

DRAINAGE.

Inspection Chambers:- to be patent pvc chambers with lightweight cover and frame in pedestrian areas and heavy duty in vehicular areas and 150mm concrete base - installed to manufacturers recommendations and standards.

Foul Drains:- to be 100mm diameter soil quality p.v.c. patent pipes with laid to (max.) 1:40 falls. Protection to drain pipes to be carried out:
 *Where drain run passes through external walls provide lintel support or similar over with 50mm clearance gap around pipe and durable masking boards to cover the clearance gaps internally and externally.
 *Where drain run passes under new building wrap in 100mm fibreglass and polythene around and surrounded in 150mm concrete. Movement joints to be formed with compressible material to correspond with the joints in the pipes.
 *Where drains are subject to vehicular loading provide reinforced concrete raft over and on 100mm (min) granular fill between raft and foul drain to connect into existing foul drain - refer to Plandescil drainage design drawing.

Internal Drainage:- provide anti-syphonic traps and waste outlets of the following sizes:-
 sink.....38mm waste, 75mm trap.
 basin.....32mm waste, 75mm trap.
 bath.....38mm waste, 75mm trap.
 wc.....110mm waste, 50mm seal.
 shower.....42mm waste, 75mm trap.
 (shower trap to be fully accessible)
 All appliances to connect into S.V.P./S.S. as shown on plan.

Stub Stack:- provide 100mm diameter stub stack with osma vent 110 or similar air admittance valve above highest invert. Osma vent 110 air admittance valves are subject of bba certificate number 86/1643.

Soil Vent Pipe:- provide (min.) 100mm diameter plastic soil pipes with 'Y' junctions and (min.) 200mm bends and cleaning access at bends. Provide 75mm diameter vent pipes above highest connection to discharge through roof to external air and with lead slate.
 Provide durable wire cage to top of the vent pipe to prevent the entry of vermin. Outlet of soil pipe to be a (min.) of 900mm above any opening into the building within 3 metres.

Storm Drains:- to be 100mm diameter soil quality pvc patent drainage pipes laid in accordance with manufacturers recommendations and to suitable falls and to connect into soakaway(s) or to attenuation (and discharge into drainage dyke and/or culvert) or direct connection into culvert/IDB system.
 Stormwater drains to have trapped gullies set in concrete lump with grating under rainwater shoe.

Soakaways:- to be equal to Aquacel (or equal) crate soakaway, ensure suitable for vehicular loading where necessary. Contractor must carry out percolation tests to allow design for crate soakaway - All to be to local authority approval. Soakaway system to be installed in accordance with manufacturers standard details and recommendations.

Rainwater Goods:- Provide 115mm diameter half round black gutter to discharge to soakaways via 63mm diameter downpipes. Downpipes to be fitted with shoe discharging over trapped gullies.

Water Supply:- Below ground water supply pipes are to be of MDPE type as a precaution against contamination within soil.

Provide water supply from statutory water undertaker or a licensed water supplier through an installation complying with the requirements of the water supply (water fittings) regulations 1999 (SI999/1148 as amended) - all water installation to be in accordance with Part G of the Building Regulations. The potential consumption of wholesome water for the dwelling must not exceed 125litres per person per day (controlled through use of tap restrictors etc.) Use to be calculated upon completion of dwelling to ensure this is achieved and agreed with Building Control.

Domestic hot water operating temperature where exceeding 80°C, install outlet from storage vessel fitted with a device i.e. inline hot water tempering valve to ensure the temperature of the domestic hot water supply does not exceed 60°C.

Water temperature bath supply should be limited to 48°C.

Roof Plan

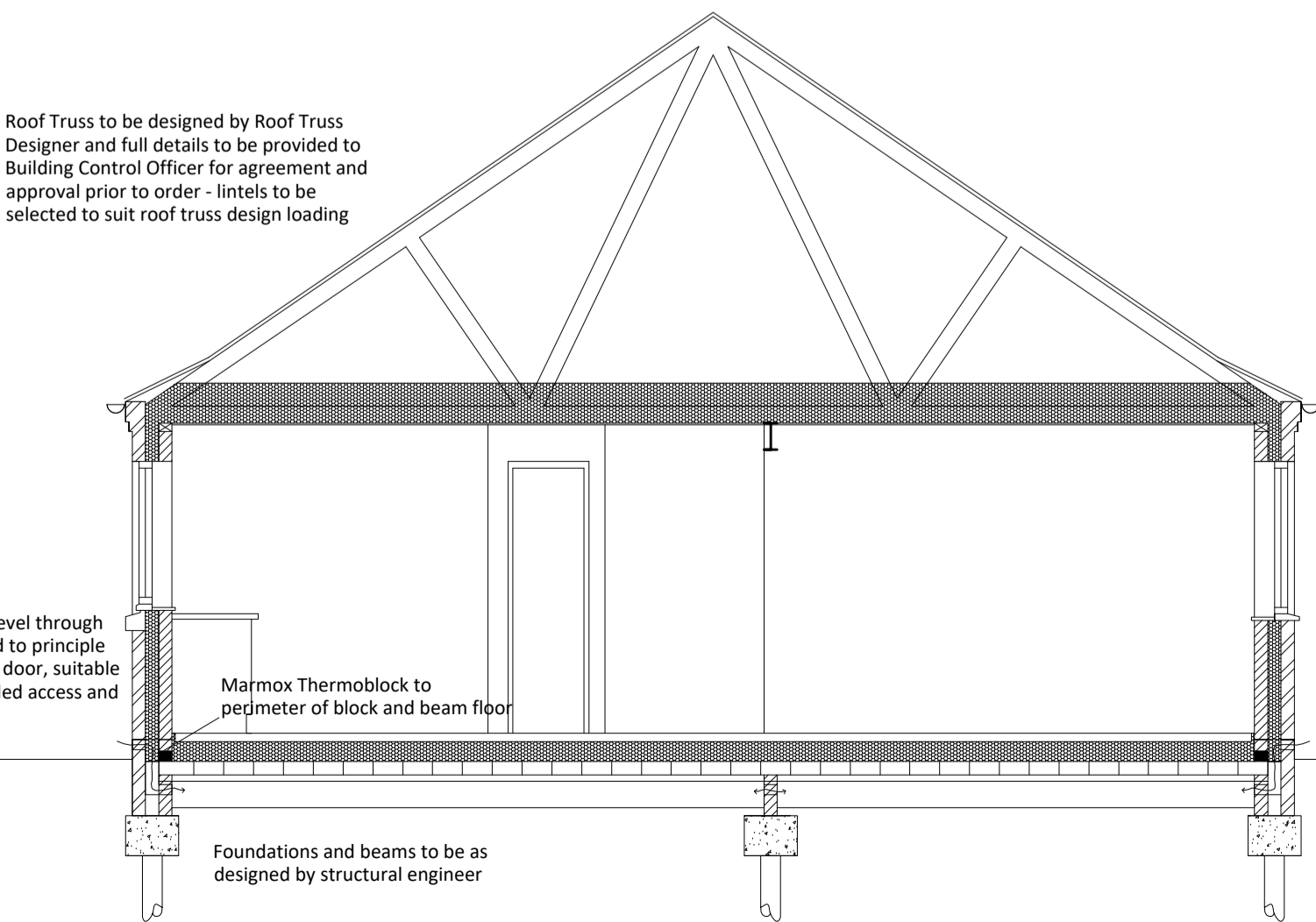
GUIDANCE NOTES.

- *All construction to N.H.B.C. standards and to comply with building regulations and the current codes of practice.
- *All sizes shown are excluding plaster i.e. brick, block and stud faces.
- *Floor finishes are to be negotiated.
- *Joists or structural members must not be notched for services without agreement and all must be pressure treated against infestation and rot, tanalised or equal. If notching is agreed it must be in accordance with N.H.B.C. standards.
- *Site and formation of ground assumed by this drawing to be level and speculated capable of supporting building in accordance with the arrangement shown, to be to local authority approval.
- *Structure and structural members to be judged and calculated by structural engineer if required and amplified or modified by requirements if necessary for stability and support.
- *Heating, electrical and plumbing arrangements to be designed and installed by approved specialist contractors to satisfy codes of practice and regulations laid down by i.e.e., institute of heating and plumbing engineers and local byelaws or authorised specification.
- *The use and installation of all materials, goods and equipment and the preparation for and the use of decorative applications to be strictly in accordance with manufacturers recommendations and limitations irrespective of any notes contained upon this drawing.
- *This drawing is only for use in conjunction with the site referred to and contained upon the location plan.

CONCRETE.

Foundations:- To be as designed by structural engineer to suit ground conditions. Building Control Officer must inspect excavations and deem suitable prior to concreting).

Block and Beam Floor:- to consist of 65mm screed reinforced with fibrous reinforcement (incorporating underfloor heating) on 150mm Kingspan K3 insulation board or equal (Provide 25mm insulation to the perimeter of screed) on 1200 gauge visqueen d.p.m. on patent block and beam suspended construction with (min.) 150mm void under floor. Void to be ventilated with glidevale or equal persicoe wall ventilators to provide 5400mm² free air space, installed at (min.) 1800mm centres, installed in accordance with manufacturers recommendations. Concrete floor to be designed by specialist supplier and fixed to their requirements and standards. Floor slab not to project into cavity.



THIS DRAWING IS SUBJECT TO AGREEMENT, CHECKING AND APPROVAL - NOT FOR CONSTRUCTION



WALLS.

External Walls:- to consist of 102.5mm external facing bricks with 125mm Crown Dritherm 32 or equal full cavity fill and 100mm Thermalite Shield or equal Internal blockwork plastered. Install Marmox Thermablock on top of block and beam floor to limit thermal bridging.
 Provide stainless steel wall ties to BS1243: 1978 or other acceptable standard certification to external walls at (max.) 450mm centres vertically and 300mm vertically at unbonded jambs and (max.) 750mm centres horizontally.
 Cavity insulation to be taken down level to underside of floor insulation and up gable to roofline and manufacturer tables to suit loadings and span and at all openings close cavity using Kingspan Kooltherm or equal proprietary cavity wall closers to prevent cold bridging and provide vertical d.p.c.
 Door and window frames must overlap insulated cavity closers by min. 30mm
 Provide 150mm lead flashing at junction of roof and wall/chimney with cavity tray.

Expansion Joints:- Provide expansion joints at centres (12-15m for clay brickwork and 7.5-9m for silicate brickwork and 6m for concrete blockwork), at positions recommended by the St. Eng. and agreed with by the contractor. Movement joints to be designed in accordance with BS5628: Part 3: Code of practice for use of masonry: Materials and Components, Design and Workmanship.

D.P.C.:- Provide Hyloard or equal d.p.c. at floor level and vertically at openings. Provide d.p.c. under sills.

Internal Partitions:- To be 100mm load bearing lightweight blockwork built off foundation and provide d.p.c., or non-load bearing partition built off thickened slab - see plan and confirm load bearing walls with roof truss designer prior to excavations. Partitions to be bonded at all abutments. Use 100mm Thermalite Shield or equal block to achieve 40dB sound insulation.

Lintels:- To be Keystone Hi-Therm(External walls)/Catnic (internal walls) or similar from manufacturers tables to suit loadings and span and in accordance with manufacturers recommendations. All external lintels to be packed with insulation and provide cavity tray.

ROOF.

Eaves:- Form eaves as shown in section.

Roof Construction:- Provide gannail timber roof trusses to be as designed by specialist supplier to suit loads and span with 100*65mm wallplates and to comply with building regulations. Trusses to be set at a max. 600mm centres and trusses and bracing to be to BS5268: Part 3: 1985. Provide patent galvanised mild steel straps of at least 900*32*6mm turned and secured onto blockwork at 1800mm centres secured over plates and onto walls.

Provided galvanised mild steel restraint straps at all gables turned and secured over trusses to wall at 1800mm centres. Incorporate 100*50mm timber noggings between trusses to support restraint straps.
 Provide insulation at ceiling level (see section and details). Approved Tyvek Supro Plus or equal breather underlay is to be laid over trusses lapped and installed in accordance with manufacturers recommendations and details.

Approved quality tiling battens of 50*25mm are to be laid to a suitable gauge to suit roof tiles and secured to the trusses with wire nails. Battens to be at least 1.2m in length supported at each end and intermediately by at least 3 trusses or wall. Butt joints over intermediate supports should be staggered and the ends must be sawn. Provide tiled finish (to be as agreed with planning authority). Tension struts conforming to BS EN 845-1 spaced at no more than 2m apart at rafter and ceiling joist level to the gable walls.

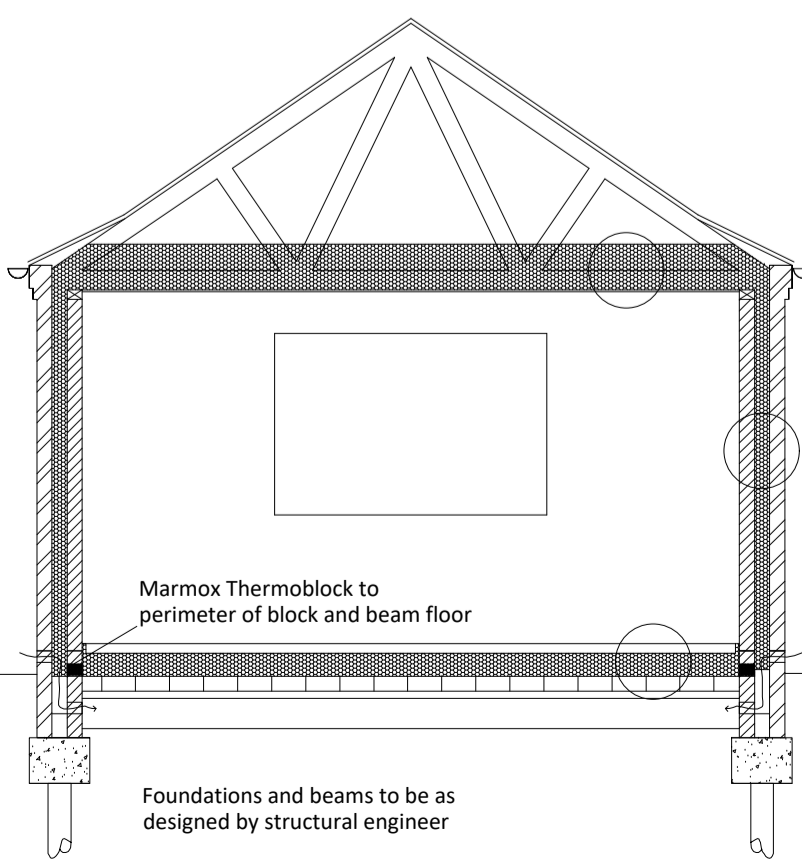
TIMBERWORK.

Windows and Doors:- To be high performance double glazed units fitted with patent frame ventilators to provide trickle ventilation (See Energy Consultant design re ventilation requirement subject to building air permeability).
 Doors and Window sets to be manufactured to requirements of BS PAS 24:2012 or deigned and manufactured in accordance with Appendix B of the Approved Document Q.

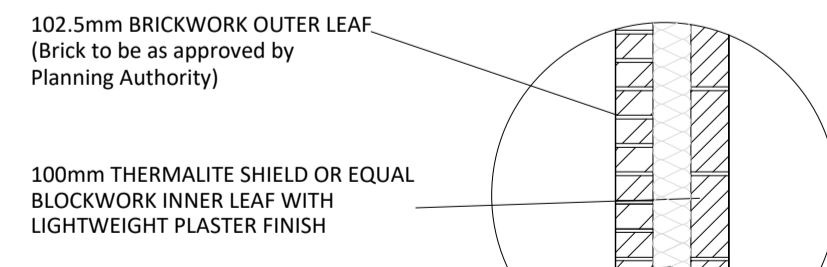
Door and window frames must overlap insulated cavity closers by min. 30mm.
 Glazing to have an area weighted average u-value of 1.4 W/m²K in timber /Aluminium frames.
 Windows and doors to be set on d.p.c. and provide vertical d.p.c..

Architrave:- All doors abutting walls at right angles to have a full architrave at abutments.

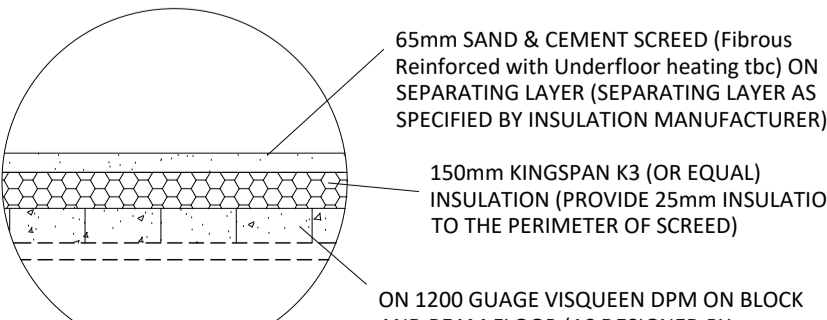
Trap Door:- Loft hatch to be insulated, draught striped and fitted with a suitable fastening to adequately compress the draught seal.



PITCHED ROOF INSULATION - COLD ROOF 1:20



WALL CONSTRUCTION - 1:20



GROUND FLOOR CONSTRUCTION - 1:20



ADDITIONAL INFORMATION.

Disabled Person Access (Part M):- Light switches, sockets, and doorbells to be positioned between 450 and 1200mm above floor level. Entrance and internal doors to habitable rooms and WC have a minimum clear opening width of 775mm. Radiators and other permanent fixtures are not to be fitted in positions were they will cause an obstruction to wheelchair users turning in and out of rooms.

Heating System:- Specialist designed system comprising of air-source heat pump and linked into underfloor heating manifolds with thermostats to allow zone control heating.
 Alternatively, gas fired boiler - all to be designed to comply with current standards and in association with Energy Calculations.

Space heating system to be fitted with a boiler interlock to ensure central heating system controls switch boiler off when there is no demand for heat to avoid unnecessary boiler cycling. Concealed services should be adequately boxed and sealed at floor & ceiling levels & piped services should be sealed where they project into hollow constructions or void (ie. roof/floor voids).
 Note: Installation of heating and hot water systems is to be undertaken by a competent person and is to provide the owner of the property with suitable commissioning certificates (i.e. those produced by Benchmark.) Copies of certificates are to be provided to the Council prior to acceptance of the installation.

Ceiling:- Provide 15mm plasterboard (with VCL) fixed to underside of ceiling joists, all joints to be taped and filled and plaster skim finish.

Extracts:- Provide mechanical extracts to the following rooms:
 *Bathrooms/Ensuite - mechanical extract to give 15l/sec extraction and to be operated by pull cord switch (provide overrun to room without a window opening).
 *Kitchen - cooker hood extract to give 30l/sec extraction or 60l/sec elsewhere.
 *Utility - 30l/sec mechanical extract.
 All extracts to be wall mounted or ceiling mounted through roof to tile vent with insulated ducting.

Electrics:- All electrical work required to meet the requirements of Part P (electrical safety) must be designed, installed, inspected and tested by a person competent to do so. Prior to completion the Council should be satisfied that Part P has been complied with. This may require an appropriate BS7671 electrical installation certificate to be issued for the work by a person competent to do so.

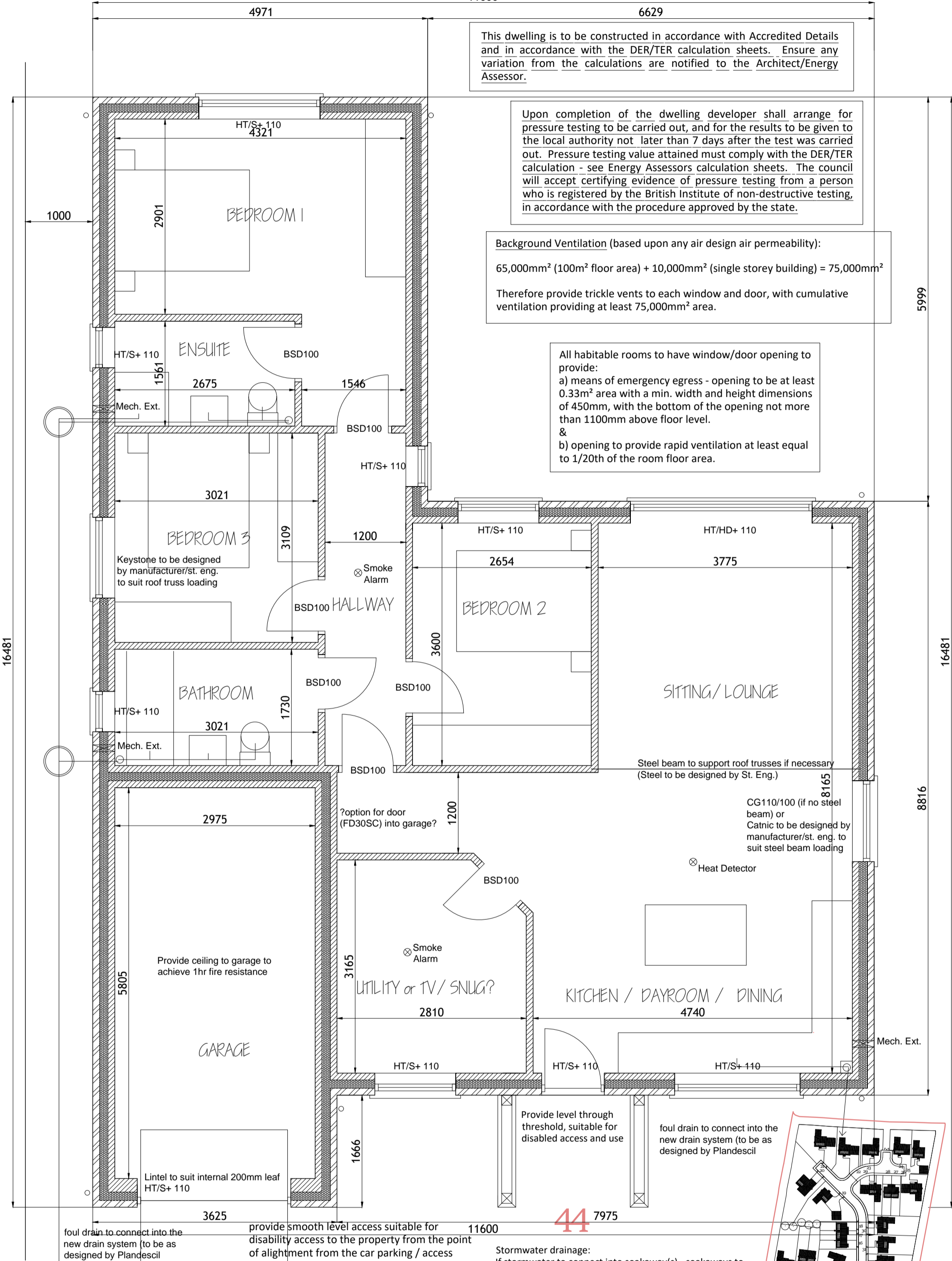
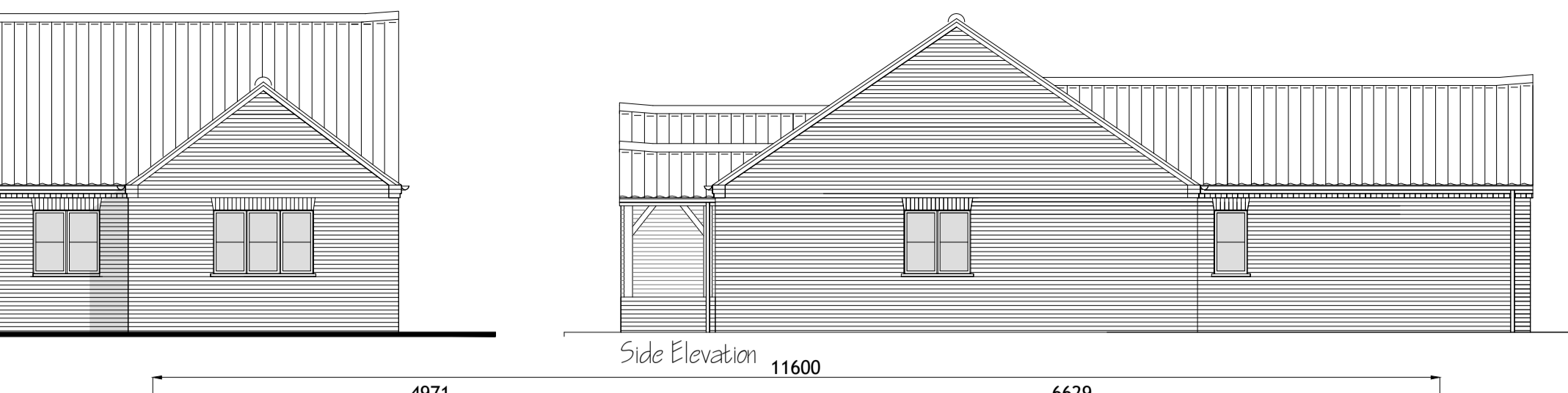
Electronic Communication:- Infrastructure for high-speed electronic communications to be provided. Network termination point to be provided with ducting from a network access point to the termination point.

External Lighting:- Where providing external fixed lighting, the lamp capacity should not exceed 150watts/light fitting and the lighting will automatically extinguish when there is enough daylight and when they are not needed at night, or they have sockets that can be used with lamps having a luminous efficiency greater than 45 lumens per circuit-watt (ie fluorescent tubes and compact fluorescent lamps, not gls tungsten lamps with bayonet cap or Edison screw bases).

Internal Lighting:- New lighting to comprise of lamps with a luminous efficiency greater than 45 lumens per circuit-watt and a total output greater than 400 lumen to 100% of the light fittings. GLS tungsten lamps with bayonet or Edison screw bases are not to be used.

Smoke Alarms:- To be self contained mains operated and to conform to BS5446: part 1. Smoke alarms to be provided as shown and interconnected so that detection in one unit operates the alarm signal in all alarm units.

Glazing:- All glazing in critical locations should be of a type that is unlikely to cause injury upon impact. This type of glass should be installed to areas where:
 *all glass lower than 1500mm above floor level to doors, adjacent sidelights and windows.
 *all glass lower than 800mm above floor level elsewhere.
 Where glass to be safety toughened to be manufactured to bs6206: 1981 and to satisfy building regulations.



This dwelling is to be constructed in accordance with Accredited Details and in accordance with the DER/TER calculation sheets. Ensure any variation from the calculations are notified to the Architect/Energy Assessor.

Upon completion of the dwelling developer shall arrange for pressure testing to be carried out, and for the results to be given to the local authority not later than 7 days after the test was carried out. Pressure testing value attained must comply with the DER/TER calculation - see Energy Assessors calculation sheets. The council will accept certifying evidence of pressure testing from a person who is registered by the British Institute of non-destructive testing, in accordance with the procedure approved by the state.

Background Ventilation (based upon any air design air permeability):
 65,000mm² (100m² floor area) + 10,000mm² (single storey building) = 75,000mm²
 Therefore provide trickle vents to each window and door, with cumulative ventilation providing at least 75,000mm² area.

All habitable rooms to have window/door opening to provide:
 a) means of emergency egress - opening to be at least 0.33m² area with a min. width and height dimensions of 450mm, with the bottom of the opening not more than 1100mm above floor level.
 &
 b) opening to provide rapid ventilation at least equal to 1/20th of the room floor area.

Steel beam to support roof trusses if necessary (Steel to be designed by St. Eng.)

CG110/100 (if no steel beam) or Catnic to be designed by manufacturer/st. eng. to suit steel beam loading

Heat Detector

Provide level through threshold, suitable for disabled access and use

foul drain to connect into the new drain system (to be as designed by Plandescil)

provide smooth level access suitable for disability access to the property from the point of alignment from the car parking / access space into the building (with level through threshold to the entrance door) - layout to be finally confirmed on site by client.

All paths and parking area shown subject to client agreement - ensure cross fall of paths is no greater than 1 in 40, with a level approach (not steeper than 1 in 20) with its surface firm and even and width not less than 900mm. If gradient exceeds 1 in 20, then form ramp with gradient of either 1 in 12 (for max. 5m) or 1 in 15 (for max. 10m), ensuring that each has a top and bottom landing(x900mm width) length of 1200mm exclusive of any gate or door opening onto it.

Stormwater drainage:
 If stormwater to connect into soakaway(s) - soakaways to be located min. 5m from any building, sized to suit ground conditions following percolation test by contractor and to accommodate area of roof/hardstanding discharging into or connect via attenuation into IDB drain/culvert as per Plandescil design layout.

In Building physical Infrastructure:- Physical infrastructure for high-speed electronic communications networks are to be installed to each dwelling in accordance with Approved Document R of the Building Regulations.

0m 1m 2m 3m 4m 5m

Floor Plan

RICHARD C.F. WAITE ARCHITECT
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Proposed development of land off Hungate Road, Emneth Detached Bungalow

Plot 44

Paper Size: A1
 Drawn: DRF
 Date: 19.11.17

This drawing is subject to amplification from further construction information. Any discrepancy found on drawing to be notified to Architect immediately. All foundations to be modified to suit ground conditions & structural requirements after site investigation by others. No dimensions or sizes to be scaled from this drawing. All sizes or dimensions to be checked before construction. This drawing is copyright & must not be copied without consent.



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