AIR TIGHTNESS AND VENTILATION

AIR TIGHTNESS

Basic draught proofing and low-cost ventilation is covered above. When considering a deeper retrofit project (e.g., aiming for net zero carbon for example), an airtightness strategy is necessary. This involves incorporating an airtightness layer around the entirety of the home - a way to imagine this is having a bucket with no holes placed inside a leaky bucket with holes.

A mixture of detailed design and the use of advanced membranes, sealants and insulation is used to help achieve a desired air tightness level. A Retrofit Coordinator or Designer will specify a target airtightness for your retrofit project and airtightness testing typically takes place before and after a project to ensure this has been met. For some retrofit building standards (e.g., EnerPhit) a target air tightness figure is specified.

VENTILATION

When the insulation and airtightness of a building is improved, it is important to ensure that adequate ventilation is maintained – the more airtight a building is, the less natural ventilation it receives. It is important to note that just because a house is airtight does not mean it isn't ventilated – either by natural means such as windows and trickle vents, or mechanically by extraction ventilation or Mechanical Ventilation with Heat Recovery (MVHR). The key difference is being able to control how and when air comes in and out of the building rather than allowing it to regularly leak.

MVHR is a whole-house system that extracts stale air from rooms in your house and supplies fresh air. When warm, stale air is extracted from your home through MVHR, the system recovers around 80-90% of the heat to pre-warm the fresh air being supplied back into your home. Air is typically extracted from warm and wet rooms in the house (kitchens, bathrooms) and supplied into bedrooms and living spaces.

Cost: MVHR - **£££+**

MVHR systems are commonly found in new-build homes and whole-house retrofits which reach high thermal performance and airtightness standards.

A whole-house MVHR system is not cheap and can be complex. It requires air ducting to be installed throughout the house and this can be an intrusive process therefore combining this with other more significant retrofit works is advisable. The MVHR unit itself is around the size of a large suitcase and additional space is required for ducts and exhausts therefore consideration on where this would fit in your home is also necessary. A Retrofit Coordinator or Designer will be able to advise further on the design and requirement of MVHR in your home retrofit.

MVHR is typically only necessary for whole house retrofit projects and therefore should be completed as part of a larger scheme of works due to the intrusiveness of installation.

Disruption: MVHR: ■ ■ ■ ■ □