GREEN IS THE SMART COLOUR FOR CONSTRUCTION INDUSTRY

The construction industry is gearing up to cater to the rising demand in green products such as smart roof solutions, green window panes, green plumbing lines, eco-friendly floors and green tiles, among others. They are trying to offer long-term solutions to building issues with their green products at budget prices.

Asimavo Bose welcomes his new visitors to his newly constructed third floor, atop his duplex-styled house located in a tony suburb of the city. From the outside, the building looks usual --- with its plastered walls, shingled roof and wood-panelled windows. But, in effect, the house is anything but traditional. It has been built with solar panels, organic paint, smart roof and a concept called the ‘building envelope.’ A building’s envelope, especially roofs and walls, contribute to as much as 28% and 45% of the energy loss in buildings. Good thermal insulation for the envelope is crucial to prevent heat from seeping through the exterior of the building. Most buildings in India, unfortunately don’t offer adequate thermal insulation for the building envelope thereby unnecessarily enhancing its energy usage, carbon footprint and lifecycle costs.

Despite accommodating a family of five, the house uses one-third of the electricity, unlike the other buildings, thanks to its modern, updated green technology. It uses less water too and prevents its roof from leaking, at any cost. The insulation system keeps it cool all through the year, keeping intact the freshness of the inhouse nursery plants. Though the house looks bright with sunlight, it doesn’t heat up at any occasion. The house is cool even on hot, sultry, summery days. Its roof shingles are made of recycled materials. On the terrace, photovoltaic solar panels are placed next to water pipes. Despite everything, this home indeed stands out on the quiet lane it is located in.

Although Mr. Bose is not exactly a very wealthy person, the present green arrangement did not require him to invest a lot. And at the same time, it helped him to turn his house into
Undeniably, a green revolution is on its way, thanks to rising energy consciousness, new standards and improved technology. While many of these technologies have been around across different parts of the world, it is only now they are ready for the market. India’s green building market is estimated to double by 2022 at 10 billion sq ft, valuing around $35-50 billion, driven by increasing awareness level, environmental benefits and government support, according to property consultant ANAROCK. “Though at a nascent stage, India has emerged as one of the leading countries in terms of green buildings’ projects. India ranks only second after the US in terms of the number of green technology projects and built-up area,” said Anuj Puri, Chairman, ANAROCK Property Consultants. More than 4,300 projects with about 4.7 billion sq ft of built-up area had registered for green technology as of September 2017, ANAROCK said in its report ‘Go Green - The Mantra for Sustainable Living.’

There are also a number of certifiers in the market to set standards for green products. A number of assessment tools have been developed to assist the green building developments. The leading green building assessment tools include Excellence in Design for Greater Efficiencies (EDGE, United States), Leadership in Energy and Environmental Design (LEED, United States), BRE Environmental Assessment Method (BREEAM, United Kingdom), Green Building Council of Australia Green Star (GBCA, Australia), Green Mark Scheme (Singapore), DGNB (Germany), Comprehensive Assessment System for Built Environment Efficiency (CASBEE, Japan), Pearl Rating System for Estidama (Abu Dhabi Urban Planning Council), Hong Kong Building Environmental Assessment Method (HK BEAM), and Green Building Index (Malaysia), according to Green Building research- Current status and future agenda. All these green building assessment tools are voluntary rather than mandatory. It was developed by the green building council in each country/region. The assessment is undertaken by accredited professionals that are commissioned by the green building council. The World Green Building Council has been established to coordinate the efforts of various green building councils over the world.

A range of low energy consumption system includes LEC system, Blueseal system, Light weight concrete under roofing solutions. For walls, there is Smart wall insulation finishing system (SIFS), External Insulated finishing system (EIFS) and Light weight wall plaster, solar panels. These systems enhance the building’s life cycle by providing better insulation and reducing overall energy consumption and carbon footprint. “With energy being in short supply across large parts of India, it is essential to create comprehensive solutions that are energy efficient and best suited for creating sustainable structures. With our green products we aim to provide customers with energy efficient products and remain certain that it will offer unmatched performance and sustainable structures,” says Dr. Sanjay Bahadur, global CEO, Construction Chemical Division of Pidilite Industries. Recently, Dr. Fixit, the construction and the waterproofing expert, announced the launch of building envelope solutions for roof and walls for better thermal insulation of the building. With this launch, the brand aims to strengthen its low energy consumption systems and spearhead the propagation of modern solutions against conventional approach.

Apart from the fight against the climate change, green buildings help in value proposition to property developers. “Property developers who choose to certify with EDGE benefit from the position of being the first mover in the business, as they can differentiate their buildings to attract and retain customers. EDGE certification is streamlined and affordable, offering a certification process that is conducted entirely online. The software application is unique in the world, enabling decisions to be made on the fly as to the most cost-effective ways to build green in a bioclimatic way. This is particularly important in a vast country such as India where the climate varies greatly,” says Rebecca Menes, the Global Marketing Lead for EDGE, a start-up created under the International Finance Corporation (IFC), a part of the World Bank Group. EDGE is gaining traction in the Indian market because of
its software application, streamlined certification process, and overall brand value.

A lot of green players in the construction industry are looking at leveraging on the financial industry in India. There is plenty of liquidity available for green construction financing and green mortgages, but the effectiveness of linking low-risk investment to certified green buildings that have fewer late payments and lower default rates is still largely unproven in India. IFC does predict that there is a $1.4 trillion investment opportunity in green buildings in India (between 2018 and 2030) according to its report, Climate Investment Opportunities in South Asia. As a confirmation of its own belief, IFC invested a record-high of $2.6 billion in fiscal year 2018, which includes investments in HDFC and Mahindra & Mahindra. The green bond industry, which is growing in leaps and bounds, is also intent on building investor confidence through a metrics-driven approach to green buildings. Once we have evidence in hand, an abundance of government and banking incentives, and growth in consumer demand, then we know for certain that the next generation of buildings will be built green. With the support of GBCI and our early adopters in India, EDGE can help to make this happen.

Another innovative idea could stem from refining older products. A lot of players are working on windows insulation panels wherein the room looks well-lit and bright but does not heat up. This is sometimes achieved by sheets of glass separated by a vacuum. While the idea has been there for a long time, across the world, it is only recently construction industry is taking note of this. In a way, it’s like going back to old times in India where interiors of houses would remain cool and airy, despite the temperature outside. Earlier, this would be achieved by creating broader, denser walls with solid materials and big windows, facing the direction through which breeze comes in. “We are trying to work out a solution wherein a window which can reject most of the sunlight from coming in and at the same time we only have daylight inside. So, heat coming in is rejected but the daylight comes in. It’s still work under progress. Wherever you can put a window, you could put this instead of a normal window. This will also come up end of next year,” adds Bejay Jayan, energy consultant for Smart Insulation Finishing Systems (SIFS), partner of Pidilite, who’s mainly driving the growth of smart building products of India.

Once the players succeed in placing such window sheets or panels, providing adequate vacuum in between, the flow of air, moisture can be controlled and ventilated. A lot of people are also using a heat-recovery ventilator, which sucks in the toxic air and allows fresh air to flow through the house. It uses no electricity and its energy sufficient. It’s the same with kitchen chimneys that sucks in fumes and smokes, grease created by spicy Indian cooking. Yet another great eco-friendly green-home device is LED lights, used in home lighting. Such lights use only about one-third of the electricity as normal, incandescent bulbs or tube lights. Its longevity extending up to several decades, its surely a smart device. In fact LED lamps completely revolutionized the lighting industry.

Yet another smart, green home-product is photovoltaic panel, placed on the roof that converts sunlight into electricity. In most modern homes, any excess power gets trapped into the grid and the house can draw electricity form it, as and when needed. It’s the same for solar gas used for cooking. However, such solar devices can only be used with incentives from the government.