



OFFICE

Case Study Number: 5

Overview

- **Location:** Cloughjordan, Tipperary (Rural)
- **Size:** 250 m²
- **Constructed in:** c.1800
- **BER Before:** G | **BER After:** B1 (A2-level performance estimated)
- **Energy and Carbon Savings:** N/A
- **Display Energy Certificate:** N/A

A deep passive retrofit used natural materials and renewables to transform a traditional building into a near zero-carbon space.



CHALLENGES

The 3-year phased renovation was delayed by limited contractor availability, slow grant processing, and financing challenges due to the building's mixed-use and heritage status.

SIMPLE PAYBACK

- **Total project cost:** €175,000 (incl. VAT and owner labour)
- **Estimated payback:** ~ 7 years
- **Funding Mode:** Private

ADDITIONAL INFORMATION

- Renovation achieved near-passive performance.
- Breathable materials and MVHR enhanced air quality and comfort.
- Traditional finishes preserved the cultural character of the historic building.

Energy Upgrade Measures

Fabric Upgrade:

- Airtight taping, passive windows, and breathable construction using cork, cellulose, lime render, reclaimed timber, and wood-fibre insulation.
- Full internal refurbishment supported envelope performance.

HVAC Upgrade:

Air source heat pump with radiant heating (ceiling/floor/walls) and upgraded MVHR system with heat recovery.