Fig. 12. Bodega Berdugo, Aranda

**Form Liners : Lycée sports hall in Marseille (France)**
**Architecture: Apack, Flachaire**

The use of elastic facing moulds has attained high acceptance in terms of both quality and economy for the texturing of fair-faced concrete surfaces (Fig. 13). The elasticity of the form liners enables demoulding without breakage of either the concrete or the form. Individual form liners in the form of an enfolding curtain were also used effectively for the construction of a new sports hall at a school in Marseille in France. A positive model was produced on the basis of an artist's design. The depth of the structure is around 30 mm and the façade was subsequently provided with a brown glaze.

Fig. 13. Lycée, Marseille

## Material innovations

**Titanium Dioxide: Jubilee Church, Rome (Italy)**
**Architecture: Richard Meier**

Three self-supporting concrete shells, staggered in height and standing behind one another, form the striking silhouette of the Jubilee Church in Rome (Fig. 14). The shells were assembled together on site to the exact millimetre from 256 concrete elements. 2,600 metric tons of ground Carrara marble were used for the construction, and titanium dioxide was mixed into the concrete so that the church would retain its immaculate white. This additionally acts as a catalyser: on contact and in sunshine it allows harmful substances in the air to be oxidised to carbon hydride. This process works

Fig. 14. Jubilee Church, Rome

for different organic and inorganic compounds, including car exhaust fumes and the normal emissions from heating systems.

**Translucent Concrete**

Demands on design and function are continually growing and call for new top creative performances by architects. With cleverly used translucent concrete slabs or elements, architects now have the means to give their buildings a fascinating new type of image. Transparent concrete walls are inspiring the world of construction and setting new emphases (Fig. 15).

Fig. 15. Translucent concrete

The main components are light-conducting media placed in the concrete: glass fibres, light-conducting textile fibres or fabrics. Manufacturing methods for series production are currently under further development.

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