BRITISH MUSEUM GREAT COURT PROJECT
GREAT RUSSELL STREET, LONDON, WC1

This is the original 18thC façade into which the Great Court Project was built during 2000. The main entrance to the Great Court is through the centre building shown above. The only way to appreciate this structure is to see it. However, it has this huge glass domed roof, whose claim to fame is that it is the largest un-supported glass roof in Europe.

One of the problems faced by the structural engineers, Buro Happold, was that the original building had virtually no foundations; not good when you intend to insert a huge basement.

The requirement for the below ground waterproofing was for a Grade 4 environment.

2,266m^3 of Caltite System concrete in 69 pours was used to waterproof the basement slab, retaining walls, lift pits and, at ground level, the base slab of the new Reading Room.

Apart from the public lavatories, the basement consists of a lobby, plant rooms, lecture theatre and an exhibition room (Currently showing African artefacts).

In the basement there were big problems with water ingress, nothing to do with the Caltite concrete, which Concrete Remedial Systems Limited was able to fix. There were six holes through the Caltite slab, four metres deep into which plastic sleeves had been concreted. These holes are where the hydraulic piston rams for the lifts go. Unfortunately, water was getting into the plastic sleeves from below the slab and filling them up with water. The gap between piston and outer sleeve is just 250mm and the gap between piston bottom and sleeve only 600mm, so there was very little space available to do the repair work. The work involved pumping fast-set grout down a tube to the bottom of the sleeve to temporarily stop water ingress. The water was then pumped out and a thin layer of hydrophilic resin pumped down to just cover the base area. This was left for a short time to react with the dampness before pumping down another layer of fast-set grout to restrain the resin.

Article that appeared in Building Magazine in 2000

Cementaid's *Caltite System* concrete used to waterproof the Nation's Treasures.

An extraordinary feat of engineering is taking place at the British Museum, as work continues on the spectacular roof and basement to rejuvenate the Museum for the new millennium. The Great Court project, costing nearly £100 million, will house the restored Reading Room, an education centre, exhibition galleries, restaurant, café, museum shops and new visitor services

The construction programme began in March 1998; the roof will be completed in early 2000 and the Great Court will open to the public in late November 2000

The Great Court scheme will transform the Museum's inner courtyard, with the world-famous Reading Room at its heart, into the largest covered public square in Europe

The architects are Foster and Partners; Buro Happold are the consulting engineers.

Basement

Buro Happold exploited the cost and installation advantages of the Caltite integral waterproofing system for the 2,500m^3 of structural concrete in the new lower level basement to form an auditorium, theatre, conference areas and plant rooms. The performance specification required that the system be British Board of Agrément certified and provide a guaranteed archive storage environment. The Contractor is John Doyle Construction with the ready mixed concrete supplied by London Concrete.

Caltite

Manufactured and supplied by Cementaid, the **Caltite System** is a high performance hydrophobic and pore blocking ingredient which modifies the concrete to provide water vapour transmission resistance, waterproofing, damp-proofing and corrosion protection. Used in thousands of projects around the world, the Caltite system has a track record of over 40 years. Over 12,000m^3 of Everdure Caltite System concrete was used in the new Wimbledon No 1 Court, it was used at the recent Chelsea Village development and, more recently, in the basement structure of the CONSTRUCT award winning project, Christ Church Court, part of the re-development of Paternoster Square by St Paul's Cathedral.

British Museum, Great Court, Great Russell Street

Architect: Foster & Partners Structural engineer: Buro Happold Contractor: John Doyle Construction
Everdure Caltite System concrete used to waterproof the basement slab and retaining walls