



*Main picture: Location of the Palazzo Versace Hotel.
Above: Façade wing.*

Palazzo Versace Hotel, Dubai

Located in the heart of Dubai, once open in summer 2013 the new luxury Palazzo Versace Hotel will not only showcase the rich and famous who will come and stay in its luxury rooms, it will also demonstrate how complex technical construction issues were overcome to produce the highly detailed precast concrete façade of a hotel that will undoubtedly become one of Dubai's iconic developments.

Daniele Pfeffer Seraphim, Gulf Precast Concrete Company, Abu Dhabi, UAE



UAE precast concrete manufacturer Gulf Precast has executed many challenging façades for iconic developments such as the Dubai Mall and the Abu Dhabi Paris Sorbonne University.

In August 2009, Gulf Precast was presented with the equally challenging task of installing the façade of the new Palazzo Versace Hotel in Dubai. The 170,000m² luxury resort will include 169 private residences and 217 hotel suites, which will be furnished from the Versace Home range.

More than 91,000m³ of concrete, 20,000 tonnes of reinforcing steel and over 3,500,000 man hours have gone into creating the resort's building. To meet the demands of the luxury image of the Versace brand, and create a façade of outstanding beauty, Gulf Precast produced 23,138 elements – 19,100 in glass-fibre-reinforced concrete (GRC) and the remaining in precast concrete elements. Over 17,000 different types of elements were fixed on the steel and concrete structures to create a façade of beauty and exclusivity.

Design complexity

The complex design required 42,000 hours of structural and detailing engineering works, including the construction of a secondary steel support system. Numerous

Left: Counter-moulds carved in wood.





Prototype of counter-mould in polystyrene.



Above: GRC, rubber and wood mould, with different finishing texture.

Below: Two GRC elements with decorative work.

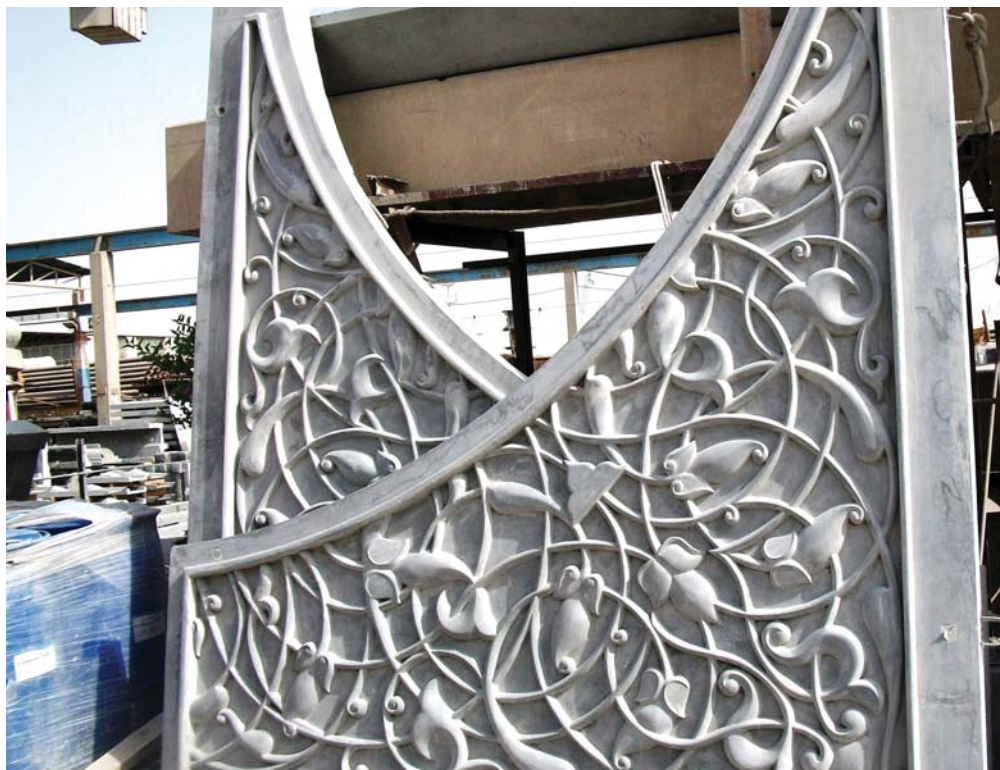
GRC panels, characterised by deep design patterns, different finishes and intricate shapes, were designed. The complex task of forming a seamless large patterned area was created by matching elements with complicated design patterns of different forms, including arches and curved panels.

In order to meet the project deadlines, engineering, production and erection works were undertaken in parallel. The engineering works began in August 2009 and are ongoing for the final roof section, as the majority of the elements require specific shop drawings including complex fixing details.

Mould carving and production

Depending on the complexity of the pattern, a polystyrene counter-mould prototype was prepared to verify that the design complexity was accurately captured and that the element matched perfectly with those adjacent. The advantage of such a prototype was that it required minimal work and was produced using inexpensive material, minimising the time and cost impact in case the prototype was not entirely satisfactory.

The final counter-moulds were then sculpted in wood. Only a few of Gulf Precast's experienced carpenters were capable of performing such exquisite wood carving works, which required both technical expertise to match the complexity of the



design and excellent sculpting abilities.

Liquid rubber was then poured into the imprint of the wooden counter-mould. With such a fine pattern, the flexibility of the rubber was of critical importance to prevent breaking the elements during de-moulding. Parts of the mould with a lower requirement for flexibility were prepared in glass-reinforced polyester (GRP) or wood. The mould had to pass extensive quality control checks before it was released for casting.

With more than 17,000 different moulds, mould manufacturing was certainly the most challenging part of the production process. The most difficult part was avoiding damage to the patterns while de-moulding. This was

made harder because of the sheer size of some of the elements – some cornices are 4m long, 1.5m wide and 1.5m high.

Site installation

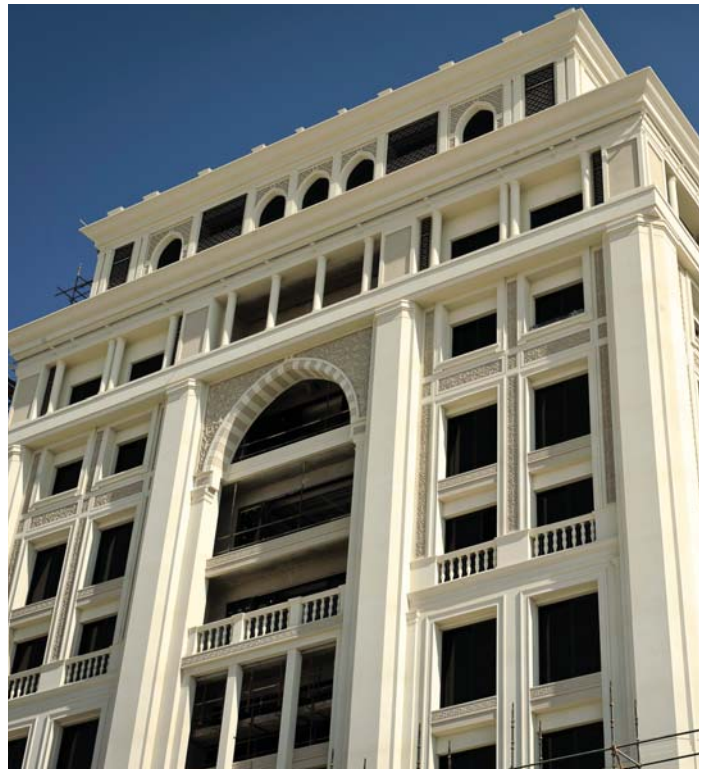
One of the main challenges during installation was fixing the panels to the steel structure, as this did not allow for any flexibility in the adjustment of the elements. The size of some panels, as well as the protection of the patterns against damaging impacts during installation, was also critical, especially as cranes were not always available and the majority of the erection works was performed using cradles.

The client's design brief for the Palazzo

Versace was to produce an amazing and unique façade that would set a new standard for iconic developments, and would match in terms of quality, the reputation of the Versace brand. The client and consultant requirements were stringent – international standards for tolerances were not considered. Visual perfection is the standard against which Gulf Precast's work is evaluated. In order to achieve this and match the client's expectations, the company used its expertise and combined it with the artistic abilities of its employees to produce a visually impressive façade to rival many of the existing iconic structures already visible in the city skylines of the UAE. ■



Above: GRC element with deep pattern.



Top levels elevation.



Above and left: Details of the façade.