



Reference	YHB-102	RC / Version		V1
Address:	[REDACTED]			
Date:	14/09/2023	Reviewed		

Tailored Requirements:

Project Overview and Responsibilities

This document is to help inform all contractors about the complete range of retrofit measures proposed for this property.

For the purpose of quoting, please refer to the specific Building Performance Requirement for each measure that has been sent to you.

PACKAGE OF RETROFIT MEASURES

- Loft / Room in Roof insulation
- Suspended floor / cellar insulation

TIMEFRAME

ASAP

FRONT ELEVATION



PARKING / ACCESS

Parking for 1-2 vehicles on drive in front of the house. Street parking is unrestricted.
No permits required.

PROPERTY OVERVIEW

- Semi-detached house, built in the 1920's.
- House is in a conservation area.
- The following construction elements have been identified during the survey:
 - Solid walls (260mm) – uninsulated.
 - Suspended floor over cellar and void – uninsulated.
 - Pitched roof insulated at joist level with 200mm of mineral wool (void).
 - Roof room with limited insulation
- The windows are a mix of single and double glazing.
- There is one main heating system, a new condensing standard gas boiler which is 89% efficient with an insulated cylinder and full controls.

IMPORTANT INFORMATION FOR THE CLIENT

Include in this section anything that the client needs to action themselves or be made expressly aware of e.g., the need to obtain:

- a party wall agreement
- planning permission
- building control sign off.

If the client chooses not to comply with our ventilation recommendations then it should be flagged up here.

SEQUENCE OF INSTALLATION

Preliminary guide subject to client/contractor agreement

Measure	Order of works								
1	Loft / RIR insulation								
2	Suspended floor insulation								
Independent			Concurrent			Sequenced			

RELEVANT STANDARDS

Quotes and design should refer and adhere to applicable product specification and/or detail and: [Approved Document L, Conservation of fuel and power, Volume 1: Dwellings](#)

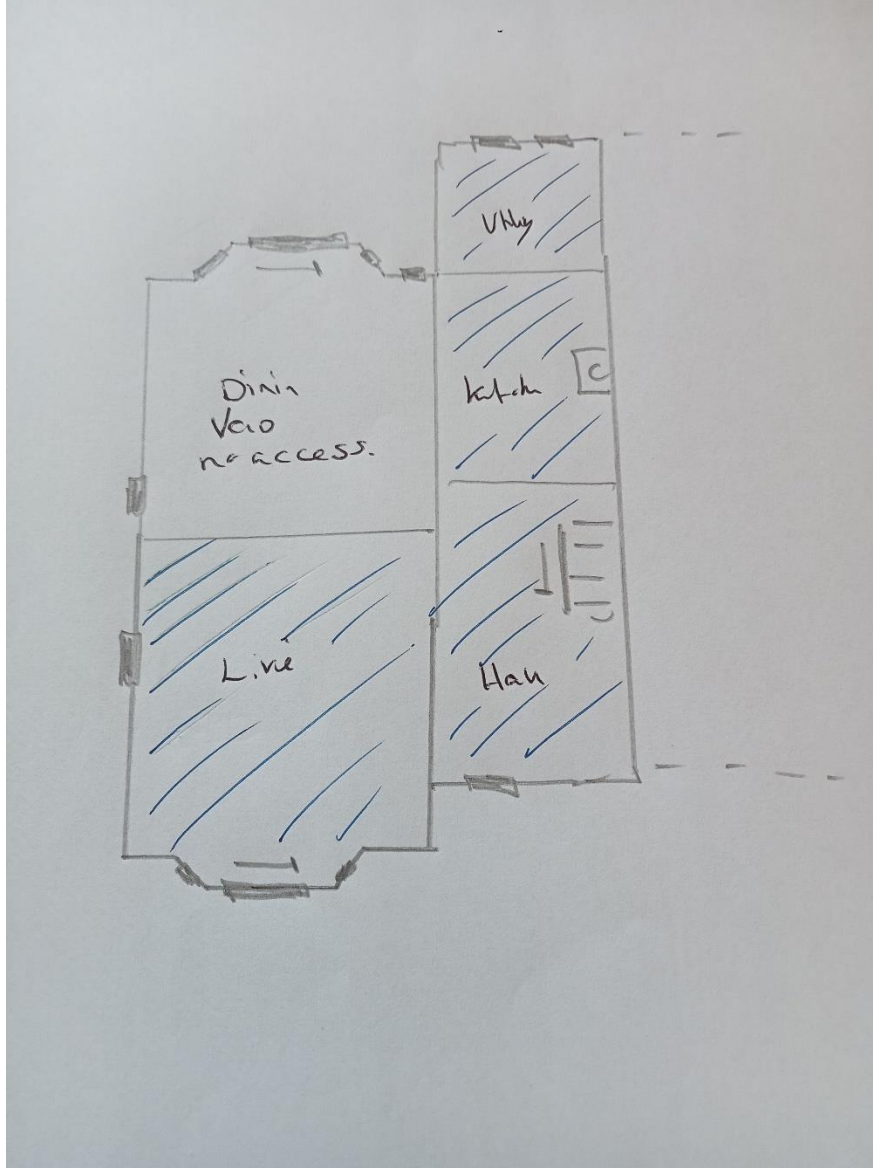
RESPONSIBILITIES

Retrofit Assessor	██████████
Retrofit Coordinator (WHP)	N/A
Retrofit Coordinator (BPR)	██████████
Retrofit Coordinator (Installs)	TBC
Retrofit Designer	N/A

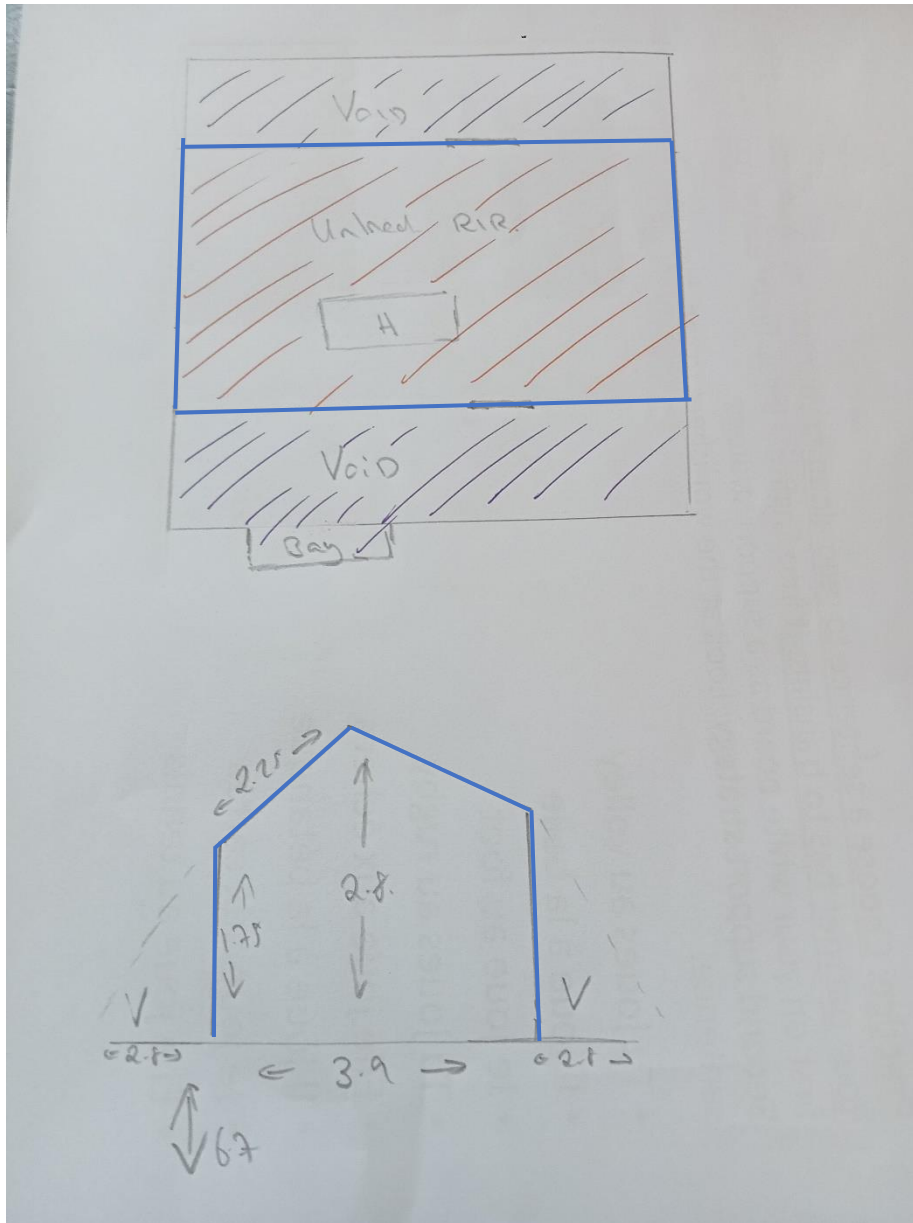
Works design responsibility	Contractor
Principal Designer (CDM)	RetrofitWorks
Principal Contractor (CDM)	TBD

FLOOR PLANS





Ground Floor: All planned measures



Loft / RIR: All planned measures



Floorplan Key

	Suspended floor insulation
	Loft insulation - below boards
	Loft void insulation
	RIR insulation

EXTERNAL PHOTOS AND AERIAL VIEW

Front Elevation - northeast



Rear Elevation - southwest



Side Elevation – southeast



Aerial view



TARGET U-VALUES

Renovated and retained elements

4.11 The **U-value** of an existing **thermal element** that is being renovated should both:

- a. be no worse than that of the element before it was renovated
- b. meet the limiting standards in Table 4.3.

4.13 If achieving the **U-value** in Table 4.3, column (b) either:

- a. is not technically or functionally feasible or
- b. would not achieve a **simple payback** of 15 years or less

then the element should be upgraded to the lowest **U-value** that both:

- a. is technically and functionally feasible and
- b. can achieve a **simple payback** not exceeding 15 years.

Generally, a **thermal element** once upgraded should not have a **U-value** greater than $0.7\text{W}/(\text{m}^2\cdot\text{K})$. A lesser standard for the **thermal element** may be acceptable where work complies with Part C of the Building Regulations on protection from the harmful effects of interstitial and surface condensation.

When renovating **thermal elements**, the work should comply with all the requirements in Schedule 1, but particular attention should be paid to Parts B, C, F and J.

Table 4.3 Limiting U-values for existing elements in existing dwellings

Element	U-value ¹ W/(m ² ·K)	
	(a) Threshold	(b) Improved
Roof ⁽²⁾⁽³⁾⁽⁴⁾	0.35	0.16
Wall – cavity insulation ⁽²⁾⁽⁵⁾	0.70	0.55
Wall – internal or external insulation ⁽²⁾⁽⁶⁾	0.70	0.30
Floor ⁽⁷⁾⁽⁸⁾	0.70	0.25

NOTES:

1. Area-weighted average values.
2. For dormer windows, 'roof' includes the roof parts of the windows and 'wall' includes the wall parts (cheeks).
3. If meeting such a standard would limit head room, a lesser standard may be appropriate. In such cases, both of the following should be achieved.
 - a. The depth of the insulation plus any required air gap should be at least to the depth of the rafters.
 - b. The insulant should be chosen to achieve the lowest practicable U-value.
4. If there are problems with the load-bearing capacity of the frame or height of the upstand, for a flat roof or roof with integral insulation, a lesser standard may be appropriate.
5. This applies only to a wall that is suitable for cavity insulation. Where this is not the case, it should be treated as 'wall – internal or external insulation'.
6. If meeting such a standard would reduce the internal floor area of the room bounded by the wall by more than 5%, a lesser standard may be appropriate.
7. The U-value of the floor of an extension may be calculated using the exposed perimeter and floor area of the whole enlarged dwelling.
8. If meeting such a standard would create significant problems in relation to adjoining floor levels, a lesser standard may be appropriate.

		date
ref	YHB 100	
RC		14/09/2023
Reviewed		
Address:	1150	

loft insulation – joist level

The purpose of this document is to provide sufficient information to enable contractors to quote for works.

Other works being carried out on the property are:

	Suspended floor insulation	

DESCRIPTION OF WORKS

Option 1 – Lift roof room floorboards, insulate whole area to 400mm at ceiling joist level and replace boarding on legs.

Option 2 – Increase void insulation to 400mm, insulate stud walls and sloping ceilings with 100mm wood fibre insulation. Internal wall insulation to gable wall and party wall with 100mm wood fibre insulation.

AREAS TO BE INSULATED

	Elevation	notes
1	Main loft area	
2	Loft void / bay area.	
3	Loft hatch	

site specific information, not covered below

- Loft currently partially insulated, unheated store area – void area, knee walls and sloping ceilings.
- Proposal to either lift roof room floor and increase insulation at ceiling joist level, or to improve the insulation levels of the knee walls and sloping ceilings with wood fibre insulation. Client undecided.

INTERFACE WITH OTHER MEASURES

No interface.

DETAILS FOR DESIGN AND QUOTE PREPARATION – Option 1.	YHB data	notes	Notes/answers contractor
Insulation			
Current depth mm	200mm void / 100mm below boards.		
Requires depth mm	400		
Requires top up depth mm	200 – 300mm		
Existing insulation material	Mineral wool		
Quality of existing material	Satisfactory / poor under boards.		
% requiring attention	100% of loft area		
Any additional areas requiring attention	No		
% requiring insulation	100% of main loft		
New insulation material	Mineral wool		
Prefer λ value	0.032 W/mK		
Ventilation and membranes			
How is the loft ventilated? Eaves, ridge, tile vents?	Eaves		
Existing roof membrane?	Non-breathable membrane		
Is there evidence of condensation?	No		
If yes describe			
Boarding			
Currently boarded	Yes		

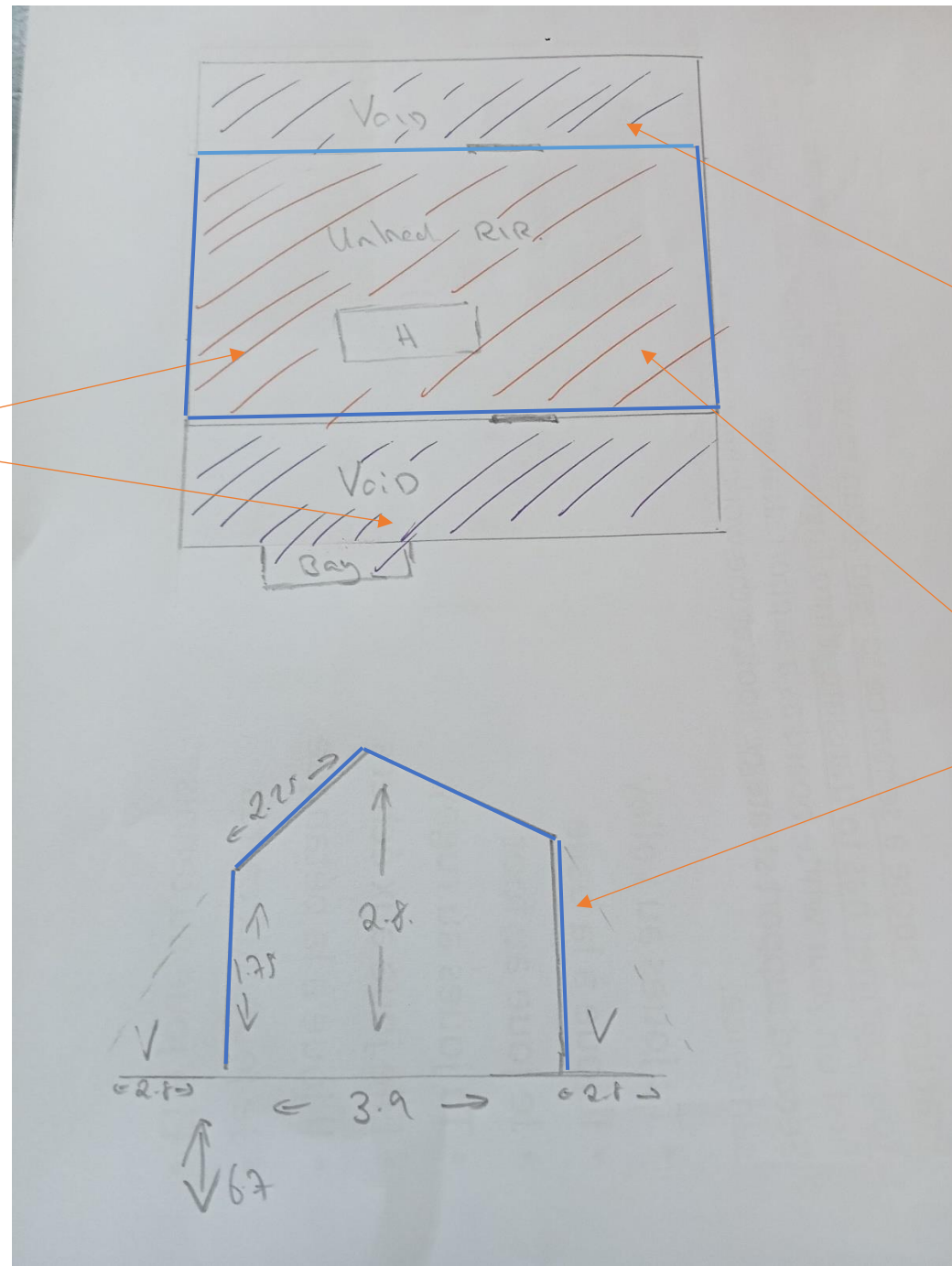
Existing boarding area m ²	26m ²		
Gap between boarding and ceiling below	100mm		
Remove existing boards	Yes		
Is new boarding required	Relay existing		
Proposed new boarding m ²	26m ²		

Hatch			
Ceiling type	Lath and plaster / plasterboard		
Existing hatch present	Yes		
Existing hatch type with or without ladder	ladder	Adequate for access	
Location	Landing	Is access safe	
Does existing hatch need insulating and draught proofing?	Yes		
New hatch	No		
New hatch type			
Proposed hatch size mm			
Location			
Electrical and ventilation			
Thermal hoods for downlights (No.)	Yes – bathroom X5		
Ventilation ducting	None		
Other electrical equipment present	None observed		
Electrical cables present – identify high amperage	None observed		
Has electrician been consulted	No		
Additional works required	None		
Plumbing and heating			
Any water or heating equipment	None observed		
Any flues	None observed		
Any further insulation required (tanks or pipework)	No		
Approx length of pipework to be lagged			
Other			
Cold bridge mitigation at eaves	N/A	Contractor proposal	
Rafter trays needed	Yes	Contractor proposal	
Evidence of protected species (bats / birds)	No		
Evidence of pests (squirrels, mice, wasps, bees)	No		
Loft excessively dirty (extra PPE required)	Yes, below boards		
Clearance of goods	Yes – by client		
Additional works			

Floor plan - loft

Option 1:
Insulate
below
roof room
floor.

Floorboards
to be lifted,
insulation
added to
400mm and
boards
relayed on
legs.






Option 2:
Roof room
to be
insulated.

Void areas
to be
topped up
to 400mm.

Stud walls,
sloping
ceilings,
gable walls
and party
walls to be
insulated
with
100mm
wood fibre
insulation.

Key

	Loft area below boards - 400mm (option 1).
	Void areas to be topped up to 400mm (option 1 and 2).
	Stud walls, sloping ceilings, gable walls and party walls – 100mm wood fibre insulation (option 2).

Supporting Photos:

Loft hatch



Loft hatch and ladder from landing.



Option 1: Existing floorboards and banister removed and reinstated after works.



Existing hatch uninsulated and no draught proofing.
New hatch required.

Void area



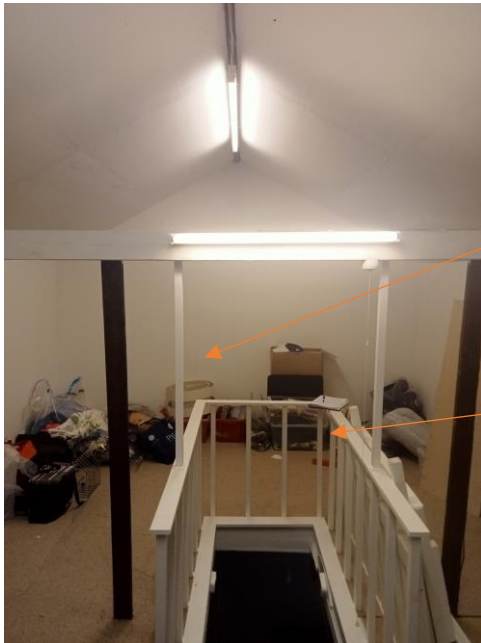
Access to void areas via 2 access hatches.



Increase void insulation from 200mm to 400mm (some rolls of insulation available).

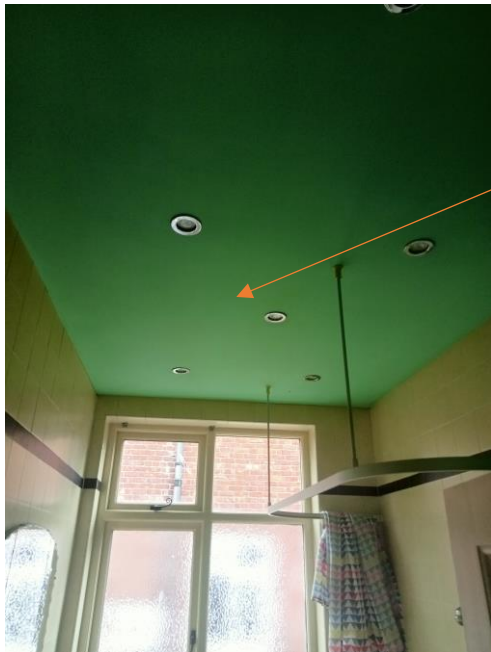
Non breathable membrane, ensure ventilation at eaves.

Option 1 – Insulate at ceiling joist.



Loft floor to be lifted, 400mm of insulation added and floor relayed on legs.

Banister removed and reinstated after works.



Spotlights in bathroom – thermal hoods required X5.

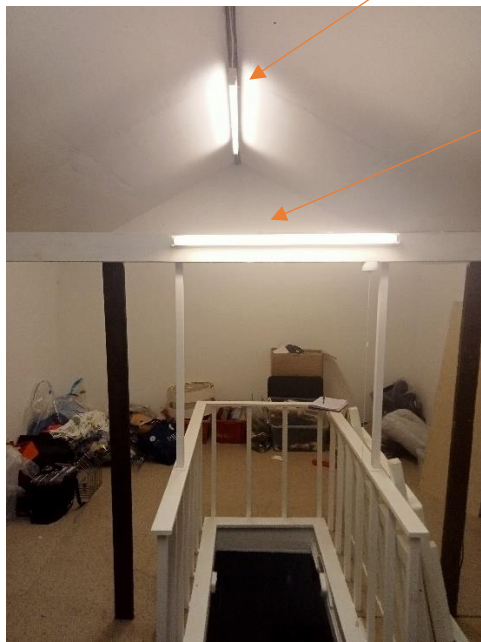
Option 2 – Roof room insulation.



Stud walls and ceilings to be removed, insulated between and over rafters with 100mm wood fibre insulation, reboarded and plastered.

2 strip lights to be removed and reinstated after works. Switch on timber cross beam.

Gable wall and party wall to have internal wall insulation applied – 100mm wood fibre.



1 power socket on timber cross beam.



Existing insulation to stud walls and sloping ceilings. 1 layer of foil insulation roll.

TARGET U-VALUES

Must comply with Approved Document L, Limiting U-value (table 4.3 p26) for roofs is 0.16 W/m²K. We recommend aiming at 0.1 W/m²K - 400mm as this is an easily achieved improvement at minimal cost.

RELEVANT STANDARDS AND CERTIFICATION

Quotes and design should refer and adhere to:

- Building Regulations Part L Vol 1(a), Part C and Approved Document 7 Materials and workmanship. Refer to Part L1B table A1.
- RetrofitWorks 05 Loft Insulation at Joists Standard Requirements.

Refer to applicable product specification and/or detail as part of your quote.

SCOPE OF WORK

- Pre-installation work – prepare site. Ensure the electrical connections are sound and wiring fixed securely to joists.
- dispose of all waste arising
- consult electrician if high load electric cables are likely to be buried under insulation, e.g. shower supply, PV, if ring main ensure breaker is appropriate for max load of cable when enclosed
- Report any electrical/gas/water services that are obstructing your installation or require attention.
- If the existing insulation is patchy then ensure that there is even coverage before applying the new layers of insulation.
- remove loose debris where excessive (>10mm thick) from ceiling
- If there is evidence of condensation within the loft then check ventilation pathways are present and clear.
- If eaves are ventilated ensure existing or new loft roll do not block pathway. Notify retrofit co-ordinator if resulting insulation thickness <100mm.
- check for obvious air infiltration from room below and notify if present.
- install plywood sleeve round loft hatch to depth of loft roll to prevent loft roll obstructing entry
- install pipe insulation round exposed cold water pipes to prevent condensation
- If the loft is ventilated via the eaves then ensure that the new insulation does not block the ventilation pathway.
- Supply & install all items as listed in table above.

RETROFIT DESIGN

By Contractor unless otherwise agreed

Design Risk Assessment to be provided by contractor and submitted to RC prior to start on site.

IMPORTANT INFORMATION FOR THE CLIENT

The loft must be cleared of all storage prior to the contractors arriving on site, unless otherwise agreed with the contractor

		date
ref		
RC	Tim Fooks	16/09/2023
Reviewed		
Address:	115 College Road, Manchester, M16 0AE	

Suspended Floor Insulation

The purpose of this document is to provide sufficient information to enable contractors to quote for works.

Other works being carried out on the property are:

	Loft / RIR insulation	

DESCRIPTION OF WORKS

Insulate the cellar ceiling / suspended floor from below.

AREAS TO BE INSULATED

	Elevation	notes
1	Living room	Utility
2	Kitchen	
3	Hall	
4	WC	

DETAILS FOR DESIGN AND QUOTE PREPARATION

	YHB data	Notes	notes/answers from contractor
Listed	No - conservation area		
Accessibility	Cellar accessed via door and stairs. Internally and externally	for vehicles, operatives, scaffolding etc	
House type	1920 Semidetached house		
existing floor types, (type & room if >1)	suspended timber		
above cellar or underfloor void	Cellar		
subfloor condition/type	Cellar – fair – can flood		
approx floor joist size	50x175m approx	tbc by contractor	number mm
distance from underside of floor boards to ground	2000mm	tbc by contractor	number mm
number of air-bricks	Front 2 Rear 1 Undercroft 3 Manual extractor fan		
are the airbricks clear both sides	Cellar – clear Undercroft – unknown		

site specific information, not covered below

- The client wants to insulate the floor between the cellar and the ground floor.
- They have enquired about spraying foam insulation into the void. We would advise against this as current moisture levels in the timbers cannot be assessed, even coverage of the insulation cannot be guaranteed resulting in cold spots, and a breathable insulation material should be used.
- The cellar ceiling has the original lath and plaster which is in a relatively poor condition, so this is a great opportunity to remove the ceiling and insulate the suspended floors from below, 200mm of high-performance glass wool such as Knauf Frametherm 32 between the joists will give a U-value of 0.2 W/m².K. The 32 denotes the λ-value for thermal conductivity.
- The cellar is beneath the front and party side rooms. There is an undercroft below the back dining room with no access at present. An access hatch could be created in the cellar wall to allow this area to also be insulated from below.
- It is not known how deep this void is nor the moisture levels.
- The door into the cellar will want to be draught sealed to prevent the cold potentially moist air entering the house in an unmanaged way.
- Additional ventilation will be required, new air bricks to the outside and cross ventilation between the cellar and the undercroft.

INTERFACE WITH OTHER MEASURES

None

is additional UF ventilation needed	Yes – additional external air bricks and cross ventilation.	confirm?	describe
Target u-value – see section below	0.2 W/m2.K	exemption if required:	describe
Proposed insulation material	High performance glass wool or wood fibre.	tbc by installer	number
λ value	0.032W/mk		
proposed depth of insulation	200mm	2 layers or 1	describe
adequate access to work from beneath	Yes	confirmation re access + H&S	yes/no/?
size of existing floor hatches	N/A – Cellar doors	are more hatches needed?	describe
cellar ceiling finish	Discuss with client.		
existing floor finish	Timber boards	proposed product	describe
retention, reinstatement or replacement	Retain	agree with client	
Is there evidence of damp?	Some damp in cellar – prone to flooding	work cannot proceed >20%	
assumed cause, local or overall	Flooding during heavy rain		
moisture content of timbers			
mitigation required	Ensure adequate ventilation.	confirm if proposed	describe
Ground/floor			
Ground floor type	Timber boards.		
ground type abutting floors to be insulated	Slabs		
internal floor level (IFL) above ground	550mm	will 300mm splash zone overlap EWI?	
EWI distance carried past IFL	N/A		
ELEMENTS requiring attention either for thermal bridging or other detailing			
bay window	Gas / electric meters		
Boiler/ cylinder / pipework	WC waste plumbing		
SUPPORTING PHOTOS			
			describe/insert/link

OBSTRUCTIONS ON FLOORS	INSULATION WILL BE APPLIED					
WHERE	Number	notes	retain/reinstate	remove	relocate	notes
radiators & circulation pipework	3	Living room / hall / kitchen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	describe
utility cables in void	yes	Electric meter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	describe
shared water main			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	describe
hearths		Living room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	describe
Boiler / cylinder / pipework			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	describe
airbricks	3		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	describe
Gas meter	1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	describe
Waste pipes for WC	1					
Extractor fan	1	Manual				

TARGET U-VALUES

Must comply with Approved Document L, Limiting U-value (table 4.3 p26) for floors is 0.25 W/m2K. If meeting such a standard would create significant problems in relation to adjoining floor levels, a lesser standard may be appropriate. We recommend treating 0.25 W/m2K as a minimum as underfloor insulation depths can usually easily be achieved. and aiming at 0.2 W/m2.K

Notes

Utility providers must be consulted if relocation of utility inlets or meters is being considered.
Owners of telecoms cable must be consulted before any work is done to them.
Electrician advice must be sought if external cabling is present. It is possible it can be left as is as long as circuit trip is sufficiently below cable capacity to prevent overheating.

RELEVANT STANDARDS AND CERTIFICATION

- BBA or CE approval
- 7-year installation warranty
- Optional insurance backed guarantee.
- Building Regulations parts C & L1
- BS5250

SCOPE OF WORK

Note this is a summary of the scope. For a detailed requirements please refer to:

[BEIS Guide to Best Practice Retrofit Floor Insulation - Suspended Timber Floors](#)

The following links provide step-by-step guidance to best practice suspended timber floor insulation:

<https://www.ecologicalbuildingsystems.com/post/best-practice-approach-insulating-suspended-timber-floors>

<https://www.ecologicalbuildingsystems.com/post/suspended-timber-floor-insulation-best-practice-installation-guide>

<https://www.ecologicalbuildingsystems.com/post/suspended-timber-floor-insulation-installation-underneath>

CARRY OUT:

- The contractor is to visit the property in order to quote unless otherwise agreed. This will enable measuring up and identification of elements that will vary the price from the standard assumptions used in the WHP. These should be listed as part of the quote.

REVIEW - CONSULT WITH RETROFIT CO-ORDINATOR

- Check conditions in the sub-floor area. Check that joists and wall plates are sound, dry, and free from rot and infestation especially at the abutment with external walls. The moisture content of the timbers should be below 20%. Carry out any structural repairs, as required.
- If the walls are damp, the option of mounting the joists on hangers to reduce the risk of timber rot in the future should be considered.
- Contractor to confirm that cross-ventilation to the underfloor area is in compliance with Building Regulations Part C and BS5250 and the existing vents provide no less than 1500mm²/lm of external wall or 500mm²/m² floor area whichever is greater. If insufficient cross ventilation area is available, then additional vents should be installed to achieve adequate ventilation. Swan neck periscope tubes are an option if airbricks are going to be enclosed in the insulations.
- Agree with YHB and the client the thickness, type, and method of insulation

STRIP OUT

If insulating from below:

- remove any perishable debris and any debris that might affect airflow or safe access for installation.
- If additional cross vents are required these should be installed.
- Ensure existing ventilation bricks are clear inside and outside.
- Ensure all electric cables are sound; if needed cable tied or cable clipped to floor joists so as to be below the insulation • If cables are too short to sit below the new insulation consult an electrician as to cable load capacity and likely temperatures.
- If necessary, consult with retrofit co-ordinator and client.
- Ensure any pipework (incoming water pipes, heating distribution pipes and condensate pipes) are lagged with 50mm of new foam tube insulation e.g., Tubolit or similar. Corners and junctions should be mitred and taped. Gas pipes should not be insulated.

If insulating from above,

- remove existing carpet and timber floorboards and either dispose of or retain for reinstatement.
- Remove as required and set aside for reuse where in good condition: • Skirting boards and trims.
- Built in storage.
- Radiators and pipework.
- Floor sockets and electrical fittings.
- Ensure the tops of joists are clean and free of nails and screws etc.

INSULATE

- Prepare surfaces to take insulation.
- Install an airtight vapour permeable membrane, as agreed with retrofit co-ordinator, to underside of floorboards ensure airtightness layer is continuous with all penetrations treated.
- if walls abutting insulation are damp then use carry membrane or paint on VCL onto wall to act as capillary break • The perimeter gap between the last joist and the wall must be fully insulated with no gaps.

FINISH

- reinstate where previously agreed with customer.
- Remove any waste from site and recycle where possible and leave a clear and clean site.

RETROFIT DESIGN

By Contractor unless otherwise agreed

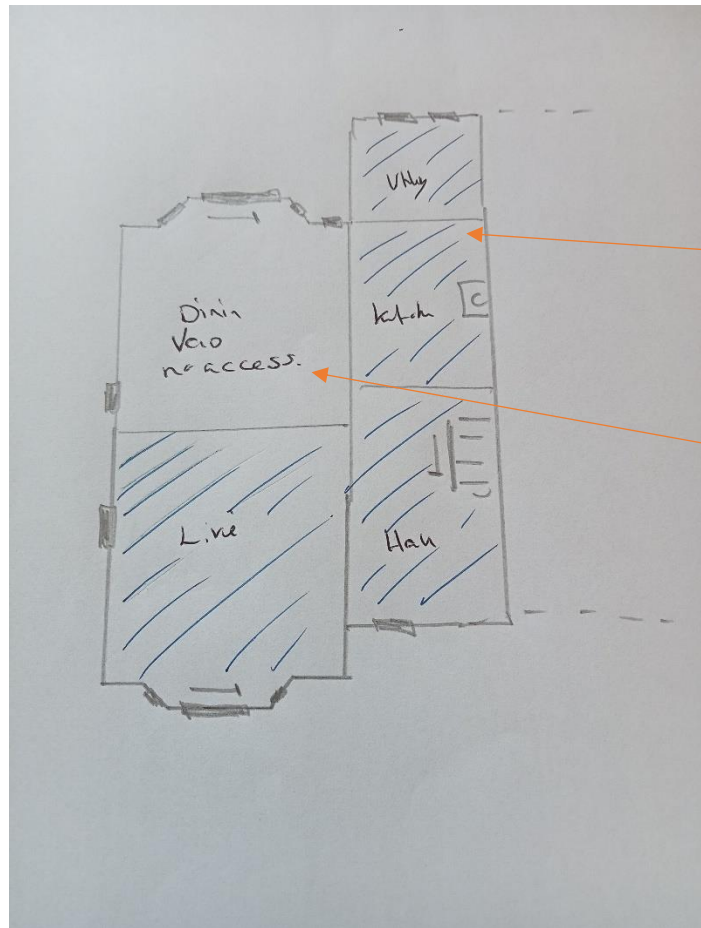
Design Risk Assessment to be provided by contractor and submitted to RC prior to start on site.

IMPORTANT INFORMATION FOR THE CLIENT

- It is the responsibility of the client to clear the relevant spaces prior to the contractors' arrival. Cellars will need to be cleared if insulating from below if from above then emptying relevant bookshelves and cupboards.

Floor Plans

Ground floor



Suspended floor above cellar to be insulated from below.

Void under dining room currently inaccessible.

Key



Cellar insulation

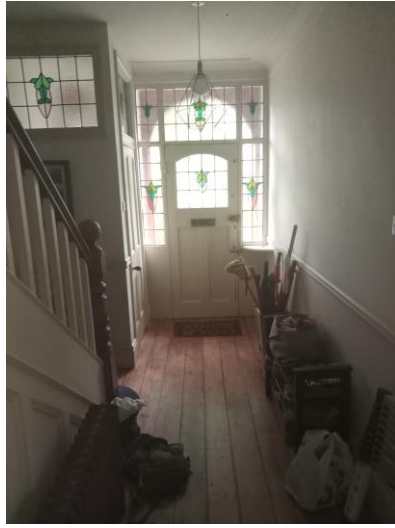
Supporting Photos



Door to cellar. Requires insulating and draught proofing.



External rear door to cellar - access for waste and materials.



Hall, Living room, WC, Kitchen and Utility floors to be insulated.



Hearth in living room.



Gas / electric meters.



Waste pipes from ground floor WC – need boxing in and insulating.

Strip lights to be reinstated.



Timber framed, single glazed side windows.



Lath and plaster ceiling to be removed, insulated, and reboarded.

All pipework to be insulated.



Extractor fan – manually operated by switch.



Gas boiler and cylinder – all pipework to be insulated.



Boiler flue.

Rear air brick to cellar.



Front air bricks to cellar. (X2)



Air bricks to suspended floor (dining room). 1 on bay, 2 on side wall.