



## **Four questions on the Dives in Misericordia Church answered by Carlo Pesenti, Italcementi's Co-General Manager.**

### **What did being a partner in such a landmark work as the Dives in Misericordia Church mean to Italcementi?**

We are very proud of having participated in such a prominent project as the Dives in Misericordia Church. We are proud of the considerable artistic value of the work accomplished and most pleased that the Tor Tre Treste community and parish eventually have a church and a welcoming place of their own.

With this initiative, we are continuing a journey that began 30 years ago with PierLuigi Nervi, whom we worked with on the construction of the Audience Chamber (now Paul VI Hall) in Vatican City. On that occasion, our laboratory had produced and tested more than 100,000 specimens to develop the best cement and final structure that could satisfy the master designer's requirements.

As to the Church project, we followed the same pathway with the Vicariate and Richard Meier. Mr. Meier had designed a church with three sails full of religious significance, which, due to their distinctive features, required highly advanced engineering solutions to fulfill the requirements of the designer and the client.

Our knowledge and expertise in the cement field allowed us to identify suitable solutions to face structural complexity and to supply innovative materials.

Let me give you some figures: we needed more than 300 design drawings to cope with the variety of block geometries and construction details, and over 23,000 man-hours from the design stage through to execution.

### **Some of a craft work...**

For the construction of the sails, 256 prefabricated elements were used. Each precast block had to be lifted and set in place next to others with the utmost precision according to the sail's geometry. Work continued at the rate of 2-3 precast elements being set in place per day. No traditional machinery or scaffolding was of any help. Therefore, we invented a special moving form. This machine enabled us to move each precast block in the direction of the three ideal X-Y-Z axes and to accomplish the three rotations on those same axes resulting in the six movements with permit a solid to achieve any position in space. An original, complex machine that is reminiscent of the machinery that was used to build ancient cathedrals, although in this case, all the advantages of modern technology were available, and thus employed.

### **Have you developed a new type of white cement?**

In this case, too, we have tried to satisfy the demands of the designer and the Vicariate with a product that has high added value, as well as a high symbolic value. The white cement TX Millennium, containing titanium dioxide, is the result of extensive research efforts made by individuals and laboratories in Italy and France and belonging to our Group Technical Center. The new cement was developed to optimize the characteristics of aesthetic durability that are typical of top quality cement structures. Once the cement has hardened and in the presence of light and air, the photocatalytic particles in the cement allow it to oxidize organic and inorganic air pollutants.

The structure thus stays white and unaltered in time, which was exactly what Richard Meier wanted to achieve.

### **How does this new cement work?**

The white cement TX Millennium is a product we patented. In the presence of air and light, the photocatalytic process allows for the destruction of various kinds of air pollutants – e.g. vehicle exhaust fumes, emissions from residential heating systems, industrial emissions of aromatic chemical substances, and pesticides - that come in contact with the cement surface, oxidizing them to carbon dioxide. Therefore, pollutants lack a substrate they can adhere to, and the original aesthetic appearance of the structure remains unchanged over time”.

Rome, 24 October 2003