

White Horse Bridge

Case study 2013

Focus product: Intercrete® 4840

Location: Wembley, London, United Kingdom

Contractor: Edmund Nuttall Limited

Designer: Halcrow Group Limited

Summary: Reinstatement of concrete cover on recently cast abutments



Background

The White Horse Bridge is a state-of-the-art £20 million footbridge that crosses Wembley Stadium Railway Station leading up to the new Wembley Stadium.

Constructed in 2006 and designed by London Eye architects Marks Barfield, the name of the bridge was decided via an online poll hosted by BBC Five Live in conjunction with the London Development Agency. The chosen name commemorates the first FA Cup final to be held at the old stadium in 1923 with the famous image of Billy, a white horse, clearing a pitch invasion after an estimated 250,000 people flooded the ground.

The bridge's four arches mirror the now-famous arch of the new Wembley Stadium itself. On event days, as many as 8,000 people an hour cross the footbridge. During construction it was found that the abutments supporting the main arch had insufficient concrete cover to the reinforcement and a rapid method of reinstatement was required without resorting to costly recasting.

The solution

Intercrete 4840, a two component, waterborne, epoxy and cementitious modified polymer coating, was chosen for this project due to its ability to effectively reinstate cover. A 2mm coating of Intercrete 4840 affords in excess of an additional 100mm of effective cover, as well as providing a complete barrier to water under 10 bar pressure. Being cement based, it chemically reacts with the substrate to form an integral part and will have a design life equivalent to that of the concrete to which it is applied.

Intercrete 4840 can be applied to green concrete by brush or spray techniques, exhibits minimal hazard and is non-toxic when cured. Intercrete 4840 does not require specialist skills or equipment during application and rapidly cures to enable early backfilling - an important consideration to minimise disruption to construction schedules. It cures to produce an exceptionally hard, durable coating with excellent resistance to water, chloride ions, oxygen and aggressive chemicals.