SWANN EDWARDS ARCHITECTURE

BUILDING REGULATION NOTES

Rev BR02

PROPOSED NEW DWELLING

AT

RAVENS BANK
WHAPLODE ST CATHERINE
PE12 6SH

FOR

S&R PROPERTIES

Job No. SE-1985

November 2023

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REV	AMENDMENTS
BR01	Initial Issue

PRE-CONSTRUCTION HEALTH AND SAFETY
This document and all drawings and details are to be read in conjunction with Swann Edwards Architecture Limited Pre-Construction Information Document.

LOCAL AUTHORITY BUILDING CONTROL
No work is to commence on site without the benefit of a Full Plans (Building Regulation) approval. All approved works are to be notified to the Building Control Officer on commencement.

MATERIALS
Materials should comply with the appropriate British Standards or Agreement Certificates. Alternatively, the materials should be marked, stamped, independently certified or otherwise justified by test or calculation to show their suitability. Standards of workmanship should meet the relevant BS 8000 series

STRUCTURAL ENGINEER
The clients Structural Engineer is to be notified of all structural alterations and appropriate calculations and details provided for approval by the Building Control Officer.

CERTIFICATES AND DECLARATIONS
All work carried out under Part L & Part P of the Building Regulations must be done so by suitably qualified persons and suitable "commissioning certificates" should be completed.

ACCESS FOR DISABLED PERSONS
All access and facilities for disabled persons are to comply with the Building Regulations Approved Document M 2015 edition, Volume 1, Category 1.

SAP RATING
A SAP rating for the new dwelling shall be calculated on completion of the dwelling. Energy Performance Certificates are to be provided upon completion.

Design stage SAPs are to be produced and coordinated with the drawing package and building regulations notes. The construction process on site must adhere to all As-Designed documents provided, all relevant sections of the current building regulations and thermal bridging details where applicable.

Any deviations from the As-Designed Building Regulations package could have a negative impact on the SAP assessment and may therefore result in the As-Built dwelling being non-compliant. It is therefore advised that any deviations from the original specification should be checked by the SAP assessor for their impact on the SAP assessment prior to being actioned.

Before the production of an As-Built SAP can commence the SAP Assessor **MUST** be provided with all necessary information for its completion. This information will be requested prior to the commencement of the SAP assessment.

In accordance with Approved Document (AD) L: Volume 1 2021, incorporating 2023 amendments, photographic evidence must be provided for each dwelling as a record during the construction process.

Photographs should be taken of typical examples as listed below.

1. Foundations/substructure and ground floor, to show thermal continuity and quality of insulation in the following places.
    a. At ground floor perimeter edge insulation.
    b. At external door threshold.
    c. Below damp-proof course on external walls.
2. External Walls: for each main wall type, to show thermal continuity and quality of insulation for the following.
    a. Ground floor to wall junction.
    b. Structural penetrating elements.

    NOTE: For blown fill insulation, photos should show clean cavities and clean brick ties with very limited mortar droppings.
3. Roof: for each main roof type, to show thermal continuity and quality of insulation at the following.
    a. Joist/rafter level.
    b. Eaves and gable edges.
4. Openings: for each opening type (one image per wall or roof type is sufficient), to show thermal continuity and quality of insulation with photographs of the following.
    a. Window positioning in relation to cavity closer or insulation line.
    b. External doorset positioning in relation to cavity closer or insulation line
5. Airtightness: additional photographs for all details 1-4 to show airtightness details (only if not included or visible in continuity of insulation image).
6. Building services: for all plant associated with space heating, hot water, ventilation and low or zero carbon technology equipment within or on the building, show the following.
    a. Plant/equipment identification label(s), including make/model and serial number.
    b. Primary pipework continuity of insulation.
    c. Mechanical ventilation ductwork continuity of insulation (for duct sections outside the thermal envelope).

It is the Contractors duty to organise who will be responsible for taking the photographs and to ensure they are taken at the correct stages throughout construction.

THERMALLY MODELLED CONSTRUCTION DETAILS

The design stage SAP calculation relies on the use and implementation of thermal bridging details. The details are conveyed on Swann Edwards details and drawings, included at the rear of this document:

Details TBC by SAP assessor.

- MFF- E1 – Steel lintel with perforated steel base plate
- MFF- E3 – Window cill
- MFF - E4 – Window jamb
- MFF – E10 – Pitched Roof Eaves Insulation at ceiling level
- MFF – E11 – Pitched Roof Eaves Insulation between Rafters
- MFF – E13 – Pitched roof gable

A thermally bridging detail for the ground floor is anticiipated however a manufacturer specific detail will be required.

AIR PRESSURE TESTING

Air permeability and pressure testing to be carried out in accordance with the procedure approved by the Secretary of State. The contractor is to arrange for air tightness testing to be carried and is to achieve an Air Permeability of 5.0 (TBC by Sap Assessor). All results are to be passed onto the Contract Administrator.

The Contractor is to refer to GPG 224 'Improving Air tightness in Dwellings' as a reference point for areas within that require detailed attention to limit the air leakage. These areas include foundation, ground floor, doors and windows openings, intermediate floors, eaves and service penetration. The contractor is to be responsible for carrying out all the necessary sealant work. Sealants available include membranes, expanded foam sealants, gun-applied sealants, tapes and fillers.

FOUNDATIONS

Foundations are to be calculated and designed by the Clients Structural Engineer including retaining walls.

EXTERNAL WALLS BELOW DPC

(To be confirmed by Structural Engineer)
External cavity walls below dpc to be constructed from loadbearing blockwork skins externally and internally. Concrete blocks to have a compressive strength not less than 7N/mm². Cavities filled with lean mix concrete within 225mm below lowest dpc. External skin to have a min. of 3 courses of Class B brickwork below finished ground level. All mortar below ground level to be sulphur resistant.

DAMP PROOF COURSES & CAVITY TRAYS

'Ruberoid Hyload' or similar damp proof course is to be provided a minimum 150mm above ground level installed in accordance with manufacturers instructions.

DPC is to be installed beneath floor beams on loadbearing blockwork walls.

Proprietary insulated cavity closers are to be provided to the perimeter of openings with integral DPC.

Cavity trays with stop ends are to be provided over all lintels and air bricks. Weepholes to be provided over cavity trays at 900mm centres (min 2 no.). Proprietary stepped cavity trays are to be provided at edge abutments, installed as manufacturer's recommendations, linking with lead flashings.

Seal all laps with DPCs and / or cavity trays using adhesive / mastic / torching in accordance with manufacturer's recommendations to ensure a fully watertight installation.

GROUND FLOOR CONSTRUCTION

(To be confirmed by Structural Engineer / Specialist Manufacturer)
Site to be cleared and excavated to reduced levels. Apply weed-killer if required.

75mm screed, over min. 500 gauge polythene separation layer / vapour barrier, turned up at walls with all service entries and joints sealed, over 150mm Kingspan K103 insulation board with a GWP of less than 5 and 1200 gauge damp proof membrane (DPM), installed as manufacturer's recommendations on suspended precast concrete block and beam floor, designed and manufactured by specialist manufacturer in accordance with BS8110. Insulation is to include a 25mm continuous strip to the perimeter of the screed). Ensure precast concrete beams bear onto strip of DPC on loadbearing blockwork walls. Garage construction to be the same as above but with omission of 150mm Kingspan K103 insulation board.

Cross ventilation to be provided by air bricks located below the DPC, with periscope underfloor ventilators to achieve min. 1500mm2 per m run. at max. 2m centres and within 450mm of each end of wall. Colour to match facing brickwork. Provide cavity tray over with weepholes. Void size under floor to be confirmed by Structural Engineer in consideration of ground heave.

U-value for the floor construction under 0.13W/m²K (To be confirmed by Client & SAP Assessor)

EXTERNAL WALLS

BRICKWORK
102.5mm facing brickwork outer leaf
150mm cavity fully filled with Knauf Dritherm 32 Ultimate insulation
100mm aerated 3.6N/m2 blocks

VERTICAL CLADDING - GARAGE
Horizontal cladding (as approved) to be installed in accordance with manufacturer's instructions. Installed on: 50 x 50 sw vertical timber battens (TBC by cladding manufacturer) on breather membrane
2 skins of 100mm medium dense blocks (inner skin at jamb detail to be 200mm).

Rigid cavity wall insulation to carry past lowest DPC.

Walls are to be finished internally with 12.5mm Gypsum Wallboard on Dryliner Basic or similar and 3mm skim finish. Moisture resistant plasterboard to be provided to bathrooms and WC's.

Wall ties are to be confirmed by the Client's Structural Engineer. Ties are to be installed at max 750mm horizontal centres and 450mm vertical centres, laid in staggered pattern. Spacing of ties is to be decreased to 225mm vertical centres at corners and perimeter of openings etc.

Expansion joints are to be installed as required by the Client's Structural Engineer. Appropriate locations are to be discussed to establish the most discrete locations and whether any changes to RWP locations would be beneficial to help obscure movement joints.

U-value of walls to be a minimum of 0.17W/m²K (To be confirmed by Client & SAP Assessor)

LINTELS

All lintels to be IG Limited or equivalent galvanised mild steel as shown on details. All lintels are to be installed as manufacturer's recommendations with min 150mm end bearing. Heavy duty lintels are to be provided where recommended by the lintel manufacturer. Cavity trays to be installed in strict compliance with manufacturer's instructions.

INTERNAL PARTITIONS – BLOCKWORK

(TBC by Client's Structural Engineer)
Loadbearing walls to be designed by Client's Structural Engineer where required.

Where indicated on the drawings, 100mm blockwork internal partitions to be constructed with 12.5mm Gypsum Wallboard on Drilyner Basic or similar and 3mm skim finish to each side. Moisture resistant plasterboard to be provided to bathrooms and WC's.

ROOF CONSTRUCTION – TRUSSED ROOF

All structural timbers are to be FSC or PEFC certified and pressure impregnated. Trussed rafters construction to be designed and manufactured by specialist manufacturer to BS5268:- Part 3. SW binders and bracing to be designed and installed to BS5268:-Part 3.

Roof structure designer is to provide design and manufacture of all necessary plan bracing members or diaphragms at rafter and ceiling levels to provide lateral stability to external walls in accordance with Building Regulations. Attic truss' to be provided where possible as shown in sections.

5 x 30mm lateral restraint straps to be provided at verge of gable walls at max. 2m centres. Straps to be fixed to blockwork and screwed to 3 trusses with solid 50 x 100mm softwood noggins under.

5 x 30mm fixing down straps (1.0m long) to be provided to the external walls at max. 2m centres. Straps to be fixed to blockwork and screwed to wall plate.

Generally, ceilings to be 15mm foil backed plasterboard and skim finish with timber supports to all unsupported edges and around perimeter.

Loft hatch to be insulated plywood with draft seals to be minimum size 550 x 700mm.

Fascia, soffits and bargeboards to be uPVC.

ROOF INSULATION – ABOVE CEILING CHORD

450mm Knauf Loft roll 40 insulation to be laid between and above ceiling chords of trusses. Insulation is to be unbroken with wall insulation to prevent cold bridging. Ensure a 50mm min. clear ventilation gap is maintained from roof space to eaves. Insulation and membrane is to be installed as recommended by manufacturer.

Roof to obtain a U-value for the construction under 0.11W/m2K (To be confirmed by Client & SAP Assessor)

ROOF COVERING

Roof tiles are as agreed with Local Planning Authority on 25 x 50mm treated softwood battens with all overlaps and fixings as recommended by manufacturer over Kingspan Nilvent breathable underlay lapped into gutter laid horizontally across rafters as manufacturer's recommendations. At exposed locations felt to be to BS747 Class 5U. Additional high strength underlay Hyload 150E or other equal and approved, minimum 500mm wide, is to be provided at eaves. Dry ridge, hip and verge systems are to be installed.

Install over fascia vents to provide 25mm continuous ventilation strip and ridge vents to provide 5mm continuous ventilation strip. Install uPVC fascia, soffits and bargeboards.

Code 4 Lead flashings, aprons and soakers generally. Code 5 Lead flashings or GRP to all valley linings, gutters and saddles generally.

Roof to obtain a U-value for the construction under 0.13W/m2K (To be confirmed by Client & SAP Assessor)

ROOF CONSTRUCTION – CUT ROOF

All structural timbers are to be FSC or PEFC certified, and pressure impregnated. Cut roof construction to be designed and manufactured by specialist manufacturer to BS5268:- Part 3 OR to be designed by structural engineer, if required. SW binders and bracing to be designed and installed to BS 5268:- Part 3.

5x30mm lateral restraint straps to be provided at verge of gable walls at max. 2m centres. Straps to be fixed to blockwork and screwed to 3 trusses with solid 50x100mm softwood noggins under.

5x30mm fixing down straps (1.0m long) to be provided to the external walls at max. 2m centres. Straps to be fixed to blockwork and screwed to wallplate.

ROOF INSULATION

Sloping Roof to be insulated between the rafters with 100mm Kingspan Kooltherm K107 insulation with layer of 82.5mm Kingspan Kooltherm K118 insulated plasterboard below rafters. Provide skim finish to plasterboard face. Insulation is to be unbroken with wall insulation to prevent cold bridging. Ensure a 50mm min. clear ventilation gap between the membrane and the top of the insulation and continuous 50mm at the eaves. Insulation and membrane is to be installed as recommended by manufacturer.

Roof to obtain a U-value for the construction under 0.15W/m2K. (To be confirmed)

STRUCTURAL TIMBER TREATMENT

Any new structural timber to be C24 Grade to BS4978: 1988 unless otherwise specified and pressure impregnated with preservative in accordance with BS4027:1974. All exposed timbers to be treated with preservative complying with BS1282:1975.

FLASHINGS

All lead flashings to comply with BSEN 12588: 1999 and are to be installed and detailed as in the Pocket Guide for Installers of Rolled Lead Sheet published by the Lead Sheet Association.

RAINWATER GOODS

uPVC half round gutters and 68mm diameter downpipes discharging to drains with direct connections. Downpipe locations are as shown. Gutter and downpipes are to be confirmed by drainage designer.

WINDOWS

Windows are to be double glazed (triple glazed to the front elevation) uPVC casement windows with a **U-value of min. 1.2W/m²K** (To be confirmed by Client & SAP Assessor). All habitable rooms and bathrooms are to have an opening size of 1/20th of the floor area as shown, minimum unobstructed opening of 0.33m² (min.450 x 750mm).

All windows are to open outwards from the dwelling. Windows are to be fully openable to 90o and not obstructive or hazardous.

Toughed glass to BS6206 is to be used to inner leaf in all windows where the glazing is within 800mm of Finished Floor Level and within 300mm of a door.

Ironmongery is to include:

- Concealed stainless steel friction hinges / stays
- Multipoint espagnolette system with lockable lever handle incorporating key operated cylinder lock allowing lights to be locked in a partially open position (no lock to fire egress windows)
- Cranked window handles to achieve 40mm min separation from either window frame of glass behind
- Windows that could cause a hazard or obstruction are to be fitted with opening limiters.

All windows are to have silicone sealant pointing internally and externally.

Cavity to be fire stopped at external openings.

All windows to conform to Approved Document Part Q and the requirements of British Standards publication PAS 24:2016.

DOORS – EXTERNAL

External doors to be composite, insulated doors achieving a **min. U-value of 1.0W/m2K** (To be confirmed by Client & SAP Assessor). They are to have a minimum clear opening of 775mm and be a minimum of 44mm thick. Pattern/style to be as shown on elevation drawings. Draught strips to be included. Skirting mounted door stops to be provided internally.

Rear entrance doors to be uPVC achieving a **min. U-value of 1.0W/m2K**. Pattern/style to be as shown on elevation drawings. Lock protector plate and hinge bolts to be provided in addition to a doorstop and restrictor for outward opening doors.

Front doors are to be provided with a weather strip to suit level access threshold max 15mm high.

External doors are to have toughened glass internally to BS 6206. Front door to be triple glazed.

All doors are to have silicone sealant pointing internally and externally.

All external doors to conform to Approved Document Part Q and the requirements of British Standards publication PAS 24:2016.

DOORS - INTERNAL

Internal doors as indicated on drawings and within door schedules. Ground floor internal doors to provide min. 775mm clear opening. Doors to be undercut by 20mm to allow circulation of ventilation.

Ironmongery is to include:

- Mortice latch and bolt through type lever handles and roses with matching 110mm butt hinges.
- All cupboard doors are to be openable from the inside.
- Bathroom and WC doors to include indicator bolt with safety access facility openable from the outside in the case of an emergency.

WATER CONSUMPTION

Water consumption is to be less than 110 litres / person / day of wholesome water using the fittings approach in accordance with Approved Document Part G. Maximum consumptions are specified with each fitting under sections 'Sanitaryware' and 'Kitchen'. Should any of these consumptions be exceeded a water calculation is to be carried out and forward to Building Control for approval.

KITCHEN

Layouts shown indicatively, specialist designer to provide detailed layout drawings

Kitchen tap to have a flow rate of **8 litres/minute flow rate (max.)**.

Dishwasher is to have a water consumption of **1.25 l/place setting (max.)**.

Washing machine is to have a water consumption of **8.17 l/kilogram (max.)**.

SANITARYWARE

Supply and fix sanitaryware as chosen by the Client, including all fixtures and fittings as necessary, as follows:

WC's: Dual flush with soft close seat. **6/4 litre dual flush cisterns (max.)**

WHB - Bathroom: Wash hand basin with pedestal. **6 litres/minute flow rate (max.)**

WHB – WC: Hand rinse wash hand basin wall mounted. **6 litres/minute flow rate (max.)**

Bath: 1700 x 700mm bath. **185 litre capacity (max.).** Void beneath bath to be insulated with mineral wool insulation.

Showers: Thermostatically controlled mains hot and cold fed over bath shower, surface mounted with flexible hose, riser rail and shower head**. 10 litre/minute flow rate (max.)**

The hot water temperature to the bath outlet is to be limited to a maximum of 48°C by the use of an in-line blending valve to BS EN 1111:1999 or BS EN 1287:1999. The valve should not be easily altered by the building user and the length of the pipes between the valve and outlets should be kept to a minimum.

WASTE PLUMBING

All waste plumbing to be carried out in accordance with BS5572.

Soil and vent pipes (indicated with SVP) are to be 100mm diameter terminating with a tile/ridge vent min. 900mm above highest opening window. Stub stacks (indicated with SS) are to terminate with air admittance valve. Direct connections (indicated with DC) to be provided where shown.

WC waste to be 100mm diameter, WHB to be 36mm diameter, to be fitted with Anti syphon trap where 1.7m away from SVP or SS. Bath and sink waste to be 40mm. Anti-vac traps to bath. All wastes to connect separately to stack and to be provided with 75mm deep traps. Access to soil stacks to be provided through 30 minute fire rated proprietary panels in boxing with access fitting in stack located above flood level line. Soil Stack boxings are to be filled with glass fibre quilt insulation and be finished with 2 layers 12.5mm plasterboard to achieve 30 minutes fire resistance. Any penetrations through fire resistance construction is to be fire stopped as follows:

- SVP's, wastes and ducts with a diameter of 40mm or greater shall be provided with a propriety fire collar.
- Services with a diameter of less than 40mm shall be sealed around with intumescent sealant.

FOUL WATER DRAINAGE

All foul water drainage to be designed by client's drainage engineer.

SURFACE WATER DRAINAGE

All surface water drainage to be designed by client's drainage engineer.

WATER INSTALLATION

Water installations shall comply with all the Local Water Company requirements.

A mains stop valve and drain off tap, ideally located beneath the kitchen sink or service cupboard at the point of entry into a flat is to be provided with a 'SureStop' stopcock.

HEATING / HWS / CWS
(To be confirmed by Client & SAP Assessor)

The heating system is to incorporate radiators, and be designed to achieve the following room temperatures when the outside temperature is -1 ºC Bathrooms 22ºC Living and dining rooms 21ºC, all other rooms 18ºC.

Air Source Heat Pump (Air to Water) as designed and detailed by specialist manufacturer/installer.

- 300 litre unvented hotwater cylinder with min. 80mm factory fitted insulation. Cylinder to be located in a heated part of the dwelling.
- Cylinderstat
- Primary pipework to be fully insulated
- Water heating timed separately
- Pump to be located in heated space
- MCS certification is required
- Underfloor heating to ground floor and radiators to first floor
- Time and temperature zone controls to be provided

On completion of the heating/HWS/CWS installation the installers shall commission the system and certify the work to the LA building control officer. The installer shall also provide the building occupier a full set of operation manuals.

Hot water pipework is to be insulated as the recommendations of BS 5422: 2001.

The pipework and ductwork is to be unobtrusive and installed in an economic layout. All valves, stopcocks etc. are to be clearly labelled to show their function. All sanitary appliances and sinks are to have isolating valves (ballofix or similar).

All services are to be readily accessible for inspection, routine maintenance and repair and installed in accordance with the Scheme Development Standards clause 16B.2. The pipework and ductwork is to be unobtrusive and installed in an economic layout. All valves, stopcocks etc. are to be clearly labelled to show their function. All sanitary appliances and sinks are to have isolating valves (ballofix or similar).

The hot and cold-water system is to be designed to avoid the risk of microbial contamination in line with best practice.

FIRE DETECTION
Provide self-contained Smoke Detectors (DS) and Heat Detectors (DH) in all positions indicated on the plans. Smoke detectors are to be mains operated with a battery backup and are to be designed to conform to BS 5446: Part 1. The smoke detector electrical circuit is to be fused independently.

Where more than one alarm is to be provided all alarms are to be interconnected. Smoke detectors are to be fixed to the ceiling at least 300mm from any wall or light fitting. All smoke detectors are to be positioned where they are easily accessible for safe testing, cleaning and maintenance. The manufacturer's instructions containing the operation, testing and maintenance of the unit is to be passed to the occupier of the dwelling.

ELECTRICAL
Consumer unit is to be located so the switches are between 1350-1450mm from FFL.

Switches, sockets, stopcocks and controls have their centre line between 450-1200mm from FFL. Sockets on the ground floor are to be RCD protected.

100% of all new light fittings to be installed within buildings are to be dedicated low energy light. The fittings are to be capable of only taking lamps with a luminous efficacy greater than 40 lumens per circuit-watt. (E.g. compact fluorescent lamps).

All electrical installations are to be tested and left in full working order at handover. NICEIC electrical installation completion certificates are to be provided.

Install new high-speed-ready-in building infrastructure so that future devices capable of delivering broadband speed greater than 30Mbps can be installed.

An electric vehicle charging point is to be designed and installed to meet the following requirements:
- BS EN 61851
- have a minimum nominal rated output of 7kW
- Be fitted with a universal socket (also known as an untethered electric vehicle charge point)
- Be fitted with an indicator to show the equipment's charging status that uses lights, or a visual display
- Be a minimum of a Mode 3 specialised system for electric vehicle charging running from a dedicated circuit, or equivalent, as defined in BS EN IEC 61851-1.
- BS 7671.
- IET's Code of Practice: Electric Vehicle Charging Equipment Installation.

SERVICES
All external services and builders work in connection therewith are to be carried out fully in accordance with the relevant Statutory Authorities and Undertakings' requirements.

All service meters to be 'Permanently labelled/marked' with the appropriate postal address.
Drainage is to be clay or PVCu to BS 8301.

OVERHEATING MITIGATION
Overheating of the dwelling is to be mitigated by limiting unwanted solar gains in the summer and providing an adequate means of removing excess heat from the indoor environment. Compliance is TBC by energy assessor.