthan also assisted and supported the setting up of Building Centres.

B. Jabalpur Rehabilitation Project

Local Building Centres have been identified which will play a very important and crucial role in the rehabilitation process.

- Create awareness among people regarding disaster resistant technologies.
- Impart training to building artisans and construction workers as well as unemployed youth so that it also generates employment.
- Take up reconstruction, retrofitting and repair work of individual houses, community buildings and infrastructural development activities.

C. Andhra Pradesh Cyclone Rehabilitation Project

The massive reconstruction of houses and community infrastructure buildings would need a large quantity of building materials and components. HUDCO with the assistance of Kreditanstalt fur Weideraufbau, KfW (German Bank for Reconstruction) supported the establishment of 10 special Building Centres.

"People have lived under the thread of disaster in South Asia for thousands of years. In that time, they have developed their own ways of coping with crisis: for instance, traditional wooden buildings in parts of the Himalaya are designed to withstand earthquakes, and many communities have well established procedures for protecting their belongings in time of flood. Duryog Nivaran's studies demonstrate the sophistication and rationality of such 'coping strategies', which can be highly effective".