SECTION 2 CONTENTS

2 PARTICULAR SPECIFICATION

2.1 INTRODUCTION

This specification describes the requirements for the electrical services installation at School of Oriental and African Studies, University of London, LTM, Percival David Foundation, 53 Gordon Square, London, WC1. The electrical services include the following elements of work:

- Strip out of existing lighting installation.
- New lighting installation
- Strip out of existing fire alarm installation.
- New fire alarm installation
- Strip out existing distribution boards and isolators.
- New distribution boards and isolators.
- Record documentation

This specification describes where appropriate the existing conditions to assist the tenderer in evaluating the extent of the work. The contractor should however make himself fully conversant with the existing conditions by site inspection prior to submitting his tender.

The contractor shall note that work will be required to be carried out in an occupied building by staff, public and works of art in display cabinets. The contractor shall be required to provide a method statement for the work operations to ensure safety of the contractor's operatives, other building occupants and the protection of the works of art.

The contractor shall note that the basement electrical and fire alarm detection services extend into the basement of 45 Tavistock Square. This area of the works is to be costed as a separate item (refer to the Tender Summary)

2.2 STRIP OUT, MODIFICATIONS TO EXISTING LIGHTING INSTALLATION

The existing lighting installation shall be upgraded by the use of new luminaries within the basement and circulation areas. The existing VIR wiring installation, distribution boards referenced DB A, DB B, DB c and DB D, light switches and isolators as detailed on the tender drawings. The existing containment system shall be reused and extended where indicated on the drawings.

The existing luminaires shall be removed and disposed of by the contractor in accordance with the specific HSE requirements for the disposal of PCB (capacitor) materials and fluorescent tubes. The luminaire fixing threaded rods, bolts and brackets shall be removed back to the concrete soffit or main building structure. The luminaire feed conduit outlet boxes that remain unused in the new installation shall be fitted with circular covers.

The contractor shall allow for the removal and replacement of 81 existing luminaires plus 2 number pendants as shown on the survey and tender drawings and being replaced by linear or compact fluorescents luminaries as shown on the tender drawings. Any discrepancy in quantity the drawings shall prevail.

This work is to be carried out during normal working hours.

The contractor shall allow for protection to the building finishes and contents as described in Clause 1.20 of this document. Refer tender summary.

2.3 LUMINAIRE INSTALLATION

New luminaires shall be installed throughout the library, reading area, circulation areas, toilets and basement areas as indicated on the tender drawings and schedules.

Where surface mounted luminaires are specified these shall be fixed using the existing luminaire fixings wherever possible. Where new luminaire locations exist the luminaires shall be fixed to the building structure.

2.4 LIGHTING WIRING INSTALLATION

The contractor shall reconnect the existing wiring installation for the lighting circuits to the new distribution boards (refer to clause 2.8). All circuits shall be tested as specified for new wiring and the results recorded on the test schedules. It is to be noted that there are some circuits emanating from distribution boards referenced DB C and DB D that are wired in VIR cabling. These circuits are to be re-wired using LSF sheathed cabling utilizing the existing containment system. Where new luminaries, switches, key switches are shown in new positions surface PVC mini trunking in white finish shall be used. The trunking shall be fixed directly to the building structure. There is to be no chasing out of walls.

2.5 LIGHTING MOCK-UP

Immediately following appointment the Contractor shall install a mock-up of the library store (caged) area lighting luminaire. The order for these luminaires shall not be placed by the Contractor until the mock-up has been accepted by the engineer. The Contractor shall allow two weeks in his programme for review and acceptance of the mock-up by the engineer.

2.6 LIGHTING SWITCHING

The contractor shall replace all the existing lighting switches and plates associated with the new installed luminaries with new items of the gangs and ways as indicated on the tender drawings. All plates shall be white plastic finish type. Emergency test key switched shall be provided locally n at the switch plate.

The switching of circuits indicated shall be controlled via localized on/off manual switches or passive infra red detectors for the male and female toilets.

Where indicated local control equipment incorporating presence detectors shall be installed. The control arrangement to each type of area of area shall be as follows:

Area	**Equipment**	**Control arrangement**
Male Toilets	Passive Infra Red (PIR) surface mounted to underside of soffit.	Controlled by PIR set to 16 minute time delay
Female Toilet	Passive Infra Red (PIR) surface mounted to underside of soffit.	Controlled by PIR set to 16 minute time delay
Kitchen	Manual light switch	Localised on/off switching
Staff Room	Manual light switch	Localised on/off switching
Circulation areas	Manual light switch	Localised on/off switching
Reading area	Manual light switch	Localised on/off switching
Library	Manual light switch	Localised on/off switching
Offices	Manual light switch	Localised on/off switching
Stores/Lobbies/ Entrances	Manual light switch	Localised on/off switching
Photographic areas	Manual light switch	Localised on/off switching

2.7 EMERGENCY LIGHTING

The contractor shall install emergency luminaires where indicated on the drawings. Where indicated general lighting luminaires shall be fitted with battery inverter units. Self contained non-maintained emergency lighting luminaires shall also be provided where indicated. Test key switches shall be provided locally at the switch position as described in clause 2.6 above. The circuits shall be wired so that the general lighting remains operational under test conditions.

2.8 DISTRIBUTION BOARD AND ISOLATOR REPLACEMENT

The contractor shall replace the existing distribution boards referenced DB A, DB B, DB C and DB D serving the Basement and Ground floor lighting and general power re-connecting the existing circuits as per the new distribution schedules within section 4 of this specification. The replacement of the distribution board(s) shall take place prior to replacement of any circuit wiring.

Unless otherwise indicated all distribution boards shall be surfaced mounted in the existing distribution board locations as shown on the tender drawings.

The existing and general power circuit wiring indicated on the distribution board schedules is to be retained except where as previously noted VIR cabling is used. The contractor shall reconnect all these existing final circuits to the new distribution boards. All circuits shall be tested as specified for new wiring and the results recorded on the test schedules.

The existing isolators serving the following as listed below are to be removed and / or replaced with new to the same rating.

i. Isolator serving DB A and DB B
ii. Isolator serving Lift Control Panel
iii. Isolator serving DB C and DB D
iv. Isolator serving Fourth Floor Flat
v. Isolator serving Heating Pump Motor (Redundant no replacement required)
vi. Isolator serving the Fire Alarm Panel (This shall become redundant no replacement required)

All proposed power shut-downs associated with the replacement of the distribution boards and isolators or any other activity shall be notified to the employer by an agreed procedure giving at least seven days prior notice.

Circuits wired in VIR are as follows. Wiring is to be replaces with LSF sheathed cable of the same rating

i. cabling to Lift control panel isolator
ii. cabling emanating from DB C circuits 5,7 & 9
iii. cabling to DB C and DB D
iv. cabling emanating from DB D circuits 2 and 5
v. cabling to Heating pump motor isolator
vi. cabling emanating from the yellow phase cut-out fuse
vii. cabling to Fourth floor flat isolator

It's the contractor's responsibility to satisfy himself whether there is any other VIR cabling present and to bring this to the attention of the engineer.

2.9 STRIP OUT OF EXISTING FIRE ALARM INSTALLATION

The contractor shall strip out the existing fire alarm system as noted on the survey drawings. This shall include the existing 8 zone AFA MINERVA System 1500 fire alarm panel, panic fire alarm button and all devices (sounders, call points and smoke / heat detectors). The existing micc cabling shall be retained for re-use and extending of the detector loops and sounder circuits.

The existing wiring is configured as follows:-

Zone 1 Basement
Zone 2 Ground
Zone 3 First Floor
Zone 4 Second Floor
Zone 5 Thirds Floor
Zone 6 Fourth Floor
Zone 7 Spare
Zone 8 Spare

The existing power supply to the fire alarm panel shall be strip out and a new circuit using Fire Rated cable shall be installed terminating in an unswitched fused connection with neon indicator mounted adjacent to the new fire alarm panel as shown on the tender drawings.

The contractor shall employ the services of a specialist fire alarm contractor for the installation of the new works. The contractor shall liaise with the specialist contractor before commencing any of the strip out works.

2.10 FIRE ALARM INSTALLATION

The contractor shall carry out the installation of the new fire alarm system indicated on the drawings.

The new system shall replace the existing installation which the contractor shall remove.
The new system equipment shall be an 8 zone conventional panel as Manufactured by GENT and type XENEX.

The contractor shall extend the existing detection loop circuits and separate sounder circuits which currently serve the building (Refer to survey drawing numbers 2458/ES/001 and 2458/ES/002 for typical existing wiring arrangement).

Generally a separate detection circuit serves each floor level individually from the main control panel located at the ground floor entrance reception.

The existing wiring is in Mineral Insulated Copper Clad (MICC) cabling. This wiring is to be retained and re-used and extended too as necessary using 2 core 1.5 mm^2 Fire Rated cable to BS7629-1 and BS6387 Cat CWZ, sleeve colour white. The system cabling shall be concealed within the box out ducts rising between floors and where appropriate for horizontal runs and clipped direct to the building fabric.

In the galleries generally the cables may be installed in surface mounted white PVC mini-trunking taking the shortest possible route to minimise the extent of mini-trunking installed. The mini-trunking shall be installed as described for the lighting installation.

The contractor shall install new fire alarm devices (sounders, call points and detectors) at the locations indicated on the tender drawings. Within the public areas Xenon flashing beacons shall be installed in addition to the fire alarm sounders as shown on the tender drawings.

Sounders shall be continuous operation type 100dBA @ 1m in white colour finish wall mounted 2100mm AFFL.
Point detectors shall be optical and or fixed temperature heat type soffit mounted.
Xenon Flashers wall mounted at 2100mmAFFL
Call points Red LPC approved gasket with hinged door shall be surface mounted type mounted at 1200mm AFFL.

All the components of the installation shall be labeled to indicate the items function together with circuit identification.

The contractor shall commission the installation and bring the system into service.

The record documentation for the installation shall include, along with plan layout drawings, a schematic single line wiring diagram of the system with all devices and equipment individually indicated and referenced.

2.11 EARTHING AND BONDING

The contractor shall install all earthing and bonding reasonably associated with the elements and areas of the installation in accordance with BS7671.

2.12 LABELLING

The contractor shall label all new and existing distribution boards and isolators with a permanently fixed engraved laminated label clearly identifying the equipment i.e. 'DB A' for distribution boards and 'Isolator for DB A & DB B' for isolators. Letters shall be black on a white background and no less than 5mm. The contractor shall seek the approval of all labels from the engineer before placing an order.