

Tavistock Guildhall

Tavistock Town Council

M&E Scoping Document

May 2016



Document History

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1 Introduction

This report has been produced as a scoping document for the refurbishment works at the Grade II* Listed Tavistock Guildhall and is intended to form the basis of the mechanical and electrical specification.

2 Questions for the Client

These are raised at the end of each section and will need to be answered by the Client before the design can progress.

3 Building Regulations Part L & EPC

3.1 Scope

We understand that whilst Building Regulations Part L2B will apply, but exemptions noted in 3.6-3.13 apply regarding energy efficiency due to Listed Building Status. Therefore given that it is proposed to replace the existing heating system with a new heating system, then any requirements will be met.

4 Building Survey, Buried Services Survey and Services Diversions

4.1 Scope

Whilst the external elements are fairly limited, it may be prudent to undertake a buried services survey in order to accurately plot any existing services. We understand that a survey will be undertaken in the autumn as part of the external works to Guildhall Square.

4.2 Client questions

- 1) Please can the Client pass on the buried services survey once complete?

5 Below Ground Drainage

5.1 Scope

Refer to Structural Engineer's package.

6 Above Ground Drainage

6.1 Standards

The whole installation will comply with BS EN 12056 and Building Regulations Part H.

All vertical soil vent pipes and stacks will be uPVC, all branch pipework will be uPVC or ABS with solvent welded joints and will connect directly into existing or proposed drainage points entering the building. Pipework will be concealed wherever possible in plumbing ducts or boxing.

6.2 Scope

The existing internal above ground drainage services will generally be stripped out in their entirety. However, the existing external SVPs will be retained and reused in order to minimise or eliminate the extent of digging required into the "scheduled monument land".

New above ground drainage will be provided for all new sanitary appliances and condensate from plant (including boilers, as shown on the architect's drawings and will connect into proposed drainage points.

Soil stacks will be vented with automatic air admittance valves except for the head of drain vent which will be vented to atmosphere above the roofline.

Air admittance valves (AAVs) will be used to minimise the number of roof penetrations so that only the SVP at the head of the drain requires a roof penetration

Floor gully

No works proposed – the boiler room will be drained by making a new above ground drainage connection to the existing below ground drainage.

7 Water Services

7.1 Standards

Smart meter

BS 8558, BS EN 806 and the Water Regulations of the water supply company.

All pipework will be copper to BS EN 1057 with soldered joints. All pipework to be insulated to BS 6422 except for exposed final connections to appliances.

All pipework will be concealed within voids or services risers except for final tails to appliances. All appliances will be fitted with isolation valves.

Building Regulations 2000 Part G

Thermostatic mixing valves

Thermostatic mixing valves will not be installed on Cleaner's sinks but will be installed on:

- All wash hand basins
- Showers

Water purification & scale inhibitors

Assumed not required.

Flow restrictors

Flow restrictors will also be specified which will limit the flow rate to the taps.

Hose union taps

Assumed not required.

Water leak detection

All internal water meters will have a pulsed output and will be linked to the BMS for internal water leak detection purposes, including:

- High limit alarm
- Out of hours alarm
- Continuous low flow alarm

7.2 Incoming service

We understand that the site is currently served via 2No. un-metered South West Water (SWW) services and that both services are now metered with new SWW meters:

- Service 1 serves the North end of the building as well as the 2No. number of neighbouring cottages (and the museum too via a sub-meter) – it appears to have multiple entry points
- Service 2 serves the South end of the building.

Since there are no reports of lack of system capacity (flow or pressure) we do not propose to specify any up-grade works. However, both services will require modification where they enter the property boundary due to the new arrangement and relocated plantroom.

Both services also require wholesale replacement since there are reports of lead pipework and leaks (we understand that the incoming external buried pipework will be replaced as part of the autumn external works to Guildhall Square and so is not within the scope of this project).



Photo 7.2.1: Location of South West Water water meter No.1 (under archway by the dog)



Photo 7.2.2: Location of South West Water water meter No.2 (by pavement across the carpark)

A sub-meter will also be installed on Service 1 so that the Town Council water usage can be separately recorded from the cottages.



Photo 7.2.3: Existing water stop-cock cupboard (to rear of WHS Orientation space)



Photo 7.2.4: Existing water service heading to the cottages

Fire hydrant

No works proposed.

7.3 Scope

The existing hot and cold water services will generally be stripped out in their entirety.

New services will be provided throughout with all sanitary ware being mains fed – cold water storage will not be provided since it has been confirmed by TTC that there are no reports of lack of water flow or water pressure.

Hot water services will be generated via local electric water heaters complete with central 5+2day timeclock control

Kitchenette

A ZIP hydroboil above sink water boiler will be provided in the kitchenette.

8 Gas Services

8.1 Standards

Smart meter

The whole installation will comply with BS EN 1775: 2007, the IGEM publication UP11 and the HSE approved Code of Practice.

All above ground pipework will be medium grade steel pipe to BS 1387 with screwed joints, painted yellow. Copper pipe is not considered to be suitably robust and will not be used.

Below ground pipework will be yellow HDPE with fusion welded joints.

The gas service will be provided with an automatic fire solenoid shut-off valve. The fire valve will be installed downstream of the meter manual emergency control valve inside the plantroom. The valve will be hard wired and closure will be by operation of a thermal link located above each burner, and push buttons located at the exit from the plantroom or a fire signal from the building fire alarm.

Gas works will only be carried out by Gas Safe registered personnel.

Gas monitoring

Assumed not required.

8.2 Incoming service

There appears to be 2No. incoming gas services and 3No. meters. One service enters the building at the front where there is a U6 (approx. 65kW) gas meter (still live and in use) and serves the boiler contained within the lean-to outbuilding,

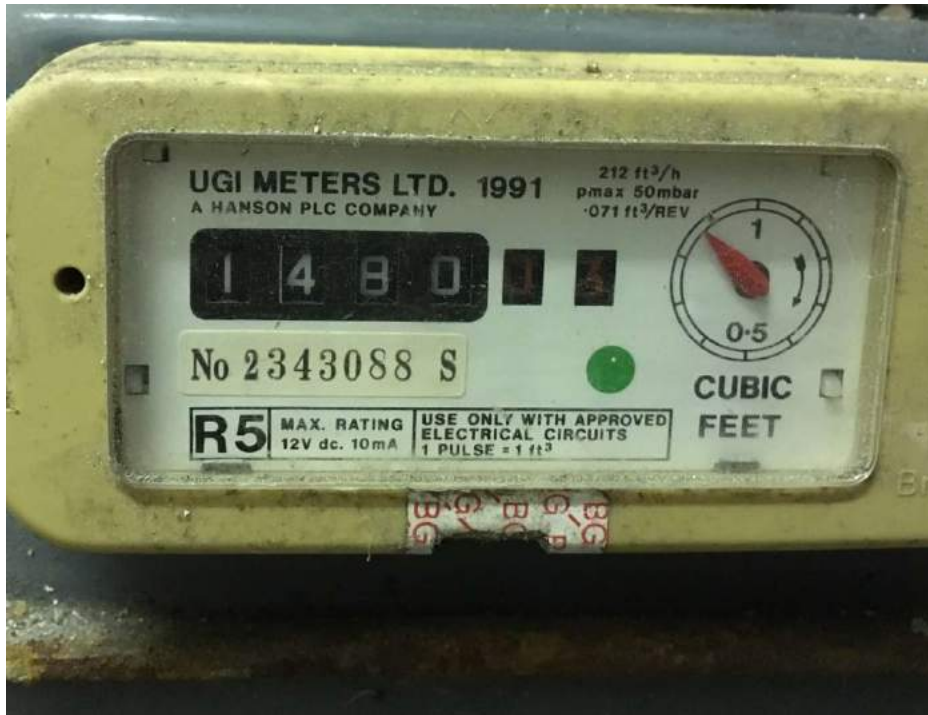


Photo 8.2.1: Existing U6 (~65kW) gas meter serving the boiler in the rear courtyard

Despite being live and still in use, this service will be stripped out as it is too small to serve the entire building. We have requested a quotation from Wales & West Utilities for its disconnection and will pass on once received.

The other service, which is a larger non-domestic service, enters the rear of the building into one of the original prison cells and serves 2No. meters, a U6 (approx. 65kW) and a U16 (approx. 165kW)



Photo 8.2.2: Existing gas meter(s) (U6 at H/L and U16 at L/L) located in one of the original cells

We do not understand why there are 2No. meters in this location? However, for the proposed scheme both the U6 meter and the U16 meter will be stripped out. A new U25 meter (~250kW) will be installed (likely to be located within the new plantroom) and Wales & West Utilities have confirmed that the existing service has sufficient capacity for this.

8.3 Scope

The existing gas services will generally be stripped out in their entirety.

New gas services will be installed to reflect the new arrangement.

There is some surface mounted pipework that runs through the rear courtyard towards the cottages. It appears that this is gas pipework is ed from the neighbouring cottages. This pipework is capped off at high level within the proposed new tea-point located on the second floor. This

service may still be live. As part of the project the pipework will be isolated and removed including the length of surface mounted pipework in the rear courtyard wall.



Photo 8.3.1: Surface mounted pipework (possibly gas) leaving the Guildhall (on the left) and heading towards the cottages (on the right)

9 Fire Suppression and Sprinklers

Assumed not required.

10 Heating

10.1 Standards

The heating design will comply with BS 8558, BS-EN-806 parts 1-5 and DS 439.

The whole installation will comply with BS 5440 and BS 6644 and BB 87 as appropriate.

Pipework will be steel with screwed joints. Exposed pipework to radiators will be painted – refer to the Architect’s package for colour.

All pipework to be insulated to BS 6422 except for exposed final connections to radiators - insulation will be provided on all LTHW and H&C services.

The heating systems will be pressurised LTHW operating at 70/50°C for primaries.

Radiator valves

All radiators will include a thermostatic radiator valve (TRV) and lock shield valve (LSV).

Design temperatures

Please refer to the Selected Proposed Mechanical Services drawings for specific target design temperatures for each space – please note that the Exhibition Specialist has proposed that some spaces are un-heated.

Winter external design temperature:	-5°C
General occupied spaces:	21°C
Selected corridors:	18°C
WCs:	18°C
Stores:	Unheated (frost protection in plantroom)

Overdoor air curtain

Assumed not required.

10.2 Scope

The existing heating services will generally be stripped out in their entirety (although some services to ground floor and first floor Town Council spaces will be retained as we understand that these were recently up-graded).



Photo 10.2.1: Existing boiler in lean-to boiler house (will be stripped-out)

New services will be provided throughout, with heat generated via central gas boiler plant (such as 1No. 180kW boiler or 2No. 115kW boilers) and distributed via an LTHW radiator heating system (except for the new Gateway Centre, meeting space, print room and WC which will have LTHW underfloor heating). All radiators will include a thermostatic radiator valve (TRV) and lock shield valve (LSV).

Many of the new radiators will adopt similar positions of the existing radiators.

Zoning

The heating system will be zoned and sub-metered as follows:

- Town Council spaces
- Exhibition spaces
- Shared spaces

Overdoor air curtain

An LTHW overdoor air curtain will be provided above the One Stop Shop entrance.

10.3 Client questions

- 1) Is the Client aware that the Exhibition Specialist has suggested that some spaces will be unheated?

11 Ventilation

11.1 Standards

Building Regulations Part F.

11.2 Scope

The existing ventilation services will generally be stripped out in their entirety.

The majority of spaces will be naturally ventilated with openable windows.

Supplementary trickle ventilation will be provided for the WHS Orientation/Tavistock Canal exhibition space.

WC's

New ducted extract fans linked to dedicated PIRs will be provided to new WC spaces.

12 Controls

12.1 Standards

Open protocol system.

Trend IQ4

12.2 Scope

The existing control systems will be stripped out in their entirety.

A new Building & Energy Management System (BEMS) will be provided. It will comprise central controls with local set point adjustment and alarms including remote plant alarm and status monitoring functionality. 3No. principal zones (with separately programmable routines) will be provided:

- Town Council
- Exhibition
- Shared

A data point will be provided in the plantroom to allow the future installation of BEMS monitoring.

All energy and water meters will be modbus type, with pulsed outputs, linked to the BEMS system for monitoring.

Control function	Required?
Central BEMS for heating and hot water services	Yes
Zonal heating control	Yes
Heating optimisation	Yes
Weather compensation	Yes
Frost protection	Yes
Night setback	Yes
Hot water priority	Yes
Hot water circulation	Yes
Electric immersion back-up	Yes
Anti legionella purge	Yes
Gas solenoid shut-off	Yes
Gas sensing/ monitoring	No
Mech vent time clock to control MVHR units	n/a
Nat vent override & timeclock (high wind, rain, out of hours)	n/a
Fire alarm interlock (to boiler plant)	Yes
Fault alarm to main panel in plantroom	Yes
Data outlet	Yes

Control function	Required?
Link to internet	Yes
Water leak detection	Yes
Water sub-metering	Yes
Gas sub-metering	Yes
Heat sub-metering	Yes
Electricity sub-metering	Yes
Power outage auto restart	Yes

Table 12.2.1 Proposed control functionality

The BEMS will perform the following functions:

- Provide optimised, weather compensated heating by enabling and disabling the gas boilers based on readings from master internal and external thermostats for each of the principal heating zones
- Provide temperature and time clock control of the heating (at least 6 different programmable temperature time profiles per day) for each of the principal heating zones
- Provide heating override facilities for each of the heating zones (override on and override off)
- Provide time clock control of the secondary hot water circulation pumps
- Provide data connection links to the internet
- Provide enable and disable signals to the gas boilers (enable/disable the gas boilers and associated pumps)
- Provide cascade control of the gas boilers if/when they are enabled
- Provide automatic changeover of all twin head pumps
- Provide night setback and frost protection
- Provide a weekly run routine for the gas boilers and pumps (to ensure that they are occasionally enabled).
- Provide 2-stage frost protection at 5°C and 3°C
- Provide summer winter switch
- Provide all necessary safety interlock devices
- Provide interfaces to the various proprietary systems
- Provide holiday setting mode
- Provide heating failure indicator lamps
- Provide lamp test button

13 Low Voltage Distribution

13.1 Standards

The whole installation will comply with BS 7671: 2008 (IEE 17th Edition) and subsequent amendments.

Refer to Samples Sheet for details for socket outlet specification and styles.

Ensure separation between single phase circuits of separate phases and between single phase and 3-phase circuits.

Sub-mains cables will generally be LSF sheathed SWA cables run on cable trays.

Final distribution will use LSF twin & earth cables run in basket and conduits and will be concealed in ceiling voids or in wall chases. All cables and containment will be concealed within risers and the building fabric (via new chasing) or voids. Surface mounted conduit or mini-trunking will not be used, except for the plant spaces which will use surface mounted galvanised steel conduit.

Surface mounted conduit or mini-trunking will not be used.

RCBO's

In order to reduce the risk of nuisance tripping from RCBO protection devices, a maximum of 16No. socket outlets will be wired on any given circuit. RCBO protection will be provided on all services other than lighting.

Photovoltaics

Assumed not required.

Standby generator services

Assumed not required.

13.2 Incoming service

Assumed not required – we understand that the existing service was recently up-graded to a 80A 3-phase supply (55kVA), complete with new Western Power Distribution fusehead, meter and panelboard.

13.3 Scope

The existing electricity services will generally be stripped out in their entirety (although some services to ground floor and first floor Town Council spaces will be retained as we understand that these were recently up-graded).



Photo 13.3.1: Recently up-graded panelboard (will be retained)

Split metered distribution boards will be provided for all spaces.

Small power will be distributed generally via flushed outlets.

Additional small power outlets will be provided for miscellaneous equipment such as hand dryers. The requirements for these will need to be developed.

Hand dryers

1No. Dyson Airblade hand dryer will be provided within each WC.

Headset Charging

1No. outlet for the charging of informative headsets to be provided at the reception desk area.

Zoning

The electrical distribution system will be zoned and sub-metered as follows:

- Town Council spaces
- Exhibition spaces
- Shared spaces

External services

IP65 MK Weather Seal socket outlets will be provided within the external courtyards.

Electric chair charging points

1 No. Internal electric chair charging point for wheelchairs / scooters will be provided.

13.4 Client questions

- 1) Are any external services required such as IP65 socket outlets?
- 2) Is there a preferred hand dryer make/manufacturer?
- 3) Is 1 No. Wheelchair / Scooter charging point internally located acceptable?

I4 Lighting

14.1 Standards

The lighting installation will comply with LG7, BS 5489-1:2003, BS 8300, A2:2008 Lighting of Roads and public amenity areas, Building Regulations Part M.

All luminaires shall be LED to 4000K.

LED light sources will be used to provide general lighting throughout.

Emergency lighting

Emergency lighting will be provided by means of converted self-contained versions of standard luminaires with NiCad batteries and control gear integral within the body of the luminaire. Test key switches shall be located on the lighting switch plate within the relevant space.

Illuminated emergency escape signs will be provided in accordance with the escape strategy agreed with Building Control.

Emergency lighting will comply with CIBSE lighting Guide LG12 and BS 5266.

Design illuminance levels

Target daylight factor:	2%
Offices:	500lux at desk height
Workshops:	500lux at desk height
Building entrance:	20lux at floor level
Carpark:	20lux at floor level
WCs:	100lux to 150lux at floor level
Circulation spaces:	100lux to 150 lux at floor level
Plant rooms:	200 lux at floor level
Steps and ramps:	100lux at floor level
Wheel chair accessible walkways:	20lux at floor level
General external walkways:	5-10 lux

14.2 Scope

The existing lighting services will be stripped out in their entirety (although some services to ground floor and first floor Town Council spaces will be retained as we understand that these were recently up-graded).

All lighting will be low energy, high quality LED. The installation will be undertaken by NICEIC, IEE 17th Edition qualified personnel.

Lighting, including emergency lighting will be provided in all spaces. All lighting will be low energy, high quality LED. The plantroom and other functional areas will consist of robust linear or bulkhead fittings with PIR control to suit the space. All lighting will be switched locally via manual wall switches, manual wall switches with daylight dimming and some spaces having PIRs with daylight hold off.

Exhibition spaces

Refer to Exhibition Specialist's package for details.

Internal display lighting

The requirements for internal display lighting will need to be developed with the Client.

External display lighting

Assumed not required.

External lighting

Emergency bulkhead lighting will be provided outside all external doors, switched via photocell and timeclock.

5A lighting outlets

Assumed not required.

Walkway and carpark lighting

Assumed not required.

14.3 Client questions

- 1) Is any display/sign lighting proposed?

15 Telephone and Data Cabling

15.1 Standards

Data cabling will comply with BS 6701 and be wired with Category 5e UTP copper network cables.

All cables and containment will be concealed within risers and the building fabric (via new chasing) or voids. Surface mounted conduit or mini-trunking will not be used, except for the plant spaces which will use surface mounted galvanised steel conduit.

15.2 Incoming service

We understand that the existing service was recently up-graded. However, it will need to be relocated to reflect the new arrangement.

15.3 Scope

The existing data services will be stripped out in their entirety including the recently installed new wall hung data cabinet (although some services to ground floor and first floor Town Council spaces will be retained as we understand that these were recently up-graded).

Fixed data points will be distributed generally via flushed outlets. WiFi points will be provided throughout.

Additional data outlets will be provided for miscellaneous equipment such as shop tills. The requirements for these will need to be developed.

Exhibition spaces

The data services for the exhibition spaces will also need to be developed.

Telephone links

The Client will need to ensure that BT telephone connections will be available for the following services:

- BMS
- Intruder alarm (BT RedCare)
- Fire alarm (BT RedCare)

15.4 Client questions

- 1) Please can the Exhibition Specialist confirm data and telephone requirements for the exhibition space?

16 Television and Radio Services

Assumed not required.

I7 Public Address and Audio-Visual

17.1 Standards

Same make and model of cameras, AV equipment and wiring as existing in the existing Town Council chamber

17.2 Scope

Courtroom & magistrates room

We understand that the existing Town Council chamber system (which consists of 3No. cameras and an audio feed with speakers) will be carefully demounted and relocated to the Courtroom.

A new identical system will also be provided in the Magistrates room.

Exhibition spaces

Refer to Exhibition Specialist's package for details.

I8 Sound Amplification

18.1 Standards

Multiple loop system compliant with BS EN 60118-4 1998.

18.2 Scope

A hearing aid induction loop system will be provided for the:

- Tourist Information reception
- Court room
- Magistrates court

Portable systems (purchased by the Client) will be used elsewhere as and when required.

Exhibition spaces

Refer to Exhibition Specialist's package for details.

18.3 Workshops

Assumed not required.

19 CCTV

19.1 Standards

IP, Cat 5e.

19.2 Scope

Exhibition spaces

Provision will be provided for the future installation of a CCTV system. The extent of provision will need to be agreed with the Client.

General spaces

Assumed not required.

19.3 Client questions

- 1) Is there an existing CCTV system and if so what is the make/manufacturer?
- 2) What are the contact details of the current system maintainer?

20 Electronic Access Control

20.1 Standards

Access control will be based on the Salto System c/w PC, 17 flat screen colour monitor, keyboard and mouse. The access control system will include battery back-up to power the entire system in the event of mains power failure in full alarmed state for 24 hours.

Double leaf and leaf-and-a-half doors will be networked via inclusion of a data point.

Salto approved installer.

20.2 Scope

Single leaf doors will be equipped with a battery operated, Salto Dead Lock with integral card reader. This lock is to provide the security to the door and so therefore does not require a maglock, they also do not require a push-to-exit or emergency break glass unit.

Double leaf and leaf-and-a-half corridor and meeting room doors will be accessed controlled with on-line (c/w data connection) magnetic locks on each leaf mounted at the top of each door on the secure side. The locks will be powered by a local power supply unit connected to the mains supply. Each door will be fitted with a data connection to monitor the status of the door (open or closed), a proximity card reader, a press to exit button and an emergency break glass unit which breaks the power to the magnetic lock and opens the door in an emergency.

Main entrance doors will be on-line (c/w data connection) and be fitted with a PIR detector on both the secure and non-secure side. A proximity card reader mounted on the building on the non-secure side of the outer door will also be provided. Push-to-exit switches, emergency break glass units, which break the power to the magnetic lock and open the door in an emergency, and a key switch to allow manual adjustment of the door mode operation, will also be provided on the secure side of each door.

A programming and monitoring point will be provided.

The access control system will not be linked to any other building other than a remote monitoring station.

Lift

Access control will be provided on all lifts to control movement of staff and visitors to/from each floor level.

20.3 Client questions

- 1) Are any audio visual intercoms, door release systems required, and where will they communicate to?

21 Security Alarm & Detection

21.1 Standards

Intruder alarm to BS 4737 and ACPO guidelines.

Grade 3.

Secure-by-Design.

Honeywell Galaxy, open protocol, approved installer.

Integral 24hr battery back-up and digital communicators will be provided.

21.2 Scope

The existing security alarm and detection systems will be stripped out in their entirety.

A central intruder alarm system will be installed and will comprise of magnetic contacts on all external doors and dual technology (for sequential alarm description configuration) PIR and microwave detectors to provide coverage to all spaces with windows, doors and any other opening on the ground floor. The system will be controlled by a central panel with integral keypad and LCD display for staff to set and unset the system.

Zoning

The intruder alarm system will be zoned, with keypads provided, as follows:

- Town Council spaces (master keypad and slave keypads)
- Exhibition spaces (slave keypad)
- Shared spaces (slave keypad)

Wiring and cabling as recommended by specialist. All wiring will be fully concealed and laid on cable trays or in conduit chased into walls.

The intruder alarm will not be linked to any other building other than a remote monitoring station.

22 Fire Alarm

22.1 Standards

Fire alarm to BS 5839

L2 category

Analogue addressable

Kentec panel, Apollo heads

Open protocol

Integral 24hr battery back-up in the event of mains failure will be provided

22.2 Scope

The existing fire alarm and detection systems will be stripped out in their entirety (although we are liaising with the manufacturer of the existing system to determine the feasibility to retain, modify and extend it).



Photo 22.2.1: Existing fire alarm panel at high level (above doorway)

A new fire alarm system, with main panel located in reception, will be provided. The system will comprise detectors (smoke or heat, dependent on the use of the space), speakers and flashing beacons covering all principal rooms and escape routes.

It will include GSM digital communicators and connection facilities for BT Redcare and battery backup for 24hours.

Doors with hold opening devices

Assumed not required.

Fire alarm links

Fire alarm links will be provided for:

- Any roller shutter doors through fire rated walls (release in event of fire alarm activation)
- BMS (shut down boiler and ventilation plant)
- Gas solenoid valve (close in event of fire alarm activation)
- Door with door hold open devices

The fire alarm will not be linked to any other building other than a remote monitoring station.

Carbon monoxide detectors

Assumed not required.

Site wide integration

Assumed not required.

23 Assistance Call Systems

23.1 Standards

Building Regulations Part M.

23.2 Scope

An assistance call system will be provided for the accessible WCs. The system will comprise an alarm unit with pull cord, reset button, internal reassurance light, external warning light and buzzer. A repeater panel will be provided in reception.

24 Refuge Intercom

24.1 Standards

Building Regulation Part M

BS 5839

24.2 Scope

A refuge intercom will be provided allowing 2-way communication between the refuge points and the main panel (which will be located adjacent to the fire alarm panel).

25 Lift

25.1 Standards

Building Regulation Part M

Machine-room-less.

We understand that the scheme is based on a Thyssenkrupp Gulliver HE3 Series: P54A (External) and P52S1 (internal).

25.2 Scope

A new internal machine-room-less passenger lift with automatic opening doors will be provided. The lift will include door openings and landing positions as reflected on the architect's plans. The lift capacity will be confirmed by the Architect.

A new external machine-room-less passenger lift with automatic opening doors will be provided. The lift will include door openings and landing positions as reflected on the architect's plans. The lift capacity will be confirmed by the Architect.

Access control

Access control will be provided on all lifts to control movement of staff and visitors to/from each floor level.

Evacuation

Assumed not required – evac chair proposed.

26 Lightning Protection

Assumed not required.

