

Indoor Air Quality



The Role of Good Ventilation Installation and Competence



New and Renovated Homes

- Well-insulated, energy-efficient homes
- Cosy and warm indoor environment

BUT

- The building is effectively sealed and unable to “breathe”. In fact, it’s like wrapping a plastic bag around the house and hermetically sealing it.



These indoor environments need effective ventilation and better oversight of the installation process



Are ventilation installation practices keeping pace?

Recurring themes from end users are: -

The house is stuffy - Condensation, Damp and Mould
The fan or system is noisy - How does it work ?

There is also reality that many householders / occupants would not know if the ventilation system is working effectively or not because they know no different!

There are many cases of 'Good Practise' design, on-site installation and commissioning of ventilation solutions

However, levels of competence of installers vary wildly.



Recent Independent research supports the variability of on-site installation



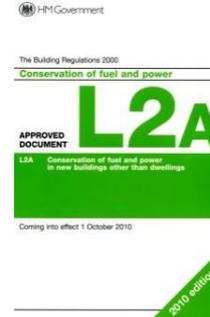
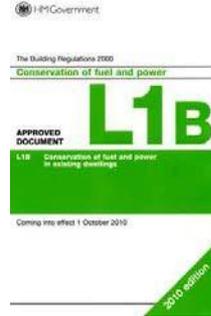
A report of site visit findings



**MACKINTOSH
ENVIRONMENTAL
ARCHITECTURE
RESEARCH UNIT**



Building Regulations exist



F = Means of Ventilation

L = Conservation of Fuel and Power...

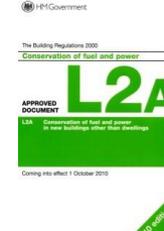
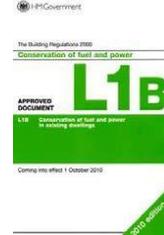
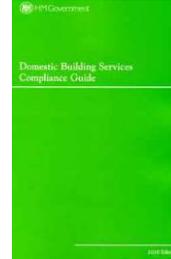
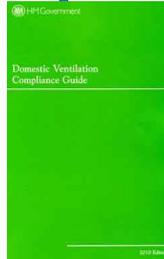
1A = ...in New Dwellings

1B = ...in Existing Dwellings

2A = ...in New Buildings other than Dwellings

2B = ...in Existing Buildings other than Dwellings

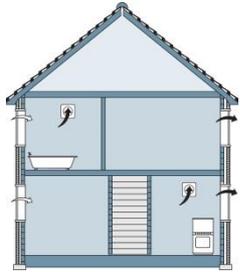




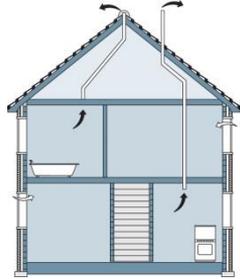
But so do Installation Compliance Guides



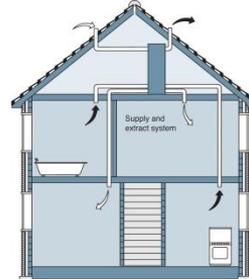
DCLG - Domestic Ventilation Compliance Guide



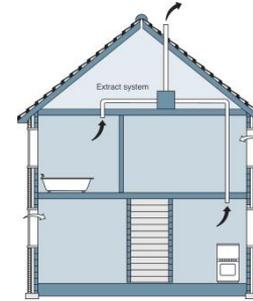
System 1 Intermittent Fans



System 2 Passive Stack



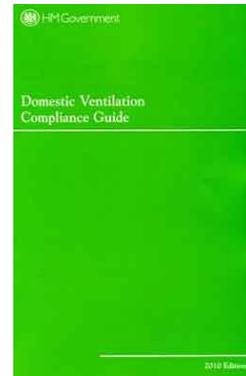
System 3 Continuous extract Ventilation



System 4 Continuous supply/extract with Heat Recovery

- Do's and Don'ts of installation, inspection, testing, commissioning and handover
- Following these basic recommendations will help improve system performance

In our experience Installer awareness of these guides and similar guides from NHBC and others is low



A common sense approach to Competence

Use these sources of information to better effect. Even simple measures will have a positive effect on air movement

- Cut Flexible ducting to length and pull taught
- Use rigid ducting where possible and on longer runs
- Fit condensation traps on vertical ducts
- Insulate ducts through cold spaces
- Undercutting internal doors for whole house systems
- Avoid screwing fans just to plasterboard ceilings



Follow through with Good Practise

Testing and Commissioning stage

- Check that individuals carrying out commissioning are trained and registered under a Competent Persons Ventilation installer Scheme. There are benefits in SAP for using an accredited installer
- Check that commissioning sheets have been fully completed for each property.
- Check that MVHR filters have been replaced or cleaned prior to handover, Check all control systems function correctly
- Check that external grilles have been cleaned and are free from debris.
- Use correct and UKAS calibrated measuring instruments



Handover stage

- Occupants should be provided with a full explanation of the ventilation system controls and operation.
- System information should be left with the occupants, including details of maintenance requirements. ie Routine fan cleaning, replacement of filters (MVHR units)



NEW - Competent Persons Ventilation Installer Training Scheme

- Ventilation training courses exist but none have been a true 'Competent Persons' accreditation
- BEAMA (A Ventilation sector trade association) has been proactive in working with NECEIC to create a Training and Audited registration scheme for Residential Ventilation Installers
- Qualification will allow demonstration of a high level of competence for supply, design, installation, commissioning and handover of a domestic ventilation system.



Raising Competence is a Shared Responsibility

- **Manufacturers**

- Produce products which are fit for purpose meeting the requirements of latest Building Regulations and delivering Installed Performance
- Provide clear instructions and easy to understand operating documents for handover to occupiers
- Facilitate training and education of ventilation installers



Raising Competence is a Shared Responsibility

- **Housebuilders and Developers**

- Select and monitor qualified, Competent Installers who understand the importance of best practise installation
- Specify products which will meet the requirements of the specific house type / renovation
- Insist on liaison with the architect / designer where logistical issues arise. (*Don't just run longer lengths of flexible ducting to get around obstacles not on drawings*)
- Inform householder on handover how their ventilation system works and how it should be maintained



Raising Competence is a Shared Responsibility

- **Building Control**

- Greater education in fully understanding the detail of the Building Regulations and Domestic Ventilation Compliance Guide
- Better policing of installation documentation and understanding the impact of poor ventilation installation on air movement before signing off

- **Government**

- Further recognition that Best Practise ventilation installation is an important skillset



Summary

By all stakeholders working together to raise standards of ventilation installation through the provision of good design, quality performing products and installer training to deliver 'Best Practise' on site, we will provide improved Indoor Air Quality

Thank you for your attention

