**Specification for Entry Systems & Proximity Access Control.**

Royal Borough of Kensington & Chelsea

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CONTENTS

1 NEW, REPLACEMENT & UPGRADE OF SYSTEMS

2 DOOR ENTRY SYSTEMS GENERAL REQUIREMENTS

3 CLASS OF WORKS

4 EQUIPMENT

5 GENERAL DESCRIPTION OF OPERATION FOR DOOR ENTRY AND PROXIMITY ACCESS CONTROL SYSTEMS

6 SYSTEM DESIGN

7 NEW INSTALLATIONS & UPGRADES: DOOR ENTRY SYSTEMS

8 ENTRANCE PANEL

9 DDA REQUIREMENTS

10 STYLE OF PANELS

11 SYSTEM CONTROL UNIT

12 RESIDENTS TELEPHONE HANDSET/ROOM TERMINAL

13 PUSH TO EXIT BUTTON

14 ELECTRIC DOOR RELEASE

15 EMERGENCY SERVICES ACCESS SWITCH/FIRE SWITCH

16 PROXIMITY ACCESS CONTROL

17 ELECTRICAL SUPPLY

18 BUILDERS WORKS

19 EXISTING CONTAINMENT SYSTEMS

20 CONDUIT SYSTEM

21 FIXINGS

22 CONDUIT (STEEL)

23 CONDUIT (FLEXIBLE STEEL)

24 CONDUIT (UPVC)

25 CONDUIT FITTINGS

26 METAL CONTAINMENT/METAL FRAMEWORK & SUPPORTING STRUCTURES – TREATMENT

27 TRUNKING (STEEL)

28 TRUNKING (UPVC)

29 WIRING

30 DECOMMISSIONING OF SERVICES, ACCESS AND REMOVAL OF WASTE MATERIALS

31 OPERATING AND MAINTENANCE MANUALS

32 INFORMATION TO TENANTS.

33 TESTING AND COMMISSIONING

34 COMMUNAL ENTRANCE DOORS & LOCKING DEVICES (GATES)

35 DEFECTS LIABILITY PERIOD

APPENDIX 1 - TYPICAL AUDIO

APPENDIX 2 - COMMUNAL ENTRANCE DOOR TYPICAL DOOR DESIGN

APPENDIX 3 - SCHEDULE A - SCHEDULE OF SPECIFIED MATERIALS

APPENDIX 4 - FRP-013 – EMPLOYERS REQUIREMENTS PROCESS

APPENDIX 5 – PROPERTY LIST SCHEDULE - TBC

APPENDIX 6 – PRICING SCHEDULE

APPENDIX 7 – QUALITY QUESTIONS

# SECTION 1 – NEW, REPLACEMENT & UPGRADE OF SYSTEMS

# SCOPE OF CONTRACT

The scope of the contract includes for the following type of service for the various types of equipment detailed.

1. Supply and installation of new systems.

The door entry systems shall be supplied, installed, and commissioned to the following requirements and read in conjunction and to the following suite of documents –

1. TYPICAL AUDIO SYSTEMS
2. SCHEDULE OF SPECIFIED MATERIALS
3. FRP-013 – EMPLOYERS REQUIREMENTS PROCESS
4. PROPERTY LIST SCHEDULE – **To be advised**
5. PRICING SCHEDULE

Audio door entry system shall be installed in all cases.

1. **SECTION 2 - DOOR ENTRY SYSTEMS GENERAL REQUIREMENTS**

# These clauses shall be read in conjunction with the specification and all other sections of this specification. Where two different standards are cited the higher standard shall prevail in all instances.

# General Requirements All electrical installation works shall be designed, selected and erected in compliance with BS 7671: 2018 Requirements for Electrical Installations (including all Amendments up to the date of tender).

# This section of the Specification shall be read in conjunction with all other sections and, the electrical engineering general clauses.

# Particular attention is drawn to the following, which lists relevant statutory instruments, regulations and codes of practice.

# The list is not exhaustive and any omissions from the list shall not exonerate the Contractor from his Responsibilities under his duty of care.

a) The Housing Act 2004

b) The Health & Safety at Work Act 1974.

c) The Electricity at Work Regulations 1989.

d) The Construction, Design & Management Regulations 2015.

e) The Management of Health & Safety Works Regulations 1992.

f) The Workplace (Health, Safety and Welfare) Regulations 1992.

g) The Provision and Use of Work Equipment Regulations 1992.

h) The Manual Handling Operations Regulations 1992.

i) The Personal Protective Equipment at Work Regulations 1992.

j) Regulatory Reform (Fire Safety) Order 2005.

k) BS 7273-4 Code of practice for the operation of fire protection measures – part 4: Actuation of release mechanisms for doors

l) The Control of Substances Hazardous to Health Regulations 1988.

m) The Noise at Work Regulations 1989.

n) The Abrasive Wheels Regulations 1970.

o) The Health & Safety (First-Aid) Regulations 1981.

p) The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013.

q) The Highly Flammable Liquids & Liquefied Petroleum Gases Regulations 1972.

r) The Safety Representative and Safety Committees Regulations 1977.

s) The Health and Safety (Safety Signs and Signals) Regulations 1996.

t) Health and Safety Information for Employees Regulations 1989.

u) The Control of Asbestos at Work Regulations 2002

v) All relevant Building Regulations.

w) Local Bye-Laws (including Fire Officer’s requirement).

x) Trade Association Recommendations, such as – National Inspection Council for Electrical Installation Contracting, and in particular their Technical Guidance Manuals.

y) Chartered Institution of Building Service Engineers (CIBSE) Recommendations.

z) Employers Site Access & Security Regulations.

The Contractor shall comply with:

a) All Standards referred to within this Specification.

b) CIBSE Publications.

c) Fire safety in construction: HSG168

d) Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).

e) Workplace health, safety and welfare. Workplace (Health, Safety and Welfare) Regulations 1992. Approved Code of Practice and guidance

f) Regulations under the Electricity Acts.

# All works shall be installed to facilitate ease of inspection, testing and maintenance. The Contractor shall make good at no extra cost to the Contract any part of the works that has not been carried out to the full satisfaction of the Engineer/Project Manager.

# All cables shall be routed and supported to be a minimum distance of 100 mm clear of steam, water or other pipe work and ventilation duct work when fully lagged or insulated. A minimum separation of 300 mm shall be maintained between any other heat emitting surface of plant, equipment or pipe work that is not lagged or insulated. Where these requirements cannot be met, the Contractor shall refer to the Engineer before starting that section of the works. Electrical services which run parallel with hot water or heating services pipes shall not be installed above such services. Temporary electrical installations shall comply in all respects with BS 7671 and all relevant codes of practice. Under no circumstances shall temporary electrical installations be allowed to compromise health and safety.

# SECTION 3 - CLASS OF WORKS

# All works shall conform to the best principles of modern practice and shall be carried out by fully competent tradesmen of the appropriate grades.

# The whole of the works shall comply with the requirements of the following bodies or authorities where applicable, with all amendments in force at the date of tender: -

# The Regulations for Electrical Installations 18th Edition as published by the Institution of Electrical Engineers subsequently referred to as the IET (IEE) Wiring Regulations.

# The Electricity Supply Regulations 1988.

# The relevant Codes of Practice and British Standard Specifications as published by the British Standards Institution.

# The Fire Officers Committee Regulations and the Local Fire Officers requirements.

# Local Bye Laws and the regulations and requirements of other Authorities.

# Health and Safety at Work Act 1974 with particular reference to the Electricity at Work Act 1989.

# Building Regulations. viii)Any other relevant regulations statutory or otherwise.

# All works shall be installed to facilitate ease of inspection, testing and maintenance.

# The Contractor shall make good at no extra cost to the Contract any part of the work that has not been carried out to the full satisfaction of the Engineer.

# Information to be Provided by the Contractor

# Contractor Survey Details

# A fully detailed survey shall be carried out, by the Contractor, to ascertain all relevant site details, prior to carrying out any drawings works and ordering of materials or construction works. The survey shall include but shall not be limited to:

# Positions of existing doors and screens.

# Positions of existing door entry equipment, including door panels, RTE buttons, stand-alone fob readers, control and intermediate panels, power supplies and the like.

# Building finishes (walls, ceilings and floors).

# Location of electrical supplies and other services.

# Location of risers.

# Working Drawings

# Working drawings shall be provided for all installation works. Existing building layouts are not, generally, available and the Contractor shall include for preparing layouts of all relevant areas affected by the ingoing doors and door entry systems. These shall be provided in sufficient detail to enable the scheme to be reviewed as a whole.

# The Contractor shall include in his tender for the preparation of all Working, Drawings, Builders Work and Installation Drawings together with any detail drawings necessary to facilitate the installation, to the satisfaction of the PROJECT MANAGER.

# Such drawings shall be submitted to the PROJECT MANAGER for comment in such time so as not to impede the progress of the Works. A period of 14 days minimum from receipt of drawings is required by the PROJECT MANAGER to comment on the drawings prior to use by the Contractor as Construction Drawings.

# This time period shall be included in the Contractor’s programmes. Such general comments as given by the PROJECT MANAGER shall not relieve the Contractor of any responsibility for the accuracy of details as set out on the drawings. Failure to prepare and present Working and Construction drawings to the PROJECT MANAGER, as required above shall render the Contractor liable to all consequential costs incurred by the Employer or the PROJECT MANAGER in the correction of the Works Working drawings shall comprise:

# Fully dimensioned plan of location(s) of ingoing services and equipment (including cabinets, buttons, switches, panels risers and the like)

# Fully dimensioned details of all equipment being installed and its relationship to the other equipment and to the building.

# Details of any text and wording required (including engraving details, address, numbering and the like.)

# Details of coordination with existing buildings, including locations of risers and switchrooms and any locations in which equipment will be installed.

# Coordination of ingoing services and installations with any existing services

# Coordination with any temporary structures, services, components and the like.

# Any temporary works required, especially to maintain existing systems

# Details of how the new scheme integrates into the existing building including fillets and fillers, trimmers, cover strips thresholds and other building interfaces.

# Details of fixings to the structure. NOTE gaps in the building shall not exceed 6mm. Any fixings with gaps found to exceed 6mm will not be accepted.

* + 1. PROGRAMME/CASH FLOW PROJECTION

1. The Service Provider shall prepare a programme of work to meet the completion dates given and shall submit this programme at the start of the contract to the Client Representative for approval.
2. The supplier shall provide, alongside the project programme, a cash forecast projection for the full duration of the all works associated with the project. This will include pre-start, main body of works and post project associated costs.
3. The forecast will highlight expected monthly expenditure, inclusive of all anticipated costs, as a single line cost, shown as pounds sterling for the respective calendar month. This will be listed by calendar month and based on the Borough’s financial year cycle; that is April through to the end of March.
4. Where the project duration extends past the end of the current financial year, then a separate book will be presented, detailing proposed expenditure covering the following year, and so forth.

**NOTE: These requirements exceed the standards and services offered by many suppliers. The Contractor shall ensure all his suppliers are fully aware of the requirements of this specification**

# SECTION 4 - EQUIPMENT

* 1. The equipment covered by this contract shall include but not necessarily be limited to the following components, modules and systems detailed below.
  2. Variation of Equipment Where equipment listed has been specified by a single supplier name, equal and approved shall be considered during the tendering process. A full letter of explanation is to be included within the proposal highlighting the advantages of changing the manufacturer. The equipment shall meet the specification below 100%.
  3. Entrotec Door Entry Systems
  4. Entrotec Door entry control equipment.
  5. Audio equipment (Video as required when upgrading an existing video system).
  6. Door entry handsets.
  7. Power supplies for door entry systems.
  8. KMS proximity access control key fobs, readers & controllers.
  9. Magnetic and electric lock releases.
  10. Steel, aluminium & timber Communal Entrance Doors.
  11. Door closers.

# SECTION 5 - GENERAL DESCRIPTION OF OPERATION FOR DOOR ENTRY AND PROXIMITY ACCESS CONTROL SYSTEMS

* 1. RBKC requirement for the supply of Door Entry equipment is a vandal resistant fully isolated door entry system with dedicated hard-wired resident’s room terminal with each dwelling. The door entry system shall be integrated the remotely programmed and managed via a Cloud based Proximity Access System using GPRS modems and contract SIM cards on site or where indicated a broadband router and line. Please refer to performance specifications in these documents listed below in conjunction with the Materials & Specified Manufactures specifications.
  2. RBKC require that B1 of the Building Regulations 2010 is specifically considered, in relation to means of escape, and all associated Standards that so relate, including the recommendations detailed in BS 7273-4:2015 (as appropriate) are incorporated within the project.
  3. RBKC require that B5 of the Building Regulations 2010 is also considered in respect of access to the site by London Fire Brigade. Given that the work is likely to constitute Building Work as defined in Regulation 7 of the Building Regulations, it is considered to be a requirement that an application be made to the local authority Building Control, which will facilitate statutory consultation with the fire and rescue authority via Building Control.
  4. The Door Entry and KMS Proximity access control system shall be supplied and manufactured and integrated by SBD Member Company: Entrotec Limited, Access House, 5 Ashwood Court, Oakbank, Livingston, EH53 0TL. Contactor shall purchase all KMS via Entrotec.
* Contact: John Cossey. Email: [johncossey@entrotec.co.uk](mailto:johncossey@entrotec.co.uk)
* Telephone No: 01506 886230: DDL 01293 530117: Mobile 07836310677
* Web: [www.entrotec.co.uk](http://www.entrotec.co.uk)
  1. Variation of Equipment. Equal and Approved shall not be considered unless approved in advance by the CONTRACT ADMINISTRATOR and a full letter of explanation is received demonstrating the advantages of changing the manufacturer. The equipment shall meet the specification below 100%. A contactor can only put an alternative equipment manufacturer forward at a pre contract meeting and only if in full agreement with the client’s M & E consultant (where applicable) and the CONTRACT ADMINISTRATOR.
     1. Where the contractor wishes to deviate or vary from the preferred equipment manufacture or specialist, they must complete the tender return using Entrotec equipment as per the specification. If the contractor wishes for an alternative equipment manufacturer or specialist to be considered then they must provide, on a separate sheet, a costing break-down showing a like for like alternative in a similar format to that of the tender return. They shall provide a detail letter explaining why they wish to deviate from the specified equipment with a list of advantages and a full specification for the alternative manufacture, including a detailed break-down showing on a comparable, like for like equipment list.

1. All dwellings shall be provided with a hard-wired Door entry system. Telephone based systems calling residents PSTN/Broadband or mobile phones shall NOT be acceptable.
2. All equipment shall be supplied and installed to the latest and relevant British Standards.
3. The installation shall be by the specialist door entry contractor, who shall supply and 2nd fix all the equipment. The specialist shall also be approved, accredited and certificated by Entrotec the door entry manufacturer and by KMS the proximity access control manufacturer.
4. The installer shall provide to the PROJECT MANAGER current certification that specialist is a current Entrotec & KMS approved installer with proof of manufactures approval and engineering training certification.
5. Contractors shall provide details of the site requirements to Entrotec and obtain a quotation to suit the site including a cost for commissioning by an Entrotec approved specialist security installer or commissioning agent, whom the contractor shall employ direct to final connect and commission the systems.
6. Electrical contractors can carry out the electrical installation but shall not supply or second fix the equipment. This shall be by a specialist door entry contractor. The specialist contractor shall be a current Entrotec accredited specialist approved installer.
7. The installation contractor shall supply a tender return or price for a complete working system. Supplied and installed by a specialist door entry contractor, with associated costs for commissioning. Costs shall include all warranty call outs. Including equipment warranties, to allow the specialist to be responsible for all call outs, relating to the equipment.
8. The installer shall provide evidence that the system has been installed and commissioned by a current Entrotec approved installer. The contractor pre tender return shall provide Entrotec with the full specification and required drawings and door information to allow Entrotec to supply the correct equipment.
9. The door entry system shall be as manufactured by Entrotec Limited and be a fully isolated system.
   1. This shall be either the: -
   2. Apex Functional system. For system with up to 8 dwelling.
   3. Apex Digital system. For system with 9 and above dwellings.
   4. The system installed shall be capable of operating in the manner described below: -
   5. Allow a visitor to ring any selected dwelling within the system and hold a two-way simultaneous conversation with the occupant of the dwelling.
   6. Allow the occupant of the dwelling to operate the electric locking device to unlock the communal entrance door. The electric locking device, when electrically operated, shall be accompanied by an audible and visual indication to the visitor, that the door has been released.
   7. Trades button and facility shall be required. Trades entry also shall be via a dedicated key fob(s) supplied by the client. Trades clock times shall be set and clarified via the PROJECT MANAGER. (Unmarked and inactive on New build or as client directs)
   8. Provide a timed harassment control privacy switch on each handset with illuminated RED LED to allow the occupants to switch off their individual Entryphone handsets for a variable time that shall automatically reset after a pre-set period, pre-set period factory set to 8 hours.
   9. Provide live door monitoring on the handset by use of a Green LED which shall illuminate when the main entrance door is open and permanently illuminate if the door is left open.

# SECTION 6 - SYSTEM DESIGN

* 1. The contractor shall obtain a quotation for the supply only of the door entry system, integrated KMS cloud proximity access control system to the latest equipment performance specification as set, and required by RBKC. This shall be obtained from the equipment manufacturers and suppliers Entrotec Limited.
  2. The telephone entry system shall be of a high specification isolated type, with standby battery facility to operate the system in the event of a power failure. The system shall incorporate timers for the various functions afforded by the system.
  3. Telephone based calling door entry systems using PSTN & GMS calling residents landlines or mobile phones shall NOT be acceptable.
  4. The system shall be capable of controlling multiple doors using the Apex System, with facilities to include expansion of the system, when minor adaptations are undertaken.
  5. The entrance panel shall be vandal resistant stainless steel and provide a minimum rating of IP44.
  6. A central control unit of high specification, containing the necessary facilities to provide the following features: -

1. Full secrecy of conversation between caller and any individual tenant’s handset to the front door only.
2. Audio door entry system on blocks served by a single or dual entrance to a stair core using ED4+ audio handsets.
3. Lock release, only operable after lifting of the handset in the dwelling called.
4. Timed lock release for 10 seconds from both handset and proximity fob operation.
5. Timed call up facility from the door panel for 30 seconds.
6. Timed speech facility for 2 minutes.
7. Adjustable reassurance tones at the entrance panel for call tone and door open.
8. Separate adjustments for system call tone and panel reassurance tone volume.
9. Visual OLED message display white on black (OLED) for flat Calling, speak now, door open and system busy/call waiting on Functional and digital call panel systems.
10. Equipment to be mounted to meet current BS8300 and disability discrimination act.
11. The facility to add on hard of hearing aids.
12. The facility to add additional handsets in any given dwelling.
13. The facility for controlling a minimum of two entrance doors, with the facility to add further doors as per the system design.
14. Full isolation of all circuits connected to the system controller.
15. To provide a double pole, double throw, Push to exit (PTE) switch to the front doors.
16. PTE shall be complete with a large 25mm button, including a DDA yellow contrasting ring.
17. PTE Plate engraved above the button in Green “Push to Exit” and in Red below the button “In emergency press and hold button while opening door.”
18. All cabinets shall be fitted with Screw fixed traffolite labels “Door Entry System” & “Fob Equipment”.
19. Where the control equipment cabinet is located outside a secure cupboard, the cabinet shall be fitted with a hasp and staple and secure common access suited padlock.
20. To provide a proximity system (KMS) to control both front (and any rear if required) doors. KMS controller shall be supplied and fitted with in the Entrotec Sarel enclosure complete with a GPRS modem and contract SIM card. GPRS modem connected to an external high gain aerial, located in the optimum signal strength position on the building. Contactor to check and confirm position using a signal strength meter and provide the results of the test to the PROJECT MANAGER on request. (Aerial cable length to suit the location of the aerial in relation the GPRS modem and KMS equipment with 15/20 meter cable).
21. SIM card shall be a data contract SIM card complete with pre-register information and numbers supplied complete with GPRS modems by Entrotec including a two-year contract and Simplekey hosting. SIM card fitted within the GPRS modem by the installer including within the equipment supply cost.
22. Provision of a self-contained standby battery facility capable of operating all the functions of the system for a minimum period of at least 5 hours (7 AH battery).
23. All switched fused spurs powering any door entry equipment shall be upgraded and replaced to an Unswitched fused spur.

# SECTION 7 - NEW INSTALLATIONS & UPGRADES: DOOR ENTRY SYSTEMS

# Basis of Costs - Audio Door Entry System with 4 Main Entrance Doors.

# The contractor shall survey the required block(s) and supply survey photographs of the existing block and installation to the PROJECT MANAGER with the returning upgrade costs. The photos shall show the following:

* 1. External block photograph.
  2. Existing communal entrance doors. This shall include all controlled doors operated with a communal Fob or mechanical key, including bin and bike stores.
  3. Existing call panels and proximity readers.
  4. Existing containment system in communal areas
  5. Existing containment system in a dwelling if possible.
  6. Existing main equipment and location.
  7. Existing cabling.
  8. Existing locking system, including lock release or magnetic lock, lock case and cylinders.
  9. On completion of the installation the contractor shall send as installed photographs of all items as listed above **a to h**.
  10. Contractor to supply and install to RBKC performance specification as included as section 1 of this document.
  11. The tenderers are to price systems as follows: -
  12. Install new Entrotec audio door entry system, as per equipment performance specification.
  13. Call Panel - 2.5mm stainless Steel to BS316 Call Panel with Mitred Bezelled back box, Call Buttons with Yellow contrasting rings (Functional call panel only), On digital system white LED contrasting rings on the digital keypad shall be used, Visual display unit, KMS Proximity Reader.
  14. Door Entry Entrotec Apex Controllers (dependant on the size of the system), with integrated KMS controller and GPRS modem, SIM card with external high gain aerial.
  15. SIM and Host fee for 24 months.
  16. KMS shark tooth pre-programed colour key fobs. 3 per flat + 20 spare.
  17. Entrotec ED4+ handset, one per dwelling.
  18. Entrotec PTE/EPTE/YR Push to Exit where electronic exit of the door is required, this shall be either flush or surface as the installer requires to suit the block and installation.
  19. New Fire switches for any MED or controlled access where the fire service will require access.
  20. All cabling to Entrotec the manufacturers recommendations, with individual 6 pair CW1308 to all dwellings.
  21. All containment lids shall be secured using security screws.
  22. All cabling fitted in plastic trunking above doorways shall be secured within the trunking using metal cable retain clips.
  23. Where pre-existing cylinders have been removed, contractor to allow for blind roses to ensure for satisfactory finishes.
  24. Installation of a new suitable fail-safe locking device to all controlled doors including new lock cases and locking devices as required.
  25. All lock connections shall not be made in the call panel and shall be connected to a secure lock relay connection with in the door entry main equipment.

# SECTION 8 - ENTRANCE PANEL

# The panel fascia shall be manufactured from 2.5 mm, BS 316 stainless steel plate with a polished smooth finish. The panel shall front fixed with tamper resistant counter sunk Allen screws, requiring the use of a special key for removal and refitting.

* 1. The call panel, entrance door and adjacent area shall be adequately illuminated, by lighting directly above the entrance area.
  2. The push buttons within the fascia are to be stainless steel, with a minimum diameter of 20mm, and shall be designed to withstand heavy impacts. All buttons shall be round, and flush fitted with an integral shoulder to prevent the ingress of moisture.
  3. On functional panels the buttons shall be mounted directly onto the front of the stainless-steel panel fascia and shall be fixed via a locking nut.
  4. On Functional panels, the buttons shall be moving vandal resistant stainless-steel buttons (VRB). All buttons shall be integrated with a yellow DDA contrasting ring.
  5. On Digital style keypad panels, the button shall be supplied with an illuminated digital keypad button arrangement with illuminated numbers on the button faces. The keypad shall be a standard DDA keypad layout 0–9 with contrasting rings, call and cancel buttons with braille and a pimple on the number “5” button with a dual call/trade button.
  6. Buttons shall be clearly numbered to match the corresponding dwelling numbers, and all engraved on the button face (up to three characters) or to the left of each button. All engraving shall be a minimum of 6mm high and in black laser etched text. Standard simple operating instructions shall be included on the call panel (functional only, with digital call panels having the instructions on the OLED message display. Where more than three charters are required to be engraved this shall be approved by the PROJECT MANAGER in advance and engraving shall be to the left of each call button with two columns of buttons. Engraving sheets shall be requested from Entrotec by the installer in advance to facilitate the extra cost of a two-column button arrangement call panel.
  7. The panel shall be specifically designed for flush mounting in conjunction with a purpose made back box. The back box shall have a stainless-steel laser cut bezel style flange to protect the edges of the panel from attack. The back box shall be sealed to the Fence Railings or side railing screen at the top and sides to prevent the ingress of moisture when the front panel is fitted. The concealed part of the back box shall be constructed from either stainless steel or galvanised steel.
  8. The panel shall incorporate a separated split speaker amplifier unit and microphone of high quality, operating over a frequency range of 200 Hz to 8k Hz with sufficient sensitivity to maintain speech clarity over ambient noise level without distortion, and should have separate controls for the adjustment of the microphone and speaker levels. The speaker shall have a waterproof cone, and the microphone shall be fitted separately from the speaker. A stainless-steel mesh shall be fitted between the rear of the panel and the speaker/amplifier to provide protection from objects being pushed through the matrix of holes on the fascia panel.
  9. All connections to the Entryphone panel shall be made using Klippon type connectors having clamp style terminals, with wire protection leaves.
  10. At no time shall any lock connections be made within the call panels. Lock cables shall be run direct from the systems controllers to the locks via any PTE, fire switch, AOV/FA/SD or BGU. Call panel back boxes shall not be used as lock cable junction boxes.
  11. The call panel shall be mounted to the current Equality Act, BS8300 and the disability discrimination act. Ideally between 900 and 1050 FFL with in 200mm of the door locking device on the locking device side of the door.
  12. FUNCTION STYLE CALL PANELS – shall be supplied only to buildings where there is an alphanumeric requirement, such as 22a, 22b, etc. in all other situations a digital panel will be used. This will only be sanctioned by prior agreement of the CA/PM.
  13. DIGITAL STYLE CALL PANELS – shall be supplied on building serving 9 dwellings and above served from a communal entrance.
  14. All engraving sheets shall be sent to the client for approval by the PROJECT MANAGER prior to manufacturer.

# SECTION 9 - DDA REQUIREMENTS

* 1. All call panels shall have a yellow ring that surrounds the button to assist the partially sighted distinguish the contrast of stainless steel of the button and that of the stainless-steel panel.
  2. The Block address and flat numbers shall be shown with in the OLED display. All standard engraving in Title and sentence case. Maximum of 16 charters per line, two lines.
  3. The proximity access control reader legend shall be white with a raised tactile blue key symbol.

1. **SECTION 10 - STYLE OF PANELS**

All system no matter the size shall have a Digital style call panels shall be complete with an illuminated digital standard 4 x 3 keypad arrangement 0-9, with “Call”, “Cancel” buttons. Buttons with LED hallo forming the contrasting rings and button number and illumination. A Braille pimple shall be on the number 5 button with Braille and 6mm wording “Call” and “Cancel” under each button. The call button shall have an illuminated green telephone and cancel button an illuminated red cross pictorial and tactile symbols with audio visual indication and operating instructions and call progress. Where multiple blocks are called from a gated call panel a 4 x 4 keypad, 16 button call panel shall be used with an A, B, C and Scroll button. The scroll button shall be used to select the block required before a call to a dwelling can be made.

The only exceptions to above is where there are Alphanumerical flat numbering. Where there is a dwelling that is a number followed by a letter of either A, B or C e.g., 23A, 23B or 23C then the Apex 4x4 16 button keypad shall be used. Where the flats numbers are A, B, C,D,E etc then an Apex functional call panel shall be used with moving VRB buttons with yellow contrasting rings. This will be up to 12 dwellings/buttons. After this number it will be classed as a special and must be discussed with the PM for the various options that can be offer as an alternative.

* 1. **Digital Style Call Panels.**
     1. In addition to the requirements of the functional panel Digital panels shall have a Braille dimple on the number five to aid the visually impaired.
     2. The panel shall have illuminated buttons with an OLED message display showing the block name and instruction messages.
     3. Braille engraving, “Cancel” & “Call” shall be included below the cancel and call buttons.
     4. The button layout shall be a standard keypad arrangement with a raise pimple on the No. “5” button.
     5. The contractor shall refer to Appendix 1A for reference to whether a functional, or digital system is required.
     6. The system shall have audio and visual indications with an adjustable reassurance call tone for “Calling” & “Door Open”.
     7. The call panel shall have pictorial symbols to show and indicate the location of the speak and microphone.
     8. The call panel and PTE shall be fitted in accordance with the latest BS8300 requirements and 2010 Equality act.

# SECTION 11 - SYSTEM CONTROL UNIT

# The power supply/control unit shall be located within the respective intake cupboards for each staircase, the exact location to be determined in conjunction with the Project Manager / Project Managers Representative.

* 1. The power supply/control unit shall be housed in an IP 66 Sarel surface lockable steel cabinet with chassis plate, securely fixed to the wall, and fitted with a 1242E cabinet lock.
  2. The cabinet shall be clearly marked with screw fitted cabinet traffolite labels engraved “Door Entry System” & “Fob Equipment.” Where cabinets contain both systems, a combined label shall be fitted “Door Entry & Fob Equipment”.

* 1. The main equipment shall incorporate a 6-amp internal MCB for local isolation. Internal spurs and other devices are not acceptable. The MCB shall be enclosed with in a purpose made cover plate/box.
  2. The system control unit shall support the features and functions specified herein.
  3. The conduit system for the Entryphone shall be coupled directly to the steel cabinet housing, using conduit couplers and male brass bushes.
  4. The circuitry of the control unit shall be mounted on a printed circuit board, excepting the terminals for the incoming connections. The 230v mains supply shall be connected to an unswitched fused spur externally to the control cabinets that in turn connects to an internal 6-amp MCB fitted with in the cabinet. Spur by installer fitted directly under the control equipment cabinet.
  5. Each dwelling shall be individually wired to a separate removable terminal connection block on the PCB.
  6. Each dwelling terminal block and handset port shall have an LED to indicate port live and blown fuse situations.
  7. The power supply/control unit shall incorporate a suitable switch mode PSU and all door entry PCBs. Equipment shall be integrated with KMS proximity access control equipment.
  8. All equipment shall be earth bonded together with a common 0v bond across all PSU’s.
  9. The system control unit shall house the standby power supply, which shall consist of a constant voltage, temperature compensated float charger and sealed lead-acid batteries of sufficient capacity to support the system in a fully functional status for a minimum period of 5 hours (7AH). This must include the front and rear door locks and the entry phone system.
  10. Where every possible the proximity access control equipment shall be housed within the same Sarel IP66 enclosure as the door entry equipment.
  11. All wiring entering the control equipment shall enter the enclosure from the bottom of the box. Top entry cabling is NOT acceptable.
  12. All cabling entering the box shall include a maintenance loop with a minimum of 1 meter tails per cable.

# SECTION 12 - RESIDENTS TELEPHONE HANDSET/ROOM TERMINAL

* 1. The telephone handset/Room Terminal shall be constructed from ABS impact resistant, toughened plastic, and shall be suitable for wall mounting.
  2. All handsets shall be audio only ED4+.
  3. The telephone/Room Terminal shall be factory manufactured to incorporate the following: -
     1. Full Duplex speech, with facility for privacy of conversation.
     2. Nuisance on/off non latching type switch with soft touch control, to disconnect the sounder call circuit, complete with Red LED indicator with pictorial symbol.
     3. Timer for Nuisance switch adjustable individually between 15 minutes and 8 hours. (Factory set to 8 hours)
     4. Large Door release button/switch to open the secure door from which the call originated with pictorial symbol.
     5. Door open monitoring Green LED to indicate if any of the monitored doors have been left open, and which illuminates when the door is open.
     6. Adjustable DC sounder and ringing tones. Individually adjustable to turn the call tone down.
  4. The handset shall be generally installed in the hall/entrance areas to the dwellings cable fitted in protected in mini trunking. The exact location of the handset shall be agreed with the Project Manager / Project Managers Representative for each dwelling type. An instruction leaflet shall be left in each dwelling to show the resident the operation.
  5. The system/handset shall have the facility for the addition of accessories to aid tenants with hearing disabilities.
  6. Mobile or landline telephones shall not be used to answer the call. This shall be via a dedicated door entry handset. These types of systems are unacceptable.

# SECTION 13 - PUSH TO EXIT BUTTON

# The Contractor shall supply and install Exit Switches, to be sited to the door handle side of each exit door. The PTE must NOT be positioned next to any BGU or AOV/FA BGU. The PTE shall be positioned so that the user can operate the switch and push the door open simultaneously. There shall be at least a clear 1-meter distance between the two types of devices.

* 1. The exit switches shall be stainless steel type with a large 25mm button with DDA yellow contrasting ring.
  2. The button shall be double pole N/O N/C contacts with two separate commons. When operated and the button is held down the exit buttons N/C contact shall disconnect the positive supply to the magnetic locks making if a true fail safe way of exit, common and N/C. Normal operation shall be a simple press of the button that shall use the N/O contacts to instruct the door entry system to produce a timed release, common and N/O.
  3. Engraved above the button shall be “Push To Exit” in green and engraved in also in green the button shall be “EMERGENCY DOOR RELEASE”– **Type PTE/EDR/OL.**

* 1. If the PTE is required to be surface mounted the contractor shall allow for either a stainless-steel surface back box (External) or green powder coated surface mount back box (Internal).

**BREAK GLASS UNIT (BGU)/RESETTABLE CALL POINT**

Where the PM/CA instructs the installer, provision shall be made for resettable break glass units for emergency door release.

* 1. The contractor shall supply and fit a green resettable call point with clear plastic protective cover for each door secured by Maglocks.
  2. BGU shall not be fitted side by side to the PTE and shall be separated to avoid accidental use and shall be 2m away from the controlled door.
  3. BGU shall incorporate both push to break and push to make contacts to enable, where required, activation alarm notification.

# SECTION 14 - DOOR RELEASE SYSTEMS

* 1. The contractor shall supply a High Security magnetic lock system.
  2. The Contractor shall supply and install 2 No. electrically operated magnetic lock releases per outward opening door fitted 1/3rd and 2/3rd heights in the vertical door jamb within the frames of each of the controlled external entrance points.
  3. The magnetic locks shall be of a heavy duty, fail safe type, rated for continuous duty, and shall have internal monitoring of door lock status in the top magnetic lock.
  4. The magnetic lock shall have built-in high-quality suppression circuits to stop ant back EMF.
  5. The magnetic locks shall be capable of withstanding a minimum holding loading of 600lb per magnetic lock and fitted ideally on outward opening doors. Securitron M32 or equivalent.
  6. All doors where every possible shall be outward opening doors.
  7. If Inward opening doors are installed, as outward opening doors are not suitable, three Magnetic locks per door shall be installed with the third magnetic lock being installed centrally in the middle of the door jam.
  8. The release shall emit an audible warning noise to advise the visitor that the door has been released.
  9. All locking devices shall be Fail Safe / Fail Open / Fail Unlocked.
  10. **Failed Locked / Fail Closed devices are NOT acceptable.**
  11. Wink Haus AV2E type fail secure multipoint-locking devices and V locks shall not be acceptable unless fitted on individual flat entrance door serving a particular dwelling where a one-way call panel is required.

# SECTION 15 - EMERGENCY SERVICES ACCESS SWITCH/FIRE SWITCH

The system shall incorporate on every controlled entrance door a double pole FS4/BZ type Fireman’s override switch above the relevant call panel/proximity reader or within sight of the door. The switch shall not be fitted with in the door side screen. This is for use by the fire brigade only and should NOT be accessible by staff, contractors or postal workers. The fire switch shall be double pole and wired to produce a timed release and when the switch is held, remove the 12vDC positive supply from the lock. Making a fail-safe entry to the block, thus opening the door in an emergency situation.

Any Fireman drop key switches fitted on a block where SBD is required for planning shall be fitted with an SBD approved cover box to LPS1175 SR2 standard as manufactured by Gerda, using the H series key. Must be fitted by an approved contractor and ensure it is fitted correctly to meet SBD.

ACB (Access Control box) by Gerda www.gerdasecurity.co.uk or Premier www.premier-ssl.com this shall be connected to release all access-controlled fire exit doors. This is not part of the door entry system and shall be connected to the FA/AOV/SD system using local I/O relays. All I/O relay coils shall be powered from the FA/AOV system with the lock supply passing through the N/O held closed by the coil contacts, therefore when the switch is activated all power to the I/O relay contacts is dropped failing all door open. A timed global trigger system is not acceptable.

The fire switch or ACB shall be fitted flush and high level 2.5m – 2.75 FFL and above the relevant call panel/proximity reader or within sight of the door.

* 1. Typical Emergency Services Access Switch / Fire Switch



1. **SECTION 16 -**

# PROXIMITY ACCESS CONTROL

* 1. The Contractor shall supply and install as part of this Contract, a proximity access control system to the Main Entrance Door (MED) and all external controlled entrance doors in to the communal areas of the estate.
  2. The system used shall be manufactured by KMS and supplied and fitted with in the Entrotec Sarel control enclosure and shall be the KMS simple key unit or multiples if more than two proximity doors are to be controlled.
  3. The KMS Simple Key web unit shall be supplied complete from Entrotec as a remote programmed system communicating with a Web cloud using a GPRS modems and 2-year contract SIM cards with the following access tokens for each system pre-programmed in to the controller. Type - SKW4
  4. The controller shall be supplied complete from Entrotec with all fobs pre-programmed in to the controller and on to the client’s cloud. Fobs shall be labelled and bagged with the resident dwelling numbers. Spare fobs shall be bagged and numbered with the unique reference code.
  5. Controllers shall be fitted within Sarel IP66 enclosures and shall be fitted with a KMS GPRS modem fitted, complete with a contract SIM card. SIM card shall be supplied by Entrotec with the GPRS modems and shall be fitted and enabled by the commissioning engineer.
  6. The contractor shall supply a Web based USB programming reader that shall be connected to the client’s PC that will be the main user of the fob administration. The contractor shall demonstrate and train the client, who to manage and administer the system.
  7. The contractor shall provide the GPRS SIM card and Hosting fee as part of the equipment cost for a 24-month contract.
  8. Contractor shall supply and fit a High gain GSM aerial, with a pre fitted 15-meter lead. This shall be connected to the KMS simple key controller and fitted to the building at high level so that vandals cannot attack it. Aerial position shall be as agreed with the PROJECT MANAGER and in the optimum location to receive the best GPRS signal, Contractor use a test meter to determine the best position in relation to signal strength and shall on request provide a test result. The high gain aerial cable leaving the buildings fabric shall be protected in a steel conduit or an armoured copex and fixed to the mounting bracket. The aerial shall be at high level to stop this being attached and the cable loop pulled or damaged.
  9. Where blocks are physically linked together the contractor install networked CAT5/6E cablings to form a network of controllers to a single GPRS modems and SIM card thus reducing the number of modems, SIM cards and hosting costs. These network links shall be from the proximity control equipment location to location, generally intake to intake cupboard.
  10. Where indicated in lieu of the GPRS system, when there is a broadband connection on site, the contractor shall allow the KMS system to be networked to a broadband connection and router. When this connection is in place the SIM is not required. Only a 24-month Host fee will be required per connection. The controllers shall be supplied with an IP connection for simple connection to the router/switch.
  11. The contractor shall set up the system and test the system operation offline. Once this test is complete the installer shall call KMS from site and test the communications between the site and the web-based cloud system. They shall carry out a live test with a fob and test the fob operation on all doors with a live system. The installer is to prearrange this test with RBKC and KMS to ensure the system is online and operating correctly. The contractor shall prior to connection request they be issued with a resident fob, so that can test the fobs operations. If the resident fobs had not shown any issues in advance, they shall also batch test the pre-programmed residence fob operation.
  12. The contractor shall supply three colour coded Shark tooth tokens assigned per dwelling to the standard RBKC colour code. These shall be pre-programmed in to the KMS controller as follows:
  13. KMS Black/P - First issued tenant fob – Black
  14. 1 per dwelling.
  15. Programmed on to the Cloud and assigned to a dwelling.
  16. KMS Orange/P - Second issued tenant fob – Orange.
  17. 1 per dwelling.
  18. Programmed on to the Cloud and assigned to a dwelling.
  19. KMS Green/P - Third issued tenant fob – Green.
  20. 1 per dwelling.
  21. Programmed on to the Cloud and assigned to a dwelling.
  22. In addition, the contractor shall supply 20 No. spare tokens per block or project (multiple blocks). These shall be pre-programmed in to the cloud but unassigned to a dwelling. Therefore, they shall NOT be assigned to a person or dwelling, these shall be spares and extra fobs for future use. Allocation and issuing of these fobs shall be by RBKC at a later date.
  23. Spare Tokens shall be issue in advance to Scheme/Project Manager of RBKC.
  24. The 20 No. spare fobs shall be a mixture of the first three colours to be used as replacement fobs if lost and a selection of a 4th, 5th, and 6th colour where extra fobs need to be issued to the same dwelling. Normal issue to dwellings shall be 3 fobs per dwelling. Three of each of the base three colours Black, Orange, and Green shall be supplied as spares, together with, further tokens for use and issued as required if a 4th, 5th, or 6th token as required for a particular dwelling. Spare Fobs shall be programmed on to the Clients cloud but shall NOT unassigned to a person or dwelling. These shall be supplied as follows: -
  25. 3 No. KMS Black/P/U – Spare - First issued tenant fob – Black.
  26. Programmed on to the Cloud but Unassigned.
  27. 3 No. KMS Orange/P/U – Spare - Second issued tenant fob – Orange.
  28. Programmed on to the Cloud but Unassigned.
  29. 3 No. KMS Green/P/U – Spare - Third issued tenant fob – Green.
  30. Programmed on to the Cloud but Unassigned.
  31. 6 No. KMS Blue/P/U – Spare - Forth issued tenant fob – Blue.
  32. Programmed on to the Cloud but Unassigned.
  33. 3 No. KMS Yellow/P/U – Spare - Fifth issued tenant fob – Yellow.
  34. Programmed on to the Cloud but Unassigned.
  35. 2 No. KMS Purple/P/U – Spare - Sixth issued tenant fob – Purple.
  36. Programmed on to the Cloud but Unassigned.
  37. The contractor shall also supply per block or if multiple blocks per group of blocks at the same location the following: -
  38. Five Grey fobs for the contractors use, programmed in staff and contactors until it can be assigned under the Contractors name and company.
  39. 5 No. KMS Grey/P/U - For contractors – Grey
  40. Programmed on to the Cloud but Unassigned.
  41. Two White fobs for Postal access, Programmed in staff and contactors until it can be assigned under the postal staff member’s name.
  42. 2 No. KMS White/P/U - For postal deliveries – White
  43. Programmed on to the Cloud but Unassigned.
  44. Five Clear fobs for Staff/Common access, Programmed in staff and contactors until it can be assigned under the staff member’s name.
  45. 5 No. KMS Clear/P/U - For use as Staff/Common Access Fobs – Clear
  46. Programmed on to the Cloud but Unassigned.
  47. Allocation and issuing of these fobs shall be managed and agreed with/by RBKC.
  48. The Contractor shall liaise with KMS and RBKC and confirm communications between the Simple Key web and the GPRS modems can be establish and that the pre-programed fobs are working. The contractor shall in advance issue the fobs to the PROJECT MANAGER to allow the fobs to be issue to the residents. A number of fobs that are used by the client as ‘Common Access Masters’, postal services, staff and Contractors shall be updated in the controller once Communications has been established, allowing existing client fobs access to the blocks, as well as including to programme in some access tokens already in use for other sites.
  49. Full details of the proposed pre-programming shall be submitted to the Project Manager / Project Managers Representative for approval, at least 7 days prior to the date at which the Contractor intends to start programming the access tokens. After the tests, all access tokens shall be handed directly to the Project Manager / Project Managers Representative and shall not be issued directly to any residents. The Contractor shall provide for each system, fully detailed operating instructions, and programming manuals.
  50. Where rear/resident only doors, Bin store doors and Cycle stores are required to have controlled access as per the buildings drawings or as required by Secure by Design the contractors shall supply and install Readers, Controllers, electronic locking devices to the doors, Push to Exits and where required fire switches and BGU’ s to all required doors. The contractor shall confirm access rights to each door from each dwelling and confirm this information to the door entry manufacturer at the time of order so that the proximity equipment can be programmed to suit.
  51. Where indicated in the scope of works where the block does not required a KMS proximity access control system and resident access is not proximity access control that is a remote managed system then will use the Integrated EasiTag Apex proximity control system that is standalone and managed at the block on site using EasiTag key fobs colour coded the same as the KMS shark tooth fobs.
  52. Where indicated in the scope of works, where a proximity access control system is not required and where resident access is by use of mechanical keys the reader cut out shall be blanked off. Note this is also only where magnetic locks are not used to secure the doors. If magnetic locks are used the resident access must be by proximity keyfobs.

# SECTION 17 - ELECTRICAL SUPPLY

* 1. The Contractor shall be responsible for the provision of dedicated circuits for each door entry system. This may be an existing point serving an existing access control/door entry system.
  2. In all cases the contractor shall provide suitable electrical certification demonstrating that the circuit serving the access control/door entry system meets current electrical regulations (BS7671: 2018)
  3. If the existing supply and spur is suitable it may be reused. If the existing supply is via a plugged in 13amp socket and plug or via a switched spur, then the contractor shall replace it.
  4. Replacement unswitched fused spurs shall be to be taken from the landlord’s intake position(s), situated on the estate. The Contractor shall provide dedicated circuits for each individual system, each fed from a new, 13A metal clad un-switched fuse connection unit to be installed by the Contractor and connected to the 24-hour supply.
  5. All mains power services shall be separated from control wiring and contained within metal containment systems, no UPVC/PVC containment systems will be permitted for mains power circuits.
  6. MICC Cables
     1. Generally, use 600v grade copper conductor MICC cable with LSZH overall sheath for all fire alarm and central battery emergency lighting wiring systems throughout, including all connections to interface units and between main and repeat panels where applicable.
        1. Agree use of MICC cables for other applications with the Project Manager.
        2. Provide red overall sheathed cables to all fire alarm system installations.
        3. Provide black overall sheathed cables for all lighting applications.
        4. Provide white overall sheathed cables for general power applications.
  7. Radio and Television / Satellite TV / Cable TV Equipment
     1. Aerials, cables and equipment, including satellite dishes, likely to impede or suffer damage as a result of the specified works are to be carefully removed and temporarily re-rigged by the Contractor to maintain the quality of the signal reception to the user’s satisfaction. Cables interfering with door and window replacement works are to be carefully unclipped and repositioned so as to pass between the new frame and the masonry opening, sealed and re-clipped internally and externally.
     2. The Contractor is to make all arrangements and pay all fees and charges required by British Telecom/British Cable TV/NTL, Sky, their agents, subsidiaries or successors for similarly removing and refixing their equipment, cables, wiring, bracket fixtures and fittings as required to facilitate the works.

# SECTION 18 - BUILDERS WORKS

* 1. The Contractor shall include for all core drilling of floors to ensure a clean and adequately sized transition for the ingoing cables and containment. The Contractor shall protect all the existing finishes, furnishing and fixtures, services cables and the like. The Contractor shall form holes of sufficient size to accommodate the cable containment. Stopping containment short of the core hole is not acceptable. Cables shall be enclosed along their entire length. The Contractor shall form or cut other holes through brickwork, blockwork and timber, as necessary. All holes shall be properly made good and fire stopped as appropriate to suit the surrounds. Where holes are drilled into dwellings, they shall only be drilled with the resident being present. No holes shall be drilled into an unoccupied dwelling. Generally, holes shall be drilled from the inside of the dwelling to minimise the risk of break out plaster. The Contractor shall ensure the risk or damage to brickwork where the bit breaks through is minimised. If necessary, 6mm pilot holes shall be used. The Contractor shall be responsible for all damage caused by the drilling operations and shall remedy them at his own expense.
  2. Where edges of existing floor finishes (Altro. linoleum, thermosetting tiles etc) will be exposed by the removal of existing doors and frames and are likely to be left exposed by the new installation a purpose made cover strip shall be installed. This shall be designed and incorporated into the door and screen to prevent a trip hazard and to prevent the edges of the floor finishes from lifting or being damaged. It shall be designed to cover any substrates and to fully integrate with the ingoing door and screen. Consideration shall be given to providing a low-profile threshold strip to cover any incomplete floor finishes. Similar consideration shall be applied to walls and ceilings, where finishes are going to be exposed. Alternatively, a matching finish to the existing shall be applied to eliminate any exposed, undecorated edges.
  3. Ensure conduit is not concealed until work has been inspected and approved.
  4. Obtain permission before horizontally chasing walls.
  5. Ensure that conduit and fittings buried in concrete or behind plaster are protected against corrosion or electrolytic action prior to rendering.
  6. Ensure conduit concealed in wall chases is covered by plaster and/or rendering to minimum depth of 12 mm.
  7. The Contractor shall include for redecoration of surrounding areas affected by the works. This shall include walls, ceilings and floor where doors and screens have been replaced, trunking, risers, panels, boxing and the like where these have been disturbed by his works. Generally, and unless specified otherwise the Contractor shall redecorate the elevation affected by the ingoing doors and frames to the nearest, full height (floor to ceiling), change in direction. The Contractor shall match, as closely as practicable, the existing colours, textures and finishes of decoration. Where this is not possible the Contractor shall agree an alternative colour and finish to be applied.

# SECTION 19 - EXISTING CONTAINMENT SYSTEMS

* 1. The Contractor shall supply and install a completely new door entry system reusing and adapting the existing containment systems where necessary.
  2. Where existing containment is installed and is in good condition and would benefit the client for this to be reused, the installer should identify this and report this back to the client prior to undertaking any adaptation or replacement works.
  3. Existing conduit and steel trunking systems may be reused under certain conditions, only with the express permission of the client. If it is to be reused it shall be:

1. Fit for purpose.
2. Inspected for suitability, capacity and condition. If the condition is deemed unacceptable in the opinion of the PROJECT MANAGER, it shall be replaced.
3. Thoroughly cleaned internally and reamed if necessary.
4. Securely fixed and any missing fixings, lids, gaskets, covers and the like reinstated or renewed.
5. Secured along its entire length with security screws, including all conduit boxes, adaptable boxes and the like. Boxes with cross threaded screws shall be replaced.

# SECTION 20 - CONDUIT SYSTEM

* 1. The Contractor shall supply and install a complete new conduit system for the Entryphone cabling. The conduits shall be 20mm and 25mm Class 4 heavy gauge steel, surface fixed with all the proprietary accessories, e.g. boxes, adaptable boxes, saddles, couplings etc. necessary to provide a complete and satisfactory installation.
  2. All the system cabling shall be enclosed within the new conduit system to allow the system to be rewireable, except when the contractor installs cabling within the individual dwellings, which shall be installed in PVC miniature trunking. However the preferred method is a conduit to the handset location. The conduit installation shall be fully completed before any cables are drawn into it.

# SECTION 21 - FIXINGS

* 1. All apparatus, accessory boxes, trunking, conduit saddles, and fittings shall be securely fixed with Size 8 wood screws at least 38mm long. The screws shall generally be of the roundhead type unless countersunk screws are required and shall be zinc plated steel within buildings and shall be brass in all damp and external areas. Except for fittings incorporating single hole fixings, e.g. space bar and distance type conduit saddles, at least 2 No. screws shall be used for each item to be fixed.
  2. No shot firing shall be used.
  3. All drilling or welding of structural steelwork shall be carried out without the written permission of the Project Manager.
  4. Where fixings into brickwork, blockwork, concrete or masonry shall be made using non-deteriorating type plastic plugs of a size appropriate for the screws to be used & inserted into a hole of correct diameter & depth as recommended by the manufacturer of the fixing plugs.
  5. No fixings shall be made into the mortar course of brickwork, blockwork, or masonry.
  6. All conduit stop end, through & adaptable box lids shall be fixed with star headed security screws.

# SECTION 22 - CONDUIT (STEEL)

* 1. All Steel conduits, bends, couplers, fittings and components shall be BS 4568 Parts 1 and 2 and shall be heavy gauge screwed, welded, black enamelled unless otherwise specified.
  2. No conduit less than 20mm diameter shall be used unless otherwise specified elsewhere.
  3. The runs shall be so arranged that any condensed moisture can drain to the lowest point, where a screwed plug shall be provided for the purpose of draining.
  4. Conduit runs shall be arranged in a neat and inconspicuous manner. Due consideration shall be given to the other services and the Contractor shall ensure that his selected routes will enable the necessary clearance to be obtained between electrical and other services.
  5. Bends shall be made on a pipe-bending machine fitted with formers of the correct radii for the particular conduit. Where bends and sets occur in multiple conduit runs they shall be arranged symmetrically to present a uniform and neat arrangement.
  6. No more than two right angle bends will be allowed between draw-in boxes. All burrs shall be removed from cut lengths and surplus screwing lubricant wiped from threads prior to fixing of the conduit.
  7. The requirements of Regulations 522-08 shall be observed when erecting a conduit installation.
  8. Conduit systems concealed in walls, floors and roof slabs shall be designed so that the wiring can be readily inserted after the whole of the conduit installation has been erected and all wall, ceiling, and floor finished have been completed. All conduit chases into walls shall be recessed sufficiently to permit a minimum thickness of 6mm of plaster or other finish to be obtained.
  9. Ceiling boxes for lighting fittings, etc., shall be brought flush with the ceiling plaster or finish. Extension rings shall be provided where necessary to facilitate this. The boxes of flush pattern switches and sockets, etc., shall be recessed into the wall structure until front edge is level both horizontally and with the finished surface of the plaster or other wall covering.
  10. The use of crumpets shall be restricted to the securing of conduits to floor slabs and in chases pending plastering or other finishes.
  11. In roof voids and similar spaces where the conduits pass across the ceiling beams, plain stamped saddles shall be used.
  12. Purpose made fixing clips and brackets may be necessary to buildings of special construction or industrial premises and the Contractor shall be deemed to be aware of this at the time of tendering and to have included for the supply of it in this tender.
  13. Details of the proposed clips and/or brackets shall be submitted to the Project Manager / Project Managers Representative for approval prior to the manufacture of same being commenced.
  14. Holes shall not be drilled in any structural steel work or pre-stressed concrete without first obtaining the approval of the Project Manager / Project Managers Representative.
  15. Conduits shall be terminated in accessories, fuse boards or other equipment either by being screwed into the tapped spout or hole when such is provided or by locking into clearance holes by means of couplers and smooth bore hexagonal male bushes.
  16. Connections between conduit and the boxes with clearance holes shall be fitted with a brass compression washer between the box and coupler. All conduit joints shall butt in solidly to boxes, etc., with no exposed threads except at running couplers.
  17. Where surface type fuse boards are to be installed on a concealed conduit installation the conduits shall terminate in an adaptable box behind the fuse board. Where possible an extra 20mm conduit shall be installed to a suitable termination point such as in a roof void or services duct to allow for future extension. The remote end shall be plugged.
  18. Where the conduit system is left temporarily incomplete, all open ends shall be sealed by means of a coupler and screwed plug. Steps shall be taken to prevent the ingress of plaster into junction boxes and associated conduits.
  19. Where the galvanising has been damaged during the course of the erection it shall be made good with good quality aluminium or zinc paint immediately.
  20. All boxes carrying lighting fittings, switches, sockets and other accessories shall be rigidly and securely fixed independently of the saddles. All other conduit boxes shall be securely fixed before the cables are drawn in.
  21. Sufficient boxes shall be installed to permit the re-wiring of the installation and no box shall be installed in an accessible position. The Contractor shall check all proposes positions with the Project Manager / Project Managers Representative before installation.

# SECTION 23 - CONDUIT (FLEXIBLE STEEL)

* 1. In situations where connections to motors or other such items of removable equipment are prone to mechanical damage these shall be made with PVC sheathed metallic flexible conduit, as manufactured by Kopex Ltd. List No. LS/1/PVC or equal and approved.
  2. The flexible conduit shall terminate in the equipment, fitting, or conduit box etc., by means of a proper manufactured coupling as Kopex Ltd. List No. C/12 Duralumin in coupling or equal approved. Flexible conduits shall be kept as short as possible.

# SECTION 24 - CONDUIT (UPVC)

* 1. Plastic conduit shall NOT be installed within any common or communal area. It shall only be used where specified and agreed in advance with the PROJECT MANAGER and RBKC electrical engineer. Only when approved and in these circumstances every precaution shall be taken to prevent external mechanical damage and unnecessary stress during erection.
  2. All cabling fitted in plastic trunking or conduits above doorways and within hallways shall be secured within the trunking using metal cable retain clips.
  3. Plastic conduit shall be manufactured to BS 4607 from plasticised PVC and shall not support combustion. It shall be rigid heavy gauge high impact grade except where flexible is specified and be continuous drawn with welded fixings to accessories.
  4. The minimum size of conduit to be used is 20mm diameter. Oval conduits shall not be used without the Project Manager / Project Managers Representative written approval.
  5. The conduit shall be installed only where operating temperatures are within the range 10°C to 65°C. No actual installation of the conduit system will be allowed when the ambient temperature is below 5°C.
  6. The conduit system shall mechanically continuous and all termination shall be made in conduit boxes, switches and socket outlet boxes or in the enclosure of electrical equipment. All conduit accessories shall be of same material as the conduit unless otherwise specified and conform to BS 4607 Part 1 and be provided with socket adapters to accommodate the conduit.
  7. The ends of all conduits shall be cut square, be free from burrs and closely butted inside sockets. The joint between the conduit and socket shall be permanent, being made with cement supplied by the conduit manufacturers.
  8. For conduit up to 25mm diameter, site bends may be made cold in conjunction with the correct size of steel bending spring. Above 25mm diameter bends must be made by heating the tube and insertion of the correct size of rubber cord in accordance with the manufacturer’s instructions. Conduits showing signs of strain or kinking as a result of bending shall not be installed.
  9. In all other ways plastic conduit shall be installed as steel conduit except as follows: -

1. Fixings shall be made at least every 900mm for surface runs.
2. Care shall be taken to prevent damage due to expansion.
3. Expansion joints shall be made with oversize sleeves sealed with non-setting mastic compound.
4. Where earthing facilities are required, a suitable size earth conductor shall be included in the conduit system and connected to purpose made terminal in each accessory or conduit box.
5. Where flexible conduit is specified, this shall be heavy gauge and fitted with cemented couplings suitable for connection to the remainder of the conduit system. The use of flexible corrugated conduit will not be permitted.
6. At ceiling lighting points where excessive heat may cause loss of fixings, the method of attachment of fittings shall prevent heat transmission or metal-ceiling boxes shall be used.

# SECTION 25 - CONDUIT FITTINGS

* 1. All conduit fittings shall be of similar materials and finish to the particular conduit being used and comply with BS 4568 Part 2 unless otherwise specified.
  2. Hard cast boxes will not be allowed except where specified for use with Fire Alarm equipment.
  3. Elbows and tees, inspection or solid types, will not normally be allowed, but where conditions warrant the use of these fittings the Contractor shall apply to the Project Manager / Project Managers Representative for permission to use the same.
  4. Standard circular boxes shall be used at lighting points unless otherwise specified.
  5. Looping-in boxes used on concealed conduit systems shall be ‘medium’ pattern where the floor slab thickness permits 90° bends to be obtained in the conduit.
  6. Angle pattern looping-in boxes may be used where the slab thickness is limited.
  7. Adaptable boxes shall be heavy gauge pattern and of ample size for the quantity of conduits that are to be accompanied.
  8. For conduit of 25mm diameter the boxes shall be 50mm in depth.
  9. For conduits up to 37 mm diameter the boxes shall be 65mm in depth.
  10. For conduits up to 64mm diameter the boxes shall be 100mm in depth.
  11. Where inspection boxes occur in floor slabs, a non-ferrous metal floor trap shall be installed over the box.
  12. The aperture area of the trap shall be sufficient to enable the cover for the inspection box to be easily removed.
  13. Trap covers shall be recessed or plain type to suit the particular floor finish.

# SECTION 26 - METAL CONTAINMENT/METAL FRAMEWORK & SUPPORTING STRUCTURES – TREATMENT

* 1. All cut edges shall be cut square, deburred and treated with a suitable and compatible paint, with finish as follows -
  2. Galvanized finish; use two coats zinc rich paint.
  3. Black enamelled finish; uses two coats of good quality, air drying, black enamel paint. Remove grease, oil, dirt and rust before applying protective paint.
  4. Notify of any serious damage and repair or replace as instructed.
  5. Coating materials
  6. All coating materials shall be applied in accordance with manufacturer’s instructions and specifications. Coatings shall be applied in accordance with BS6497.
  7. Whenever possible all coating materials shall be from one manufacturing batch.
  8. Where more than one batch is to be used, keep separate, allocate to distinct parts or areas of the work, and inform the PROJECT MANAGER accordingly.
  9. Check that all coating materials to be used are recommended by their manufacturers for the particular surface and conditions of exposure, and that they are compatible with each other.
  10. Coating materials shall be Polyester powder coat, colour to be agreed to a standard RAL range. The Contractor shall apply a polyester powder seal and a polyester powder coat as recommended by the manufacturers.
  11. Curing times shall be as recommended and appropriate to the metal temperatures. Coating thickness shall be in the range 55 –65 microns.
  12. The durability shall pass the BS3900 tests for flexibility, scratch and impact resistance.
  13. Handling and Storing Coated Steelwork
  14. Use methods and equipment which will minimise chafing, chipping and other damage to coated components.
  15. Ensure an adequate drying/curing period for each coat before handling.
  16. Use suitable packing, lashings, lifting harnesses, nylon slings, rubber protected chains and chocks, etc.
  17. Stack coated components clear of the ground, separated by timber chocks, and so that ponding does not occur.

# SECTION 27 - TRUNKING (STEEL)

1. Metal trunking may be approved or specified in certain installations instead of multiple conduit runs. Such trunking shall be fabricated from sheet metal. It shall be internally reinforced by cross stays in such a manner that distortion will not occur during and after the installation of the cables. The internal free area of the trunking shall be such that the quantity of specified cables shall not occupy more than 45% of the available capacity.
2. All trunking used shall be of sufficient gauge to ensure that it is rigid when erected, will not easily deform and will not spring from its original shape. Trunking shall be securely fixed, each length shall be separately supported, and additional fixings shall be provided 300mm from the ends of a run.
3. Sliding joints shall be incorporated in trunking runs crossing building expansion joints.
4. Sections of trunking shall be connected by internally fixed rectangular coupling units of sufficient width to provide a bearing face of 25mm to which the lengths shall be welded or bolted. Paint and/or enamel shall be scraped away between the coupler and trunking to provide with additional fixings within 150mm of the end.
5. Tee pieces and bends shall be of the gusset type with removable covers and be formed with similar means of connection and inner radii shall be such that the integrity of cable insulation and conductors will not be impaired. Copper links shall be provided at couplings to maintain earth continuity.
6. Where a change in direction of a trunking run occurs, the deviation must be affected by a purpose made unit manufactured on similar lines to the bends and tee pieces described below, not by manipulation of the trunking.
7. Trunking shall be firmly attached to its associated equipment either by bolted flanges or by hexagonal male bushes, couplings, and compression washers, according to the direction of run in relation to the equipment. Grommeted holes will not be accepted.Where trunking does not terminate in equipment, the otherwise open end shall be capped with a flanged cover suitably bolted in position.
8. Vertical runs of trunking exceeding 2m in length shall be fitted with pin packs or other approved type of support to carry the weight of the cable. Inverted trunking shall be provided with cable retaining clips.
9. Care shall be taken to avoid damaging finished surfaces, protective enamel, or galvanising. Any such damage that occurs to the trunking shall be made good using a matching enamel or zinc rich paint immediately after erection.
10. Trunking that is intended for accommodating cables for various services shall be divided into compartment in order that complete segregation of the difference service cables can be effected.
11. Where trunking passes through walls and/or floors that normally constitute a fire barrier in a building, the Contractor shall seal any gaps left between the trunking and the building structure with intumescent material. The Contractor shall also be provide a barrier of intumescent material fitted inside the trunking at this point to prevent the passage of fire.

# SECTION 28 - TRUNKING (UPVC)

* 1. *Under NO circumstances* shall UPVC Trunking be permitted to be used in any common or communal area, in line with the precedent set in situations of fire where trunking lids under heat melt and fall, allowing the cables within to subsequently drop and fall from the containment that can restrict exit and entanglement.
  2. All cabling fitted in plastic trunking or conduits above doorways and within hallways shall be secured within the trunking using metal cable retain clips.
  3. Trunking manufactured from a high impact grade of UPVC, in compliance with BS 4678 Part 4, may be approved, in certain installations instead of steel trunking or multiple conduits. Such trunking shall have a white finish, unless otherwise specified.
  4. The internal free area of the trunking shall be such that the quantity of cables specified shall not occupy more than 45% of the available capacity.
  5. Trunking of 50mm of greater width, installed with the cover on the side or bottom, shall be fitted with removable cable retainers at intervals not exceeding 1 metre.
  6. All trunking and accessories shall be installed strictly in accordance with the manufacturer’s instructions, taking particular care to prevent distortion due to expansion.
  7. Fixing holes must be elongated to allow for longitudinal expansion, and washers be provided behind screw-heads.
  8. Screws must not be over-tightened. Fixings to be spaced at maximum intervals of 400mm and two fixings must be provided at each point, for trunking having a width of 50mm or greater.
  9. Straight joints shall be completed using permanent and semi-permanent sealing cements, allowing sufficient gap between ends of trunking lengths to allow for expansion. Lids shall be fitted so that they overlap joints for greater strength.
  10. Tee joints and bends shall be affected by utilising appropriate and approved accessories, fitted in accordance with manufacturer’s instructions, and separately fixed, where these are not of the “Snap-On” design.
  11. The inner radii of all bends in the trunking system shall be such that cables will not require a bend of lesser radius than that prescribed in the current edition of IEE Regulations.
  12. Where trunking terminates in accessories or equipment, this shall be achieved using flanged couplers or other appropriate accessory. Open ends shall be fitted with end caps of an approved pattern.
  13. “Self-fixing,” types of PVC trunking will not be accepted. All trunking shall be screw fixed.
  14. Unless routes of trunking area clearly indicated on the drawings they shall be determined by the Contractor and approved by the Project Manager / Project Managers Representative before work commences.
  15. Trunking shall be parallel with the lines of the building construction, and properly aligned.
  16. Vertical runs of trunking exceeding 2m in length shall be fitted with an approved type of support to carry the weight of the cables.
  17. Where trunking passes through walls and/or floors that normally constitute a fire barrier in a building, the Contractor shall seal any gaps left between the trunking and the building structure with intumescent material. The Contractor shall also be provide a barrier of intumescent material fitted inside the trunking at this point to prevent the passage of fire.
  18. Where points are wired using mini trunking the trunking must be extended along the whole length of the wall upon which it is fitted whether it contains cabling along its entire length or not, this applies both vertically and horizontally.
  19. Mini trunking shall be installed in a convenient corner or against door architraves and skirting boards. Under no circumstances should it be installed in the centre of a wall without the prior agreement of the Project Manager / Project Managers Representative. Where possible trunking shall be installed in accessible cupboards or other unobtrusive locations.
  20. Where mini trunking butts up against the accessory box a purpose made clip or moulded coupling shall be used to assure a square and neat joint occurs at this point.
  21. Where mini trunking is installed from a floor or roof void it shall extend 30mm into the void and a short length of lid placed on the trunking to extend 12.5mm below the ceiling. The longer length of trunking lid shall then be fitted and a purpose made clip-on coupler fitted over the joint in the lids and butted against the underside of the ceiling.
  22. No surface cables shall be installed without the protection of P.V.C miniature trunking.
  23. Mini-trunking is used from one room to another and it passes through a wall a short length of lid shall be fitted of the trunking extending 12.5mm either side of the wall. The lid shall then be fitted in both rooms and a purpose made clip-on coupler fitted over the joints on either side of and butting against the wall.
  24. Where mini-trunking is used from one room to another and it passes through a wall a short length of lid shall be fitted to the trunking extending 12.5mm either side of the wall. The lid shall then be fitted in both rooms and a purpose-made clip-on coupler fitted over the joins on either side of and butting against the wall.
  25. A PVC Surface Trunking System shall be installed in each dwelling to house and protect the telephone handset cabling entering the dwelling.
  26. All finished lengths shall be caulked using decorators caulking mastic.
  27. Generally in all other ways plastic trunking shall be installed as steel trunking except as follows:
  28. Fixings shall be made at least every 500mm for surface runs.
  29. Double side tape fixing mini trunking shall not be acceptable.
  30. For use in Flat/dwelling only To BS 4678: Part 4.
  31. The contractor shall install all cabling with in each dwelling in white MT2 mini trunking the contractor shall use manufactured bends and ends only.
  32. Installer to install to PROJECT MANAGER’s requirements.
  33. Allow 6 meters per dwelling.

# SECTION 29 - WIRING

* 1. All cables and flexible cords used shall be provided by an approved manufacturer and manufactured to BS and BASEC standards. Mains and flexible cables shall be LSOH insulated and shall comply with BS 6500.
  2. **CCS** (Copper Clad Steel) conductor and or **CCA** (Copper Clad Aluminium) conductor cabling shall ***not be deemed as an acceptable option***. Any cabling found to be of this type shall be removed and replaced at the contractor’s expense.
  3. Audio and low voltage cables shall be as CW 1308, having tinned copper conductors of a minimum size of 1/0.5 mm2, insulated with colour coded PVC, and contained within an overall PVC sheath. Where cabling is run in false ceiling or with in walls and is not in a suitable protective containment Entrotec recommend a screened CW1600 cable shall be used in place of CW1308. Note Drain/earth/screen wires must be connected at both ends to 0v. Connections for +V, 0V & lock lines, two cable cores shall be twisted to reduce any possible volt drop.
  4. All handsets cables shall be 6 pair CW1308/CW1600. CAT5 cables are not suitable. Video system with handset run exceeding 50m shall be run in 10 pair CW1308/1600.
  5. All extra low voltage 12vdc power cables to locks, fire switches, push to exit switches and call panel shall be run in 2 and 3 core 1.5mm2 flex. Twin and earth shall not be acceptable.
  6. All cables shall be handled with care to avoid kinking or stretching. This applies particularly to multi-pair cables, which are easily damaged
  7. All cables shall be run independently and directly back to the System Control Unit, and under no circumstances shall cables be looped from dwelling to dwelling.
  8. Where cables supply lock releases, fire switches and push to exit switches 3 core 1.5 mm2 flex shall be run (Not twin and earth). All equipment shall be suitable connected to a single common earth.
  9. Telephone type multi-core cables shall contain at least 10% or two spare conductors, in addition to the actual number required. All spare conductors in multi-pair cables shall be tied neatly out of the way, and labelled at each end as ‘SPARE’, for possible later use.
  10. Cables carrying data signals shall be contained within a separate screened sheath.
  11. Cables serving dwellings shall be marked at each end with the number to denote which dwelling is being served. All other cables shall be marked with destination and use.
  12. With the exception of terminals in the power supply, the terminal marking at each end of any particular conductor shall be the same. That is, the conductor at a terminal marked LO, will go to another terminal marked LO at its other end. The terminal blocks shall be laid out in the same order in different items of equipment.
  13. The connectors in the entrance panel shall be removed from the printed circuit board before the cables are connected to them to avoid possible damage.
  14. All terminals shall be tightened carefully to avoid damage to the circuit boards. Slack shall be left when terminating cables to minimise strain on the terminals and to allow for re-termination.
  15. The cable colour coding in the Installers Manual should strictly adhere to facilitate future maintenance.
  16. All cables shall be continuous between the items of equipment forming part of the system, and under no circumstances shall through joints be permitted in any cable or wire installed under this contract.

1. **SECTION 30 – DECOMMISSIONING OF SERVICES, ACCESS AND REMOVAL OF WASTE MATERIALS**
   1. All waste will be disposed of in a skip(s) provided by the contractors – no contractors waste will be disposed of in the council skips.
   2. It is your duty as a contractor to dispose of waste under the WASTE duty of care. All disposed waste from council sites, must have a certificate stating that the waste items have been transferred to an authorised waste handler, and disposed of accordingly. This certificate must be handed to the Project Manager for our records.
   3. An Asbestos Register for the council was compiled in 2018/19. This register is available on request.

# SECTION 31 - OPERATING AND MAINTENANCE MANUALS.

* 1. The Contractor shall provide operating and maintenance manuals for all aspects of the Entryphone systems.
  2. The Contractor shall provide, seven days before handing over the systems, draft copies of the operating and maintenance manuals for approval by the Project Manager / Project Managers Representative. Two copies of the approved manuals shall be issued to the Project Manager / Project Managers Representative within seven days of the handover.
  3. In addition, the Contractor shall provide the following information: -
  4. Schematic diagrams of the systems, which detail the positions of all apparatus.
  5. Details of all connections.
  6. Listings of the make, model, and serial nos. of all items of equipment installed.
  7. Any other technical information required to maintain the systems.
  8. Asset details, including data sheets with pertinent asset reference details, *final file conventions to be agreed with Project Manager.*
  9. All the above information (sections a – d) shall be displayed on A4 sheets, and be mounted in hardwood or metal, glazed frames, to be fixed adjacent to the respective system control units. The exact locations shall be agreed on site.
  10. Full and complete operating and maintenance manuals shall be provided to each site. These manuals will include the following details as a minimum: -

1. Commissioning Certificate, Test Result and Comment Sheet.
   1. Including all electrical test certification.
2. Entrotec Apex digital system manual as applicable.
3. KMS Cloud key Management staff training manuals and passwords.
4. If EasiTag a Programmed token list shall be provided.
5. Installer Generated as installed cable schematic listing equipment locations.

# SECTION 32 - INFORMATION TO TENANTS.

* 1. The Contractor shall provide a simple printed instruction leaflet for each tenant, giving precise instructions for the operation of the systems. A draft copy of the instruction leaflet shall be passed to the Project Manager / Project Managers Representative for approval, prior to commissioning. After approval, 10 No. copies shall be handed to the Project Manager / Project Managers Representative, and further copies provided, each enclosed in a plastic envelope and taped to the handset in each dwelling on completion of the commissioning, and immediately prior to handover.
  2. The installer shall leave a resident’s A5 instruction sheet for use of the door entry system and handset within each dwelling.

# SECTION 33 - TESTING AND COMMISSIONING

* 1. The Contractor shall, upon the completion of the works, arrange for the testing and commissioning of the complete new installations, by an Entrotec approved installer specialist, or it shall be fully supplied, installed and fully commissioned by a current Entrotec approved installer in accordance with the manufacturers’ installation and commissioning instructions and all relevant British Standard Codes of Practice, together with the current Edition of the IEE Requirements for Electrical Installations (BS 7671) and to BS7273 where connections to the FA/AOV system are required. The PROJECT MANAGER shall be provided with evidence and documentation that the contractor has employed the manufacturer’s agent or is a current approved installer.
  2. The Contractor (not the manufacturer) shall be required to demonstrate the full operation and function of the completed systems to the satisfaction of the Project Manager / Project Managers Representative, immediately prior to the systems being handed over; and all due allowance shall be made for this within the tender sum. All call outs to faults shall be carried out by the specialist installer and not by the manufacturer.
  3. All test, commissioning, and completion certificates for the systems shall be duly completed and handed to the Project Manager / Project Managers Representative at the time of handover.

# SECTION 34 - COMMUNAL ENTRANCE DOORS & LOCKING DEVICES.

**(GATES)**

* 1. All Gates shall be outward opening and of a vandal resistant design.
  2. Where a new communal entrance gate is being fitted this shall be outward opening. The gate shall be secured using 2 monitored Magnetic locks supplied. These shall be fitted in the gate leaf 1/3 and 2/3 heights.
  3. Where inward opening gates have to be installed, gates shall be fitted with a third magnetic lock in the centre position.
  4. Gates with Sheer locks, lock release or multipoint locking systems are not acceptable.
  5. All communal gates shall be supplied with magnetic locking devices. On gates positions where a magnetic lock gate cannot be fitted due to opening width shall an electronic lock release be acceptable.
  6. The gate shall meet Part M of the building regulations and also meet BS8300. To meet BS8300 the call panel shall and must be mounted with in 200mm of the magnetic locking devices at a height of between 900mm and 1050mm above FFL from the base of the call panel back box.
  7. If the gate has a side railing the installer shall allow for the side panel that housing the call panel and fire switch. Where these items are mounted with in brickwork the installer shall allow for flush fitting of the units, making good of the wall and sealing the call panel to either the side screen or wall with suitable mastic.
  8. The call panel & fire switch shall be fitted at the correct heights in line with Part M & BS8300.
  9. All new gates shall be outward opening wherever possible. These shall be secured using two magnetic locks per door. These shall be two number side fix magnetic locks per door, one monitored (fitted at the top 1/3 and one unmonitored fitted in the bottom 1/3 of the door. This is per MED. Any RED’s shall have two Magnetic locks.
  10. All gates shall comply with Part Q of the building Regulations.
  11. Where there is a requirement for SBD the doors shall meet the SBD standard of LPS1175 SR2 or STS202 BR2. The SBD requirements supersede those below, however doors shall follow the principle set up below & shall be outward opening & secured using 2 magnetic locks.
  12. AUTOMATIC DOOR OPERATORS.
  13. All door operators on existing building of on new build developments where required and specified shall be an electro Mechanical low energy with on door safety sensors for both opening and closing operations with finger trap protection.
  14. The contractor shall install a suitable un-switched spur above each door to power the automatic operators.
  15. The contractor installing the unit shall be trained accredited and install the unit to BS7036.
  16. BS7036. This is the British Standard revised in 1996 for "Safety at powered doors for pedestrian use." It covers all aspects of risk assessment for straight, curved, sliding, folding, swing and revolving doors. Whilst not yet legally binding, these recommendations will undoubtedly be taken into consideration should an installation result in an accident or injury. We strongly insist that any person responsible for specifying and/or installing automatic door equipment is familiar with the requirements of the standard.
  17. Residents requiring remote operation shall be issued with a single enrolled dual proximity/infra-red transmitter. Un-enrolled transmitters will not be acceptable.
  18. When using automatic operators all doors shall be outward opening and locked using high quality fail unlocked magnetic locks.
  19. All locking devices shall be 12 Volt DC Fail Safe/Open lock release that shall fail in the open/unlocked position if power is removed from the device or system.
  20. Doors wherever possible shall be outward opening.
  21. Exit shall be via a Double pole, Double throw Push to Exit switch.
  22. **DEFECTS LIABILITY PERIOD**

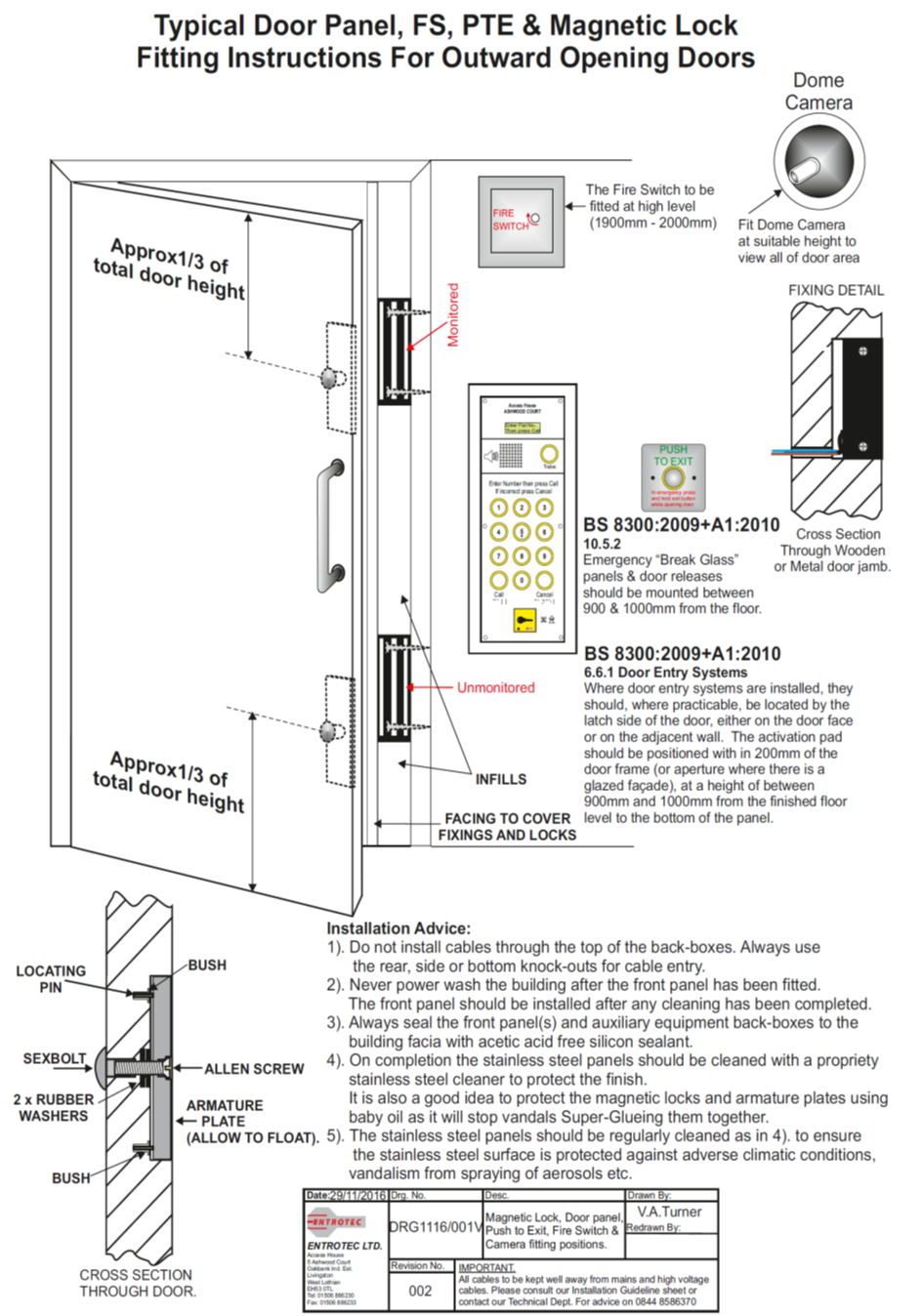
1. The defects liability period of 12 months from the issue of the final Certificate of Practical Completion includes for all "breakdowns" of the Controlled Entry System in this period - except those for which, in the opinion of the CA, the Contractor is not responsible.
2. The Contractor shall ensure that any defects in the operation of the system shall be attended to within six/twenty-four hours of the defect being notified to him, any time of the year including holidays. No payment will be for abortive visits due to no access being available. If the Contractor fails to remedy the defects within twenty-four hours the PROJECT MANAGER may arrange for the works to be carried out by others and the Contractor will be contra-charged for all costs incurred.
3. The Installation contractor shall attend site and assess/repair the fault.
4. The installer shall warrant the door entry installation for 1 year from date of commissioning certificate.
5. The Door entry equipment shall be warranted for 2 years from date of supply.
6. The Proximity KMS access control equipment shall be warranted for 5 years from date of supply.
7. If the fault is a manufacturer’s defect the installer is responsible to ensure the manufacturer attends site if required at no cost to the client. The manufacturer shall attend on instruction from the installation contractor who has attend first to the fault and deemed the fault a manufacturers defect of equipment. The manufacturers shall attend with the replacement part within 2 working days.
8. Where the fault is found to be due to vandalism or external forces and chargeable the contractor will enter here the actual labour charge for the call, inc travel and other costs, during the defects period excluding VAT. This will be the total amount to be invoiced excluding parts due to vandalism.

APPENDIX 1A

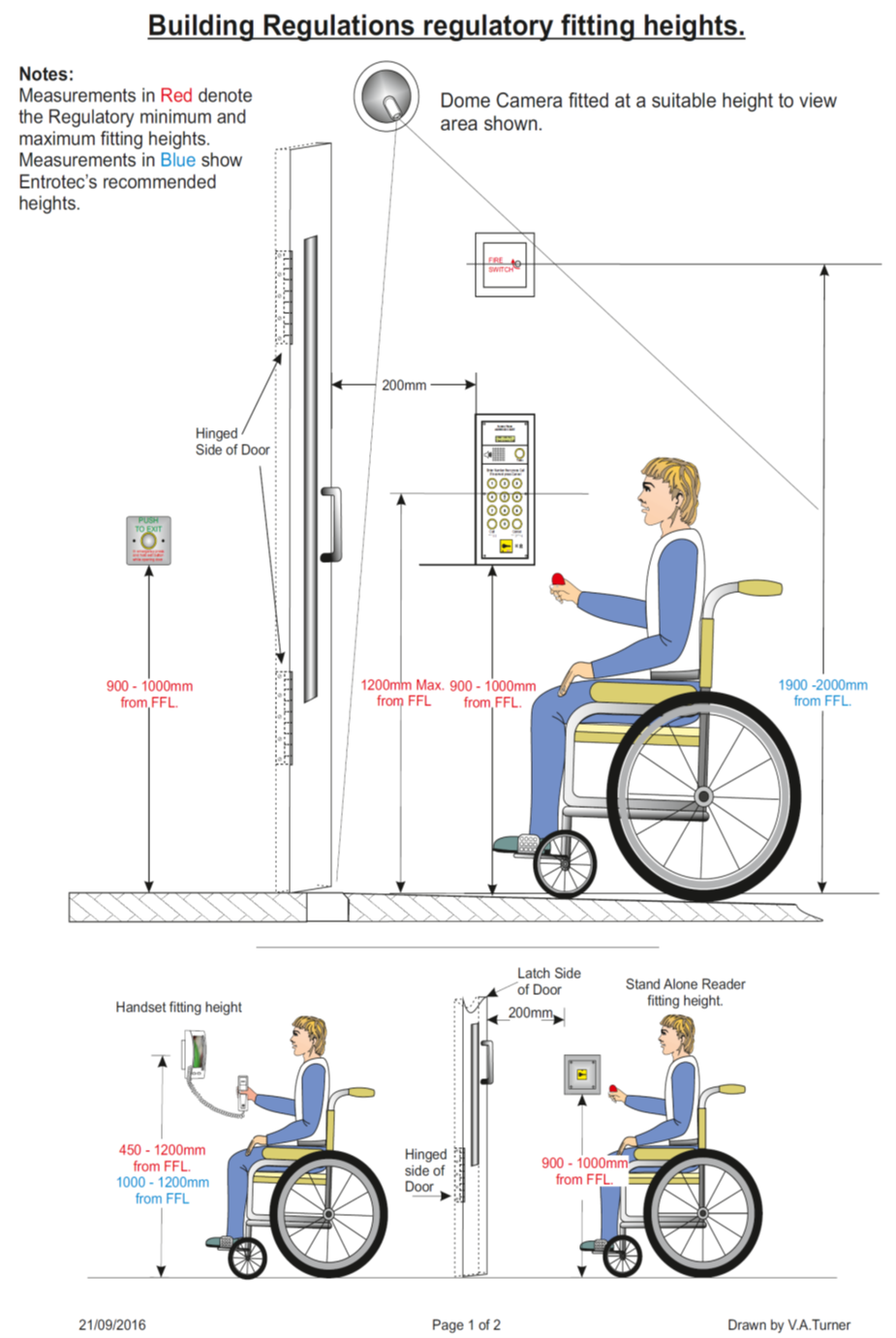
TYPICAL APEX AUDIO SYSTEM

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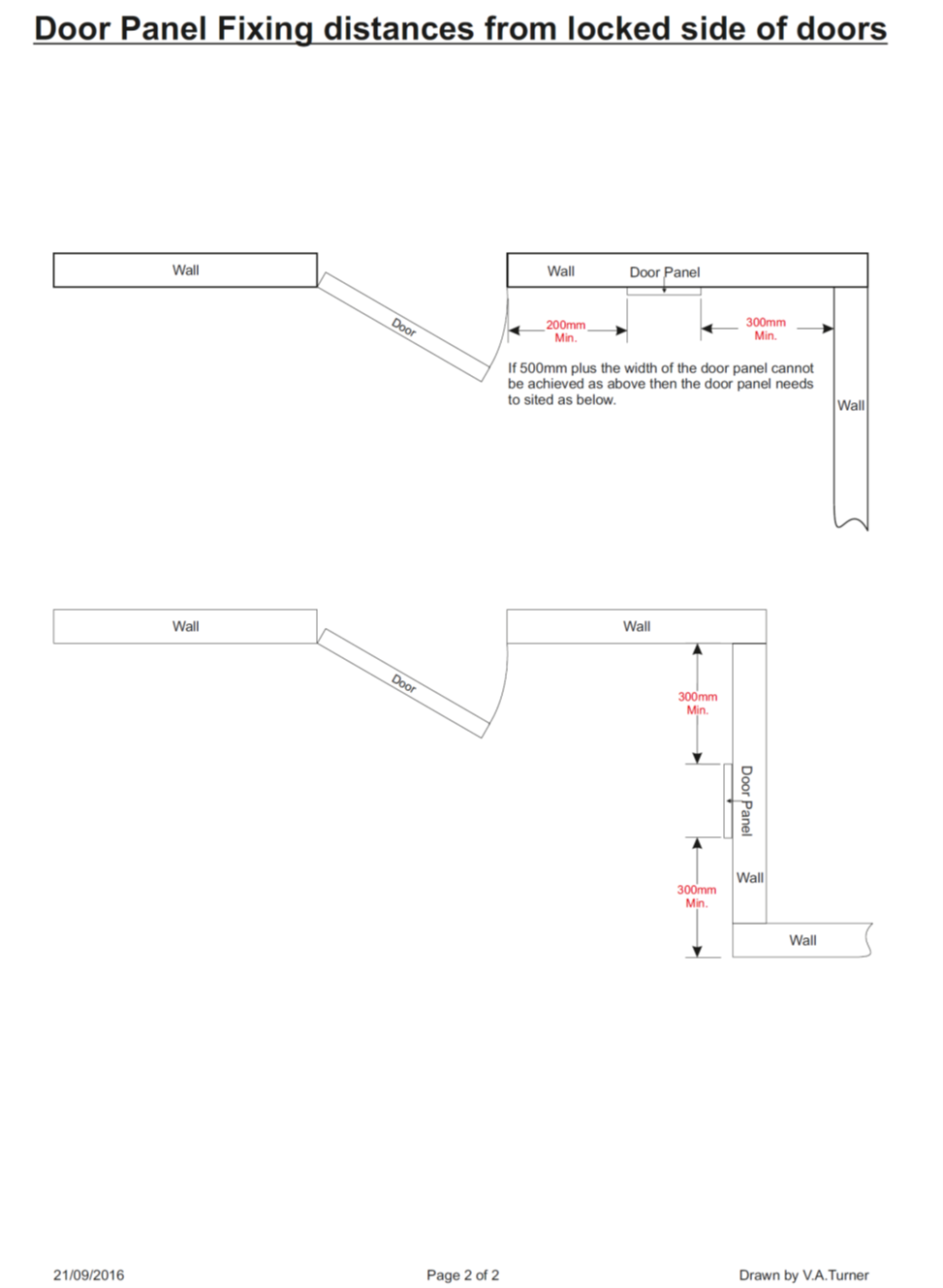
APPENDIX 2A – EXAMPLE MAGNETIC LOCK FITTING AND DOOR DESIGN



APPENDIX 2B – EXAMPLE OF FITTING HEIGHTS



APPENDIX 2C – EXAMPLE OF FIXING DISTANCES FROM LOCKED SIDE OF THE DOORS



APPENDIX 3 – SCHEDULE OF SPECIFIED MATERIALS

MATERIALS PREFERED MANUFACTURER

a) Entry Phone Equipment

Entrotec Limited,

Access House, 5 Ashwood Court, Oakbank, Livingston, EH53 0TL.

Telephone No: 01506 886230. DDL 01293 530117

Contact: John Cossey: Mobile: 07836310677

Email: [johncossey@entrotec.co.uk](mailto:johncossey@entrotec.co.uk)

Web: [www.entrotec.co.uk](http://www.entrotec.co.uk)

b) Proximity Access Control

KMS Limited.

(Supplied as complete system with door entry equipment via Entrotec Limited).

c) Timber, Steel & Aluminium

Soundcraft,

Communal Entrance Doors

Orchard Building, Hewitt Road,

Chelsfield, Kent, BR6 7QL

Telephone No: 01959 533778.

Contact: Mr Dominic Chugg.

Email: [dominic@soundcraft-doors.co.uk](mailto:dominic@soundcraft-doors.co.uk)

Web: [www.soundcraft-doors.co.uk](http://www.soundcraft-doors.co.uk)

d) Bamford Doors – STS202 BR2 – Aluminium.

Ajax Works, Whitehill,

Stockport, Cheshire, SK4 1NT

Phone: 01614806500.

Contact: Mark Rodway – Business Development Manager. Mob: 07557 969845

Email: [mark@bamforddoors.com](mailto:mark@bamforddoors.com)

Website: [www.bamforddoors.com](http://www.bamforddoors.com)

e) Firedoor60 – PAS24:2016 & STS202 BR2 tested to FD30/60/90 – Steel.

Environmental House,

Drakes Lane Industrial Est,

Boreham, CM3 3BE.

Phone: 01206 913213

Contact: Chris Walsh – MD. Mobile: 07979 860031

Email: [info@firedoor60.co.uk](mailto:info@firedoor60.co.uk)

Website: <https://firedoor60.co.uk>

f) Multisteel Limited – PAS24:2016 & STS202 BR2 tested to FD30/60/90 – Steel.

Multisteel House,

12 Bremer Road, South Harrow,

HA2 8AX

Phone: 020 8208 8300.

Contact: James Horan (MD) Mobile: 07966390189 or Terry Horan Mobile: 07817761238

Email: [office@multisteel.co.uk](mailto:office@multisteel.co.uk)

Website: [www.multisteel.co.uk](http://www.multisteel.co.uk)

g) Neos Protect – STS202 BR2 - Steel

Unit C3, Felling Business Centre,

Green Lane, Gateshead,

Tyne & Wear, NE10 0QH

Phone: 01914380226.

Contact: Kirsty Thomas. Mobile: 07934 857348

Email: [kirsty.thomas@neosprotect.com](mailto:kirsty.thomas@neosprotect.com)

Website: [www.neosprotect.com](http://www.neosprotect.com)

h) Premier Security Solutions – LPS1175 SR2/3, LPS2081 tested to FD30/60 - Steel

19-21 Roebuck Road,

Hainault Business Park,

Hainault, Essex, IG6 3TU

Phone: 020 8500 6679.

Contact: Neil Johns – MD. Mobile: 07973676449

Email: [neil@premier-ssl.com](mailto:neil@premier-ssl.com)

Website: [www.premier-ssl.com](http://www.premier-ssl.com)

i) UK Security Doors Limited – STS202 BR2 – Aluminium/Steel

Unit 26 Siddons Factory Estate,

Howard Street,

West Bromwich, B70 0SU

Telephone: 0121 5052279.

Contact: Robert Cross or Sabrina Germano. Mobile 07792 168501

Email: [robert@uksecuritydoors.com](mailto:robert@uksecuritydoors.com)

or

[sabrina@uksecuritydoors.com](mailto:sabrina@uksecuritydoors.com)

Website: [www.uksecuritydoors.com](http://www.uksecuritydoors.com)

j) Circuit Breakers

To comply with BS EN 60898, Type B

k) Containment systems.

Class 4 Heavy Gauge Steel Conduit To BS 31: 1940 (Revised 1988)

PVC mini trunking - Marshall Tufflex Ltd. 25 x 16 mm MMT2

Mini trunking spout - Marshall Tufflex Ltd. 25 x 16 mm TA2 adapters

l) PVC insulated singles - BICC LSHF BS: 6004 Cables

m) Signal Cables

CW 1308 Solid Copper Conductors.

Batt Cables Ltd, The Belfry, Fraser Road, Erith, Kent, DA8 1QH

Telephone No: 01322 441165

Email: [battindustrial.sales@batt.co.uk](mailto:battindustrial.sales@batt.co.uk)

Web: [www.batt.co.uk](http://www.batt.co.uk)

**CCA & CCS cables shall not be accepted.**

n) Coax Cable

RG59BU – Solid Copper Conductor

APPENDIX 4

**FRP-013 – Employer Requirements Process**

**The Requirement**

To set clear minimum standards to be incorporated into contracts for goods and services that implement the highest standards of fire safety.

**Process to Meet Requirement**

RBKC have drafted Employer Requirements (contained at the end of this document).

The ERs will be delivered to key stakeholders across RBKC Housing Management for them to mandate compliance with amongst their staff, contractors and suppliers. This will be supported by training carried out by the RBKC fire safety team.

The ERs should be implemented through formal contracts in the course of procurement of all goods and services, and with current suppliers.

**Process to Record and Monitor Compliance**

Records of contracts to be maintained which reference / contain the fire safety ERs.

**Process to Evaluate Compliance**

Audits of procurement of goods and services to ensure that ERs have been adopted, applied and evidenced. It is envisaged that annual audit of the process will be sufficient.

**Process to Implement Improvements**

Corrective action, in terms of communicating and further training, as well as revision of the ERs in response to queries and clarifications required, will be undertaken continuously as well as following completion of audit.

**RBKC Housing Management – Fire Safety Employer’s Requirements (ERs)**

# Introduction

These ERs relate to all new-build projects and refurbishment projects.

They form a critical component of RBKC Building Safety Cases, in that all new work must comply with these Requirements. RBKC are implemeting Building Safety Cases retrospectively in a phased programme. Whilst it is noted that in many cases that Building Safety Cases may not be in place for buildings in which capital refurbishment works are taking place (particularly in buildings of relatively low height), at least for some time into the capital programme, the ERs and construction fire safety control process should be followed.

Project managers are responsible for familiarizing themselves and their design teams with the Requirements, and providing a statement of compliance with the ERs. This statement, as well as a project summary, should be provided in writing to the RBKC fire safety team.

Where work relates to new-build projects, it is considered reasonable to incorporate all fire safety ERs, and any variation to the ERs will require explicit express agreement with the RBKC Head of Fire Safety, and will only be given in cases where robust engineering analysis and justification is provided in support of such variation.

Where work relates to refurbishment, it is recognized that there may be challenges in meeting all ERs. In such cases, betterment to the extent practicable must be the guiding principle. The project team will also be required to clearly demonstrate why the full ER cannot be adhered to.

In the case of existing situations that incorporate non-compliances, projects must, where they directly interface with the non-compliance, or could reasonably address it by minor variation / addition to the proposed works, address the non-compliance as part of works.

# Fire Safety ‘Red Lines’

The Employer requires that our buildings:

* Do not overly rely on performance-based engineering solutions
* Do not incorporate open plan flats with bedrooms as inner rooms located off risk rooms that are the sole point of access
* Do not incorporate timber frame construction type (i.e. we will only accept concrete or adequately-protected steel frame construction)
* Do not use combustible materials as part of any external wall system, to include cladding or insulation, **for any building height (including those under 18 metres)**
* Do not have any balconies that are formed of, or contain any amount of, combustible material, as any part of the construction or aesthetic detailing
* Only use materials that achieve A1 or A2, S1, D0 as defined through test to BS EN 13501
* (Where fire safety engineering is used as part of the design) are designed only be fire engineers who are appropriately registered as such, as either Incorporated or Chartered Engineers with the ECUK, and who can demonstrate such registration; we will not accept fire engineering services by unregistered personnel who artificially claim to be fire engineers
* Are provided with a suitable suppression system, which may involve a residential sprinkler system in accordance with BS 9251:2014, a residential water mist system in accordance with BS 8458:2015, or a bespoke system with a design and implementation that is fully-supported by sound engineering justification made by a fire engineer that is either Incorporated or Chartered through the ECUK and who has experience in designing such systems
* Are fire-stopped by companies who are third-party accredited by an appropriate recognized UKAS Scheme, including LPS 1531 or FIRAS – this is our requirement for all fire-stopping carried out within the buildings and must be clearly demonstrated to us
* Have fire safety designs that are referred for approval to the RBKC Head of Fire Safety at each RIBA Stage to ensure that the premises as designed can be managed compliantly under the Regulatory Reform (Fire Safety) Order 2005
* Have suitable shutdown facilities for photovoltaic systems, where these are provided
* Are provided with egress facilities that increase accessibility so far as is reasonably practicable
* Are provided with full building floor plans, showing all fire precautions, supported by simple information for use by the end user, in the form of a fire safety building manual, and to comply with the requirements of Regulation 38 of the Building Regulations

# Fire Strategy

* The design team will deliver a fire strategy that conforms to either the approach detailed within Approved Document B Volume 1 2019 or BS 9991:2015.
* An overview fire strategy document will be prepared that provides detail of the approach adopted and the rationale. Particular attention will be paid to addressing the approach to meeting the functional requirements of Building Regulations, namely means of warning and escape, fire spread – linings, fire spread – structure, external fire spread and access and facilities for the fire and rescue service.
* Consideration will be paid to both active and passive fire safety measures, not limited to alarms, smoke ventilation system, suppression and compartmentation.
* The fire strategy document should also clearly make reference to requirements for planned, preventive maintenance. Where the approach detailed in Approved Document B is utilized, whilst not an explicit requirement of that approach, fire safety management will be addressed within the fire strategy document.
* The Employer will also require that all information related to a Building Safety Case is set up in a manner that allows fire safety to be managed effectively for the lifecycle of the building. This will necessitate inclusion of clearly annotated fire safety-specific floor plans and recorded information, with use of BIM, where appropriate.

# Fire-Resisting Structure and Linings

As noted in the ‘red lines’ structure will meet the requirements of Regulation B2, and will not incorporate timber frame.

Steel and concrete frames will be protected and sub-divided (compartmented) using materials having suitable fire-resistance.

Compartment walls - are constructed from either brickwork or dense concrete block, it is important that all perpends are fully filled and not merely ‘buttered’. Compartment walls constructed from stud partitioning are to be of a specification to meet with building control and fire officer’s requirements for fire separation/resistance. In this regard, steel framing and Metsec framing systems are acceptable.

RBKC fire safety should be consulted if these systems are proposed. All compartment walls are to be taken up to the underside of the concrete floor slabs to maintain fire separation and fully fire sealed. They shall comply with Local Planning Authority, Building Regulations airborne and impact sound insulation requirements. Robust Details are an acceptable method of compliance.

Compartment all construction to comply with Building Regulation Standards and identification of fire break walls to be clearly identified on the Architects fire strategy plans and agreed with the building control and fire officers.

No foams or plastic-based materials will be used in the wall assemblies within common parts. No combustible materials at all will be used on external walls, balconies, roofs, etc.

# Emergency Lighting

An emergency lighting system should be provided to all communal areas, escape routes, stairs, work areas, bin rooms, to illuminate plant and electrical cupboards, car parks, outside all exit doors, at all changes of direction or level, to illuminate all fire fighting equipment. The installation should comply with the recommendations of BS 5266-1 and the requirements of BS 5266-8 and BS EN 1838.

Emergency fittings shall be LED emergency version of the matching communal lighting and shall be designed to be part of the communal lighting in looks and control.

Emergency lights should be designed to operate in the event of local mains failure of the same circuit. The system should be a self-test system with control and indicating equipment kept in a landlord-controlled area that is documented clearly on floor plans contained within the building fire safety manual provided to satisfy Regulation 38 of the Building Regulations.

To future-proof, the Employer requires that systems can be remotely monitored as well as being self-test, automatically reporting failures using an open protocol-type system.

# Fire Detection and Alarm System Requirements - Dwellings

Each individual dwelling will be provided with domestic smoke and heat alarms, provided to a minimum standard of Grade D1 Category LD2 as defined by BS 5839-6:2019. Where any form of compensation is required for existing situations, such as balcony escapes that were provided for original design but have, over years of the building being in use, been compromised and are no longer viable, or where separation between flats may not fully meet current standards, LD1 will be provided.

Detectors should be provided on separate fused circuits, with non-removable lithium battery or capacitor back-up. To mitigate unwanted fire signals, multi-sensor alarms should be used in preference to smoke alarms for circulation and habitable risk rooms, unless smoke alarms are proven through design risk assessment to be more appropriate. Heat alarms should be provided in kitchens. Positioning of alarms should be in accordance with the recommendations of the British Standard.

Alarm sound pressure levels should achieve 85dB(A) at the door frame of each bedroom within the property. Where flats are designated as accessible, consideration of visual alarm devices will be necessary. Interfacing of other warning devices should also be considered (for example, vibrating pillows).

# Fire Detection and Alarm Systems – Common Parts

On the basis that purpose-built flats will have a designated ‘stay put’ policy in operation, fire detection systems in common areas should not be provided with fire alarm warning sounders or visual alarm devices, which could cause confusion in respect of fire procedures.

Fire detection equipment for the purposes of actuating devices in support of the fire strategy (i.e. smoke ventilation systems) should be provided in accordance with the recommendations contained in BS 5839-1:2017, with detection provided as per Category L5. As detection is provided to achieve fire strategy aims and not to provide general warning, manual call points should not be provided (although specific ventilation equipment should be provided with controls for use by the fire and rescue service).

Control and indicating equipment should be provided as per BS 5839-1 and should be readily located within a main entrance (where provided), with additional CIE (repeater panels) in other routes into the building. A diagrammatic zone plan should be provided.

All fire detection and alarm system should be open protocol (i.e. not managed or closed protocol) to allow future serviceability and maintainability.

# Smoke Ventilation Systems

Smoke ventilation systems should be provided to meet the functional requirements of Building Regulations B1 and B5.

The Employer requires that pressurization systems are not used, due to sustainability issues with such systems, as well as practical implications to adopting such an approach to smoke control (i.e. we recognize that these systems can fail in conditions that exceed the design parameters, including multiple doors open simultaneously).

Approaches that will be acceptable include use of natural smoke shafts (preferred), automatically-opening ventilators (AOVs) where external walls are provided to lobbies, or mechanical ventilation. Whichever approach is used, the Employer requires that suitable justification of the adopted approach is clearly recorded, including information pertaining to hand calculations or computer models (where these are used in support of selection of a particular method).

Staircases will be provided with AOVs for the purpose of facilitating replacement air, where necessary. Given the potential for health and safety impact during operation of an AOV in adverse weather, particular attention will be paid to avoiding rain ingress.

Other replacement air provision (such as, at low level within a natural shaft) will be considered and justified.

With all smoke ventilation systems, care will be taken that adverse wind conditions do not undermine system performance, and this will require sound engineering justification, including, where necessary, through modelling and calculation.

Any smoke ventilation system should be open protocol and particular consideration will be paid to maintainability and serviceability.

Any system used will be provided with all facilities for manual and automatic operation, and will comply with the relevant section of BS EN 12101.

Manual call points or buttons shall be type so that only a button press is required to close/ reset. Breakglasses shall not be installed. Simple control buttons to enable closing and resetting by unskilled persons without tools, keyfobs or other special devices shall be installed on the ground floor and within sight of the each AOV to enable safe closing. Auto closers and wet weather sensors should be installed to roof vents. AOVs should not act as roof access points.

# Suppression Systems

The Employer requires that suppression is provided to afford our residents protection that exceeds minimum legislative requirements.

We therefore require that either residential sprinklers or residential water mist systems are provided within our dwellings, that meet appropriate standards (i.e. BS 9251, BS 8458, or a fully-engineered system). To ensure robustness of these systems, we require that backup power supplies are provided to the system, as well as dual pumps.

We require that careful consideration is given to minimizing the risk of accidental discharge, and that facilities for inspecting or testing the system are provided as far as possible within the common parts, minimizing reliance on entering the flats to carry out testing or maintenance of the system.

Where retail units are provided within a block, these should be provided with a suitable suppression system. This is particularly important where food outlets are provided, where ductwork and canopies provided for the extraction of cooking fumes must be provided with wet chemical extinguishing systems.

# Fire-Resisting Doors and Doorsets

Fire-resisting doors should meet the standard for either FD30S or FD60S (as determined by the building fire strategy, based on location). It is noted that statutory guidance may not require smoke seals on certain doors (e.g. some riser cupboards), although the Employer requires a higher standard than minimum in these instances, requiring that all fire doors are fitted with cold smoke seals. Smoke seals are to be of the brush type (as opposed to plastic fin) to ensure that they are hard-wearing and lower maintenance.

Self-closing devices are to be overhead arm-type closers (as opposed to floor spring or recessed Perko-type closers) to ensure that they are robust. Where practicable, self-closers are to be provided on the external (common parts side) face of the flat entrance door, to allow simple maintenance by the Employer and easy identification of issues with the device without necessitating entry into the flat.

Fire doors within common parts (i.e. not front entrance doors) are to be provided with FIRE DOOR KEEP SHUT or FIRE DOOR KEEP LOCKED signage as appropriate to the designation of the fire door.

All fire doors will have performed to the certified duration under appropriate BS 476-22 and/or EN 1634-1 fire tests. The Employer requires that the doors will have been tested from both sides, and that all hardware provided on the doors was included within the test (e.g. ironmongery, letterboxes, spy holes, etc.). Certificates will be provided within Regulation 38 information, including full floor plans showing the location of all fire-resisting doors. The door and frame will also be provided with a simple visual indication of the fire-rating of the doorset for ease of future inspection and check.

The door and doorset as tested will be provided, without any variation or deviation from the type to which test data relates.

# Fire-Resisting Glazing

All fire-resisting glazing must meet the appropriate fire-rating, achieving both integrity and insulation qualities under appropriate British and/or European fire tests. A clear marking must be provided on every individual piece of glazing. The Employer will consider failure to adhere to this requirement as failure to adequately demonstrate that the glazing achieves the appropriate fire-rating, and will require that the Contractor remedies any such glazing. Fire-Resisting Walls

Fire-resisting compartment walls will be adequately formed of blockwork supported by fire-stopping to ensure a full seal between floor slabs. All walls will ensure that adequate fire-rating is achieved to support the fire strategy and can be evidenced through appropriate test data under either the appropriate BS 476 test or European equivalent. All fire-resisting walls will be clearly indicated within the Regulation 38 floor plan information delivered at the end of the project.

All fire-stopping is to be undertaken by a UKAS-accredited third-party certificated fire-stopping company.

# Photovoltaic systems and green roofs

Where PV systems are provided, they will be provided with facilities for shutdown by the fire and rescue service in a suitable location at access point(s) to the premises. A specific fire risk assessment will be undertaken by a fire engineer supported by an electrical engineer to confirm that the risk of fire within the array and surrounding areas is minimized as far as possible. It will be ensure that the array does not generate a diret current voltage that is defined as ‘prescribed voltage’ by the Regulatory Reform (Fire Safety) Order 2005 without express agreement by the RBKC Head of Fire Safety and the London Fire Brigade, who will require evidence that appropriate control measures are incorporated.

PV locations will be isolated from domestic dwellings and will not be included on walls to the block. An acceptable location is likely to only be on a flat roof or in the ground surrounding the block, and needs to be considered carefully to ensure that any fire that affects the array cannot foreseeable spread to the building. Consideration to fire-fighting operations must be undertaken. Access facilities to reach the array must also be assessed and be appropriate to comply with the Construction (Design and Management) Regulations 2015.

Green roofs must be easily maintainable so that plants cannot dry out and become a fire hazard. Careful consideration of this is a requirement of any design.

# Rising Mains

Where deemed necessary to comply with Regulation B5, dry or wet rising fire mains will be provided, formed of galvanized steel, and complying with the guidance contained in the current version of BS 9990.

# Fire Safety Signs and Notices

All signs and notices are to comply with the relevant section of BS 5499. In addition to statutory signage, the Employer requires that notices clearly indicating the layout of the premises and the location of fire exits and fire precautions (such as fire doors, smoke control systems, detection, etc.) are prominently displayed in a suitable aesthetic appearance on each level, also clearly detailing the evacuation procedure (i.e. ‘stay put’).

# Regulation 38 Information

On completion of the project, a fire safety manual must be provided as a separate document, with full floor plans showing all fire precautions, a fire strategy document, a fire maintenance document, a pre-occupation fire risk assessment, and information relating to all fire precautions discussed in the above commentary.

# Access and Accessibility (Fire Safety)

A fire service drop release /override switch shall be fitted to entrance doors to blocks to enable emergency release by the fire and rescue service.

All fire exit doors should be provided with hardware that is easily and readily openable by users of varying physical ability.

Where flats are provided for persons with restricted mobility or physical ability (i.e. upper body strength), friction-less closers will be used.

# Lifts (Fire Safety)

Lift parts shall be readily available from standard UK suppliers. All parts shall come from one principal suppler.

Passenger lifts shall be provided as indicated on the contract drawings, which must be accessible for wheelchairs. Lifts shall be provided in all flatted blocks that have four floors or more.

To ensure robust accessibility facilities (by ensuring adequate means of self-egress), lifts should meet a minimum standard for an evacuation lift in accordance with BS EN 81-76. Where fire-fighting lifts are provided in accordance with BS EN 81-72 (i.e. to comply with Regulation B5), these can be considered to meet the Employer’s requirement for egress, providing that a suitable strategy is agreed and documented.

# Construction

During construction, particularly in occupied buildings, construction site areas will be separated from occupied areas by fire-resisting construction achieving 60 minutes’ fire-resistance (FR60).

As noted within the ‘red lines’, our requirement is that all fire-stopping is carried out by third-party certified companies.

It is noted that the Fire Safety Order applies to construction work as well as the requirements of CDM, and, as such, the Articles of the Order must be complied with at all times, demonstrable under co-operated and co-ordinated risk assessment procedures.

Hot works are a recognized risk. RBKC require that hot works permit arrangements are put in place for any hot works. These will require fire watch checks every half-an-hour as a minimum for a period of two hours at least.

RBKC are operating a blanket ban on acetylene, due to the significant hazard associated with this gas. Safer alternatives must be used. Contractors must not bring acetylene to site, and must ensure that their sub-contractors or staff are aware of this prohibition.

Site storage must be in a fire-resisting container. Welfare and storage units must be located at least six metres from any RBKC building. Where this is not achievable, any such units must be fully fire-resisting, including doors and doorsets, and must not be provided with windows that face RBKC buildings.

Site logistics must be carefully planned to ensure that means of escape are not, at any time, compromised.

Variation to agreed materials or designs on site is prohibited without express inclusion in the CFSC and approval from the RBKC fire safety team. Any unauthorized variation will be required to be immediately rectified, without cost to RBKC, by the Principal Contractor.