CAMDEN PEOPLE'S THEATRE

Mechanical and Electrical Services Performance Specification

Revision C01

16 December 2020

REVISION SHEET

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Initially Prepared by KE/RG

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1. INTRODUCTION

1.1 OVERVIEW	
The Building	Camden's People Theatre is located at 58-60 Hampstead Road, Kings Cross, London NW1 2PY on the corner of Drummond Street It comprises a Victorian corner building and a portion of the adjacent 1960's development. This has the functioning theatre occupying the ground and basement floors and 3 floors above proposed as offices, which are to be developed as a separate project. The project involves re-working the internal spaces, enlarging the café/foyer area and upgrading the services provision throughout.
Construction Conditions	Criteria as described in each section, allowing in all cases, that any alteration to or interference with the building elements (including wall, floor and ceiling finishes) must be approved prior to works starting. The building above the site is to remain usable throughout the works, any shutdowns and invasive works will need to be co-ordinated to minimise disruption
Other notes	All final accessories and visible interfaces to services are to be installed as per the architects setting out details. All final positions for services and accessories shall be agreed with the client/architect prior to installation. Contractor Design Portion (CDP) systems must be fully designed and detailed and submitted to the client team for review prior to installation.

1.2 PRELIMINARIES	
General	Comply with British Standards, EU Directives, Building Regulations, CIBSE Guides, and accepted good practice within the industry
	This specification shall be read in conjunction with all other technical specifications, drawings & schedules
Contractor Information Required	Schedules of rates totalling tender sum
	M&E specialist system schematics with sizes
	General arrangement design/working drawings 1:50
	Coordination drawings and details where requested
	Design calculations for all M&E systems
	Builders work drawings
	Controls schematics and wiring drawings
	Distribution board circuit charts
	Valve charts
	Production of "as fitted" Record drawings and information
	Production of system specific O&M manuals, in line with BSRIA guide BG1/2007
Contractor Design Requirements	**As described within this specification the design of the heating, ventilation and air conditioning systems has been undertaken by P3R to Stage 4. Whilst the contractor is to develop their installation from these details, P3R will retain design responsibility for these elements.** **The contractor shall be responsible for the design of all plumbing and electrical works and systems. For these elements, the project is let on a "Design and Build" basis**, therefore responsibility for design of any system or component remains with the contractor. The contractor shall make allowance to engage any relevant specialists or consultants required to carry out the designs in line with recognised industry standards, British Standards, Building Regulations & Planning requirements. Any consultants design information provided for tender associated with these systems shall be taken as notional "design intent" information only and shall not be relied upon as complete or compliant with the relevant

	standards.
Identification	Valve labels
	Equipment labels
	Electrical isolator labels
Building regulations	Part L2B
Certificates	Water purity certificate
	All heating, cooling and ventilation (including balancing) systems test and commissioning records
	Electrical test and completion certificates to BS7671
	Fire alarm certification in line with BSEN5839
	Emergency Lighting certification in line with BS5266
	Data wiring test certificates (point by point)
Handover	Client demonstration and training
	12 months' maintenance and aftercare for all installations

1.3 ENERGY

Extent	The building services and building fabric are to be designed to optimum energy efficiency. **All services shall comply with Building Regulations Approved Document Part L2B and with the appropriate Non-Domestic building services compliance guide.** The building services will include: - A Low energy consumption air handling plant and fans, energy efficient mechanical DX systems providing heating and cooling to all new front of house areas. - Low energy lighting (LED)

1.4 UTILITIES

Extent	Incoming Utilities, water, electrics, telecoms and gas are all currently installed and are expected to be retained. The contractor is to allow to inspect and test all existing connections and report any issue to the client's design team as needed. Internally termination points and meters are to be relocated as shown. As required the contractor is to allow for co-ordination with utility providers to facilitate these relocations.

1.5 STRIP OUT AND REMOVAL

Extent	Existing services within the project demise are largely to be stripped out and removed however some local equipment and systems (radiators/fan heaters etc. ductwork with risers) maybe retained for re-use. Removal of existing services shall not impact the wider building services and shall not affect any services to be retained to other floors (there is some RWP & SVP pipework passing through the basement and ground from the upper floors). Electrical services shall be isolated and stripped back to the incoming position fiscal (utility) meter.
Builders work	All holes are to be set out by the contractor for review and approval prior to works starting.

2. MECHANICAL

2.1 VENTILATION – OVERVIEW	
Extent	There are three main systems to be installed within these works. In the auditorium, the rehearsal space below and the foyer. Additionally some smaller systems serving toilets BoH areas etc are also detailed.

2.2 VENTILATION – AUDITORIUM	
Extent	Develop design, supply, install, test and commission ventilation system. Ventilation systems is to comprise a Part F compliant new heat recovery 600l/sec Air Handling Unit (and heat pump) to be located at high level within the ground floor. AHU to include a duct mounted cooling coil (linked with AHU controls). System to include all required grilles and controls. All ducting termination to outside shall be provided with weather cowls / louvres/ air bricks to architect's approval.
Standards	1. Building regulations Approved Document F and related references 2. Non-Domestic building services compliance guide
Products/Materials	
Ventilation units including controls	Air Handling Unit selection detailed in the schedules.
Grilles	Detailed in the schedules, to be approved by the Architects prior to order, maximum resistance 5Pa All front-of-house grilles to be painted to colour as specified by the architect.
Louvres	As per Architects selection, maximum resistance 20Pa
Ductwork	Galvanised sheet metal, with final connections allowable in flexible up to a length of 0.5m at unit or grille / connection in a back-of-house area. All front-of-house connections are to be rigid. All front-of-house ductwork to be painted to colour as specified by the architect.
Controls & Wiring	Local controls located within staff areas of auditorium. Power supplies and control wiring to BS7671 and as Clause 6 below

2.3 VENTILATION – REHEARSAL SPACE	
Extent	Develop design, supply, install, test and commission ventilation systems. Ventilation systems is to consist of replacing the existing supply system with new Part F compliant fresh air supply fan, filter and heating coil. Replace existing wall extract fan with new ducted system including high level grille and attenuation. System to include all required grilles and controls. All ducting termination to outside shall be provided with weather cowls / louvres/ air bricks to architect's approval.
Standards	1. Building regulations Approved Document F and related references 2. Non-Domestic building services compliance guide
Products/Materials	
Ventilation units including controls	Air Handling Unit selection detailed in the schedules
Grilles	Detailed in the schedules, to be approved by the Architects prior to order, maximum resistance 5Pa All front-of-house grilles to be painted to colour as specified by the architect.

Ductwork	Galvanised sheet metal, with final connections allowable in flexible up to a length of 0.5m at unit or grille / connection in a back-of-house area. All front-of-house connections are to be rigid. All front-of-house ductwork to be painted to colour as specified by the architect.
Louvres	As per Architects selection, maximum resistance 20Pa
Controls & Wiring	Local controls located within staff areas local to rehearsal space. Power supplies and control wiring to BS7671 and as Clause 6 below

2.4 VENTILATION – FOYER	
Extent	Develop design, supply, install, test and commission a Part F compliant Ventilation system. Ventilation systems is to consist of a 250 l/sec heat recovery ventilation unit to be at at high level, outdoor heat pump to be mounted on the ground floor roof above. Units intake and exhaust to be ducted to/from the rear over the escape door and supply/return ducted over café counter. System to include all required grilles and controls. All ducting termination to outside shall be provided with weather cowls / louvres/ air bricks to architect's approval.
Standards	1. Building regulations Approved Document F and related references 2. Non-Domestic building services compliance guide
Products/Materials	
Ventilation units including controls	Air Handling Unit selection detailed in the schedules
Grilles	Detailed in the schedules, to be approved by the Architects prior to order, maximum resistance 5Pa All front-of-house grilles to be painted to colour as specified by the architect.
Ductwork	Galvanised sheet metal, with final connections allowable in flexible up to a length of 0.5m at unit or grille / connection in a back-of-house area. All front-of-house connections are to be rigid. All front-of-house ductwork to be painted to colour as specified by the architect.
Louvres	As per Architects selection, maximum resistance 20Pa
Controls & Wiring	Local controls located within staff areas at the rear of the café courter. Power supplies and control wiring to BS7671 and as Clause 6 below

2.5 VENTILATION – TOILETS & BoH	
Extent	Develop design, supply, install, test and commission a Part F compliant Ventilation system. Ventilation systems is to consist of at basement level in the toilet areas, the existing ductwork is to be cut back as required to suit the new layout and re-routed to all toilet cubicles. The existing fans (at ground) are to be replaced. The ductwork in the riser and to roof is to be retained were possible. A new louvre at roof level is required. New back-of-house (BoH) extract systems are to be installed as shown were areas are being re-working and/or new room formed. System to include all required grilles and any alterations to controls.
Standards	1. Building regulations Approved Document F and related references 2. Non-Domestic building services compliance guide

Products/Materials	
Ventilation units including controls	Selection detailed in the schedules
Grilles	Detailed in the schedules, to be approved by the Architects prior to order, maximum resistance 5Pa All front-of-house grilles to be painted to colour as specified by the architect.
Ductwork	Galvanised sheet metal, with final connections allowable in flexible up to a length of 0.5m at unit or grille / connection in a back-of-house area. All front-of-house connections are to be rigid. All front-of-house ductwork to be painted to colour as specified by the architect.
Louvres	As per Architects selection, maximum resistance 20Pa
Controls & Wiring	Local controls located without staff areas of auditorium. Power supplies and control wiring to BS7671 and as Clause 6 below

2.6 HEATING AND COOLING

Extent

General:
Throughout the building each area is to be individually served as shown on the drawings.

The building is currently heated by radiators and convectors fed from the main communal boiler plant in the basement. Temperature control is by way of weather compensation of the water temperature and thermostatic radiator valves.

Where systems or equipment are to be replaced the contractor is to allow for supply, install, testing and commissioning of the complete system.
All units installed at roof level must be installed on isolation pads and antivibration mounts to manufacturers recommendations.

Auditorium

New heat recovery unit is installed this unit is to be fed from a heat pump at roof level which is to heat and cool the delivered air.
Retain existing radiators and provide tamperproof thermostatic radiator valves

Foyer

The new heat recovery unit is to be fed from a heat pump at roof level which will heat and cool the delivered air. The existing radiators could also be retained, subject to client preference or replaced with electric panel heating.

Rehearsal Space

Replace the 2No. existing fan convector heaters with new wall mounted heating/cooling fan coil units and associated outdoor multi-split heat pump to be mounted on the ground floor roof.

Back of House Areas

The existing radiator scheme is to be retained with radiator locations modified as required and shown on the drawings.

All new systems and equipment are to be installed with independent controls, located within local staff areas.

Design criteria

- General

External ambient -4°C / 30°C
Internal temperature 18-21°C
Noise level internal to be ≤NR25 in auditorium and ≤NR35 generally

- Noise

Noise level externally to be in accordance with LB Camden noise criteria

Standards	1. Standards BS EN 60335-2-40, BS EN 14511 parts 1-4, BS EN 255-3, BS EN 378 All components of the refrigeration system to be designed and installed to the requirements of BS EN 292, BS EN 378 Parts 1-4 – Refrigeration systems and heat pumps – Safety and Environmental requirements, the Pressure Systems Regulations The Pressure Equipment Regulations 1999 and the following Institute of Refrigeration codes: Safety Codes for Compression Refrigerating Systems Utilising Ammonia – Part 1, Design and Construction HSE Guidance note PM81 – Safe management of Ammonia refrigeration systems Code of Practice for the Minimisation of Refrigerant Emissions from Refrigerating Systems
Products/Materials	
Heating/ Cooling/ Air conditioning source including controls	Selection detailed in the schedules
Radiators	*Selection to be confirmed with Architect, for pricing selection to be based on; Hudevad P5K.VD*
Pipework	Material Seamless copper tube to BS EN 12449 or BS EN 12450 Refrigerant quality copper, fully annealed and internally degreased and cleaned.
Insulation	Pipework insulation to be **black** closed-cell material with thickness to meet standards.
Ductwork	Galvanised sheet metal, with final connections allowable in flexible up to a length of 0.5m at unit or grille / connection if being made in a back-of-house area. All front-of-house connections are to be rigid.
Controls & Wiring	Local controls as described above. Power supplies and control wiring to BS7671 and as Clause 6 below

2.7 HOT & COLD-WATER SERVICES	
Extent	Develop design, supply, install, test and commission hot and cold-water services to all outlets and appliances. The existing supply into the building from the street is to be reused, as is the current metered location. Where outlets are retained all pipework etc. is to be inspected and repaired as required but can generally be assumed to be retained There are no proposals to alter the primary mains water distribution or base hot water generation. All equipment is to be inspected and recommissioned on completion of the works. The hot water supply to all wash hand basins in the bathroom will be limited to 43˚C in accordance with the requirements of Approved Document Part M. The hot water supply to kitchen sink etc. is to be at 60 ˚C The contractor shall pressure test the existing/reused pipework and any leaks must be fixed.
Standards	1. Approved Document G with related references, IOP, CIBSE Design Guides and BS EN 806-2 & 3 2. Comply with appropriate WRAS guidance 3. Comply with HSE Approved code of practice – Legionnaires disease. The control of legionella bacteria in water
Design Criteria	1. Maximum hot water temperature restricted from the outlet as per AD G 2. Hot water temperature to be achievable at the hot water outlet within max. 60s. 3. Water pipework sizing providing sufficient flow to BS EN 806 or to IOP and at the minimum guaranteed pressure in the street mains of 1.0 bar.

Products/Materials	
Taps/outlets/Zip Tap	Refer to architects sanitaryware schedules for equipment requirements.
Pipework	1. Distribution - Pipework to be routed within the ceiling or floor voids. - Pipes branches to appliances to be made within internal walls, chased or exposed (subject for the Architect confirmation). - Uninsulated (exposed) final connection to the taps shall be no more than 2-3m meters. 2. Material Polypropylene pipes of the type for potable water purposes, jointed as appropriate e.g. Aquatherm green pipe or similar.
Insulation	1. Pipework to be insulated with thickness to meet standards and to be closed- cell material insulated for cold water pipework. 2. Pipework high level exposed or in ceiling void shall be insulated via e.g. AF/Armaflex Class O elastomeric nitrile rubber or similar.
Valves	1. Provision shall be made for isolating valves to all major items and branches, where appropriate, to allow maintenance to elements of the system without affecting operation to other parts
Sanitary Ware	1. All sanitary ware and appliances will be provided with isolating valves on both the hot and cold water supplies local to the appliance. 2. Pressure reduction will be provided to protect sanitary ware and appliances from excessive pressure where appropriate.
Ancillaries	Valve identification labels
Chlorination	1. Flush, clean and sterilise complete systems installed before opening up 2. Provide certificate of water purity

2.8 GAS SUPPLY & DISTRIBUTION	
Extent	No alterations to the gas pipework are proposed during these works. Any redundant pipework found during the works are to be purged in accordance with IGE/UP/1 and stripped out
Design criteria	Gas safety regulations

2.9 FOUL DRAINAGE ABOVE GROUND	
Extent	Develop design, supply, install and test soil and waste drainage from all sanitary appliances, including final connections, overflows. Stack shall be ventilated to outside. The existing waste drainage from the toilet areas and bars will be retained and adapted to suit. New areas requiring drainage connections will be connected where possible to existing soil stacks. All appliances are to be drained gravitationally. Systems to be fully roddable. Rodding eyes to be installed on each floor about 0.5-1.0m above FFL.
Standards	1. Approved Document H with related references, IOP, CIBSE Design Guides 2. BS EN12056
Products/Materials	
Pipework	Generally, drainage pipes to be plastics PVC-U, PP with sockets joints
Ancillaries	1. AAVs- Air Admission Valves 2. Trap seals (anti syphon) 3. Tundish (visible break) 4. Access panels (rodding eyes) 5. Chrome traps where visible

2.10 RAINWATER DRAINAGE	
Extent	No alterations to the rainwater pipework are proposed during these works. Some existing connections do pass through the works areas from above, these are to be retained and repaired as necessary. Any redundant pipework found during the works are to be stripped out All existing rodding points must be maintained as accessible. Refer any clashes with the new layouts to the architect for review. .

3. ELECTRICAL

3.1 LV SUPPLY AND DISTRIBUTION	
Extent	All installations shall be in accordance with the requirements of BS7671 18th edition. The existing three phase 200A LV electrical supply to the building, LV switchgear, Ryefield board (assumed 100A) supply fuse protection and fiscal (utility) meter serving the theatre demise shall be retained in its existing location at basement level. The contractor shall provide a new suitably sized & rated split metered (Power & Lighting) TPN Distribution Board at ground floor level, fed from the existing fiscal meter in the LV switch room in the basement, utilising a new suitably sized XLPE/SWA/LSF +CPC Mains cable/s. A new 100A TPN 4P Isolator & Type 1/2 Surge Protection Device (SPD) shall be installed immediately downstream of the fiscal meter to serve/protect the new mains cable in accordance with BSEN62305 & BS7671. The exact cable route from the switch room to ground floor DB location shall be agreed with the project architect prior to installation, to suit existing building elements and proposed builders work penetrations. The new distribution board shall be split metered to include sub metering for lighting and power loads, in accordance with Part L building regulations. New final LV circuits throughout are to be fed from the new DB as necessary. Suitably rated Circuit Protection Devices (CPDs) including MCBs/ RCD/RCBOs in line with BS7671 18th edition requirements shall be provided. The contractor shall install a new Type 2 Surge protection Device to the new main LV distribution board in line with the recommendations of BSEN62305 for lightning and surge protection. Suitable Type 1/2 Surge Protection Devices (SPD) shall also be provided to any new Sub Consumer units or lighting control panels downstream in line with the recommendations of BS7671 and BSEN62305. The contractor shall allow to provide connections as necessary to the existing building Main earth bar, connected directly to the supplier's earth connection, for all surge protection, earthing & bonding connections. Separate earth conductors (CPCs) shall be wired alongside or included within the cores of all armoured cables. <u>The cable armour shall not be relied upon as a CPC in any instance.</u>
Products/Materials	
Distribution boards	Hager Invicta TPN DB or equal and approved
Protection	CPDs to be provided in line with BS7671 18th Edition Surge Protection to BSEN62305

3.2 SMALL POWER	
Extent	Provide and install switches, sockets, fused connection units, isolators throughout to suit final locations as agreed with the client/architect. Refer to architectural drawings for small power requirements. The contractor shall refer to the kitchen/bar specialist information to determine the final power requirements to all bar/servery equipment. The contractor shall make adequate allowance within their tender for all power supplies to suit ancillary systems including Mechanical installations, AV systems, Intruder alarms etc. Refer to mechanical services layouts for further information on plant to be replaced/retained and provide suitable power supplies from the new Distribution Board. Final locations and setting out of all electrical accessories are to be agreed with the project architect/client prior to installation. Full mechanical containment is to be provided to all accessory positions. The contractor shall be responsible for the final containment sizing and coordination of runs to suit site installation constraints and coordination with other specialist trades. LV wiring shall be carried out from the new Distribution Board in LSF Singles, via high level multi compartment trunking containment, with final drops/rises to accessories to be carried out in rigid or flexible metal conduit to ensure physical segregation of services/voltage bands and to enable future re-wiring. Circuits are generally to be wired in coordinated high level main runs within suitably compartmentalised trunking with drops to accessories in galvanised conduits. Main cable runs shall not be clipped direct to the structure or building fabric without prior agreement. Voltage bands are to be physically separated throughout in line with BS7671 requirements (LV/ELV). Containment is to be fully bonded. Cables are to be installed within the building voids where possible to ensure cables are not visible. Where exposed cables or containment routes are unavoidable the final routes are to be agreed with the architect in all cases prior to any works taking place. Isolators & fused connection units supplying fixed equipment are to be labelled with the equipment served and supply circuit reference to enable easy identification for future maintenance. Socket outlets located behind appliances or within joinery are to be wired via suitably rated remote isolation, in line with BS7671 requirements. Final locations for isolators are to be agreed with the client/architect. All wiring is to be carried out in line with BS7671 requirements including earthing and bonding of any extraneous metalwork or services to the Main Earth Termination at the intake position.
Design criteria	Agree final positions of accessories with architect.
	BS7671 wiring regulations
	Specialist system contractor's requirements
Products/Materials	
Accessories	Final wiring accessory specification/finishes to be confirmed by architect. Refer to specialist's details for specific connection details/requirements to catering equipment.
Wiring	LSF Singles

3.3 LIGHTING	
Extent	Provide Internal and external lighting and controls throughout. Refer to the architect's details for specification of luminaires. Any luminaires which have not been fully specified shall be brought to the attention of the client team within a suitable time frame to suit project programme so that a suitable selection can be made with agreement from the client without effecting progress on site. Refer to the architect's drawings for lighting layouts and proposed circuit/switching arrangements. Specialist stage/theatre lighting to the basement and ground floor performance areas shall be detailed by the client team. The contractor shall carry out design of supply circuits to suitable termination points, BS4343 sockets or truss sockets as necessary to suit the final requirements. Control cabling shall be provided (DMX or as otherwise specified by the client) to each luminaire from a central control position/AV desk. Dimming/switched control shall be installed throughout, as identified on the lighting drawings utilising local manual switching/dimming and presence detection in accordance with the design brief and Part L building regulations. Controlled "groups" of luminaires shall be separately switched/dimmable from local "switches/dimmers" in locations to be agreed with the architect. The design and installation of the lighting control system to suit all areas shall form part of the works. The contractor/designer shall ensure that any dimmers selected are compatible with the finalised luminaire driver types (trailing edge/leading edge/DALI/1-10V/phase dim/push dim/DMX etc). It should be noted that multiple dimming protocols/technologies may be present within a common space. External signage supplies are to be controlled via 7 day astronomical timeclock, with mains photocell override to ensure lighting is held off during hours of adequate daylight. Emergency lighting shall be provided to all areas utilising LED luminaires with integral 3hr battery back-up. Any stand alone (not a converted standard luminaire) emergency light shall be wired for "non-maintained" operation, meaning that they only illuminate in the event of mains failure. Emergency lighting shall be provided and installed in accordance with the requirements of BS5266-1. Illuminated emergency exit signs shall be provided throughout in line with the agreed escape strategy and in accordance with BS5266 <u>Final locations and setting out of all luminaires and associated switches/accessories are to be confirmed by the project architect/client prior to installation.</u>
	SLL/CIBSE Guides to Interior Lighting BS7671 BS5266-1
Products/Materials	
Luminaires	Refer to architectural information for specification of luminaires
Accessories	Final wiring accessory specification/finishes to be confirmed by architect.
Wiring	LSF T&E / Specialist to advise
	Galvanised conduit

3.4 FIRE ALARM SYSTEMS	
Extent	Fire alarm works shall be provided throughout the new theatre demise. The Contractor is to engage a suitably qualified specialist to carry out the fire alarm design and provided a fully compliant & certified system in line with BS5839-1, building specific fire strategy and building control requirements throughout. Refer to architectural design drawings for design intent only. It shall be the responsibility of the contractor/fire alarm specialist to ensure that the correct number and type of devices are provided throughout in line with the specified requirements, including any interfaces required to secondary systems such as HVAC, gas interlocks, PA systems etc. Detailed designs are to be submitted to the Building Control Officer for review prior to any installation works taking place. It is deemed that the demise shall be provided with a BSEN5839-1 compliant system to category L1. The existing fire alarm panel at ground floor level shall be surveyed by the specialist to ensure that it is still in serviceable condition and spare/new parts are still readily available. The intention at this stage is to retain the existing fire alarm panel and carry out local modifications and extension to the existing field wiring in order to install new devices or remove/relocate existing to suit new compartmentation, reconfiguration of rooms etc. All works shall be carried out in accordance with BSEN5839-1. If the specialist deems that the existing system is not suitable for re-use/extension then a fully priced proposal for replacement of the main panel and any necessary field devices or wiring shall be provided at an early stage for review by the client team. Certification shall be provided by the specialist for modification of the existing system in accordance with BSEN5839-1. The specialist shall confirm with the fire consultant or BCO to establish if there is any link required to the existing building wide fire alarm systems, which will include the existing offices above. A New Emergency Voice Communication System (EVCS) shall be provided to serve all disabled refuge positions as per the finalised fire/escape strategy. Type B call stations shall be provided to the disabled refuge positions, wired to a central Master Station in the main Foyer utilising "Enhanced" cabling (FPPLUS or equal and approved). The system shall be designed and installed in accordance with BSEN5839-9.
Design criteria	BSEN5839-9 (EVCS)
	To suit building control requirements & building wide fire strategy BSEN5839-1 Category L1
Devices	To suit existing building wide system

3.5 DATA/TELECOMS SERVICES	
Extent	The existing main incoming telecoms line distribution point shall be retained. The existing theatre data/internet is served via a wireless network. This shall be retained and re-used. New analogue telephone lines shall be provided to the office & fire alarm panel (remote dial out to Alarm Receiving Centre (ARC) as agreed with the client. The contractor shall make allowance to apply for a new line/s as necessary and install cabling from the existing main building Distribution Point on the ground floor (location TBC on site). The contractor shall allow to provide a new 600x600mm minimum 8U data cabinet in a final location TBC with the client/architect. The cabinet shall be used to house networking equipment, switches, routers, AV head end etc. and shall be the "hub" for any networked or distributed services throughout. Allow for 6 No New Cat6 data points/sockets shall be installed as identified on the architect's drawings. These shall be wired in Cat6 cable back to the new data cabinet. The contractor shall make allowance to terminate all data cables at each end and carry out signal and noise testing. Test certificates shall be provided for each cable. Internal data and controls (ELV) wiring shall be installed within dedicated containment/compartment or physically separated from other voltage bands by minimum 150mm in line with industry standards. Final drops shall be wired in separate galvanised metal conduit to accessories.
Design	New data points to be wired to new data cabinet
Products/Materials	
Bonding	All containment is to be adequately earth bonded to building earth network. Cat 6 LSOH data cable

3.6 SECURITY, ACCESS CONTROL & ALARMS SYSTEMS	
Extent	**Access Control:** There are no Access Control or Intercom works proposed within this contract. **Intruder Alarm:** There are no intruder alarm works proposed within this contract. **Disabled Person Call System Alarm:** A Document M Compliant disabled alarm system shall be provided to all accessible WCs, utilising pull chords & local reset buttons with local AV indication as well as an indicator panel in the main Foyer.
Design criteria	To suit building security strategy BSEN 50132
Products/Materials	To suit specialist requirements. All finishes to be agreed with the architect prior to procurement.
Cables	Specification to be agreed with specialist to suit manufacturer

3.7 EARTHING, BONDING & SURGE PROTECTION	
Extent	Provide earthing & equipotential bonding of the complete electrical installation in line with the requirements of BS7671 wiring regulations. Surge Protection shall be provided in line with BS7671 and BSEN62305 recommendations. Refer to LV distribution section above for performance criteria. As a minimum the LV distribution shall be provided with a type1/2 SPD at the main LV distribution point/meter, Main Distribution board and suitable SPDs on incoming telecoms lines.
Design criteria	BS7671 and BSEN62305
Products/Materials	
Cables	Copper LSF to BS 7211 and BS EN 50525. Protective conductor of multi-core cable.
Earth electrodes (if required)	Hard drawn copper

4. TESTING & COMMISSIONING

4.1 TESTING & COMMISSIONING	
Mechanical	Pipework static pressure, temperature testing
	Ventilation Plant to be fully tested, balanced and commissioned
	Heating/Cooling system to be fully tested, commissioned and certified.
	Domestic Services
	Test records to CIBSE Commissioning Codes
Electrical services	Electrical installations to BS7671
	Surge protection to BSEN 62305
	Fire alarms to BS 5839-1
	Disabled Person Call System Alarm
	All ancillary/specialist electrical systems to be fully tested, commissioned and certified.
	Data cable test certificates (results for each cable)
	BS7671 electrical test records and certificates

5. TENDER SUMMARY

MECHANICAL SERVICES		
Preliminaries		
Strip Out		
Ventilation		
Auditorium		
Rehearsal Space		
Foyer		
Toilets and Back of House		
Heating and Cooling		
Hot and cold water		
Drainage above ground		
Any other item not listed		
Total Mechanical Services (Option A)		

ELECTRICAL SERVICES		
Preliminaries		
Strip Out		
LV Supply and Distribution		
Small Power		
Lighting		
Fire Alarm		
Data/Telecom		
Security, Access Control		
Earthing, Bonding and Surge Protection		
Any other item not listed		
Total Electrical Services		

TOTAL TENDER SUM	

APPENDIX A – MECHANICAL SCHEDULES

- Schedule of Fans
- Schedule of Air Handling Units
- Schedule of Fan Coil Units
- Schedule of DX Condensers Units
- Schedule of Grilles/Diffusers

APPENDIX B – DESIGN DRAWINGS

- 1927-M-1101 RevC1 - Basement Plan - Proposed Services Layout
- 1927-M-1102 RevC1 - Ground Floor Plan - Proposed Services Layout
- 1927-M-1103 RevC1 - First Floor Roof Plant - Proposed Services Layout