A. DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY
B. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED OTHERWISE
C. THE CONTRACTOR IS TO CHECK DRAWINGS AND TO VERIFY ALL DIMENSIONS ONSITE BEFORE COMMENCING ANY WORK OR MAKING ANY SHOP DRAWINGS.
D. ANY DISCREPANCIES ARE TO BE NOTIFIED TO EXPRESS PLANS IMMEDIATELY.
E. THE DRAWING IS THE PROPERTY OF EXPRESS PLANS.
F. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT BUILDING REGULATIONS.

SPECIFICATION SHEET - 2

26.INTERMEDIATE FLOORS

Intermediate floor to be 25mm t&g flooring grade chipboard or floorboards laid on C24 joists at 400mm ctrs (see engineer's calculation for sizes and details). Lay 100mm Rockwool mineral fibre quilt insulation min 10kg/m^3 or equivalent between floor joists. Ceiling to be 12.5 FireLine 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 312:2010. 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 1000mm x 30mm x 5mm galvanised mild steel straps or other approved in compliance with BS EN 845-1 at max 2.0m centres, straps to be taken across minimum 3 no. joists. Straps to be built into walls. Provide 38mm wide x ¾ depth solid noggins between joists at strap positions.

27.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.

28.NEW GAS BOILER
Heating and hot water will be supplied via a wall mounted condensing vertical balanced flue pressurised boiler with a min SEDBUK rating of 90%. No combustible materials within 50mm of the flue. System 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 "competent person" and a certificate issued 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.

29.ESCAPE WINDOWS
Provide emergency egress windows to any newly created first floor habitable rooms and ground floor inner rooms. Windows to have an unobstructed openable area of 450mm high x 450mm wide, minimum 0.33m sq. 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.

DOOR BETWEEN HOUSE AND GARAGE

Door between garage and house to be fd30 self closing with a 100mm step down into garage, fitted with 3 steel hinges, intumescent strips and smoke seals. construction between house and garage to be 30 minutes fire resisting.

30.ROOF LIGHTS
Min U-value of 1.6 W/m^{2}K.
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 etc.

31.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.

32.NEW AND REPLACEMENT WINDOWS
New and replacement windows to be double glazed with 16mm argon gap and soft coat low-E glass. Window Energy Rating to be Band C or better and to achieve U-value of 1.6 W/m^{2}K. 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.

33.NEW AND REPLACEMENT DOORS
New and replacement doors to achieve a U-Value of 1.80W/m^{2}K. Glazed areas to be double glazed with 16mm 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.

34.VENTILATION

BACKGROUND AND PURGE VENTILATION

Background ventilation - Controllable background ventilation via trickle vents to BS EN 13141-3 within the window frame to be provided to new habitable rooms at a rate of min 5000mm^2; and to kitchens, bathrooms, WCs and utility rooms at a rate of 2500mm^2
Purge ventilation - New Windows/rooflights to have openable area in excess of 1/20th of their floor area, if the window opens more than 30° or 1/10th of their floor area if the window opens less than 30°
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.

EXTRACT FOR SHOWER ROOM
Provide mechanical extract ventilation to shower room ducted to external air capable of extracting at a rate of not less than 15 litres per second. Vent to be connected to light switch and to have 15 minute over run if no window in the 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.

EXTRACT TO BATHROOM
Bathroom to have mechanical vent ducted to external air to provide min 15 litres / sec extraction. 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.

EXTRACT TO W/C
W/C to have mechanical ventilation ducted to external air with an extract rating of 15l/s operated via the light switch. Vent to have a 15min overrun 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.

EXTRACT TO UTILITY ROOM
To utility room provide mechanical ventilation ducted to external air capable of extracting at a rate of 30 litres per second. 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.

EXTRACT TO KITCHEN
Kitchen to have mechanical ventilation with an extract rating of 60l/sec or 30l/sec if adjacent to hob to external air, sealed to prevent entry of moisture. 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. Cooker hoods to BS EN 13141-3. 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.

VENTILATION OF TIMBER SUSPENDED 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 1500mm^2 per metre run of perimeter wall or 500mm^2 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 a radon barrier.

BLOCK AND BEAM FLOOR 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 1500mm^2 per metre run of perimeter wall or 500mm^2 per square metre of floor area, whichever is the greater.

PITCHED ROOF VENTILATION
Maintain a 50mm air gap above insulation in the roof pitch 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.

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.

35.GLASS BALUSTRADING
All balcony balustrades to be min 1.1m in height. Balustrades to be in toughened glass in accordance with Part K (Part N in Wales) of the Building Regulations and designed to resist the horizontal force given in BS 6180:2011. No openings in any balustrading should allow the passage of a 100mm sphere and children should not readily be able to climb the guarding.

36.TRADITIONAL BALUSTRADES
Provide balustrades to balcony min 1100mm in height and capable of resisting at least the horizontal force given in BS 6180:2011. No openings in any balustrading should allow the passage of a 100mm sphere and children should not readily be able to climb the guarding.

37.DOOR BETWEEN HOUSE AND GARAGE
Door between garage and house to be FD30 self closing with a 100mm step down into garage, fitted with 3 steel hinges, intumescent strips and smoke seals. Construction between house and garage to be 30 minutes fire resisting.

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

39.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: 2009.

40.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.

41.ABOVE GROUND DRAINAGE
All new above ground drainage and plumbing to comply with BS EN 12056-2:2000 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 4m for 40mm pipe
Bath/shower - 3m for 40mm pipe 4m for 50mm pipe
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.

42.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.

43.AUTOMATIC AIR VALVE
Ground floor fittings from WC to be connected to new 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 and connected to underground quality drainage encased with pea gravel to a depth of 150mm.

44.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.

45.TANKED PROTECTION.
Vandex Super
Type A waterproofing in accordance with BS 8102: 1990 to give a protection level of grade 2 (suitable for concrete surfaces and storage areas only as detailed in BBA certificate).
Ensure that all materials and products are compatible.
Assess structure for suitability of tanking system and ensure substructure is free draining. The concrete surface must be examined for defects and repaired in accordance with manufacturer's details if required. All retaining elements are to be detailed by a Structural Engineer.
All materials and products to be installed by a competent contractor strictly in accordance with the manufacturer's recommendations, BS 8102 and BBA certificate.
Concrete surfaces to be prepared for waterproofing system by being bush hammered, scabbled or sandblasted and then wetted down.
Apply two coats of Vandex Super Crystalline Waterproofing, to the wall and floor slab surface with a trowel or suitable spray equipment.
Provide a coved fillet with a suitable mortar at wall and floor junction Ensure continuity between wall and floor waterproofing and around the structure.
Penetrations through waterproofing to be kept to a minimum and detailed by specialist waterproofing manufacture where unavoidable.
Vandex Premix to be used as a final coat in areas where enhanced resistance to mechanical abrasion is required.
Provide 77.5mm Celotex PL4000 insulated plasterboard dry-ling and floor finish as required strictly in accordance with manufacturer's recommendations.

46.DRAINED CAVITY WATER PROOFING SYSTEM
Type C drained protection in accordance with BS 8102: 1990 -
RIW Cavity Drain System as BBA certificate for use in new constructions.
Ensure that all materials and products are compatible. Assess structure for suitability of tanking system. The surface must be examined for defects and repaired in accordance with manufacturer's details if required. All retaining elements are to be detailed by a Structural Engineer.
All materials and products to be installed by a competent contractor strictly in accordance with the manufacturer's recommendations, BS 8102 and BBA certificate.

Prepare wall by cleaning with a stiff brush. Provide a high density polythene (HDPE) cavity drain membrane, e.g. RIW Cavity Drain, fixed using RIW brick plugs to wall and floor slab staggered at 1m centres. Fixings to be sealed using RIW Sealing Rope.
The horizontal and vertical sheets should be butt jointed at the base of the wall and the joint covered with a pre-formed RIW Wall/Floor Junction piece and sealed with proprietary sealing tape.
The floor membrane is to be covered by reinforced concrete or screed at least 65mm thick.
Provide a suitable drainage channel, e.g. RIW Aqua Channel within the slab around the perimeter of the floor and install a sump and mechanical pump as manufacturer's details with suitable access if required.
Drainage channel to be provided with an adequate fall to a suitable soakaway. Ensure suitable access points and rodding eyes at every 10m and every change of direction.
Penetrations through waterproofing to be kept to a minimum and filled with RIW flexible sealant or sealing rope detailed by RIW specialist waterproofing manufacturer where unavoidable.
In very high water table area an additional moisture barrier may be required.
Construct an independent timber frame with preservative treated timber studwork using 100mm x 50mm treated timbers with head and sole plates and noggins at 400mm ctrs ensuring an adequate clear cavity between wall and new stud for cavity drain membrane.

Insulation requirements
Insulation between and over studs to be 90mm Celotex FR4000 between and 37.5mm Celotex PL4000 insulated plaster board with VCL over studs.

47.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.

48.PLUMBING SPECIFICATION

All new drainage and sanitary pipework, including layout, materials, bedding/surround etc, must be discussed and approved on site by a Building Control Surveyor prior to installation. Perform air and running tests on completion of work.

Provide and install hot and cold water supplies for connection to fittings and appliances, positioning to be agreed with Client.
Fit new and existing appliances. Positioning to be agreed with Client.

Fit sink, washing machine and dishwasher with 38 diameter PVC waste pipes, with 75mm deep back inlet gully to suit ground finish.

Provide and lay 100 mm diameter underground quality PVC pipe, to form under floor ventilation duct between existing and new air bricks.

49.STRUCTURAL STEEL WORK:

All material and workmanship to be in accordance with BS 449 or BS 5950.

Structural steelwork sections to be Grade 43A mild steel in accordance with BS 4360.

Contractor must verify all dimensions on site before commencing any work or making any shop drawings. No dimensions to be scaled from drawings, any discrepancies must be reported to the Structural Engineers prior to proceeding.

Steel work contractor to design all connection details for maximum moments and reactions as indicated on Structural Engineers drawings and calculations.

Steel work which is not required to be encased in concrete to be blast cleaned / wire brushed free from mill scale, rust and other contamination and painted with two coats of approved primer as soon as practicable but not more than four hours after cleaning.

Uncased stanchions and beams located within an external wall to have a minimum gap of 40 mm from face of external brickwork, or alternatively 25 mm minimum impermeable insulation from face of steel to the external wall, unless galvanised or similary treatment.

All concrete encased steel work to be unpainted.
All pockets formed in brick work or block work for steel beams to be made good in grade 35 concrete.
Concrete padstones to be provided for steel beam, for sizes see Structural Engineer's calculations.
All existing lintels are to be checked for suitability, where taking additional loads, if inadequate new lintels to be installed.

All existing steel columns and beams to be painted with two layers of fire resistant paint and encased with 2no. layers of 12.5mm plasterboard with staggered and taped joints, and apply 5mm gypsum plaster set to give half hour fire resistance.

Issue	Notes	Drawn	Date

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Drawing Title

SPECIFICATION

Scale	Date	Checked	Drawn By
NTS	02/06/21	AZ	AZ

Drawing Number

D14

Revision