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Creating Sustainable Shelters

Pre-engineered buildings and infrastructure projects as well as roofing solutions with thermal insulation and energy conservation properties are steadily making inroads in construction projects across the country.

Case Study

Raghu Balan,
Executive Vice President - Quality, Safety and Technology, Sobha Ltd

CLAY TILES
PROJECT: SOBHA ARISTOS, BENGALURU

Requirement: Durable roofing.
Smart features: Designed for long-term performance, maintains colour, long-lasting protection, economical, can sustain high winds, requires limited maintenance, traditional elegant appearance, ability to insulate, keeps inside temperatures warm in winter and cool in summer.
Technology used: Fixed using adhesive Cerabond 27.
Time taken: Six months.
Challenges: Requirement of appropriate manpower.
USP: It has durability beyond compare, saves energy costs, and offers protection like no other roofing material.
Market share: Clay tiles are widely used for roofing.
Area covered: 19,000 sq ft.
Cost of roofing: Rs 50-60 per sq ft (depending on quality of tile used).
Materials used: Clay tile, Iberica Ultra Tile and Cerabond 27.
Suitable for: Villas and row houses with sloped roofs.

Case Study

Roshni Udyavar Yehuda,
Head, Rachana Sansad's Institute of Environmental Architecture

THERMAL SENSITIVE ROOFING
PROJECT: SNDT CAMPUS, MUMBAI

Requirement: To provide thermal comfort to occupants through retrofitting.
Smart features: Reduced heat gain; it has vents to remove hot air and uses the radiative barrier below the roof to do so.
Technology: High albedo paint on the upper side with SRI > 0.5; turbo ventilators suck air inside spaces and throw it outside; the radiative barrier is a silver-coloured material with an air gap of 100 mm and low emissivity; as a result it doesn't emit any heat inside.
Time taken: Design took a month, execution a year.
Challenge: Retrofitting the roof without disturbing the exterior of the building.
USP: Good solution for making a building environment-friendly.
Market share: Less than 0.5 per cent.
Area covered: 12,610 sq ft.
Cost of roofing: Rs 11.56 lakh.
Materials used: The existing AC sheets were retrofitted with translucent polycarbonate sheets for daylighting; multiwall polycarbonate panels at truss level (above 4.4 m) for noise and thermal insulation; radiative barrier material (North and South, East roof slopes) below roof with 100-mm air gap with emissivity < 0.1.
Maximum demand for roofing: Residential sector.
Suitable for: Retrofitting of existing structures.