SIKA AT WORK

BATTERSEA POWER STATION, LONDON, UNITED KINGDOM

CONCRETE PRODUCTION: Sika® admixtures
WATERPROOFING: SikaSwell®, Sikalastic®, Sikadur® Combiflex®, SikaDrain®, SikaInject®
CONCRETE REPAIR: Sika MonoTop®
GROUTING: SikaGrout®

BUILDING TRUST

RESTORATION OF AN ICONIC LANDMARK

Comprehensive waterproofing and concrete repair solutions

PROJECT DESCRIPTION
This project features restoration and adaptive reuse of Battersea Power Station – one of the world's largest protected brick buildings – into a mixed-use destination with retail, offices, leisure and residential components within a 42-acre estate on the River Thames. The historic power station building itself has c. 27,200 m^2 of floor area.

Project **phase 1** was mainly the substructure excavation and waterproofing activities for the Power Station's basement and service tunnels which began in 2016. **Phase 2** (the Power Station building, led by Mace as Construction Manager from August 2017) delivered the refurbishment, new energy center and riverside park. The Power Station opened to the public on October 14, 2022. Subsequent estate phases continue toward a multi-phase masterplan.

The project was very complexed. Deep basements and service tunnels lie adjacent to the Thames; legacy steel grillages and interfaces with the original structural frame required intricate below-ground detailing, staged sequencing, and integration with the new Northern Line Extension and public realm.

At the end, the redevelopment returned a decommissioned power plant (closed 1983) to public use, with phased openings since 2017 and the main building reopening in 2022 – now a major visitor destination and business hub.

PROJECT REQUIREMENTS
Reviving a Grade II* listed structure of this scale required an intricate balance between heritage preservation and modern performance standards.

Durability and watertightness below ground
Reliable waterproofing for a multi-story basement and service tunnels in close proximity to the river, with full watertightness around complex penetrations, grillages and movement interfaces.

Heritage-led refurbishment
Preservation of the listed fabric (brick facdes, turbine halls, control rooms) while introducing new uses; detailing had to be non-intrusive and compatible with historic materials and the existing steel/concrete hybrid frame. Phased construction & interfaces.

System compatibility (rapid strength gain, minimized over-dig, optimized detailing) and coordination across multiple systems (basement, tunnels, parking, energy center, public realm), managed under a complex multi-contractor setup.

SIKA SOLUTIONS
Sika was selected as the key waterproofing partner, supplying detailed specification packages and providing ongoing technical support throughout construction. The solution combined several systems to meet diverse site conditions:

Watertight concrete (Type B) – primary barrier
~30,000 m^3 of watertight concrete placed for the basement structures, using Sika® admixtures to control permeability and enhance durability. Benefits included reduced over-dig versus membranes and compatibility with dense reinforcement.

Joint sealing & interfaces
Sikadur® Combiflex® and SikaSwell® hydrophilic joint technology deployed at construction joints and details to provide redundancy at critical interfaces, with movement-tolerant solutions used where required (e.g., complex grillage zones and penetrations). This is a system approach consistent with Sika Watertight Concrete designs.

Structural repair, reprofiling & grouting
- Ground floor slabs: ~15,000 bags of flowable repair mortar to reprofile and level working/finished surfaces.
- Columns & beams: ~5,000 bags of repair mortar for local defect rectification and geometry restoration.
- SikaGrout® used for void filling and precision bedding where required.

Detail waterproofing & coatings
Sikalastic® one-component coatings and Sika®-1 renders used around complex junctions, plinths and transitions where a liquid-applied or render-based approach was more practicable than sheet membranes (e.g., congested details, change of plane).

Other solutions
SikaDrain® for drainage systems and SikaInject® for injection in the basement waterproofing.

Sika collaborated closely with the main contractors –
Mitchellson Formwork, P J Carey, and MPB Structures – attending design meetings, issuing over 100 detail drawings, and conducting more than 160 site visits over four years. All waterproofing systems were installed under Sika supervision to ensure full compliance and long-term durability.

The substructure and interfaces achieved the required watertightness and durability, enabling the October 2022 public opening and ongoing fit-out/operation of retail, leisure and office spaces within the preserved historic shell.

BATTERSEA POWER STATION, LONDON

PROJECT PARTICIPANTS
Project Owner: David Cliff, Andy Edwards
Architect: Wilkinson Eyre Architects / SimpsonHaugh / Foster + Partners
Contractor: Skanska / Mace JV; Mitchellson Formwork; P J Carey; MPB Structures
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