CASE STUDY

OXLOW BRIDGE SEND SCHOOL, DAGENHAM, LONDON

IKO Permatec LI Anti-Root Inverted Waterproofing with IKO Elements Extensive Green Roof
IKO Armourplan Single Ply Waterproofing System
3,206m²

Project sector: Education

CONTRACTOR

DF Roofing

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CASE STUDY

OVERVIEW

IKO, in partnership with DF Roofing, successfully delivered a roof waterproofing solution on a new build development project within the Borough of Barking and Dagenham. The Oxlow Bridge SEND School forms part of a wider initiative to expand inclusive education within the Borough. The new 3,770m² net-zero-carbon facility is designed for children and young people with profound and multiple learning disabilities, most of whom require mobility support. The building incorporates a hydrotherapy pool, specialist therapy spaces, sensory rooms, and a multi-use hall with integrated therapeutic equipment.

IKO Permatec LI Anti-Root Inverted Roof Waterproofing System with IKO Elements Extensive Green Roof System, including IKO enertherm XPS Insulation, was specified as part of a wider scope that included single ply waterproofing (IKO Armourplan). The specification also featured a full PV and biosolar design with roof access solutions, safety guard systems, and paving installations.

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CHALLENGES

The project presented significant logistical challenges due to limited on-site space for material storage and deliveries. With a roof area exceeding 3,200m², scheduling and coordinating the delivery of large volumes of materials required careful planning.

An additional key challenge was the biosolar design, which required mounts, ballast, and vegetation zones to meet structural compliance and optimal energy performance.

Achieving the target U-value of 0.12 W/m²K presented a key technical challenge. This was delivered through the installation of 270mm of IKO enertherm XPS Insulation to the main roof, ensuring consistent energy efficiency, and compliance with the project's sustainability objectives.

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SOLUTION

The project at Oxlow Bridge SEND School comprised of two roof areas. For the main roof, IKO Permatec LI Anti-Root Inverted Waterproofing System was selected for its combination of technical performance and sustainability benefits. As part of IKO's commitment to environmental performance, IKO Permatec LI Anti-Root is manufactured using a carefully engineered formulation with over 50% lower upfront embodied carbon compared to our previous hot melt systems, as verified by third-party EPD data. This allowed the project team to meet both durability and decarbonisation requirements, aligning with wider ESG targets and circular economy principles. The system also supports sustainable construction logistics through zero wrapper waste deliveries and full recyclability, reducing packaging on site, and supporting low waste installation practices.

IKO enertherm XPS Insulation was installed to ensure compliance with the net-zero carbon aspirations of the facility, then an IKO Elements Extensive Green Roof System was installed. The green roof build-up included filtration layers, drainage elements, an engineered substrate, and a sedum-based vegetation layer designed to thrive with minimal maintenance. This system not only supports local ecology but also provides thermal and acoustic benefits while extending the lifespan of the waterproofing, by protecting it from UV exposure and temperature fluctuations.

The project incorporated a full photovoltaic system integrated within a biosolar roof design, combining renewable energy generation with enhanced ecological performance. The surrounding sedum vegetation improves PV efficiency by lowering ambient temperatures and provides habitat value.

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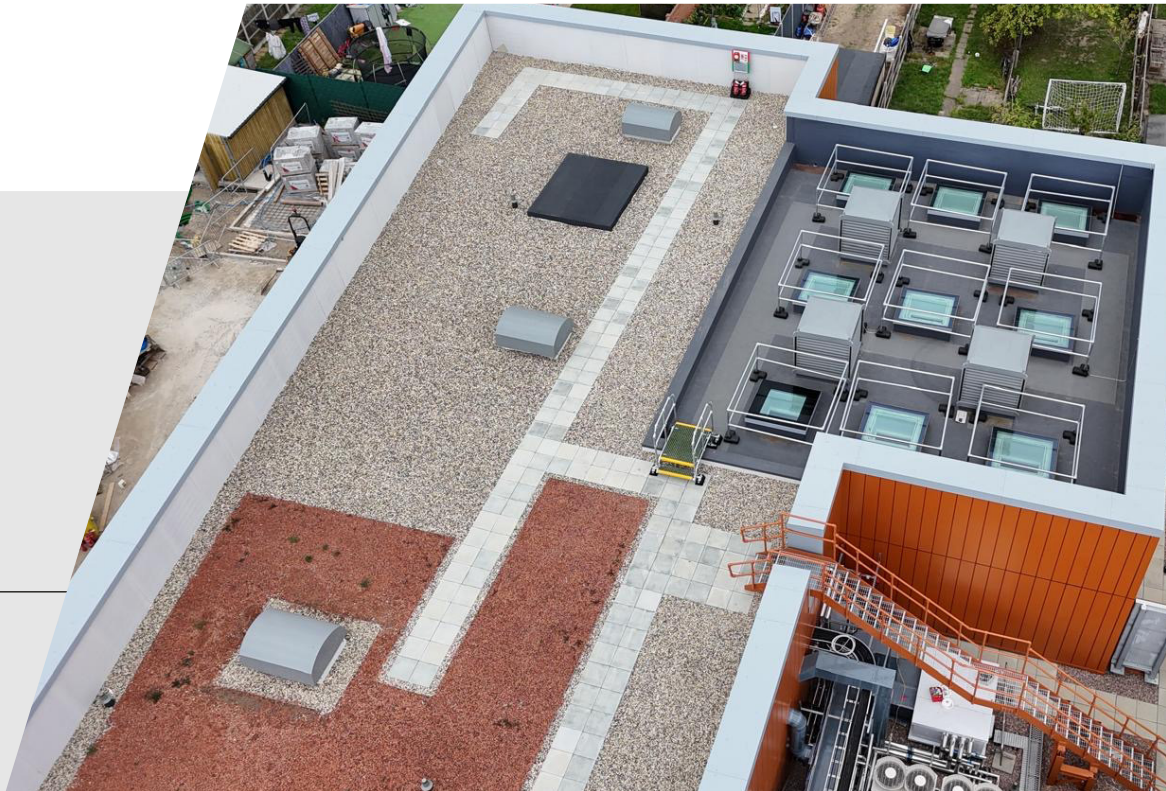
Roof paving and guardrail protection was installed to offer safe access for maintenance personnel, contributing to overall rooftop usability, delivering a clean, well-defined architectural finish to the serviced areas.

A smaller upper roof section of the overall scheme was specified with IKO Armourplan PSG Single Ply Roof Waterproofing System. The system build-up comprised of an air and vapour control layer (IKO Spectravap), Mechanically Fixed IKO enertherm PIR Insulation Boards, and the IKO Armourplan PSG Single Ply Membrane. Upstands, parapets, penetrations, and service interfaces were completed using pre-formed corners, coated metal flashings, and IKO-approved detailing accessories.

IKO's Technical Team supported with regular site inspections and guidance, ensuring full compliance with the specification and quality standards.

The outcome leaves a positive legacy, delivering a modern school fit for purpose, contributing to the net zero target in operation, aligning to the Government's emission targets for 2050.



IKO GUARANTEE

25 Year Materials & Workmanship Guarantee

PRODUCT / SYSTEMS

- IKO Permatec LI Waterproofing System
- IKO enertherm XPS Insulation
- IKO Elements Extensive Green Roof System
- IKO Armourplan PSG Waterproofing System

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