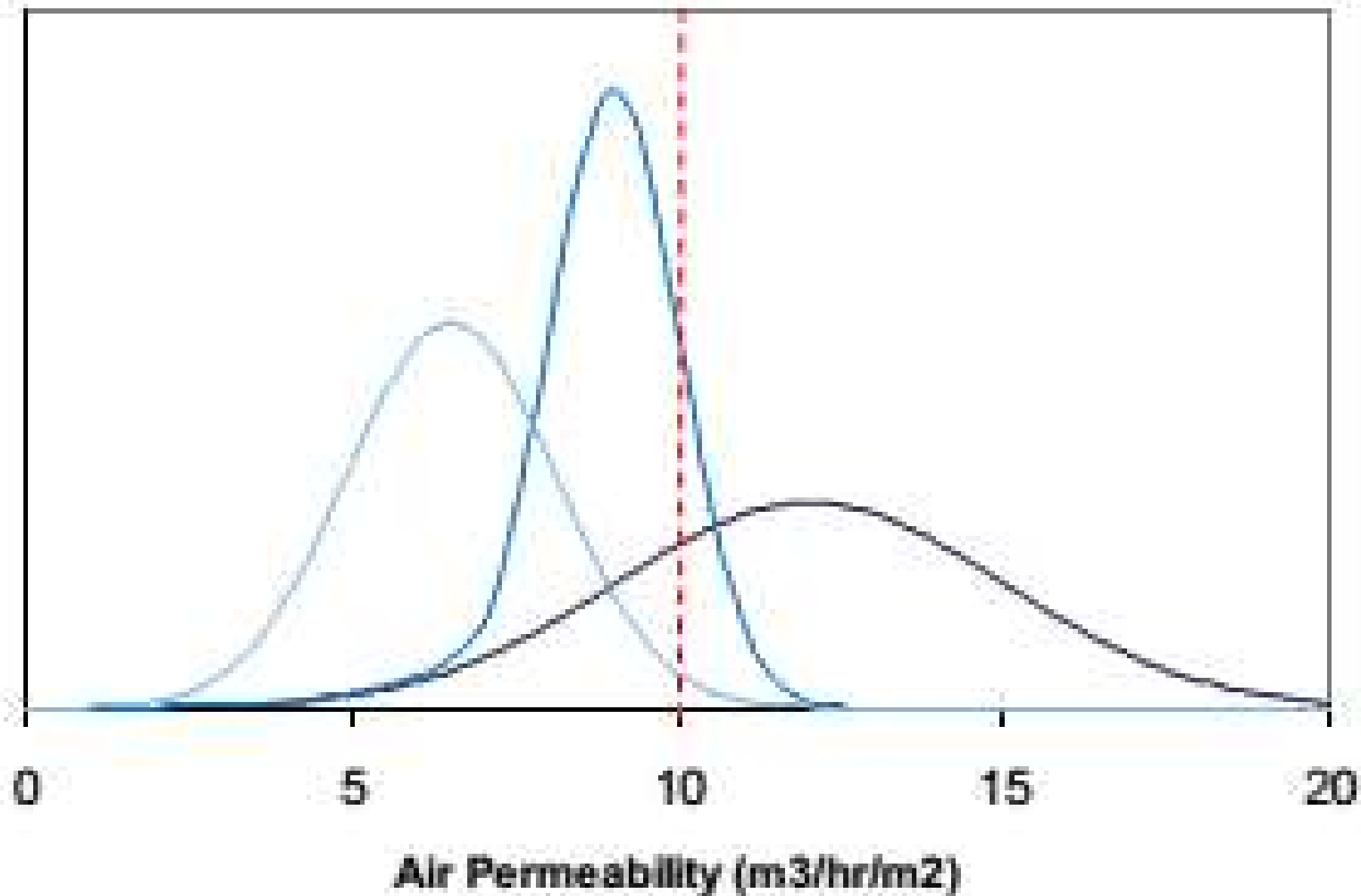


WHERE DOES THE HEAT GO?

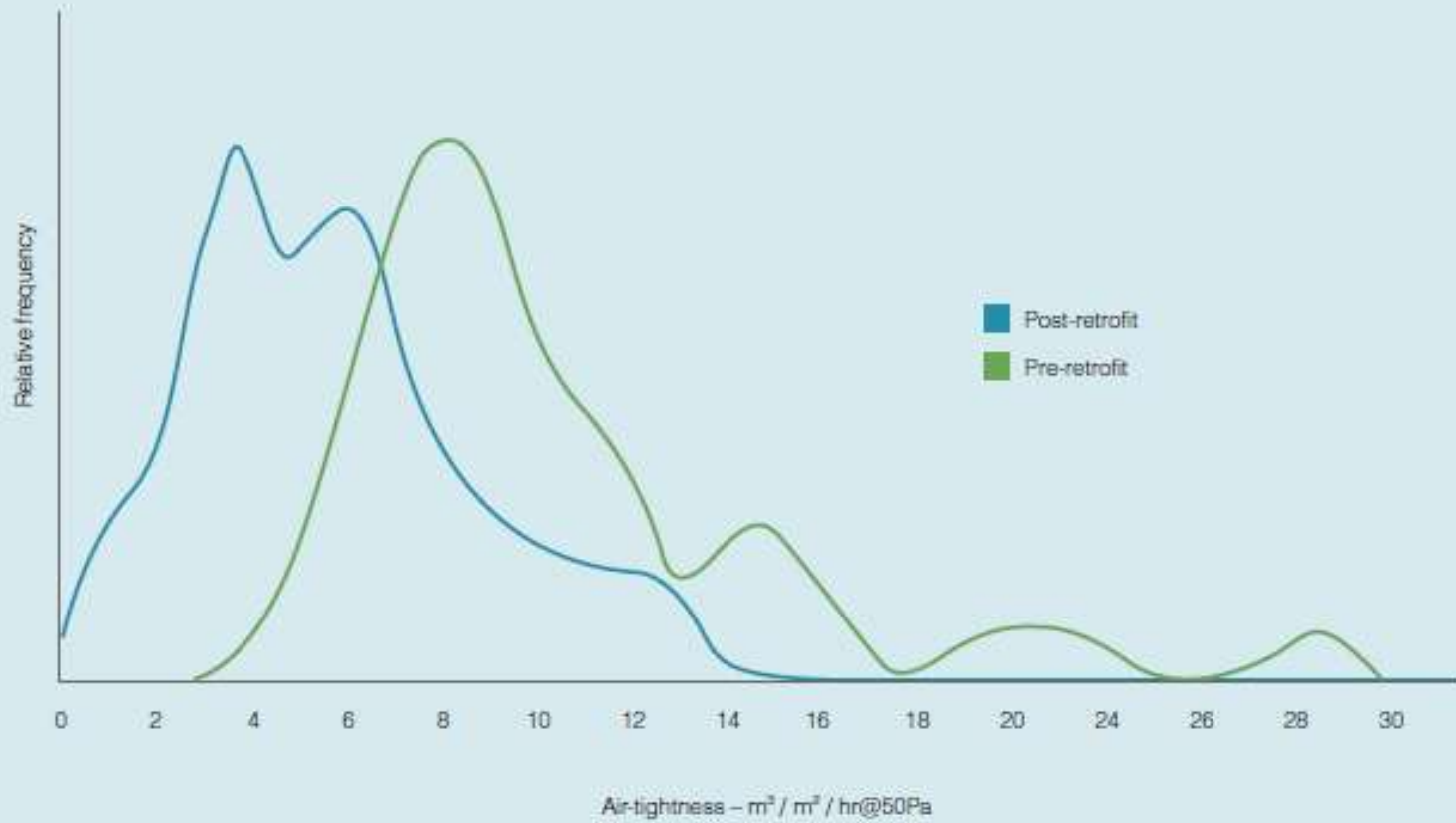






— Pre-2006 — Expected Post-2006 — Actual Post-2006

Air-tightness results (against 87 properties)



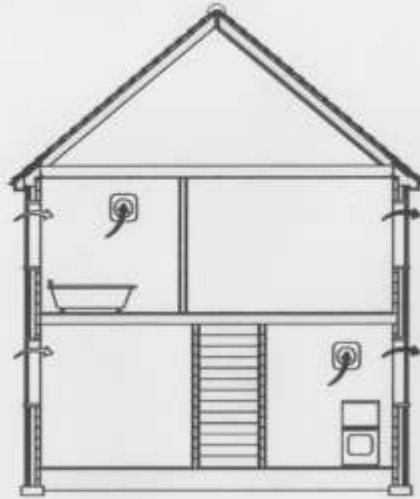
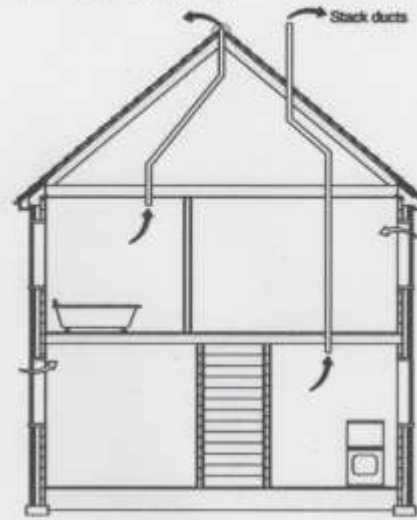
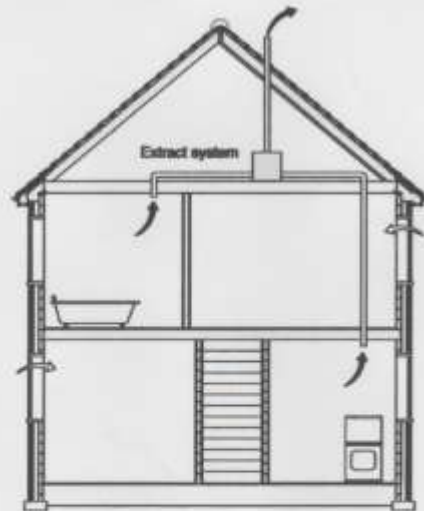
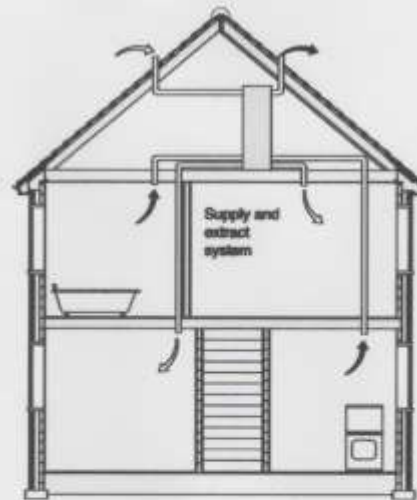
BR_PDF_AD_L1... x ATTMA-TSL1-Issue-... x

Approved Documents L1A and L1B, is based on air permeability where the envelope area is defined as the surface area of boundary walls, roof and floor. For improved energy efficiency and much better control of the indoor environment, building airtightness standards are required that are significantly more stringent than the relatively relaxed standards currently set by the Building Regulations. The ATTMA standard TSL1 is a new standard for building airtightness to ensure the proposed dwelling is within the target emission rate (TSL1) required to demonstrate compliance with Building Regulations Part L (England and Wales), Part F1 (Northern Ireland), or Section 6 of the Domestic Handbooks (Scotland). The following table provides current normal and best practice airtightness criteria for different dwelling types:

ATTMA standard TSL1

Type	Air permeability $m^3 \cdot h^{-1} \cdot m^{-2}$ @ 50 Pascals		Air Change Rate h^{-1} @ 50 Pascals
	Best practice	Normal	
Dwellings			
<i>naturally ventilated</i>	5.0	7.0	-
<i>mechanically ventilated</i>	1.0	5.0	-
<i>PassivHaus Standard</i>	-	<1.0	0.6

Diagram 2a Ventilation systems

**Background ventilators
and intermittent extract fans****Passive stack ventilation****Continuous mechanical extract****Continuous mechanical supply and
extract with heat recovery**

Typical Trickle Vent



Passive extract vent

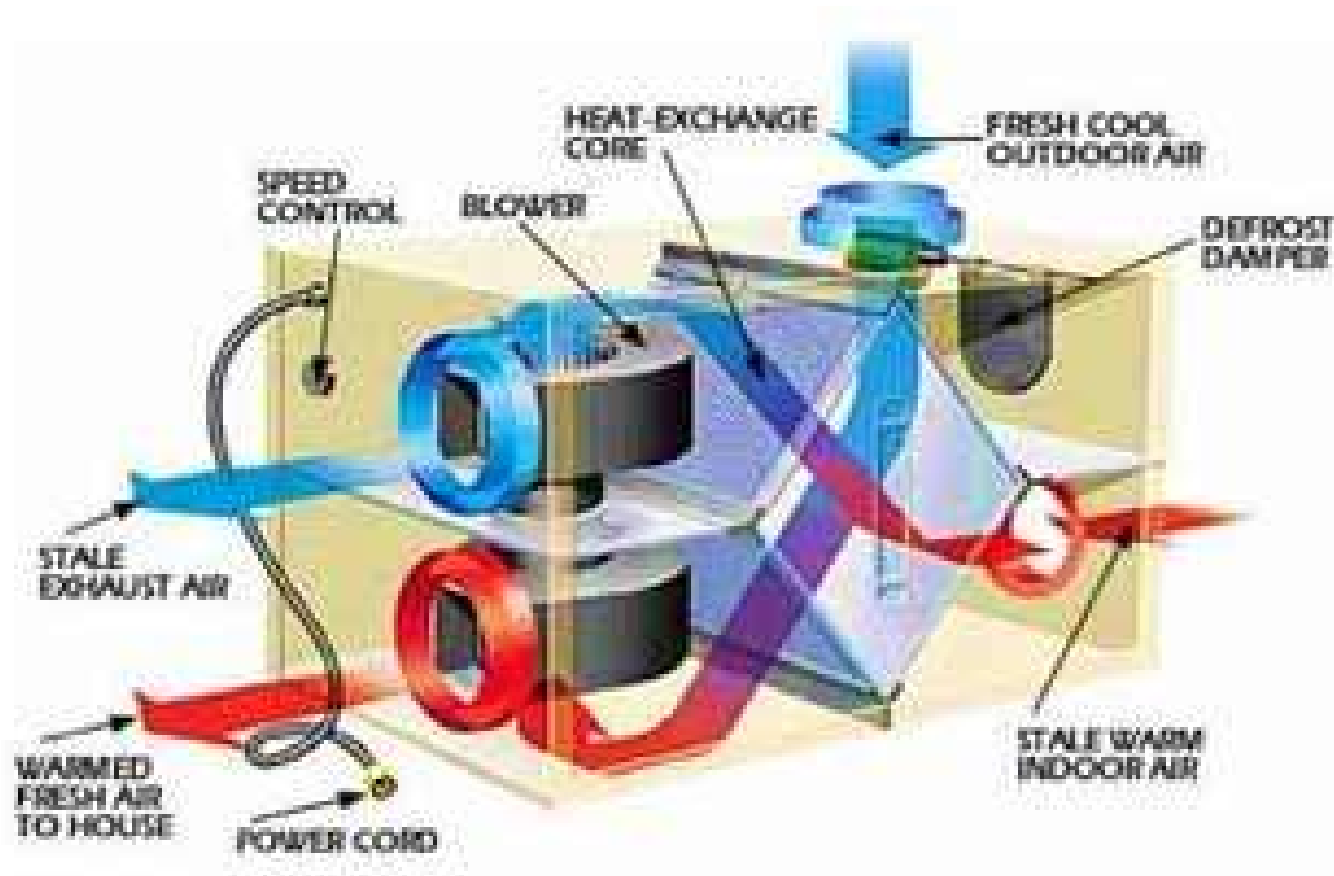
③



Centralise Mechanical Extract



Mechanical Ventilation with Heat Recovery



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Approved Documents L1A and L1B, is based on air permeability where the envelope area is defined as the surface area of boundary walls, roof and floor. For improved energy efficiency and much better control of the indoor environment, building airtightness standards are required that are significantly more stringent than the relatively relaxed standards currently set by the Building Regulations. The ATTMA standard TSL1 is a new standard for building airtightness to ensure the proposed dwelling is within the target emission rate (TSL1) required to demonstrate compliance with Building Regulations Part L (England and Wales), Part F1 (Northern Ireland), or Section 6 of the Domestic Handbooks (Scotland). The following table provides current normal and best practice airtightness criteria for different dwelling types:

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