AVO Guide – Ventilation

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Ventilation

What is ventilation?

ADF States:

Ventilation is simply the removal of 'stale' indoor air from a building and its replacement with 'fresh' outside air.

Ventilation

Ventilation is required for one or more of the following purposes:

- Provision of outside air for breathing
- Dilution and removal of airborne pollutants, including odours
- Control of excess humidity

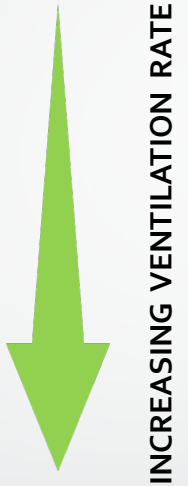
ADF requires that:

There shall be adequate means of ventilation provided for people in the building

Ventilation

ADF adopts the following 3 pronged vent strategy:

- Whole dwelling ventilation
- Extract ventilation
- Purge ventilation



Each of these types of ventilation are required for differing lengths of time and more or less often.

Therefore, different acoustic requirements are likely to apply to each scenario.

Whole Dwelling Ventilation

- Continuous ventilation to provide fresh air and dilute / remove pollutants and water vapour
- Relatively low rate of ventilation
- Required continuously

Extract Ventilation

- Required in rooms where most water vapour and / or pollutants are released i.e. **bathrooms or kitchens**
- To minimise the spread of water vapour / pollutants to the rest of the building
- Can be continuous or intermittent
- Increased rate of ventilation compared to WDV

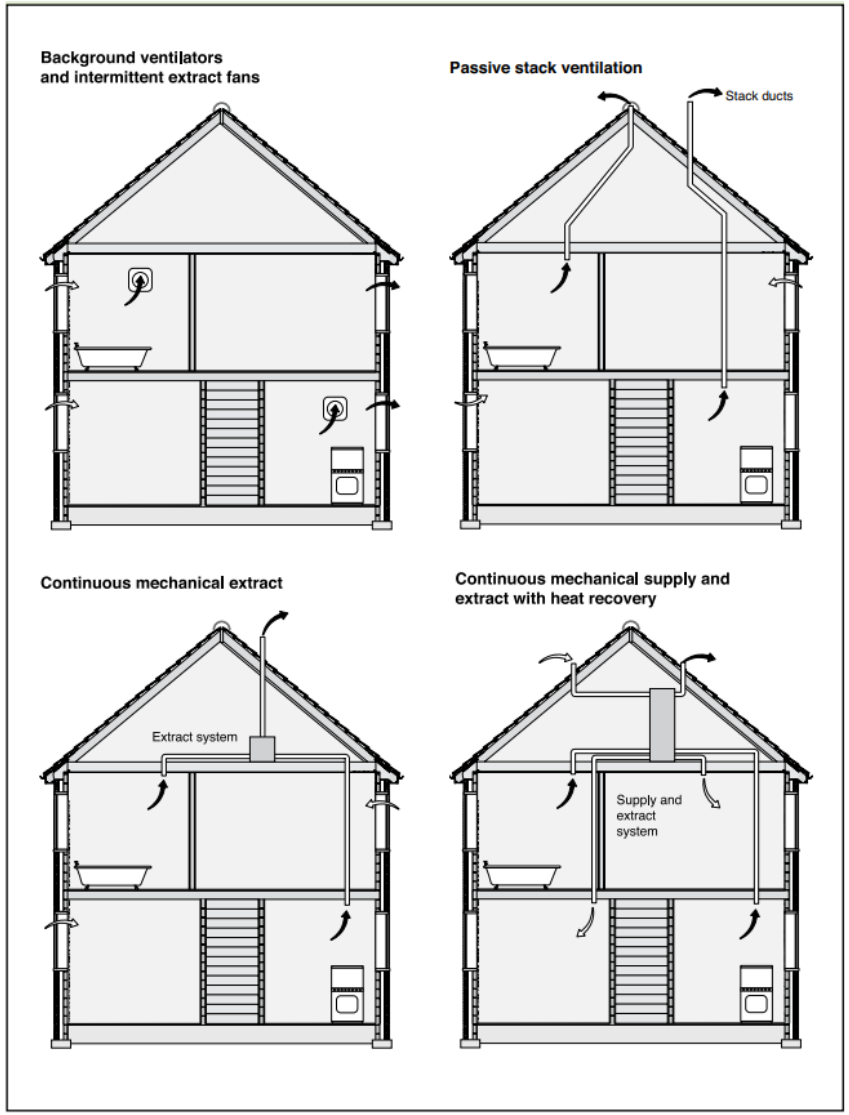
Purge Ventilation

- To aid in the removal of high concentrations of pollutants and water vapour from occasional activities
- Only required occasionally i.e. to remove smoke from burnt foot or when painting
- Increased rate of ventilation compared to extract (approx. 4 ach)

Ventilation Systems

ADF provides details of 4 ‘systems’ which comply with the ventilation strategy

Ventilation system	Provision with ADF system / purpose		
	Whole dwelling ventilation	Extract ventilation	Purge ventilation
System 1: Background ventilators and intermittent extract fans	Background ventilators (trickle vents)	Intermittent extract fans	Typically provided by opening windows
System 2: Passive stack ("natural")	Background ventilators (trickle vents) and passive stack ventilation	Continuous via passive stack	Typically provided by opening windows
System 3: Continuous mechanical extract (MEV)	Continuous mechanical extract – minimum low rate Trickle vents provide inlet air	Continuous mechanical extract – minimum high rate Trickle vents provide inlet air	Typically provided by opening windows
System 4: Continuously mechanical supply and extract with heat recovery (MVHR)	Continuous mechanical supply and extract – minimum low rate	Continuous mechanical supply and extract – minimum high rate	Typically provided by opening windows



Ventilation

- Three different types of ventilation
- 4 main systems used to provide this
- Need to understand the ventilation strategy to provide the correct acoustic advice

Ventilation

- Providing 'ventilation' is a requirement of ADF but this should not be confused with providing thermal comfort / relief from overheating

- ADF states that:

'Ventilation may also provide a means to control thermal comfort but this is not controlled under the Building Regulations'

'Purge ventilation provisions may also be used to improve thermal comfort, although this is not controlled under the Building Regulations'

Ventilation

- Purge ventilation should not be confused with 'ventilative cooling' to help provide thermal comfort (relief from overheating)
- Relief from overheating is likely to be required much more often than purge vent
- Ventilation rates required to avoid overheating are often significantly greater than the purge ventilation provisions

<u>The acoustic impact of the ventilation strategy needs to be assessed separately from the overheating scenario</u>