

Single Ply Roofing Award Winner Macallan Distillery Extension

The irregular shape and scale of this roof demanded ingenuity and precision of design and specification, which CARLISLE® Construction Materials were able to provide.

At a glance

Client: Macallan Distillery

Architect: Rogers Stirk Harbour + Partners

Timber Structure Engineer: WIEHAG

Main Contractor: Robertson Construction Group

Roofing Contractors: CARLISLE® Construction Materials, with Topek

Building Type: Industrial

Location: Aberlour, Scotland

Completion: 2017

Roof Type: Single Ply

Finish: Sky Garden Wildflower Blanket Green Roof System

Underlay: ALUTRIX® 600

Battens: RESIFLEX®

Membrane: RESITRIX® SKW



The Project

Set in the heart of the Scottish Highlands, near the River Spey, the Macallan Distillery has been producing whisky since 1824 at the beautiful 18th century Easter Elchies House. The client wanted a modern facility and visitor centre that would not only help them to meet growing demand for their single malt whisky but would complement the setting. The architect Rogers Stirk Harbour + Partners, therefore designed a modular building with an undulating green roof to help the building blend within the surrounding countryside. The unique 12,000m² double-curved roof, with five mounds covering the distillery's production machinery, consists of a green roof built up over a timber grid-structure.



Complexity

The irregular shape and scale of the roof, therefore, made this a highly complex project, requiring a CARLISLE[®] Construction Materials to devise a bespoke roof panel design able to allow for inevitable movement and expansion. The roof structure is formed by 3x3m grids, made up of 1,800 curved glulam beams that WIEHAG manufactured to form an irregular shape to mimic rolling hills. The roof deck is built-up with a laminated veneer lumber ceiling, timber joists and 2,700 OSB panels, which serves as the base for the green roof. Roof expansion on this modular building, therefore, meant that all the roofing panels had to sit perfectly together, which required careful specification and precision-manufacturing for each individual panel.



Challenges

The issue of the roof panels moving in different directions made the original roofing specification untenable. CARLISLE[®] Construction Materials Technical Team was therefore asked to quickly propose an

alternative specification to solve the problem and it managed to provide a fully-functional 3D scale model to the design team within a fortnight of the proposal.

Any project in north-east Scotland has to factor in unpredictable weather conditions and the Macallan Distillery extension was no exception. A remote Highland location, situated high up from the valley floor, with multiple contractors on site meant that logistical co-ordination was of the utmost importance. Added to this was the challenge presented by the pitch of the roofs, with some sections in excess of 50 degrees. This meant that both Topek and green roof specialist Sky Garden had to ensure that all operatives working in these areas had first undergone specialist harness training to allow them to complete the works safely.



All the roofing work and installation undertaken on-site were carried out in accordance with BS 6229 'Code of practice for flat roofs with continuously supported coverings', with other sources of best-practice advice including SPRA Technical Guidance Documents. Indeed, insights from SPRA's Jim Hooker were essential in evaluating the design.

CARLISLE® Construction Materials' own CARLISLE® Academy in Mansfield also provided specialist product and installation training to Topek's installation team. The day-long, practical session covered intricate product and installation details that adhered to the product specifications.

Regular site inspections by CARLISLE® Construction Materials, Topek, and Robertson Group, ensured all quality standards were adhered to, and that the installation met the original design and specification. RESITRIX®, ALUTRIX® and RESIFLEX® products were also specified to ensure the high levels of quality and watertightness; Topek's most experienced team, which had more than 60 years' experience between them, brought all the elements together to deliver the final package.



Topek and the main contractor, Robertson Construction Group, had set clear and consistent guidelines and communication for all the contractors and teams working on site. And so, key to the successful delivery of this project was the need for good co-operation between the different teams as well as working within the pre-agreed budget. Good training and supervision of the onsite teams throughout the project was also crucial and as result of all this, the project was completed couple of weeks ahead of

schedule, allowing follow-on trades to start working.



All works were carried out in line with Health & Safety Executive guidelines; Personal Protective Equipment at Work Regulations 1992; and Work at Height Regulations 2005.



“The Macallan Distillery extension project is a one of a kind in the UK, demanding innovative design, problem solving and high standards of workmanship. CARLISLE® Construction Materials Ltd is the industry leading UK manufacturer who offer a best in class waterproofing solution to a complex project and tight deadline such as this”.



CARLISLE® Construction Materials Ltd have its European head quarters in Hamburg, Germany. The CARLISLE® CM Europe group is Europe’s leading provider for single-ply EPDM sealing products for roof, façade and ground construction. Parent company is the division of Construction Materials of the diversified US company CARLISLE® Companies Incorporated.

CARLISLE® CM Europe employs over 500 staff at seven manufacturing and three administration sites in Europe. CARLISLE® CM Europe offers a smart product range, professional advice and training as well as a reliable service. The umbrella brand CARLISLE® CM Europe unites the trusted brands RESITRIX®, HERTALAN®, ALUTRIX®, HARDCAST®, ECOLAN® and ARBO®.

Learn More

 ccm-europe.com

 [linkedin.com](https://www.linkedin.com)

 [YouTube](https://www.youtube.com)