

CASE STUDY

Schwarzman Centre



RADMAT PRODUCTS USED:

- PermaQuik Hot-Melt Monolithic Membrane Waterproofing System
- ProTherm Insulation XPS X 300 SL
- ProTherm RockFace A2 Non-combustible Upstand
- MedO Living Roof Systems
- EshaFlex Reinforced Bitumen Membranes

“The design, construction and commissioning of such a large building with complex usage requires an extraordinary team effort. This team spirit and high level of motivation of all those involved was clearly noticeable from the beginning to the end and was an essential part of the quality achieved. I am delighted to confirm that the high-quality standards required for Passivhaus certification have been met in this project.”

Lazlo Lepp,
Director of the Passivhaus Institute

ARCHITECTS:
Adamsons Associates

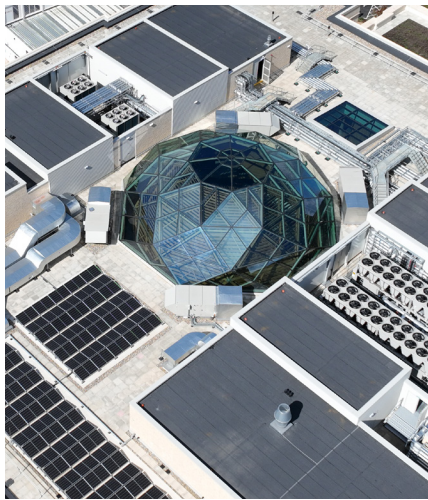
The University of Oxford's Schwarzman Centre for the Humanities

is one of the UK's most ambitious cultural and academic developments. Designed to Passivhaus standards and featuring Europe's largest concert hall of its kind, the project demanded exceptional performance across every element of the building envelope. Central to this was the delivery of over 6,000m² of high-performance flat roofing, installed by Noble House Services in close collaboration with Radmat and the wider project team.

At the core of the roofing strategy was the **Radmat PermaQuik PQ6100 Hot-Melt Monolithic Waterproofing System**, specified as the primary waterproofing layer across the entire roof area. This system provided a seamless, fully bonded and highly durable waterproofing solution, critical for a complex roofscape incorporating extensive plant, multiple penetrations, and intricate architectural detailing. Its monolithic nature ensured long-term reliability while supporting the airtightness requirements essential for Passivhaus certification.

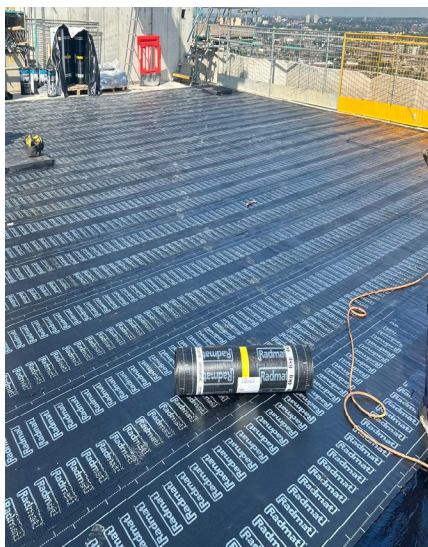


Technically, the project presented significant challenges. The central dome structure, a defining architectural feature, required precise waterproofing and insulation at a low-height upstand, with complex geometry demanding meticulous cutting and placement of insulation boards. Additionally, the roof accommodated a large volume of plant equipment, resulting in numerous service penetrations. Each penetration required carefully developed detailing to maintain airtightness and thermal continuity, critical under Passivhaus standards.



The project adopted an inverted warm roof construction to meet stringent thermal targets, including a roof U-value of 0.10 W/m²K. This was achieved through the extensive use of **Radmat ProTherm G XPS X 300 SL insulation**, installed to a depth of approximately 295mm. Positioned above the waterproofing layer, the insulation protects the membrane from thermal stress and physical damage while delivering exceptional thermal performance. Careful detailing and precision installation ensured continuity of the thermal envelope, eliminating cold bridging, and supporting the building's energy efficiency goals.

At vertical interfaces and upstands, enhanced fire performance was achieved using **Radmat ProTherm RockFace A2 non-combustible insulation**, specified at the request of the main contractor. This provided additional fire safety assurance while maintaining consistency across the thermal line. Together, these systems formed a robust and fully integrated insulation strategy aligned with both Passivhaus and fire compliance requirements. The roof design was further enhanced through the integration of **Radmat MedO Living Roof Systems**, including biodiverse wildflower finishes. These systems contribute to biodiversity by creating habitats for local wildlife, while also supporting sustainable drainage and reducing the urban heat island effect. The combination of high-performance waterproofing and living roof systems demonstrates a balanced approach to environmental performance and long-term resilience.



A particularly complex interface occurred at the junction between the roof and the precast façade. Here, a localised warm roof detail was developed using a combination of mineral wool insulation and **Radmat's EshaFlex Reinforced Bitumen Membranes**, seamlessly integrated with the PermaQuik PQ6100 system. This ensured continuity of the waterproofing layer while accommodating structural movement and maintaining thermal performance. Detailed CAD design and collaborative workshops between Radmat, Noble House Services, and Laing O'Rourke were key to resolving this interface successfully.

Quality assurance played a critical role throughout the project. **Radmat Site Quality Technicians** carried out enhanced inspection regimes, exceeding standard practice to meet the rigorous demands of Passivhaus certification. Their involvement ensured precise installation of both waterproofing and insulation systems, with detailed reporting and ongoing coordination between all stakeholders. This was further supported by Radmat's bespoke Passivhaus technical guidance, developed specifically for the project to ensure best practice at every stage.

Despite logistical constraints associated with the Oxford Low Emissions Zone, Radmat's FORS Gold-accredited transport and just-in-time delivery strategy ensured efficient material supply with minimal environmental impact. This approach supported programme certainty while aligning with the project's broader sustainability objectives.

The Schwarzman Centre stands as a benchmark for high-performance roofing within complex, design-led developments. Through the integration of Radmat's advanced waterproofing, insulation, and living roof systems, the project successfully delivers long-term durability, exceptional thermal performance, and environmental resilience—meeting the exacting standards of Passivhaus while supporting a landmark addition to Oxford's built environment.



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