



CASE STUDY

KEBLE COLLEGE, UNIVERSITY OF OXFORD

IKO Permaphalt mastic asphalt



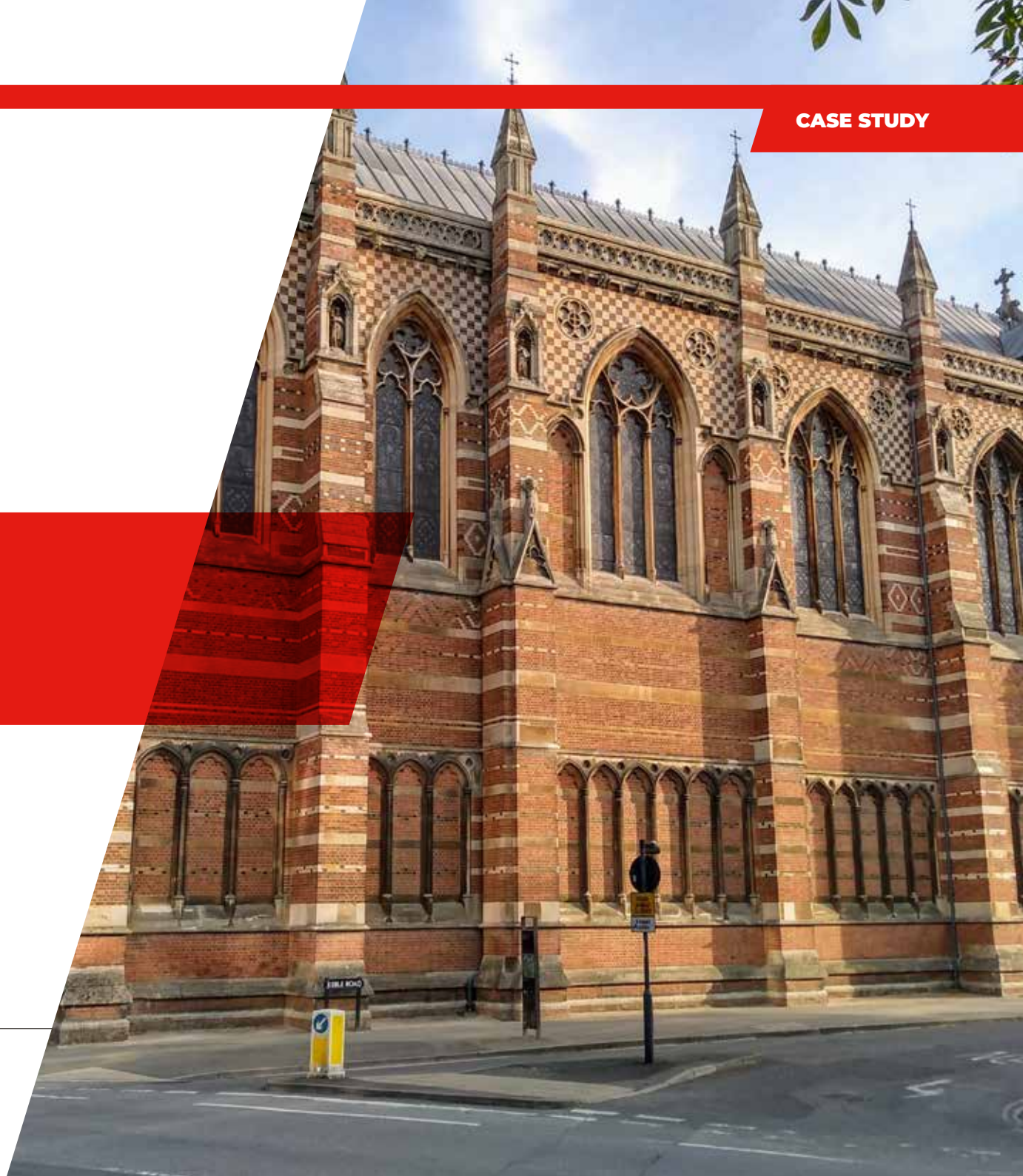
Project sector: Heritage

CONTRACTOR

Oxford Asphalt Company



t: 01257 255771
e: getintouch.uk@iko.com
www.ikogroup.co.uk





CASE STUDY

BRIEF

Keble College, one of the largest and most prestigious colleges at the University of Oxford, sought to renovate the roof of its student bar. To ensure aesthetic continuity, the college opted to use mastic asphalt, which is consistent with the material used on the roof previously.

However, there was a need to paint the asphalt with white solar paint to reflect sunlight onto the higher-level windows surrounding the single-storey building. To address this concern while also enhancing the project's environmental credentials, the college decided to implement a green roof solution, incorporating the traditional mastic asphalt material.



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CHALLENGES

The Keble College project presented numerous complex challenges that demanded expert knowledge and innovative problem-solving. One significant issue involved the unique slopes of several roof sections, which required IKO's specialised guidance on the application of mechanical fixings. To ensure these fixings were both secure and effective, rigorous pull-out tests were conducted.

Additionally, due to the building's listed status, any modifications to the low parapet were strictly prohibited, making it necessary to maintain the existing design detail. This restriction limited the insulation installation to a thickness of only 50mm. Despite these constraints, the college recognised this as the most feasible and optimal solution given the circumstances. The project also took place at a 'live' site, meaning that students and staff continued to occupy and use the building during the works.





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SOLUTION

The Oxford Asphalt Company Ltd and IKO worked in close collaboration to achieve a high quality result and selected the IKO Permaphalt system to create a durable, watertight and visually appealing roof. The installation involved applying a 20mm thick layer of IKO Permaphalt in two 10mm coats over an IKO black sheathing felt separating membrane, ensuring a seamless, impermeable barrier. To enhance the roof's finish, clean coarse sand was applied to the final coat.

On insulated sloping timber surfaces with gradients over 5 degrees, IKO Permaphalt was applied in three layers totalling 20mm on Expanded Metal Lath (EML) over IKO black sheathing felt. This method provided robust waterproofing and improved thermal efficiency by reducing heat loss. To reinforce potential weak points, a two-coat solid IKO Permaphalt angle fillet was installed at junctions between flat and upstand areas, ensuring long-term system integrity and protection against water damage.

The Oxford Asphalt Company demonstrated exceptional craftsmanship and maintained high-quality standards throughout the project, with regular inspections by IKO. The company's dedication to health and safety included creating a segregated route to the roof to keep students safe and building a shallow ramp for safe asphalt delivery. The company also prioritised training, providing on-site instruction for younger operatives in mastic asphalt application.

Despite challenges, the partnership between The Oxford Asphalt Company and IKO exceeded Keble College's expectations and the college commended both companies for their meticulous and dedicated efforts.



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IKO GUARANTEE

Up to 25 years warranty

PRODUCT / SYSTEMS**On flat surfaces**

- IKO Permaphalt nominal 20mm thick in 2x10mm coats
- IKO black sheathing felt separating membrane loose laid with minimum 50mm side and end laps
- The surface of the final coat to be rubbed with clean coarse sand mostly passing a 600-micron sieve and mostly retained on 212-micron sieve

On sloping surfaces

- IKO Permaphalt nominal 20mm thick in 3 coats on EML over IKO black sheathing felt fixed to insulated timber slopes over 5 degrees.

Associated details

Permaphalt nominal 13mm thick in 2 coats on primed brick or concrete upstands not exceeding 300mm high. 2 coat solid Permaphalt angle fillet at base.

Permaphalt nominal 20mm thick in 3 coats on primed brick or concrete upstands exceeding 300mm high. 2 coat solid Permaphalt angle fillet at base.

Permaphalt nominal 20mm thick in 3 coats on EML on IKO Black Sheathing Felt over all timber surfaces. 2 coat solid Permaphalt angle fillet at base.

