

BUILDING REGULATIONS SPECIFICATION NOTES v2 10.06.24

New Self Build 3-Bed House

Land adjacent 15 Hillcrest Rd

Rochdale, OL11 2QE

For Ms Leonora Wells

Prepared by Ian Banks ARB ACArch Atoll Ltd

INTRODUCTION

Refer to all Detailed Plans & Sections drawings (i.e. 499-BR 300 – 313 inclusive) linked to these Building Regulation Specification Notes, as well as Structural Engineer Drawing 11276-S-GA XX-XX-1000-P01 & calculations and all approved planning drawings (Ref: 23/00605/FUL). BCO to bear in mind that this new build house is being self-built as an affordable home and that the building plot was bought at auction in good faith with the external masonry already built to DPC level (and done under Building Regulations sign-off at that time). General building Regulations Specification Notes are as follows:

BUILDING CONTROL

CONTRACTOR TO LIAISE REGULARLY WITH NOMINATED BUILDING CONTROL

OFFICER (BCO) AT ROCHDALE BOROUGH COUNCIL BUILDING CONTROL ON 01706 924327.

SEE - <https://www.rochdale.gov.uk/building-control-regulations/apply-building-regulations>

building.control@rochdale.gov.uk / Building Control, Number One Riverside, Smith Street, Rochdale, OL16 1XU

Unless stated otherwise, good building practice shall be followed in accordance with the [LABC Warranty Technical Manual - Version 13](#) (Version 13 applies to quotes provided from 1st January 2026)

IMPORTANT BUILDING REGULATIONS UPDATE – JUNE 2022

The Department for Levelling Up, Homes and Communities (DLUHC) announced a raft of changes to Building Regulations that will take effect from 15th June 2022. Contractor to note these important new changes which will now impact new homes and some existing homes and improving the energy efficiency of buildings. Building contractor to consult with BCO if in any doubt. The new building regs comprise uplifts to Approved Document L, Conservation of fuel and power and Approved Document F, and the creation of Approved Document O, Overheating, and Approved Document S, Infrastructure for charging electric vehicles.

EXISTING GROUND FLOOR LEVEL AS ALREADY PART-BUILT / SET OUT

Generally existing set out as-built of assumed suspended block and beam floor level is too high in relation to street and driveways. In order to minimise number of steps up to the ground floor, this level is to be revised with new set out to suit – proposing an alternative, lowered ground bearing slab.

NEW BUILD SPECIFICATION

New Build housing via Self Build is a specialist area and appropriate Works should only be undertaken by competent, qualified and experienced professionals requiring the services of a professional architect who can approve all surveys, investigations and oversee employment of other professional services. This specifications applies to dwellings up to 2 storeys with some of the specifications additionally applicable to 3 storeys as proposed here.

The design and construction of the proposed works is always the responsibility of the designer, applicant and contractor as Dutyholders. In order to create a Complete Building Regs Specification, additional factors will need to be covered and these should include:

- SAP Calculations. Important Note: When using these New Build Specs and Detail Drawings, some will require modification according to provided SAP assessments as many of the values provided are Starting Values. In general, these are always adjusted for each bespoke project. See the note in the New Builds Web App under: Part L (Cons. of Fuel & Power) >> SAP 2012 and appendix R.
- Structural Calculations
- Water Calculations.
- Other factors.

NOTICE OF COMMENCEMENT

A notice of commencement is to be submitted to Building Control within 5 days of work being regarded as commenced, under regulation 16 of The Building Regulations etc. (Amendment) (England) Regulations 2010. Work will be deemed to have commenced when the build has progressed to at least one of the following: For new buildings and horizontal extensions - Sub surface structure of the building or the extension including all foundations and the structure of the ground floor level is completed. For all other works – constructed 15% of the overall work.

NOTICE OF COMPLETION

A Notice of Completion to be given to Building Control not more than 5 days after the work has been completed. The notice to contain the following information:

- The name, address, telephone number and (if available) email address of the client, principal contractor, and principal designer.
- A statement from the applicant to say that the works have been completed and complies with all the applicable regulations to the best of their knowledge.
- A statement from both the principal contractor and principal designer to confirm they have fulfilled their duties under Part 2A (duty holders and competence).

CDM REGULATIONS 2015

The client must abide by the Construction Design and Management (CDM) Regulations 2015.

The client must appoint a contractor, if more than one contractor is to be involved, the client will need to appoint (in writing) a principal designer (to plan, manage and coordinate the planning and design work) and a principal contractor (to plan, manage and coordinate the construction and ensure there are arrangements in place for managing and organising the project).

COMMERCIAL CLIENT OBLIGATIONS UNDER CDM

The commercial client is to appoint a principal designer and a principal contractor when there is more than one contractor, if not duties are automatically transferred to the contractor or principal contractor. The designer can take on the duties, provided there is a written agreement between client and the designer to do so. The Health and Safety Executive is to be notified as soon as possible before construction work starts if the works:

- (a) Last longer than 30 working days and has more than 20 workers working simultaneously at any point in the project. Or:
- (b) Exceeds 500 person days.

PRINCIPAL DESIGNER CDM AND PRINCIPAL DESIGNER BUILDING REGULATIONS

The dual role of the Principal Designer for both CDM and Building Regulations is agreed with the Commercial Client / Developer / Employer in writing not to extend beyond Pre Commencement Works to prepare and submit Building Regulations to RIBA Stage 3. Duty Holder duties pass to the Client and Principal Contractor as appropriate. Refer the supplied Principal Designers Health & Safety File and Risk Assessment Revision B 11Jun26 or all subsequent revisions.

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 building work on, to or near an existing Party Wall involves any of the following:

Support of beam; Insertion of DPC through wall; Raising a wall or cutting off projections; Demolition and rebuilding; Underpinning; Insertion of lead flashings; or Excavations within 3 metres of an existing structure where any new foundations will go deeper than adjoining foundations, or within 6 metres of an existing structure where any 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.

HEALTH AND SAFETY

The contractor is reminded of their liability to ensure due care, attention and consideration is given in regard to safe practice in compliance with the Health and Safety at Work Act 1974.

MATERIALS AND WORKMANSHIP

All works are to be carried out in a workmanlike manner. All materials and workmanship must comply with Regulation 7 of the Building Regulations, all relevant British Standards, European Standards, Agreement Certificates, Product Certification of Schemes (Kite Marks) etc. Products conforming to a European technical standard or harmonised European product should have a CE marking.

RADON PROTECTION

Refer to Rochdale Building Control Guide Approved Document C Site preparation and resistance to contaminants and moisture as according to information on the UK Radon Interactive Map shows the Maximum Radon Potential for this postcode OL11 2QE as being 1-3% Radon - see:

www.ukradon.org/information/ukmaps . The 1–3% risk rating shown on the UKradon map means that this project does not require mandatory radon protection measures under Building Regulations for England. Because this postcode sits in England, the legal thresholds for Building Regulations (following BRE BR211 and Approved Document C) are dictated by specific risk bands: 0% to 3% Risk,

this is officially classified as a "low-risk" or "non-affected" area. As such, no protective radon measures are required under Building Regulations and standard DPM Rules Apply: i.e. You only need to fulfill standard damp proofing regulations to stop moisture ingress. A standard 1200-gauge polythene Damp Proof Membrane (DPM) meets this requirement. However, as the 1–3% level means you do not need to worry about sub-floor ventilation or complex sumps, it is proposed to simply swap the standard 1200-gauge DPM for a heavier 2000-gauge (400-micron) radon membrane, which safely doubles as a mandatory water-damp barrier.

DISCREPANCIES NOTIFIED BEFORE WORKS COMMENCE

Contractor to fully check both architectural /Building Regulations drawings against site inspection of constructional details currently installed (including currently hidden structural elements such as footings, historic and new masonry walls and structural lintels) in advance of starting any works against SE details and notify of any discrepancy and agree any modifications with the approved Building Inspector on site.

DEMOLITION

Measures to be put in place during and after the demolition to ensure the protection of the public, public amenities and adjoining properties. Such measures to include:

- The shoring of adjoining buildings.
- The control of dust and noise generation.
- The weatherproofing of any parts of adjoining buildings which are left exposed by the demolition.
- The repairing and making good any damage to any adjacent building effected by the demolition.
- The removal of material or rubbish resulting from the clearance and demolition of the site.
- The disconnection, sealing or removal of any drain or sewer, as required.
- The making good of any disturbed ground.
- Any arrangements necessary for the disconnection off all services (e.g. gas, water, electricity).

Consultation with the Health and Safety Executive, and Fire Authority should be sought if burning structures or materials on site. If the demolition is more than 50m³ in volume a formal notice of demolition is to be given to building control at least six weeks before any demolition work starts, in accordance with The Building Act 1984: Sections 80-83. Consultation to be undertaken with the occupiers of adjacent buildings where applicable and a Party Wall agreement put in place. A planning application to demolish to be made where required. All demolition work to comply with the Construction (Design and Management) Regulations 1994 and a Health and Safety plan is to be provided by the principal contractor

SITE INVESTIGATION

If required / requested a survey of the site is to be carried out by a suitably qualified person including, an initial ground investigation, a desk study and a walk over survey. A copy of all reports and surveys to be sent to building control for approval before works commence on site. Any asbestos, contaminated soil or lead paint found on the site is to be removed by a specialist. Asbestos is to be dealt with in accordance with the Control of Asbestos Regulations 2006.

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.

CONTAMINATED LAND GENERALLY

Rochdale Borough Council contaminated land team at Environmental Health Services may hold no objection to underground works with regard to any anticipated contaminated ground under the contaminated land provisions of Part IIA of the Environmental Protection Act 1990. But as required, the contaminated land team can offer environmental advice and searches that details the information they holds for local areas of land. This will also detail whether a site is Contaminated Land under the legal definition. For information please see the Councils Contaminated Land page or contact: environmental.health@rochdale.gov.uk or call 0300 303 8871 .

CONTAMINATED GROUND REMEDIATION

The remedial objectives are to ensure that a safe and suitable development platform is provided for the proposed land use, by removing all identified potential human health pollutant linkages. The remediation should comprise the excavation and removal of all Made Ground in the external areas. It is expected that this will be to between 0.40m and 0.50m below ground level. This

Phase 2 report and remediation strategy presumed the area inside of the existing brickwork walls built to DPC was to become a suspended precast concrete floor system whereas it is now to be ground bearing slab instead. As such, with the need to lower the finish floor level and include for su floor needs of 300mm MOT, 100mm slab, 120mm insulation and 75mm screed, the same degree of top soil removal is also envisaged. Currently the depth of footings anticipated are deep and so this is not seen as problematical. Refer to Environ Solution Phase 2 Geo-Environmental Ground Investigation Report dated 06.08.24 and associated Remediation Strategy (in particular Section Remediation Options).

STRUCTURE

STRUCTURAL ENGINEERS DESIGN AND CALCULATIONS

Building Regulation drawings and specification notes must be read in conjunction with the most recent revision of Structural Engineer (SE) Richard Shuttleworth of Icis Design Ltd. See their Provisional Detail Drawing No. 11276-S-GA-XX-XX-1000-P01, plus supplementary Calculation Notes. S.E contact details are: 07944 701481 / richard.shuttleworth@icis-design.co.uk

EXISTING STRUCTURE

Existing structure including already built foundations, beams and walls carrying new and altered loads are to be exposed and checked for adequacy prior to commencement of work and as required by the BCO and/or SE. Refer to new steelwork UC columns and SHS wind post on SE details.

BEAMS

Supply and install new structural elements such as new beams, roof structure, structural bearings, and padstones in accordance with the Structural Engineer's calculations and details. New steel beams to be encased in 12.5mm Gyproc FireLine board with staggered joints, Gyproc FireCase or painted in Nullifire S or similar intumescent paint to provide 1/2 hour fire resistance, as agreed with Building Control. All fire protection to be installed as detailed by specialist manufacturer.

LINTELS

For uniformly distributed loads and standard 3 storey domestic loadings only

Lintel widths are to be equal to wall thickness and appropriate to historic wall makeup.

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 EN 1992-1-1, with a concrete strength of 50 or 40 N/mm² 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 manufactures standard tables. Stop ends, DPC trays and weep holes to be provided above all externally located lintels.

STRAPPING FOR PITCHED ROOF

Gable walls should be strapped to roof at 2m centres. All external walls running parallel to roof rafters to be restrained at roof level using 1000mm x 30mm x 5mm galvanised mild steel horizontal straps or other approved to BS EN 845-1 built into walls at max 2000mm centres and to be taken across minimum 3 rafters and screw fixed. Provide solid noggins between rafters at strap positions. All wall plates to be 100 x 50mm fixed to inner skin of cavity wall using 30mm x 5mm x 1000mm galvanised metal straps or other approved to BS EN 845-1 at maximum 2m centres.

FLAT ROOF RESTRAINT

100mm x 50mm C16 grade timber wall plates to be strapped to walls using 1200mm x 30mm x 5mm galvanised mild steel straps at maximum 2.0m centres, straps to be fixed to internal wall faces.

STRAPPING OF FLOORS

Lateral restraint to be provided where joists run parallel to walls. Floors to be strapped to walls at max 2.0m centres with 1200mm x 30mm x 5mm galvanised mild steel straps or other approved, in compliance with BS EN 845-1. Straps to be taken across minimum of 3 joists and built into walls. Provide 38mm wide x 3/4 depth solid noggins between joists at strap positions.

OPENINGS AND RETURNS

An opening or recess greater than 0.1m² shall be at least 550mm from the supported wall (measured internally).

FOUNDATIONS

All existing foundations already as-built to be uncovered for investigation on site with the BCO and the SE as required to determine depth and toe of either assumed strip or trench footings. In the meantime, all must be reasonably assumed to be constructed in accordance with 2010 Building Regulations A1/2 and BS 8004:2015 Code of Practice for Foundations. See S.E details on Drawing And Calculations.

STRIP FOUNDATION

For new extended area to rear extension, provide 225mm x 600mm concrete foundation to new rear extension, 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 be agreed on site with BCO to suit site conditions. All constructed in accordance with 2010 Building Regs A1/2 and BS 8004:2015 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 be found or any major tree roots in excavations, the BCO to be contacted and the advice of SE sought.

PIPES PASSING THROUGH TRENCH FOUNDATIONS

The load-bearing capability of foundations must not be affected where services pass through. Services should be either sleeved with flexible joints, pipe to be within 150mm of foundation and connected on each side by of rocker pipes by length of at most 600mm with flexible joints or, Pipes to pass through a suitably strengthened opening in the foundation, i.e. foundation shuttered and a suitable lintel provided over, sufficient space for movement is required to leave to ensure that the drain is capable of maintaining line and gradient. Opening to be masked with granular backfill (pea shingle) around pipe. DPC to be provided as required by BCO. Advise from Building Control to be sought on suitability of pipe running through any foundations before construction is commenced.

PIPES PASSING THROUGH WALLS

Walls above pipes passing through substructure walls are to be supported on suitable lintel on semi-engineering bricks. Pipe to be provided with a 50mm clearance all round, opening to be masked with granular backfill (pea shingle) around pipe. DPC to be provided as standard and as required by BCO.

NOTIONAL DWELLING THERMAL STANDARDS SAP TARGET

NOTE: This provides good practice specifications for a dwelling built with a heat pump. By using These specifications, the dwelling should pass the target primary energy rate and target emission rate. However, this should be checked through energy calculations. To meet min U value required of P/A ratio of 0.63.

EXISTING GROUND FLOOR LEVEL AS SET OUT

Generally existing set out as-built of previous suspended block and beam floor level is too high in relation to street and driveways. In order to minimise number of steps up to the ground floor, this level is to be revised with new set out to suit using instead a ground bearing slab with simple radon DPM.

GROUND BEARING SLAB- SAP Target: Notional dwelling 0.13 W/m²K

Solid ground floor to consist of 150mm consolidated well-rammed hardcore, blinded with 50mm sand blinding. Provide 100mm ST2 or Gen1 ground bearing slab concrete mix to conform to BS 8500 2:2023 and BS EN 206 over a heavier and upgraded 2000 gauge (400-micron) radon membrane polythene DPM to provide nominal radon protection beyond that mandatorily required. DPM to be lapped in with DPC in walls. Floor to be insulated over slab and DPM with min 120mm thick Kingspan Kooltherm insulation. 25mm insulation to continue around floor perimeters to avoid thermal bridging. A VCL should be laid over (and under if required by the manufacturer) the insulation boards and turned up 100mm at room perimeters behind the skirting, all joints to be lapped by 150mm and sealed. Finish with 75mm sand/cement finishing screed with light mesh reinforcement suitable for cover over any proposed underfloor heating pipes.

FULL FILL EXTERNAL CAVITY WALLS – SAP Target: Notional dwelling 0.18 W/m²K

Subject to SE / BCO inspections of as-built masonry bearing below, all new cavity walls to comprise of 103mm suitable facing brick. Full fill the cavity with 90mm Kingspan Kooltherm K106 full fill insulation as manufacturer's details, leaving 10mm cavity between the insulation and outer skin. Inner leaf to be 100mm medium block, 0.45 W/m²K. Internal finish to be 12.5mm plasterboard on dabs. Walls to be built with 1:1:6 cement mortar. Vertical joints in the board must be staggered and all joints tightly butted. All details including corner and junction to be as relevant BBA certificate. Location to be assessed for suitability of insulation boards, but given the very restricted size and widths of the plot and room sizes as-built, the extra provision of internal insulated plasterboards are not seen as being practical whilst maintaining space standards.

WALLS BELOW GROUND

Inspect all as-built walls below ground for compliance. These and all new walls to be constructed

using blockwork compliant with BS EN 771 and suitable for below ground level or semi engineering brickwork. Walls to be built using 1:4 masonry mortar mix or equal approved specification to BS EN 1996-1-1. Cavities below ground level to be filled with lean mix concrete min 225mm below damp proof course. Or provide lean mix backfill at base of cavity wall (150mm below damp course) laid to fall to weepholes.

DPC

Provide horizontal strip polymer (hyload) damp proof course to both internal and external skins, DPC to be placed a 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

Walls constructed using ss vertical twist retaining wall ties built in at 750mm ctrs horizontally, 450mm vertically and 225mm ctrs at reveals and corners in staggered rows. Wall ties to be suitable for cavity width and in accordance with BS EN 845

CAVITIES

Note that due to existing nature of the construction built to DPC already that the cavity widths of walls is pre-determined and needs to be taken into account by the BCO.

Provide cavity trays over openings and where roofs abut walls. 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.

CAVITY BARRIERS

30 min fire resistant cavity barriers to be provided at tops of walls, gable end walls and vertically at junctions with separating walls & horizontally at separating walls with cavity tray over installed according to manufacturer's details.

MOVEMENT JOINTS

Movement joints to be provided at the following maximum spacing:

Clay brickwork - 12m; Calcium silicate brick - 7.5-9m; Lightweight concrete block - density not exceeding 1,500kg/m³ - 6m; Dense concrete block - density exceeding 1,500kg/m³ - 7.5-9m;

Any masonry in a parapet wall (length to height ratio greater than 3:1) - half the above spacings and 1.5m from corners. Movement joint widths for clay bricks to be not less than 1.3mm/m i.e. 12m = 16mm and for other masonry not less than 10mm. Additional movement joints may be required where the aspect ratio of the wall (length :height) is more than 3:1. Considerations to be given to BS EN 1996-1-2:2005 Eurocode 6. Design of masonry structure.

PARTY WALLS

Not applicable.

ROOFING – SAP Target: Notional Dwelling 0.11 W/m²

THIS IS A GENERAL GUIDE BASED ON NORMAL LOADING CONDITIONS FOUND IN DOMESTIC CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY UNDER THE CONTRACTORS DESIGN PORTION (CDP) TO ASSESS DESIGN TO ASCERTAIN WHETHER FURTHER ENGINEER'S DETAILS/CALCULATIONS ARE REQUIRED. PLEASE REFER TO TRADA DOCUMENT SPAN TABLES FOR SOLID TIMBER MEMBERS IN FLOORS, CEILINGS & ROOFS FOR DWELLINGS OR ASK BCO / SE FOR ADVICE.

VENTED PITCHED ROOF

Marley Duo Modern or Roman Tiles or similar approved to match existing adjoining houses. Pitch 30 Degrees (imposed load max 0.75 kN/m² - dead load max 0.75 kN/m²). To achieve U-value 0.11 W/m²K. Timber roof structures to be designed by SE in accordance with NHBC Technical Requirement R5 Structural Design. Calculations to be based on BS EN 1995-1-1:2004 Eurocode 5: Design of timber structures. Suitable roofing tiles on 25 x 38mm tanalised sw treated battens on breathable felt to relevant BBA Certificate. Supported on 47 x 195mm grade C24 rafters at max 600mm centres, max span 4.12m. Rafters supported on 100 x 50mm treated sw wall plates. Allow min 20mm air space to allow for drape of breathable felt. Insulation to be 150mm Kingspan Thermapitch between rafters and 72.5mm Kingspan Kooltherm K118 insulated plasterboard under. VCL to be provided under insulated plasterboard if required by BCO. Finish 3mm skim coat of finishing plaster. Restraint strapping: Ceiling joists tied to rafters (if raised collar roof consult SE). 100mm x 50mm wall plate strapped down to walls. Ceiling joists and rafters to be strapped to walls and gable walls, straps built into cavity, across at least 3 timbers with noggins. All straps to be 1200 x 30 x 5mm galvanized straps or other approved to BSEN 845-1 at 2m centres.

WARM FLAT ROOF REAR PORTION

(imposed load max 1.0 kN/m² - dead load max 0.75 kN/m²). To achieve U value 0.11 W/m²K. Flat roof covering to be single ply membrane providing aa fire rating for surface spread of flame with a current BBA or WIMLAS Certificate and laid to specialist specification. Single ply membrane to be fixed to 18mm exterior quality plywood over 100mm plus 110mm Kingspan Thermaroom insulation. Insulation bonded to VCL fixed to 18mm exterior grade plywood on firrings to give 1:40 fall on 47 x 195mm C24 timber joists at 400 ctrs, max span 4.51m (see Engineer's details for sizes). Fix 12.5mm plasterboard over vapour barrier to underside of joists, finish a with plaster skim.

Provide restraint to flat roof by fixing of 30 x 5 x 1200mm ms galvanised lateral restraint straps at maximum 2000mm centres fixed to 100 x 50mm wall plates and anchored to wall.

LEAD WORK AND FLASHINGS

All lead flashings, any valleys or soakers to be Code 5 lead and laid according to Lead Development

Association. Flashings to be provided to all jambs and below window openings with welded upstands. Joints to be lapped min 150mm and lead to be dressed 200mm under tiles, etc. All work to be undertaken in accordance with the Lead Development Association recommendations.

LEAD VALLEYS

Lead-lined valleys formed using Code 8 lead sheet. Valley lead and two tiling fillets to be supported on min 25mm thick and 225mm wide marine ply valley boards on either side of the rafters. Lead to be laid in lengths not exceeding 1.5m with min 150mm lap joints and be dressed 200mm under the tiles. Roofing tiles to be bedded in mortar placed on a tile slip to prevent direct contact. Valley to have a minimum 100mm wide channel (125mm minimum for pitches below 30 degrees). Work in accordance with roof cladding manufacturers & Lead Development Association recommendations.

INTERNAL WALLS - STUD PARTITIONS

Note the position and specification of SE proposed vertical diaphragm stud walls. Otherwise, due to the very limited size of the existing floorplate (and desire to add insulated plasterboard to inside face of external blockwork), the desire is to keep internal stud walls as slim as possible but with improved acoustic insulation. Generally: 75mm x 50mm softwood treated timbers studs at 400mm ctrs with 50 x 75mm head and sole plates and solid intermediate horizontal noggins at 1/3 height or 450mm. Provide min 10kg/m² density acoustic soundproof quilt tightly packed (eg. 75mm Rockwool or Isowool mineral fibre sound insulation) in all voids the full depth of the stud. Partitions built off doubled up joists where partitions run parallel or provide noggins where at right angles, or built off the slab above the DPM ground floor. Walls faced throughout with 12.5mm plaster board with skim plaster finish. Taped and jointed complete with beads and stops.

INTERNAL MASONRY PARTITIONS

Not applicable.

INTERMEDIATE FLOORS

Intermediate floor to be 22mm T&G flooring grade MR chipboard or floorboards laid on 175 x 75 C24 joists at 400mm ctrs (see Engineer's calculation for sizes and details). Lay 100mm Rockwool mineral fibre quilt insulation min 10kg/m³ or equivalent between floor joists. Ceiling to be 12.5 Fire Line plasterboard with skim plaster set and finish. Joist spans over 2.5m to be strutted at mid span using 38 x 38mm herringbone strutting or 38mm solid strutting (at least 2/3 of joist depth). In areas such as kitchens, utility rooms and bathrooms, flooring to be moisture resistant grade in accordance with BS EN 312. Identification marking must be laid upper most to allow easy identification. Provide lateral restraint where joists run parallel to walls, floors are to be strapped to walls with 1200mm 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 3 no. joists. Straps to be built into walls. Provide 38mm wide x $\frac{3}{4}$ depth solid noggins between joists at strap positions.

STAIRS

Again, stair dimension is based on already built and planning approved layouts to a limited footprint. Dimensions to be checked and measured on site prior to fabrication of stairs. Timber stairs to comply with BS585 and with Part K of the Building Regulations. Max rise 220mm, min going 220mm. Two risers plus one going should be between 550 and 700mm. Tapered treads to have going in centre of tread at least the same as the going on the straight. Min 50mm going of tapered treads measured at narrow end. Pitch not to exceed 42 degrees. The width and length of every landing should be at least as great as the smallest width of the flight. Doors which swing across a landing at the bottom of a flight should leave a clear space of at least 400mm across the full width of the flight. Cupboard doors may open across the top landing where the swing is a minimum of 400mm from the tread. Min 2.0m headroom measured vertically above pitch line of stairs and landings. Handrail on staircase to be 900mm above the pitchline, handrail to be at least one side if stairs are less than 1m wide and on both sides if they are wider. Ensure a clear width between handrails of minimum 600mm. Balustrading designed to be unclimbable and should contain no space through which a 100mm sphere could pass. Allow for all structure as designed by a Structural Engineer.

SERVICES

Under the Contractors Design Portion (CDP) and sub-let Sub Contractors Design Portion (SCDP) refer to Cornerstone Projects Ltd utilities search provided to determine positions of all on-site services in advance where possible. Generally inspect all incoming underground existing services. All potential ducting and service routes and incoming services meter housings to be investigated and agreed prior to planning works to meet new scheme. All M&E works designed and installed under the CDP / SCDP and to be agreed with the BCO as fit for purpose and meeting current regulations as minimum.

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 Building Control on completion.

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 and the Domestic Building Services Compliance Guide.

FIXED EXTERNAL LIGHTING

External light fittings to be fitted as calculated in the DER and in compliance with the Domestic Building Services Compliance Guide. Light fitting to be either: a. lamp capacity not greater than 100 lamp-watts per light fitting and provided with automatic movement detecting devices (PIR) and automatic daylight sensors ensuring lights shut off automatically when not required.

Or

b. lamp efficacy greater than 45 lumens per circuit-watt; fitted with manual controls and automatic day light cut-off sensors so that lights switch off when daylight is sufficient.

HEATING

Consider current boiler options and capacity under CDP / SCDP design new heating system throughout. Assumed as a gas-fired system as a default initially, all radiators to have TRVs. Heating system to be designed, installed, tested and fully certified by a GAS SAFE registered specialist. All work to be in accordance with the Local Water Authorities bye laws, the Gas Safety (Installation and Use) Regulations 1998 and IEE Regulations. The energy performance of the new components to be assessed. The results should be recorded and given to the building owner. All accessible pipes to be insulated to the standards in Table 4.4 Approved Document L.

WET UNDERFLOOR FLOOR HEATING

If applicable, wet underfloor heating installation to be designed and specified to the ground floor as an integrated CDP/SCDP package by the system manufacturer to ensure compatibility of all the components. Pipework loops design, layout and sizing of the system to be in accordance with BS EN 1264[1-5]. The most appropriate layout for a particular application should be confirmed by the system manufacturer. Maximum floor temperature to be 29°C, or 27°C where floor tiling or resilient floor is proposed in compliance with BS EN1264-2[1]. Insulation to be applied to the floor slab, the insulation type and thickness to be confirmed by calculations, taking into account the specific shape and size of the floor. The resistance value of the insulation layer to be at least 10 times the resistance value of the floor finish. Intermediate floors should have a layer of insulation to reduce downwards heat transmission with a thermal resistance of not less than $0.75(\text{m}^2 \cdot \text{K})/\text{W}$.

Joints between insulation boards to be properly taped to prevent seepage of screed.

Pipework to installed directly to rigid insulation using proprietary clip rails and clips. spaced in accordance with pipe layout design. Pipework loops leading to and from the manifolds to be kept free of any sharp bends that could restrict the free flow of water. Where 90° bends are required, metal formers to be used to prevent twisting and constriction. All joints between the manifold and pipework loops are to be accommodated above the level of screed. No joints to be embedded in the screed. Pipework loops should not extend right to the edge of the floors and under the skirting boards. Pipework fixings to be maintain the integrity of the insulation and other materials.

Manifolds to be securely fastened on a wall at a reasonable height from the floor. Manifolds to be insulated or placed inside an insulated enclosure. Min 65mm sand/cement screed to be provided over insulation and underfloor heating pipework, 75mm to be provided if required by building control and/or manufacture. Prior to pouring the screed, 25mm edge insulation must be installed along the perimeter of the floor. Movement joints to be provided to the floor screed and/or tiles in the following locations: Across door thresholds, Where bay sizes exceed 40m² with a maximum of 8m on any one side, Where sub floor construction joints exist or change of span occurs e.g. beam and block floors, Between independently controlled heating zones, Between heated and unheated areas of screed and ,Additional joints should be considered in areas of high thermal gain e.g. large conservatories or glass atria. Screeds to be isolated at all edges, abutments and columns to allow for movement due to thermal loadings. Joints to be filled with a suitable flexible fille. Grout must not be used. The manufacturers' guidance for both the floor screed and the tiling must be followed to determine the minimum thickness of edge strip required to allow for expansion. Primary pipework and distribution pipework which does not provide useful heat to a room to be insulated to the standards detailed in paragraph 4.26 Approved Document L. Heat loss to be minimised by following

the guidance in paragraphs 6.29 to 6.32 and table 4.4 Approved Document L. Each room should be provided with thermostatic room controls, capable of being used to separately adapt the heating output in each room served by the heating appliance. Dwellings with a floor area of 150m² or greater to have a minimum of two independently controlled heating circuits. Pipework loops to be charged with water and pressure tested prior before screed is poured. Labelling to be provided to enable effective inspection, commissioning, maintenance and repairs of the underfloor heating installation and to identify the rooms to which individual ports of the manifold are connected.

All installed equipment in underfloor heating systems to be commissioned in accordance with BS EN 1264-4. before floor finish is applied. At completion commissioning certificate to be given to the building control body confirming that the commissioning plan has been followed and that all systems have been inspected and conform with the design requirements

NEW GAS BOILER

As default, it is anticipated that heating and hot water will be supplied via a wall mounted condensing vertical balanced flue pressurised boiler with a minimum efficiency of 92% (as defined in ErP) and boiler control interlocks. Each room to be fitted with thermostatic radiator valves and all necessary zone controls. Energy-Related Products Directive for Standard Assessment Procedure modelling, SEDBUK values to be used. The energy performance of the new components to be assessed. The results to be recorded and given to the building owner. All pipes to be insulated to the standards in Table 4.4 Approved Document L. All parts of the system including pipework and emitters should be sized to allow the space heating system to operate effectively and in a manner that meets the heating needs of the dwelling, at a maximum flow temperature of 55°C or lower.

The system will be installed, commissioned and tested by a GAS SAFE Registered Specialist and a certificate issued to demonstrate that the installation complies with the requirements of Part L.

Carbon monoxide alarm to be positioned near boiler. Boiler flue to be installed in accordance with Approved Document J, British Gas requirements and manufacturer's guidance. Flues to be terminated externally with metal terminal guard and positioned a minimum of 600mm away from any openings into the building. Where the flue passes through a wall, floor or roof, enclose in a non combustible sleeve. Where the flue is within a void provide appropriate and sufficiently sized access to allow inspection of the flue. No combustible materials to be within 50mm of the flue. Provide new metered gas supply to the dwelling. All works to comply with gas authority standards. Heating system to be designed, installed, tested and fully certified by a GAS SAFE registered specialist. All work to be in accordance with the Local Water Authorities bye laws, the Gas Safety (Installation and Use) Regulations 1998 and IEE Regulations. Battery operated or mains-wired Carbon monoxide alarm to be fitted between 1m and 3m of the boiler in compliance with Approved Document J.

ALTERNATIVE AIR SOURCE HEAT PUMPS (ASHPS)

As an alternative to the above and if client requests it, then under CDP / SCDP design investigate the supply and fit by specialists of a suitable Heat Pump heating system – assumed provisionally to be most likely an Air Source Heat Pump (ASHP). For this, all external pipework between the dwelling and the heat exchanger should be insulated following the TIMSA guidance. Pipe sizes should be in accordance to manufacturer's recommendations. The load-bearing capacity of surface to take the heat pump, hot water cylinder and thermal store (where fitted) equipment to be assessed and access for maintenance should be provided. Increase the rating of the mains electrical power supply if required to accommodate the electrical current drawn by the heat pump. Fix permanent labels and flow arrows to pipework, valves, etc. Where the heat pump is to be backed up by another heat source, the control of that source must be interlocked to ensure that it can never operate as the priority or 'lead' device. Ensure that the system is commissioned properly and tested for correct operation by a member of the Microgeneration Certification Scheme. All electrical work to be undertaken by a Part P registered Electrician i.e. NAPIT, ELECSA and NICEIC. Installation to be BS EN 14511: Air conditioners, liquid chilling packages and heat pumps with electrically driven Compressors for space heating and cooling (4 parts), BSI 20. Provide operating instructions and maintenance recommendations for the homeowner. Health and safety Care should be taken to address all issues, including: the risk of Legionnaires' disease.

Note, given the additional space requirements of large diameter supplementary buffer vessel(s) and associated plant room equipment for ASHP, given the limited space requirements of the house, it may not be practical to fit this within the current scheme. However, it is suggested that built-under horizontal buffer vessels be used in parallel sequence within the top floor eaves storage space to overcome this. However, such a design needs to be to CDP/SCDP, be fit for purpose and be achievable and affordable cost-wise for this starter home type property.

SMOKE DETECTION

Provide a linked smoke alarm detection system to BS EN 14604 and BS 5839-6:2019 to at least a Grade D2 category LD2 standard. System to be mains powered with battery back up. Smoke detectors to be provided to: Each hallway and landing and every principal living room (as required by the building control officer). An interlinked heat detector to be provided in the kitchen.

In hallways exceeding 7.5m in length, no point within the hallway should exceed 7.5m from the nearest detector and no bedroom door should be further than 3m from the nearest smoke alarm. If ceiling mounted detectors to be 300mm from the walls and light fittings.

MEANS OF ESCAPE - Fire doors

Form a protected escape stairway by providing half hour fire resistance to all partitions, floors and ceilings. Stairway to be protected at all levels and to lead directly to an external door at ground level (no inner rooms allowed). All doors on to the stairway must be FD20 rated fire doors to BS 476 (fitted with intumescent strips rebated around sides & top of door or frame if required by BCO). Where applicable, any glazing in fire doors to be half hour fire resisting and glazing in the walls forming the escape route enclosure to have 30 minutes fire resistance to at least 1.1m above the floor level or stair pitch line. NOTE: Bedroom door to top floor mezzanine bedroom is practically at first floor level to the landing.

ESCAPE WINDOWS

If required as option or Instructed by BCO as additional measure, provide emergency egress windows to any other habitable rooms. The window should have an unobstructed clear openable area that is at least 0.33m² and have no clear dimension less than 450mm high or 450mm wide. The bottom of the openable area should be not more than 1100mm above the floor. The window should enable the person to reach a place free from danger from fire.

UNPROTECTED AREAS

Please note the extent of unprotected area on an external wall, i.e. windows, doors, timber cladding etc, should not exceed: 5.6m² when the minimum distance between side of the building and the relevant boundary is 1m; or 12m² when the minimum distance between the side of the building and the relevant boundary is 2m. Other methods of calculation are given in Approved Document B1.

UNPROTECTED AREAS LESS THAN 1M FROM BOUNDARY

Not applicable but, generally any window or door openings should meet the conditions in Diagram 11.5 in Part B Volume 1 (small unprotected areas), and the rest of the wall should be fire resisting from both sides. External surface materials facing the boundary should be class B-s3, d2 or better.

WINDOWS AND DOORS

ROOF LIGHTS

Min U-value of 1.6 W/m²K. Roof-lights to be double glazed with 16mm argon gap and soft low-E glass. Window Energy Rating to be Band C or better. Roof lights to be fitted in accordance with manufacturer's instructions, with rafters doubled up to sides and suitable flashings provided.

SAFETY GLAZING

All glazing in critical locations to be toughened or laminated safety glass to BS 6206, BS EN 14179 or BS EN ISO 12543-1:2011 and Part K (Part N in Wales) of the current building regulations. i.e. within 1500mm above floor level in doors and side panels within 300mm of door opening and within 800mm above floor level in windows.

DOORS

Doors to achieve a U-Value of 1.6 W/m²K. Glazed areas to be double glazed with 16-20mm argon gap and soft low-E glass. Glass to be toughened or laminated safety glass to BS 6206, BS EN 14179 or BS EN ISO 12543-1:2011 and Part K (Part N in Wales) of the current Building Regulations.

Insulated plasterboard to be used in reveals to abut jambs and to be considered within reveal soffits. Fully insulated and continuous cavity closers to be used around reveals. Windows and door frames to be taped to surrounding openings using air sealing tape.

WINDOWS

Windows to be double glazed with argon filled gap and with a soft coat low-E glass. Window Energy Rating to be Band A or better and to achieve U-value of 1.6 W/m²K. Insulated plasterboard to be used in reveals to abut jambs and to be considered within reveal soffits. Fully insulated and continuous cavity closers to be used around reveals. Windows and door frames to be taped to surrounding openings using air sealing tape.

VENTILATION GENERALLY

Ventilation provision generally in accordance with CDP/SCDP and the Domestic Ventilation Compliance Guide and in strict compliance with new 2022 Building Regulation updates. NOTE: Natural ventilation is only suitable for less airtight dwellings which have one of the following: A Design air permeability higher than 5m³/(h.m²) at 50Pa, or; An as-built air permeability higher than 3m³/(h.m²) at 50Pa. For other dwelling expert advice should be sought but mechanical ventilation is likely to be required (see below):

MECHANICAL VENTILATION WITH HEAT RECOVERY

Mechanical system to be installed in accordance with manufacturer's details. Details of system to be given to BCB. Minimum extract ventilation extract rates to be: Kitchen – 13 l/s; Utility room - 8 l/s; Bathroom – 8 l/s and; Sanitary accommodation – 6 l/s. The sum of all extract ventilation in the dwelling, on its continuous rate, to be at least the whole dwelling ventilation rate given in Table 1.3 Approved Document F. The minimum whole dwelling ventilation rate for the supply of air to the habitable rooms to be 0.3 litres per second per m² of internal floor area. System to include either manual or automatic controls, (i.e. humidity sensors) to operate between trickle and boost modes. Mechanical extract system to be performance tested to BS EN 13141 -7. Mechanical supply terminals should be located and directed to avoid draughts. To ensure good transfer of air through the dwelling there should be an undercut of minimum area 760mm in all internal doors above the floor finish. This is equivalent to an undercut of 10mm for a standard door. System to be designed to avoid the moist air from the wet rooms recirculating to the habitable rooms. To avoid unintended air pathways, background ventilation should not be installed with mechanical ventilation with heat

recovery. Mechanical ventilation system to be designed and installed to minimise noise. Access to be provided for maintaining and cleaning ventilation systems, Rigid ducts to be used wherever possible. Flexible ductwork only to be used for final connections, in lengths no more than 1.5m. Ductwork to meet BSRIA's BG 43/2013. Any ducting passing through a fire resisting wall/floor or fire compartment to be adequately fire stopped, provided with suitable dampers and/or fire collars or in fire resisting trucking in compliance with Approved Document B. Mechanical ventilation systems to be commissioned in accordance with Approved Document F. Appendix C, completion checklist, commissioning sheet and air flow rate test results to be given to the Local Authority on completion. The owner to be provided with information as listed in Approved Document F including: Information about the building's ventilation system and maintenance requirements; The operating and maintenance instructions; The design flow rates and ; The completed commissioning sheet. The information should be provided in a non-technical and clear manner. A Home User Guide to be provided for the dwelling containing a section on 'Ventilation' that provides nontechnical advice on the ventilation systems provided. Systems to ensure that they use no more fuel and power than is reasonable in the circumstances in accordance with Approved Document L.

COMMISSIONING OF MECHANICAL VENTILATION SYSTEMS

Any fixed mechanical ventilation system to be commissioned in accordance with F1(2). The person carrying out the work to give to building control, no later than 5 days after the final test, the Appendix C completion checklist and commissioning sheet, along with the commissioning results to show mechanical ventilation flow rates are as specified and that the controls are operating as required. A copy of the completed commissioning sheet in Appendix C to be given to the owner along with clear and simple written guidance on how to operate and maintain the ventilation system. A section on ventilation that provides non-technical advice on the ventilation system to be provided in the Home User Guide.

PITCHED ROOF VENTILATION

Maintain a 50mm air gap above insulation in all re-laid and new roof pitches to ventilate roof. Provide opening at eaves level at least equal to continuous strip 25mm wide and opening at ridge equal to continuous strip 5mm wide to promote 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.

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.

DRAINAGE

Cornerstone Project Ltd services search provided to be inspected by the Contractor as part of their CPD/SCDP prior to all works to help establish actual routing of all underground drainage and agreements made with BCO regarding all new service runs.

RAINWATER DRAINAGE

New rainwater goods to be new 110mm UPVC half round gutters taken and connected into 68mm dia UPVC downpipes. Note that due to the limited site constraints and as-built nature of the house setting-out, rainwater cannot feasibly be taken to a new crate soakaway, situated a min distance of 5.0m away from any building, via 110mm dia UPVC pipes surrounded in 150mm granular fill. BCO to advise.

EXTERNAL SURFACE WATER DRAINAGE

Drainage of paving areas to be carried out in accordance with BS EN 12056-3:2000 and Approved Document H. Hard surfaces around the building should be provided with a proprietary non slip permeable surface laid to manufacturer's details and in compliance with BS EN 1338:2003, to allow adequate drainage or be provided with a non slip surface and cross fall of 1:40 – 1:60 draining away from the building (for a minimum of 500mm) to a suitable soakaway. Paths, driveways and other narrow areas of paving should be free draining away from any buildings to a pervious area such as grasslands permeable paving system or to a suitable soakaway. Paved areas to be suitably drained free from storm water using permeable/porous finishes such as resin-bound aggregates, gravel or dry-laid pavers.

UNDERGROUND FOUL DRAINAGE

Underground drainage to consist of 100mm diameter UPVC proprietary pipe work to give a 1:40 fall. Surround pipes in 100mm pea shingle. Provide 600mm suitable cover (900mm under drives). Shallow pipes to be covered with 100mm reinforced concrete slab over compressible material. Provide rodding access at all changes of direction and junctions. All below ground drainage to comply with BS EN 1401-1.

Form 2 No. Foul and Surface Water Manhole / Drop Manhole (specification subject to site Invert Levels confirmed) and road sewer connection invert levels to suit optimum falls direction & connection requirements of separate Foul and Combined Sewers. The New Roads and Street Works Act 1991 (NRSWA) requires that qualified operatives are on site at all times whilst any street works are in progress.

CONTRACTOR STANDARDS AND INDUSTRY GUIDES

All drainage works underground to Sewerage Sector Guidance (SSG) Appendix C: Maintained by Water UK, this document contains the mandatory Design and Construction Guidance (DCG) which replaced Sewers for Adoption. It defines the specific technical geometry for backdrop steps, pipe encasements, and boundaries. Saddle Connections & Core Drilling: When joining your lateral drain to the main road sewer, contractors are prohibited from using mechanical disc cutters to smash holes. Standard specifications require a core-drilled opening fitted with a proprietary oblique mechanical saddle to safeguard the structural integrity of the main sewer. Confined Space Regulations 1997: Any contractor adjusting levels or entering a public asset manhole deeper than 1.2 meters must hold a valid confined space certificate and execute the connection under a formal, site-specific Method Statement. British Standards (BS EN 752 / BS EN 12056): These European and British standards govern the functional design of drain and sewer systems outside buildings, ensuring correct flow velocities (minimum 0.7m/s) to achieve self-cleansing performance

INSPECTION CHAMBERS

Underground quality proprietary UPVC 450mm diameter inspection chambers to be provided at all changes of level, direction, connections and every 45m in straight runs. Inspection chambers to have bolt down double sealed covers in buildings and be adequate for vehicle loads in driveways.

MANHOLES / DROP MANHOLES

Precast elements used for drop manholes must strictly conform to specific British and European standards: BS EN 1917 / BS 5911-3: Specifies the dimensional, material, and structural requirements for precast circular manhole components, chamber rings, and base slabs. BS EN 13101: Governs the material and design of precast step irons and ladders for safe manhole access. BS EN 124: Specifies the structural load capacity and dimensions of cast-iron or steel access covers and frames (e.g., D400 for roadways).

ABOVE GROUND DRAINAGE

All new above ground drainage and plumbing to comply with BS EN 12056-2 for sanitary pipework.

All drainage to be in accordance with Part H of the Building Regulations. Wastes to have 75mm deep anti vac bottle traps and rodding eyes to be provided at changes of direction.

Size of wastes pipes and max length of branch connections (if max length is exceeded then anti vacuum traps to be used): Wash basin - 1.7m for 32mm pipe 3m for 40mm pipe; Bath/shower - 3m for 40mm pipe 4m for 50mm pipe: and W/c - 6m for 100mm pipe for single WC.

All branch pipes to connect to 110mm soil and vent pipe terminating min 900mm above any openings within 3m. Or to 110mm upvc soil pipe with accessible internal air admittance valve complying with BS EN 12380, placed at a height so that the outlet is above the trap of the highest fitting. Waste pipes not to connect on to SVP within 200mm of the WC connection. Supply hot and

cold water to all fittings as appropriate.

SOIL AND VENT PIPE

Subject to client review inspect all existing SVP and consider alternative material such as cast iron or aluminium if required as upgrade to default UPVC. If applicable, SVP is to be extended up in 110mm dia and to terminate min 900mm above any openings within 3m. Provide a long radius bend at foot of SVP.

AUTOMATIC AIR VALVE

As applicable, ground floor fittings from WC's to be connected to new 110mm soil pipe with accessible internal air admittance valve complying with BS EN 12380, placed at a height so that the outlet is above the trap of the highest fitting and connected to underground quality drainage encased with pea gravel to a depth of 150mm.

PIPEWORK THROUGH WALLS

Where new pipework passes through external walls form rocker joints either side wall face of max length 600mm with flexible joints with short length of pipe bedded in wall.

Alternatively provide 75mm deep pre-cast concrete plank lintels over drain to form opening in wall to give 50mm space all round pipe: mask opening both sides with rigid sheet material and compressible sealant to prevent entry of fill or vermin.

SOLID WASTE STORAGE (REFUSE)

Bin storage to be in accordance with BS 5906:2005 Code of Practice for waste management in buildings to ensure that there is suitable spaces/enclosures for bins. Adequate provision shall be made for the collection of waste as required by the Waste Collection Authority. The new dwelling is to be provided with an area of 1.2m x1.2m for refuse storage containers. Separate containers are to be provided for recycling and non recycling household waste. Waste collections that are less than weekly may require increased capacity as agreed with the Waste Collection Authority. If a communal solid waste storage facility is used, storage to have a combined capacity of 0.25m³ per dwelling or as agreed with the Waste Collection Authority. Refuse storage areas to be sited within 25m of the waste collection point or as specified by the Waste Collection Authority, and placed so that the householder does not need to carry refuse more than 30m. Refuse storage areas are to be positioned away from any windows and ventilators and are not to impede access into the dwelling.

ENERGY EFFICIENCY / BUILDING REG CHANGES 2022

Key changes to the Building Regulations at the time of writing are: Reduction of carbon emissions as part of the Future Homes Standard; Reduction of carbon emissions in non-domestic new builds by 27%; New metric for measuring energy efficiency; New minimum efficiency standards In new domestic builds, the new U-value for walls will be 0.18W/m², 1.4 (Window Energy Rating Band B) for

windows and rooflights, and 1.4. for doors; New maximum flow temperature New and replacement heating systems in both domestic and non-domestic builds must have a max flow temperature of 55 C; Heating and lighting system efficiency; Ventilation and indoor air pollutants; Fabric Energy Efficiency Standard (FEES); Prevention of overheating. New Approved Document O introduces glazing limits in new build homes to reduce unwanted solar heat and new levels of cross ventilation; and Electric vehicle charging points.

PART L (CONS. OF FUEL & POWER)

REGULATIONS 26, 26A AND 26C ENERGY PERFORMANCE

Supplied by others and as requested, the below to be submitted to building control before the work starts as requested:

Target primary energy rate and the dwelling primary the emission rate; The target emission rate and the dwelling emission rate; The target fabric energy efficiency rate and the dwelling fabric energy efficiency rate, and ; A list of specifications to which the dwelling is constructed.

The dwelling primary energy rate, dwelling emission rate and dwelling fabric energy efficiency rate must not exceed the target primary energy rate, target emission rate and target fabric energy efficiency rate, respectively.

No later than 5 days after the work has been completed building control to be provided with: The as built target primary energy rate and as-built dwelling primary energy rate; The as-built target emission rate and as-built dwelling emission rate; The as-built target fabric energy efficiency rate and as-built dwelling fabric energy efficiency rate, and: A list of specifications used in the as-built calculations, and whether the specifications have changed from those used in the design stage calculations.

All to be calculated using the Standard Assessment Procedure for Energy Rating of Dwellings, SAP 10. BREL report to be given to building control along with photographic evidence of compliance. Energy Performance Certificate (EPC) accompanied by a recommendation report in compliance with Regulation 29, is to be given to the owner of the building and submitted to building control, no later than 5 days after the work has been completed.

REGULATION 43 - AIR PRESSURE TESTING

An air pressure test to be carried out on each dwelling. Certificate to be given to building control by a person who is registered by Elmhurst Energy Systems Limited or the Air Tightness Testing and Measurement Association. Air pressure tests to be performed following the guidance in the Approved Airtightness Test Methodology CIBSE TM23. The measured air permeability to be not

worse than 5 m³/(h·m²) at 50 Pa. If the required air permeability is not achieved, then remedial measures should be undertaken and a new test carried out until satisfactory performance is achieved. The results of all pressure tests, including any test failures, should be reported to building control. A copy of the test results to be sent building control no later than 7 days after the test has been carried out.

REG 40 AND 40A PROVIDING INFORMATION

On completion of the works the owner of the dwelling shall be provided under the CDP/SCDP with: Information about the fixed building services and on-site electricity generation and their operating and maintenance instructions, including timing and temperature control settings, and a Home User Guide; A recommendations report generated with the 'on-construction' energy performance certificate, and; A signed copy of the Building Regulations England Part L compliance report (BREL). Information to be easy to understand and in an accessible format.

CONTINUITY OF INSULATION AND 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. The building fabric to be constructed so that the insulation is reasonably continuous across newly built elements.

Drawings to be provided for junctions to prevent thermal bridging, guidance in Building Research Establishment's BR 497 or other independently assessed thermal junction details to be followed. Before elements are concealed, photographs of the details and an on-site audit to be undertaken to confirm that the designed details have been constructed in line with the guidance in Appendix B of Approved Document L.

REGULATION 25A: CONSIDERATION OF HIGH EFFICIENCY ALTERNATIVE SYSTEMS

Analyse of the use of high efficiency alternative systems to be undertaken under the CDP/SCDP, taking into account the technical, environmental and economic feasibility of the provision of such systems. A copy of the analysis to be available for inspection by building control to on request. The document to state whether high-efficiency alternative systems have been included in the dwelling design.

REG 44 AND 44ZA – COMMISSIONING OF FIXED BUILDING SERVICES

All fixed building services under the CDP/SCDP to be commissioned and a commissioning plan to be produced identifying: Systems that need to be tested; How these systems will be tested, and; Commissioning plan to be given to the building control body with the design stage dwelling primary energy rate, dwelling emissions rate and dwelling fabric energy rate calculation. At completion a commissioning certificate to be given to the building control body confirming that the commissioning plan has been followed and that all systems have been inspected and conform with

the design requirements.

SYSTEM CONTROLS AND ZONING

Domestic hot water circuits to have: Time control that is independent of space heating circuits and Electronic temperature control. Each room or agreed zone should be provided with thermostatic room controls. Any dwellings with a floor area of 150m² or greater to have a minimum of two independently controlled heating circuits (NOTE: The estimated floor area is 88m² and so this latter requirement is not applicable here).

LIMITING HEAT LOSSES AND GAINS

In accordance with Table 4.4 Approved Document L Insulation to be provided to: Primary circulation pipes for domestic hot water; Primary circulation pipes for heating circuits where they pass outside the heated living space and voids; Pipes connected to hot water storage vessels for at least 1m from the point at which they connect to the vessel, and; all secondary circulation pipework.

AIR TIGHTNESS

As / if requested, drawings to be provided which identify the position, continuity and extent of the air barrier. Incoming and penetrating services, ducts and cables, wherever possible, to be grouped to minimize how often the air barrier is penetrated. Grommets or flexible collars to be used around flexible services and sealed to the air barrier with air-sealing tape or sealant.

APPENDIX B: REPORTING EVIDENCE OF COMPLIANCE BREL report

The Building Regulations England Part L (BREL) report and photographic evidence to be provided to building control and to the building owner. Photographs to show thermal continuity and quality of insulation to be made available to the energy assessor and building control of the following details: At ground floor perimeter edge insulation; At external door threshold; Below damp-proof course on external walls; Ground floor to wall junction; Structural penetrating elements; Joist/rafter level; Eaves and gable edges; Window positioning in relation to cavity closer or insulation line; External doorset positioning in relation to cavity closer or insulation line; Air tightness details where required; Under CDP/SCDP, Plant/equipment identification labels, including make/model and serial number; Primary pipework and continuity of insulation, and; Mechanical ventilation ductwork continuity of insulation (for duct sections outside the thermal envelope). Each image file name to confirm location, date and time. Plot number and detail reference to be shown on image.

PART M (ACCESS AND USE)

M4(1): CATEGORY 1 – VISITABLE DWELLINGS.

Compliance with this requirement is achieved when a new dwelling makes reasonable provision for most people, which includes wheelchair users to access and enter the dwelling, and access habitable

rooms and sanitary facilities on the entrance level. However, being accepted as 'reasonable' must also consider the approved space limitations of 2007 granted planning permission 07/D49154 already part-developed on site, as well as subsequent Lawfulness Development Certificate 23/00198/CPE and approved variation 23/00605/FUL.

LEVEL APPROACH

Note that the house as set out is already part-built to DPC as was done under earlier Building Regulations scheme at that time. The proposal is to attempt in good faith to lower the height that was previously set for the current precast suspended floor units in an attempt to improve level access – but within reason and where practical. Otherwise level access can be provided towards the rear patio units. Here, provide a level approach. No steeper than 1:20 and at least 900mm wide, with cross falls no greater than 1:40. Approach. Surface material to be resin bound permeable surface as detailed –or otherwise agreed as variation. Finish to be firm, non-slip and capable of supporting the weight of a wheelchair and its user (loose material such as gravel and shingle is not suitable).

ACCESSIBLE LEVEL DOOR THRESHOLDS INTO THE BUILDING

As above, where practical entrance door to the rear to have an accessible level threshold provided with a weather bar (maximum height 15mm) with suitable drainage channel. Landings to have a fall of 1:40-1:60 away from the door. Principal entrance door to have a minimum 775mm clear opening between the door leaf and doorstops.

RAMPED APPROACH MAX GRADIENT 1:12

As above, where fair and reasonably practical (given the pre-existing nature of the construction to DPC), provide a ramped approach to the principal entrance door with a firm, even, non slip (permeable) surface capable of supporting the weight of a wheelchair and its user. Any ramp to be at Least 900mm wide and with cross falls no greater than 1:40 and a maximum gradient of 1:12. Although not applicable here, landings of 1.2m to be provided every 5m. Ensure the top and bottom Landing are at least 1.2m clear of any door swing (provide intermediate landings if necessary).

EXTERNAL STEPPED APPROACH SITES WITH A SLOPE OF MORE THAN 1:15

If limitations of already set out and as-built floor construction requires it, provide suitable firm, hard and non slip steps to principal entrance door at least 900mm wide, with landings 900mm long (min) at the top and bottom of the steps. Steps to have suitable tread nosing profile and uniform rise between 75 - 150mm and a uniform going of 280mm (which for tapered treads should be measured at a point 270mm from the inside of the tread). Provide a continuous handrail with a grippable profile fixed 850-1000mm above the step pitch line and extending 300mm beyond the top and bottom nosings. The rise of the flight not to exceed 1.8m between any landings (although not applicable here).

INTERNAL CORRIDORS AND DOOR WIDTHS

Looking at the existing nature of the approved layout and limited footprint, a 900mm wide stair and corridor and upper landing effectively condenses space requirements in all upper floors pro rata (so room widths would be reduced to both the 2 primary bedrooms to the first floor by 200mm making them unusable to fit a small double bed even. Add to this requirements to include internal insulated plasterboard. Note that this scheme was agreed at planning and Building Regulations some considerable time ago and so certain variations or upgrades are just not practical given already installed construction and site constraints.

Doorway clear opening width and corridor clear passage way width to comply with the following: 750mm or wider doorway – corridor to be 800mm (when approached head on); 750mm doorway – corridor to be 1200mm (when approach is not head on); 775mm doorway – corridor to be 1050mm (when approach is not head on); 800mm doorway – corridor to be 800mm (when approach is not head on); Door and corridor width to comply with Diagram 1.2 and to be measured in accordance with diagram 1.1, Approved Document M. Any localised obstruction must not occur opposite or close to a doorway, and should not be longer than 2m in length. The corridor must not be reduced below a minimum 750mm width at any point.

ACCESSIBLE SWITCHES, SOCKETS, CONTROLS ETC

All electric sockets outlets, controls and switches etc to be positioned between 450mm and 1200mm above floor level. Accessible consumer units should be fitted with a child proof cover or installed in a lockable cupboard.

PROVISION OF A GROUND FLOOR WC

Considering the extreme physical space limitations of 2007 granted planning permission 07/D49154, LDC 23/00198/CPE and 23/00605/FUL, it is clear that a full wheelchair accessible WC absolutely cannot realistically or reasonably be provided on the principal entrance storey (i.e. with a minimum 500mm clear space provided either side of the centre of the WC pan and 750mm minimum clear space in front of the pan to allow sufficient space for wheelchair approach and turning). However, the washbasin and door has been positioned so as not to impede access or manoeuvrability and the door into WC is outward opening to make it suitable for ambient disabled.

LIFETIME HOMES

Dwelling to comply where practical with the criteria set out for lifetime homes including: Dwelling approach, Entrances, Internal doors and hallways, Circulation space, Entrance level living space, WC & Bathrooms, Glazing and Location of service controls. However, again, the issue of achieving space and manoeuvring standards for parking off road must defer again to 07/D49154, LDC 23/00198/CPE

and 23/00605/FUL first and foremost and be treated reasonably.

PART C (CONDENSATION)

C2. CONDENSATION

Walls, floors and roof of the building to be designed and constructed so that their structural and thermal performance will not be adversely affected by interstitial condensation, surface condensation or mould growth. Account to be taken of the building's form and orientation in relation to topography, prevailing winds, sunlight and over-shadowing, and the rate at which humidity is generated. Materials with the highest vapour resistance should be located on the warm side of a thermal element. VCLs to be provided where necessary. The junctions between elements are designed to Accredited Construction Details or guidance of BRE IP17/01] and BS 5250:2021 Management of moisture in buildings to be followed.

PART E (SOUND PROTECTION AND TESTING)

Not applicable. The property is a single dwelling, not a House in Multiple Occupation and does not have any separating Party Wall, floors or partitions. That said, sound insulation work onsite will look to comply generally with non-statutory best practice 'robust construction design details' as specified to reduce both airborne and impact sound transfer and disturbance internal to the dwelling.

PART G (HOT & COLD WATER SUPPLY)

WATER EFFICIENCY

The estimated water consumption not to exceed 125 litres per person per day in accordance with Approved Document G2. Water Efficiency to be calculated using the 'Water Efficiency Calculator for New Dwellings' and results submitted to building control before works commence on site. Water calculation to be in compliance with Code for Sustainable Home Level 3/4 as stipulated by the local Planning Authority. Example calculation below; WC 5/3 (dual flush); Taps (excluding kitchen taps) 4; Baths 180; Shower 8; Kitchen sink taps 6; Washing machine 8.17; Dishwasher 1.25; Water recycling 0 and; Predicted per capita consumption (Code) 103.28.

COLD WATER SUPPLY

There must be a suitable installation for the provision of a wholesome water supply in accordance with Approved Document G. Cold water supply to be provided to washbasins, bidets, baths, WCs, showers, any place where drinking water is drawn off and to any sink provided in areas where food is prepared. Supply of cold water to comply with section 67 of the Water Industry act 1991 and the Water Supply Regulations 2000.

HOT WATER SUPPLY

All bathrooms, washbasins, bidet, baths and showers to be provided with adequate hot and cold water supply in accordance with Approved Document G3. A washbasin with wholesome hot and cold

water supply to be provided in or adjacent to all rooms containing a WC. A sink with hot and cold water also to be provided to any area where food is being prepared.

CONTROL OF WATER TEMPERATURE

The installation of the hot water supply to comply with Approved Document G3. All baths and showers are to be fitted with an inline thermostatic mixing valve to ensure that the temperature of the water delivered to the bath is limited to 48°C.

HOT WATER STORAGE SYSTEMS

Hot water storage systems should be designed and installed in accordance with BS 12897 2006. Hot water vessels, cisterns etc and must be adequately supported. Any hot water storage system, including any cistern or other vessel, shall incorporate precautions to ensure suitable pressure relief, and ensure any discharge from safety devices is safely conveyed to where it is visible, but will not cause harm to persons in or about the building. Precautions to be in place to prevent stored water exceeding 100°C. Hot water vessels to be fitted with a non self resetting energy cut out to instantly disconnect the power supply. Outlets from domestic hot water storage vessels to be fitted with an in-line valve to prevent water temperatures exceeding 60°C. All pipes carrying hot water to be insulated where they pass through unheated spaces. Hot water storage system to be provided with suitable warning labels. Relevant certificates for the heating system i.e. Benchmark certificate, and commissioning certificates for fixed building services are to be given to the building owner and a copy provided to Building Control on completion.

PART O (OVERHEATING)

Compliance to be demonstrated by using as preference the simplified method for limiting solar gains and providing a means of removing excess heat as set out in Section 1 of Approved Document O. Compliance check list (AD O Appendix B) to be provided to demonstrate compliance. Alternatively, the dynamic thermal modelling method may be considered as set out in section 2 of Approved Document O, using the guidance set out in - CIBSE TM59 methodology for predicting overheating risk. Report to be provided that demonstrates that the building passes CIBSE's TM59 assessment of overheating. Consideration given to provision of adequate daylight as detailed in BS 8206 -2 Code of Maintaining Adequate Level of Daylight, noise pollution and security.

SOLAR GAIN LIMITATION

Maximum allowable glazing of the building or part of the building and the most glazed room are to be determined using Table 1.1 or 1.2 of Approved Document O, using the orientation of the façade with the largest area of glazing. Appropriate shading for any building in a high risk location to be provided by either: a. External shutters with means of ventilation; b. Glazing with a maximum g-value of 0.4 and a minimum light transmittance of 0.7, and; c. Overhangs with 50 degrees altitude

cut-off on due south-facing façades only.

PROTECTION FROM FALLING AND ENTRAPMENT

Window handles on windows that open outwards are not to be more than 650mm from the inside face of the wall when the window is at its maximum openable angle. Any guarding to be sized to prevent the passage of a 100mm sphere, to be 1.1m high from floor level, to be not easily climbable and to be capable of resisting at least the horizontal force given in BS 6180:2011. Any louvered shutters, window railing and ventilation grilles to comply with the following: Not allow the passage of a 100mm diameter sphere; All holes which allow the passage of an 8mm diameter rod should also allow the passage of a 25mm diameter rod, such holes should not taper in a way that allows finger entrapment, and; All looped cords must be fitted with child safety devices.

PROVIDING INFORMATION

The owner of the building shall ensure they be given information to allow them to use the overheating mitigation strategy, sufficient information about the overheating mitigation strategy and its maintenance requirement to be given to the owner, information to include: Overall overheating mitigation strategy; Location of each element of the strategy; Instructions for the operation of each element of the strategy; The time of day the different parts of the strategy should be used; The time of year the strategy should be used; Manufacturer's contact details; The location of controls and instruction for setting of controls; The location of sensors and how to recalibrate them; Cleaning and maintenance instructions, and ; Home User Guide to include a section on 'Staying cool in hot weather'.

PART R (COMMUNICATIONS)

Self build developer to install at least one functioning gigabit-capable connection from a network distribution point to a network termination point at the new dwelling. The Developer to provide gigabit-ready infrastructure necessary for gigabit-capable connections up to a network distribution point, or as close as is reasonably practicable where the developer does not have the right to access land up to that distribution point; and Subject to a £2,000 cost cap per dwelling, a functioning gigabit-capable connection. Where the developer is unable to secure a gigabit-capable connection within the cost cap, the developer to install the next fastest connection available, provided this can be done without that connection also exceeding the cost cap. Where the developer has no right to install the infrastructure in or on intervening land and no gigabit-capable connection is being provided, the developer is still required to install infrastructure to one of the following points in order of priority 1. As close as reasonably practicable to a location at which it is likely that a distribution point is to be installed with a 2 year period and 2. Where there is no existing network distribution point to which infrastructure can be built and where there is no likely future location for

a distribution point, an access point in or on the building. A connectivity plan to be submitted to building control as part of the building regulations application.

PART Q (SECURITY)

Confirmation required that all doors and windows are to be installed in accordance with the advice stated in PAS24:2022 or alternatively comply with the requirements set out in Approved Document Q – Appendix B. Doors to be manufactured to a design that has been shown by test to meet the requirements of British Standard publication PAS24:2022 or designed and manufactured in accordance with Appendix B or Approved Document Q. For example: Doors to be fitted with a viewer, door chain and mechanically fixed as the manufacturer's installation guide; The door set should be manufactured from solid or laminated timber with a minimum density of 600kg/m³; Any panel in the door must be a min 15mm thick and suitably secured in place; The smaller dimension of the panel must be no larger than 230mm in either width or height; Main front doors should be fitted with multipoint locking system.

Windows:

Any part of a window or doorway, which is within 2m vertically of an accessible level surface such as the ground level, or an access balcony, or windows within 2m vertically of a flat or sloping roof (with a pitch of less than 30 degrees) that is within 3.5m of ground level should be secure windows in accordance with paragraphs 2.2 and 2.3 of Approved Document Q. Windows to be made to a design that has been shown by test to meet the security requirements of British Standards publication PAS 24:2022. Frames to be mechanically fixed to the structure of the building in accordance with manufacturer's installation instructions.

PART S (VEHICLE CHARGING)

Electrical vehicle charge point to be provided to any associated car parking spaces. If the connection cost is greater than £3600 two formal quotes to be given to building control, as detailed in Approved Document S, in which case cable routes for electrical vehicle charge points to be agreed.