FOUNATION DUE TO THE PROXIMETY OF THE DRAINAGE TO THE FOUNDATIONS, RECOMMEND REAR DRAINAGE RUN MARKED OUT ON SITE BY SPECIALIST CONTRACTOR PRIO TO FOUNDATION EXCAVATION. IF TRADITIONAL FOUNDATIONS ARE USED AN EXCENTRIC FOUNDATION WILL BE REQUIRED TO ENSURE NO LOADING ONTO THE EXISTING DRAIN. ANY DRAINAGE PASSING THROUGH THE FOUNDATIONS TO BE SHUTTERED AND LINTEL OVER.

STRIP FOUNDATION - OR PILE BY SPECIALIST

THERE IS AN EXISTING DRAIN RUNNING ACROSS THE REAR OF THE PROPERTY APROXIMATILY 2.0 FROM THE REAR ELEVATION - THIS IS 1.8 - 2.2M DEEP RUNNING DOWN TOWARDS THE ADJOINED NEIGHBORS PROPERTY. A PILED FOUNDATION DESIGN MAY BE A MORE COST EFFECTIVE FOUNDATION OPTION.

IF TRADITIONAL FOUNDATION SUGGEST MASS FILL TO MIN 500MM BELOW FINISHED GL - Provide Min 600mm Wide concrete foundation, concrete mix to conform to BS EN 206:2013 and BS 8500-2. All foundations to be a minimum of 1000mm below ground level, exact depth to be agreed on site with Building Control Officer to suit site conditions. All constructed in accordance with 2010 Building Regulations 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 Building Control Officer is to be contacted and the advice of a Structural Engineer should be sought.

SOIL AND VENT PIPE

Svp to be extended up in 110mm dia UPVC and to terminate min 900mm above any openings within 3m. Provide a long radius bend at foot of SVP.

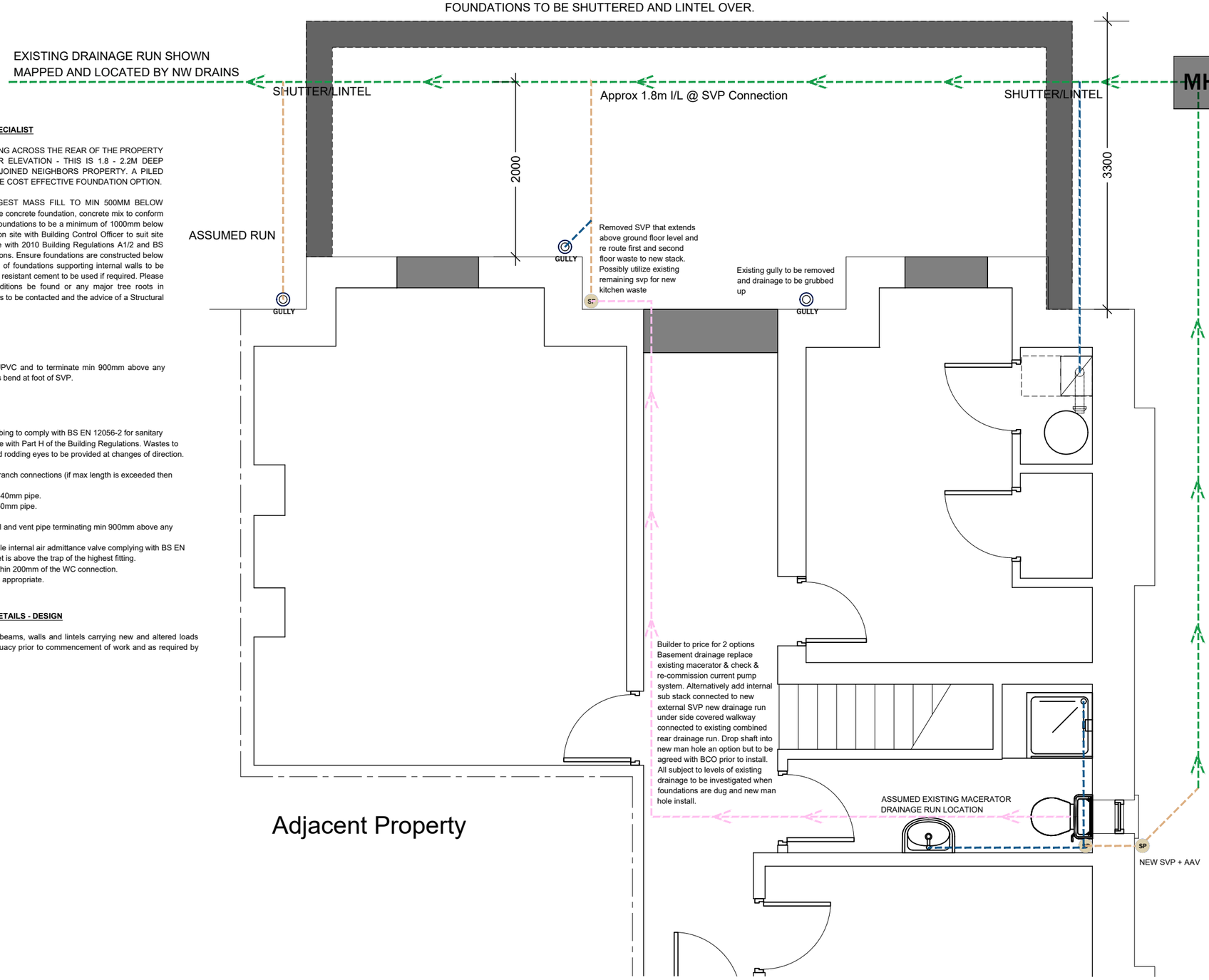
ABOVE GROUND DRAINAGE

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-vac 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.
WC - 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.

EXISTING STRUCTURE - SEE ENGS DETAILS - DESIGN

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



INSPECTION CHAMBERS -

DROP SHAFT DUE TO THE EXISTING DEPTH OF THE CURRENT REAR DRAINAGE RUN THE NEW RAIN WATER GULLEYS ARE TO BE CONNECTED VIA A DROP SHAFT INSTALLED WITHIN THE NEW MANHOLE

Underground quality proprietary UPVC 450mm diameter inspection chambers to be provided at all connections, changes of level, changes in direction, 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.

Either install new 450mm proprietary manhole by cutting existing drainage run and installing flexi band seals. Alternatively cut and fabricate additional required slipper and use either pre fab concrete rings or create brick built man hole. Install reducers down to 350mm for any depths more than 1200mm from finished ground level.

NEW GAS BOILER - ALREADY RECENTLY INSTALLED PRIOR TO WORKS DUE TO CURRENT BOILER NO LONGER BEING COST EFFECTIVE TO REPAIR

Heating and hot water will be supplied via a wall mounted condensing vertical balanced flue pressurised boiler with a minimum efficiency of 91% (as defined in ErP(1))
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. All parts of the system including pipework and emitters to 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. No combustible materials within 50mm of the flue. Rooms to be fitted with thermostatic radiator valves and all necessary zone controls and boiler control interlocks. The system will be installed, commissioned and tested by a GAS SAFE Registered Specialist and a certificate issued that demonstrates that the installation complies with the requirements of PART L. All work to be in accordance with the Local Water Authorities bye laws, the Gas Safety (Installation and Use) Regulations 1998 and IEE Regulations. Gas-fired combination boilers installed in existing dwellings, to have at least one of the following energy efficiency measures, appropriate to the system:
- Flue gas heat recovery.
- Weather compensation.
- Load compensation.
- Smart thermostat with automation and optimisation.
Battery operated or mains-wired Carbon monoxide alarm to be fitted between 1m and 3m of the boiler in compliance with Approved Document J.

Assumed Drainage to basement unable to access during drainage survey

New lean to canopy roof may require pad foundations. Final design to be confirmed by MANF supplier

Depending on final depth of the rear drain run at the point of new man hole, new drainage to connect via a slipper at drain invert level or via a drop shaft formed internally to the man hole. Drop shaft must be terminated on its own new slipper to avoid any future blockages.

Proposed Drainage Plan - Scale 1:50

m 0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0
SCALE
1:50

Client:	Project:	Drawing:
Mr & Mrs Challiner	Proposed Extension & Alterations	Proposed Drainage Plan

Project no:	Drawing no:	Rev:	Drawn:	checked	Date:	Scale: A3
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Existing Door & Window @ basement level To Be Removed & Blocked Up. Ensure existing tanking is extended and maintained. See Engineers Details For structural alterations to basement

Existing Means of Escape to be removed and provided by smoke detection and protected route with alternate direction

Install new extractor ducted to external 15ls linked to light switch 15 min over run

Install new extractor ducted to external 15ls linked to light switch 15 min over run

Study Room

SD

Utility Room

SD

FD30

FD30

SD

30 min fire separation to stair enclosure

Bathroom

SP

FD30

FD30

SD

Store

SD

Bedroom

Builder to price for 2 options Basement drainage replace existing macerator & check & re-commission current pump system. Alternatively add internal sub stack connected to new external SVP new drainage run under side covered walkway connected to existing combined rear drainage run. Drop shaft into new man hole an option but to be agreed with BCO prior to install. All subject to levels of existing drainage to be investigated when foundations are dug and new man hole install.

Builder to agree existing front bedroom M.O.E window is suitable for the current egress arrangements. Ensure minimum 750mm X 450mm clear opening and any external grate are non locking and are easily removable.

Adjacent Property

BACKGROUND VENTILATION -REAR BASEMENT ROOM
DUCT A VENTILATION PIPE IN 110mm UPVC UNDER THE NEW EXTENSION FLOOR TO EXTERNAL TO SUPPLY THE ROOM WITH THE REQUIRED VENTILATION. VENTILATION TO TURN ON WITH THE LIGHT SWITCH AND REMAIN ON FOR 15MIN MIN.

Controllable background ventilation at least 1700mm above floor level to be provided to habitable rooms and kitchens at a rate of min 10,000mm², and to bathrooms at a rate of min 4000mm², Total number of ventilators installed in a dwellings habitable rooms to be at least 4 ventilators for one bedroom dwellings and 5 ventilators for dwellings with more than one bedroom. Background ventilators to be tested to BS EN 13141-1. Background ventilator equivalent area and operation to be measured and recorded.
Noise attenuating background ventilators should be fitted to facades with sustained loud noise.

Where the extension connects to in an existing room and as a result the existing room is left with no windows or background ventilation less than 5000mm², then the new room background ventilation to be at least 10,000mm² equivalent area. Where the extension connects to in an existing room and as a result the existing room is left with background ventilation at least 5000mm², then both the following is to be provided:
- Background ventilators of at least 12,000mm² equivalent area should be provided between the two rooms.
- Background ventilators of at least 12,000mm² equivalent area between the additional room and the outside.

PURGE VENTILATION

Minimum total area of opening in accordance with Table 1.4 Approved Document F1. Hinged or pivot windows with an opening angle of 15 to 30 degrees to have an openable area in excess 1/10 of the floor area of the room. External doors and sash, hinged or pivot windows with an opening angle of equal to or greater than 30 degrees to have an openable area in excess of 1/20 of the floor area of the room.
Purge ventilation should be capable of extracting at least 4 air changes per hour per room directly to the outside. Internal doors should be provided with a 10mm gap below the door to aid air circulation.

ESCAPE WINDOWS - EXISTING FRONT BASEMENT ESCAPE WINDOW -

SIZE AND LOCATION TO BE AGREED ON COMENCEMENT WITH BCO
Provide emergency egress windows to any newly created first floor habitable rooms and ground floor inner 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.

SMOKE DETECTION

Provide a linked smoke alarm detection system to BS EN 14604 and BS 5839-6:2019 to at least a Grade D category LD3 standard. System to be mains powered with battery back up. At least one smoke detector to be provided in each hallway and landing. 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 they should be 300mm from the walls and light fittings. Where the kitchen area is not separated from the stairway or circulation space by a door, there should be an interlinked heat detector in the kitchen. Mains-wired, interlinked heat detector to be provided to the kitchen and smoke detectors to principal living rooms, if required by Building Control.

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Mr & Mrs Challiner	Proposed Extension & Alterations	Proposed Basement Floor Plan

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PARTY WALL ACT

Should they need to do so under the requirements of the Party Wall Act 1996, the owner has a duty to serve a Party Structure Notice on any adjoining owner if the building work involves any of the following to a Party Wall:
- Support of beam
- Raising a wall or cutting off projections
- Demolition and rebuilding
- Insertion of lead flashings

A Party Wall Notice is also required for:
- Any excavtions within 3 metres of any part of a neighbouring owner's building or structure, where any part of that work will go deeper than the neighbour's foundations; or
- Any excavations for a new building or structure, within 6 metres of any part of a neighbouring owner's building or structure, where any part of that work will meet a line drawn downwards at 45° in the direction of the excavation from the bottom of the neighbour's foundations, see diagram 7 in the following Government guidance.

LINTELS - WIDENED SIDE DOOR OPENING CATNIC CN71A OR Suitable Alternative
For uniformly distributed loads and standard 2 storey domestic loadings only
Lintel widths are to be equal to wall thickness. All lintels over 750mm sized internal door openings to be 65mm deep pre-stressed concrete plank lintels. 150mm deep lintels are to be used for 900mm sized internal door openings. Lintels to have a minimum bearing of 150mm on each end. Any existing lintels carrying additional loads are to be exposed for inspection at commencement of work on site. All pre-stressed concrete lintels to be designed and manufactured in accordance with BS 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 manufacturer's standard tables. Stop ends, DPC trays and weep holes to be provided above all externally located lintels.
Independent lintels to have an insulated cavity closure between the inner and outer lintel.

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 MASONRY PARTITIONS

Construct non load bearing internal masonry partitions using dense concrete blocks built off thickened floor slab. Wall to be tied at 225mm centres with proprietary steel profiles or block bonded to all internal and external walls. Walls faced throughout with 12.5mm plasterboard on dabs with skim plaster finish or 13mm lightweight plaster.

INTERNAL STUD PARTITIONS

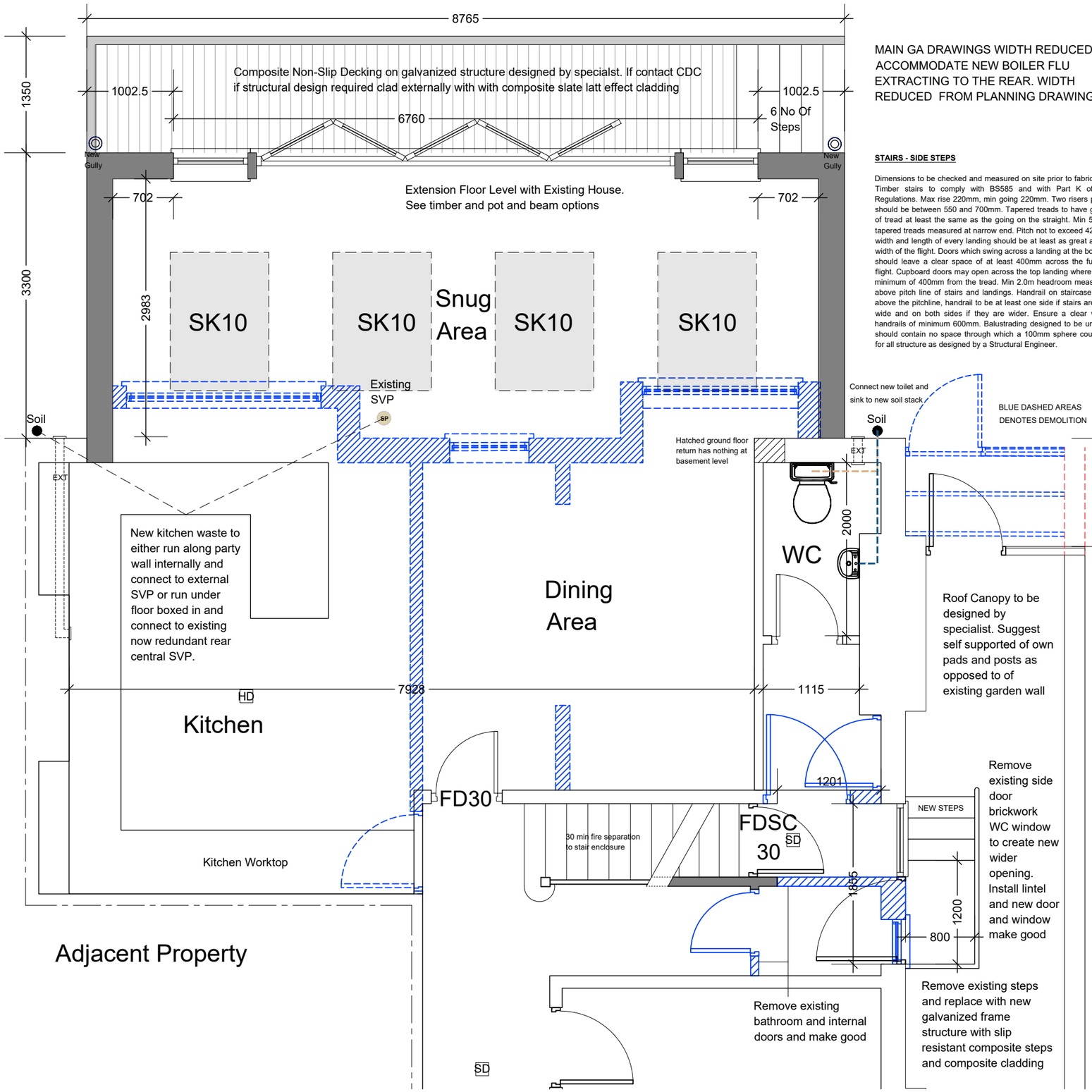
100mm x 50mm softwood treated timbers studs at 400mm ctrs with 50 x 100mm head and sole plates and solid intermediate horizontal noggins at 1/3 height or 450mm c/cs. Provide min 10kg/m³ density acoustic soundproof quilt tightly packed (e.g.100mm Rockwool or Isowool mineral fibre sound insulation) in all voids the full depth of the stud. Partitions to be built off doubled up joists where partitions run parallel or provide noggins where at right angles, or to be built off DPC on thickened concrete slab if solid ground floor. Walls faced throughout with 12.5mm plasterboard with skim plaster finish. Plasterboard to be taped and jointed complete with beads and stops.

INTERNAL LIGHTING

Install low energy light fittings that only take lamps having a luminous efficiency better than 80 lumens per circuit watt. All fixed to have lighting capacity (lm) 185 x total floor area, to comply with Part L of the current Building Regulations and the Domestic Building Services Compliance Guide.

HEATING

Extend all heating and hot water services from existing and provide new TRVs to radiators. 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.



MAIN GA DRAWINGS WIDTH REDUCED TO ACCOMMODATE NEW BOILER FLU EXTRACTING TO THE REAR. WIDTH REDUCED FROM PLANNING DRAWINGS

STAIRS - SIDE STEPS

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.

ROOF LIGHTS - SUGGEST VELUX - SK10 1140mm by 1600mm

Min U-value of 1.6 W/m²K.
Roof-lights to be double glazed with16mm 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 and Part K 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.

NEW AND REPLACEMENT WINDOWS & DOORS

New and replacement windows to be double glazed with 16-20mm argon gap and soft coat low-E glass. Window Energy Rating to be Band B or better and to achieve U-value of 1.4 W/m²K. The door and window openings should be limited to 25% of the extension floor area plus the area of any existing openings covered by the extension. 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 to be fitted with trickle vents to provide adequate background ventilation in accordance with Approved Document F.

EXTRACT TO BATHROOM

Bathroom to have mechanical vent ducted to external air to provide min 15 l/s. Vent to be connected to light switch and to have 15 minute over run if no window in room. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. Intermittent extract fans to BS EN 13141-4. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

EXISTING STRUCTURE - SEE ENGS DETAILS - DESIGN

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

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.

THERMAL BRIDGING

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

SMOKE DETECTION

Provide a linked smoke alarm detection system to BS EN 14604 and BS 5839-6:2019 to at least a Grade D category LD3 standard. System to be mains powered with battery back up. At least one smoke detector to be provided in each hallway and landing. 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 they should be 300mm from the walls and light fittings. Where the kitchen area is not separated from the stairway or circulation space by a door, there should be an interlinked heat detector in the kitchen.
Mains-wired, interlinked heat detector to be provided to the kitchen and smoke detectors to principal living rooms, if required by Building Control..

Client:	Project:	Drawing:
Mr & Mrs Challiner	Proposed Extension & Alterations	Proposed Ground Floor Plan

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Proposed Ground Floor Plan

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SCALE
1:50

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STRAPPING FOR PITCHED ROOF

Gable walls should be strapped to roofs at 2m centres. All external walls running parallel to roof rafters to be restrained at roof level using 1200mm x 30mm x 5mm galvanised mild steel horizontal straps or other approved to BSEN 845-1, straps to be screw fixed, built into walls at max 2000mm centres, and taken across a minimum of 3 rafters. 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 1200mm galvanized metal straps or other approved to BSEN 845-1 at maximum 2m centres.

TIMBER SUSPENDED FLOOR - OPTION 1

To meet min U value required of 0.18 W/m²K - P/A ratio 0.5
gk not more than 0.5
Ground preparation -Remove top soil and vegetation, apply total weed killer and 150mm min thick sand blinded hardcore, then either –
- Provide concrete ground cover of at least 100mm thick or
- Prepare the ground to an even surface and lay a ground cover of concrete at least 50mm thick, on a damp-proof membrane of at least 1200 gauge polyethylene, laid on a bed of fine blinding material.
Floor construction - min 20mm tongue and groove softwood boards or moisture resistant particle/chipboard grade type C4 to BS EN 312:2010 as required. Lay with staggered joints on 47mm x 170mm C24 grade soft wood joists at maximum 400mm centres, max span 3.77m. Joists to be supported off proprietary galvanized joist hangers built into new masonry walls or fixed to treated timber wall plates resin bolted to walls at 600mm centres. If required, floor joists also to be supported on 100mm x 50mm treated wall plates and DPC fixed to masonry honeycombed sleeper walls built on thickened oversite concrete or foundation, as required by BCO.
Joists to be infilled with 130mm Kingspan Kooltherm insulation between joists fixed with proprietary clips.

The top surface of the ground cover under the building shall be above the finished level of the adjoining ground. The underside of the floor joists not to be less than 150mm above the top of the ground cover. The underside of any wall plate not to be less than 75mm above the top of the ground cover.

Ventilation of Floor
Provide cross-ventilation under floor to outside air by ventilators in at least 2 opposite external walls of the building. Ventilation openings having an opening area of 1500mm² per metre run of perimeter wall or 500mm² per square metre of floor area whichever gives the greater opening area. All sleeper walls or similar under floor obstructions shall be of honeycombed construction or have similar provision for distribution of ventilation. The under floor space shall be free from debris. Ducts to be sealed using gas proof tap if they pass through the radon barrier.
THIS IS A GENERAL GUIDE BASED ON NORMAL LOADING CONDITIONS FOUND IN DOMESTIC CONSTRUCTION. IT IS YOUR RESPONSIBILITY TO ASSESS YOUR DESIGN TO ASCERTAIN WHETHER ENGINEER'S DETAILS/CALCULATIONS ARE REQUIRED. PLEASE REFER TO THE TRADA DOCUMENT – 'SPAN TABLES FOR SOLID TIMBER MEMBERS IN FLOORS, CEILINGS AND ROOFS FOR DWELLINGS OR ASK YOUR BUILDING CONTROL OFFICER FOR ADVICE.

WALLS BELOW GROUND

All new walls below ground 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.



CDM REGULATIONS 2015

The client must abide by the Construction Design and Management 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).

Domestic Clients
The Domestic Client is to appoint a Principal Designer and a Principal Contractor when there is more than one Contractor, if not your duties will automatically be transferred to the Contractor or Principal Contractor.

The Designer can take on the duties, provided there is a written agreement between you 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:

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

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 and Part K 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.

GLASS BALUSTRADING

All balcony balustrades to be min 1.1m in height. Balustrades to be toughened laminated glass (thickness to suit span) in accordance with Part K (Part N in Wales) of the Building Regulations and designed to resist the horizontal force given in BS 6180. No openings in any balustrading should allow the passage of a 100mm sphere and children should not readily be able to climb the guarding.

TRADITIONAL BALUSTRADES

Balustrades to balcony to be min 1100mm in height and capable of resisting at least the horizontal force given in BS 6180. No openings in any balustrading should allow the passage of a 100mm sphere and children should not readily be able to climb the guarding.

EXTERNAL STAIRS AND ACCESS PLATFORM

Dimensions to be checked and measured on site prior to fabrication of stairs. Galvanised Steel Frame (By Specialist) clad in Rot Resistant Materials to the facades, Top Deck and Stairs. Top Deck and Stairs to have a slip resistant finish. Suggest Composite Materials for longevity and reduced maintance. Stairs to comply with BS585 and with Part K of the Building Regulations. SEE SUGGESTED STAIR DIMENSIONS

DRAWING - 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., Handrail on staircase to be 900mm above the pitchline, and 1100mm to Top Landing Area. 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. Balustrade designed to be unclimbable and should contain no space through which a 100mm sphere could pass. IF requested by Inspecting BCO frame Supplier does not have in house design engineers contact Matt CDC Ltd for Structural Frame Designs for all structure as designed by a Structural Engineer

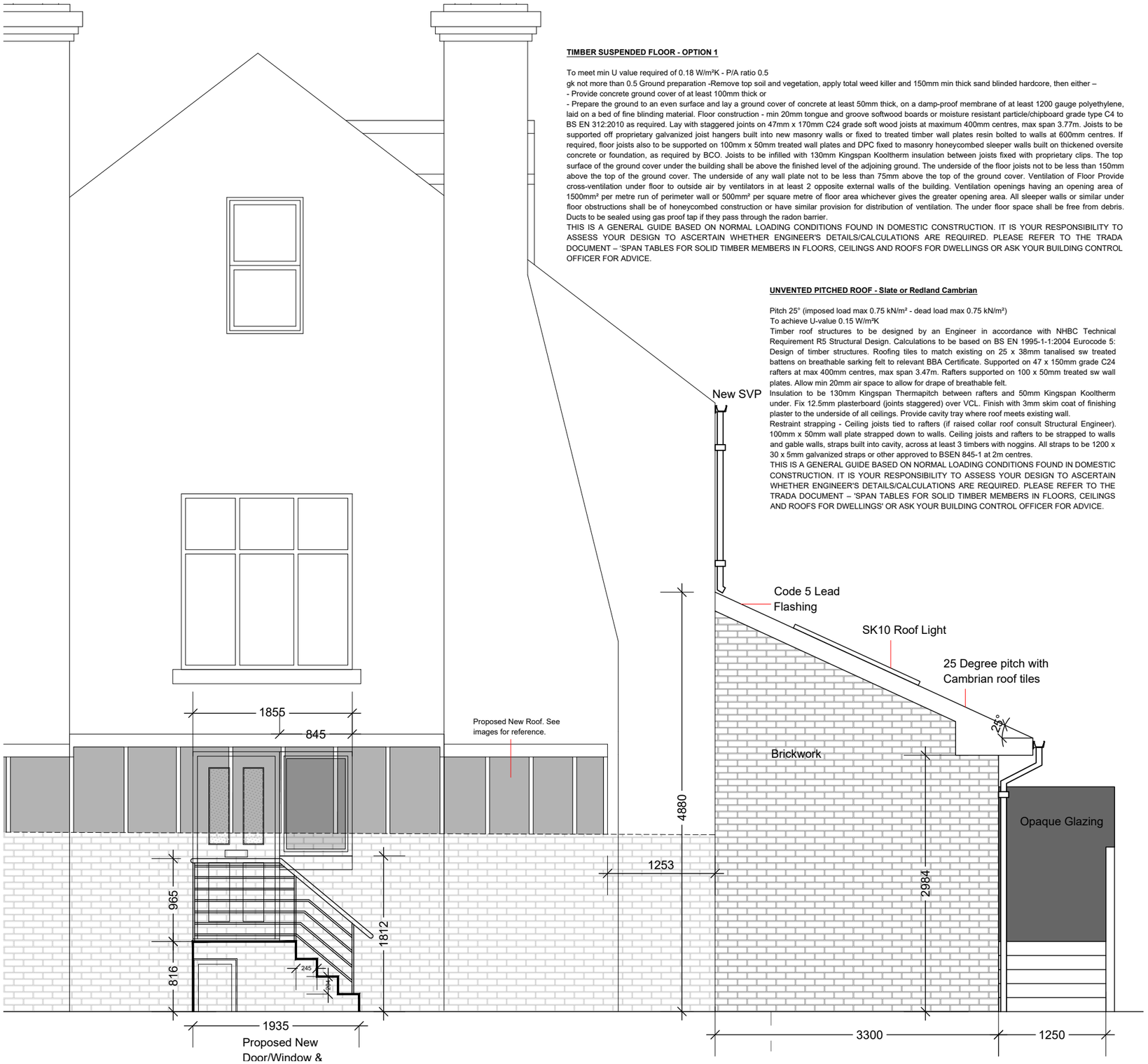
Proposed Rear Elevation - Scale 1:50

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SCALE
1:50

Client:	Project:	Drawing:
Mr & Mrs Challiner	Proposed Extension & Alterations	Proposed Rear Elevation

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Proposed Side Elevation - Scale 1:50

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SCALE 1:50

TIMBER SUSPENDED FLOOR - OPTION 1

To meet min U value required of 0.18 W/m²K - P/A ratio 0.5
gk not more than 0.5 Ground preparation -Remove top soil and vegetation, apply total weed killer and 150mm min thick sand blinded hardcore, then either –
- Provide concrete ground cover of at least 100mm thick or
- Prepare the ground to an even surface and lay a ground cover of concrete at least 50mm thick, on a damp-proof membrane of at least 1200 gauge polyethylene, laid on a bed of fine blinding material. Floor construction - min 20mm tongue and groove softwood boards or moisture resistant particle/chipboard grade type C4 to BS EN 312:2010 as required. Lay with staggered joints on 47mm x 170mm C24 grade soft wood joists at maximum 400mm centres, max span 3.77m. Joists to be supported off proprietary galvanized joist hangers built into new masonry walls or fixed to treated timber wall plates resin bolted to walls at 600mm centres. If required, floor joists also to be supported on 100mm x 50mm treated wall plates and DPC fixed to masonry honeycombed sleeper walls built on thickened oversite concrete or foundation, as required by BCO. Joists to be infilled with 130mm Kingspan Kooltherm insulation between joists fixed with proprietary clips. The top surface of the ground cover under the building shall be above the finished level of the adjoining ground. The underside of the floor joists not to be less than 150mm above the top of the ground cover. The underside of any wall plate not to be less than 75mm above the top of the ground cover. Ventilation of Floor Provide cross-ventilation under floor to outside air by ventilators in at least 2 opposite external walls of the building. Ventilation openings having an opening area of 1500mm² per metre run of perimeter wall or 500mm² per square metre of floor area whichever gives the greater opening area. All sleeper walls or similar under floor obstructions shall be of honeycombed construction or have similar provision for distribution of ventilation. The under floor space shall be free from debris. Ducts to be sealed using gas proof tap if they pass through the radon barrier.
THIS IS A GENERAL GUIDE BASED ON NORMAL LOADING CONDITIONS FOUND IN DOMESTIC CONSTRUCTION. IT IS YOUR RESPONSIBILITY TO ASSESS YOUR DESIGN TO ASCERTAIN WHETHER ENGINEER'S DETAILS/CALCULATIONS ARE REQUIRED. PLEASE REFER TO THE TRADA DOCUMENT – 'SPAN TABLES FOR SOLID TIMBER MEMBERS IN FLOORS, CEILINGS AND ROOFS FOR DWELLINGS OR ASK YOUR BUILDING CONTROL OFFICER FOR ADVICE.

UNVENTED PITCHED ROOF - Slate or Redland Cambrian

Pitch 25° (imposed load max 0.75 kN/m² - dead load max 0.75 kN/m²)
To achieve U-value 0.15 W/m²K
Timber roof structures to be designed by an Engineer 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. Roofing tiles to match existing on 25 x 38mm tanalised sw treated battens on breathable sarking felt to relevant BBA Certificate. Supported on 47 x 150mm grade C24 rafters at max 400mm centres, max span 3.47m. 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 130mm Kingspan Thermapitch between rafters and 50mm Kingspan Kooltherm under. Fix 12.5mm plasterboard (joints staggered) over VCL. Finish with 3mm skim coat of finishing plaster to the underside of all ceilings. Provide cavity tray where roof meets existing wall.
Restraint strapping - Ceiling joists tied to rafters (if raised collar roof consult Structural Engineer). 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.
THIS IS A GENERAL GUIDE BASED ON NORMAL LOADING CONDITIONS FOUND IN DOMESTIC CONSTRUCTION. IT IS YOUR RESPONSIBILITY TO ASSESS YOUR DESIGN TO ASCERTAIN WHETHER ENGINEER'S DETAILS/CALCULATIONS ARE REQUIRED. PLEASE REFER TO THE TRADA DOCUMENT – 'SPAN TABLES FOR SOLID TIMBER MEMBERS IN FLOORS, CEILINGS AND ROOFS FOR DWELLINGS' OR ASK YOUR BUILDING CONTROL OFFICER FOR ADVICE.

SUSPENDED BLOCK AND BEAM FLOOR - OPTION 2

To meet min U value required of 0.18 W/m²K - P/A ratio 0.5
Remove top soil and vegetation and apply weed killer – provide 50mm concrete ground cover if required by BCO.
The underside of beams to be not less than 150mm above the top of the ground. PCC beams to be supplied and fixed to beam manufacturer's plan, layout and details (details and calculations to be sent to Building Control for approval before works commence). Beam to have a minimum bearing of 100mm onto DPC and load bearing walls. Provide concrete blocks to BS EN 772-2, wet and grout all joints with 1:4 cement/sand mix. Provide double beams below non-load bearing partitions. Lay 1200g DPM/radon barrier over beam and block floor, with 300mm laps double welted and taped at joints and service entry points using radon gas proof tape. Lay floor insulation over DPM, 80mm Kingspan Kooltherm applied as a rigid material. 25mm insulation to continue around floor perimeters to avoid thermal bridging.
Lay 500g separating layer over insulation and provide 75mm sand/cement screed over and prepare for floor finishes as required. The top surface of the ground cover under the building shall be above the finished level of the adjoining ground.
Ventilation - Provide cross-ventilation of the under floor to outside air by ventilators in at least 2 opposite external walls of the building. Ventilation openings having an opening area of 1500mm² per metre run of perimeter wall or 500mm² per square metre of floor area, whichever is the greater. Sleeper walls shall be of honeycombed construction or have provision for distribution of ventilation.

STRIP FOUNDATION - OR PILE BY SPECIALIST

THERE IS AN EXISTING DRAIN RUNNING ACROSS THE REAR OF THE PROPERTY APROXIMATILY 2.0 FROM THE REAR ELEVATION - THIS IS 1.8 - 2.2M DEEP RUNNING DOWN TOWARDS THE ADJOINED NEIGHBORS PROPERTY. A PILED FOUNDATION DESIGN MAY BE A MORE COST EFFECTIVE FOUNDATION OPTION.

IF TRADITIONAL FOUNDATION SUGGEST MASS FILL TO MIN 500MM BELOW FINISHED GL - Provide Min 600mm Wide concrete foundation, concrete mix to conform to BS EN 206:2013 and BS 8500-2. All foundations to be a minimum of 1000mm below ground level, exact depth to be agreed on site with Building Control Officer to suit site conditions. All constructed in accordance with 2010 Building Regulations 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 Building Control Officer is to be contacted and the advice of a Structural Engineer should be sought.

LINTELS - WIDENED SIDE DOOR OPENING CATNIC CN71A OR Suitable Alternative

For uniformly distributed loads and standard 2 storey domestic loadings only
Lintel widths are to be equal to wall thickness. All lintels over 750mm sized internal door openings to be 65mm deep pre-stressed concrete plank lintels. 150mm deep lintels are to be used for 900mm sized internal door openings. Lintels to have a minimum bearing of 150mm on each end. Any existing lintels carrying additional loads are to be exposed for inspection at commencement of work on site. All pre-stressed concrete lintels to be designed and manufactured in accordance with BS 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 manufacturer's standard tables. Stop ends, DPC trays and weep holes to be provided above all externally located lintels.
Independent lintels to have an insulated cavity closure between the inner and outer lintel.

PARTIAL FILL CAVITY WALL WITH INTERNAL INSULATION - OPTION 1

To achieve minimum U Value of 0.18 W/m²K
Provide 103mm suitable facing brick. Ensure a 50mm clear residual cavity and provide 50mm Celotex CW4000 insulation fixed to internal leaf blockwork constructed of 100mm, 0.15 W/m²K lightweight block, e.g. Celcon solar, Thermalite turbo. Provide additional 52.5mm PIR insulated plasterboard internally e.g. Celotex PL4000, fixed using dot and dab method or battens.
Finish with plaster skim. Walls to be built with 1:1:6 cement mortar.
VCL to be provided under insulated plasterboard if required by BCO..

FULL FILL CAVITY WALL WITH INTERNAL INSULATION - OPTION 2

To achieve minimum U Value of 0.18 W/m²K
New cavity wall to comprise of 103mm suitable facing brick. Inner leaf constructed using 100mm lightweight block, 0.15 W/m²K e.g. Celcon solar, Thermalite turbo. Full fill the cavity with 100mm Rockwool Cavity insulation as manufacturer's details and provide additional 62.5mm PIR insulated plasterboard internally, e.g. Celotex PL4000, fixed using dot and dab method or battens. Finish with plaster skim. Walls to be built with 1:1:6 cement mortar. VCL to be provided under insulated plasterboard if required by BCO.

LEAD WORK AND FLASHINGS

All lead flashings, any valleys or soakers to be Code 5 lead and laid in accordance with BS 5534 and BS EN 12588. 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.

Client:	Project:	Drawing:
Mr & Mrs Challiner	Proposed Extension & Alterations	Proposed Side Elevation

Project no:	Drawing no:	Rev:	Drawn:	checked	Date:	Scale: A3
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Proposed Side Elevation - Scale 1:50

m 0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

SCALE

1:50

Client:	Project:	Drawing:
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