

U.S. Embassy

Concrete admixtures used in construction of new building



Our reference in London (United Kingdom): U.S. Embassy

The background

This new Chancery building houses the new American Embassy and Consulate. The Chancery sits centrally within the site and has a single basement level with a central 12-storey reinforced concrete slip-formed core. At ground level there is a reinforced concrete slab with an 11-storey steel frame above.

The reinforced concrete basement and entry level (ground floor) slabs have 12 levels of composite steel deck above.

Around the Chancery a single basement level has been constructed which provides space for underground car parking and ancillary plant.

The challenge

The finish on the walls and floor slabs had to produce excellent results that would meet the USA's strict rules on concrete finish.

Due to the necessarily robust nature of the structural design for security reasons, the detailing and installation of the reinforcement was more complicated than most structures.

Construction had to accommodate high levels of security on site, requiring a positive approach from all parties.

Project:

U.S. Embassy

Location:

London

Client:

US Government

Main contractor:

JV – BL Harbert International & Sir Robert McAlpine

Sub contractor:

Byrne Brothers

Concrete producer:

Aggregate Industries

Market sector:

Ready-Mixed Concrete

Products used:

Masterset R200

MasterGlenium 123

MasterGlenium SKY 569

MasterGlenium SKY 902

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Our solution

The suspended slab over the car park not only includes two access ramps and the foundations for the three access control buildings, but is also stepped and sloped to allow for landscaping and security requirements. Therefore, the layout of beams was very complicated as they varied in depth and width, particularly over column locations where beams intersected.

There was a significant area of concrete structure around the Chancery exposed to view when complete, so the architect specified an exposed aggregate finish (grit blasted) to the concrete using large panel formwork.

The solution supplied to the contract included MasterGlenium SKY 569, which the contractor had used in past contracts, especially those involving slip-forming. MasterGlenium 123 and MasterGlenium SKY 902 were used in the piling mixes with good flow retention. Masterset R200 was used throughout in general works.

Master Builders Solutions assisted in trials at London Concrete's batching plant for every mix, prior to use on site.

The customers benefit

- Master Builders Solutions admixtures helped to achieve the finish required by US building codes.
- Track record for slip-forming with contractor
- Working within stringent quality control regime

Project facts at a glance

- Structure constructed generally to Euro codes, however, in certain instances US codes prevailed.
- Total contract: concrete in excess of 60,000m³
- Contractor employed a range of Master Builders Solutions admixtures to achieve the required results