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Prefab construction elements are slowly catching on in Mumbai as developers look to fast-track deliveries and reduce input costs

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Instead of opting for conventional mud bricks for their upcoming buildings in Kamothe, Navi Mumbai-based developer Baviskar Group sourced pre-cast bricks made of fly-ash. With this technology, instead of manually stacking bricks, the developer could build a wall offsite that mimics a brick-and-mortar structure, and then transport it to the site of construction.

"Not only is this 50% cheaper, but the assembly line production ensures a consistent size and lightness, which is better for the load-bearing of the construction," says Prakash Baviskar, CEO of Baviskar Group. "Pre-cast bricks and other pre-fabricated components are shaving costs, as well as improving quality of construction."

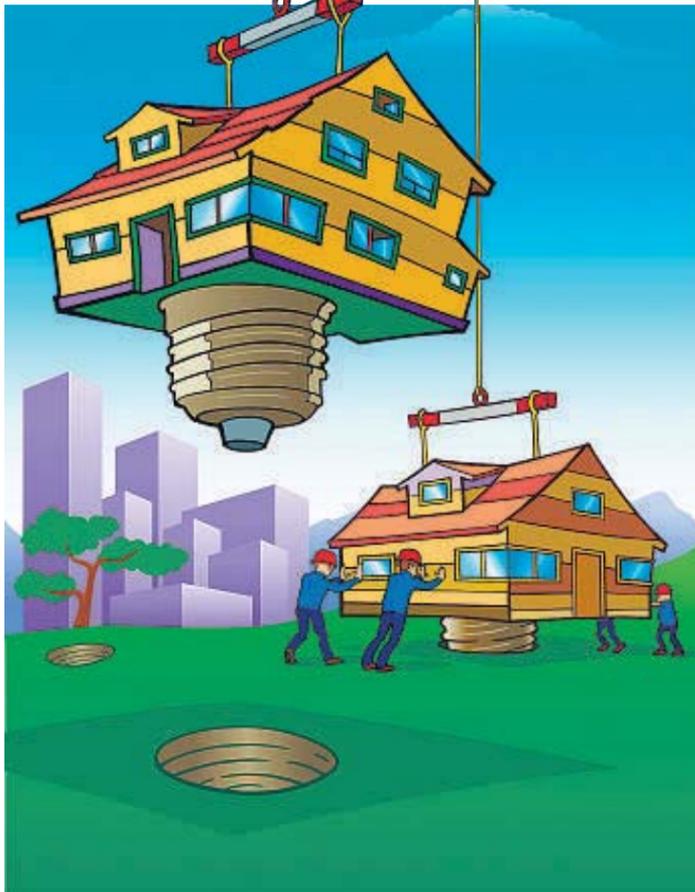
To meet the growing demand for housing in the city — affordable and otherwise — some developers are turning to pre-fabricated construction. Here, components of the structure are built at a manufacturing or pro-

duction site, then transported to the location. Work is carried out in two stages — manufacturing elements in a place other than the final location, and their erection in position.

"This technique has recently gained pace in India," says Sandeep Ahuja, CEO of Richa Realtors, a construction firm that has used prefabrication in a project called Park Mist in Dadar and an untitled project, also in Dadar. "Prefabrication includes working with steel structures and casting concrete slabs, and this adds pace on construction sites."

Prefabricated construction methods are now increasingly used by developers such as Richa Realtors, Shapoorji Pallonji, Cybercity Builders and Developers and Tata Housing, to name a few.

In the current marketing scenario where meeting a deadline is the biggest challenge, technology can catalyse movement. "The technology is fast, as one floor can be constructed in four days irrespective of floor area, if implemented with strict discipline," adds Ahuja. "It has helped us



finish construction sooner, and the consistency of quality is definitely higher."

"Offering these services helps developers deliver better quality products while keeping a check on development costs, therefore increasing their profit margins," said Anuj Puri, chairman and country head of realty consultancy JLL India, adding that by using this approach, buyers get possession on time — a win-win deal.

India has been using precast concrete to construct tunnels, bridges and fly-overs, but in buildings, it has so far been used in stairs, landings and modular structures. Experts say India will now see greater use of precast concrete in residential buildings.

Tata Housing, for instance, employs precast hollow blocks, lintels, floor tiles and prefabricated panels and polymer panels for doors and windows.

This shrinks the onsite work requirements — a majority of the parts for building are being made in a closed environment and transported to the site. The main advantages are quality, speed, and value for money, say developers.

Brotin Banerjee, MD and CEO, Tata Housing says, "It is also sustainable design. Being versatile and durable, it is produced under strict quality measures in a factory by

highly trained professionals, with almost no wastage." "It makes sense to adopt methods that augment supply while reducing the amount of waste created, recycling and reusing materials," says Kishor Pate, CMD — Amit Enterprises Housing Ltd.

NEED OF THE HOUR

Tata Housing has set up one of the largest precast facility in partnership with Shapoorji Pallonji in Bangalore, to support the construction of its New Haven Township in Peenya.

Cybercity in Hyderabad uses Shear Wall Technology (MIVAN), a new technique that has empowered and motivated mass construction projects throughout the world. According to Venu Vinod, MD, Cybercity Builders and Developers, "Prefabrication also addresses the shortage of skilled labour at construction sites."

According to a Report titled 'Indian Construction Sector — The Great Leap Forward', by Synergy Property Development Services, a global project management consulting and turnkey solution company, due to the rapid development across Tier II and III cities, India will witness acute labour shortages in the coming years. Reiterating the need to accelerate construction, on January 2 this year, Nandita Chatterjee, secretary of Housing and Urban Poverty Alleviation stressed the need to improve construction technology, including prefabricated structures.

"An enormous number of homes — to the tune of about 20 million — will need to be constructed by 2022. We will need to judiciously select fast-track construction technologies and evaluate those that are globally acceptable," Chatterjee said.

MONEY MATTERS

In prefabricated homes, since the cost to the developer is reduced, this leads to a cheaper home for the buyer, says Suchit

THE BENEFITS

Precast technology shrinks the onsite work, with a majority of the parts for building being made in a closed environment and transported to the site

The main advantages are quality, speed of construction, and value-for-money. Moreover, the technology contributes to sustainable designs in various ways

Being versatile and durable, it is produced under strict quality measures in a factory by highly trained professionals with almost no wastage

The technology is adaptable and suitable to all types of construction

Pre-cast buildings have low-weight, flexible frames, and offer higher resistance to seismic forces

this might not always be true. "In fact, it could mean increased cost for the consumer, because prefabrication is a relatively new method in India and the logistics are not fully developed. There are costs relating to factory premises, quality raw material, energy, manpower, transportation and quality of production etc. When you add it up, the overall cost may work out slightly higher than traditional methods and materials at this stage," he says.

PATH OF RESISTANCE

There is still a fair degree of resistance, both from developers and buyers, to projects built with alternate construction materials. Pate adds, "While innovative techniques such as Alu-Form have become widely accepted and indeed popular, the Indian market's acceptance of housing built with alternate construction materials is still quite low."

Punnose, founder and CEO at Red Ribbon Asset Management, an advisory service. "Buyers get timely delivery of a product that is of high quality. Developers get certainty on project cost as they are delivered by the offsite contractor on a legally binding fixed time and cost contract," he adds.

Pate adds, "By using alternate materials and methods, construction costs can be reduced by a minimum of 10% to 15% in terms of materials, and up to 20% in terms of skilled manpower expenses and construction time."

"This method results in cost cutting of between 15% and 20%, compared with the conventional brick-and-mortar technique. It means reduced cost for the consumer, but it is difficult to estimate the difference in terms of percentage as converted benefits may vary from developer to developer," Ahuja says.

However, Sourabh Bansal, managing director of Magicrete Building Solutions says that in the short term,

Hiral Sheth, director — marketing and sales, Sheth Creators says, "The technology is still nascent in India even though there are a few large projects being made in metro cities. It is fast evolving with new machinery, new players from various parts of the globe coming in and domestic developers increasingly looking at prefabricated construction."

In India, unlike in the more developed countries, there is still an erroneous assumption that the use of cost-effective alternate construction materials results in inferior structures. Knowing that a building has been built with anything but conventional materials and technologies causes potential buyers to have concerns about its safety, durability and resale value.

The primary challenge lies in convincing buyers of the inherent value of such projects, and also to educate developers on the long-term business potential. There needs to be a greater level of awareness.

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