

PARTICULAR ELECTRICAL SPECIFICATION

AMP44943.1 - CCTV Installation Clayton Hall



Electrical Service Engineer

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M&E Group
Capital Programmes
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Contents

Contents	2
Introduction	3
Associated Drawings	3
General.....	3
Working Methods	3
Site Health & Safety	4
Supervision of the Works	4
Workmanship & Materials	5
Defects and Maintenance	5
Interpretation of the Tender Documentation	5
Post Practical Completion	6
Proposed CCTV Installation	6
Power Installation.....	9
Sockets	9
Surge Protection	10
Testing and Inspecting	10
Spares	10
Accessories	10
As Fitted Drawings	11
Operating and Maintenance Manuals.....	11
Appendix 1 - Handover Documentation	13
Appendix 2 - Contractor's Cost Sheet.....	16

Introduction

The property and grounds at Clayton Hall are not adequately covered by a CCTV system. It is therefore proposed that a new CCTV system be installed to the external sides of the buildings.

The main contractor shall supply and install the required cameras, control station, associated accessories and equipment, power supplies, cabling and containment, needed to form a complete operational CCTV system.

Associated Drawings

This specification shall be read in conjunction with the following drawings:

- MCC-ZZ-XX-DR-E-0010 CCTV Layout
- MCC-B01-XX-DR-E-0011 CCTV Elevation Positions
- MCC-ZZ-XX-DR-E-0012 Proposed Duct Route – Site plan
- MCC-XX-XX-DR-E-0020 CCTV Column Details

General

The Contractor is strongly advised to visit the site prior to tendering in order to assess the extent of the works that are required. **Claims due to want of knowledge as a result of no survey, or an inadequate survey being carried out, shall not be entertained.**

Site address: Clayton Park, Ashton New Rd, Clayton, Manchester M11 4RU

If the contractor has any questions, queries please contact:

Electrical Engineer:	Thomas Balcombe
Mobile:	07929 823590
Email:	Thomas.balcombe@manchester.gov.uk

Working Methods

The contractor shall ensure that the work is conducted in a safe manner, with the Manchester City Council standards adhered to at all times. This includes all measures to protect staff and members of the public. This includes providing barriers and signage to provide safe working areas.

Risk assessments and method statements should be produced prior to the works and the site operatives should be provided with copies of these.

The electrical contractor shall be registered competent person with NICEIC.

The contractor shall arrange access to the areas requiring work and shall leave the areas in a clean and tidy condition with the access secured and any keys or passes obtained for the works returned.

The contractor shall be responsible for liaising with on-site staff and/or the contractor administrator (C.A.) and client to arrange access to the property.

It is anticipated that the works will commence during normal daytime working hours.

Site Health & Safety

The contractor shall be responsible for developing a works programme detailing dates of works to be undertaken, number of personnel on site etc. This programme shall be submitted for approval to the contract administrator, principal designer and client, before works commence.

The contractor shall be responsible for clearly defining working areas. The contractor shall provide suitable measures e.g., barriers, hazard lighting, signage, etc. to ensure no vehicles or members of the public enter working zones. The contractor shall ensure alternative pedestrian and/or vehicle access routes are provided, where needed.

An asbestos management report was produced in January 2023 and shall be made available to the contractor. Asbestos containing materials are presumed to be located within existing incoming electrical supply cables, with no other materials being found in the property.

A further asbestos survey shall be requested in those areas being opened up for new cable routes. This report shall be made available to the contractor as soon as possible.

Irrespective of the above, if during the installation, the contractor finds material of questionable type then they shall stop work immediately and report their concerns to the Contract Administrator and Main Contractor without delay.

Supervision of the Works

The contractor shall ensure that the operatives are supervised sufficiently, and the supervising officer is given sufficient time and facilities to organise and run the contract. The supervisor shall be responsible for resolving day to day practical problems and checking the quality of the work.

The majority of the planned works are external, with no provision for welfare facilities on-site. The contractor shall include for any welfare facilities necessary. The site setup shall be kept to a minimum office, welfare and small storage container. The exact locations shall be agreed on site with the contract administrator, client, and residents. The buildings and car park should be left tidy and free from clutter.

Workmanship & Materials

The property is a grade II* listed building. Planning permissions are currently being sort from the local planning authority. Any planning approvals granted shall be based on the drawings provided and this specification. **No deviation from the drawings or specifications shall be allowed unless prior written approval is obtained from the planning officer and contract administrator.**

All work shall be carried out by qualified skilled labour from the appropriate trade to the full satisfaction of the Supervising Officer. The materials supplied by the Contractor shall be of the sizes, types and quantities specified and conform to the requirement of this specification, the drawings, schedules or any supplementary specification issued with the contract documents.

The electrical contractor shall be registered competent person with NICEIC/ECA/NAPIT
The CCTV system contractor shall be 3rd party accredited to Nacoss or SSAIB.

Defects and Maintenance

The Contractor shall guarantee the works and materials for a period of twelve months from the date of handing over the installation. He shall make good at his own expense, all defects due to faulty materials and workmanship which may arise during the guarantee period.

The Contractor shall attend site within 8 hours of notification of any defect deemed by the Supervising Officer to be of an urgent nature.

Any item of plant or equipment installed under the contract which requires any form of servicing or maintenance (as recommended by the manufacturer, required under legislation, Standards or Codes of Practice, or as listed elsewhere) during the period between handover and issue of the Making Good Defects Certificate, shall be undertaken by the Contractor.

Interpretation of the Tender Documentation

Should there be any doubt about the precise meaning of any item for any reason whatsoever, the tenderer must inform the office of issue of the tender document, in writing in order that the correct meaning may be given.

No liability will be admitted, nor claim allowed, in respect of errors in a tender due to mistakes that should have been rectified in the manner described above.

Post Practical Completion

During the 12 months after practical completion and in consultation with the Supervising Officer undertake to Assess the need for fine tuning of the installation and that fine tuning activities are programmed, planned in advance and agreed with the Supervising Officer and employer prior to commencement.

Proposed CCTV Installation

The contractor shall supply and install the new cameras in the positions as shown on the drawings. The contractor shall supply and install all required fittings and accessories needed to install the cameras as indicated.

CCTV cabling shall be run internally to each CCTV point. Where possible the contractor shall utilise existing containment / cable runs for new CCTV cabling. Where containment or cables runs do not exist, the contractor shall agree the final locations of cables with the planning officer and lead engineer.

The contractor shall be responsible for fire stopping any penetrations required for cable or containment runs. The method of fire stopping shall be confirmed by the contract administrator and conservation architect prior to installation. Spray foam shall not be used within the property.

The contractor shall include to supply and install new Beldon Cat 6 Purple cable to feed the cameras.

The contractor shall employ Grantfen as the CCTV specialist for the works. All camera locations and specifications shall be confirmed by Grantfen prior to their purchase.

The recording equipment shall also be complete with keyboard, mouse, suitable sized monitor, and preloaded with all the necessary software including a video management client and necessary licenses. The system shall be compatible with the Genetec system to allow future control from MCC control room should this be required.

RADAR AND HORN SPEAKERS

The contractor shall supply and install 1No radar detectors and 2No horn speakers as indicated on the design drawings.

The radar detectors and horn speakers shall be compatible with the new CCTV system.

The purpose of the radar detectors shall be to improve detection coverage for the new CCTV cameras and increased area monitoring. The horn speakers shall be compatible with the new system and allow for voice or recorded messages to be played as required.

CAMERAS

The contractor shall supply and install 3No external static bullet cameras, 3No external static dome cameras, and 1No column mounted camera (to be installed on a new column), as indicated on the design drawings.

Bullet and dome cameras shall have the following specifications:

- Max. 5Megapixel (2592 x 1944) resolution
- 2.8mm fixed lens
- 0.15Lux (Colour), 0Lux (B/W, IR LED on)
- H.265, H.264, MJPEG codec support, Multiple streaming
- Day Night (ICR), WDR (120dB)
- Tampering, Motion detection, Defocus detection
- IR Viewable length 20m (65.62ft)
- IP66, IK10, PoE

To limit the amount of storage, static cameras will record when motion triggered. The column mounted camera shall record continuously. Images shall be recorded and stored on the DVR for 31 days.

RECORDING STATION

The contractor shall supply and install 1No recording station. The contractor shall supply and install a CCTV Cabinet to house the relevant switches and cables etc. The contractor shall include to supply and install the required storage capacity required. Recording equipment etc. shall be mounted in the cabinet.

Final locations of recording equipment shall be confirmed on site with the C.A. and client.

The recording station shall have the following specification:

- 18tb network video recorder
- Up to 16CH 32MP supported
- Max. 140Mbps network camera recording
- HDMI out
- User-friendly UI / UX

- AI search support when working with Wisenet AI camera
- Dynamic Event support - New event function of cameras is available without a software update
- H.265, H.264, MJPEG codec supported
- Plug & play by 16 PoE port
- Bookmark management (Up to 100 set)
- SATA 4ea (Up to 24TB)

The contractor shall be responsible for confirming required number of POE switches needed for the number of devices and distances covered.

The contractor shall include to supply and install the necessary POE/Network switches spaced throughout the building to enable cabling for the cameras to be kept to a minimum distance.

All items such as switches etc. shall be included to complete a fully functional system.

For tender purposes. The contractor shall supply and install 2No 27" CCTV desktop monitors. Monitors to be high resolution.

The Contractor shall supply, install, connect and commission the CCTV system. On completion all redundant equipment, housing and cabling is to be removed.

The contractor shall include to demonstrate the system, to the building users, before the final handover when the full system has been installed.

A final commissioning shall be allowed at which time certification shall be provided.

The CCTV system contractor shall be 3rd party accredited to Nacoss or SSAIB.

CAMERA COLUMN

The contractor shall supply and install a new CCTV column as indicated on the design drawings.

The column shall be from the TPT Range as manufactured by WEC Group. The column shall be installed in line with the manufacturer's instructions and be complete with all necessary CCTV mounting brackets and fixings.

The column is to be located as to provide CCTV coverage to the bridge and moat entrance.

DUCT TO COLUMN LOCATION AND PARK BOUNDARY

In order to connect the column mounted CCTV camera to the workstation, the contractor shall supply and install 1No new 50mm ducts, as indicated on the design drawings. The contractor shall

also supply and install an additional 50mm green duct to the park boundary for future broadband fibre cables.

The contractor shall supply and install all necessary draw pits required in order to facilitate the data cable installation to the column and hall. Draw pits shall be manufactured by Cubis Systems and be from their Modula range, or equal and approved, and be complete with a Composite access cover.

Due to the heritage status of the grounds, archaeological interest and existing wildlife, all earthworks shall need to be co-ordinated with extreme care between the planning officer, contract administrator, archaeologists and ecologists.

Prior to trench works commencing, the contractor shall provide a detailed duct design drawing including any necessary topographic and tree surveys required.

The duct shall be 50mm green PVC and be complete with draw rope. Ducts shall be laid in accordance with NJUG and Openreach specifications.

Power Installation

Generally, the system of installation will be in LSF insulated LSF sheathed multi core and earth cables fixed to galvanised steel cable tray/basket installed in the ceiling voids wherever possible. In areas with no ceiling voids cables runs shall be agreed with the planning officer and contract administrator.

Sockets

The electrical Contractor shall supply and install the power installation as required for the installation of the CCTV system.

All socket outlets are to be RCD protected used single pole RCBOs with a tripping current of 30 mA.

The sockets are to be labelled accordingly as required by BS7671.

Socket outlets must have dual earth terminals.

The circuit list in each board shall be typed and shall give the circuit number MCB rating, cable size and a description of the circuit.

Generally, MCBs and RCBOs will be types B, C or D as indicated on the distribution board schedules, RCBOs are generally type B or C with 30mAmp trip RCD elements.

Surge Protection

The contractor shall supply and install Fuse or equivalent surge protection to be fitted in the cabinet to protect the incoming supply and the cables to the external cameras.

Testing and Inspecting

Testing of new parts of the installation shall be as per the general specification.

Spares

The contractor will supply the following spares:

- 1) Any Specialist tools required to access equipment installed.
- 2) All items as per general specification.

Accessories

Electrical accessories will generally be installed as indicated on the drawings and in accordance with the DDA regulations.

Isolators and fused connection units will be installed adjacent to the item of equipment being supplied.

All accessories are to be white mounted on high impact plastic boxes to match the surface trunking used when surface mounted.

Surface boxes are to be white finished to match the accessories.

All dual socket outlets are to be of the type with dual earth terminals throughout with all ring main circuits connected in accordance with section 543.7 of BS 7671 assuming that there will be high protective conductor currents generated by the computer equipment.

All accessories are to be manufactured by one of the following; all accessories are to be from one manufacturer.

Crabtree
Lichfield Road Stafford
Brownhills
West Midlands
WS8 6JZ

Schneider Electric Ltd
Park 5
Telford
Shropshire
TF3 3BL

MK Electric
Novar ED&S Ltd
The Arnold Centre
Paydock Road
Basildon

As Fitted Drawings

The Contractor shall include in his tender price for the preparation of “As Fitted” drawings.

At the commencement of the Contact, the Contractor will be provided with one complete set of drawings in addition to those issued for the execution of the works.

The “As Fitted” drawings shall be to a scale consistent with that used for the tender drawings and shall indicate:

- Exact locations of all electrical equipment and appliances installed and routes of main cable.
- Trunking routes, circuit references, designations and arrangements and the size and type.
- Alarm systems.
- Distribution and final circuit diagrams of the installation. Complete schematic.
- Wiring diagrams of controls where applicable. Concealed junction boxes and service points.
- “As Fitted” drawings shall conform in all respects to the complete installation.

Contractor shall supply the following:

- Two copies of “As Fitted” drawing on disc (Latest Autocad dwg format).
- Two Copies of black and white prints within the O & M Manual.

Operating and Maintenance Manuals

The Contractor shall supply TWO copies of the operating and maintenance manual (or series of manuals, if required by the extent of the installations).

The manual shall be loose leaf A4 sized, hard backed sub-divided for each section with a ready means of reference and detailed index. Each section shall be presented in a systematic form and the binder shall be no more than 70% capacity to facilitate ease of use.

The manual shall have the full project title mounted on the front cover and shall include the following:

- a) Description of the installation, itemising the main items of plant.
- b) Manufacturer’s literature/operating instructions.
- c) Complete schematic line diagrams of the installation.
- d) Regular maintenance description of all items of plant.

- e) Full list of spares.
- f) Commissioning and completion certificates for the whole installation.
- g) As installed drawings.

In addition, two copies of the O & M Manual shall be supplied on disc.

The Contract shall be deemed incomplete until the above have been supplied and approved.

Demonstrations

All systems must be fully demonstrated to the building end user.

This should be presented electronically on a disk.

Appendix 1 - Handover Documentation

M&E HANDOVER PLAN

Project Number:	Project Title:
Project Manager:	Location:

Activity	Action to/from/by	Due Date	Actual Date
Staff Training Carried Out	Contractor		
Witnessing of Commissioning	Contractor		
Demonstrations of plant, equipment and systems	Contractor		
Presentation of draft O&M manuals	Contractor		
Presentation of draft As-Installed drawings	Contractor		
Presentation of draft H&S File	Contractor		
Draft O&M manuals returned with comments	Designers/ Maintenance		
Draft As-Installed drawings returned with comments	Designers		
Draft H&S File returned with comments	Designers/ Maintenance		
Final O&M manuals issued	Contractor		
Final As-Installed drawings issued	Contractor		
Final H&S File issued	Contractor		
Works Inspection schedules issued	Designers		
List of required Commissioning and Inspection Certificates issued	Contractor		
PRACTICAL COMPLETION DATE:		**/**/**	**/**/**
Issue Practical Completion Certificate & distribute	Contract Administrator		
Distribute O&M manuals, As-Installed drawings, H&S File, Certificates etc.	Contract Administrator		
Staff Training Carried Out	Contractor		
Demonstrations of additional and/or specialist equipment and systems	Contractor		
List of required Commissioning and Inspection Certificates issued	Contractor		



MANCHESTER CITY COUNCIL

RECORD OF HANDOVER

Project Number: Project Title:
Project Lead: Location:

Sign Off Stage: Practical Completion ☐ Handover to Maintenance ☐
(more than one Post Occupation Review ☐ Project Completion (End of Liability) ☐
may be chosen)

Client: **Date:**

Comments.....

Building User: **Date:**
(if different from above)

Comments.....

Contractor: **Date:**

Comments.....

Project Lead: **Date:**

Comments.....

Name: **Date:**

Comments.....

Name: **Date:**

Comments.....

Confirmation of Training on Use of Building

Name Position: Date:

NB: Photographic record of condition of building to be attached.

Appendix 2 - Contractor's Cost Sheet

Reference	Description of works			
	Measured Work			
1	CCTV system			
2	Cabling			
3	Containment			
4	Firestopping			
5	Builder's works			
6	Commissioning / Testing / Certification			
7	As fitted and O&Ms			
8	Any item not included above			
			Total	
	Identified Risks			
ID1	Unforeseen electrical works			£1,000
ID2	Unforeseen asbestos works			£2,000
ID3				
ID4				
ID5				
			Total	
			Grand Total	

The contractor should identify any further known risks to the project.