

EIFS Solution for Pyramid Scheme

Without question, rectangular buildings are an integral part of our heritage and landscape, and an efficient architectural form. However, the creative use of plastics allows designers to think outside the rectangular box, creating new types of structures with unusual—and unique—designs.

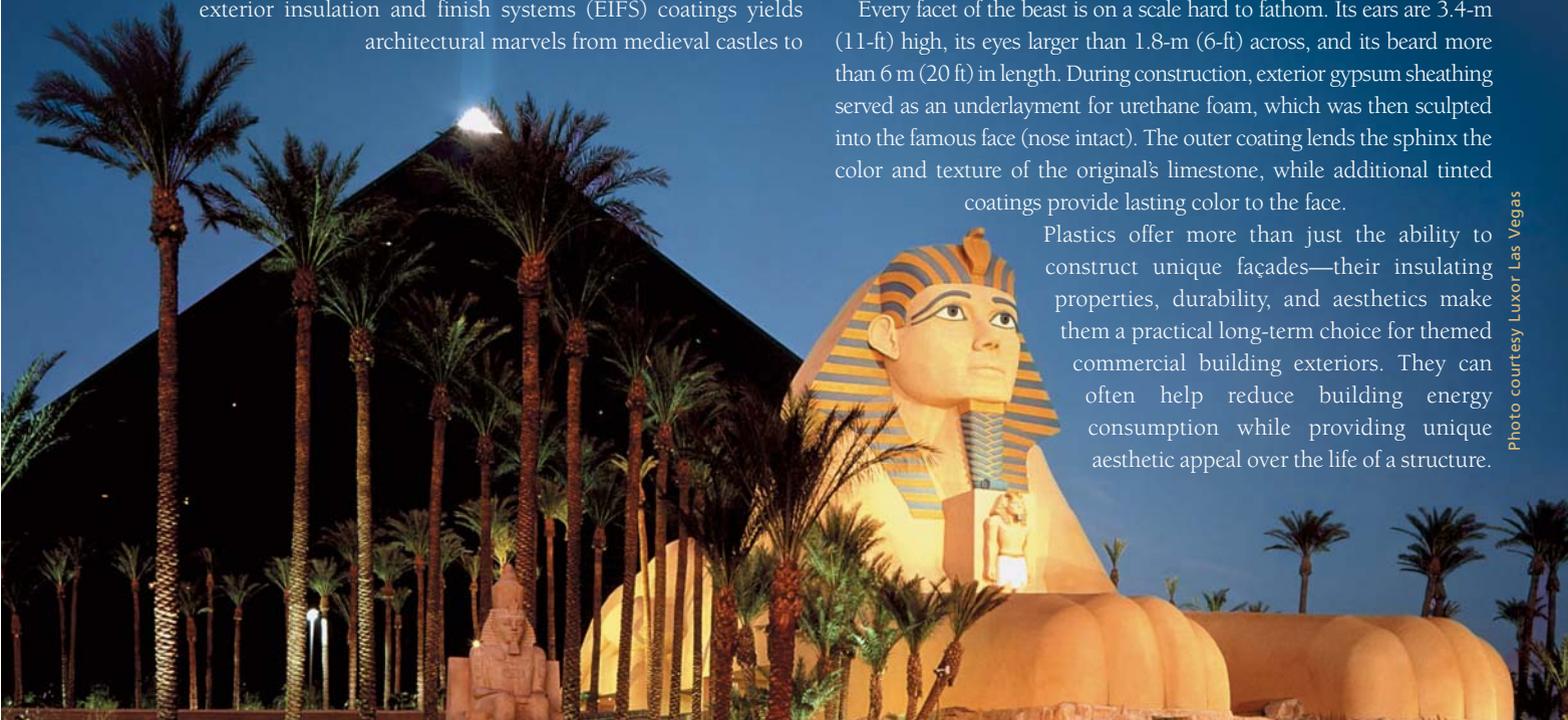
On the Las Vegas strip, expanded polystyrene (EPS) or spray polyurethane foam (SPF) covered with polyurethane, polyurea, or exterior insulation and finish systems (EIFS) coatings yields architectural marvels from medieval castles to

New York City skylines, but perhaps nothing is as impressive as the Luxor pyramid hotel with its giant sphinx. Standing tall at 10 stories high and 80.8 m (265 ft) long—larger than its Egyptian ‘parent’—the sphinx is fabricated from a custom plaster and EIFS form. Architects and designers were able to replicate the ancient wonder’s incredible features without requiring master stonemasons or having to endure the cost or complexities of transporting and carving a giant limestone slab.

Every facet of the beast is on a scale hard to fathom. Its ears are 3.4-m (11-ft) high, its eyes larger than 1.8-m (6-ft) across, and its beard more than 6 m (20 ft) in length. During construction, exterior gypsum sheathing served as an underlayment for urethane foam, which was then sculpted into the famous face (nose intact). The outer coating lends the sphinx the color and texture of the original’s limestone, while additional tinted coatings provide lasting color to the face.

Plastics offer more than just the ability to construct unique façades—their insulating properties, durability, and aesthetics make them a practical long-term choice for themed commercial building exteriors. They can often help reduce building energy consumption while providing unique aesthetic appeal over the life of a structure.

Photo courtesy Luxor Las Vegas



THE CAT IN THE POLYSTYRENE HAT



Seuss Landing at Universal Studios’ Islands of Adventure is another perfect example of using plastic materials to achieve extraordinary aesthetics.

Located in Orlando, Florida, this amusement park within an amusement park is a 4-ha (10-acre) island incorporating Green Eggs and Ham Café, Hop on Pop Ice Cream Shop, and several other attractions. Dubbed the ‘Land of No Right Angles,’ conventional construction methods were simply out of the question.

The design team was challenged to recreate the characters and environment to draw in hordes of tourists, while respecting the integrity of the style made famous by

Theodor Geisel, the author/artist better known as Dr. Seuss.

Tampa, Florida-based Keenan, Hopkins, Schmidt & Stowell Contractors (KHS&S) were charged with

making the two-dimensional figures come alive. To achieve the unique cartoon effects, employees had to hand-sculpt more than 10,684 m² (115,000 sf) of expanded polystyrene (EPS) foam to be applied over steel framing. In some places, the EPS was up to 609.6 mm (24 in.) thick.

KHS&S coordinated with manufacturers to create and apply a specially formulated exterior insulation and finish system (EIFS) to meet code requirements, while allowing more on-site foam shaping. The design team immortalized the Cat in the Hat with a 9.5-m (31-ft) tall version of his trademark red and white head wear.

KHS&S took three weeks to apply the EPS, and then spent another two weeks perfecting and carving the image. Other highlights of the project included seamless single forms with straight or plumb substrates a rarity.

The logistics required scaffolding of structures with few or no straight surfaces, while the newly developed EIFS application called for extensive training and supervision for quality control. The contractor had to install and coordinate the application of multiple layers of materials to create the ‘animated’ effect, while maintaining durability.

