

# Wembley National Stadium gets waterproofing protection from the foundation to the roof and everything in between

With help of a comprehensive waterproofing solution, stadium construction is completed.

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Project	Wembley National Stadium
Client	Wembley National Stadium
Main Contractor	Multiplex Constructions (UK) Limited
Concrete Contractor	PC Harrington Group
Architects	World Stadium Team – HOK Sport/ Foster & Partners
Structural Consulting Engineer	Mott McDonald Ltd
GCP Solution	BITUTHENE® waterproofing, PREPRUFE® pre-applied waterproofing, PROCOR® spray-applied waterproofing, SERVIDEK® /SERVIPAK® cold-applied waterproofing

# The Overview

## The Project

The new Wembley Stadium was the first for a new generation of sports stadiums, with services unmatched around the world. The 90,000 capacity bowl stadium, with state-of-the-art facilities, is the ultimate and most versatile stage for major sporting and musical events.



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*"The presence of high voltage electrical transformers and heating necessitated a high grade waterproofing system."*

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*"The fast track nature of the project required a system able to withstand different seasonal temperatures and conditions associated with lengthy timescales – this suited both PREPRUFE® and BITUTHENE®."*

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The Wembley construction design required a complete waterproofing system, which would provide high-grade waterproofing for the basement area and retaining walls, due to the presence of high voltage electrical transformers and heating needed to power the stadium.

Waterproofing continuity was essential for the basement and exposed deck areas, to achieve a complete solution. The stadium construction design also required numerous movement joints in the basement structure, which are always the highest risk of any waterproofing system.

We offered a comprehensive waterproofing system, which comprised technical design service, on-site technical support, as well as a waterproofing membrane and waterstop combination.

A complex network of waterstops with movement joints was detailed for the Wembley construction project.

The waterstops provided the security required to deal with water pressure due to the systems' continuously active sealing element. The hydrophilic elements swell when in contact with water, which then actively seal plug voids created by concrete shrinkage.

Blue360<sup>SM</sup> Design Advantage: Your design needs in a single source.

## GCP Products Used

BITUTHENE<sup>®</sup>4000 & 8000, a self-adhesive water and vapour membrane, for the protection of the basements was used along with, PREPRUFE<sup>®</sup>300R, a pre-applied bonded waterproofing membrane. The stadium construction project required a waterproofing system with a quick application process and the ability to support variable temperatures. BITUTHENE<sup>®</sup> and PREPRUFE<sup>®</sup> were selected for their ability to withstand different seasonal temperatures and conditions over the course of a lengthy timeline.

PROCOR<sup>®</sup>Deck System 2 and 4R, and PROCOR<sup>®</sup>75 were quickly spray-applied to the elevated deck areas, resulting in a reduction of the overall project time.

SERVIDEK<sup>®</sup>/SERVIPAK<sup>®</sup> cold-applied waterproofing system, appropriate for heavily trafficked decks, suited the ramp areas leading to the decks. This system allowed the surface to be trafficked immediately after the SERVIPAK<sup>®</sup> protection boards were laid, permitting work to begin without delay.