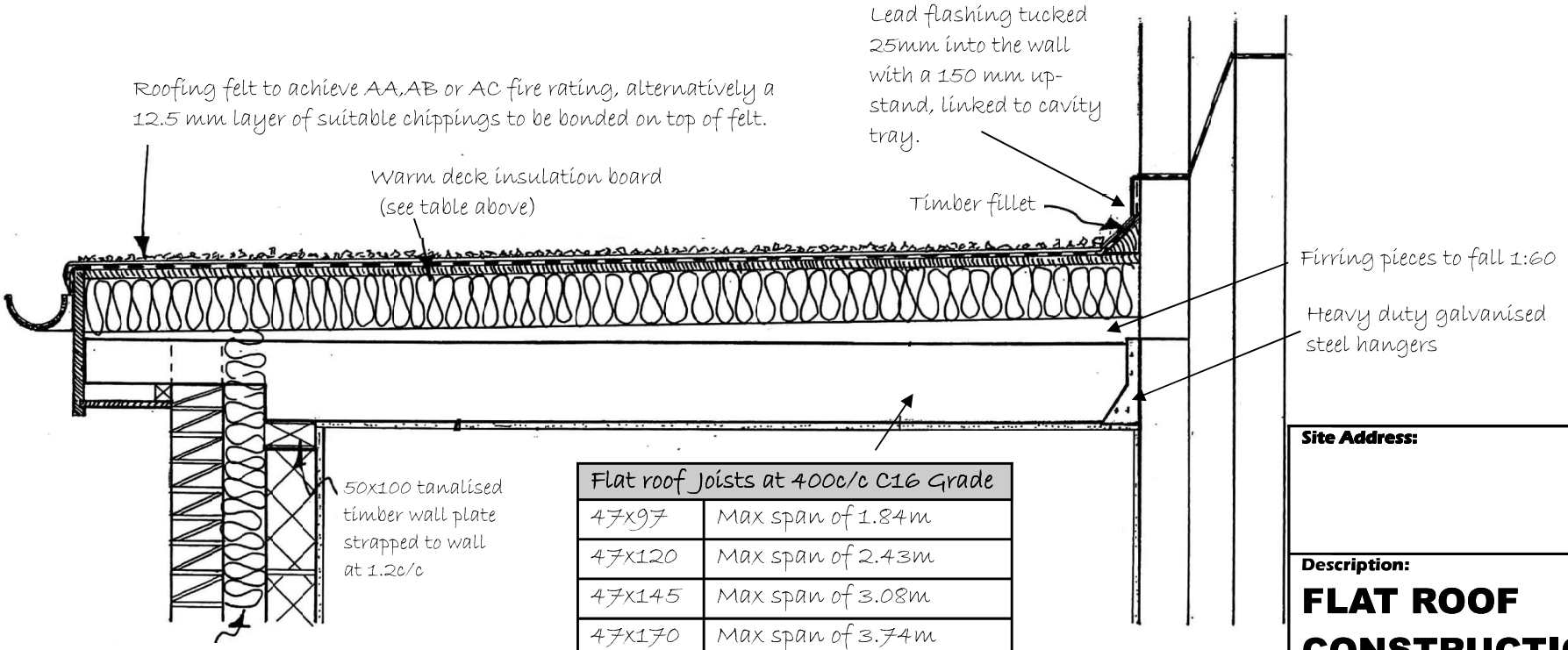
INSULATION OPTIONS

Celotex Tempcheck Deck (composite deck)	126
Celotex Extra-R XR4000	120
Kingspan Thermaroof TR31 (composite deck)	96 plus 30 Kingspan TP10 between and directly under joists
Kingspan Thermaroof TR31 (composite deck)	126
Kingspan Thermaroof TR27 (composite deck)	120
Polyfoam Roofboard Standard (for single ply membranes only)	140
Knauf Krimpact rock fibre slab	180
Jablite Jabdec	183 (with mechanical fixings) or 163 (without)

Note: All the above materials must be installed to the manufacturers' details and specification



Flat roof joists at 400c/c C16 Grade	
47x97	Max span of 1.84m
47x120	Max span of 2.43m
47x145	Max span of 3.08m
47x170	Max span of 3.74m
47x195	Max span of 4.17m
47x220	Max span of 4.79m

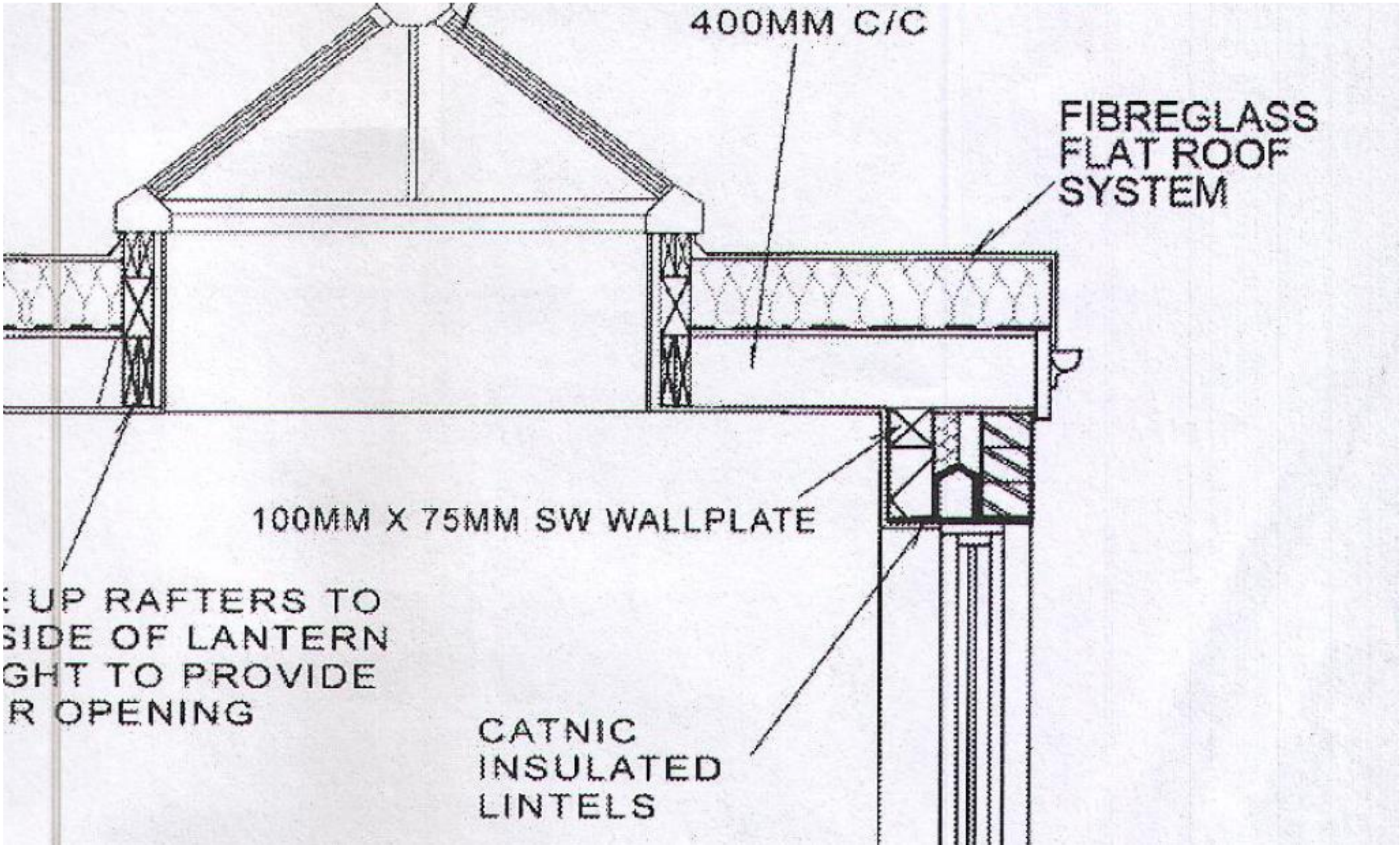
Site Address:

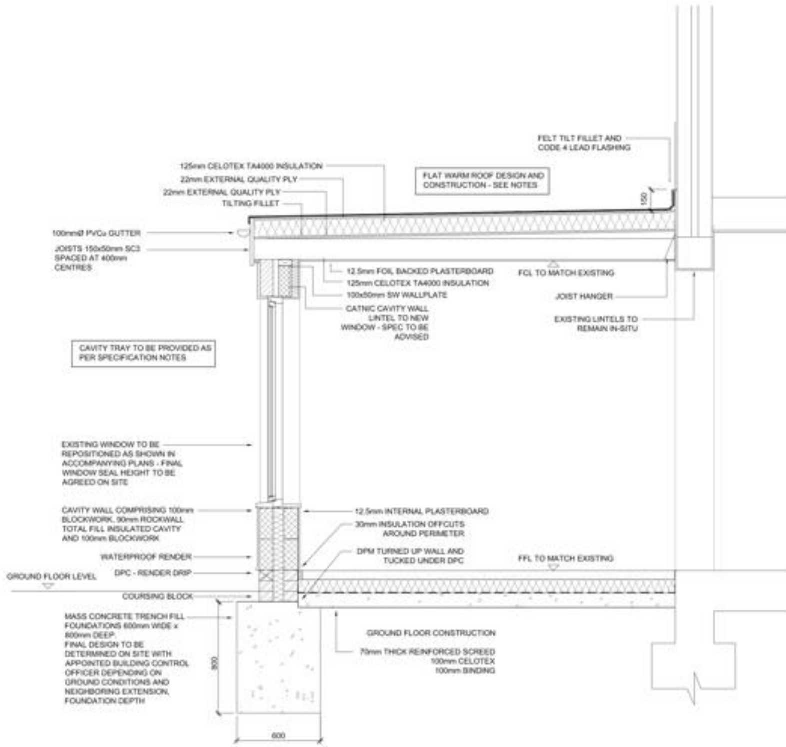
Description:

FLAT ROOF CONSTRUCTION

Scale:	**Date:**
Not to Scale	

Produced by Broxbourne Borough Council
Building Control Services Drawing 1 Rev Sept2013


400MM C/C
FIBREGLASS
FLAT ROOF
SYSTEM
100MM X 75MM SW WALLPLATE
UP RAFTERS TO
SIDE OF LANTERN
GHT TO PROVIDE
R OPENING
CATNIC
INSULATED
LINTELS



permission, subject to the following limits and conditions:
-No more than half the area of land around the "original house" would be covered by additions to buildings.
-No extension forward of the principal elevation or side elevation fronting a highway.
-No extension higher than the highest part of the roof.
-Maximum depth of a single storey rear extension to be three metres for an attached house and four metres for a detached house.
-Maximum height of a single storey rear extension to be four metres.
-Maximum ridge and eaves height no higher than existing house.
-Roof pitch of extensions higher than one storey to match existing house
-Materials to be similar in appearance to the existing house.
-Upper-floor, side-facing windows to be obscure glazed: any opening to be 1.7m above the floor.

CDM REGULATIONS
The owner, should they need to do so, must abide by the Construction Design and Management regulations 1994 which relate to any building works involving more than 500 man hours or longer than 30 days duration. It is the client's responsibility to appoint a Planning Supervisor on all projects that require compliance with the CDM regulations.

STRAPPING OF FLOORS
Provide lateral restraint where joists run parallel to walls, floors are to be strapped to walls with 1000mm x 30mm x 5mm galvanised mild steel straps or other approved in compliance with BS EN 845-1 at max 2.0m centres, straps to be taken across minimum of 3 joists. Straps to be built into walls. Provide 38mm wide x ¾ depth solid noggins between joists at strap positions.

PARTY WALL ACT
The owner, should they need to do so under the requirements of the Party Wall Act 1996, has a duty to serve a Party Structure Notice on any adjoining owner if the building work involves works on or to an existing Party Wall including:
Support of beam
Insertion of DPC through wall
Raising a wall or cutting off projections
Demolition and rebuilding
Underpinning
Insertion of lead flashings
Excavations within 3 meters of an existing structure where the new foundations will go deeper than adjoining foundations, or within 6 meters of an existing structure where the new foundations are within a 45 degree line of the adjoining foundations.
A Party wall agreement is to be in place prior to start of works on site.

THERMAL BRIDGING
Care shall be taken to limit the occurrence of thermal bridging in the insulation layers caused by gaps within the thermal element, (i.e. around windows and door openings). Reasonable provision shall also be made to ensure the extension is constructed to minimise unwanted air leakage through the new building fabric.

SITE PREPARATION
Ground to be prepared for new works by removing all unsuitable material, vegetable matter and tree or shrub roots to a suitable depth to prevent future growth. Seal up, cap off, disconnect and remove existing redundant services as necessary. Reasonable precautions must also be taken to avoid danger to health and safety caused by contaminants and ground gases e.g. landfill gases, radon, vapours etc on or in the ground covered, or to be covered by the building.

EXISTING STRUCTURE
Existing structure including foundations, beams, walls and lintels carrying new and altered loads are to be exposed and checked for adequacy prior to commencement of work and as required by the Building Control Officer.

LINTELS
- For uniformly distributed loads and standard 2 storey domestic loadings only
Lintel widths are to be equal to wall thickness. All lintels over 750mm sized internal door openings to be 65mm deep pre-stressed concrete plank lintels. 150mm deep lintels are to be used for 900mm sized internal door openings. Lintels to have a minimum bearing of 150mm on each end. Any existing lintels carrying additional loads are to be exposed for inspection at commencement of work on site. All pre-stressed concrete lintels to be designed and manufactured in accordance with BS 8110, with a concrete strength of 50 or 40 N/mm^2 and incorporating steel strands to BS 5896 to support loadings assessed to BS 5977 Part 1. For other structural openings provide proprietary insulated steel lintels suitable for spans and loadings in compliance with Approved Document A and lintel manufacture standard tables. Stop ends, DPC trays and weep holes to be provided above all externally located lintels.

TRENCH FOUNDATION
750mm x 600mm trench fill foundations, concrete mix to conform to BS EN 206-1 and BS 8500-2. All foundations to be a minimum of 1000mm below ground level, exact depth to agreed on site with Building Control Officer to suit site conditions. All constructed in accordance with 2004 Building Regulations A1/2 and BS 8004:1986 Code of Practice for Foundations. Ensure foundations are constructed below invert level of any adjacent drains. Base of foundations supporting internal walls to be min 600mm below ground level. Sulphate resistant cement to be used if required. Please note that should any adverse soil conditions or difference in soil type be found or any major tree roots in excavations, the Building Control Officer is to be contacted and the advice of a structural engineer should be sought.

SOLID FLOOR INSULATION OVER SLAB
To meet min U value required of 0.22 W/m^2K
Solid ground floor to consist of 150mm consolidated well-rammed hardcore. Blinded with 50mm sand blinding. Provide 100mm ST2 or Gen2 ground bearing slab concrete mix to conform to BS 8500-2 over a 1200mm gauge polythene DPM or 3 coats RIW. DPM to be lapped in with DPC in walls. Floor to be insulated over slab and DPM with min 75mm thick Celotex GA4000.
25mm insulation to continue around floor perimeters to avoid thermal bridging. A VCL should be laid over the insulation boards and turned up 100mm at room perimeters behind the skirting, all joints to be lapped 150mm and sealed. Finish with 65mm sand/cement finishing screed with light mesh reinforcement.
Where drain runs pass under new floor, provide A142 mesh 1.0m wide and min 50mm concrete cover over length of drain.
Where existing suspended timber floor air bricks are covered by new extension, ensure cross-ventilation is maintained by connecting to 100mm dia UPVC pipes with 100mm concrete cover laid under the extension. Pipes to terminate at new 65mm x 215mm air bricks with cavity tray over.

FULL FILL CAVITY WALL
To achieve minimum U Value of 0.28W/m^2K
20mm two coat sand/cement render to comply to BS 5262 with waterproof additive on 100mm lightweight block, K value 0.16, (Aircrete, Celcon solar, Topblock Toplite Standard). Fully fill the cavity with 90mm Rockwool Cavity insulation as manufacturer's details. Inner leaf to be 100mm lightweight, K value 0.16, (Aircrete, Celcon solar, Topblock toplite standard). Internal finish to be 12.5 mm plasterboard on dabs. Walls to be built with 1:1:6 cement mortar.

DPC
Provide horizontal strip polymer (hyload) damp proof course to both leafs minimum 150mm above external ground level. New DPC to be made continuous with existing DPC's and with floor DPM. Vertical DPC to be installed at all reveals where cavity is closed.

WALL TIES
All walls constructed with stainless steel vertical twist type retaining wall ties built in at 750mm ctrs horizontally, 450mm vertically and 225mm cts at reveals and corners in staggered rows. Wall ties to be suitable for cavity width and in accordance with BS 1243.

CAVITIES
Provide cavity trays over openings. All cavities to be closed at eaves and around openings using Thermabate or similar non combustible insulated cavity closers. Provide vertical DPCs around openings and abutments. All cavity trays must have 150mm upstands and suitable cavity weep holes (min 2) at max 900mm centres.

EXISTING TO NEW WALL
Cavities in new wall to be made continuous with existing where possible to ensure continuous weather break. If a continuous cavity cannot be achieved, where new walls abuts the existing walls provide a movement joint with vertical DPC. All tied into existing construction with suitable proprietary stainless steel profiles.

WARM FLAT ROOF
(imposed load max 1.0 kN/m^2 - dead load max 0.75 kN/m^2)
To achieve U value 0.18 W/m^2K
12.5mm spa solar reflective chippings to achieve as designated fire rating for surface spread of flame bedded in bitumen on three layer felt to BS 747 laid to CP144 on 22mm external quality ply over 125mm Celotex TA4000 insulation.
Insulation bonded to 22mm exterior grade plywood on firrings to give 1:60 fall on 47 x 145mm C24 timber joists at 400 ctrs max span 3.22m (see engineer's details for sizes). Ceilings of 12.5mm plasterboard over vapour barrier with skim plaster finish.
Provide restraint to flat roof by fixing of 30 x 5 x 1000mm ms galvanised lateral restraint straps at maximum 2000mm centres fixed to 100 x 50mm wall plates and anchored to wall.
This is a general guide based on normal loading conditions found in domestic construction. It is your responsibility to assess your design to ascertain whether engineer's details/calculations are required. please refer to the trada document - 'span tables for solid timber members in floors, ceilings and roofs for dwellings' or ask your building control officer for advice.

200mm under tiles, etc. All work to be undertaken in accordance with the Lead Development Association recommendations.

ELECTRICAL
All electrical work required to meet the requirements of Part P (electrical safety) must be designed, installed, inspected and tested by a competent person registered under a competent person self certification scheme such as BRE certification Ltd, BSI, NICEIC Certification Services or Zurich Ltd. An appropriate BS7671 Electrical Installation Certificate is to be issued for the work by a person competent to do so. A copy of a certificate will be given to the Council.

INTERNAL LIGHTING
Install low energy light fittings that only take lamps having a luminous efficiency greater than 45 lumens per circuit watt and a total output greater than 400 lamp lumens. Not less than three energy efficient light fittings per four of all the light fittings in the main dwelling spaces to comply with Part L of the current Building Regulations.

SMOKE DETECTION
Mains operated linked smoke alarm detection system to BS 5446 - 1:2000 and BS5839-6:2004 to at least a Grade D category LD3 standard and to be mains powered with battery back up. Smoke alarms should be sited so that there is a smoke alarm in the circulation space on all levels/ storeys and within 7.5m of the door to every habitable room. If ceiling mounted they should be 300mm from the walls and light fittings. Where the kitchen area is not separated from the stairway or circulation space by a door, there should be an interlinked heat detector in the kitchen.

NEW AND REPLACEMENT WINDOWS
New and replacement windows to be double glazed with 16mm argon gap and soft coat low-E glass. Window Energy Rating to be Band C or better and to achieve U-value of 1.6 W/m^2K. The door and window openings should be limited to 25% of the extension floor area plus the area of any existing openings covered by the extension.

FLAT ROOF VENTILATION
Cross-ventilation to be provided on opposing sides by a proprietary eaves ventilation strip equivalent to 25mm continuous with fly proof screen. Flat roof insulation is to be continuous with the wall insulation but stopped back to allow a 50mm air gap above the insulation for ventilation.

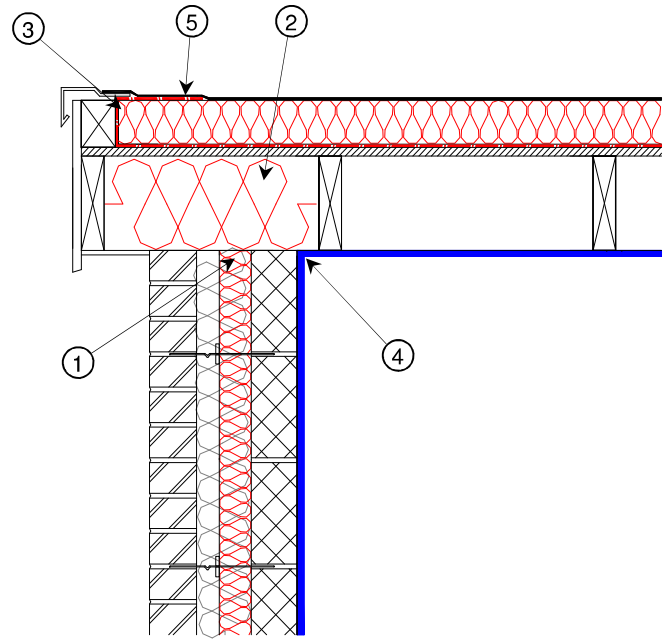
RAINWATER DRAINAGE
New rainwater goods to be new 110mm UPVC half round gutters taken and connected into 68mm dia UPVC downpipes. Rainwater taken to new soakaway, situated a min distance of 5.0m away from any building, via 110mm dia UPVC pipes surrounded in 150mm granular fill. Soakaway to be min of 1 cubic metre capacity (or to depth to Local Authorities approval) with suitable granular fill with geotextile surround to prevent migration of fines. If necessary carry out a porosity test to determine design and depth of soakaway.

REV	REVISION DETAIL

selbydesign

CLIENT MR & MRS MOSELY		
JOB EAST GRINSTEAD WEST SUSSEX		
TITLE BUILDING REGULATIONS DETAILS AND SPECIFICATION		
DRAWN S.G	DATE 06/05/12	SCALE 1:20 @A2
DRAWING No. SELDES01501-02		REVISION -

Rear Extension – East Grinstead, West Sussex



Accredited (Indicative) Detail Number: MCI-RF-01

GENERAL NOTES

- Ensure that cavities are kept clean of mortar snots or other debris during construction.
- BS5250 requires a vapour control layer to be installed between the deck and insulation.
- Turn up vapour control layer at edge of roof insulation, lap with roof waterproofing layer, and seal. ⑤

The above indicative guidance illustrates good practice for the design and construction of interfaces only in respect to ensuring thermal performance and air barrier continuity. The above guidance must be implemented with due regard to all other requirements imposed by the Building Regulations.

THERMAL PERFORMANCE OF JUNCTION

CHECKLIST (TICK)	
☐	Ensure the top of wall is level and that the wall insulation is taken up level with top of wall. ①
☐	Fit the insulation over the top of the wall within the gable ladder. Fully fill the void ensuring that the insulation is installed tightly between the joists and is in contact with the roof deck. ②
☐	Ensure that the full depth of over roof insulation over the joists extends to the edge of the roof. ③
☐	Ensure that partial fill insulation is secured firmly against the inner leaf of the cavity wall.

Complying with the above checklist items qualifies the builder to claim the Ψ value given in Table 3 of IP 1/06 and Table K1 of SAP 2005.

AIR BARRIER CONTINUITY

CHECKLIST (TICK)	
☐	Fix ceiling first and seal all gaps between the ceiling and masonry wall with either plaster, adhesive or flexible sealant. ④
☐	Seal all penetrations through air barrier using a flexible sealant.

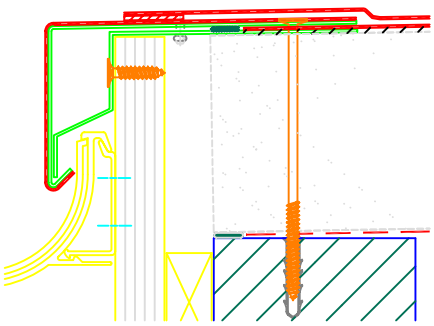
Complying with all of the above checklist items will help achieve the design air permeability and may effect a reduced testing regime.

AIR BARRIER OPTIONS

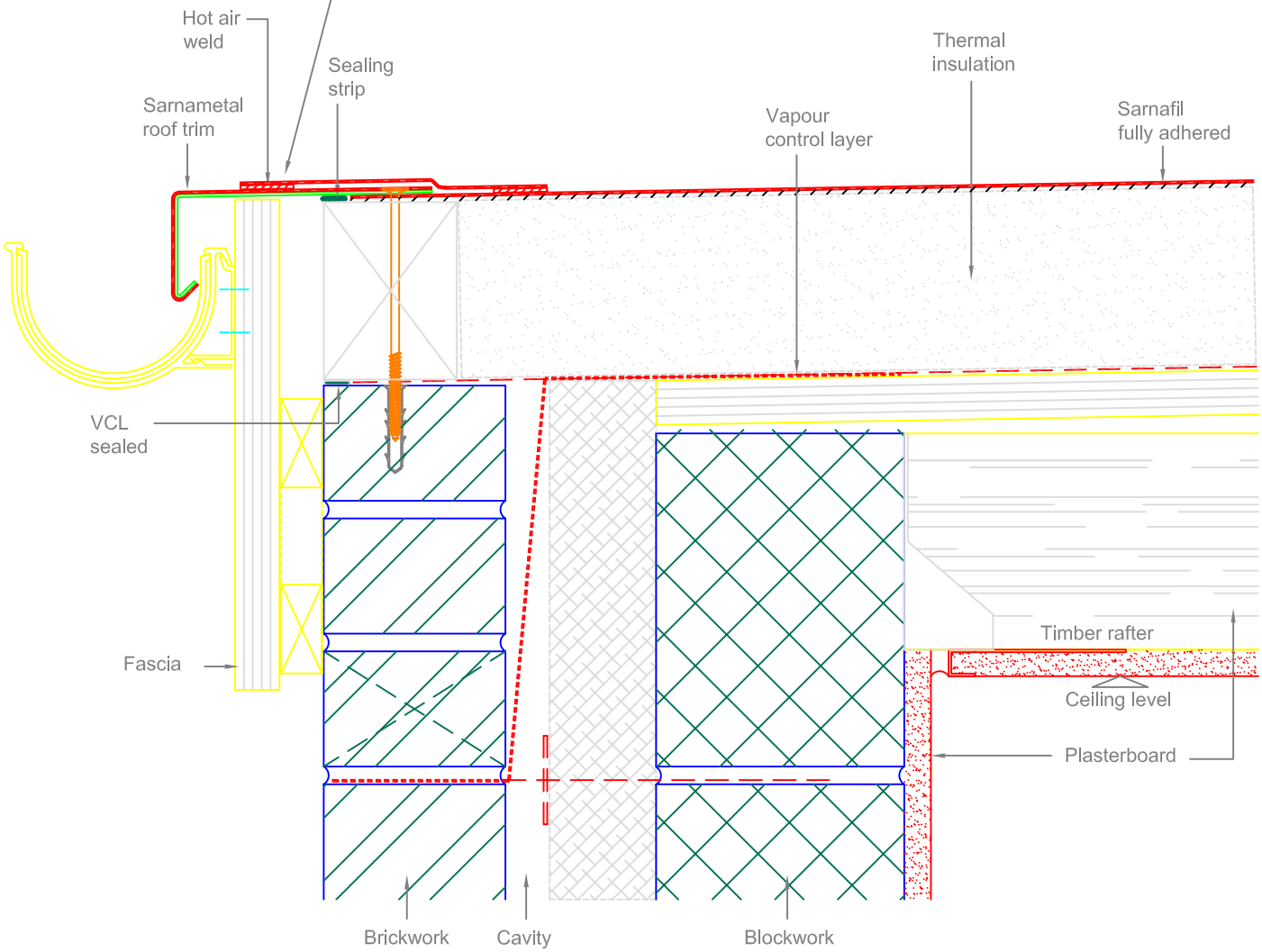
OPTION (TICK)	
☐	Plaster coat, or
☐	Blockwork inner leaf/parging coat applied to internal face of inner leaf with plasterboard over
☐	Plasterboard on dabs with continuous ribbon of adhesive around all openings, along the top and bottom of the wall, and at internal and external corners.

SITE MANAGER/ SUPERVISOR:	SITE NAME:	PLOT No:	DATE:

Ψ (W/m.K)	Default Ψ (W/m.K)	Default Ψ achieved	Temp Factor (*f*)	*f* >0.75 achieved
0.073	0.33	✔	0.93	✔



or



Sketch to be read in conjunction with written specification

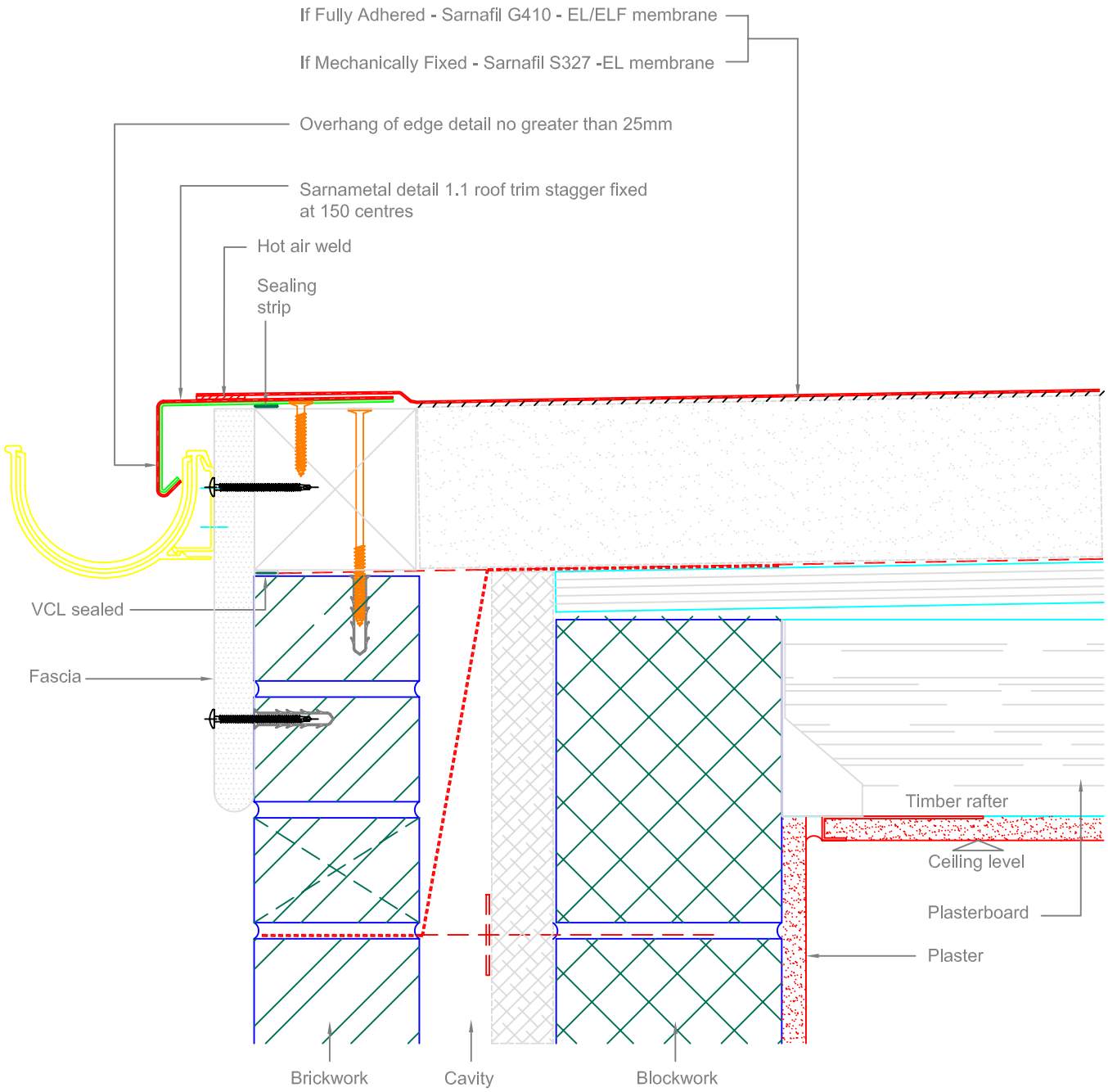
Designed by	Checked by	Approved by - date	Drawing No.	Date	Scale
HJT	NGB		131 TI	JULY 08	1:4

Sarnafil

Drawing Title

EAVES GUTTER - FULLY ADHERED

Project No.	Edition	Sheet
	A	



Note:
Only suitable for roofs less than 7m high and 100sqm in area, see detail 1.3.g for all other roofs
If trim depth is > 55mm face fixings will be required behind covertapes.
For > 110mm trim depth cleat fixed at 250mm centres.

Sketch to be read in conjunction with written specification

Designed by	Checked by	Approved by - date	Drawing No.	Date	Scale
			1.3B	NOV.2007	1:5
Sarnafil		Drawing Title	Warm roof gutter drip edge Building less than 7m high		
		Project No.		Edition	Sheet

required
in this space

Fig. 12.19 Pictorial view of a warm deck roof construction.

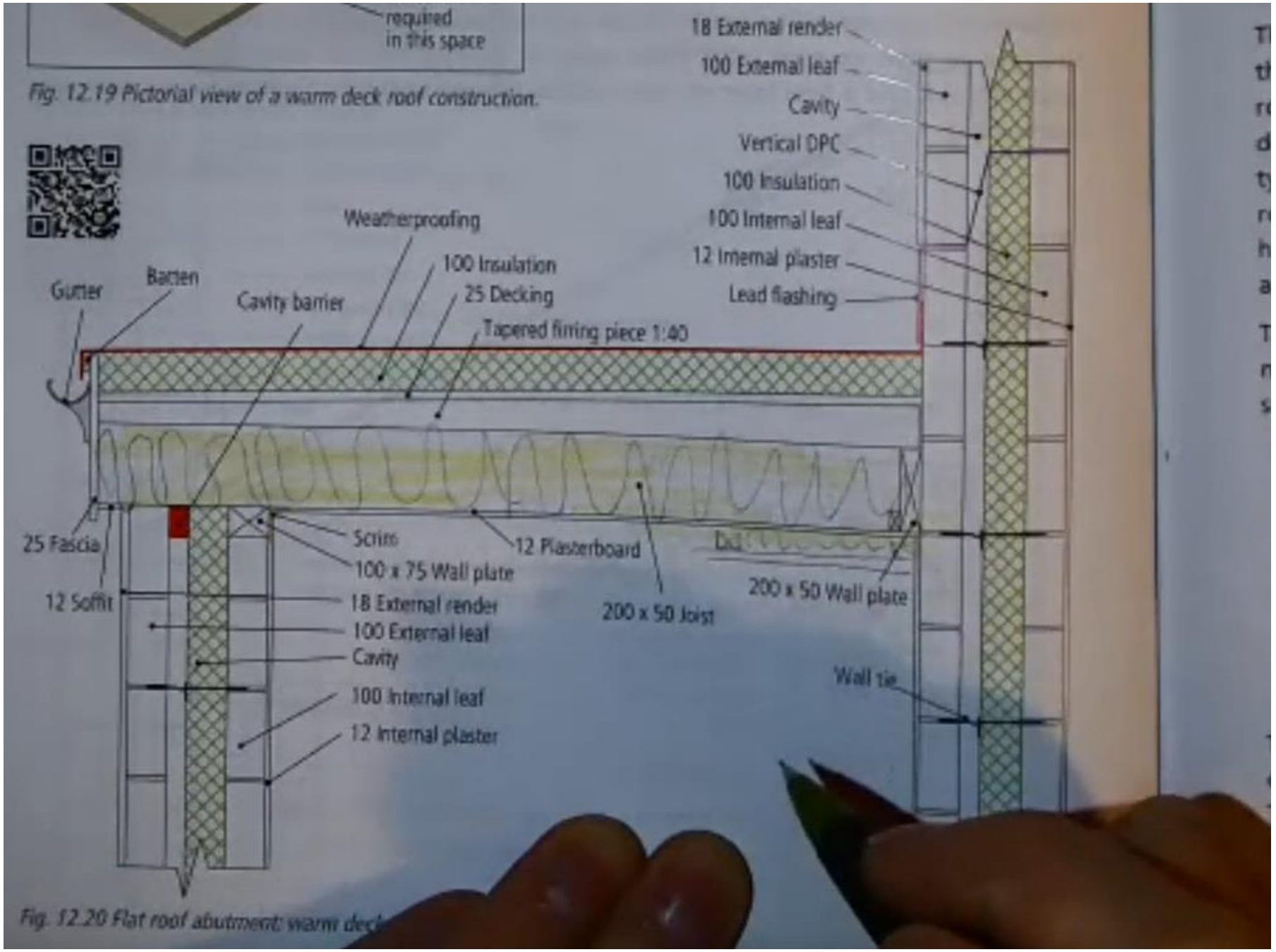


Fig. 12.20 Flat roof abutment: warm deck