



#### Leeds Skelton Motorway

## KEMPER SYSTEM IS THE FIRST STOP FOR THE MULTI-MILLION POUND GREEN ROOF PROJECT

Green roofs are now more popular than ever. This is no surprise – they have advantages not only in terms of ecology and sustainability, but also in their minimal visual impact. Green roofs retain rainwater, improve the microclimate and provide new habitats for wildlife. This is why a green roof is a must for the newly built Leeds Skelton Lake Motorway Services.

The service station is located beside Skelton Lake, a 40,000 m<sup>2</sup> area of ecologically diverse country park about two miles south-east of Leeds city centre. In coordination with Geogreen Solutions, ABG geosynthetic engineers decided to install a green roof to minimise the visual impact of the development on the natural landscape and local wildlife. Cold-applied **KEMPEROL V210 M** liquid waterproofing was used as a long-term roof waterproofing system.

The roof consists of 11 separate sections adjoining a new 100-room Ramada hotel. A characteristic feature is the wildflower meadow on the roof of the building. The service station includes a food court, shops and leisure and community facilities

within attractive and relaxing surroundings.

The roof structure is made up of a series of interconnected glulam beams, constructed from layers of timber board glued together. The curved beams are spanned using three layers of structural deck cassette panels at 20 mm thickness. Cawston Specialist Roofing first applied **KEMPERTEC D primer** in combination with **KEMPEROL V210 M** liquid plastic waterproofing to the timber panels. To do so, they first spread two-thirds of the cold-applied waterproofing on the substrate, then rolled the reinforcement fleece directly into the still-wet waterproofing, being careful not to leave bubbles or folds. Finally, they applied the remaining third of the **KEMPEROL V210 M** liquid plastic waterproofing wet-on-wet until the fleece was completely saturated.

Once cured, the resin formed a seamless, elastomeric waterproof surface that cannot delaminate, is UV stable and bonds directly to the substrate. The fully adhered, monolithic waterproofing is root-resistant and seals reliably. Thanks to this, it preserves the wooden roof from weathering and ensures long durability.

ABG Geosynthetics



Contractors then installed 180 mm Polyfoam XPS (extruded polystyrene) insulation board and a control layer for water flow reduction directly onto the waterproofing to complete the inverted warm roof build-up. The insulation was ballasted to prevent uplift prior to the green roof installation. To complete the roof structure, a total of 4,622 m<sup>2</sup> of meadow planting was provided by Wildflower Turf Ltd., which included 34 different wildflower species. The turf was locally grown to be compatible with the region, enhancing the biodiversity and ecological value of the area. At the same time, a native habitat for birds and insects was created.

The project has been shortlisted in the Liquid Roofing and Waterproofing Association (LRWA) Awards 2022 for the Liquid Roofing Project of the Year in a Buried Application category.

Stephen Humberstone at ABG comments: “The green roof plays an important role as part of the site’s overall sustainable drainage strategy, by absorbing rainwater and minimising surface water run-off. As much as 95 per cent of rainfall is captured within the green roof build-up to minimise

the risk of localised flooding. We needed a reliable and versatile waterproofing solution to ensure we could specify a warm roof build-up that would offer long durability. The ease of application was also a deciding factor due to the design of the building, with its steep ribbon slopes. Kemper System’s **V210 M** solution also offered a rapid cure time – even in winter, when the initial roof structure was installed – and it provides a life expectancy of up to 25 years.”

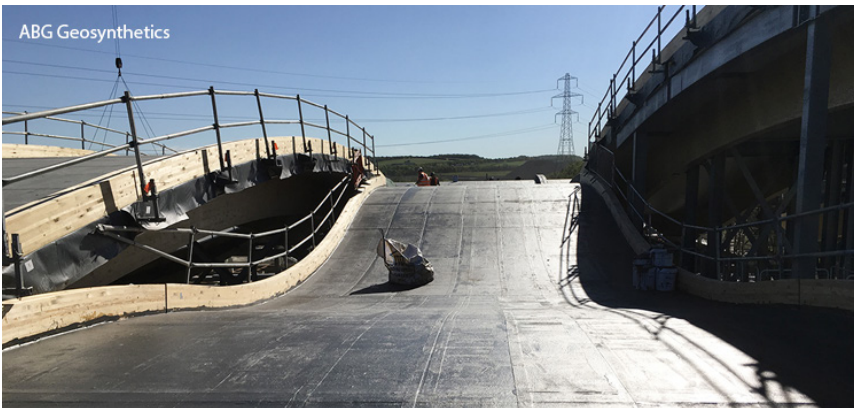
Victoria Ramwell at KEMPER SYSTEM added: “This was a fantastic project to be involved in, and we are extremely proud that it is now shortlisted in the LRWA Awards 2022. The **KEMPEROL V210 M** liquid waterproofing, which was a vital element of the specification, has guaranteed a watertight barrier between the roof substrate and the green roof system and is also resistant to root penetration. Its strength and flexibility provide the building owners, Extra MSA Group, with the assurance that the outstanding green roof – which blends seamlessly with the country park backdrop – will remain viable for at least 20 years.”



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## Project data

**Object:** Leeds Skelton Lake Motorway

**Location:** Leeds, England

**Object size:** 200 m<sup>2</sup>

### Waterproofing System:

KEMPEROL V210 M

KEMPERTEC D-Primer

### Processor:

ABG Geosynthetic

### Year of execution:

2018 – 2020

### Manufacturer:

Kemper System GmbH & Co. KG

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