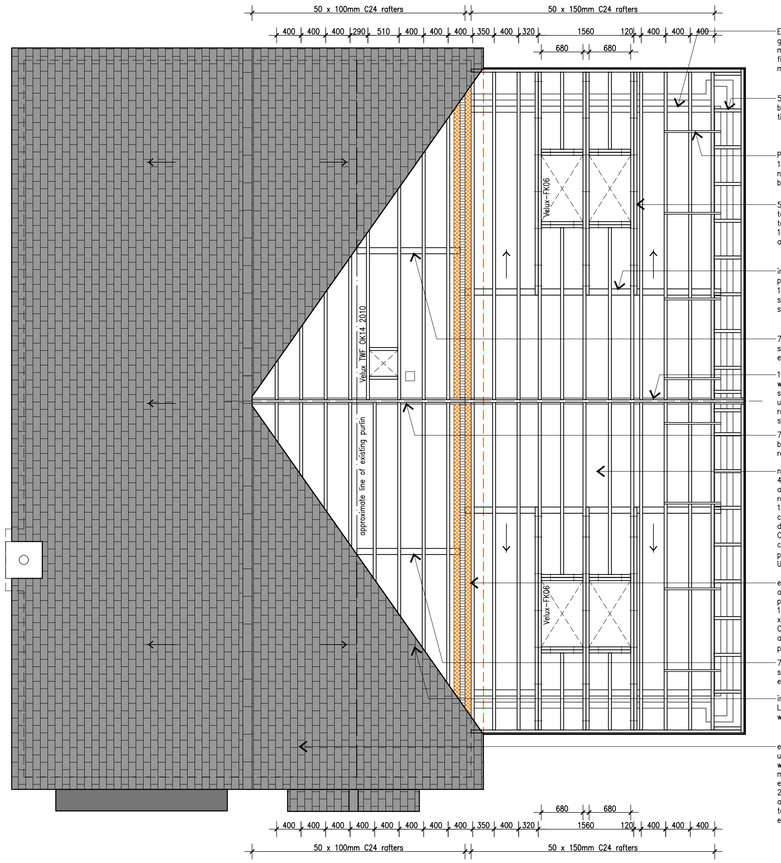

Roof Structure

Ex 100 x 75mm wallplate to be secured to masonry by 30 x 5mm galvanised vertical straps turned down internal face of blockwork minimum 1000mm long at 2000mm max. centres – rafters to be fixed onto wallplate with Expamet or approved similar pre-galvanised mild steel truss clips

50 x 150mm C24 noggings at 600mm centres to support barge barge board trimmer – underside of noggings to have treated timber carcasing to provide fixing of window frame

Provide 1800 x 30 x 5mm galvanised steel tie down straps at 1800mm centres to end three rafters where they run parallel with new gable blockwork supported with 75 x 50mm bearers fixed between rafters

50 x 150mm C24 timber rafters to be doubled up and bolted together at 600mm centres using M12 bolts with 63mm double sided toothed connectors to form trimmers to roof light aperture. 50 x 150mm Trimmers at 90 degrees to be fixed using Expamet or approved similar pre galvanised mild steel joist hangers

install new universal beam supported on new precast concrete padstones set within existing and new load bearing masonry. 75 x 100mm (C24) treated timber wallplate bolted to top flange of steelwork to provide fixing for new rafters – refer to separate structural engineer details

75 x 200mm C24 timber purlin to abut existing roof structure purlin set within load bearing masonry – refer to separate structural engineer details

100 x 250mm C24 timber ridge beam or universal steelwork section with solid timber noggings bolted through at 600mm centres, supported by load bearing masonry to be built up within roof void using 3.6N lightweight blockwork. Rafters adequately fixed to prevent roof spread using Expamet or approved similar pre-galvanised mild steel truss clips – refer to separate structural engineer details

75 x 200mm C24 timber ridge beam fixed to side of existing ridge board and supported by load bearing masonry to be built up within roof void using 3.6N lightweight blockwork

new level ceiling to comprise 50 x 100mm treated ceiling joists at 400mm centres to be supported by 32 x 75mm hangers from ridge at midspan – ceiling joists to be adequately fixed to sides of rafters to provide lateral restraint to prevent roof spread – install 100mm thick Rockwool Roll or approved similar insulation between ceiling joists and an additional 200mm minimum thickness laid at 90 degrees over – total minimum thickness 300mm, or 100mm thick Celotex GA4000 insulation or approved similar between rafters complete with additional 72.5mm thick Celotex PL4060 insulated plasterboard and skim to the underside all to achieve 0.15W/m2K U-Value

either build-up entirely cavity construction using lightweight blockwork as described including fully fill cavity insulation, or alternatively provide insulated partitioning to form hulkhead to comprise: 50 x 100mm treated timber studs at 600mm centres horizontally with 50 x 100mm noggings at 900mm centre vertically with 100mm thick Celotex GA4000 insulation or approved similar between studs and additional 72.5mm thick Celotex PL4060 insulated vapourcheck plasterboard and skim – all to achieve 0.15W/m2K U-Value

75 x 200mm C24 timber purlin to abut existing roof structure purlin set within load bearing masonry – refer to separate structural engineer details

install 25 x 150mm treated lay-boards together with Cavity Trays Ltd type VG or approved similar preformed valley gutter at abutment with new and existing roofs

existing plain roof tiles to be completely stripped off and replaced using Marley Modern or similar interlocking concrete tiles together with slate grey angular ridge and hip tiles fixed using either coloured mortar or continuous ventilating mechanical dry fix system. Use either block end ridge tile or end cap to apex, all on new treated 25 x 50 battens on Tyvek Supro breathable membrane or similar approved with minimum 200mm overlaps taped using Tyvek acrylic tape on existing rafters – all leadwork valleys and and flashings to existing roof detailing to be replaced with new code 4 lead

Section A-A

Bay Window Section

Scale Bar 1:50

0 1m 2m 3m 4m 5m 10m

Health and Safety Advisory Information (CDM 2015 Regulations) and Building Regulations (as amended) 2023:

The purposes and principles of both the CDM 2015 regulations and Building Regulations 2023 have been explained to the client (property owner) together with the roles and responsibilities of the main duty holders.

By undertaking and preparing this drawing, including the information contained within, it is deemed that Sherwood Building Design Solutions are designate 'Designer' and/or 'Principle Designer' under both the CDM 2015 Regulations and Building Regulations 2023, subject to written appointment and depending on particulars. These roles will be superceded by the appointment of Principle Contractor (Builder) on commencement and appointment thereof, as part of the construction phase.

For clarification, the client has appointed Sherwood Building Design Solutions to undertake specific design and drafting work associated with their 'client brief' (as detailed in the design services quotation) and the 'pre-construction phase' of this project. Further more, it is for the purpose of obtaining planning and building regulations approval from the enforcing local authority. It can be accepted that the client may use this drawing for the purpose of obtaining quotations for the cost of building works prior to progressing with the proposal further.

In preparing this drawing the following factors have been taken into consideration: –

- All areas of the property have been made available for the purpose of undertaking a thorough measured survey, including photographic records
- The property has had previous side conservatory with garage conversion, together with general maintenance and repair
- No existing Health and Safety File information available

This drawing together with separate information as provided by Sherwood Building Design Solutions (if applicable) will form the basis of the 'Pre-construction Information'. It is the clients responsibility to ensure ALL information is made available to other duty holders throughout the project.

No major and/or significant risks have been identified as part of this design that a competent contractor would not be capable of managing and undertaking. However, as a precautionary note, the following items will require careful consideration by the appointed contractor(s) or principal contractor: –

- Ground conditions are unknown and therefore it may be possible that the foundations will require structural engineering design if deemed necessary by either the contractor, principal contractor or building control officer.
- All associated incoming services will need to be identified prior to the commencement of any ground excavation and building work
- No hazardous materials have been identified and/or made aware of by the client
- General building work to be undertaken within an occupied property
- Foul drainage with an invert level of approximately 750mm
- Installation of large steelwork sections associated with structural alterations, therefore adequate consideration will need to be taken regarding manual handling and temporary works

It is the clients responsibility to take adequate measures to assess the competency of other duty holders, including designers and contractor(s) or principal contractor prior to their appointment.

It is the responsibility of the principal contractor to prepare a site specific Construction Phase Plan prior to the commencement of any works or ordering of any materials. An efficient and effective way of fulfilling this duty and achieving compliance with the CDM 2015 Regulations is to adopt and complete the CITB CDM Wizard – this can be downloaded from the CITB website http://www.citb.co.uk.

During the construction phase and following thereafter, the client is to be issued with all relevant manufacturers information relating to all the products and materials used during construction, for the purpose of on-going maintenance and the buildings use (Health and Safety File).

More information about the CDM 2015 Regulations and in particular guidance documents detailing the main duty holders and their respective roles and responsibilities can be found on the CITB website http://www.citb.co.uk.

Ground Floor:
Floor to comprise; 150mm thick grade C20P concrete floor slab with trowelled finish with A252 steel mesh reinforcement (50mm min top cover) on 1000 gauge polythene separation layer on 100mm thick Celotex GA4000 insulation slabs (thermal conductivity 0.022) on 1200 gauge visqueen d.p.m with all joints taped and dressed up blockwork. 150mm thick hardcore compacted in layers and blinded with sand – All to achieve minimum 0.16W/m2K U-Value.

Provide Celetex (minimum 0.88m2K/W thermal resistance) or approved similar perimeter insulation where floor slab abuts new and existing masonry.

Existing air-bricks fitted below dpc as the existing floors are suspended – Where new solid floor abuts existing suspended floor, install 100mm dia. pipes within hardcore depth to provide ducted ventilation from sub floor void to new external wall – use Cavity Trays Ltd type TAV telescopic adjustable ventilator complete with 225 x 150mm air bricks

Foundations:
To be minimum 600 x 250mm thick grade C20P concrete strip foundations built off firm load bearing strata minimum 750mm below finished ground level to the complete satisfaction of the enforcing building inspector. The exact extent of foundations shall be determined on site following initial excavation and inspection by the building control officer in-conjunction with the builder.

Depth to correspond with invert levels of all drains within 1000mm range (which ever is greater).

Existing foundations to existing external walls to be exposed to establish their size and suitability to the complete satisfaction of the local authority building control officer.

note – depending on ground conditions, concrete foundations may be required to a minimum depth of 2500mm. Alternatively, a specialist installed piled foundation may be more economical. The exact extent of foundations shall be determined on site following initial excavation and inspection by the enforcing building inspector in-conjunction with the builder

If piling is adopted, then this shall be carried out to specialist sub-contractor design. All associated design calculations and site data logs shall be issued to the inspector for their approval

Windows and Doors:
Provide and fix double glazed pvcu/powder coated aluminium casement doors and windows. Casements to give 1/20th room floor area openable ventilation, fitted with approved and controllable trickle ventilator to give 12000mm2 free air. 28mm thick double glazing units internally beaded to comprise: 7.4mm thick glass inside, incorporating Pilkington 'k' glass and standard 6.4mm thick glass on outside. All to achieve 1.4W/m2K U-value. All glazing to new doors and windows with cill level less than 800mm to have toughened safety glass in accordance with BS 6206.

Doors and windows shall be designed and manufactured and shall have test certification to demonstrate compliance with the minimum requirements of PAS 24:2012.

Optional – all glazing units to doors to be fitted with integrated blinds to manufacturers specification.

Drainage:
Where shown, all underground pipework to be removed and connection made good to maintain integrity of remaining drains.

Provide 110mm square/round section rainwater gutters with 65mm downpipes to discharge into new trapped gully complete with rodding access.

Install new 100mm dia. pvcu SVP to be terminated 900mm above window apertures. WC to have 100mm dia. pvcu waste. Shower/bath to have 40mm pvcu waste outlet, WHB to have 32mm pvcu waste outlet, all to discharge into new SVP and trapped gullies as shown on plan. WHB to have 75mm and bath/shower to have 50mm deep seal water traps.

New kitchen sink unit to have 40mm pvcu waste outlet, to discharge into internal trapped gully complete with adaptor to receive and seal sink waste pipe – exact position of gully to be determined on site once kitchen layout has been agreed. Kitchen sink to have 75mm deep seal water traps.

Provide and install Hepworth or approved similar Polypropylene access chamber complete with polymer cover and frame, raising pieces and base unit set to existing invert level. Chamber to be bedded on and 150mm surround backfill of suitable granular material.

New underground drainage to be 100mm dia. Hepworth Supersleeve clayware pipes or approved similar with all couplings and adaptors, etc deemed necessary to complete the drainage installation. All new connections to be made in the direction of existing flow.

Pipies to be laid to 1/40 falls to the full satisfaction of the Building Control officer. Hand trim the trench bottom with a spade to support the pipe along the length of its barrel, allowing for any socket recesses, lay pipework and carefully back fill with suitable granular material (10mm size or less).

Drainage trenches within 1 metre of load bearing walls to be filled with concrete at least to level of underside of the foundation. Where the distance is more than 1 metre from the wall, the concrete fill should be to a level below the underside of the foundation equal to the distance from the wall to nearside of trench, less 150mm.

Mechanical Ventilation:
Kitchen mechanical extract fan to give 60 litres per second extraction or 30 litres per second if installed adjacent to the hob, bathroom and en-suite to give 15 litres per second extraction, both of which may be operated intermittently. All mechanical extract fans to meet the standards of BS EN 13141-4 clause 4 performance test methods.
New toilet and utility to have ceiling/wall mounted extract fan with through tile terminal

Electrical Installation:
All electrical design and installation works shall be in strict accordance and compliance with the Electricity at Work Regulations 1989 as amended. On completion, the contractor shall provide the owner with either an electrical installation certificate issued under the Competent Person Scheme, or an electrical installation certificate in full accordance with BS 7671 (IEE Wiring Regulations) to confirm that the works have been inspected and tested by a competent person and undertaken in accordance with the technical standards set out in BS 7671.

Heating Installation:
All associated plumbing installation to be carried out by a suitably competent person in compliance with a competent person scheme such as Gas Safe. Radiators and associated circulation pipework to be altered to suit new layout – radiator sizes to be calculated by plumbing contractor and all fitted with thermostatic radiator valves. All relevant documentation, including commissioning certification to be made available to building control officer on completion.

Fire Detection:
Provide and install smoke/heat detectors in locations shown on plans to be inter-connected with battery backup and permanently wired to a separately fused circuit at the distribution board. kitchen to have heat detector.

Thermal Conductivity:
The insulating products incorporated within the roof, cavity walls and solid ground floor slabs have all been specified using the respective manufacturers technical literature. Note all their respective condensation calculations state are performed in accordance with BS 5250: 2011.

Party Wall Act:
It is noted the extent of the proposed works detailed on this drawing may be covered by the relevant sections of the Party Wall Act. You are therefore advised to serve the appropriate notice(s) to the adjacent property owner. Note there are minimum notice periods and procedures to be complied with within the terms of the Act. More information can be found at:- www.gov.uk/party-wall-etc-act-1996-guidance

Important Notice:
If it proposed to use any products on site during construction that differ from those specified on this drawing, then approval shall be sought by the enforcing Building Control Officer/inspector prior to ordering and installation of said products – any alternative products will be required to equal performance of those specified

General:
All work is to be carried out in accordance with local authority requirements, British Standards, Codes of Practice and manufacturers recommendations.
All dimensions and levels to be checked on site prior to the commencement of work or the ordering of any materials or component parts.
All structural timber is to be vac vac treated. All timber is softwood and is to be tonalised or primed for paint before fixing.

Roof:
pitched roof to be Marley Modern or approved similar interlocking grey concrete tiles (minimum pitch 17.5 degree) on 25 x 50 battens, Tyvek Supro breathable membrane with minimum 200mm overlaps taped using Tyvek acrylic tape on 50 x 150mm rafters (strength grade C24) at 400mm centres.

Install 100mm thick Celotex GA4000 insulation or approved similar between rafters complete with additional 72.5mm thick Celotex PL4060 insulated plasterboard and skim to the underside – all to achieve 0.15W/m2K U-Value.

Level Ceilings – Install 100mm thick Rockwool Roll or approved similar insulation between ceiling joists and an additional minimum 200mm thickness laid at 90 degrees over – total minimum thickness 300mm to achieve 0.15W/m2K U-Value.

Recommended 50mm clear ventilation space to be maintained over insulation and provide Redland Redvent Eavesvent or Redvent Over fascia vent to roof eaves to provide 2500mm² per metre length clear ventilation.

See roof structure layout and sections A-A for further information.

Bay window flat roof to be warm roof construction to comprise; Crystic cold applied liquid resin bonded system to incorporate Crystic Topcoat/CrysticRoof resin, glass sheet, all trims, angle fillet at abutments including simulated lead flashing and all fittings necessary to complete the installation to the manufacturers instructions and recommendations. All joints and overlaps to be minimum 50mm to be reinforced with glass role. Trims and fillets to be bonded using either PU Adhesive or Crystic Crystabond.
Alternatively, use Sarnafil G410-18ELF (colour either light or lead grey finish) Felt Polymeric single ply membrane installed to the manufacturers instructions and recommendations. Use Sarnavap 5000E SA vapour control layer fully bonded to OSB decking.
Use Celetex XR4000 150mm thick high performance insulation or approved similar to achieve 0.15W/m2K.
All on Smartply OSB 18mm thick tongue and groove boards allowing for 25mm gap for expansion at abutments. 50mm wide firrings (to provide minimum 1:80 fall) nailed through to 50 x 150mm C24 flat roof joists at 400mm centres. Roof to be underboard internally with 13mm thick vapourcheck plasterboard with Carlite board finish skim all to achieve 0.15W/m2K U-Value.
Insert preformed 'Cavity Tray Ltd' type E or approved similar cavity tray into existing brickwork minimum 150mm above finished roof level. Code 4 lead flashing to be tucked into masonry directly below cavity tray and dressed down face of brickwork and flat roof upstand.

Velux Integra Centre-Pivot roof lights ref: FK06 (660mm wide x 1180mm long) – complete in grey external finish, white polyurethane internal finish, 66 Pane Glazing option and flashings for side by side with 100mm gap. Optional integral blinds – refer to Velux installation instructions for exact specifications

Fascia and barge boards to match existing to be square edged Kestral K16 fascias colour tbc pvcu fixed to ends of rafters and laddering to gables complete with pvcu soffit boards.

Wallplate to be fixed to internal blockwork with 900 x 30 x 2.5mm galvanised steel straps at 1800mm centres max. Provide 1800 x 30 x 5mm galvanised steel tie down straps at 1800mm centres to end three rafters where they run parallel with new gable blockwork supported with 75 x 50mm bearers fixed between rafters.

Masonry:
K Rend Silicone Coloured Render (colour – to be confirmed) on 100mm wide dense concrete blockwork (K-Value = 1.13 W/mk), laid in stretcher bond in 10mm sand/cement mortar, 100mm cavity partially filled with 50mm thick Celotex GDS050 cavity wall insulation or approved similar rigid insulation with stainless steel cavity wall ties complete with insulation retainers at 900mm centres horizontally and 450mm centres vertically with additional ties around openings, 100mm thick Thermalite Aircrete Shield or approved similar 3.6N aerated lightweight blockwork (K-Value = 0.15 W/mK) laid in stretcher bond with 10mm thick sand/cement mortar. Over board internally with Celotex PL4040 (40mm + 12.5mm thick plasterboard) on adhesive dabs and Carlite board-finish plaster skim internally – all to achieve (≤) 0.18W/m2K U-Value.

Alternative construction: as above with 100mm cavity fully filled with either 100mm thick Earthwool Dritherm Cavity Slab 34 Super (0.034 W/mK) or 32 Ultimate (0.032 W/mK).

New brick and blockwork to be toothed into existing where they abut. Alternatively provide and fix Expamet Unistarter stainless steel track and tie system fixing plates ref: UWSS or approved similar. Use Cavity Trays Type B vertical dpc or approved similar at abutment to prevent cold bridging

All cavities are to be continuous and closed at door and window openings with 'Cavity Trays' type H2 Cavicloser or approved similar. Cavities to be closed at eaves using fibrous board bedded in cement mortar.

Provide and install steelwork as detailed on ground floor plan – Steelwork to be encased where exposed with 2 layers of 12.5mm thick Gyproc Wallboard and skim to provide half hour fire resistance.

Builder to allow for 'Slate wedge gap between new beams and masonry at 450mm intervals and pack any remaining gaps with non shrink grout. Allow grout to go off before carefully removing props'.

Provide preformed Catnic/Birtley steel lintels over all new openings, reference numbers shown on plan with minimum 150mm end bearing. Provide cavity trays Ltd preformed type C cavity trays complete with stop ends and perp weep/vents dressed over lintels to new external brick openings. All voids in lintel profile to be packed with flexible insulation material.

Provide and install to both skins 100mm wide Cavity Trays Ltd Cavirolll premium dpc or approved similar pitch polymer d.p.c at 150mm above finished ground level.

Sub-structure brickwork to comprise; two skins of concrete common bricks with 100mm cavity with ties as above filled to within 225mm of d.p.c with lean mix concrete chamfered to external leaf. Or 300mm wide Thermalite Aircrete Trenchblock or approved similar trench concrete blockwork.

Drawing to be read in conjunction with separate structural engineer details and calculations

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Status: Planning & Building Regulations

Client: Mrs Hazel Fogg

Project: 4 Wilson Fold Avenue, Lostock, BL6 4LT

Title: Proposed Side Extension and Alterations - Proposed Roof Structure, Section and Specification

Scale: 1/50 @ A1	Date: March 2024	Drawn: Rob Sherwood

Drawing Number: 2024-12-02.2

Revision: