

Construction Specification

Proposed New Build Houses at 66 Borstall Hill, Whitstable, Kent.

A	<i>Building Regs Submission</i>	<i>22.08.19</i>
B	<i>Building Regs Response</i>	<i>08.11.19</i>

GENERAL:

All dimensions are to be structural and exclude finishes unless otherwise noted. Drawings if necessary are to be read in conjunction with Structural Engineers details.

All work is to be carried out in a workmanlike manner in accordance with the 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.

SAP calculations are to be provided for each individual dwelling / flat and a Notice giving the TER and dwelling CO2 emission rate (DER) for the dwellings once constructed is to be provided to building control for their approval.

A notice confirming that the fixed building services (lighting and heating) have been commissioned in accordance with the Domestic Heating Compliance Guide is to be given to the local authority.

The design of any kitchen and utility areas are indicative only. The client / appointed contractor are to appoint a specialist manufacturer to specify the proposed kitchen and on site check measurements are to be taken by the specialist manufacturer accordingly.

Sewers local to this development may have a bearing on the foundation depth/design. It is not the responsibility of the architect to ensure that all sewers are located. Building control and Southern Water will have records and may enforce additional information and constraints. If a CCTV survey and/or a structural engineer designed foundations are requested, then the client will be responsible for the extra associated fees. Results of a CCTV survey and/or the structural engineered designed foundation may result in additional un-expected build costs which will be required to be covered by the client and not the architect or structural engineer.

The location of below / above ground services i.e. water / gas / electric and any associated meters, has not been ascertained by the architect. It is the responsibility of the client and appointed contractor to contact the relevant service providers prior to construction works taking place in order to submit the relevant applications if required. The service providers may need to re-route services due to the proposed works and if required, any associated fees are to be covered by the client. If an engineer is required to visit site, the lead time for the site visit is normally in the region of 4-12 weeks, on this basis in order to avoid lengthy delays we would advise that this is investigated at the nearest possible convenience.

CDM REGULATIONS:

The client/contractor 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).

HEALTH & SAFETY:

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

MATERIALS & 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.

DEMOLITION:

Measures are 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 affected 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:

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.

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.

AIR PRESSURE TESTING:

Note: The 'Accredited Details' must be strictly adhered to.

Reasonable provision shall be made to ensure the building is constructed to minimise unwanted air leakage through the new building fabric. The new dwelling is to be pressure tested by a specialist registered with the British Institute of Non-destructive Testing in compliance with Regulation 43 of the Building Regulations.

The measured air permeability to be not worse than $10 \text{ m}^3/(\text{h.m}^2)$ at 50 Pa or in compliance with the TER design limits, ensuring the DER calculated using the measured air permeability is not worse than the TER.

Design pressure test value of $5.0 \text{ m}^3/\text{h/m}^2$ @ 50Pa is to be used in the calculations for the houses.

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.

A copy of the test results to be sent building control no later than 7 days after the test has been carried out.

ENERGEY PERFORMANCE CERTIFICATES:

Target emissions rate (TER) to be submitted to building control in compliance with SAP 2012 and Approved Document L1A before works commence on site. To comply with Regulation 26 and Regulation 26A the dwellings emissions rate (DER) must not exceed the TER and the dwelling fabric energy efficiency (DFEE) is to be no greater than target fabric energy efficiency (TFEE).

The DER, based on the buildings as constructed and incorporating any changes made during construction, and a registered Energy Performance Certificate (EPC) accompanied by a recommendation report in compliance with SAP 2012 and 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.

SOLAR GAINS:

Reasonable provision is to be taken to limit solar gains in compliance Approved Document L1A. Excessive Solar gains to be checked using SAP 2012 and consideration given to provision of adequate daylight as detailed in BS 8206 -2 Code of Maintaining Adequate Level of Daylight.

RENEWABLE ENERGY - REGULATION 25A:

On commencement of the works, Building Control to be given documentation to confirm consideration has been given to the technical, environmental and economic feasibility of using high-efficiency alternative systems such as decentralised energy supply systems based on energy from renewable sources where available, renewable sources and heat pumps.

PART M1 - ACCESS & USE:

Level Dwelling Approach

Provide a level approach to the principal entrance door no steeper than 1:20 and at least 900mm wide, with cross falls no greater than 1:40. Approach surface material to be firm and non-slip, capable of supporting the weight of a wheel chair and its user (loose material such as gravel and shingle would not be suitable).

Accessible Level Door Thresholds into The Building

Entrance door 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.

Internal Corridors and Door Widths

Internal passageways/corridors to be 1200mm minimum clear width and doors into all rooms to have 750mm minimum unobstructed opening width.

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

Wheelchair accessible W/C to be provided on the principal entrance storey. A minimum 500mm clear space to be 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. The washbasin and door is to be positioned so as not to impede access or manoeuvrability. Door into WC to be outward opening.

PROVIDING INFORMATION:

Information about the fixed building services and their maintenance, including timing and temperature control settings, shall be provided to the owner of the dwelling on completion in compliance with Approved Document L1A.

METER BOXES:

Gas meters to be semi-concealed provided by gas company. Electricity meters to be smart meters provided within each dwelling. All to be fitted in accordance with supply authority instructions and recommendations.

SOLID WASTER STORAGE (refuse):

Adequate provision shall be made for the collection of waste as required by the Waste Collection Authority. Volume of waste storage required is to be advised by local 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.

HIGH SPEED ELECTRONIC COMMUNICATIONS NETWORK:

Building to be equipped with high-speed-ready in-building physical infrastructure, up to a network termination point for high-speed electronic communications networks.

So that copper or fibre-optic cables or wireless devices capable of delivering broadband speeds greater than 30 Mbps can be installed. A suitable position for at least one network termination point should be provided for dwelling as well as a suitable access point

SECURITY:

Confirmation required that all doors and windows are to be installed in accordance with the advice stated in PAS24:2012 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 PAS PAS24:2012 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 min15mm 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.
- Any part of a window or doorway, which is within 2m vertically of an accessible level surface such as the ground or basement 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 24:2012
- Frames to be mechanically fixed to the structure of the building in accordance with manufacturer's installation instructions.

EXCAVATIONS + FOUNDATIONS

All excavations and piled foundations are to be carried out in accordance with the Structural Engineer's details and to the satisfaction of the Building Control Officer / Structural Warranty Provider.

WALLS BELOW GROUND:

Cavity walls below DPC

Cavity wall width below DPC to be 302.5mm thick with the outer leaf of 102.5mm face brickwork, 60mm wide cavity and 140mm masonry below DPC level is to be laid using Class 2 mortar using sulphate resisting cement. Facing brickwork to external walls to start below ground level with pre stressed concrete lintels to all leaves in substructure brick/block work where drains and services pass through wall. A 50mm clearance is to be allowed for all around entrance ducting, with both sides of opening protected with a suitable rigid sheet material to prevent vermin entry.

Base of cavity to be filled with lean mix concrete 225mm below the lowest level of any DPC and external wall insulation (whichever the greater), tilting to outer leaf to facilitate drainage with ground weep holes.

Damp proof course to be Hyload pitch polymer system or similar approved, fitted in strict accordance with the manufactures recommendations, to full width of skins with external horizontal DPC 150mm minimum above ground level. DPC to be laid wet on same mortar mixes for masonry, installed as work proceeds, sandwiched between wet mortars.

Below ground service entry - Any pipe or duct passing through walls to be lintelled using 100/150 x 65mm pre-stressed concrete lintels with a minimum 150mm end bearing. The pipe passing through an external wall shall have a clearance of 50mm and the opening masked both sides with rigid sheet material to prevent entry of fill or vermin.

GROUND FLOOR CONSTRUCTION

U value achieved = 0.11W/m²K

The suspended ground floor construction is to comprise of 75mm (65mm min) Proprietary Suspended Floor Screed on 500g polythene vapour control layer on 150mm 'Celotex XR4000' rigid insulation (thermal conductivity 0.022W/m²K) with 25mm 'Celotex T-Break TB4000' R Value 0.75²K/W perimeter upstand (depth= floor insulation + screed), on proprietary specialist designed 'T' beam suspended concrete flooring system with 'Celcon Infill Blocks' 610x350x100mm thick (Strength 7N/mm². Density 500 kg/m³ & Thermal conductivity 0.15W/mK) laid in either the 610 or 350mm dimension to suit beam design, (unless Structural Design requires blocks built into wall to have crushing strength equal to, or greater than, the blocks in the wall). Beam ends to be built in at walls to side of cavity with min. 90mm end bearing with DPC below. All joints to be grouted in accordance with manufacturers' recommendations Top surface to receive 5mm nominal sand blinding and 1200 gauge 'Visqueen' DPM prior to laying insulation.

The void beneath the floor is to be free from topsoil and vegetable matter and sprayed with weed killer. Surface to be covered with 1000g polythene DPM and weighted down with 25mm sand blinding. A void of 170mm must be provided between the underside of the floor and the ground surface (subject to site soil conditions, 225mm if clay heave conditions occur). The void is to be cross ventilated using proprietary periscope ventilators (1500mm²/ metre run of external wall) including load bearing internal walls using 215 x 65mm plastic air bricks with telescopic vents (6600mm² min. airflow rate) at max. 2m crs. on opposing external walls and within 450mm from external corners. Incorporate cavity trays over all the vents with min. 25mm projection each side.

Note: Where ground conditions dictate i.e. poor soakage areas then void drainage must be provided.

BRICK FINISH CAVITY TIMBER FRAME WALL CONSTRUCTION ABOVE DPC

U value achieved = 0.21W/m²K

Cavity walls comprising selected facing brickwork external leaf, 60mm cavity and proprietary insulated 140mm timber stud frame inner leaf with 9mm OSB to cavity side (reducing cavity to 51mm) with Glidevale Protect 200 Thermo breather membrane with 100mm horizontal and 150mm vertical laps. The total timber frame system is to be constructed in strict accordance with the specialist manufacturer's recommendations and details.

Timber frame is to be insulated using 120mm 'Celotex XR4000' rigid insulation (Thermal conductivity 0.023W/mK) placed between studs against the plywood to create a 20mm service void.

To be dry lined using two layers of 12.5mm 'Gyproc Wallboard TEN' minimum mass 10kg/m²(inner layer) fixed staggered joint over suitable 500g polythene vapour control Layer over insulation where specified, fixed to timber frame. The finished plasterboard is to have all joints taped and jointed and 2 coats of 'Gyproc Dry-wall Sealer' applied over whole surface.

Construction build up from outside to inside (BRICK FINISH):

- *Facing brickwork (planning approved brick) laid in stretcher bond.*
- *51mm ventilated / residual cavity*
- *Breather membrane*
- *9mm WPB plyboard / OSB sheathing*
- *140 x 38mm studwork fitted with **120mm thick Celotex XR4000** insulation*
- *500-gauge VCL over studs lapped and sealed*
- ***12.5mm thick Gyproc WallBoard** with min. **3mm skim coat of Gypsum BoardFinish plaster.***

Construction build up from outside to inside (WEATHERBOARD):

- *Marley Eternit Cedral Click or similar weatherboarding (fixed both horizontally and vertically)*
- *Treated softwood battens and counter battens (as per cladding manufacturers details)*
- *100mm blockwork*
- *51mm ventilated / residual cavity*
- *Breather membrane*
- *9mm WPB plyboard / OSB sheathing*
- *140 x 38mm studwork fitted with **120mm thick Celotex XR4000** insulation*
- *500-gauge VCL over studs lapped and sealed*
- ***12.5mm thick Gyproc WallBoard** with min. **3mm skim coat of Gypsum BoardFinish plaster.***

WALL TIES

Wall Ties- External Wall Traditional Mortar Bed & Timber Frame - MAX 60mm Cavities - Standard Cullen FT75 brick ties at 600 centres horizontally and 375 vertically to timber frame manufacture's details.

CAVITY TRAY

Provide cavity trays over openings. All cavities are 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

Provide cavity closers to be 'Kingspan Thermabate' or similar approved with a thermal conductivity value of 0.034 W/m.K. to suit 100mm cavities fixed to outer leaf and with standard flange clips to restrain insulation to all jambs / cill openings in external walls. Provide minimum 30mm overlap with back of window/door frame.

WEEP HOLES

Form small weep-holes in external leaf sloping down towards the external face at 900mm centres over window and door openings in cavity walls, and in situations where the cavity is closed.

MORTAR

BS EN 998-2: Specification for mortar for masonry-Part 2: Masonry mortar.

PD 6678: Guide to the selection and specification of masonry mortar.

These documents are applicable to all mortars; however, when applied to site mixed mortars they must be used in conjunction with the National Standard Code of Practice BS 5628 Pt 3.

Mortar mixes using ordinary Portland or sulphate-resisting cements where required.

Masonry below dpc- The preferred mortar mix is to be Class 2 Cement:Lime:Sand 1:½:4½ using sulphate-resistant cement.

Brickwork above dpc- Under *normal* site conditions the preferred mortar mix is to be Class 3 Cement:Lime:Sand 1:1:5½.

Brickwork above dpc- Under *exposed* site conditions the preferred mortar mix is to be Class 2 Cement:Lime:Sand 1:½:4½.

ADDITIONAL STRUCTURAL NOTES

Movement Joints in brickwork- generally to be located in corners and behind rainwater pipes are to be formed to create a 12mm joint filled with 'Expandafoam' joint filler with 'Thioflex One' Polysulphide sealant or equivalent and with debonding flat metal 200x25x3mm slip ties positioned in the bead joint @ 225mm vertical centres debonded to one side. Wall ties to be at 225mm centres either side of joint and within 225mm of the joint.

DAMP PROOF COURSES ETC

Damp Proof Courses/Trays – To be proprietary approved black polythene min. 2000 gauge to BS 6515 and provided at slab level and 150mm above external ground level, as indicated. Also to be provided as cavity head closer and cavity trays, as indicated on the general arrangement and detail drawings.

Lead Flashings - All leadwork to be in accordance with the requirements of the Lead Sheet Association.

Unless stated otherwise in the details lead Code to be in accordance with the following recommendations:

Codes	Thickness (mm)	Weight kg/m ²	Use for
3	1.32	14.97	(A)
4	1.80	20.41	(ABF)
5	2.24	25.40	(BCDEFGH)
6	2.65	30.05	(BCDEFGH)
7	3.15	35.72	(CDEGH)
8	3.55	40.26	(CDGH)

Key to uses

A) Soakers	E) Pitched Roofs
B) Flashings	F) Vertical Cladding
C) Flat Roofing	G) Dormers
D) Parapet, Box and Tapered Valley Gutters	H) Bay Roofs and Canopies

LINTELS

All lintels to openings in external walls are to be by 'I G Ltd' (or similar approved) to BS EN 10142:1991 & to references as scheduled by the manufacturer to suit 100mm cavities installed strictly in accordance with manufacturer's recommendations. All lintels are to be insulated. Minimum end bearing 150mm or to manufacturers requirements. Cavity trays are to be provided over all lintels and weep holes @ 450mm centres equally spaced across opening. Trays are to be stopped both ends and to extend 300mm beyond openings.

STEELWORK

Refer to Structural Engineers drawings, details and specification. Steels indicated on Invent Architecture drawings are indicative only and are not be used for setting out unless specifically agreed.

FIRE PROTECTION TO STEELWORK

New steel beams to be encased in **1 no. layers of 15mm Gyproc FireLine board** with staggered joints nailed to timber cradles to achieve 30 mins fire resistance or painted in **Nullifire** or similar intumescent paint to provide 30 mins fire resistance. All fire protection is to be installed as detailed by specialist manufacturers recommendations.

INTERNAL STUD PARTITIONS

89mm x 38mm softwood treated timbers studs at 400mm ctrs with 89 x 38mm head and sole plates and solid intermediate horizontal noggins at 1/3 height or 450mm horizontal centres. Partitions built off doubled up joists where partitions run parallel or provide noggins where at right angles.

Generally, line both sides of studwork with 1no. layer of **12.5mm thick Gyproc WallBoard** and finish with **3mm skim coat of Gypsum BoardFinish**. Fill between the studs with Rockwool pugging.

In situations where partitions separate habitable rooms i.e. living rooms, dining rooms, studies and bedrooms the studs are to be filled with **50mm thick Isover APR1200** insulation. Line both sides of studwork with **1no. layer of 12.5mm thick Gyproc WallBoard TEN** or similar plaster board that has a minimum density of 10kg/m². Finish with **3mm skim coat of Gypsum BoardFinish**.

In situations where partitions separate dry and wet rooms i.e. bathrooms and en-suites the wet room side of studwork is to be lined with **1no. layer of 12.5mm thick Gyproc WallBoard MR or AquaPanel** boards. Fill between the studs with Rockwool pugging. Finish with tiles or **3mm skim coat of Gypsum BoardFinish**.

TIMBER TREATMENT REQUIREMENTS

Structural Softwood & joinery– All structural softwood for dry applications (rafters, joists and studwork) must be minimum of C16 stressed graded when dry and include the grading mark “DRY” or “KD” in all structural locations as per BS 4978.

Maximum moisture content of timber is to be 19%. All structural timbers and timbers exposed to external structure to be double vacuum pressure treated using a water based preservative based on copper triazole technology ‘Tanalised’ or similar approved, applied under high pressure.

All site end cutting, notching or drilling following pressure treatment must be liberally swabbed with ‘Ensele’ or similar approved compatible preservative to maintain the integrity of the treatment.

The table below explains the main Use Classes as defined in BS EN 335-1 to which timber can be subjected. Note: Class 1 treatment shall not be specified

USE CLASS	USE SITUATIONS	PRINCIPAL BIOLOGICAL SITUATIONS	TYPICAL SERVICE SITUATION	TYPICAL EXAMPLES
1	Above ground, covered. Permanently dry. Permanently less than 18% moisture content	Insects	Internal with no risk of wetting or condensation.	All timbers in normal pitched roofs except tiling battens and valley gutter timbers. Floor boards, architraves, internal joinery, skirtings. All timbers in upper floors not built into solid external walls.
2	Above ground, covered. Occasional risk of wetting. Occasionally more than 20% moisture content.	Fungi Insects	Internal with risk of wetting or condensation.	Tiling battens, structural timbers in timber frame houses†, timber in pitched roofs with high condensation risk, timbers in flat roofs, valley gutter timbers, ground floor joists†, sole plates (above dpc), timber joists in upper floors built into external walls.
3.1 3.2	Above ground, not covered. Exposed to frequent wetting. Often greater than 20% moisture content.	Fungi	External, above damp proof course (dpc) – coated . External, above damp proof course (dpc) – uncoated .	External joinery including roof soffits and fascias, bargeboards, cladding. Fence rails, gates, fence boards, garden timbers, cladding, deck boards and balustrades, agricultural timbers not in soil/manure contact.
4	In contact with ground or fresh water. Permanently exposed to wetting. Permanently above 20% moisture content.	Fungi	Soil contact. Timbers in permanent contact with the ground or below dpc.	Fence posts, gravel boards, deck support timbers, agricultural timbers in soil/manure contact, poles, sleepers, garden timbers.
			Fresh water contact. Timbers in permanent contact with fresh water.	Lock gates, revetments.
			Cooling tower timbers	Cooling tower packing (fresh water).

† These timbers are assigned to a higher Use Class than suggested by their location in the structure of a building, owing to the potential consequences of failure based on experience within the UK.

STAIRCASES

Dimensions are 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. 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. Width of staircase is a minimum of 900mm. 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. Min 2.0m headroom measured vertically above pitch line of stairs and landings. Handrail on staircase to be 900mm above the pitch line, 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.

Balustrade to comprise of 100x100 timber newel posts, with glass infill panels and brushed stainless steel handrail in strict accordance with specialists details.

INTERMEDIATE FLOOR CONSTRUCTION

Refer to Structural Engineers / Timber Frame Manufacturer drawings and details.

Floor joists to be Posi Joists at max. 600mm centres built into new walls or to be supported on steel joist hangers. Floor joists are to be doubled up under first floor partitions. Provide lateral restraint at floor level where joists run parallel to wall using 30mm x 5mm galvanised steel straps to BS EN 845-1 at maximum 2000mm centres built into walls, straps are to extend across a minimum of 3no. joists. Provide 38mm wide x $\frac{3}{4}$ depth solid noggin between joists at strap positions. Where joist spans exceed 2500mm ensure that joists are strutted at mid span using 38mm x 38mm herringbone strutting or 38mm solid strutting (at least 2/3 of joist depth).

Insulate between floor joists with minimum **100mm thick Isover APR1200** insulation or similar (min. density of 10kg/m³).

Provide 22mm thick T&G chipboard flooring boards on joists and secured using screws. In wet areas such as kitchens, utility rooms and bathrooms, flooring to be moisture resistant grade in accordance with BS7331: 1990.

Line underside of floor joists with **12.5mm thick WallBoard TEN** or similar plasterboard that has a minimum density of 10kg/m². Finish plasterboard with minimum **3mm skim coat of Gypsum BoardFinish**.

Minimum densities of materials are to ensure compliance with Part E of the Building Regulations (resistance to the passage of sound).

Note: where steels are within floor structure use 2 layers 15mm 'Wallboard' or 1 layer 15mm 'Fireline' board.

PITCHED ROOF CONSTRUCTION

Timber roof structures to be designed by an Engineer in accordance with Part A of the Building Regulations and NHBC Technical Requirement R5 Structural Design. Calculations are to be based on BS EN 1995-1-1. Natural slates on 25 x 50mm tanalised softwood treated battens on breathable underlay membrane to relevant BBA Certificate on 50x50mm tanalised softwood treated battens on rafters. Rafters supported on 100 x 50mm softwood wall plates.

Flat Ceiling

U value - 0.12W/m²K

Provide 100mm thick Knauf Earthwool Loft Roll 40 insulation between ceiling joists (to finish over wall plate on external walls) and 270mm thick Knauf Earthwool Loft Roll 40 laid over ceiling joists laid perpendicular to joists to prevent insulation sagging between joists. Do not insulate under cold water tanks unless they are elevated. Cold water tanks and pipes are to be separately insulated. Crown Loft Roll is a non-combustible inorganic glass wool, defined as mineral wool in BS 3533 and is manufactured in accordance with BSI Quality Assurance Standard BS EN ISO 9001: 2001 Fire performances to be classified as Euroclass A1 to BS EN ISO 13501-1.

Line underside of ceiling chords with 500 gauge polythene damp proof membrane with all joints lapped by 150mm and sealed and finish with 12.5mm thick Gyproc WallBoard and finish with 3mm skim coat of Gypsum board plaster.

Sloping Ceiling

U value - 0.11W/m²K

Provide 150mm thick Celotex XR4000 insulation between rafters ensuring a 50mm gap between top of insulation boards and underside of sarking felt to promote ventilation. Line underside of rafters with 75mm thick Celotex GA4000 insulation boards and line over with 500 gauge polythene VCL with all joints lapped and sealed. Provide 50mm x 25mm counter battens to underside of insulation and VCL secured into rafters behind. Line over with 12.5mm thick Gyproc WallBoard and finish with minimum 3mm skim coat of Gypsum Board plaster.

DORMER WALL CONSTRUCTION

U value requirement 0.24W/m²K

140mmx38mm head and sole plates with vertical studs (with noggins) at 400mm ctrs or to the Engineers details and calculations sheathed externally with 9mm thick WPB external quality ply sheathing. Provide treated softwood vertical timber fixing battens or similar fixed over the sheathing back to the timber frame structure.

Insulate between the studwork walls with **120mm Celotex XR4000** insulation boards and line internally with 500 gauge VCL with all joints lapped by a minimum of 150mm and taped with Butyl tape. Line over the VCL with **12.5mm thick Gyproc WallBoard** and tape and joint. '**Gyproc Drywall Primer**' or '**Gyproc Drywall Sealer**' to wc's, kitchens and bathrooms), applied prior to decoration strictly in accordance with manufacturer's recommendations. Note: Use 12.5mm Moisture Resistant boards in kitchens & bathrooms.

Finish externally with Marley Eternit Cedral Click or similar approved weatherboarding fixed vertically/horizontally in accordance with elevation drawings to softwood battens.

Construction build up from outside to inside:

- Marley Eternit Cedral Click or similar weatherboarding (fixed both horizontally and vertically)
- Treated softwood battens and counter battens (as per cladding manufacturers details)
- Breather membrane
- **9mm Promat Supalux boards (Units 2 & 3 only)**
- 9mm WPB plyboard / OSB sheathing
- 140 x 38mm studwork fitted with **120mm thick Celotex XR4000** insulation
- 500-gauge VCL with joints lapped and sealed over studs
- **12.5mm thick Gyproc WallBoard** with min. **3mm skim coat of Gypsum BoardFinish plaster.**

DORMER ROOF CONSTRUCTION

U value requirement 0.12W/m²K

Timber roof structures to be designed by a Structural Engineer in accordance with NHBC Technical Requirement R5 Structural Design. Calculations are to be based on BS EN 1995-1-1.

Provide 150mm x 50mm grade C24 flat roof joists at max 600mm centres supported on 100 x 50mm softwood wall plates. 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 internal wall faces.

Fix 50mm wide softwood firings cur to a fall of 1:40 with minimum end depths of 25mm fixed to the flat roof joists. Lay 18mm WPB exterior grade plywood decking over the firings with staggered board joints screwed through the firings into the joists below. Line over the plyboard decking with 1000 gauge polythene VCL with joints lapped by a minimum of 100mm and sealed using adhesive tape.

Insulated over the VCL with **150mm 'Kingspan Thermaroof TR27'** insulation boards ensuring boards are laid with staggered joints. Line over insulation with an additional layer of 6mm WPB exterior grade plywood decking bonded to insulation laid with staggered joints.

Finish externally over the insulation boards with fully adhered single ply roofing membrane or fibre glass roof (matt grey), installed in strict accordance with manufacturers' drawings, details and recommendations. To achieve an aa fire rating for surface spread of flame with a current BBA or WIMLAS Certificate and laid to specialist specification.

Finish internally with **12.5mm thick Gyproc WallBoard** fixed to the underside of the flat roof joists and finish with 3mm skim coat of Gypsum board plaster.

Construction build up from outside to inside:

- Fibre glass roofing finish
- 6mm thick WPB plyboard bonded to
- **150mm 'Kingspan Thermaroof TR27'** over
- 1000-gauge VCL with all joints lapped and sealed
- 18mm thick WPB plyboard bonded fixed over
- Flat roof joists to timber frame manufacturers drawings and details
- **12.5mm thick WallBoard** with min. **3mm skim coat of Gypsum BoardFinish.**

ROOF VENTILATION

Pitched Roofs

Provide 25,000 sq.mm per linear metre low level ventilation at eaves levels and 5,000 sq.mm per linear metre to be at ridge / high level.

Dormer Roof

Warm roof, no ventilation required.

RAINWATER GOODS:

Rainwater goods are to be grey UPVC half round gutters with matching 68mm diameter grey UPVC downpipes

WINDOW / DOOR SPECIFICATION

U value requirement 1.20W/m²K

Generally UPVC with manufacturer to be confirmed by client / contractor to sizes and patterns as indicated on the elevations and schedules. Windows are to be fully weather-stripped and beaded to receive double glazing. Windows to be fitted with trickle ventilators achieving required ventilation area per habitable room. All windows are to include espagnolette locking system and furniture with key operated security locks to handles (childproof and lockable in night vent position) and Projection Hinges to allow external cleaning from within the building.

All ground floor window openings below **800mm** from ffl to include restrictors to limit the opening to 100mm (child safety) with escape release.

Note: **All** windows **above** ground floor level are to include:

- Restrictors to limit the opening to 100mm (child safety) with escape release.
- Escape Projecting Hinges (**houses only where indicated**) – to habitable rooms.
- Window locks on egress windows must include child resistant release catch (**houses only**).

Windows are to be installed with a minimum **30mm** set back from the external face of cavity.

Glazing - doors and windows must be factory double glazed using hermetically sealed units, 24mm minimum overall thickness to suit specified window, to BS5713:1979.

Windows + Doors to achieve a 'U' value of **1.2W/m²K** including frame.

Windows are to conform to British Standard Publication PAS 24:1012 and Part Q of the Building Regulations Appendix B.

External front doors to the houses will be composite or similar approved single doors.

Emergency Egress Windows

Ground floor escape requirements - Emergency access to be provided to habitable room with a window that has an opening area at least 0.33m² and with a minimum unobstructed width and height of at least 450mm with the sash in the open position. Sill heights are to be between 800mm and 1100mm of floor level. Where large windows result in an opening point of less than 800mm from finished floor level, a timber balustrade is to be installed in order to ensure that the above requirements are achieved. If escape windows cannot achieve these requirements; all habitable rooms must open directly on to a hall leading to an entrance or other suitable exit.

First floor escape requirements - Emergency access to be provided to habitable room with a window that has an opening area at least 0.33m² and with a minimum unobstructed width and height of at least 450mm with the sash in the open position. Sill heights are to be between 800mm and 1100mm of floor level. Where large windows result in an opening point of less than 800mm from finished floor level, a timber balustrade is to be installed in order to ensure that the above requirements are achieved.

Safety Glass

Any areas of glass in critical locations i.e. in areas below 800mm above f.f.l. or to windows adjacent to external doors or other areas as defined in BS6206:1981 shall be safety glass to the requirements of the British Standard and shall be toughened or laminated. Note: all glass below 1500mm in doors shall be safety glass. Sidelights also to be safety glass where glazing is within 300mm from door opening and to a height of 1500mm. *Note: all safety glass that may be required in external doors and adjacent windows is to be laminated ("Secured by Design").*

Barrier Glass

Glass located within 800mm of finished floor levels that form a barrier from falling and should be designed and installed in strict accordance with the criteria set out in BS6180:1999 'Barriers in and about buildings'. Glass should be a min. 6mm thick laminated or toughened safety glass to BS6399:1996 and should be a fixed unit i.e. non-opening and should be internally beaded with a minimum 15mm overlap edge support with a soft gasket against the window frame to prevent glazing unit from popping out of the frame upon impact.

UNPROTECTED AREAS:

Extents of unprotected areas 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
- 12m² when the minimum distance between side of the building and the relevant boundary is 2m
- 18m² when the minimum distance between side of the building and the relevant boundary is 3m

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.

JOINERY

Skirtings– Skirting's will be 19 x 75mm satin finish white painted MDF.

Internal Doors, Frames + Architraves – Internal doors to be confirmed by client/contractor hung in softwood frames. Door frames will receive a satin finish painted finish. Architraves will be 19x50mm satin finish white painted softwood. Ironmongery finish will be satin stainless steel and from a manufacturers standard product range.

Door leaf sizes **Minimum structural opening sizes from ffl level**

610x1981mm	692x2040mm
686x1981mm	768x2040mm
762x1981mm	844x2040mm
838x1981mm	920x2040mm

Doors indicated as:-

- FD30** - 30 minute fire resistance with Intumescent seals
- FD30s** - 30 minute fire resistance with Intumescent and smoke seals

SERVICE DUCTS

Ducts in houses - All SVP's passing through habitable rooms to be encased with 2 layers of 12.5mm '**Gyproc Wallboard TEN**' minimum mass 10kg/m² fixed staggered joint to 38x38mm sw framing. Note: pipe to be wrapped in minimum 25mm thick '**Rockwool Tectube**' acoustic insulation for full height (including floor depth) and be accessible with screwed access panels.

PLUMBING

Plumbing – Kitchen sink, bath and shower wastes to be min. 40mm diameter PVCu with 75mm deep seal traps. Washbasin wastes to be min. 32mm diameter PVCu with 75mm deep seal trap. Waste sizes to be increased in diameter where maximum pipe lengths are exceeded. Kitchen sink traps to incorporate waste connectors for washing machine / dishwasher. All waste branch pipes taken to soil and vent pipe or standing waste. Rodding points to be provided at change of direction of all branch pipes.

Soil and vent pipes to be 100mm diameter PVCu taking all branch waste connection to main drain. Roof termination of soil stack to be min. 900mm above the head of any opening into the building within 3m of vent. Proprietary Air Admittance Valve fitted to head of stack (to terminate just above level of main roof insulation) if not at the head of a drain run. See Site Engineering Layout for final locations. All AAV's to be BBA certified. All SVP terminations to be via a proprietary tile vent or ridge vent terminal, as shown on HT Working Drawings. All SVP's to have slow radius bend at base of stack.

Bath - The hot water supply temperature to any bath to be limited to **48degC**. by use of an in-line blending valve or other temperature control device, with a maximum temperature control device and a suitable arrangement of pipework.

WATER EFFICIENCY

The estimated water consumption is 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.

HEATING AND HOT WATER

All to be designed and installed in accordance with 'Domestic Services Compliance Guide 2013'

Ground Floor – Radiators

First Floor – Underfloor Heating (to master bedroom / fit from below clip track system)

Boilers – Gas condensing combination

The space heating and hot water is to be provided by a fired wet system. A wall mounted boiler 'Alpha Intec (GS)' (with a SEDBUK efficiency in **Band A**), is to be located in the position as indicated on the drawings.

Installation to include to following:-

- a. Room thermostat.
- b. Radiators are to be fitted with 'Thermostatic Rad Valves'.
- c. Time and Temperature Zone Controls.
- d. Enhanced Load Compensator.

Gas Boilers Flues – Gas Flues are to be fan assisted.

Central Heating Commissioning - On completion of the installation of heating / hot water systems an acceptable commissioning certificate is to be provided by the plumbing sub-contractor for submission and approval by the Building Control Body. A full set of operation and maintenance instructions are to be passed to the building owner on hand over in accordance with AD Part L1A -Section 3.

Carbon Monoxide detectors - Where a new or replacement gas or solid fuel appliance is installed in a dwelling, a 'Carbon Monoxide Alarm' should be provided in the room where the appliance is located, on ceiling minimum 300mm from wall or on wall minimum 150mm from ceiling and horizontally between 1m-3m from the appliance.

Alarms should comply with BS EN 50291:2001 and battery or mains powered.

FIRE DETECTION & MEANS OF ESCAPE

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. An interlinked heat detector to be provided in the kitchen if required by Building Control.

Means of Escape - 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 FD20 rated fire doors to BS 476-22:1987 (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 and be at least 1.1m above the floor level or stair pitch line.

ELECTRICAL INSTALLATION

The complete Electrical Installation is to be carried out in strict accordance with all relevant current British Standards & Codes of Practice and also to be in accordance with the requirements of 'Approved Document P'.

Approved Document R - Physical Infrastructure for High Speed Electronic Communications Networks

The electrical contractor is to ensure that the building is equipped with high speed ready in building physical infrastructure up to a network termination point for high speed electronic communications network.

Socket Outlets & Light Switches

All socket outlets and light switches are to be located between 450mm minimum and 1200mm maximum above finished floor level.

Fixed Internal Lighting

Fixed Energy Efficient light fittings are to be installed in the most frequented locations in the dwelling to a number more than **100%** of fixed internal fittings in habitable rooms are dedicated & energy efficient and comply with the criteria laid down in the Code for Sustainable Homes Technical Manual.

(Dedicated Energy Efficient Light Fittings (EELF) – Fittings that comprise of the lamp, base, control gear and an appropriate housing, reflector, shade or diffuser. The fitting must be dedicated in that it must be capable of ONLY accepting lamps having a luminous efficacy greater than 40 lumens per circuit Watt. The fitting must be permanently fixed to the ceiling or wall.

(Habitable rooms – living rooms, dining rooms, kitchens, bedrooms, hallways, studies, bathrooms, WC's and utility rooms)
Garages, cupboards, walk in wardrobes are excluded.

Fixed External Lighting

Fixed External Lighting should have automated controls and/or efficient lamps such that:

- a. EITHER: Lamp capacity does not exceed 150W per light fitting and the lighting automatically switches off:
 - i) When there is enough daylight AND
 - ii) When it is not required at night.

- b. OR: the light fittings have sockets that can only be used with lamps having an efficiency greater than 40 lumens per circuit watt.

VENTILATION

Mechanical Ventilation

Extract ventilation to outside is required to each kitchen, utility, bathroom and sanitary accommodation using intermittent fans as below:

Bathrooms without windows - Internal bathrooms and wc's are to be mechanically ventilated to external air at the min. rate of 15 litres/second and with a 15 minute overrun. All installations are to include humidistat.

Kitchens with opening windows – Kitchen ventilation in addition to opening windows are to include background ventilation 4000mm² and are also to be intermittently mechanically ventilated to external air at the min. rate of 60 litres/second (30 litres/second if via cooker hood). All installations are to include humidistat.

Wc's without opening windows. – Wc's are to be mechanically ventilated at the min rate of 6 litres/second and with a 15 minute overrun. All installations are to include occupancy sensor.

Utility without windows – Internal utilities are to be mechanically ventilated at the min rate of 30 litres/second and with a 15 minute overrun. All installations are to include humidistat.

Where extract fan ducting has a greater distance than 1.5m length run between the fans and external vents then centrifugal fans with rigid ductwork are to be provided in accordance with the Domestic Ventilation Guide 2010.

Purge Ventilation

All habitable rooms are to include 'purge ventilation' (openable window or door) to achieve 1/20th of the room floor area for windows opening **more** than 30° and 1/10th of the room floor area for windows opening **less** than 30°.

Background Ventilation

Controllable background ventilation via trickle vents to be provided to new habitable rooms at a rate of min 5000mm²; and to kitchens, bathrooms, WCs and utility rooms at a rate of 2500mm²

NB: *Ventilation provision in accordance with the Domestic Ventilation Compliance Guide.*

SOIL AND VENT PIPES:

Soil and vent pipes to be extended up in 110mm diameter UPVC and to terminate a minimum of 900mm above any openings within 3m of a window. Provide a long radius bend at foot of SVP.

The SVPs located in the living room are to be wrapped with 25mm Isover APR1200 insulation taken into the first-floor joist zone to meet with first floor insulation. Line framing battens with 2no. layers of 12.5mm thick Gyproc Wallboard to achieve a minimum mass of 15kg/m² and finish with 3mm skim coat of Gypsum BoardFinish.

ABOVE GROUND FOUL WATER DRAINAGE:

Above ground drainage is to comply with BS 5572 and Part H of the Building Regulations. Wastes are to have 75mm deep anti-vac bottle traps and rodding eyes at changes of direction.

Size of wastes pipes and maximum length of branch connections (if max length is exceeded then anti vacuum traps to be used)

Sinks - 3m for 40mm pipe 4m for 50mm pipe

Washing machine and dishwasher - stand pipe 50mm

Wash basin - 1.7m for 32mm pipe 4m 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. Waste pipes not to connect within 200mm of the WC connection.

DRAINAGE

- a. Before commencing any construction the contractor must check the condition, line and invert of the existing foul drain indicated on the drawing. Any discrepancies between actual invert and interpolated levels must be reported to the Architect. The existing pipe is to be examined for its entire length and cleared / repaired as required.
- b. If any existing drainage pipes are intercepted during the course of the works they shall be investigated and re-connected as necessary.
- c. All building drainage works to be in accordance with BS EN 752 Building Drainage and the current Building Regulations
- d. Cover levels shown are for guidance only. Final levels are to be determined on site. Where affected by the works existing covers are to be adjusted as necessary.
- e. Private drainage both foul and surface water 'Marley' Shallow Access system or similar approved construction in accordance with BS 8301; 1985 and Approved Document 'H' of the Building Regulations.
- f. Drains passing beneath footings or through walls are to be bridged by pre-cast concrete lintels of adequate strength where necessary. Minimum clearance below lintel or ground beam to be 50mm. Opening each side of footing to be closed with rigid sheet material.
- g. UPVC pipe-work is to comply with BS 4660 or if clay-ware is used it shall comply with BS 65.
- h. All pipe bedding and protection to be in accordance with manufactures recommendations and Approval Document 'H' of the Building Regulations.
- i. Inspection chambers more than 1500mm deep to invert are to be either 1200mm diameter or rectangular 1200 x 750mm minimum.
- j. Chambers 1500mm deep or less to invert may be 1050mm diameter or rectangular 1200 x 750mm minimum.
- k. Chambers 1200mm deep or less to invert may be 450mm diameter performed chambers. These should not be used to change direction on runs where falls are critical.
- l. Access points which are no deeper than 600mm may be 250mm diameter.
- m. No inspection chambers or covers are to be located within footpaths, driveways or patios unless specifically shown on this layout.
- n. All gullies shown are to be trapped and roddable.
- o. All drainage is to be 100mm diameter unless shown otherwise.
- p. Manhole covers to be ductile iron class D400 in carriageways, class B125 in car parking areas and class A15 only in pedestrian areas and footways all to BS EN 124:1994
- q. PPIC's cast iron cover and plastic frame is suitable where wheel loads do not exceed 1.5 Tonnes. For heavier loading installations, chamber to be surrounded with 150mm thick concrete and cover replaced with appropriate type.
- r. All pipe bedding and protection to be in accordance with manufactures recommendations and Approval Document 'H' of the Building Regulations.
- Bedding shall be 150mm granular bed surround where cover:
- i) Greater than 450mm for 100mm diameter rigid pipes in soft landscaping areas. ii) Greater than 600mm for all pipe diameters greater than 100mm in soft landscape areas. iii) Greater than 900mm for pipes in trafficked areas. iv) Greater than 1200mm for pipes in adopted areas. In all other cases including gully connections use 150mm (min) concrete protection.
- s. Access to be provided at the base of all RWP's using trapped access gullies bedded and surrounded in 150mm ST4 Concrete. Gullies to be Hepworth Ref SG3/1.
- t. Pipes shall be laid at a minimum gradient of 1:40 unless inverts indicate otherwise.
- u. Any existing pipework becoming redundant shall be excavated or sealed with a cement grout.
- v. All mortar shall be 3:1 sand:cement unless stated otherwise.
- w. All concrete shall be in accordance with BS 5328:1991 with Sulphate resistance to suit ground conditions.
- x. THE ATTENTION OF THE CLIENT AND THE PRINCIPAL CONTRACTOR IS DRAWN TO THE FOLLOWING POTENTIAL RISKS IN CONNECTION WITH THE PROPOSED ON-SITE AND OFF-SITE WORKS AS DESIGNED FOR THIS PROJECT.
- (a) The works might entail deep excavation for which appropriate support and safety measures must be provided. (b) Works in the vicinity of live services including gas and electricity (underground and overhead) will be necessary and the advice of all statutory service companies must be sought before any works commence. (c) In making connections to existing sewers and drainage installations, man entry to confined spaces will be required and all appropriate safety precautions must be followed including the use of gas detection apparatus. The same precautions must be followed during future inspection and/or maintenance of any part of the drainage system. (d) Works in existing highway will involve conflict with traffic and all due precautions including traffic controls and signing must be taken to ensure the safety of operatives and the general public.

EXTERNAL RAMPS

Going of Flight	Maximum Gradient	Maximum Rise
10m	1:15	666mm
5m	1:12	416mm

Note: For goings between 5m & 10m the gradients may be interpolated.

No individual flight of a ramp should have a going greater than 10m.

No series of ramps to a building should rise more than 2m without the introduction of an alternative means of access being provided such as a platform lift.

The minimum clear width is to be 900mm.

Slip resistant surface.

Provide a level platform 1:60 top and bottom 1200mm beyond door opening & not compromised by door swing.

Handrail 900-1000mm high one side (for ramps up to 900mm wide) colour contrasted to extend 300mm beyond start & finish.

No outward opening doors or windows are to overhang ramps.

RENEWABLE TECHNOLOGIES

In strict accordance with SAP rating calculations.

All renewable technologies accreditations and certificates are to be submitted to building control for their documentation and sign off.

LANDSCAPING

GROUND COVER PLANTING

To have in planted areas, premium quality topsoil to BS3882:1994, which should be spread in planting areas to a minimum depth of 300mm after settlement, over a further depth of 150mm of subsoil.

It will be necessary to restrict any concrete haunching to kerb edgings to ensure the soil space is not unnecessarily reduced.

Any grass seeded and turfed areas to have topsoil spread to a thickness of 100mm.

Grass seed shall be sown at the rate of 1kg to 30m² and shall be to the following specification:

40% Chewing Fescue	(Festuca rubra commutate)
40% Creeping Red Fescue	(Festuca rubra)
10% Timothy	(Phleum prstense)
10% Brown Top Bent	(Agrostis Tenuis)

The sowing shall be repeated in case of failure until good growth is established.

In the case of turfing, topsoil shall be spread to at least 100mm thickness and turves to BS3969, at least 40mm thick, shall be laid to an even finish. They shall be tended and maintained until well established.

RETAINING WALLS / BOUNDARY WALLS

To be built in strict accordance with s/e details in facing brickwork unless noted otherwise. To be set out in accordance with external works plans.