SIKA AT WORK
BLACKWALL TUNNEL, LONDON

ROOFING: Sika-Trocal Type S Single Ply Membrane

Sika-Trocal®

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PROJECT REQUIREMENT
BAM Nuttall was awarded the contract by Transport for London to refurbish the northbound carriageway of the Blackwall Tunnel. TFL had a difficult task with the refurbishment as they had to ensure the tunnel remained open to traffic during the day.

Faced with the challenges of designing and installing a waterproofing system for a domed roof that features mechanical 'petals' that open and close, the architects Acanthus LW worked with specialist contractor Robertson Roofing to develop an innovative solution for the unusual single ply membrane application.

SIKA-TROCAL SOLUTION
Appearing at ground level as raised domes, a distinctive feature of each dome is the central area of roof that has been designed to open and close in certain situations as part of the Tunnel ventilation system. The area build-up to the domes comprised a new plywood deck installed by the main contractor and shaped to form a dome profile over the lower fixed perimeter area and the central eight individual opening triangular vent petals. Onto the plywood Robertson's installed a layer of Sika-Trocal S-felt type A protection fleece, which was mechanically fixed using Sika-Trocal laminated metal discs. This was followed by a layer of Sika-Trocal Type S 1.5mm thick light grey membrane welded to the Sika-Trocal laminated metal discs.

The Sika-Trocal type S membrane was installed in a manner to ensure the layout of the flaps gave the best aesthetic appearance to the finished roof.

The Trocal detailing to the eight central individual triangular curved 'petal' sections on each dome had to be designed to allow trouble free opening and closing. Each triangular petal section received a perimeter framing of rigid Trocal laminated metal edge profiles that lap into narrow fixed gutter channels at the petal abutments when closed. The rigid Trocal laminated metal edge profiles were designed to allow the individual petal section to open and close without snagging against each other and to ensure water tightness when closed. Robertson's also designed and installed a large heavy gauge galvanised steel support tray system to carry a Trocal weathered lining that formed a continuous sunken well/gutter within the dome area to allow the base of the petal sections to pivot into the dome roof profile when opening.

PROJECT PARTICIPANTS
Contractor: Robertson Roofing
Client: Transport for London
Architect: Acanthus LW

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bsi. ISO 14001 Environmental Management
bsi. OHSAS 18001 Occupational Health and Safety Management

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