

W42 CLOSED CIRCUIT TELEVISION

PART 1 SYSTEM OBJECTIVES

100.010 PERFORMANCE OBJECTIVES:

Provide a CCTV system to cover all entrance doors, both internally and externally, Level 0 communal areas and all accommodation corridors and lift cars, as indicated on the Concept Drawings and within the Room Data Sheets.

100.020 DESIGN PARAMETERS:

The CCTV system shall be designed and installed to Crime Evidence Standards, with 31 days recording capability.

100.030 SYSTEM DESCRIPTION:

CCTV

The CCTV system shall cover all entrance doors, both internally and externally, the communal areas, lift cars and all corridors.

Internal CCTV cameras shall be ceiling mounted, vandal resistant dome type. Externally mounted cameras shall be IP65 rated dome type cameras, mounted on wall brackets. All cameras shall be fixed lens, IP type with power over Ethernet.

All cameras shall link to the main system located within the Management Office. CCTV monitors shall be duplicated at the Reception Desk.

CCTV cameras are to be included within the lift cars, as part of the lift contractors works. These cameras are to be linked back to the main system within the Management Office, as part of the Electrical Sub-Contract works. As part of this Contract, the Electrical Sub-Contractor shall take the CCTV link from the Management Office to the lift control panels. Allowance shall be made for these to be located at the top of the lift shafts.

The CCTV system to the hotel shall be separate from the student accommodation system, with separate patch panels, management computers and programming locations for each system. All equipment required to run and manage the systems shall be provided as part of this contract.

The CCTV system shall be standalone, with all wiring separate from the data network. Separate patch panels shall be provided for the CCTV system.

100.060 SYSTEM DRAWINGS:

Conceptual drawings as indicated within the Drawing Schedule appended to this specification. The Electrical Sub-Contractor is to provide all design drawings.

PART 2 SELECTION SCHEDULES FOR REFERENCE SPECIFICATIONS

260.000 CONDUIT AND TRUNKING

260.010 GENERAL:

- Comply with work section general clauses reference Y60.1000 and those detailed below.

- Any conduit or trunking must support the function of the cabling system and provide protection, adequate separation distance and presentation as required by the cabling and EMC design.
- IT, BMS, security, data and voice cabling should be secured without deformation of the outer jacket and with a non-compressive securing tie. Zip ties should not be used unless written approval has been obtained.
- Zip ties should not be cut off to form a sharp end.
- Zip ties should not compress the cable jacket.
- Velcro, hook and eye ties or other non invasive ties must be used where possible.
 - Supply conduit and cable trunking as specified in section V20

261.000 CABLES AND WIRING

261.010 GENERAL:

- Comply with work section general clauses reference Y61.1010, Y61.1020, Y61.1030 and those detailed below.
 - Supply cables and wiring as Work Section V20

261.060 CONTROL AND AUXILIARY CABLES:

- Paired, screened control cables with or without metallic protection - reference Y61.2050B
- Multicore unarmoured LSF sheathed auxiliary cables - reference Y61.2050G

261.080 STANDARD COMMUNICATIONS CABLES:

- LSOH sheathing - reference Y61.2005
- Standard communications cables, for indoor use - reference Y61.2070B

261.110 INFORMATION TECHNOLOGY CABLES:

- Structured wiring
- Category 5e - reference Y61.2100A
- HBES Class 1 twisted pair - reference Y61.2100C
- Multi-pair cables for high bit rate digital access telecommunications networks - reference Y61.2100D
 - Reference Y61.2120#

261.260 WORKMANSHIP

- Cable installation - general - reference Y61.4010
- Installation of LSF cable - reference Y61.4030
- Installation of LSZH and LSOH cable - reference Y61.4030A
- Installation of unarmoured cables - reference Y61.4040
- Cable installation in conduit and trunking.
- Reference Y61.4090A
- Cable jointing and terminating generally.
 - Reference Y61.4150A
- Communications coaxial, optical fibre and IT cable installation, jointing and terminating.
 - Reference Y61.4200A

263.000 SUPPORT COMPONENTS - CABLES

263.010 GENERAL:

- Comply with work section general clauses reference Y63.1000 and those detailed below.
 - Supply support components as specified in Section V20

263.020 CABLE SUPPORT AND FINISHES:

- Cable supports and finishes
 - Reference Y63.2010A

263.030 CABLE SUPPORT SYSTEM:

- Type A
- Application *Cat5e cable containment*
- Proprietary cable ties - reference Y63.2025A
- Cable clips - reference Y63.2025B
- Cable basket - reference Y63.2025D

263.040 WORKMANSHIP

- Cable tray installation - reference Y63.3010
- Cable cleats, ties, saddles and clips installation
 - Reference Y63.3020A

280.000 EARTHING AND BONDING COMPONENTS

280.010 GENERAL:

- Comply with work section general clauses reference Y80.1000 and those detailed below.
- Supply earthing and bonding components as specified in section *W51*
- Where there is copper cabling requirement for voice and/or data, the contractor shall give consideration to the provision of a MESH-BN (Bonded Network) or equipotential bonding of the components within the communication rooms and distributors and state what has been included with the tender. Requirements and further guidance are set out in
 - BS EN 50310
 - BS EN 50174

281.000 TESTING AND COMMISSIONING OF ELECTRICAL SERVICES:

281.010 GENERAL:

- Comply with work section general clauses reference Y81.1000 and those detailed below.
- Carry out testing and commissioning of electrical services as section *V12*

282.000 IDENTIFICATION - ELECTRICAL

282.010 GENERAL:

- Comply with work section general clauses reference Y82.1000 and those detailed below.
- Supply identification - electrical as specified in section *V12*

290.000 FIXING TO BUILDING FABRIC

290.010 GENERAL:

- Comply with work section general clauses reference Y90.1000 and those detailed below.
- Carry out fixing to building fabric as specified in work section *V12*

291.000 OFF-SITE PAINTING AND ANTI-CORROSION TREATMENT

291.010 GENERAL

- Comply with work section general clauses reference Y91.1000 and those detailed below.
- Carry-out off-site painting and anti-corrosion treatment as work section *V12*

PART 3 SPECIFICATION CLAUSES SPECIFIC TO W42

300.010 CLOSED CIRCUIT TELEVISION (CCTV) SYSTEM:

- Standard
 - BS 7958.

- BS 8418.
- BS 8495.
- BS EN 50131-1.
- BS EN 50132-7.
- Third party quality assurance standard
 - National Security Inspectorate (NSI)
- Operational requirement To cover all building entrances, both internally and externally, all accommodation corridors and the interior of all lift cars.
- Carry out survey of proposed CCTV coverage both internally and externally.
 - Design CCTV system
- CCTV system coverage.
 - Ensure system provides effective and adequate viewing of areas indicated on the drawings at light levels
 - Bright sunlight down to
 - 0.4 lux.
 - Internal daylighting down to 100 lux.
- CCTV system monitoring
 - Ensure all human-machine interfaces and displays comply with the Disability Discrimination Act and BS 8300.
 - Provide means of selection and recording for system monitoring from reception and the Management Office.

300.020 CCTV SYSTEM SPECIALIST:

- Engage a CCTV specialist to develop design, supply, install, commission and set to work a complete CCTV system.
 - Ensure the CCTV specialist is approved by the National Security Inspectorate
- Gold Standard.

300.030 ELECTROMAGNETIC COMPATIBILITY:

- Ensure all equipment is compatible, and does not adversely affect, nor is adversely affected by, any other equipment installed in the same location.
- Ensure all systems are designed and installed with due consideration to good EMC practice, and in line with EMC requirements of relevant standards including: BS 7671, BS EN 50310, BS EN 50174.
- Ensure all equipment complies with the EMC Regulations (2006), carries the CE Mark, and is suitable for the EM environment in which it is to be used, for the service to which it is to be put.

300.040 SOFTWARE:

- Obtain on behalf of the end users all appropriate licences, permissions, copyright waivers, rights of use and the like from the owners of the software rights. Ensure that the end user is properly registered with the software supplier for support and appropriate updating. Provide documentation for application software in accordance with BS 7649.
- Ensure that, as far as practicable, all software is commercially available off-the-shelf.
- Ensure that any programmable configuration, customisation, and bespoke software, is developed, tested and commissioned using relevant processes and procedures complying with BS EN ISO 12207 or BS ISO/IEC/IEEE 15288, supported by a quality management system meeting the requirements of BS EN ISO 9001.

300.050 SAFETY:

- For equipment mounted at height, ensure that there is a safe method of access to facilitate installation and maintenance in accordance with applicable health and safety legislation.
- Ensure that there is an accessible means of isolation for safe maintenance of electrical equipment, in accordance with the Electricity at Work Regulations 1989.

310.000 PRODUCTS/MATERIALS

310.010 CCTV CAMERAS:

- Standard
 - BS 8418.
 - Colour for CCTV
 - Resolution
 - Active picture elements
 - Megapixel minimum of 6Megapixel
- Video output
 - 1 V peak to peak composite, 75 Ohm unbalanced
 - Features
 - On/off backlight compensation
 - Automatic black level
 - White clipper
 - Peak white inverter
 - Peak or average scene brightness level control
 - Automatic white balance
 - Through lens
 - Co-located monitor within Management Office and at Reception Desk.
- Lens mount
 - C-type
 - CS type
 - Lens
 - Focal length
 - Angle of view
 - Zoom
 - Manual
- Control and telemetry
 - Control and telemetry equipment in camera housing
 - Concealed camera
 - Power supply
- Power over ethernet

310.030 CAMERA CONTROL EQUIPMENT:

- Standard BS 8418.
- Control facilities
 - Focus
 - Aperture
 - Focal length
 - Dither
 - Scanning
 - Camera to hot standby
 - Peak or average selection
 - Peak white inversion
 - System test routine
 - Receiver for slow rate video transmission
 - Control features
 - Input and Output on PSTN or private telephone network for slow rate scan transmission
 - Output direct wired to camera
 - Video output to monitor
 - Integral with video switch
 - Display titling
 - Date and time
 - Camera identity

- Mounting
 - Rack mounted
- Environment within Management Office
- Power supply from local landlords distribution board

310.100 CCTV MONITORS:

- Standard
 - Full colour
 - Display compatible with BS EN ISO 9241-303.
- Flat panel display
 - Screen size (inches) minimum 21inch
 - Input
- HDMI
- Front panel controls
 - On/off switch
 - Brightness
 - Contrast
 - Vertical hold
 - Horizontal hold
 - Colour balance
 - Audio volume
- Performance
 - Response time better than 5 ms
 - Resolution
 - 1920 x 1080
 - Aspect Ratio
 - 16.9
 - Contrast ratio
 - 10,000:1
 - Brightness
- 250 cd/sq m
 - Mounting
 - Desktop complete with stand
- Environment *within Management Office and repeated at Reception*
- Power supply *from local landlords distribution board*

310.110 CCTV RECORDING, PLAYBACK AND PRINTING:

- Standard
 - BS EN 62676-4
 - BS EN 55020.
 - BS EN 55032
- Equipment
 - Digital recording system.
 - Input
 - HDMI
 - Digital recording facilities
 - Recording to hard disk *for a minimum of 90 days storage*
- Mounting
- Rack mounted
- Environment *within Management Office*
- Power supply *from local landlords distribution board*

310.190 CCTV NOTIFICATION SIGNS:

- Provide CCTV notification signs as current legislation and industry recommendations.

320.000 WORKMANSHIP

320.010 CCTV SYSTEM INSTALLATION:

- Install the CCTV system in accordance with the manufacturers recommendations and
 - BS 7958.
 - National Security Inspectorate (NSI) approved requirements, codes of practice and guidance.

320.020 CCTV SYSTEM COMMISSIONING:

- Demonstrate that the CCTV system meets the specified requirements and record results. Provide documented CCTV demonstration, as part of the operation and maintenance manual.
- Carry out demonstration using test objective as:
 - NSI approved standards and codes of practice.
 - BS EN 50132-7 Annex A

320.030 QUALITY CONTROL:

- Handle, store and install equipment and components of the radio/TV system in accordance with the manufacturer's recommendations.
- Inspect all equipment and components on delivery, before fixing and after installation and reject and replace any which are defective.
- Record all commissioning tests and site modifications to hardware and software, and revise operating and maintenance instructions accordingly.
- Manage configuration of software, settings, data and design, in accordance with an appropriate Configuration Management Plan complying as necessary with BS EN ISO 9001, BS ISO 10007, BS ISO/IEC 12207 and BS ISO/IEC/IEEE 15288.
- Provide configuration details along with the operation and maintenance manual on hand-over.
- Manage information security of systems, software and data during design, implementation and commissioning in line with BS ISO/IEC 27001

320.040 CCTV SYSTEM DOCUMENTATION:

- Prepare National Security Inspectorate (NSI) approved certification on completion, as part of the operation and maintenance manual.

320.050 TRAINING:

- Provide operator training for the CCTV system operators.
- Provide training for CCTV system maintenance staff.

BS APPENDIX

BS 7649:1993

Guide to the design and preparation of documentation for users of application software

BS 7671:2008+A3:2015

Requirements for electrical installations. IET Wiring Regulations. Seventeenth edition

BS 7958:2015

Closed-circuit television (CCTV). Management and operation. Code of practice

BS 8300:2009+A1:2010

Design of buildings and their approaches to meet the needs of disabled people. Code of practice

BS 8418:2015

Installation and remote monitoring of detector-activated CCTV systems. Code of practice

BS EN 50131-1:2006+A1:2009

Alarm systems. Intrusion and hold-up systems. Part 1 System requirements

BS EN 50132-7:2012

Alarm systems. Part 7 CCTV surveillance systems for use in security applications.
Application guidelines

BS EN 50310:2010

Application of equipotential bonding and earthing in buildings with information technology equipment

BS EN 55020:2007+A11:2011

Sound and television broadcast receivers and associated equipment. Immunity characteristics. Limits and methods of measurement

BS EN 55032:2015

Electromagnetic compatibility of multimedia equipment. Emission Requirements

BS EN 62676-4:2015

Video surveillance systems for use in security applications. Application guidelines

BS EN ISO 9001:2015

Quality management systems. Requirements

BS EN ISO 9241-303:2011

Ergonomics of human-system interaction. Requirements for electronic visual displays

BS ISO 10007:2003

Quality management systems. Guidelines for configuration management