SPECIFICATION SHEET - 1

EXTENSION SPECIFICATIONS

All work to be carried out in accordance with building regulations and british codes of practice.
dimensions to be checked on site before work commences and builder to report any discrepancies before work commences. this includes an assessment of whether there will be any significant problem in carrying out the work on site as per the drawing.
the builder is assumed to have a working knowledge of the building regulations and work on site must follow the latest building regulations as and when the local authority surveyor requires.
any lintels over window and door openings may have to be exposed on site in order to confirm suitability to support the additional loads. inadequate lintols will require renewal as necessary.
the building owner is responsible for serving any party wall notices on neighbours prior to building works commencing.

1.CONTRACTOR

Drawings to be read in conjuction
with all relevent contract documents,
structural engineer's details and specification.
The contractor shall be responsible for all levels and dimensions. He is to take requisite levels and dimensions from site and verify those shown on drawing. Any discrepency is to be brought to the attention of **ARCHITECT** immediately.
The contractor is to comply with all statutory obligations and regulations relating to CDM, and Health and Safety.

Builder to confirm whether any existing drain located beneath or within 3m of proposed extension is a public sewer to comply with Approved Document Part H4 obtain confirmation from Thames Water Utilities / Environment Agency to allow the discharging of rainwater into a surface water drain.
Air permeability and pressure Testing Reports in accordance with The ATTMA publication 'Measuring Air permeability of Building Envelopes' (ATTMA 2006. are to be provided by builder.

Ventilation systems should be installed & commissioned in accordance with theguidance given in the 2010 edition of the Domestic Ventilation Compliance Guide. Sufficient information about ventilation system should be given to the building owner upon completion of the building work, so that the ventilation system can be operated to provide adequate air flow.

The proposed Heating & Hot water system's are to meet the requirement of 'The Domestic Heating Compliance Guide'.
Energy efficient light fittings will be provided and specified in accordance with Approved Document L1.
CO2 Emission rate Calculations and EPC's for the dwelling to show that the dwellings emission rate (DER) is no greater than the Target Emissions rate (TER) using SAP 2005
Full details of water efficiency (G2) and prevention of excessive temperatures (G5) are to be provided in accordance with approved Document G.

2.SOLID FLOOR INSULATION UNDER SLAB

To meet min u value required of 0.22 w/m^{2}k
solid ground floor to consist of 150mm consolidated well-rammed hardcore. blinded with 50mm sand blinding. provide a 1200 gauge polythene dpm, dpm to be lapped in with dpc in walls. floor to be insulated over dpm with 75mm kingspan kooltherm k3. 25mm insulation to continue around floor perimeters to avoid thermal bridging. a vcl should be laid over the insulation boards and turned up 100mm at room perimeters behind the skirting, all joints to be lapped 150mm and sealed, provide 100mm st2 or gen2 ground bearing slab concrete mix to conform to bs 8500-2 over vcl. finish with 65mm sand/cement finishing screed with light mesh reinforcement.
where drain runs pass under new floor, provide a142 mesh 1.0m wide within bottom of slab min 50mm concrete cover over length of drain.
where existing suspended timber floor air bricks are covered by new extension, ensure cross-ventilation is maintained by connecting to 100mm dia upvc pipes to terminate at new 65mm x 215mm air bricks built into new cavity wall with 100mm concrete cover laid under the extension. ducts to be sleeved through cavity with cavity tray over.

3.STRIP FOUNDATION

Provide 225mm x 600mm concrete foundation, 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 building control officer to suit site conditions. all constructed in accordance with 2004 building regulations a1/2 and bs 8004:1986 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.

4.CONCRETE

all materials and workmanship to be in accordance with bs 8110 part 1&2- the structural use of concrete.

concrete quality to be 35n / mm^2 at 28 days unless noted otherwise. max nominal aggregate to be 20mm.
above ground:
minimum cement content 300kg / m^3. maximum free water cement ratio 0:6.
below ground:
minimum cement content 330kg / m^3. maximum free water cement ratio 0:5.
cement:
minimum cement content 330kg / m^3. maximum free water cement ratio 0:5

5.STRUCTURE

BEAMS
Supply and install new structural elements such as new beams, roof structure, floor structure, 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 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 8110, with a concrete strength of 50 or 40 n/mm^2 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.

OPENINGS AND RETURNS
An opening or recess greater than 0.1m^2 shall be at least 550mm from the supported wall (measured internally).

6.RESTRAINED TO STRUCTURE

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 1000mm x 30mm x 5mm galvanised mild steel horizontal straps or other approved to bsen 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 galvanized metal straps or other approved to bsen 845-1 at maximum 2m centres.

STRAPPING OF FLOORS
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 of 3 joists. straps to be built into walls. provide 38mm wide x ¾ depth solid noggins between joists at strap positions.

FLAT ROOF RESTRAINT
100m x 50mm c16 grade timber wall plates to be strapped to walls with 1000mm x 30mm x 5mm galvanised mild steel straps at maximum 2.0m centres fixed to internal wall faces.

7.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.

8.EXTERNAL WALLS

WALLS BELOW GROUND
All new walls to have class a blockwork below ground level or alternatively semi engineering brickwork in 1:4 masonry cement or equal approved specification. 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.

SOLID EXTERNAL BLOCK WALL

To achieve min u-value 0.28w/m^{2}k
wall constructed using lightweight aggregate or aerated concrete block, r value 0.15, at least 215mm thick, eg. topblock supabloc or celcon solar. rake out joints in the wall to a depth of at least 10mm and apply two coats of render at least 20mm thick with a scraped or textured finish. the rendering mix to comply to bs en 13914-1:2005 with waterproof additive. insulate wall on the inside using 63mm gyproc thermaline pir insulated plasterboard. batten out to provide a nominal 25mm cavity between the masonry and insulation. provide a vapour control layer under the insulation.

FULL FILL CAVITY WALL (RENDERED FINISH)

To achieve minimum u value of 0.28w/m^{2}k
20mm two coat sand/cement render to comply to bs en 13914-1:2005 with waterproof additive on 100mm lightweight block, k value 0.16, (aircrete, celcon solar, topblock toplite standard). fully fill the cavity with 90mm rockwool cavity insulation as manufacturer's details. inner leaf to be 100mm lightweight, k value 0.16, (aircrete, celcon solar, topblock toplite standard). internal finish to be 12.5 mm plasterboard on dabs. walls to be built with 1:1:6 cement mortar.

FULL FILL CAVITY WALL (BRICK FINISH)

To achieve minimum u value of 0.28w/m^{2}k
new cavity wall to comprise of 105mm facing brick to match existing. full fill the cavity with 100mm rockwool cavity insulation as manufacturer's details. inner leaf to be 100mm lightweight block, k value 0.16, (aircrete, celcon solar, topblock toplite standard). internal finish to be 12.5mm plasterboard on dabs. walls to be built with 1:1:6 cement mortar.

9.TILING SPECIFICATION
Provide and fix wall tiles with waterproof adhesive and grout. Type of tile to be agreed with Client

10.INSULATION SPECIFICATION
All new windows are to be fitted with 'Pilkington' 'K' glass.
U value 1.6 W / m^2 K
New Roof: Insulation layed between and below rafters, use 100mm thick Kingspan 'Koolthern K7' roof board between rafters and 62.5mm 'Koolthern K18' insulated plasterboard below to achieve U value 0.18 W / m^2 K.

11.DPC

Provide horizontal strip polymer (hyload) damp proof course to both internal and external skins 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.

12.WALL TIES

All walls constructed using stainless steel vertical twist type 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 5628-6.1: 1996 and bs en 845-1: 2003

13.CAVITIES

Provide cavity trays over openings. 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.

14.EXISTING TO NEW WALL

Cavities in new wall to be made continuous with existing where possible to ensure continuous weather break. if a continuous cavity cannot be achieved, where new walls abuts the existing walls provide a movement joint with vertical dpc. all tied into existing construction with suitable proprietary stainless steel profiles.

15.CAVITY BARRIERS

30 minute fire resistant cavity barriers to be provided at 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 manufacturers details.

16.FLAT ROOF

WARM FLAT DORMER ROOF
(imposed load max 1.0 kN/m² - dead load max 0.75 kN/m²)
To achieve U value 0.18 W/m²K
GRP (Fibreglass) over 22mm OSB Board over 125mm
Celotex TA4000 insulation.
Insulation bonded to 22mm exterior grade plywood on firrings to give 1:60 fall on 47 x 170mm C24 timber joists at 400 centres max span 4.55m (see engineer's details for sizes). Ceilings of 12.5mm plasterboard over vapour barrier with skim plaster finish.
Provide restraint to flat roof by fixing of 30 x 5 x 1000mm ms galvanised lateral restraint straps at maximum 2000mm centres fixed to 100 x 50mm wall plates and anchored to wall

FLAT ROOF CONSTRUCTION (Cold Deck Type).

12.5 mm plasterboard and skim. 175 x 50 tanalised C16 s/w joists @ 400 c/c on heavy duty joists hangers. firing pieces with fall 1:40. Insulation to be 100mm celotex between Ceiling Joists and 50m. GRP (Fibreglass) over 22mm OSB Board. 20 mm fascia board. 1000 x 30 x 5 mild steel straps screwed to the underside of joists and wall at 1800 mm c/c. Provide Stone Chippings where built up felt is to be used. U-value to achieve 0.18w/m2k
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17.PITCHED ROOF

COLD PITCHED ROOF INSULATION AT CEILING LEVEL

pitch 22-45° (imposed load max 0.75 kn/m^2 - dead load max 0.75 kn/m^2)
to achieve u value of 0.16 w/m^{2}k
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. roofing tiles to match existing on 25 x 38mm tanalised sw treated battens on sarking felt supported on 47 x 150mm grade c24 rafters at max 400mm centres max span 3.47m. rafters supported on 100 x 50mm sw wall plates. insulation at ceiling level to be 150mm xr4000 celotex between ceiling joists with a further 25mm over joists.
construct ceiling using sw joists at 400mm centres, finished internally with 12.5mm plasterboard and min 3mm thistle multi-finish plaster. provide polythene vapour barrier between insulation and plasterboard. provide opening at eaves level at least equal to continuous strip 25mm wide in two opposite sides to promote cross-ventilation. mono pitched roofs to have ridge/high level ventilation equivalent to a 5mm gap via proprietary tile vents spaced in accordance with manufacturer's details.
restraint strapping - 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 1000 x 30 x 5mm galvanized straps or other approved to bsen 845-1 at 2m centres.

WARM PITCHED ROOF

pitch 22-45° (imposed load max 0.75 kn/m^2 - dead load max 0.75 kn/m^2)
to achieve min u-value required of 0.18 w/m^{2}k
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. roofing tiles to match existing fixed to tile battens secured over breathable sarking felt to relevant bba certificate allowing the breather felt to sag at least 10mm over preservative-treated counter battens (min 38mm x 50mm). provide 60mm celotex ga4000 insulation boards under the counter battens and 60mm celotex ga4000 between 47 x 150mm timber rafters strength class c24 at 400 c/c – to give a max 3.47m span. a vapour control layer should be provided to the underside of the rafters. finish with 12.5mm plasterboard and skim.
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 1000 x 30 x 5mm galvanized straps or other approved to bsen 845-1 at 2m centres.

18.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.

19.LEAD VALLEYS
Lead-lined valleys to be formed using code 5 lead sheet. valley lead and two tiling fillets to be supported on min 19mm 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°).
all work to be in accordance with the roof cladding manufacturers and the lead development association recommendations.

20.HEATING
Extend all heating and hot water services from existing and provide new TVRs 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.

21.WOOD BURNING STOVE
Ensure the wood burning stove is installed by an APHC, HETAS, NAPIT or NICEIC accredited specialist in compliance with Part J. Supply a suitable flue, hearth and CO / Carbon Monoxide alarm and provide ventilation to ensure the necessary combustion air and to prevent the depletion of oxygen in the room. There must not be an extractor fan fitted in the same room as the stove. A notice plate giving operating and maintenance instructions must be provided and fixed in an obvious place and the Part J installation checklist is to be completed and a copy given to Building Control.

22.OIL HEATING APPLIANCES UP TO 45kW
Oil burning appliances up to 45kW to be installed, commissioned and tested by an installer registered with OFTEC, in compliance with Approved Document J.
On completion, building control is to be provided with a copy of the commissioning certificates.

23.OIL STORAGE TANKS
Oil tanks up to 3500 litres.
Oil tanks to be:
-placed on a 50mm thick a concrete base which extends 300mm beyond the base of the tank
-located in the open air, 1.8m min from buildings or flues and 760mm from boundaries.
-provided with a proprietary fire resistant pipe and valve system. If there is a risk of pollution to water courses or drains, the tank should either be:
-internally bunded.
Or:
-provided with an impervious masonry bund equal to capacity of 110% of its volume.

24.SMOKE DETECTION
Mains operated linked smoke alarm detection system to BS EN 14604 and BS5839-6:2004 to at least a Grade D category LD3 standard and to be mains powered with battery back up. Smoke alarms should be sited so that there is a smoke alarm in the circulation space on all levels/ storeys and within 7.5m of the door to every habitable room. 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.

25.INTERNAL WALLS

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. Provide min 10kg/m³ density acoustic soundproof quilt tightly packed (eg. 100mm 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 DPC on thickened concrete slab if solid 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

Construct non load bearing internal masonry partitions using dense concrete blocks built off thickened floor slab and 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 LOADBEARING MASONRY PARTITIONS

Construct load bearing internal masonry partitions using dense concrete blocks built off concrete foundation. Concrete mix to conform to BS EN 206-1. Depth to engineers details and dependent on ground conditions to be agreed with BCO. Wall 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.

26.WINDOWS AND DOOR Unprotected areas

Please note the extent of unprotected area on an external wall, i.e. windows, doors, timber cladding etc, should not exceed:
- 5.6m^2 when the minimum distance between side of the building and the relevant boundary is 1m
- 12m^2 when the minimum distance between the side of the building and the relevant boundary is 2m
- 18m^2 when the minimum distance between the side of the building and the relevant boundary is 3m
- 24m^2 when the minimum distance between the side of the building and the relevant boundary is 4m
- 30m^2 when the minimum distance between the side of the building and the relevant boundary is 5m
- no limit when the minimum distance between the side of the building and the relevant boundary is 6m

(The above apples only to buildings which are 1m or more from any point of a relevant boundary)
Other methods of calculation are given in Approved Document B1.

27.WASTES

bath waste to be 43mm diameter pvc

basin waste to be 37mm diameter pvc

w.c. waste to be 100mm diameter pvc

shower waste to be 50mm diameter pvc

traps to be 75mm diameter deep seal.

access and rodding points to all changes in direction.

gutter to dormer roof to be 100mm half round pvc, and rainwater downpipe discharging onto rear sloping roof or running down to the rainwater gulley is 63mm diameter pvc.

air admittance valve to the stub stack in bathroom to loft in order to provide for a vented system. connect to existing soil and vent pipe.

soil pipe to be extended up to 900mm above window opening where found to be within 3m of the window.

28.MEANS OF ESCAPE AND FIRE RESISTANCE
Fire doors
Form a protected escape stairway by providing half hour fire resistance to all partitions as well as floors and ceilings above and below rooms. Stairway to be protected at all levels and leading directly to external door at ground level (no inner rooms allowed). All doors on to the stairway must be FD30 rated fire doors to BS 476-22:1987 (fitted with intumescent strips rebated around sides & top of door or frame if required by BCD). 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 and be at least 1.1m above the floor level or stair pitch line

The habitable loft rooms are to have ½ hour fire resisting doors along with self closing devices and 25mm door stoppers.

existing doors of the hallway stairwell to all habitable rooms including kitchen to have doors fitted with self closing devices and 25mm door stoppers.

no glazing in the stairwell, but where fitted then should be georgian wired glass.

the loft lobby, first floor and ground floor (plus basement, where found) are to have a smoke detector at each of the levels. they should be mains operated with battery back up and be inter connected.

the new joists in the loft floor are to have (e.g 150mm rockwool insulation) laid on wire netting tacked to the sides of the joists.

flooring boards are to be 20mm tongued and grooved or have 3mm thick hardboard over straight edged boards.

fire resistance to steel beams to be 1 hour minimum and be achieved by intumescent paint
or
2 layers of 12.5mm plasterboard wire bound at 100mm centres and then 10mm thick gypsum plaster finish.

Issue	Notes	Drawn	Date

Express Plans

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Drawing Title

SPECIFICATION

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

Drawing Number

D13

Revision