



WE ARE PASSIONATE ABOUT CREATING MODERN CONTEXTUAL ARCHITECTURE WHICH IS DRIVEN BY A COMMITMENT TO HOLISTIC SUSTAINABLE AND ETHICAL DESIGN.

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An architectural rendering of a modern, multi-story building with a prominent white gabled roof and large glass windows. The building is set in a lush, green landscape with various trees and flowering plants. In the foreground, a family consisting of an adult pushing a stroller and two children in white hooded raincoats are walking away from the viewer on a gravel path. The sky is overcast and grey.

THE BUILT ENVIRONMENT MUST SUIT THE VARYING NEEDS OF COMMUNITIES
FOR ALL TO LEARN, WORK AND PLAY TOGETHER.



THERE IS **DELIGHT** IN WORKING AT THE INTIMATE SCALE OF THE DOMESTIC HOME WHERE EVERY CONDITION AND NEED IS VARIED. THESE REQUIREMENTS SHOULD BE CHERISHED AND EXPLORED TO MAKE **HOMELY** AND **CHARACTERFUL SPACES**.



OUR LOCAL GEOGRAPHY AND LANDSCAPE ARE INSPIRATIONAL TO US. WE RESPOND TO THESE SITE SPECIFIC ENVIRONMENTAL CONDITIONS, CONNECTING PHYSICALLY TO THE IMMEDIATE TOPOGRAPHY AND ENGAGING WITH DISTANT VIEWS.



WE ACTIVELY SEEK PROJECTS WHICH CONCERN THE DESIGN OF SPACES WITH AN EMPHASIS ON **HEALTH, WELLBEING** AND THE **OUTDOORS**. PHYSICAL AND VISUAL CONNECTION TO OUTDOOR GREENSPACE IS THE IDEAL ENVIRONMENT FOR LEARNING, PLAY AND OUR HAPPINESS.



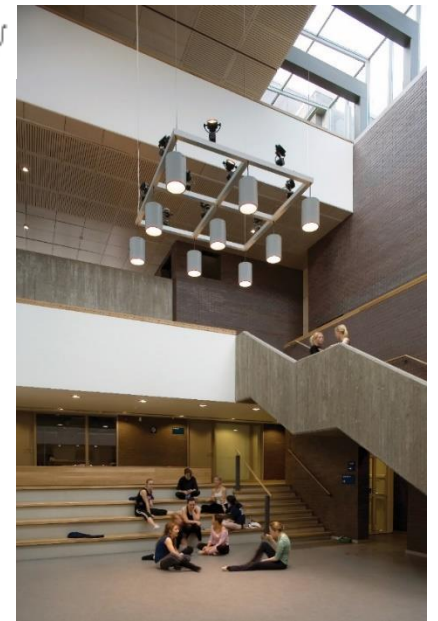
WE TAKE INSPIRATION FROM THE WONDERFUL **CRAFT** AND MATERIAL EVIDENT
IN OUR **HISTORIC BUILDINGS** AND LOOK TO CONSERVE, REPAIR AND RESPOND
TO THEIR JOYFUL CHARACTER.



RIBA 
AWARDS

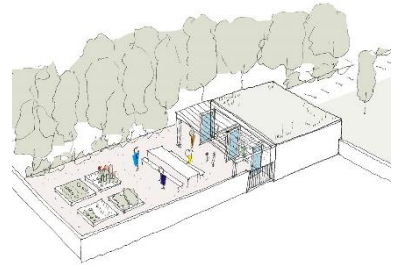
BREEAM[®]

OUTSTANDING





Edible Estates
Neighbourhood Growing
Hub



James Gillespie Primary Dining Feasibility



Dunedin School Feasibility



Broomieknowe

COMMUNITY + EDUCATION

CDAL



RESIDENTIAL

CDAL



Please Note: Approximate figures based on information supplied by: Bjarke Ingels Group, Kysthøjskolen Arkitektfirma, Copenhagen

	1900 Old City Area	2000 New City Area (Dense)	2000 New City Area (Low Density)	2000 New City Area II (Suburban Density)
Average Size of Households	4 Persons	1.8 Persons	2.0 Persons	2.2 Persons
Average Size of Dwelling Area per Resident	10m²	60m²	60m²	60m²
Number of Residents per 100m ² Built Space	10 Residents	1.7 Residents	1.7 Residents	1.7 Residents
Floor to Plot Ratio	2.0	1.8	0.25	0.1
Dwellings per Hectare	475 Dwellings/ha	166 Dwellings/ha	21 Dwellings/ha	8 Dwellings/ha
Number of Residents per Hectare	2000 Residents/ha	300 Residents/ha	42 Residents/ha	17 Residents/ha
Length of Roads & Paths per Hectare	200m/ha	230m/ha	350-500m/ha	460-700m/ha

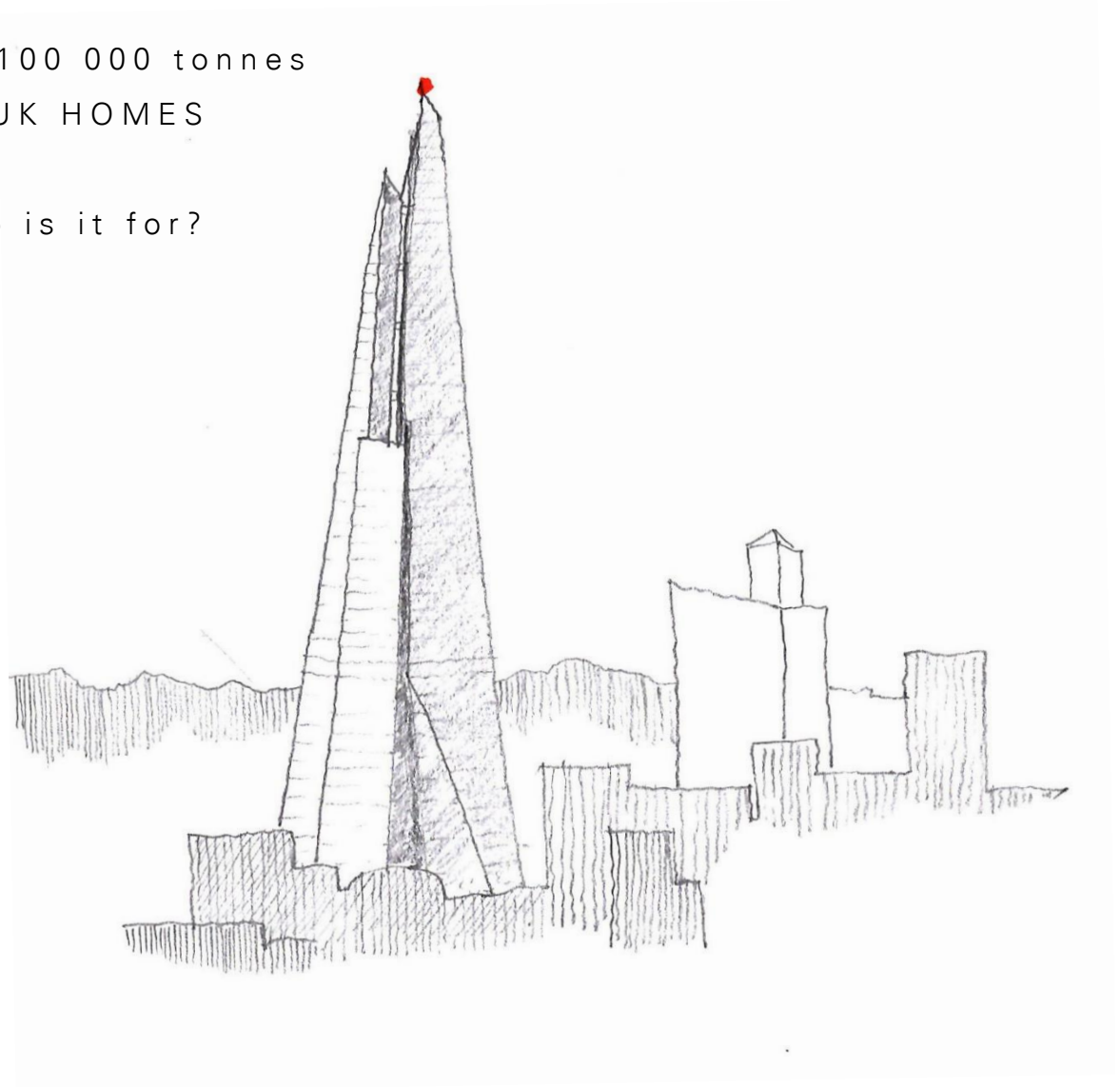
Importance of density



THE POINT OF THE SHARD

EMBODIED CARBON APPROX 100 000 tonnes
CO2 = 2000 AVERAGE SIZED UK HOMES

What are we building and who is it for?



Approximately 43,766 long-term empty homes in Scotland.

15,912 have been empty for anywhere between 6 and 12 months

27,584 have been empty for over 12 months.

Reasons include leasehold

- VAT on existing buildings
- Council tax exemption on empty properties
- Ratable value is of properties above shops are low, so shops prefer to maintain control even if empty where alteration to residential is costly give VAT



Approximately 25,000 second homes in Scotland



The Largest Passive House housing scheme in the UK
100 New homes
Fuel bills around £150/ year
15KWh/m2yr @ 20 degrees C



Goldsmith Street, Norwich



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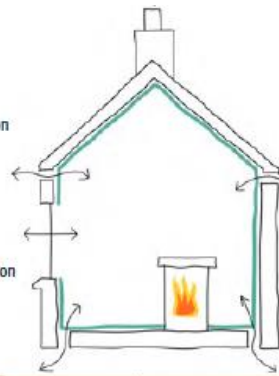


Goldsmith Street, Norwich

Changing Approaches to Building Performance

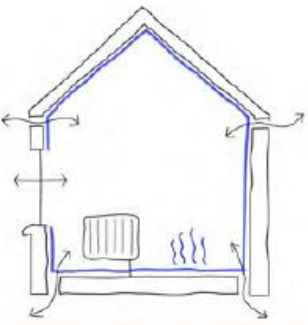
- natural material / insulation
- synthetic materials, offgassing & insulation
- synthetic materials, offgassing & insulation
- airtightness layer
- natural materials / insulation
- draughts
- ventilation (intentional)

> 1945



→ 1945

> 1970s



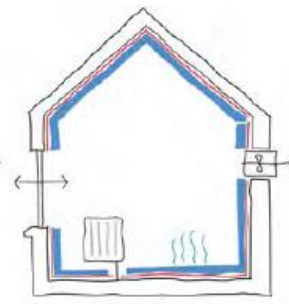
→ 1970s
+ synthetics

1980 - 2000



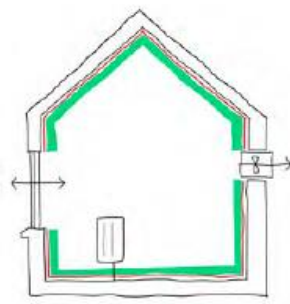
1980s - 2000s
+ insulation

2000 - 2020



2000 - 2020
+ airtightness

2020 >



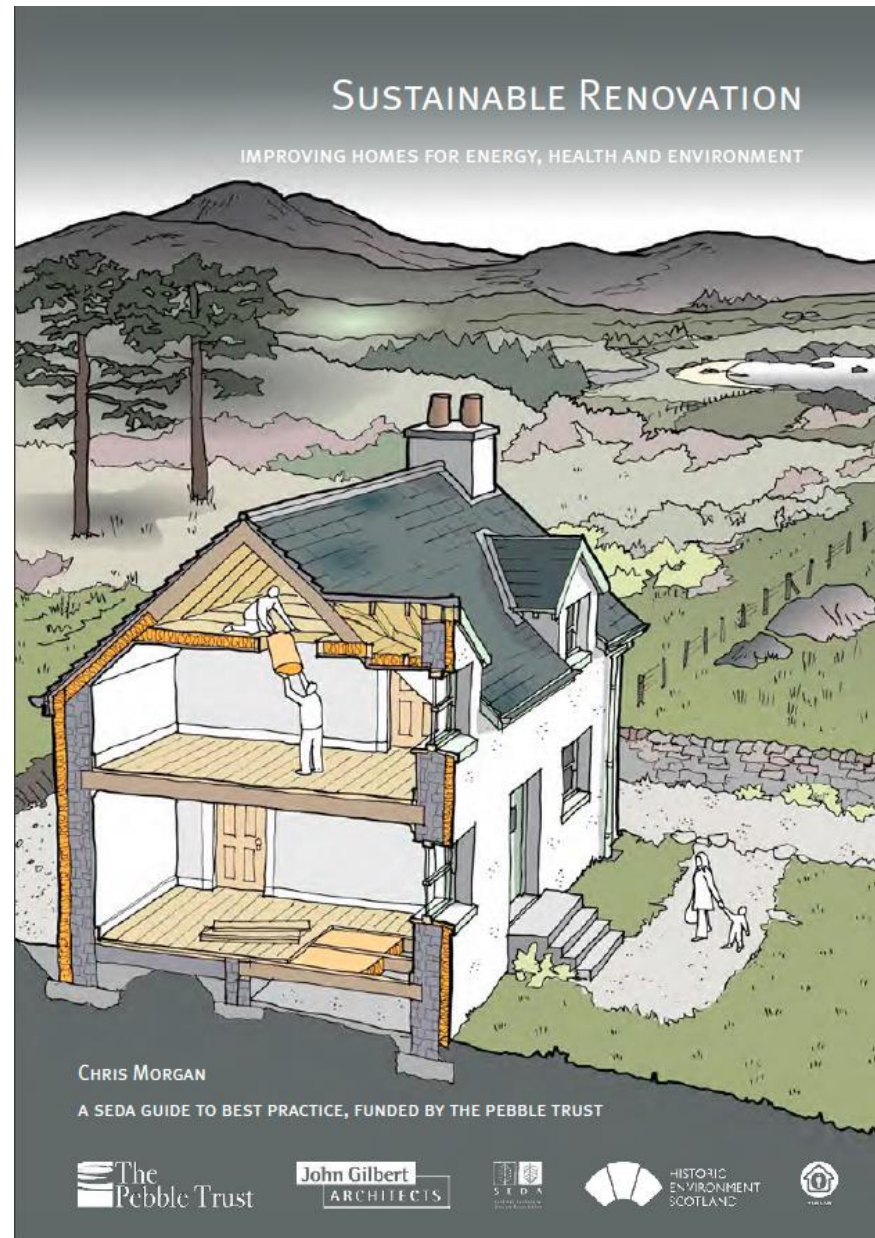
2020 →
+ ventilation
- toxicity

TEMPERATURE	COLD	COLD	WARMER	WARM	WARM
AIR MOVEMENT	DRAUGHTY	DRAUGHTY	STILL DRAUGHTY	AIRTIGHT	AIRTIGHT
INDOOR AIR QUALITY (IAQ)	GOOD IAQ	POOR IAQ	POOR IAQ	POOR IAQ	GOOD IAQ
COST TO HEAT	£££	£££	££	£	£
MATERIALS / FINISHES	NATURAL	SYNTHETIC	SYNTHETIC	SYNTHETIC	NATURAL
DURABILITY	ROBUST	LESS ROBUST	LESS ROBUST	NOT ROBUST	ROBUST

Passive House
£2.80/ wk heating
15 kWh/ m2yr @
20 degrees C
0.6 m3/hr @ 50 Pa

EnerPHit
20 kWh/ m2yr @
20 degrees C
1 m3/hr @ 50 Pa

So in this context,
what should we do...

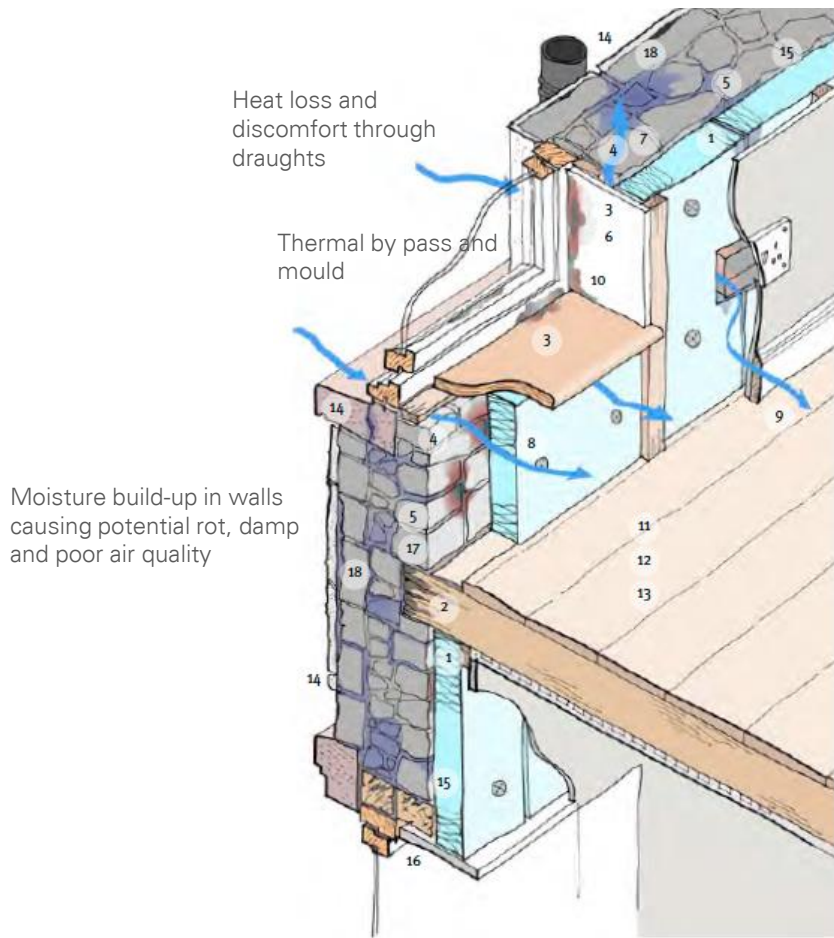


Sustainable Renovation: The Pebble Trust

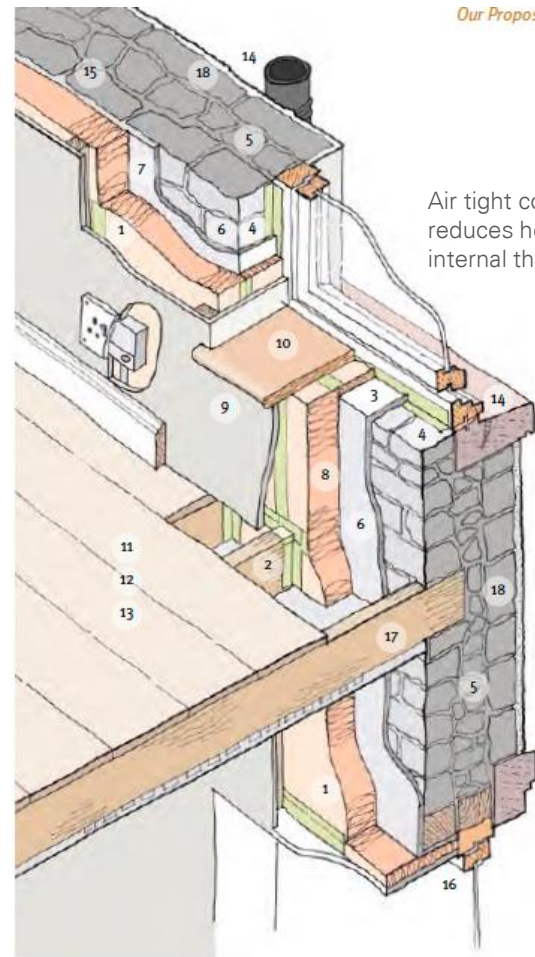
www.thepebbletrust.org

RETROFIT

CDAL



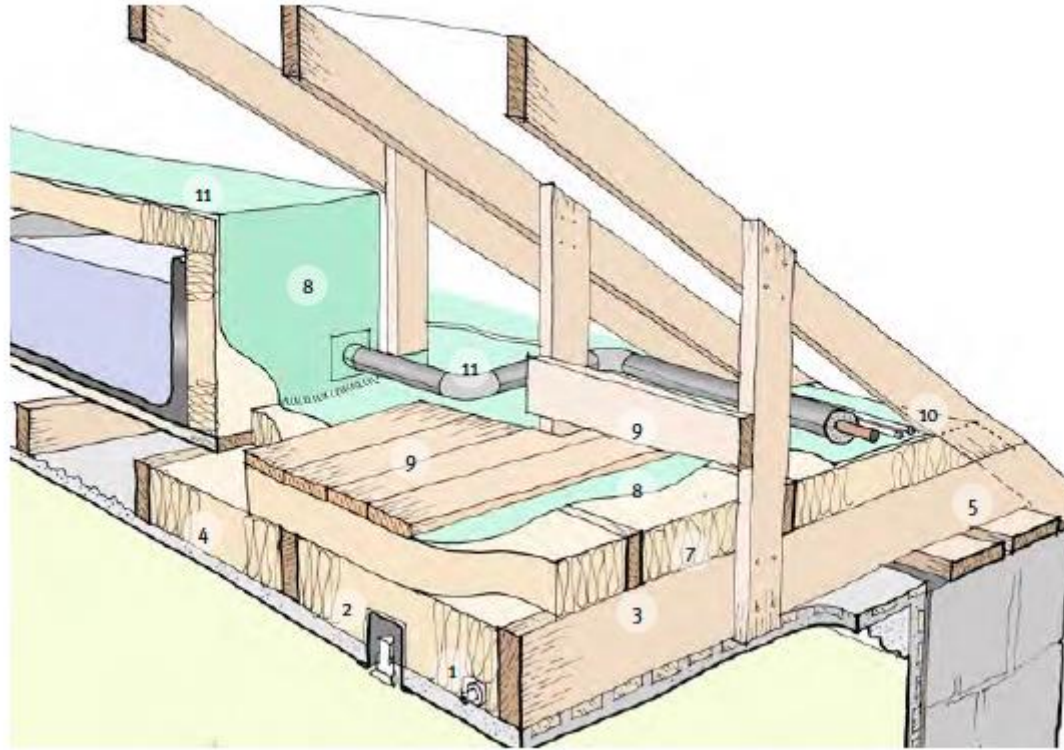
Common issues with conventional internal insulation



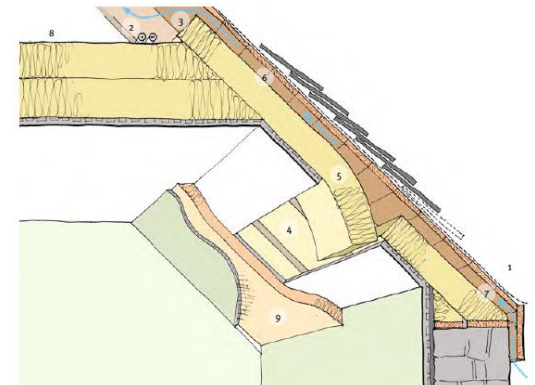
Good practice internal insulation

Overall better insulation and 'cosy-ness'

Wall Insulation and Air Tightness



Cold roof insulation and Air Tightness

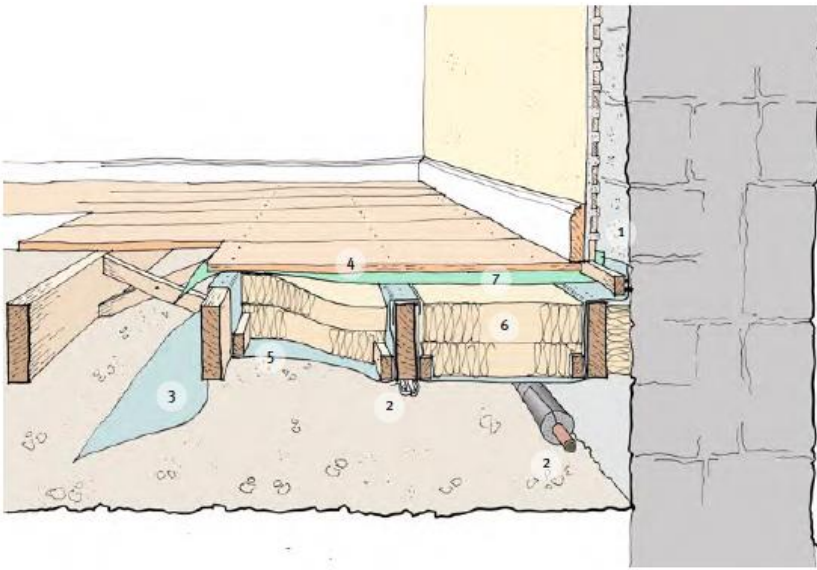


Maintaining good ventilation of roof space

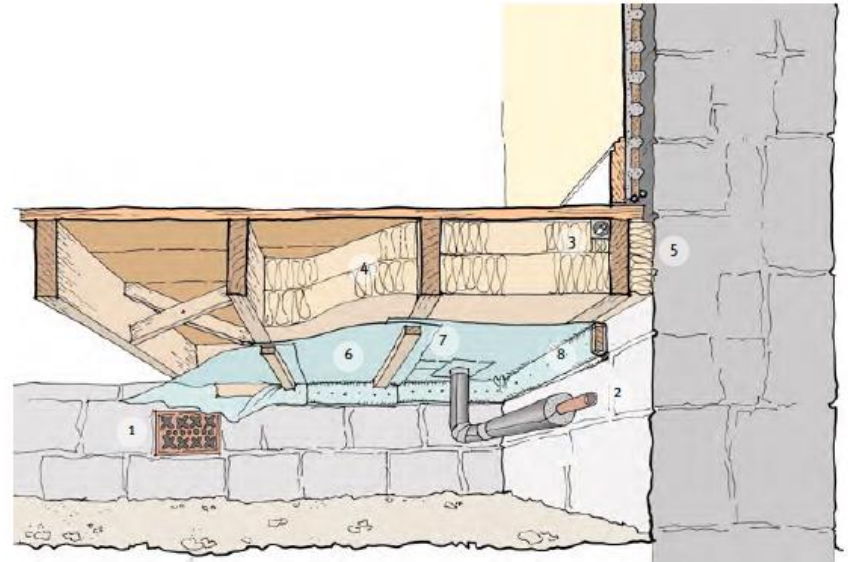
Roof Insulation and Air Tightness

RETROFIT

CDAL

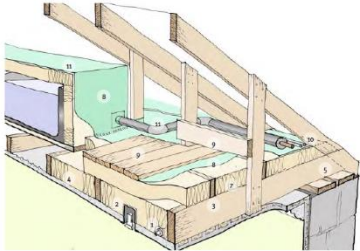
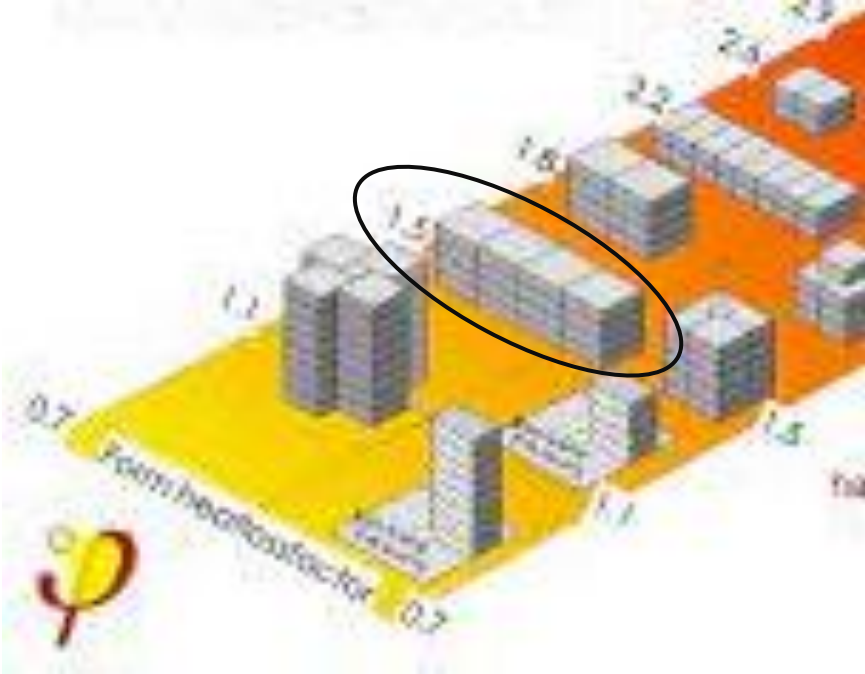


Insulated and Airtight Floor construction
(installed from above)



Insulated and Airtight Floor construction
(installed from below)

Neighbourhood Test Project to retrofit to an EnerPHit standard.....



TAKE AWAYS

- **Don't panic.**
- **Better to do a little well, than a lot which expends carbon and causes damage.**
- **Always fabric first**
- **Prioritise improvements and consider in context of the likely benefits**
- **Think wholistically and tackle improvements while making other changes or repairs and consider existing lifespan of finishes, fittings of boilers.**
- **Air tight - ventilate right**
- **Vapour open construction – just like out historic fabric – but less leaky**
- **A continuous extract vent is more efficient and removes moisture more effectively**
- **Turning your thermostat down 1 degree can equate to a 10% decrease in consumption**
- **Being aware and affecting change on VAT as well as the need for investment in good affordable housing**