EXISTING ROOF STRUCTURE
The existing roof tiles and battens shall be removed and the tiles shall be put to one side for re-use if found not to be defective.
Existing roof timbers shall be checked on site for any damage including any rot, if found to be defective the rafters shall be removed and replaced with new. Size of all new rafters to be agreed on site.
All existing trusses and purlins shall be removed and replaced with new steel beams to support all rafters to later detail and specification by Clients Structural Engineer.
Ensure that the existing wall plate is well strapped down wall face by using 30 x 5mm galvanised mild steel straps extending a minimum of 1.0m down the wall face with minimum 5 N° fixings.
Provide at a maximum 2.0m centres, 30 x 5mm galvanised mild steel anchor straps fixed over gable wall inner leaf and to 3 N° rafters, include packing piece between rafter & wall, ditto at ceiling joist level
Felt and Ventilation -
Fix proprietary 10,000mm²/m clear eaves vent strip to eaves with felt laid over strip to ventilate roof space. To ensure 10,000mm²/m clear air channel is maintained into roof space lay corrugated eaves tray continuously over rafters for depth of insulation.
Install a Proctors Roofshield or similar approved breathable roofing felt that requires no additional ventilation laid in accordance with BS 55342015 and manufacturer's instructions.
Provide additional high level ventilation by way of a continuous 5,000mm²/m vent strip with a dry ridge system for the length of the ridge, cutting the felt along the ridge line, or provide equivalent area of roof vents incorporated within the tiling at high level.
We suggest fitting a 450mm wide roll of dpc below all felt at eaves to counteract later rotting of the felt.
Roof Covering:-
Install 25 x 50mm tanalised battens over roofing felt, at appropriate gauge to accept plain tiles, fixed in accordance with manufacturer's instructions and BS 55342015.
Flat Ceilings -
Construction to achieve a U-value of 0.16W/m²K or better.
Lay 100mm thick mineral wool insulation layer between joists and 200mm layer cross laid over joists. Mineral wool insulation is to have a Lambda value of 0.044 W/mK or better.
Ceilings to have minimum 12.5mm plasterboard and 3mm skim finish.
Note - before applying plasterboard finish, check with roofing felt manufacturer as to whether a vapour control layer is required below ceiling joists by way of a polythene sheet to reduce risk of condensation in roof void.
Sloping Ceilings -
Construction to achieve a U-value of 0.18W/m²K or better.
To sloping rafter ceilings insert a layer of Celotex GA4000, 50mm thick PIR rigid insulation board tight between rafters ensuring that a 25mm space still exists over the insulation to allow felt to sag. Below the rafter fix an additional layer of Celotex GA4000 PIR insulation, 100mm thick with all joints sealed using Celotex Insulation Tape before applying 12.5mm plasterboard and skim finish. If a service void is required or insulation depth below rafter exceeds 50mm introduce a 25 x 50mm tanalised batten between insulation and plasterboard.
Raised ceiling roofs shall have rafters and ceiling joists connected together using M12 diameter grade 4.6 bolts with 38mm diameter double sided toothed connector between members and 25mm diameter spreader washers to outside.
Ensure 2 N° bolt fixings on each rafter and joist intersection.

ROOF (steel support beams)
Where shown insert steel beam to Engineers later design having 100 x 50mm C16 grade timber plate bolted to top at maximum 600mm centres, using 12.5mm bolts with 30mm diameter spreader washers.

TIMBER TRUSS
Within the new lounge install new feature truss to later detail by Clients Structural Engineer. Full details to be forwarded to the Approved Building Inspector prior to work commencing.

FLASHINGS
Where roofs and walls intersect provide Grade 4 leadwork cover flashings and under soakers. Include 150mm high cavity tray directly above all flashings into cavity walls complete with weepholes at maximum 900mm centres. Coat lead in patination oil.

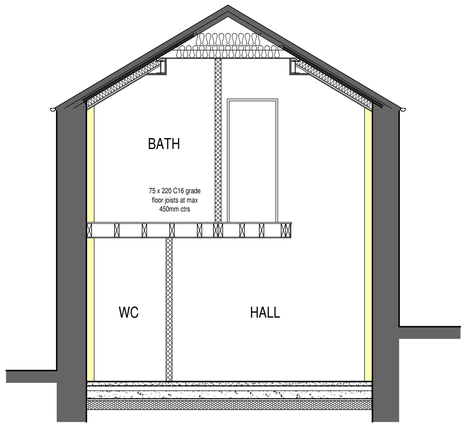
ROOF ACCESS HATCH
Install a proprietary insulated / draught stripped loft hatch with a clear opening 600 x 532mm
Install in accordance with manufacturer's written instructions.
The product is to have a U-value of 0.2W/m²K or better.
The ceiling joists around the hatch shall be trimmed to suit site conditions. Where trusses are used they should be designed to accommodate any necessary trimming.
If boiler is located in the roof space, provide and fix suitable retractable loft ladder and board out using 22mm tongue and groove chipboard flooring between hatch and boiler.

EAVES (stone corbel)
125mm deep natural stone eaves course projecting a maximum 50mm from the face of the wall below.
Check on site to see if existing is chamferred, if so the new must match. Check and agree with Client on site prior to work commencing.

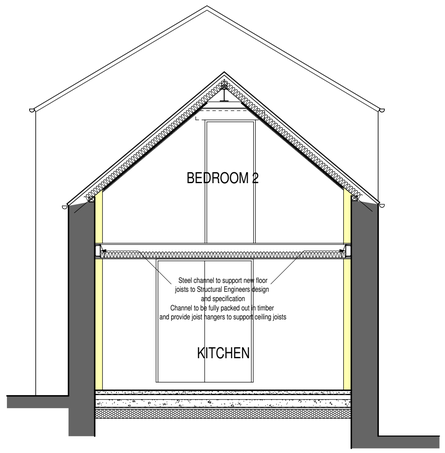
RAINWATER GOODS (cast metal)
Black painted 110mm diameter half round cast metal gutters and fittings fixed onto galvanised rise and fall brackets laid to fall toward the outlet.
75mm diameter black painted cast metal downpipes and fittings attached to wall face with suitable brackets.

ROOF PITCHED (traditional construction)
The existing roof over bedrooom 2 shall be removed and replaced with new as noted below.
New roof over lounge shall also be formed as noted below.
Roof Structure -
100 x 75mm wallplates anchored to inner leaf at ends and 2.0m intermediate centres, using 30 x 5mm galvanised mild steel straps extending a minimum of 1.0m down the wall face with minimum 5 N° fixings.
47 x 150mm C16 grade rafters at 450mm centres (birds mouth cut over timber plates to be a maximum 1/3rd depth of rafter),
200 x 25mm ridge board or ridge beam where indicated.
47 x 97mm C16 ceiling joists at 450mm centres,
Provide at a maximum 2.0m centres, 30 x 5mm galvanised mild steel anchor straps fixed over gable wall inner leaf and to 3 N° rafters, include packing piece between rafter & wall, ditto at ceiling joist level
Felt and Ventilation -
Fix proprietary 10,000mm²/m clear eaves vent strip to eaves with felt laid over strip to ventilate roof space. To ensure 10,000mm²/m clear air channel is maintained into roof space lay corrugated eaves tray continuously over rafters for depth of insulation.
Install a Proctors Roofshield or similar approved breathable roofing felt that requires no additional ventilation laid in accordance with BS 55342015 and manufacturer's instructions.
Provide additional high level ventilation by way of a continuous 5,000mm²/m vent strip with a dry ridge system for the length of the ridge, cutting the felt along the ridge line, or provide equivalent area of roof vents incorporated within the tiling at high level.
We suggest fitting a 450mm wide roll of dpc below all felt at eaves to counteract later rotting of the felt.
Roof Covering:-
Install 25 x 50mm tanalised battens over roofing felt, at appropriate gauge to accept plain roof tiles to match the existing over bedroom 2 and Marley Hawkins clay plain roof tiles (smooth) over lounge roof, fixed in accordance with manufacturer's instructions and BS 55342015.
Flat Ceilings -
Construction to achieve a U-value of 0.16W/m²K or better.
Lay 100mm thick mineral wool insulation layer between joists and 200mm layer cross laid over joists. Mineral wool insulation is to have a Lambda value of 0.044 W/mK or better.
Ceilings to have minimum 12.5mm plasterboard and 3mm skim finish.
Note - before applying plasterboard finish, check with roofing felt manufacturer as to whether a vapour control layer is required below ceiling joists by way of a polythene sheet to reduce risk of condensation in roof void.
Sloping Ceilings -
Construction to achieve a U-value of 0.18W/m²K or better.
To sloping rafter ceilings insert a layer of Celotex GA4000, 100mm thick PIR rigid insulation board tight between rafters ensuring that a 50mm space still exists over the insulation to allow felt to sag. Below the rafter fix an additional layer of Celotex GA4000 PIR insulation, 50mm thick with all joints sealed using Celotex Insulation Tape before applying 12.5mm plasterboard and skim finish. If a service void is required or insulation depth below rafter exceeds 50mm introduce a 25 x 50mm tanalised batten between insulation and plasterboard.
Raised ceiling roofs shall have rafters and ceiling joists connected together using M12 diameter grade 4.6 bolts with 38mm diameter double sided toothed connector between members and 25mm diameter spreader washers to outside.
Ensure 2 N° bolt fixings on each rafter and joist intersection.

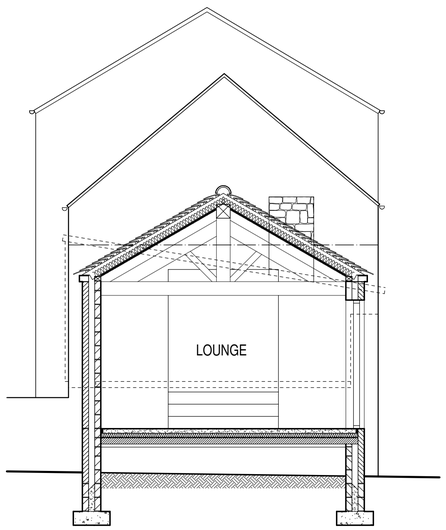
ROOF WINDOW ('U' value 1.4W/m²K)
Velux (tel 01592 772211) conservation style rooflights
3 No nominal dimensions 550mm wide x 980mm high
4 No nominal dimensions 550mm wide x 1180mm high
2 No nominal dimensions 780mm wide x 1400mm high
All to be fitted in compliance with manufacturer's written instructions, including flashings etc.
Note - provide twin rafters to each side and twin trimmers to top and bottom of openings.



SECTION C - C



SECTION B - B



SECTION A - A

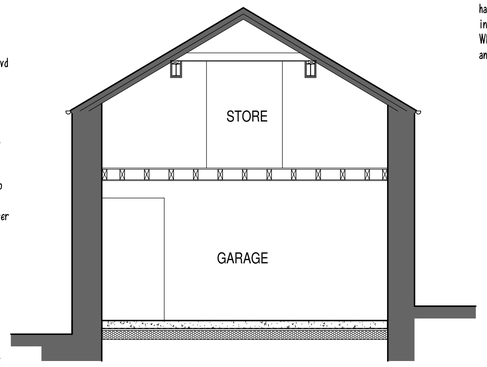
SOLID FLOOR (ground bearing with underfloor heating)
Existing ground floors to be taken up and replaced with new.
Construction to achieve a 'U' value of 0.22W/m²K or better.
Remove all vegetable / deleterious soil, lay clean soluble sulphate free hardcore in well compacted 150mm layers to achieve depth required (maximum 400mm), apply 25mm smooth sand blinding and over lay with 1200 gauge visqueen dpm turned up at edges to link with dpc on all walls.
Lay 125mm 35N concrete slab with fine tamped finish.
reinforce with 1 N°. layer steel fabric mesh BS ref: A393 set 40mm up from bottom on proprietary carriers.
Provide insulating layer of 75mm Celotex FF4000 over slab to base with 30mm thick upstand to external wall perimeter.
NOTE - do not lay insulation between the slab and top of walls it sits upon.
Over the insulation install the underfloor heating system onto a 'Nu-Heat' or similar approved floor panels to hold the heating pipes in place complete with cellular foam to perimeter as specified by the underfloor heating installer.
Apply a min 65mm thick 1:3 cement/sand screed reinforced with a suitable fibre reinforcement as specified by the underfloor heating manufacturer.
Ensure that screed is well compacted around heating pipes.

SOLID FLOOR (garage) This shall be constructed employing the same method as for the ground floor slab excepting that the insulation and screed shall be omitted and the surface trowelled smooth.
Insitu concrete slabs shall be thickened to a depth of 250mm x 400mm wide across the full door width.

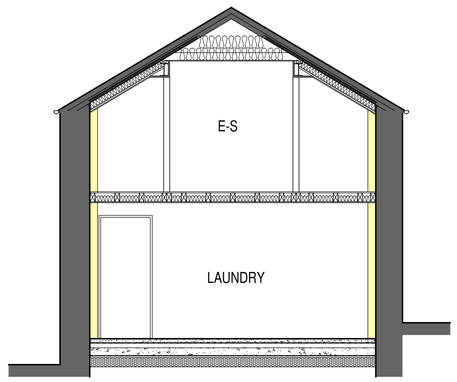
BEAM AND BLOCK FLOOR (with underfloor heating)
Construction to achieve a 'U' value of 0.22W/m²K or better.
NOTE:- blockwork support walls are to be minimum 100mm thick if carrying single span of beams and 200mm thick if supporting two spans. The void below the bottom of beams must be at least 200mm high and free of all vegetable / deleterious soil. Perimeter ventilators to be installed to give 1500mm² free area per metre run of external wall installed as per manufacturers instructions.
The floor type must be designed and specified by a manufacturer and be installed to their details.
The Client is responsible for obtaining the design and providing two copies of the information and layout to Approved Building Inspector prior to installation.
Apply smooth slurry screed over completed beam and block lay 1200 gauge visqueen dpm to link to dpc on all walls.
Provide insulating layer of 75mm Celotex FF4000 to base with 30mm thick upstand to external wall perimeter.
NOTE - do not lay insulation between the slab and top of walls it sits upon.
Over the insulation install the underfloor heating system onto a 'Nu-Heat' or similar approved floor panels to hold the heating pipes in place complete with cellular foam to perimeter as specified by the underfloor heating installer.
Apply a min 65mm thick 1:3 cement/sand screed reinforced with a suitable fibre reinforcement as specified by the underfloor heating manufacturer. Ensure that screed is well compacted around heating pipes.

FOUNDATIONS
All to comply with BS EN 1997-1:2004 (Eurocode 7).
Generally as follows:-
600 x 225mm to cavity wall, 450 x 225mm to single leaf wall. All concrete shall be minimum 35N grade and laid in continuous strip. Use trench fill make up below as required. If steps cannot be avoided concrete should overlap minimum twice height of step.
Reinforce with 1 N° layer steel fabric mesh BS ref B503 in both top and bottom maintaining 40mm concrete cover.
Trench excavations shall be taken down to firm sub-strata and be a minimum of 900mm deep below original ground or new floor level whichever is greater. Final depth must be agreed with Local Authority Inspector on site.

FIRST FLOOR STORE
Access to the first floor storeage area will be via a access ladder located with the ground floor store. Position of access to be agreed on site.



SECTION E - E



SECTION D - D

FLOOR SUSPENDED (traditional joist to 40Rw.dB or better)
Joists must be supported by appropriate hangers to external and party walls, installed in accordance with chosen manufacturer's written instructions.
Lay C16 grade joists as shown on sections
Fix double joists below lines of partitions, trimmers, stairwells and baths. Bolt double joists together at 600mm centres using 12.5mm diameter threaded bar or bolt with bulldog washer between and 30mm spreader washers either side.
Hang trimmed joists on appropriate joist hangers, installed in accordance with chosen manufacturer's written instructions, fully nailed through all holes using at least 50mm long nails. Fix three quarter depth strutting at mid point to all spans over 2.5m.
Provide 30mm x 5mm galvanised mild steel straps at maximum 2.0m centres laid over inner leaf of cavity wall alongside and over 3 N° joists.
Include packing piece between joist and wall.
Lay 22mm flooring grade chipboard (moistureproof to Kitchens and Bath/Shower rooms) or 22mm softwood tongue and groove boarding to Client's requirement.
The floor void is to have 100mm of minimum density 10kg/m.cube insulation quilt laid tight between joists.
Ceilings must be of 15mm Gypsum wallboard, screw fixed and finished 3mm skim.

STAIRCASE (domestic timber)
Standard timber construction maximum 900mm overall width with minimum 38mm thick strings, 22mm thick treads with minimum 220mm goings each but sized to give maximum pitch of 42 degrees (tapered treads shall have a minimum going of 50mm.) 9.5mm thick risers not exceeding 220mm each.
Maintain 2000mm headroom throughout flight.
Provide handrail minimum 900mm above nosings on flights and landings.
Provide a balustrade designed to resist a horizontal force of 0.36KN/m and to prohibit the passing of a 100mm diameter sphere at any point, Where stairs are located above habitable or bed rooms under-draw with minimum 10kg/m.cube insulation quilt infill.
Where in Halls etc. underdraw with 12.5mm plasterboard and 3mm skim finish.



scale bar @ 1:50

MRS J HEATH

PROPOSED BARN CONVERSION
IVY FARM,
BACK LANE,
HEATON,
RUGHTON SPENCER,
SK11 0SJ

WORKING DRAWING
SHEET 3

Date	Sheet	Scale
OCT 2017	A1	1:50
Drg No.	Rev.	Drawn
2015-2021-06	A	AGR

A - 24/05/2018 - TITLE SHEET AMENDED

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