



Retrofit thermal upgrade - 'Imperial War Museum'

Location: **Cambridge**

Completed: **2023**

Design Company Name: **Architype Architects**

Build Company name: **Parkeray Construction with Ecological Building Systems and George Cook and Sons**

Project brief

At the Imperial War Museum in Duxford, Ecological Building Systems has partnered with Parkeray Construction, Architype Architects, and George Cook & Sons to deliver a sensitive and high-performance thermal upgrade to a historic solid brick office building. The retrofit combines conservation care with cutting-edge sustainable materials.

The internal insulation system begins with Diasen Diathonite Thermactive, a cork lime thermal plaster, followed by Redstone board and a final skim finish. This breathable, capillary-active, and Euro fire class A1 rated solution ensures optimal thermal performance without compromising the building's heritage.

Special detailing was required to preserve original features like the Dado rail, using battens, wood wool board, and fibrous insulation. Bosig Phonotherm boards, made from upcycled PUR, were used as thermal break pattresses for radiator mounting, avoiding direct fixings into the brickwork.

The boards were bonded with Redstone adhesive in a precise, tile-like process, resulting in a clean, symmetrical finish. The final surface, even before painting, is smooth, white, and visually striking.

The building is being used as an artifacts assessment building and some workspace offices. The building is being monitored for post occupancy energy performance.

This project exemplifies how thoughtful collaboration, and natural materials can meet modern performance standards while respecting architectural legacy, an approach worthy of recognition in sustainable building awards.

Sustainability features

- 40mm Diathonite Thermactive and 30mm Calsitherm Climate board (215mm Solid brick wall)
- The U value is ~0.49W/m2K

Find out more: www.ecologicalbuildingsystems.com

