

FIRST FLOOR GARAGE INDICATIVE **ELECTRICS & PLUMBING PLAN**

MECHANICAL & ELECTRICAL BUILDING REGULATION NOTES

Include for a new electric supply to the barn with new electric meter and consumer unit. Include for stripping out of any existing electrics. Include for all chasing, and making good. Electrical installation, power & lighting circuits to be designed, installed, tested & certified by Contractor's qualified electrical sub-contractor (Building Regulations Part P compliant). Commissioning certification to be submitted to CA & Building Control for all fixed building service elements. **Lighting** 100% low energy fittings. LED lamps throughout. Light fittings & lamp types to be agreed with client.

Master switch to lights: Master override switch to control all lights, with switch located just inside front door. **Electrical Accessories** New switch, socket plates: White plastics face plates MK or equivalent, contractor to provide samples for client approval. Switches and sockets outlets: Switches and sockets outlets for lighting and other equipment (ie door bell, entry phone, T.V etc) to be located at appropriate heights between 450mm – 1200mm above FFL. In accordance with BS 7671:2001 section 601-07, all wiring situated on walls adjoining bathrooms and en-suites containing a shower All electrical works are to be carried out by a suitably qualified person.

should be located outside of zoned areas wherever possible. Where not possible, shaver units located within zone 3 should have a minimum IP coding of IPx3, where the shaver socket is located within zone 2, it should have a minimum The person who carries out the commissioning of the work must forward an electrical safety certificate to Building Control confirming the work has been carried out correctly. Full operating instructions/maintenance requirements must be made available for the end user.

Fire Alarm System Owner Occupied Barn = Single storey dwellinghouse of floor area exceeding 200m2. Requires a Grade D Category LD2 fire detection and alarm system, as described in BS 5839-6:2019. Grade D = A system of one or more mains-powered detectors, each with an integral standby supply consisting of a user replaceable battery or batteries. LD2= A system incorporating detectors in all circulation areas that form part of the escape routes from the premises, and in all specified rooms or areas that present a high fire risk to occupants, including a heat alarm in any kitchen and a smoke alarm in principle habitable room(s). Hallway, Living Room, Kitchen (Heat Alarm).

Smoke/heat detectors and alarms Mains operated self contained smoke detector alarms to BS 5446:1:2000 to be ceiling mounted as shown on the plans, with heat detector in the kitchen. Installed in accordance with the manufacturers instructions. All detectors are to be inter-linked and permanently wired to a separately fused circuit at the distribution board. If the alarms incorporate a standby power supply they can be connected to a Note: There should be a smoke alarm in the circulation space within 7.5 m of the door to every habitable room. **Door bell** Supply and install new wired door bell to ED01 main entrance door to clients choice.

Security alarm Supply and install new wireless security alarm system to Clients choice, supplied and installed by

CCTV systems Supply and install new cctv systems to house and stables to Clients choice, supplied and installed ROOFLIGHTS Check with MC which rooflights are electrically operated and include for all electrical TV / DATA TV aerial/ satelleite dish for tv & data to Client's requirements.

Supply & install underground electric supply to gates.

Install ethernet connection socket adjacent each TV point and connected back in conduit to homehub location ELECTRIC GATES to Garage Yard

PHOTO VOLTAIC PANELS & BATTERY STORAGE Supply & install ground mounted PV array (located beyond stable building) to provide around 12KW comprised of No. 6 KW inverters with around 18KW of battery storage and including underground cables and all required

Physical Infrastructure for High Speed Electronic Communications A physical point and ducting is to be provided within the dwelling in order for an electronic communications network which is capable of delivering. Provisional position shown, Exact Position of access point and Network termination point to be confirmed on site with building control officer. Contractor should refer to PAS 2016 Next Generation Access For New Building Homes Guide for best practice guidance.

Ventilation / Mechanical Extraction: WC: Extract fan to provide min 6 litres/second- light actuated with 15min overrun where internal room. Provision should be made for an air inlet into the room i.e 10mm gap under the door. Existing WC fan to be removed and aperture infilled, and replaced by new fan, repositioned to avoid new SVP. es/Bathrooms/Shower Rooms: Extract fans to provide min. 15 litres/second - light actuated with 15min overrun. Ducted to outside at high level where inner room using flat profile duct (must be compatible with extract fan all to manufacturer's details).

Utility: Extract fan to provide min 30 litres/second. Kitchen: Extract hood above hob, or pop up extract next to hob to provide min. 30 litres/second. Testing and inspection checklist to be supplied upon completion of the ventilation system and included in the O and M manual as per section 4 and 5 of the domestic ventilation compliance guide 2010. **ELECTRICAL** MC TO INCLUDE FOR THE DESIGN, SUPPLY AND INSTALLATION OF THE ENTIRE ELECTRICAL SYSTEM, INCLUDING:-New electric supply to the barn with new electric meter and consumer unit.

- Light fittings to be agreed with client. - Final positions of all sockets and lights to be agreed with client prior to installation. - Contractor to provide schedule of proposed light fittings for client review prior to purchase/installation.etc plate ype/finish to be agreed with client. Master override switch. - New consumer unit to accommodate extended system, all light fittings and lamps, all extract fans, all switch and socket plates, backboxes, wiring, cabling, conduit, ductwork, smoke and heat detectors and units as specified, electrics / controls associated with heating / hot water system and with dual fuel towel radiators, and all electrical components and accessories to form a complete working installation. - Electrics / controls associated with rooflights RL01 -05 (where required, check wth MC).

- Include for any stripping out of redundant fittings / system. - all chasing, and making good and all associated builders work.
- For air tightness either silicon back of downlights, (use fire rated downlights) as they are installed or use Optime - Include for testing and certification at completion to satisfy Building Control and for clients use.

Note: all new switches and sockets to be between 450mm and 1200mm from Finished floor level in order to comply ctrical installations are to comply with approved document Part P and a test certificate provided at the er

MC to supply and install new heating and hot water system to the property, comprised of an air source heat pump connected to a thermalstore supplying the hot water, underfloor heating and dual fuel towel radiators and first floor radiators (radiators need to be oversized to suit due to air source).

Each room is to have either dial thermostat or TRV. System to include all valves, controls, timer switch and components and be fully designed and sized to suit by specialist including submission of information to BC officer for approval and is to comply fully with Building Regulations Part G.

Controls / timer details to be agreed with client. A hot water system, including any cistern or other vessel that supplies water to or receives expansion water from a hot water system, shall be designed, constructed and installed so as to resist the effects of temperature and pressure that may occur either in normal use or in the event of such malfunctions as may reasonably be anticipated. and must be adequately supported. (3) A hot water system that has a hot water storage vessel shall incorporate precautions to:

(a) prevent the temperature of the water stored in the vessel at any time exceeding 100°C; and (b) ensure that any discharge from safety devices is safely conveyed to where it is visible but will not cause a danger to persons in or about the building. Hot water system to supply all fittings fully designed and sized to suit by specialist. Heated wholesome water to be provided to all washbasins, showers, baths and sinks in compliance with Building Regulations Part G3. Hot water supply to any fixed bath to be fitted with device to prevent the water being delivered exceeding 48 degrees C. Include for stripping out of existing redundant pipework and fittings.

Potable drinking water cold taps (unsoftened water): adjacent to kitchen sink & utility sink. Water softener Supply and install new water softener to clients choice located below Utility sink.

Potable boiling water tap adjacent to kitchen sink.

Supply and install new undergound water supply into the barn, taken off the existing on site water supply, including all required testing to meet current legislation The system is to be fully designed and sized to suit by plumber, including checking of water pressure. New water installation to supply all fittings, including all pipework, valves, and all components to achieve a fully operational installation to comply with all current legislation. Supply and install easy to use lever stopcock where the water supply enters the property (Utility). Cold water system to supply all fittings, fully designed and sized to suit by plumber. Wholesome water to be provided to all washbasins, showers, baths and sinks in compliance with Building

Include for stripping out of any existing pipework and fittings. Water Efficiency: All fittings to be water efficient, including aerating taps. Include for Water Efficiency Calculation to achieve Building Control Approval (110 litres per day per person) including liaision with client on taps and fittings. MC to supply & install new air source heat pump as Mitsubishi Ecodan or equivalent, sized by specialist to suit the property, all designed and supplied by Client's specialist and design information is to submitted to Building Control for approval. To include remote control via mobile phone.

Air source heat pump unit to be installed by specialist.

Electrician to connect power and communication cable to air source unit. Main Contractor to provide underground ductwork & Plumber to fit insulated flow and return pipes. Air Source Specialist to provide details of required base to MC. MC to supply and install solid level concrete base for air source unit, with pea shingle margin, sized and positioned as manufacturers details. Ensure compliance with manufacturers required clearance dimensions around unit and to face of barn. Underground insulated duct between air source & thermal store.

MC to supply & install new thermalstore, sized to suit property for direct hot water and heating demand, supplied The entire system is to be designed and supplied by specialist.

Water Efficiency The Contractor is to refer to the design stage Water Efficiency Calculation as provided and is to include for liaison with the Client, the Water Efficiency Consultant and Building Control concerning taps, showers and fittings to ensure that the installation complies with the water efficiency requirement and achieves Building Control Approval (110 litres per day per person). The Contractor is to provide all the information that the Water Efficiency Consultant requires for the As Built Water Efficiency Calculation. This needs to be submitted to Building Control and approved as part of the Completion Certificate information.

<u>Planning condition 3</u>. The dwelling(s) hereby approved shall not be occupied until the requirement for water onsumption (110 litres use per person per day) in part G of the Building Regulations has been complied with and evidence of compliance has been obtained.

MC TO INCLUDE FOR THE DESIGN, SUPPLY AND INSTALLATION OF THE ENTIRE MECHANICAL

INSTALLATION SYSTEM INCLUDING: - New undergound water supply and meter including all required testing to meet current legislation. - New heating and hot water system with all pipework, valves, controls and components as required, including air source heat pump, thermal store, wet underfloor heating system & radiators to suit room volumes, all underfloor heating pipework and all components, radiators to be oversized to suit air source heat pump. - All sanitaryware, taps, showers, shower gulleys & pumps, kitchen sink and taps, and supply & installation of all associated components to achieve a fully operational system.
- Hot and cold feed to all sinks, baths and showers, washing machine, dishwasher, cold feed to all WC's and drainage - Supply and install new water softener in Utility and connect to system. Unsoftened cold water feed to fridge, outside taps & drinking water taps.

Plumbing: Individual lever type isolation valves to be fitted to hot & cold supplies to each sink, bath, basin, WC,

- All new pipework to be concealed - chased in or boxed in, lagged where appropriate. - Include for all stripping out of redundant fittings / system.
- Supply commissioning certification and user manuals at completion to satisfy Building Control and for clients use. Water Efficiency: Include for liaising with all parties, complying with water efficiency requirements, & providing all required information as described in note on this drawing.

Mechanical & Electrical Key NOTE: ALL FINAL LIGHT POSITIONS TO BE CO-ORDINATED ON SITE

Switch

✓ 2 Two or three - way switch d d2d Dimmer controls to switches d

Double Socket High Level 1100 finished floor (13 amp) Double Socket Low Level 450 finished floor (13 amp)

5 amp switched socket Low Level 450 finished floor

FI₁5 5 amp floor Socket Pop up worktop socket (13 amp)

USB Sockets with USB port where noted Switched Spur

30 Amp switched cooker outlet with 13 Amp socket Ext / External Socket

Car Car charging point to client requirements

Low energy LED adjustable downlighter

Shaver Socket Low energy LED recessed downlighter (spotlight) - Fire hood type where located in fire rated ceiling. Spots in bathrooms / ensuites to be

ip65 rated as required Low energy pendant fitting

Wall light - type to be confirmed. (1900mm from floor unless indicated otherwise)

Up and down wall light - type to be confirmed. (1900mm from floor unless indicated otherwise) Linear LED light

LED picture light

Stair Lighting: Wall recessed lights to illuminate steps: https://www.lightingstyles.co.uk/led-guide-light---lowglare-wash-light-for-steps Colour: Black

Ceiling mounted paddle fan

External light - switched External wall lights (max 4W LED) at External light PIR and height 1900mm above ground level switched (on/off/pir)

Ext

External recessed downlight - switched Z11 Wall Light - Zone I - IP65 jetproof fitting

Low energy LED adjustable downlighter - Zone I - IP65 jetproof fitting Z10 Recessed downlighter (spotlight) - Zone I - IP65 jetproof

fitting (bathrooms/en-suites) Hidden LED feature light to shower bottle recess -

Zone I - IP65 jetproof fitting ----- Hidden LED strip light features.

Mains operated inter-linked smoke

detector / alarm (Grade D, LD2) Mains operated inter-linked heat detector / alarm (Grade D, LD2)

Carbon Monoxide detector to rooms with a woodburner/ solid fuel appliance Extract fan positions.

R = roof outlet. LV = Low voltage where in zone I

Fans to be switch actuated. WC to be light switch actuated with 15min over run.

TV Aerial, 2 No. CT100 & 1 No. CAT6 Data Outlet - Cat 6/Ethernet Wireless Hub network cable back to data hub

Ethernet router Mobile phone booster box Wi fi Extender Door bell sounder Door bell push Data Hub

Room stat for underfloor (final positions designed by supplier) Wall mounted dual fuel towel warmer (radiator / electric) with switchover facility & Electrisaver switch. LST = low surface temperature type.

Radiator with TRV sized to suit by plumber (*oversized to suit air source heat pump) Consumer unit board: switches to be between 1350mm and 1450mm above floor level to comply with AD Part M

Tap Outside water tap (with accessible inside lever stopcock)

Electric meter in lockable box Electric shower unit

Part R: High Speed Electronic Communications access point 8 network termination point to comply with Bldg Regs Part R. Cam Security camera

A Security alarm box

(indicative areas - to be designed & confirmed by mechanical NOTE: Do not install underfloor heating under kitchen units / sanitary ware. / wardrobes / Matwell - i.e any element that is likely to be fixed to the floor, or within a 400mm zone around the

NOTE: MECHANICAL & ELECTRICAL LAYOUT AS SHOWN IS INDICATIVE ONLY, FOR PURPOSES OF INITIAL PRICING, AND THE DESIGN OF THE ACTUAL SYSTEM IS TO BE BY CLIENTS APPOINTED SPECIALIST INSTALLER

- Access equipment for cleaning and maintenance will be required and works undertaken by qualified and competent person. - The risks associated with working at height should be reduced by using appropriate scaffold, platforms, mobile elevating equipment, safety nets or fall arrest systems as

deemed appropriate by the contractors review and assessment of the construction methodology & process. - The locations of all existing services and utilities must be confirmed prior to commencement of the works.

- The engineer must be contacted immediately where unsure or concern raised

General Notes

1. This drawing is to be read in conjunction with other engineers, designers, subcontractors and

2. All workmanship and materials are to be carried out in accordance with current British Standards,

4. Do not scale this drawing. All dimensions to be as noted. Contractor to check all dimensions on

5. Where existing elements are exposed or investigated during the building works and are found to be not as assumed then contractor to confirm and notify CA/design team/client as applicable before

6. The contractor is responsible for site health & safety including taking all necessary precautions to

ensure stability of both existing and proposed structures at all times during construction. Contractor

7. All services/utilities are to be located and protected as necessary by the contractor prior to the

8. This drawing is for the private and confidential use of the client for whom it was undertaken and it should not be reproduced in whole or in part or relied upon by third parties for any use without

RESIDUAL RISKTO HEALTH & SAFETY
Whilst we have made every attempt to design out risk associated with our design some risks may remain. Significant residual risks relating to our design are detailed below with

these risks should be identified within the contractor's Construction Health & Safety

Plan all operations carried out in accordance with HSE requirements, Current Code of

Numbered triangles further highlight specific locations where residual risks remain:

our assessment of how these may be managed. The contractor remains responsible for identifying and managing risk associated with construction processes and site safety and

specialists drawings and any associated specifications and details. Any discrepancies are to be reported to the CA/client or relevant project manager before proceeding with the works.

3. All work to be to the satisfaction of the Building Control checking authority.

to contact structural engineer immediately where any doubts arise on site.

the express written authority of Beech Architects Limited.

Practice and compliance with CDM 2015 regulations.

Codes of Practice and good building practice.

site before carry out works.

proceeding with works.

commencement of the works.

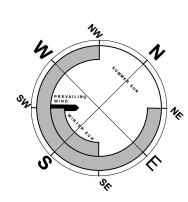
NOTES:

regarding the stability of any structure.

ALL DIMENSIONS TO BE CHECKED ON SITE. SUBJECT TO AND TO BE READ IN CONJUNCTION WITH STRUCTURAL ENGINEERS DETAILS

MC IS TO ENSURE THAT ALL DEMOLITIONS ARE CARRIED OUT IN STRICT COMPLIANCE WITH ALL CURRENT APPLICABLE HSE GUIDANCE INCLUDING REFURBISHMENT / DEMOLITION ASBESTOS SURVEY.

NOTE: BUILDING REGULATIONS CONSTRUCTION NOTES (INCLUDING DRAINAGE AND EXTERNAL WORKS) REFER TO DRAWING WD10



P5 15 Sep22 Updated to suit Structural Engineers design.

P3 8 Aug 22 Extract fan added to Utility. P2 4 Aug 22 Double socket added to utility room. Sockets & pool cover power added to plant room. Power added to gazebo for lighting & heaters. PV panels added.

P4 15 Aug 22 Water Efficiency note updated. Minor updates.

Rev PI I Aug 22 Preliminary Issue



INDICATIVE ELECTRICS & PLUMBING PLANS DRAWN BY CHECKED SCALE

MAR 2021 DRAWING NUMBER | JOB NUMBER | STATUS Not For Construction

This drawing is copyright and remains the property of Beech Architects Ltd. Original size A1. Scale shown will be incorrect if reproduced in any other format. All dimensions to be checked on site.