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## **ProAir Systems Under Joist Ducting Process.**

In order that a Heat Recovery Ventilation (HRV) system achieves its maximum thermal efficiency it is imperative that most, if not all the system should be installed within the insulation envelope of the building. The D&J oval ducting used by ProAir Systems is very suitable for installation within this envelope under the air tightness membrane. The ducting system comprises a large part of the overall system and this process outlines an appropriate procedure for achieving this goal.

1. On the first floor install ceiling air tightness membrane underneath the ceiling joists.
2. Install HRV ducting to underside of membrane for the first floor. Using galvo band to joists and/or pre-installed grounds between truss joists. (NB screws should be inserted for fixings only once).
3. Leave duct fittings for service to the ground floor pointing towards the floor. This can be done in a secluded location such as a hot press, store, the back of a wardrobe, studded partition, etc.
4. Batten and cross batten the ceiling with 44\*44 battens and 44\*22 battens making provision for the ventilation ducts.
5. Erect the stud partitions. Make allowances where ducts are run within the studded walls.
6. Trim attic access timbers making sure to seal the air tightness membrane correctly.
7. Other first fix services such as wiring and plumbing can be run through the service cavity as necessary.
8. Extend duct services to the ground floor as per design plan.
9. Install plaster board with wires and ducts protruding.

If this process is followed the heat recovery ventilation ducts and all electric wiring should be within the air tightness envelope. The HRV system will require two primary duct services (Fresh and Exhaust) 150mm diameter to be connected to the outside. We may use a ProAir FEX terminal, roof vents or louvre vents in a wall or soffitt. Where these 150mm ducts pass through the membrane they should be sealed. Plumbing services should also be sealed as they pass through the membrane to the attic.

This process eliminates the need for piercing the air tightness membrane and subsequent retro-sealing around both ventilation and electrical services. The duct runs will be on one plane making for easier air flow in the ducts resulting in less power being required to push air through the ducts. This will be a long term benefit. Further the insulation that will be installed between and over the joists will all be working to reduce heat loss. The less heat that is lost the more that can be recovered leading to a lower energy requirement in the house.

The drawing illustrates the suggested layout

