

Green Highrise

Designing With Local Climate

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Design Evolution based on local conditions with respect to climate, economy, culture, technology prevailing in the region.

Design and development of residential buildings, including flats and apartments, suited to local climate, life-style and culture have suffered a great deal in the hands of commercial developers who are primarily concerned with fully exploiting the land and building every square feet of permissible built-up area.

Exploiting the land for availing maximum available area is the target

of almost all developers. However there are exceptions and a few promoters are now developing complexes providing open spaces and recreational facilities for the residents.

The thrust of post-modernism, searching back to the roots, has been in practice among Indian Architects since the 60's. For variety of reasons, there has been a process of adaptation, a consciousness about local circumstances

in terms of Indian technology, climate, economy, culture and architects have evolved design based on early Indian concept which have a scientific and rational base of relating space to human scale (Vastu Purusha Mandala).

Climate being a strong determinant and an influencing factor in development of design, Architects through the years have tried to adapt their buildings to design with the climate. Use of local materials and technique for construction have been in use for ages. The end result of such an approach has resulted in buildings of their own style and character aligned to "Vernacular" architecture and yet remaining close to the main stream of modern architecture. However, this does not mean that Indian Architects have not yielded to the pressure of the International style of Modern Architecture; there are a number of such buildings (particularly office and commercial blocks, shopping malls) in Kolkata, New Delhi, Gurgaon, Mumbai, Chennai, and in all big and small cities across India. These buildings could be located in any country of the world as they have the least respect for local climate, material and construction technique.

The building complex of Videsh Sanchar Nigam on Eastern Metropolitan by-pass, Salt Lake is an example of a building having its own version of post modern architectural medium, and yet a Green high-rise building aligned to "Vernacular" architectural style. The complex is built on one acre of land and planned to accommodate four nine storied apartment blocks (total of 88 flats). These apartment blocks are for their executives, officers and middle level staff members.

The built form of the complex consists of high rise buildings and low rise buildings. The Architects made it their objective to make these buildings designed with the local climate, life-style and culture.

In order to create an interesting complex, with the play of light and shadow, the spatial arrangement of the blocks have been made in such away that the high blocks have been located around the row rise bungalow and the front green area. The Bungalow with Mangalore clay tiled roof is the most prominent building of the complex and designed in local vernacular style of Bengal,; it breathes fresh air in to the complex.

Within the complex there are four high-rise buildings of nine storied. These buildings have been spatially arranged in such a manner that they don't block the air movement in to different blocks; this has been achieved by introducing low-rise buildings within the cluster of high-rise apartments.

A Green park with children play area have been provided along with planter boxes, hedges, creepers, flowering and evergreen trees around the peripheral boundary wall,; to keep the air clean and the heat radiation in the area down; one of the advantages of designing the Green way.

Within these high-rise buildings all bed rooms are oriented towards South-East or South-West to ensure that there is maximum air flow within the bed rooms; this has been achieved by orienting the buildings towards South/ South-East. The three wings of each block developed in a 'T' shape avails the prevailing breeze which varies between South West to South East during summer.

By locating the building at an angle from the road, three-dimensional view of the building is visible from the front main highway as one travels along Eastern Metropolitan by-pass from South of the city to the North towards the airport. The buildings' form is attractive and pleasing; this has been achieved by incorporating latest concept of architectural and structural design; in high rise apartment, large span structural sys-

tems allow free space within living and bed rooms; projecting balconies of bed room draws on local architectural style, and these balconies shade the building surface creating an interesting light & shadow texture on the buildings. And shadows help in keeping the building cool and reduces energy consumption and give the complex a Green charater.

The complex demonstrates that high rise and low rise buildings can exist side by side and reduce energy consumption, provided spatial planning is done judiciously. So that the low rise buildings are on the shadows line of the high rise buildings. It is also an example of utilizing the latest knowledge in energy saving and in structural concept and building materials. A new way of making high-rise building complex green.

In spite of being high rise buildings, these structures are not brutal; softness in building form has been brought about by curved form of the staircase, projecting balconies and other elements, which cast interesting shadow and light pattern on the building's large façade, making them attractive to the eye and at the same reducing energy consumption and making the buildings Green.

Standing together in a complex, the high-rise and low rise buildings create a new skyline along Calcutta's new Eastern Metropolitan highway, where many Green High-rise buildings have come-up within the satellite townships of Salt-lake and Rajarhat. This is indeed a good sign to reduce emission of Green House Gases, since the buildings are energy intensive structures and do not pollute the atmosphere. ■

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