

Making Andheri Buildings Green



AMIT KULKARNI

DEVELOPMENT is measured through infrastructure as well as real estate growth. The word 'building' creates varied images in our minds. It may be a comfortable home, an imposing office, a fun-filled school and college or the crowded malls and public places. Common to all this is that there are buildings everywhere. Our lives are intricately linked to buildings. All the time we are moving in or out of a building. Hence, the design of the building that surrounds us must be efficient with respect to function and environment.

Buildings consume 40 percent of the world's energy consumption and contribute to 28 percent of the world's greenhouse gas emissions. Hence, it is imperative to build environmentally friendly, energy efficient as well as structurally sound buildings. Andheri has a

A green building creates less waste and provides a healthier living environment compared to a conventional building

wide variety of buildings. The eastern side is a mix of industrials and residential units.

Studies have proved that our traditional buildings were more sustainable and less wasteful. It all starts from the design — since ancient times we have always built keeping in mind our local climate — the compact planning and street pattern for shaded walkways, haveli architecture, adobe structures. The designs followed the sun patterns and were oriented accordingly.

The building evolved around a courtyard or front courts which were actually designed as congregation spaces but also served the purpose of air movement. Building materials were selected such that the interiors remained cool in summer and warm in winter.

Our life is now restricted to the inside spaces for most of the time. We are dependent on buildings as multi functional spaces. All this along with population growth has increased the burden on requirement for built spaces in Andheri. Hence, we have started constructing vertically making it impossible to design around the traditional concepts and using the traditional construction material. We have now turned to modern building materials like steel concrete and glass, which is the need of today's design concepts. This has in turn increased the burden on the energy requirement for lighting, heating, etc.

GO GREEN

Buildings are complex products, made of materials and components of various design variables. A variation of every design variable may affect the surrounding environment for all the building's life cycles. There is no one design medium that can fulfill all our needs and hence it come to highlighting the design requirements in making a green building.

Green buildings are designed, built and managed in a way that makes them as sustainable as possible, with minimal impact on the environment. A green building uses less energy, water and natural resources than a conventional building. It also creates less waste and provides a healthier living environment for people living inside it compared to a conventional building. An appropriate site planning is imperative. An ecological approach to the building design helps to integrate the existing on-site ecological functions — habitat, movement of the sun, purify air and water storage — with our designed system. Our building design must also reflect these functions such that it is in harmony with nature. Landscaped areas and the rooftops gardens can support ecosystems by providing native plant species.

Creating a new habitat on structures helps to support biodiversity and a healthy system. This strategy also de-

creases the urban heat island effect, thus substantially reducing the ambient temperature. Vegetation and trees also retain water on site, helping to recharge the water table.

LESSER ENERGY USE

Electricity consumption in buildings is increasing by 8 percent every year and hence, will double in approximately 15 years. With the increase in the electricity use increases the carbon footprint. A sustainable future can be ensured if buildings reduce their carbon footprint. Experience shows that the carbon footprint can be reduced up to 60 percent by climate sensitive design, passive cooling techniques, use of energy efficient equipment, adequate day lighting.

Energy efficiency is a key component making energy sources like solar, wind and geothermal increasingly important. The first step is reduction in consumption. Orienting the building rightly according to the sun movement reduces the incident solar radiation of the building façade and thus reduces the heat gain to the building.

Using good quality insulating windows is as important as their placement. Windows in right places allow daylight. BEE rated appliances and equipment help in a large way to reduce energy savings. Water can be captured, stored, filtered, and reused. It provides a valuable re-

source to be celebrated in the process of green building design. Only about 6 percent of the water we use is for drinking.

One of the smart ways of reducing the water usage is use of low flow taps and showers and dual flush system for toilets. Use of harvested rainwater further reduces the use of municipality supply of water. Waste water from bathroom, wash basins and kitchens can be recycled and reused for flushing and irrigation.

We have observed that every other day a new, innovative and sustainable building material for green buildings is introduced in market. Some of these are recycled, recyclable or salvaged from salvage companied. These materials are the first choices for building a green building.

The key chal-

lenges for the development of green buildings in Andheri are mostly in the lines of awareness on the benefits of green buildings, materials and technology which is paramount looking at the pace at which this suburb is growing and progressing.

The writer is director at Varasiddhi Infrastructures Pvt Ltd

