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## PALAZZO GATTO ART HOTEL & SPA

Italian Ar. Simone Micheli talks about Palazzo Gatto characterizing the city center of Trapani, Sicily



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# Climate responsive façade design

*Gaurav Sanghavi, Co-founder of Pentaspace Design Studio, speaks on the need to balance between aesthetics, functional role and weather conditions.*



**Gaurav Sanghavi**  
Co-founder,  
Pentaspace Design Studio.

Several variations for façade have come up for a climate-responsive façade. Different regions have different façade requirements. Hence it is necessary to evolve the façade per the regional conditions and understand the suitable material.



To read the complete interview scan the QR code

**H**ow important is a building's façade in adding character and personality and protecting it from external influences?

A façade needs to have a balance between aesthetics, functional role, and weather conditions, as well as cultural aspects. It needs to add an architectural element. Its functional aspect protects the inside, reduces heat gain, and supplements air conditioning. There can also be a perforated façade where we need shade in the corridor, and there is no air conditioning, but we have to weather-protect a person walking through. There are multi-functions to a façade. A façade has to work functionally as well as aesthetically.

**A building's facade could be more energy efficient using suitable materials. What are the best materials to use when designing a facade?**

There are several cladding materials which can be used in highrises. There are specific areas, too, on a façade in the building, one of which is the ventilation area, from where light and ventilation are received, and the other is the dead area, which is the service core with dead walls. There are different specifications of glass, which along with the reduction of heat gain inside, play a vital role.

Several other materials like stone cladding, aluminium panels, and flexible stone panels can also be used. New materials like exposed brickwork and exposed concrete are also used on façades. These materials can be used in dead areas. In Ahmedabad and the nearby areas, exposed brickwork and exposed concrete are used extensively. In Bombay, it cannot be used due to the exposure to heavy rains.

Several variations for façade have come up for a climate-responsive façade. Different regions have different façade requirements. Hence it is necessary to evolve the façade per the regional conditions and understand the suitable material.

**In areas where we need to deflect sunlight and keep the indoors cool, what design measures should be taken to create a building envelope?**

We need a double-skin façade there. It can be achieved through jaali work with glazing inside for double protection, so when we sit inside, we are not getting the heat and the glare, and it automatically cools down. A double skin façade is preferred to achieve this. In a double-skin façade, we can have jaali and glass or glass and glass. Through jaali, the air that comes inside is a lot cooler.



**What's your take on glass facades? Can we consider them energy efficient in the Indian context?**

The glass needs to be energy-efficient; instead, it must be used smartly. On a north face, glass can be used extensively because the north doesn't have heat. We have a large amount of light coming in from the north, considered good quality. For example, mills have north light trusses to achieve vast amounts of daylight inside.

The use of glass is essential, but it needs to be used strategically along with different materials. Several options can be used – fins, jaalis, or just the glass, a doubly glazed unit for more energy efficiency, or a double-skinned façade for more cooling. For example, we can't use too much glass for a school. For a commercial building, we can use glass; for a residential building, we can use cladding and some jaali work. In an institutional structure, we cannot use glass anywhere. It depends from project to project, function to function, and what we will be housing within that. 🏡