Utilities Statement

March 2024

Inhabit

Public Health Systems

Public Health Systems

PUBLIC HEALTH

General

The Public Health services will comprise the following elements:

- A domestic hot and cold water installation together with hot water storage provision, pipework, metering and booster pump sets (if needed).
- Above ground foul water system.
- Rainwater disposal systems for roofs.
- Rainwater harvesting storage for irrigation.

Design Criteria

General
Design Standards

- Chartered Institution of Building Services Engineers (CIBSE) Guides.
- Institute of Plumbing Engineering Services Design Guide.

Water Services
Design Standards

- BS 8558 – Guide to the Design, Installation, Testing and Maintenance of Services Supplying Water for Domestic Use Within Buildings and Their Curtilages.
- WRAS Regulations.
- The Building Regulations - Approved Document G – Sanitation, hot water safety and water efficiency

Assumptions

Category	Assumption
Water Demand	110L/person/day
Hot Water Demand	70 Liters per bedspace 15 Liters per visitor
Hot Water Storage	20 Liters per bedspace 5 Liters per visitor
Loading Units	Ensuite Basin – 1 Toilet Basin – 2 Bath – 4 Shower (Boat house) – 2 Kitchen Sink – 2 Washing Machine – 2 Dishwasher – 2
Hot water supply Temp.	65°C flow, 55°C return
Mixed water Temp.	38-43°C
Water Velocity	1.5m/s maximum

The cold water supply shall be treated with UV sterilisation to protect the system from bacterial growth and with a physical water conditioning unit to prevent scale from forming within the system.

The incoming pressure from the city main of the proposed development may be sufficient for the operation that no cold water booster pump is needed. If insufficient incoming pressure is found based on further investigation, a cold water booster set with a break tank will be installed to fit the future operation. The principle is to minimise the energy use and maintenance needed for plumbing.

Sanitation and Drainage
Design Standards

- Butler and Pinkerton Gravity Flow Charts.
- BS EN 12056-2 - Gravity drainage systems inside buildings - Part 2: Sanitary pipework, layout and calculation.
- BS EN 752 - Drain and sewer systems outside buildings - Parts 1-7.
- The Building Regulations - Approved Document H – Drainage and Waste Disposal.

Assumptions

Category	Assumption
Discharge Units	WC – 1.7 Kitchen sink – 1.3 Bath – 1.3 Shower – 0.4 Wash Hand Basin – 0.3 Washing Machine - 1.2 Dishwasher – 0.2
Foul Drainage Velocity	0.75 – 1.5 m/s
Maximum depth of flow	0.75

Electrical Services

Electrical Supply

The project is a refurbishment of the existing listed main house building, with the part demolition and new extension of the existing stables as well as new build for the boat house.

Existing Installation

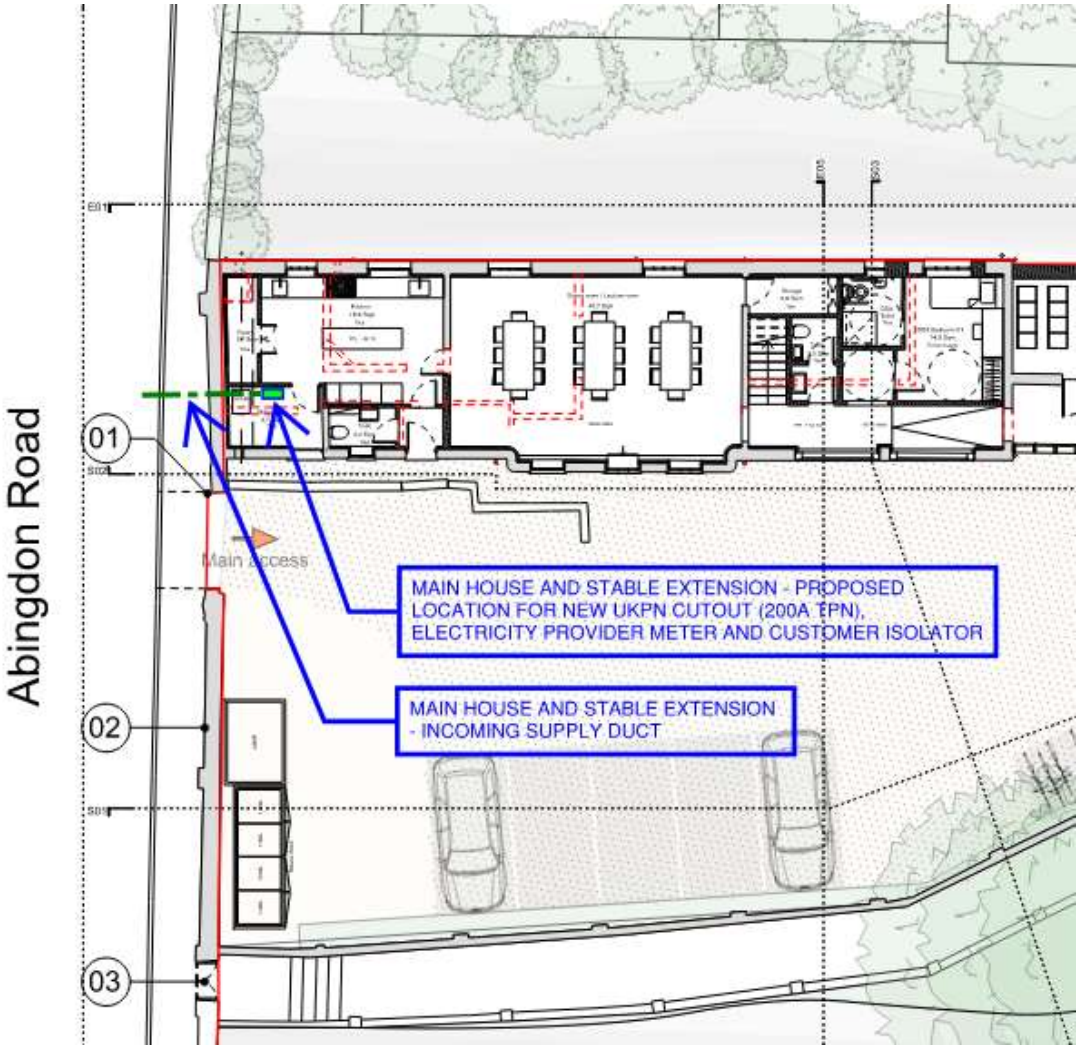
The stables is currently supplied from a dedicated incoming electrical supply while the main house also has a dedicated incoming electrical supply.

Proposed Installation for Main House and Stable Extension

It is proposed that the extension of the stable links with the main house therefore the 2No. Existing electrical intakes are proposed to be safely isolated, disconnected and stripped out thereafter replaced with 1No. New 140kVA (200A TPN) electrical intake that will supply both the main house as well as the stable extension. The new 3-phase electrical supply dedicated for the main house and stable extension shall be arranged via UK Power Networks (UKPN).

The UKPN TPN cutout, electricity supplier TPN utility meter and customer isolator / switch fuse dedicated for the main house & stable extension is proposed to be housed within the Utility Room.

The outgoing cable from the isolator / switch fuse would feed a new 3-phase main MCCB distribution board proposed to be located within the Utility Room and will distribute to supply localised sub distribution boards proposed to be located at strategic locations within the stable extension and main house.



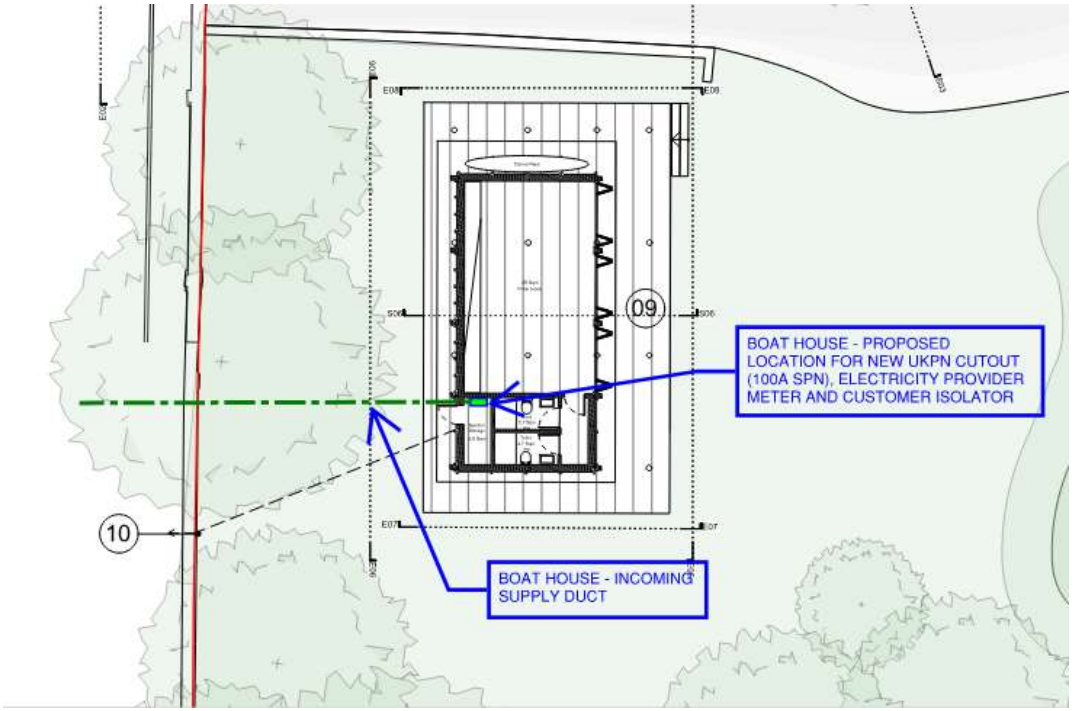
Proposed Installation for Boat House

The new boat house is proposed to be a standalone building and will therefore be supplied via a new dedicated 24kVA (100A SPN) electrical intake.

The new 1-phase electrical supply dedicated for the boat house shall be arranged via UK Power Networks (UKPN).

The UKPN SPN cutout, electricity supplier SPN utility meter and customer isolator / switch fuse dedicated for the boat house is proposed to be housed within the Garden Storage.

The outgoing cable from the isolator / switch fuse would feed a new 1-phase distribution board proposed to be located within the Garden Storage and will distribute to final circuits within the boat house.



Site Plan


Abingdon Road
Abingdon Road
PUBLIC FOOTPATH
PUBLIC FOOTPATH
HOLY ROOD CHURCH
Thames River
Thames River
Swamp
Main Access
MAIN HOUSE AND STABLE EXTENSION - PROPOSED LOCATION FOR NEW UKPN CUTOUT (200A TPN), ELECTRICITY PROVIDER METER AND CUSTOMER ISOLATOR
MAIN HOUSE AND STABLE EXTENSION - INCOMING SUPPLY DUCT
BOAT HOUSE - PROPOSED LOCATION FOR NEW UKPN CUTOUT (100A SPN), ELECTRICITY PROVIDER METER AND CUSTOMER ISOLATOR
BOAT HOUSE - INCOMING SUPPLY DUCT
01
02
03
04
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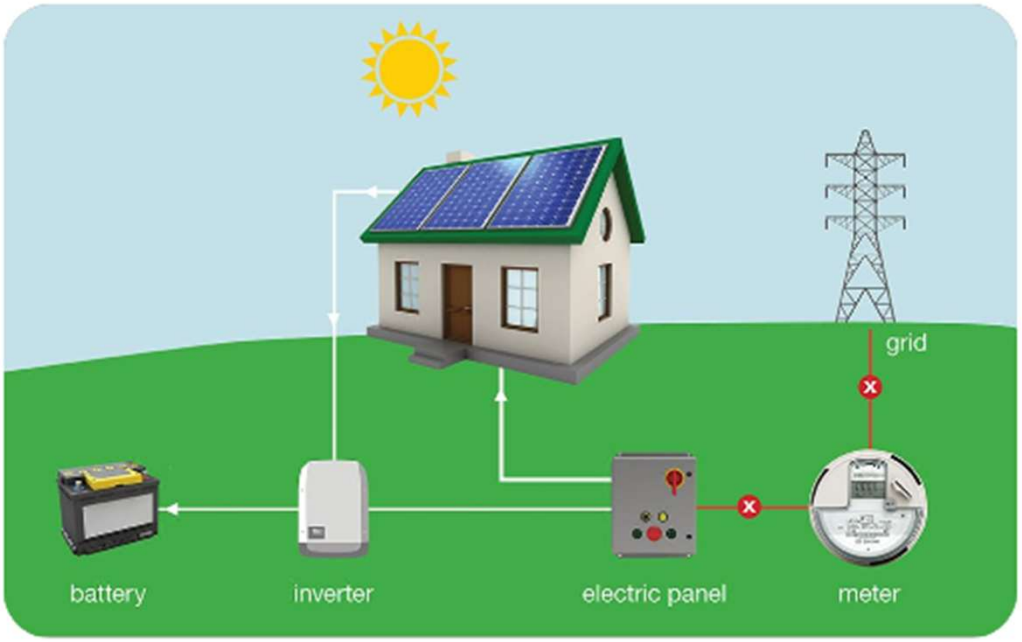
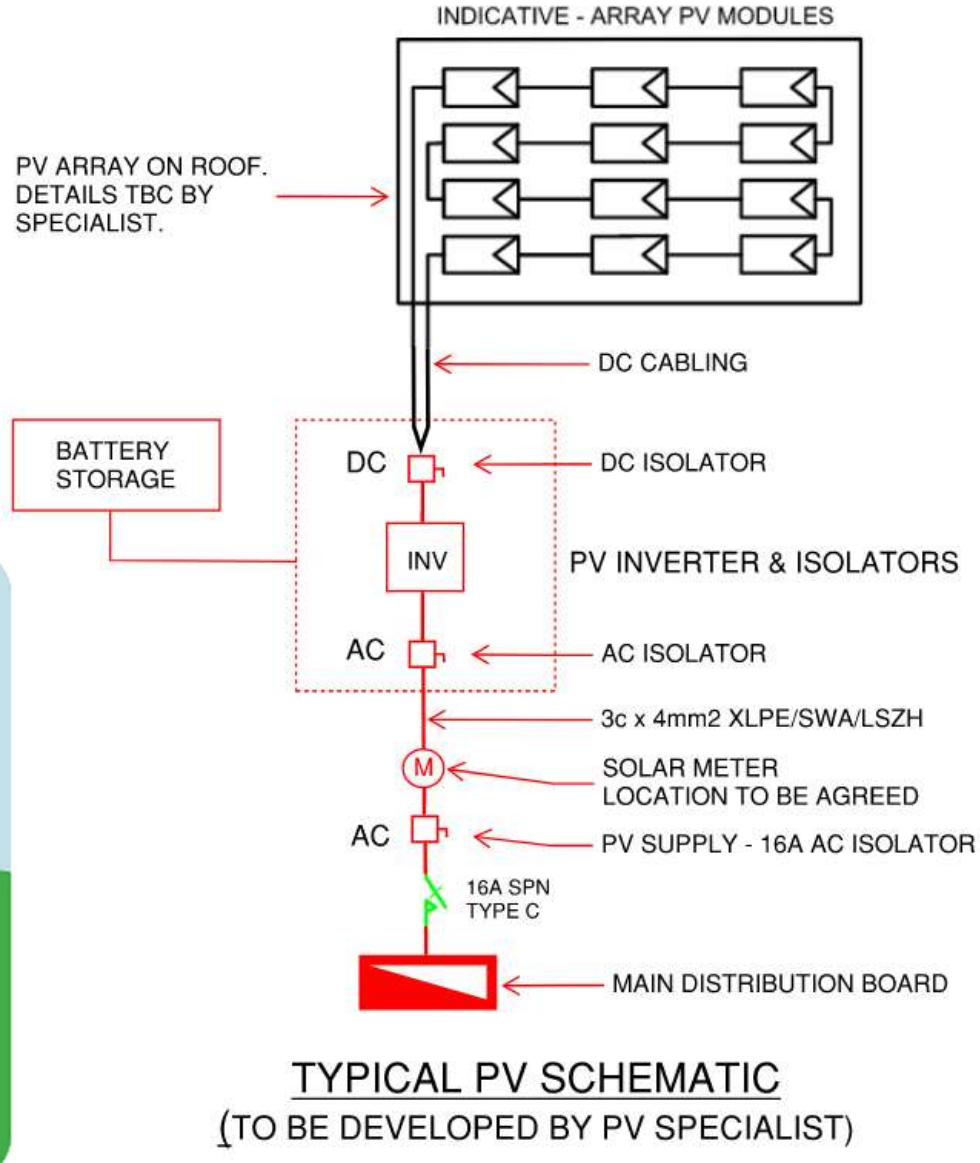
PV Schematic

A typical PV schematic is provided showing the components of a PV system and how they interface with the main DB and electrical grid.

PV system components and interfacing:





EV Charging

Provision shall be made for EV charging and 1No 7 kW EV chargers are proposed at this stage, Pod Point Solo, or similar.

The final location of the EV charger is to be agreed, however, at this stage it is proposed to be situated in the garage, as indicated on the adjacent sketch. Final location to be agreed.