



DURHAM UNIVERSITY

WATERPROOFING: Derbigum Olivine

PROJECT SIZE: 375m²

PROJECT LOCATION: Durham



Your Complete Roofing Solution

Environmentally Focussed | Responsibly Sourced | Ethically Driven



**ALUMASC
ROOFING**

VAN MILDERT COLLEGE, DURHAM UNIVERSITY

Project Overview

Van Mildert College is one of the largest colleges at Durham University, and is ranked joint 89th in the Top 100 QS World University Rankings for 2025.

Durham University is committed to delivering sustainability across all of its activities, and has founded the Greenspace Movement; an initiative that brings together all of the university's policies, plans and procedures as it contributes towards the net-zero transition.

The existing roof on the Tunstall Block of Van Mildert College was aging and showing signs of wear, including insulation deficiencies and minor leaks. It required an upgrade to enhance its thermal performance, address water ingress issues, and to provide a suitable foundation for solar panel installation in line with the university's long-term sustainability goals.

Client Brief

The primary goals of the refurbishment and solar installation were to extend the lifespan of the roof, whilst improving energy efficiency and reducing the carbon footprint of the building in accordance with the university's commitment to sustainability and long-term infrastructure resilience.

Solution

The scope of the refurbishment and solar installation involved a comprehensive approach to enhance roof durability, whilst integrating renewable energy solutions. Key steps included:

Roof Survey & Assessment:

A thorough initial inspection was carried out, incorporating core sampling to determine the existing condition of the roof. This process helped identify areas needing immediate attention and provided critical data for developing the refurbishment strategy.

Roof Refurbishment:

Based on the survey findings, a specification was developed for a high-performance waterproofing system, designed to improve weather resistance and extend the lifespan of the roof. Insulation upgrades were implemented to enhance thermal efficiency, and reduce overall heating costs for the building. Additionally, drainage improvements were introduced to ensure effective water management and prevent future ingress issues.

Quality Assurance & Compliance:

Stringent quality control measures were in place throughout the project. Alumasc Site Technicians conducted regular site inspections to verify compliance with industry standards, and to ensure that all workmanship met the specified requirements. Alumasc worked closely with registered contractors O'Conner Roofing to confirm the correct execution of both roofing and solar components. Detailed site reports were compiled, providing a transparent record of progress and adherence to best practices.

The System

The refurbishment incorporated the use of Alumasc's Derbigum Olivine High Performance Roofing System, a premium CO₂-neutralising reinforced APP polymer-modified bituminous waterproofing membrane. The system, which includes underlays, insulation boards, and air and vapour control layers (AVCL), is BBA certified and achieves a fire classification of BROOF(t4) in accordance with BS EN 13501-5.

Derbigum has a proven track record dating back to 1967, and is subject to the highest levels of certification and testing. Using a variety of installation methods and build-ups, the system is designed to meet the individual requirements of every project for use across all building sectors in both

refurbishment and new build roofing and waterproofing projects.

Derbigum Olivine aligned perfectly with the university's environmental goals thanks to the natural olivine granules in its surface layer. The granules – a magnesium iron silicate – cause a chemical reaction in CO₂ in rainwater, which converts it to silicon dioxide (sand) and magnesium carbonate, two products that are harmless to the environment.

Solar Installation

The integration of solar panels was a key component of the project. High-efficiency photovoltaic (PV) panels were selected to maximise energy generation. The panels were installed to the roof structure using Alumasc's SolaCell PV Supports: a non-penetrative system of rails and retention strips that are heat welded to the roofing membrane, so as not to compromise its integrity. The strategic positioning of the panels optimised their exposure to sunlight, while ensuring seamless integration with the roofing system. The expected energy output was calculated to align with the University's sustainability targets, contributing to their overall carbon reduction strategy.

Challenges

During the initial assessment, it was discovered that bats were living within the cavity walls of the building. Due to bats' protected status, the client took advice from ecological consultants, to ensure the habitat was preserved whilst allowing the project to progress. A special design was incorporated into the roof copings, leaving a gap between the parapet and vertical sections, allowing the bats safe access in and out of the cavity.

Outcome & Benefits

The refurbishment at Van Mildert College successfully enhanced the roof's durability and thermal efficiency, contributing to reduced heating costs for the student accommodation. The solar panel installation provided a renewable energy source, helping to offset electricity consumption and lower the building's overall carbon footprint. These improvements aligned with Durham University's sustainability initiatives and long-term infrastructure goals.

The project exemplifies a successful combination of roof refurbishment and solar integration to achieve maximum energy efficiency and sustainability. Durham University and its students, will benefit from a more resilient and environmentally friendly accommodation facility, whilst future projects can adopt the project as a template for future works, to further enhance the university's commitment to green energy and infrastructure longevity.



Specified system

Derbigum Olivine Membrane

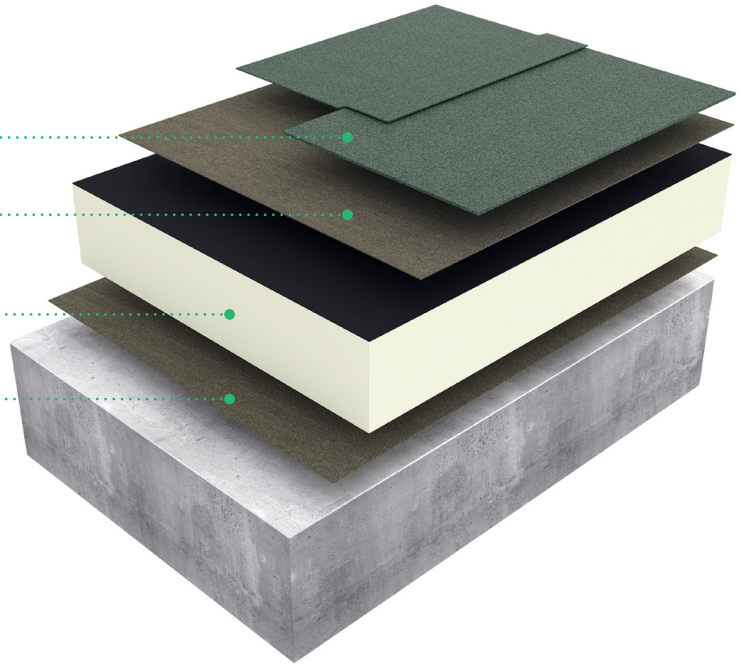
Derbigum Olivine High Performance Roofing Systems comprise a premium CO₂ neutralising reinforced APP polymer modified bituminous waterproofing membrane, underlays, insulation boards and air and vapour control layers (AVCL). Derbigum has a proven track record since 1967 and is subject to the highest levels of certification and testing

Derbigum Olivine

Torch-On Underlay

PIR Insulation or Class A fire rated alternative

Torch-On AVCL



Features & Benefits

- ✓ 1m² of Olivine will neutralise approx. 1.75kg of CO₂
- ✓ Flexibility of product specification
- ✓ Robust, proven durability
- ✓ Life expectancy of at least 50 years
- ✓ Warranty cover up to 35 years

Approvals

- ✓ BBA Certificate No. 86/1593
- ✓ Fire classification of B_{ROOF} (t4) in accordance with BS EN 13501-5