Under One Roof

ENERGY EFFICIENCY

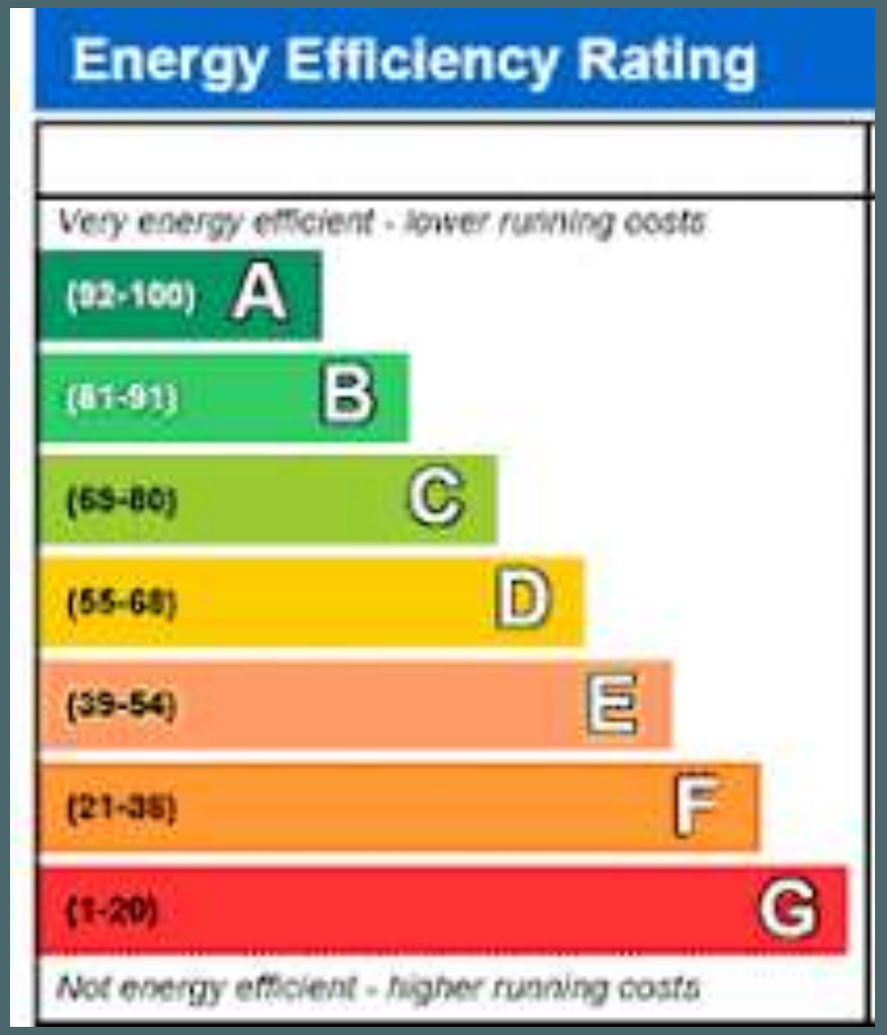
General Energy Efficiency advice on Under One Roof:

http://www.underoneroof.scot/articles/1569

Advice and details of financial help from Home Energy Scotland Private Landlords Team
0808 808 2282

Useful reading:
Pebble Trust -“Sustainable Renovation Guide” (download)
http://www.thepebbletrust.org/sustainablerenovation.asp

Private rent: EPC targets



E rating by April 2020
D rating by April 2022

EPC “E” achieved by:

- gas boiler or
- insulating the loft

EPCs and SAP ratings

The EPC (Energy Performance Certificate) rating is calculated by adding up SAP ratings for various components in your property

EPC targets

SAP does not account for:

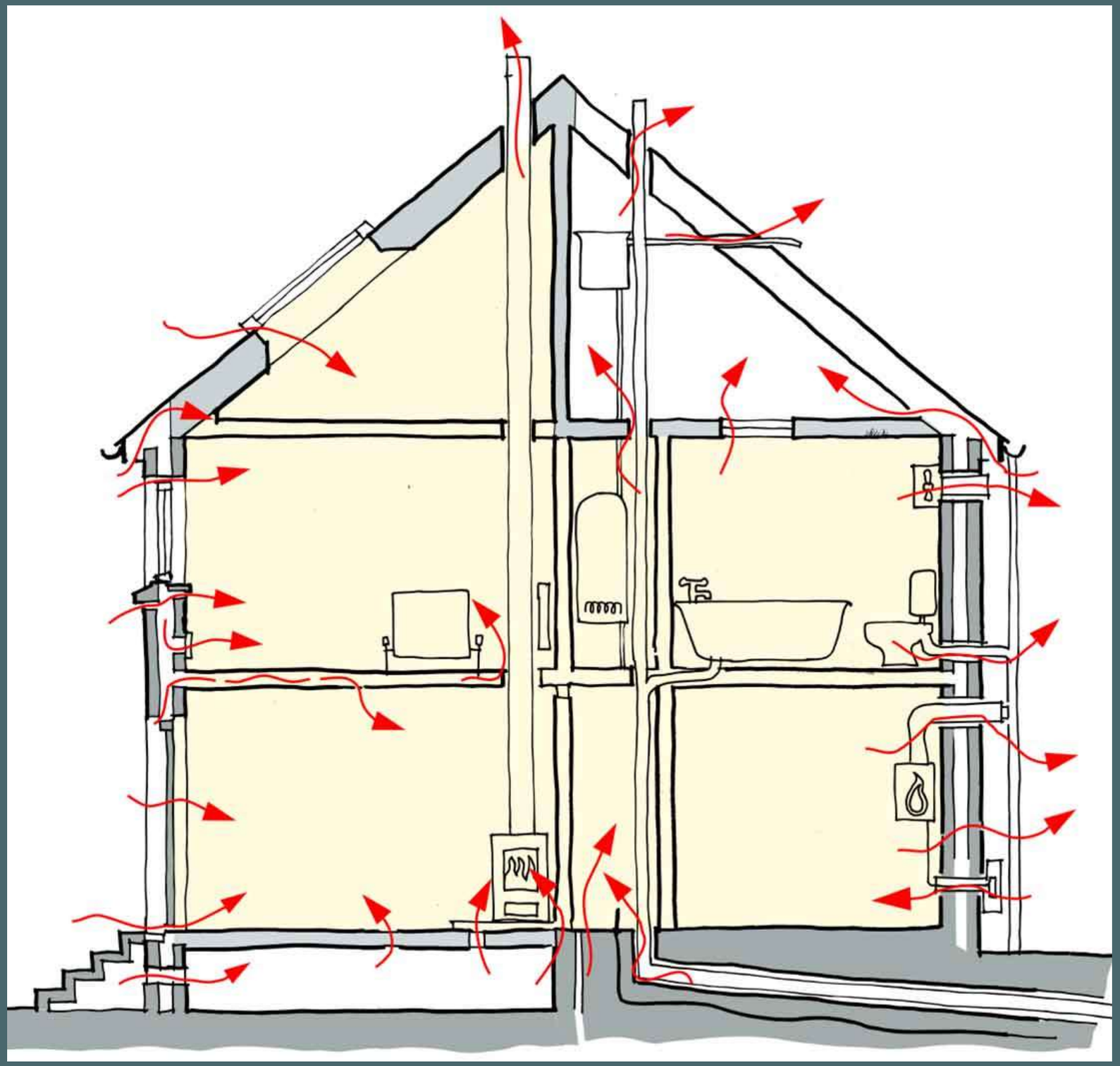
- how dry the building fabric is (dry material will be better at insulating)
- how draught proof the house is (ie air changes per hour)
- the type of double or triple glazing installed
- any heat recovery system
- if the assessor cannot easily confirm installed insulation
- Secondary heating systems such as a coal fire or radiant infra red panel heater, may be effective but will lead to a lower SAP rating.

DRAUGHTPROOFING & AIRTIGHTNESS

There can be 17 air changes per hour in a stone tenement room.

But draught-proofing and air tightness are ignored in SAP ratings.

Look for controlled ventilation



External Walls

Stone walls provide much better insulation than previously thought

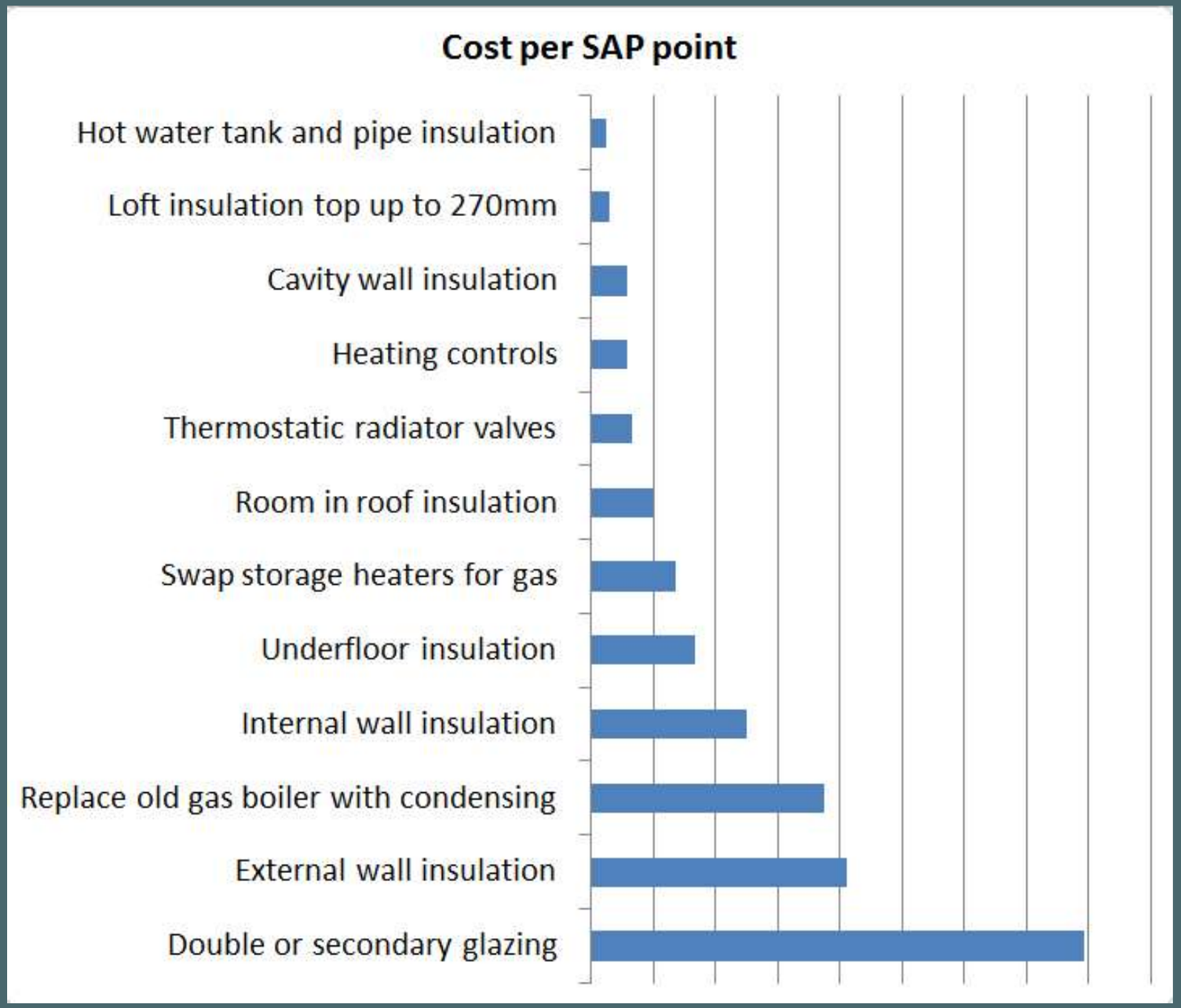
The EPC doesn't yet reflect this

BUT the walls need to be DRY

http://www.underoneroof.scot/articles/1573/

Stone walls

How cost effective are energy saving measures?



Graph shows what you might pay for each SAP point gained with different improvements.

Shows how loft insulation is much better value than installing double glazing.

But you need to get property specific advice.

IMPROVING HEATING

When installing boilers in flats:

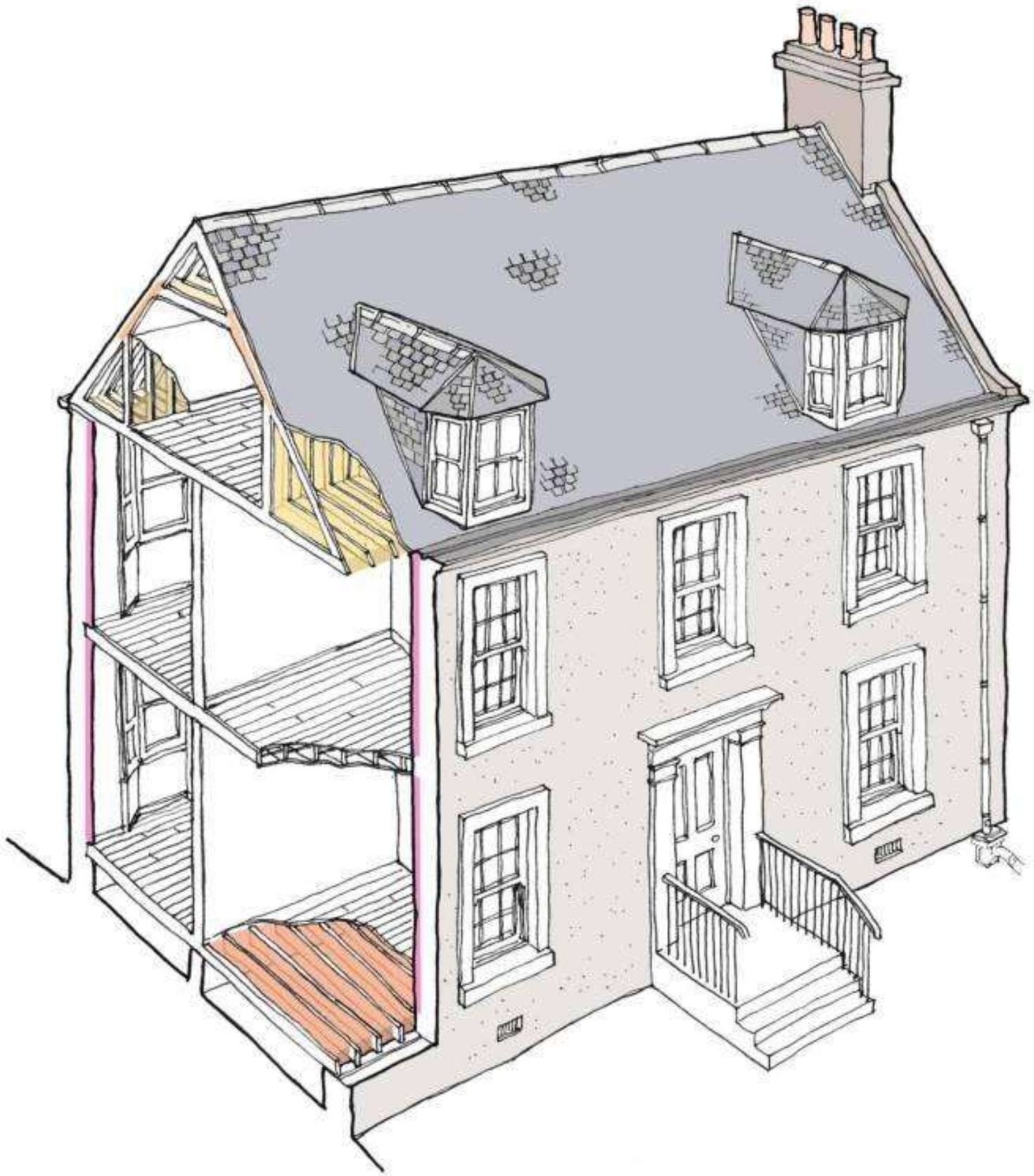
- Vent holes for new flues need to be properly made to prevent wall damage, draughts and damp
- Best to core drill from outside in, otherwise the stone could be damaged.
- boiler overflows can stain stone
- http://www.underoneroof.scot/articles/1572

Stone walls

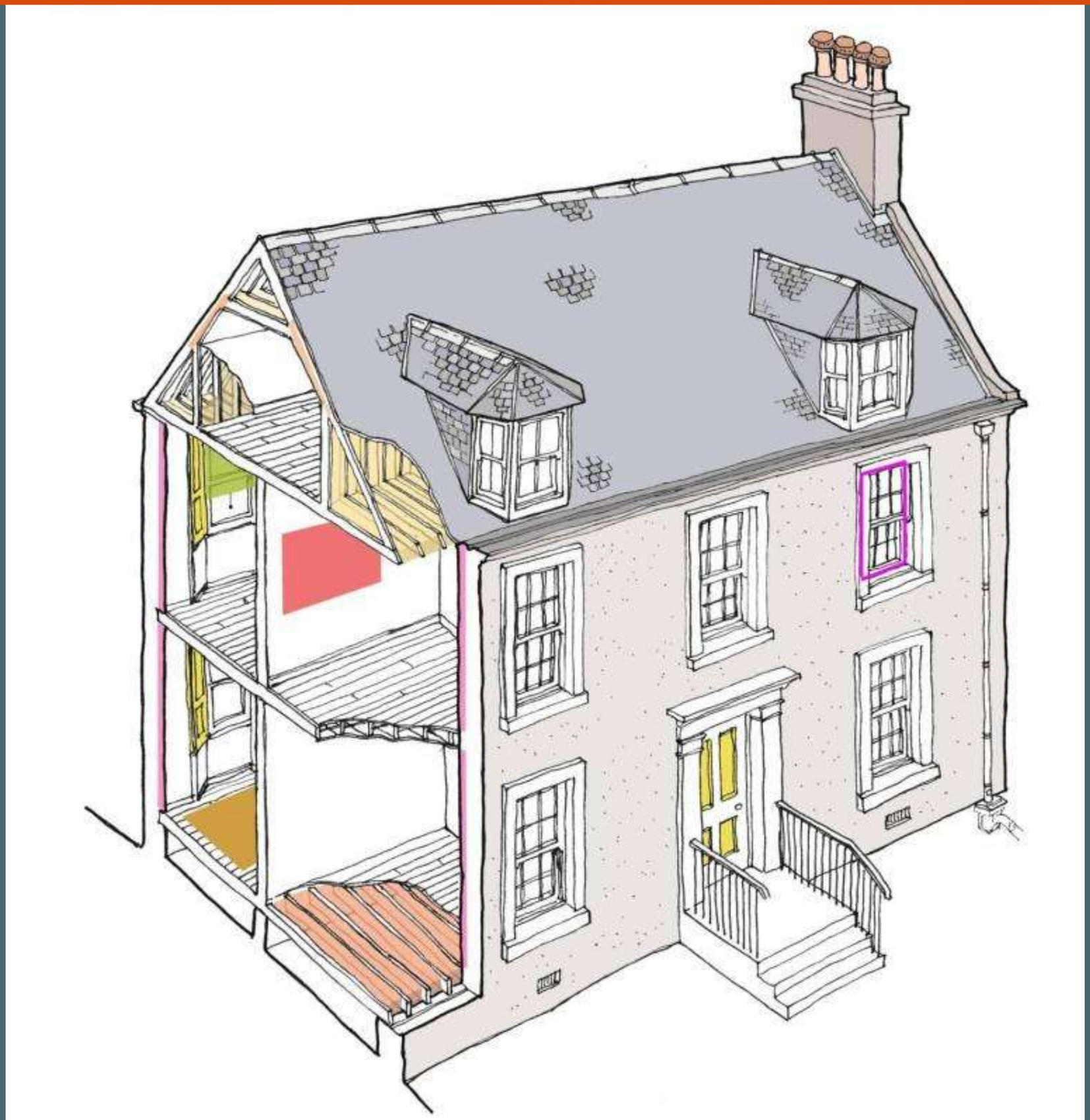
Overflows from boilers can be unsightly lead to decay

So how about an overflow diverter?

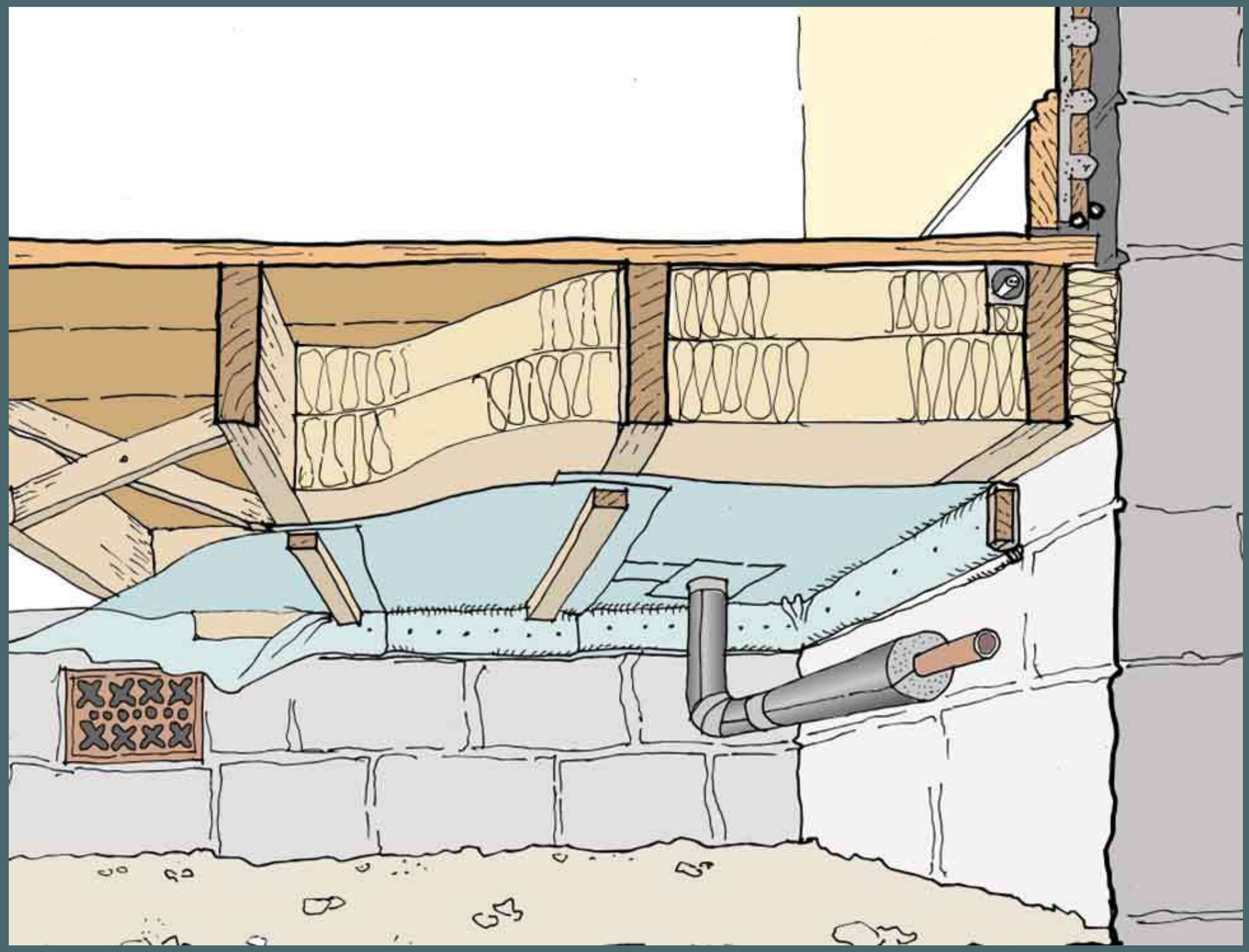
Insulation increasing EPC rating



Other interventions NOT increasing EPC rating

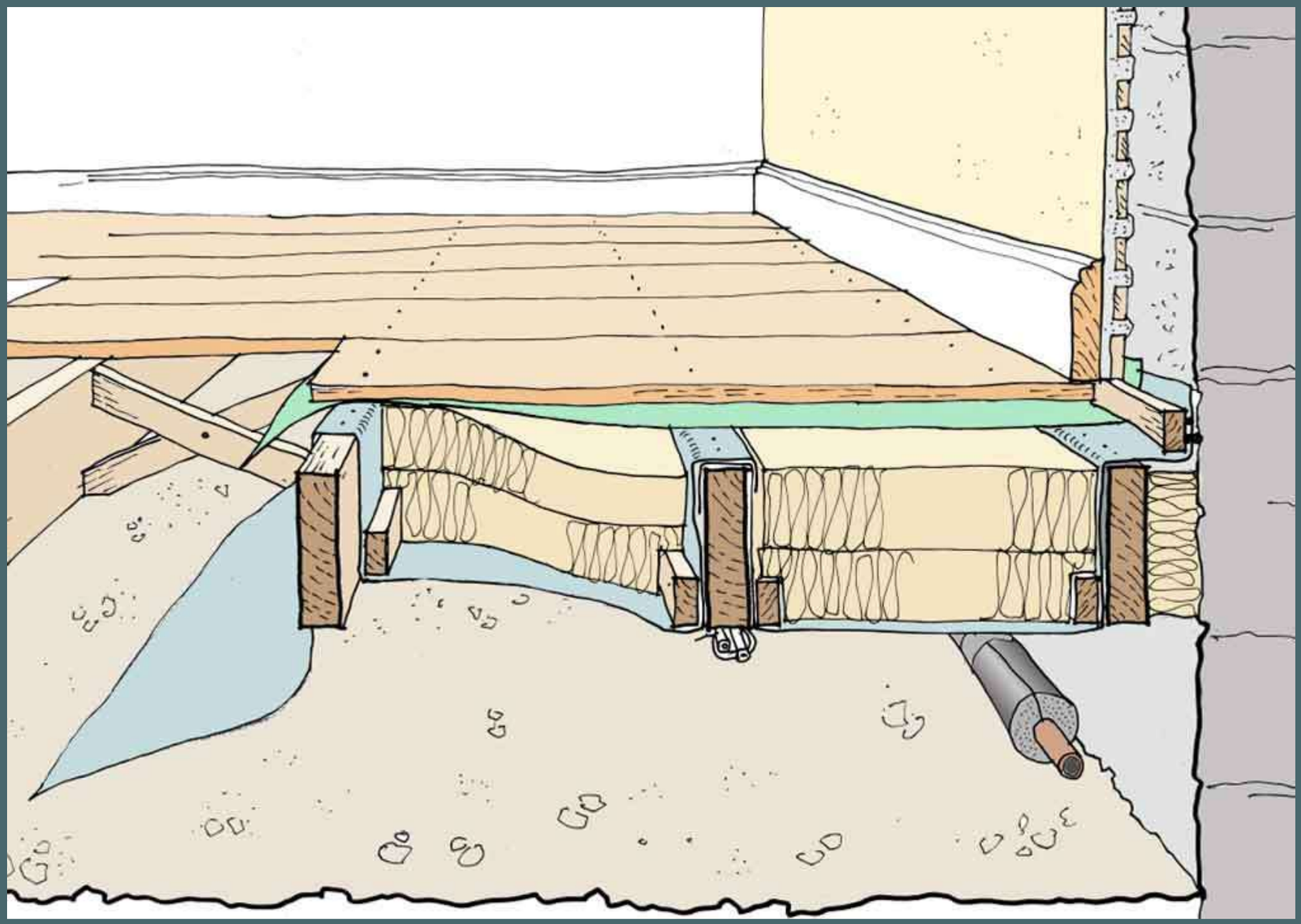


Insulating floors from below



If you can get under the floor, insulation can be wedged in. Breathable membrane (shown blue in diagram) reduces draughts.

Insulating floors from above



If you can’t get underneath, floors need to be lifted and insulation suspended on battens and breathable membrane

INTERNAL WALL INSULATION

Options for reducing heat loss:

- Inserting sticky foam beads in wall lining void
- Different types of insulated linings
- Insulated plaster
- “Aerogel” lining

http://www.underoneroof.scot/articles/1573

Internal wall insulation and cavity fill

“Aerogel” plaster board. More expensive than some other materials but breathable. Slim profile means cornices may not need to be replaced. Boards are fixed in battens

Internal wall insulation and cavity fill

sticky foam beads can be blown between lathe and inner face of stone wall

LOFT INSULATION

- Increased Insulation needs increased ventilation
- Avoid condensation in loft
  - Vent space at eaves
  - Breathable roof felt
  - Slate vents
  - Ventilate under lead roofs
  - http://www.underoneroof.scot/articles/1571/

LOFT INSULATION

Standard insulation depth: 270 mm. Fix roof leaks first: damp insulation worse than no insulation Maintain air flow at eaves

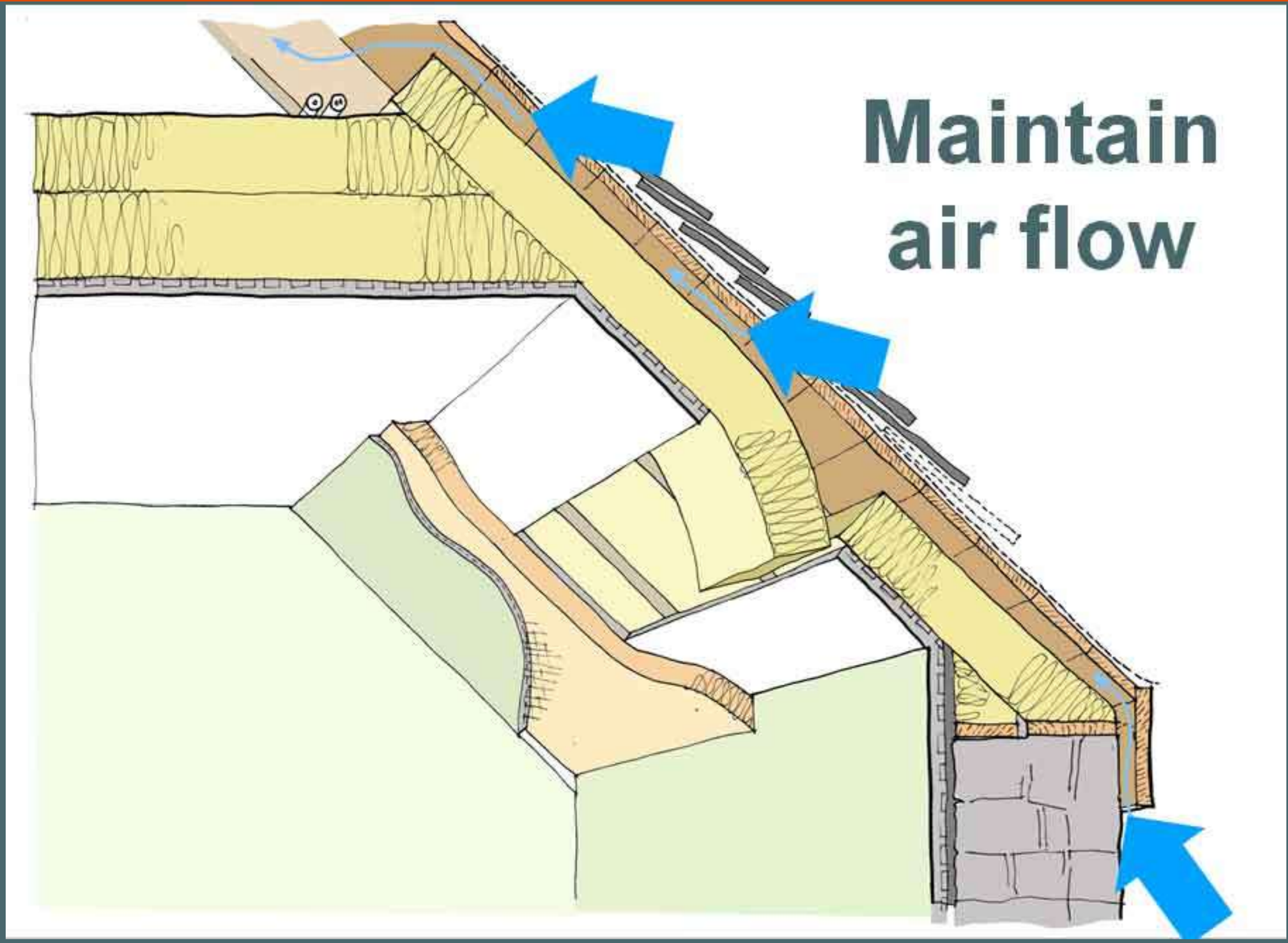
Insulate water tanks as loft space above will be much colder once insulated

Effect of condensation on roof timbers

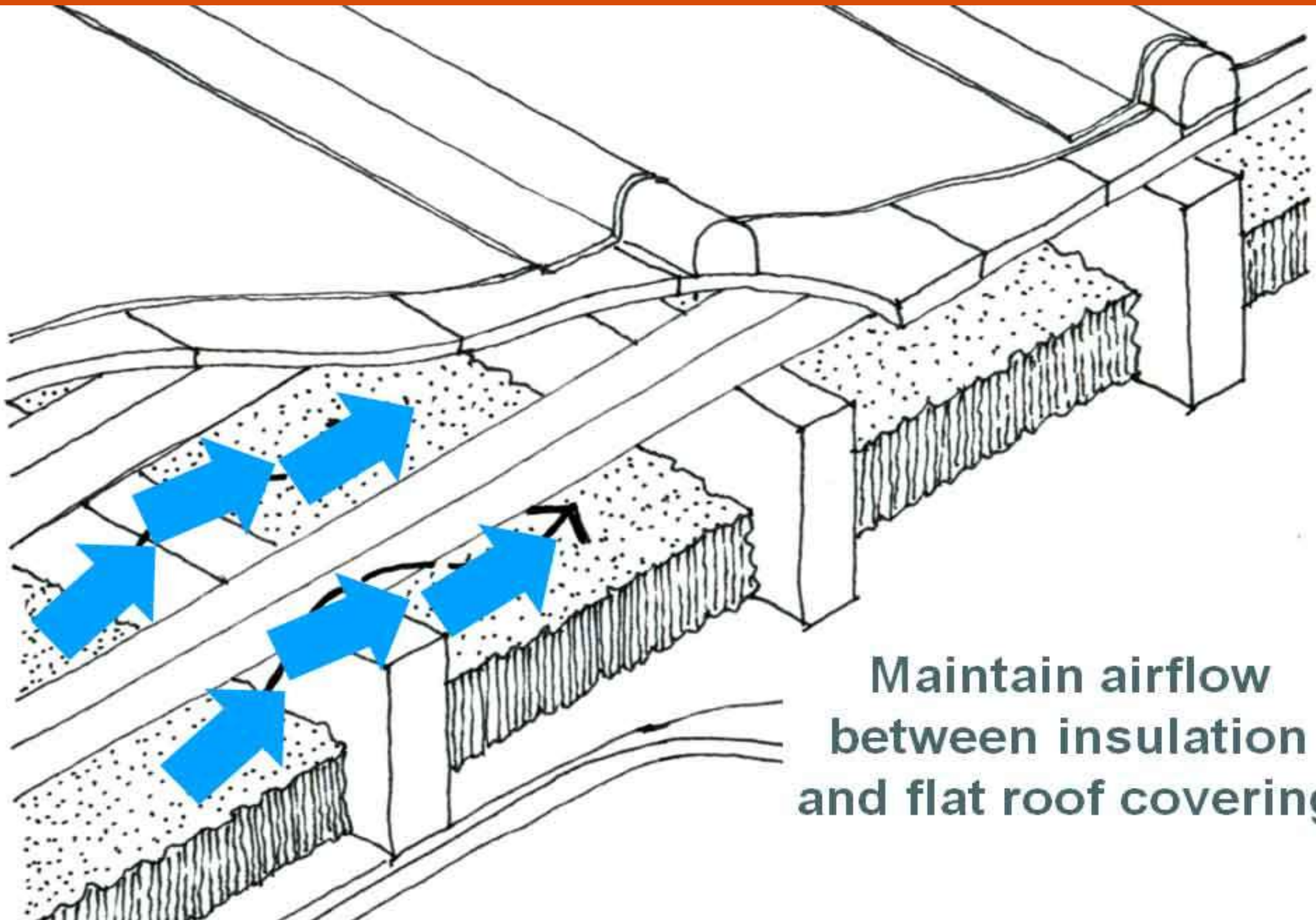
Roof ventilation solutions:

- Breathable membrane
- Slate vents
- Ridge vents

Roof insulation in coombe



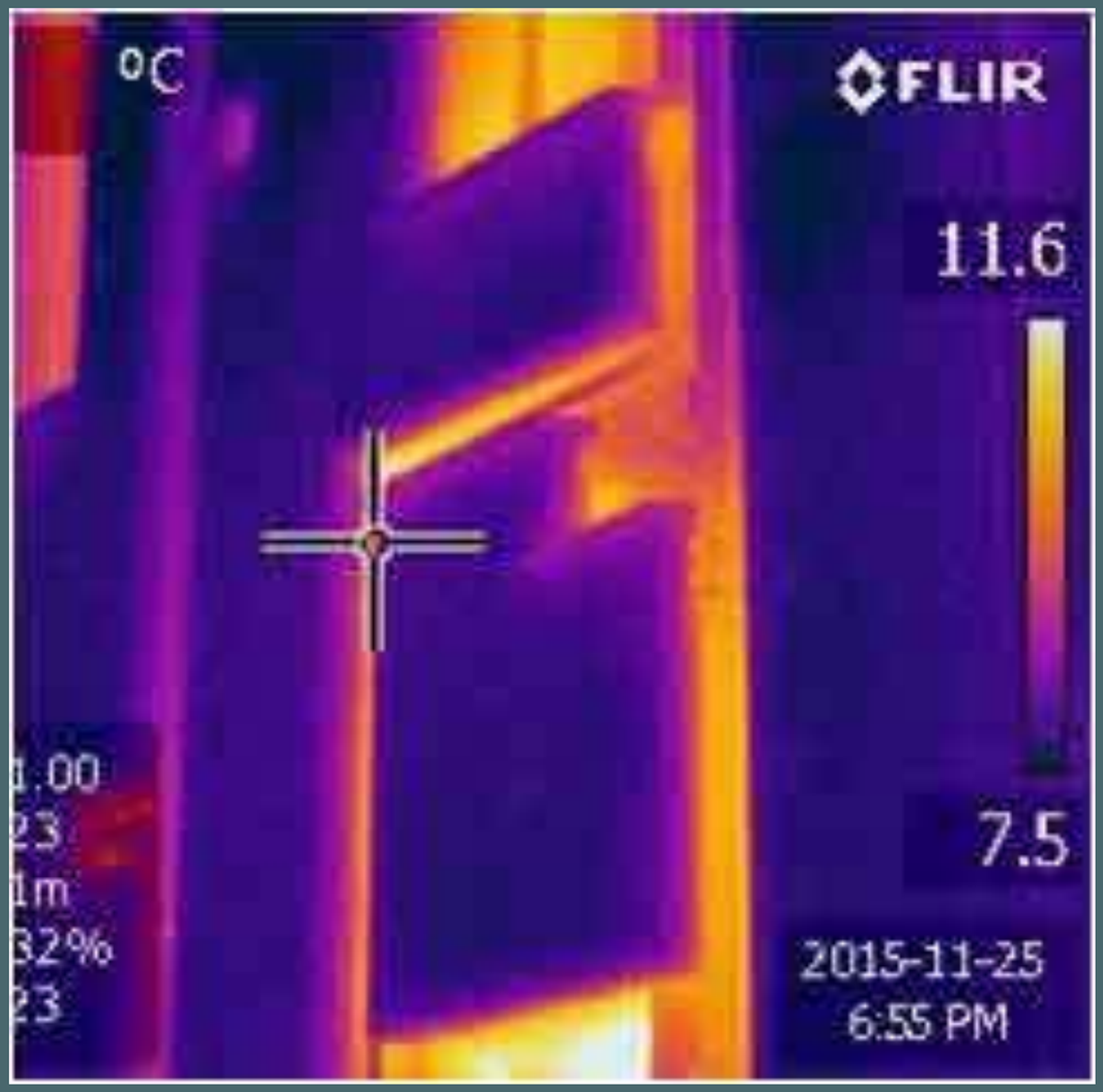
Ventilation under lead roofs



Maintain airflow between insulation and flat roof covering

Overcladding dangers

Grant funding didn’t allow pipes to be moved



Result – condensation dampness on areas of cold walls

But overcladding can be done well

Other overcladding dangers

Replacing windows

Replacing windows has relatively low impact on EPC. Payback times can be very long.

Alternatives:

- **Repair existing windows**
- **Draught proof existing windows**
- **Improve sashes with double gazed panes**
- **Restoring shutters**
- **Using thermal blinds or curtains**

http://www.underoneroof.scot/articles/1169/

Repairing Windows

Rotting parts of sashes - such as the bottom rails - can be replaced

Repairing Windows: replacing cills

Repairing Windows: draught proofing

Whole new sashes can be made

Timber sash and case

“Slim” double glazed panes can be inserted in existing sashes

Trickle ventilation to prevent condensation on glass

Replacement windows?

Poor installation – poor installation techniques. Use of existing frames can lead to frames coming loose, mastic falling out and increased draughts

PVC window replacement

Use of existing frames can also lead to considerable loss of daylight (and solar gain)
9.96 sq ft across whole bay

ADVICE AND GRANTS

Energy Savings Trust grants and loans
Potential measures include:

- Wall insulation
- Loft insulation
- Draught-proofing
- Central heating
- Renewable

https://www.energysavingtrust.org.uk