Insulating solid wall properties

Solid walls lose far more heat than cavity walls. Most properties in Barningham are older properties and, if built before 1900, are likely to have solid walls. So, what can be done?

❖ Which houses does this affect?

- Whilst some properties in Barningham are built with brick cavity walls, most are older properties. If the house was built before 1920, it may have a cavity but not be suitable for cavity infill and, if it was built before 1900, it is likely to be a solid wall.
- If you are in any doubt as to whether your house has a cavity wall, a specialist investigation might be required. This involves drilling into the wall and inserting a small camera.
- Solid walls:
  - lose far more heat than cavity walls and take much longer to heat up, meaning bigger bills.
  - can be difficult to insulate and this can be expensive.
  - There are also risks that insulating solid walls that were designed to 'breathe' can lead to damp problems, so expert advice should always be sought.
- Have a look at Factsheet No. 17, *External Maintenance for Energy Efficiency*, for additional guidance.
- Insulating solid walls can be expensive but is also likely to save a lot of energy. The two key options are to insulate on the inside or the outside.

❖ Internal insulation

- Internal insulation should not be fitted without first fixing any problems you have with penetrating or rising damp. See Factsheet No. 17, *External Maintenance for Energy Efficiency*.
- There are four approaches:
  - Rigid insulation boards
  - Stud wall
  - Flexible insulated liners
  - Insulating plaster products

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- **Rigid insulation boards** are usually plasterboard with an added layer of insulation fixed to the back.
  - They are fixed direct to the existing wall by adhesive, known as 'dot and dab' fixing. [Hint – using a continuous ribbon of adhesive, rather than small dots, helps to prevent draughts moving behind the board].
  - Dot and dab is not suitable for walls where you have heavy duty shelving and, if the job is not done well, the plasterboard can sometimes become detached from the wall.

- **Stud walls** are where a frame is fixed to the wall and either infilled with soft insulation material or overlaid with screw fixed insulated boards.
  - This method requires more work, and loses more space.
  - If a 30mm gap is left it can be used on old fashioned solid walls where the old wall needs to breathe.

- **Flexible insulated liners**, such as Sempatap Thermal, are like heavy duty insulated wallpaper and can be applied direct to the wall and then plaster skimmed.
  - They are not as effective as the other options but take up less internal space and are easier to apply.

Image courtesy of:
http://www.mgcltd.co.uk/sempatap-thermal/

- **Insulating plaster products**, such as Insowall, are applied as a normal plaster finish but include materials to reduce heat transmission.
  - The plaster can be applied in layers to reach the required insulating value.
  - It is also breathable, so should be suitable for traditional properties.

❖ External insulation

- External insulation comes in two types – cladding or render.
  - With cladding, a layer or layers of insulating material is fixed to the outside of the wall, sometimes covered with a thin rendered finish.
  - With renders, the render itself acts as the insulation. (See photos).

Fitting cladding (left) and external render (above)
Images courtesy of:
http://www.greendealinstallerhub.co.uk/what_is_eco.html

- Both approaches will change the appearance of your home and may require planning permission. **These are not normally suited to Listed Buildings or within Conservation Areas.**

❖ Which option should I choose?

- Choosing which option is best will depend on the details of your property and site-specific circumstances.
- The table overleaf summarises the main pros and cons of each option. Expert advice should be sought before making any decisions.
- The Energy Savings Trust has further information and a list of approved products, along with tips on finding an installer. See: http://www.energysavingtrust.org.uk/Insulation/Solid-wall-insulation#internal

Summary of internal and external insulation pros and cons

Internal

✓ Generally cheaper than external. ✓ Can be done a bit at a time. × Disruptive, with electrical fittings, skirting boards, etc. needing removing and refitting. × Can reduce space. × May cause problems with heavy fixings (e.g., hanging cupboards, TVs).	**Rigid board** ✓ Very effective if fitted correctly. ✓ Limited loss of space. × Not suitable for old stone walls that need to breathe.
	Stud ✓ Very good for old houses where air gap required. × Loses more floor space.
	Flexible liner ✓ Low cost. ✓ Loses much less space. ✓ Can be used on ceilings of flat roofs. × Level of insulation not as good.
	Insulating plaster ✓ Loses much less space. ✓ Can be used on ceilings of flat roofs. × Level of insulation not as good. × Can be expensive, depending on insulation level needed.

External

✓ No internal disruption. ✓ No loss of space. ✓/× Changes look of house. × Can't be done a bit at a time. × Might need planning permission. × Not suitable in Conservation Area × May be expensive.	**Cladding** ✓ Achieves high levels of insulation. × Can be expensive.
	Render ✓ Easier in less accessible areas. × Generally, not as effective as cladding

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