INTELLIGENT MEMBRANES

KORU CONSTRUCTION

FERNDALE RISE RETROFIT

PASSIVE PURPLE & BRICK SEAL

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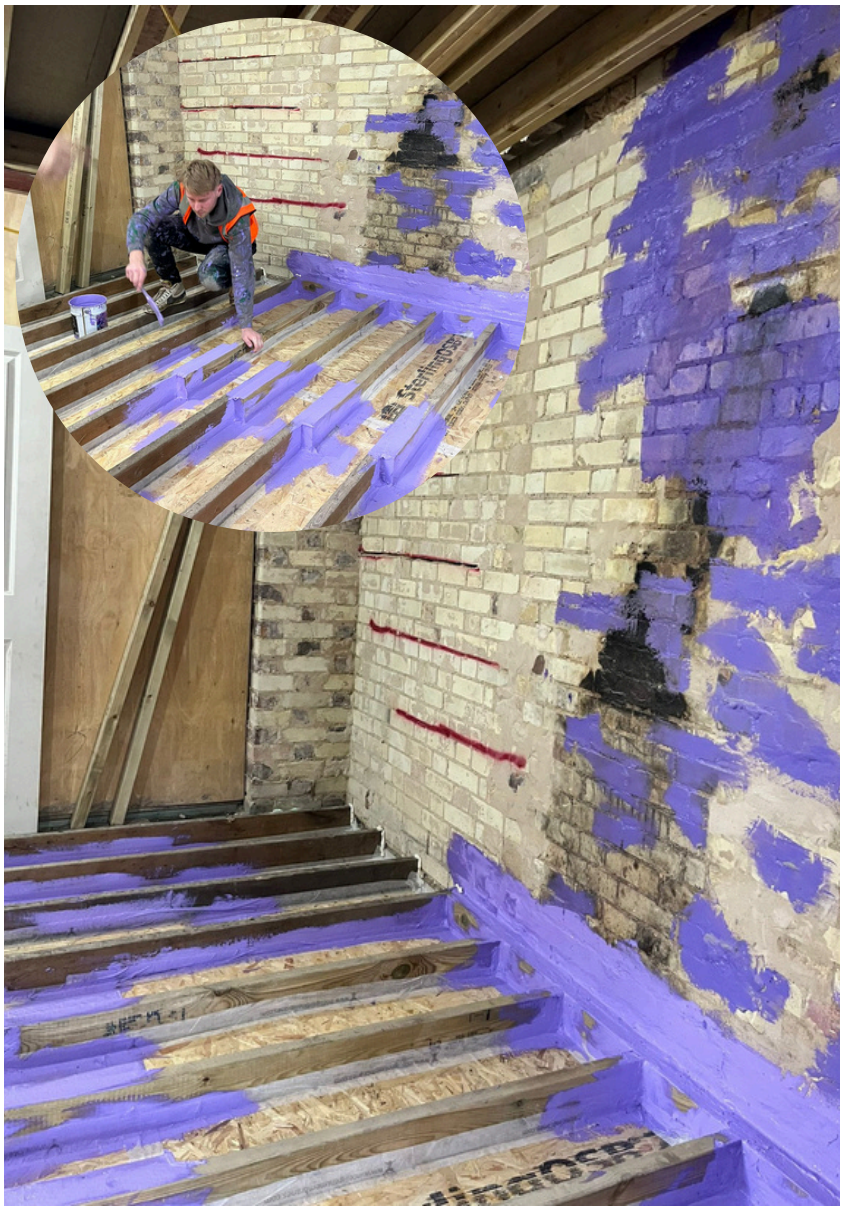
Reimagining the Past for a Greener Future

In 2024, The Cambridge Building Society set out to do something bold: take a classic 1930s semi-detached home and turn it into a model for sustainable living. Their goal was clear, reduce carbon emissions, lower energy bills, and demonstrate what was possible when tradition meets innovation.
This wasn't just a facelift, it was a deep retrofit intended to inspire change across the wider housing market.

Stripping Back, Building Forward

Koru began by taking the house back to brick. Chimneys were removed. Original materials were stripped out. What remained was a blank canvas, the perfect foundation for a high-performance retrofit. Their role was to manage every detail of the rebuild, preparing the structure to integrate modern systems and materials, including the airtightness layer at the heart of this project.



Why Passive Purple was chosen

Passive Purple is a liquid-applied membrane that delivers:

- Exceptional airtightness: Independently tested and certified Passivhaus Component A to 0.034ach. Almost 20x better than Passivhaus requirements.
- Radon Protection - More than just an airtight layer, Passive Purple also acts as a radon barrier, protecting occupants from harmful ground gases.
- Seamless application: No joints, seams, or weak spots typical of traditional membranes.
- Fire Safety Built In - Unlike paper-based membranes (Class E), Passive Purple achieves a Fire Class C rating, adding an extra layer of resilience to your build.

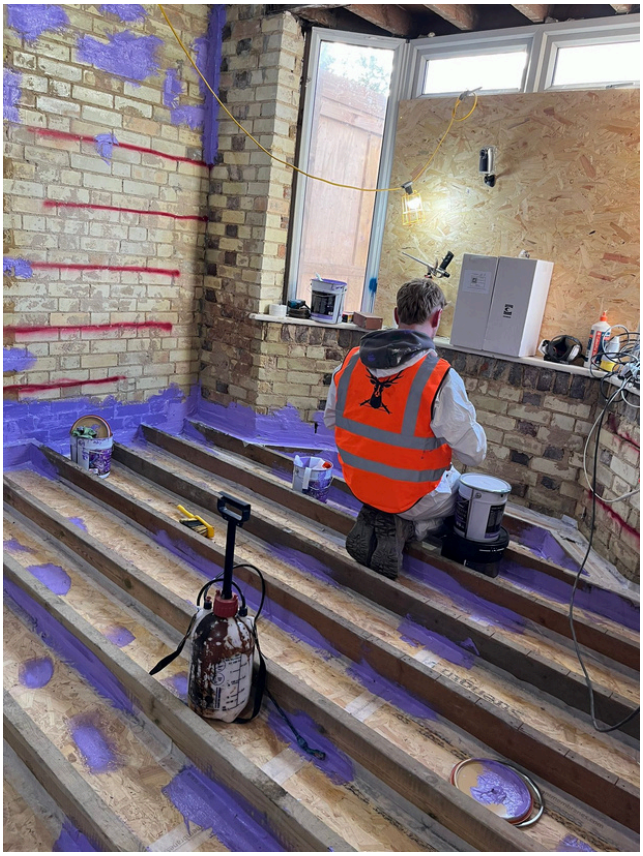
Application Process

- Intelligent Membranes' specialist team applied Passive Purple Brush (a fibre reinforced liquid membrane) to service penetrations, window and door frames, floor to wall and wall to ceiling junctions and any cracks and gaps before the installation of Passive Purple via an airless spray device.
- Application was coordinated with follow-on trades to avoid damage and ensure airtight integrity.

Airtightness, Done Right

With the building fabric exposed and ready, Intelligent Membranes stepped in to handle airtightness, one of the most critical aspects of a modern energy-efficient build.
Using our award-winning Passive Purple membrane, we spray-applied a continuous airtight layer throughout the internal envelope of the home. Passive Purple flexes with the building, bridges cracks, and seals even the most awkward junctions, no tapes, no gimmicks.

“Once it’s covered, you can’t see it, but you’ll definitely feel the difference.”
- Adam White, Intelligent Membranes.



Behind the Walls, Performance Lives On

While Passive Purple is now completely hidden behind new interior finishes, its impact is anything but invisible.
Thanks to the seamless vapour control layer, the home now holds onto heat, blocks draughts, and breathes in the right places, all contributing to a major leap in energy performance.

Brick Seal: The Cherry on Top of a High-Performance Retrofit

External masonry protection that completes the envelope.

While the internal transformation of this 1930s Cambridge home delivered impressive airtightness and thermal gains, Intelligent Membranes took things a step further by protecting the external brickwork with Brick Seal, our deeply penetrating, long-life masonry protection paste.

Why Brick Seal

Older homes often suffer from moisture absorption through their external walls — especially in exposed or wind-driven locations. Over time, this can lead to:

- Increased thermal conductivity (damp walls lose heat faster)
- Freeze–thaw damage
- Efflorescence and staining
- General degradation of the façade

To counter this, we applied Brick Seal across the entire brick exterior. This thick, ready-to-use paste penetrates deeply into the masonry before curing to form an invisible, water-repellent barrier.

Once Koru Construction completed the restoration of the brickwork and pointing, Brick Seal was applied using brush and roller to ensure deep penetration into every surface.

Airtightness Results

We're thrilled with the airtightness result achieved on this project, an impressive air test score of 0.54 ACH (air changes per hour). It's a true testament to the care, craftsmanship, and collaboration that went into every stage of the retrofit. While the score speaks for itself, it's the hard work of every trade involved that made it possible. From careful preparation to precise application, every detail mattered. Our thanks go out to all those who played a part in helping this 1930s home reach modern performance standards, a shared success that shows what can be done when everyone works with the same goal in mind.

Proof That Retrofitting Works

This project proves that deep retrofit success doesn't have to be complicated; it just needs the right products and the right team.

Achieving this level of airtightness on a 1930s semi-detached home clearly demonstrates that similar results are within reach for councils and housing providers across the UK. The knowledge, the solutions, and the proven methods are already available; it's now a matter of putting them into action.

With Koru Construction's expert delivery and Intelligent Membranes' airtightness technology, this retrofit sets a clear example of what's possible, not just in Cambridge, but nationwide.

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