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Reepham C. E. Primary School Classroom Works

Tender Pack

Lincolnshire County Council
Gleeds Cost Management Limited
NTBS3983

Version: 1
Date: February 2024

DOCUMENT CONTROL

Project name	**Reepham C. E. Primary School Classroom Works**	**Project number**	NTBS3983
Date of Issue	March 2024	**Version number**	1
Reason for issue	Tender Pack		
Document author	Chris Ross, BSc Hons MRICS	**Grade**	Executive Building Surveyor
Signature			
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Approved by	Tom Shipman, BSc Hons MRICS	**Grade**	Senior Director
Signature			

Contents

1

Invitation to Tender

Reepham C. E. Primary School
High Street
Reepham
Lincolnshire
LN3 4DP

Dear Contractor

Re:- Tender Ref: NTBS3983 Reepham primary School Classroom Works

I am pleased to enclose the following documents which should be used to prepare and return your tender proposal:

Request for Quotation Template

Form of Tender

Preliminaries

Schedule of Works

Drawings

Pre-Construction Information

Note to contractors - For access arrangements and to avoid disruption to the building, the contractor can only make one visit to site, with prior arrangement with Gleeds Cost Management Ltd (so he will be expected to have all his necessary sub-contractors in attendance at that time). Any technical queries are to be returned back to Gleeds and not Lincolnshire County Council. Tenders are to be assessed under the NJCC. Contractors are required to register to tradeshift before Tender has been returned.

The return date for your submission is to be no later than **noon on Monday 15th April 2024**. Tenders should be returned electronically via email or hard copy to Christopher Ross at the Gleeds Nottingham Office (First Floor, 11 Station Street, Nottingham, NG2 3AJ) or christopher.ross@gleeds.com
Please ensure you include an indicative programme with your tender return.

All documents must be clearly marked with the following tender reference: NTBS3983 Reepham C. E. Primary School Classroom Works. Any tenders received after **noon on 15th April 2024** will not be considered.

Specific questions relating to this tender should in the first instance be addressed to christopher.ross@gleeds.com
Points of clarification can be raised via telephone direct on 0115 977 8000.

Yours faithfully

Christopher Ross

for and on behalf of
Gleeds Cost Management Limited

2

Form of Tender

FORM OF TENDER

PROJECT TITLE:
NTBS3983 Reepham C. E. Primary School Classroom Works

To: Lincolnshire County Council

Sir/Madam,

I/We, having read the Agreement, Conditions of Contract and General Description of Work Delivered to me/us, and having examined:

The Drawings
The Schedule of Works
Supporting Documentation

Referred to therein, and also having satisfied myself/ourselves as to the Conditions appertaining at the Site, do hereby offer to execute and complete the work specified, for the Tendered Sum of:

…….. (£_____)

I/We further offer to commence on Monday 20th May 2024 and to complete and hand over the Works in accordance with the agreed JCT Minor Works Contract 2016 on Monday 17th June 2024. I/We undertake to enter into a Formal Contract as Described in the Tender Documents.

The tender remains open for consideration for 13 Weeks from the date fixed at the submission to tenders. Lincolnshire County Council acceptance of your offer will be confirmed by the issue of a contract for signing.

Dated this_____ day of _____ 20_____

Name_____

Address_____

Signed by or on behalf of the Contractor _____

Note: Lincolnshire County Council does not bind itself to accept the lowest or any tender, nor reimburse any expense incurred in the tendering.

3

Schedule of Works

This schedule of works refers to internal classroom alteration works at Reepham C. E. Primary School

Reepham C. E. Primary School
High Street
Reepham
Lincoln
Lincolnshire
LN3 4DP

This schedule of works is to be read in conjunction with the following drawings:

NTBS3983 /01 -Site Plan
NTBS3983/02 - Existing Plan
NTBS3983/03 - Proposed Plan
NTBS3983/04 – Proposed Ramp
NTBS3983/05 – Proposed Plan Decorations/ Carpet Tiles
NTBS3983/06 – Proposed New Screen

Gleeds Cost Management Limited will be manging the works and acting as Contract Administrator. The key Gleeds contact for the project is:

Contact:	Christopher Ross (Gleeds Cost Management Ltd)
Tel:	07718804331
Email:	christopher.ross@gleeds.com

All project related queries and issues that arise in the first instance shall be directed to the Gleeds key contact throughout the entire project.

NOTE: The Contractor is responsible for checking all details and dimensions on site and using his site measurements within the tender submission and any subsequent works on site. Dimensions on drawings and quantities within the specification are for guidance purposes only unless stated as CRITICAL.

Programme & Working Hours

Contractor to price for carrying out all works during the hours detailed below and within a 2-3 week period.

Commencement Date: **20th May 2024**
Completion Date: **17th June 2024**

The contractor should include for all <u>electrical shut down works or noise disturbance works</u>, to be undertaken during the May Half Term School Holidays. The Half Term runs from Monday 27th May to Friday 31st May 2024.

Monday – Friday (School Time) Working Hours TBC
Monday – Friday (School Holidays) Normal working hours 7am – 7pm
Weekends (Saturday/Sunday) Normal working hours 7am – 7pm (to be arranged via CA if required)

The works involve:

- **Removal of timber glazed partition including fire door to classroom.**
- **Removal of current accessible lift.**
- **Removal of current ramp to corridor.**
- **Removal of carpet to classroom and corridor.**
- **Removal of M&E associated fixings.**
- **Remove fire extinguishers.**
- **Removal of storage heater.**
- **Removal of store cupboard.**
- **Making good works.**
- **Decoration works.**
- **Installation of new ramp to corridor.**
- **Installation of new timber and glazed partition to classroom.**
- **Blockwork to classroom.**
- **Installation of new carpet tiles to corridor and classroom.**
- **Installation of new timber partition with glazed panels.**
- **Installation of new FR30 Door to classroom.**
- **Installation of new LED strip lights to classroom.**
- **Reinstate M&E associated items (PIR Sensors, Fire Ciren, Fire extinguishers etc).**
- **General cleaning item.**

Programme

.1 Contractor to provide with tender outline proposals for completion of the works to the contract dates above.

.2 Working hours are those outlined above.

.3 The contractor will allow to programme works around the operation of the site. The site is a busy office floor that is actively used.

Generally

.4 Contractor to visit site to ascertain the nature of all works required and raise any queries with the CA. Should the contractor wish to view the roof during the tender period they will be required to demonstrate safe access.

.5 The works are to be let via the JCT Minor Works with Contractor Design Proportion Contract 2016 enclosed with the tender.

.6 Access arrangements are to be confirmed with the CA:
Christopher Ross; Tel 0771880433

.7 The contractor is to be fully responsible for the entire area of the works for the duration of the works.

.8	Access is restricted to the immediate vicinity of the works. Parking is as detailed within the prelims and is to be confirmed at the pre-contract meeting.		
.9	The contractor is reminded that works will be undertaken within a “live” environment therefore this to be taken into account when pricing the works.		
.10	The site is to be kept in a manner to meet all current regulations and to consider the uses of and occupancy of adjoining sites and properties.		
.11	The contractor will be responsible for obtaining all permits, agreements and licences necessary in the completion of the works. Allowance should be made to accommodate restrictions accorded by these.		
.12	This schedule is to be read in conjunction with both the Preliminaries and Material and Workmanship section of this document.		
.13	Any discrepancies between elements of information should be brought to the attention of the Contract Administrator during the tender period. Claims for extras will not be accepted where it can be shown information was available for pricing. Information included within documents and drawings but not in the schedule will be deemed to have been included.		
.14	If necessary, the contractor shall provide a site set up within the site boundaries for the duration of the project. Any temporary facilities/materials are to be provided at the expense of the contractor.		
.15	The contractor is to protect all features to be retained on the site.		
.16	The employer does not bind himself to accept the lowest or any tender and he shall not be responsible for any costs incurred by any tenderer in the process of his tender.		
.17	The Contractor shall be deemed to have carefully examined all the drawings and the specification and to have ascertained the full extent and character of the works and such methods appropriate for its execution.		
.18	Allow for serving all notices and paying all fees and charges in connection with the works and any temporary structures.		
.19	Provide and maintain all necessary fencing, hoardings, fans, planked footways, guardrails, gantries, scaffolding, hoists and the like for the proper execution of the work, for the protection of the public and the occupants of the adjoining premises and for meeting the requirements of any local or any other authority and alter and adapt as necessary.		
.20	Provide all artificial lighting and power for use of the works and ensure adequate light within the building during the alterations, pay all charges in connection therewith, provide all temporary connections, fuses, switchgear, distribution boards, leads, fittings etc., including the provision of all necessary low voltage equipment, transformers, rectifiers etc., for the use of hand tools, clear away and make good on completion.		
.21	Allow for any attendance, overtime or weekend working as necessary during the duration of the contract in order to maintain and meet the agreed programme, including the liaison with the occupiers and the Local Authorities during critical periods or work which may involve some disruption or disturbance during normal working hours.		
.22	Allow for disposal of all waste as it arises to maintain clinical environment.		

.23 **The site will be occupied at the beginning time of the works (for one week). Contractor to keep circulation areas free from obstruction where practicable and cleaned at regular intervals throughout the duration of the works. All fire escape routes shall be maintained and managed by the contractor.**

.24 Contractor must allow for liaising with the Project Manager Alison Toyne at Lincolnshire County Council.

.25 All areas that constitute a fire escape route must be kept clear during school opening hours. If this is not possible a temporary alternative fire strategy for the building must be approved prior to the commencement of these works. The contractor will be required to put in place and manage all temporary fire arrangements as may be required.

.26 Contractor will allow to provide all skips necessary to undertake the works. All skips are to be fenced off and lockable.

.27 The contractor will allow to ensure a full-time supervisor is on site at all times when works are being undertaken on site.

.28 Contractor must ensure that all operatives on site hold a valid DBS Certificate.
The non-working supervisor will be expected to undertake a variety of duties to ensure the project is delivered successfully. These will include but not be limited to:

- Site management duties.
- Compliance with CDM 2015 duties on behalf of the Principal Contractor.
- Close liaison with NHS Property Services representatives.
- Close liaison with tenants to arrange access and notify them of works.
- Resolve any on site queries regarding any element of the works.
- Provide the Contract Administrator with regular progress photographs of the works.
- Ensure HS and O and M files are accurately completed prior to practical completion.

1.0 Site Set-Up and Preliminary Items

General

.1 As may be required allow for providing all Heras fencing and suitable signage to securely segregate the areas of proposed compound location, a clear and safe perimeter must be maintained by the contractor beneath any high-level works. The site is live and as such care must be taken to consider the safety of staff and members of the public.

.2 Contractor to allow for all necessary access / safety equipment to complete the works and comply with all necessary health & safety regulations in this respect. Contractor to fully assess the proposed scope of works and develop a safe working method.

.3 The contractor must follow the mandatory requirements under the Construction (Health, Safety and Welfare) Regulations 1996 and the Work at Height Regulations 2005. The contractor will provide the following:

- Details of their health and safety policy
- Any risk assessments and safe systems of work
- Appropriate qualifications or accreditations
- Details of their public liability insurance cover; and whether they have been the subject of any formal health and safety enforcement action.

.4 The contractor will allow to liaise with all stakeholders when programming their works and will ensure that there is no service interruption for these stakeholders for the duration of the works.

.5 The contractor will be responsible for liaising with client maintenance providers as may be required to manage any power shut downs on individual sites e.g. ICT providers

.6 The contractor will be responsible for ensuring there is no service disruption during normal working hours at any of the sites. Limited planned disruption of services will be accepted only via the prior agreement of the contract administrator.

.7 The contractor will allow to attend 1no pre-start meeting and 1no separate co-ordination meeting per site if required.

.8 The contractor will ensure they provide the contract administrator with regular progress photographs showing all elements of the works.

.9 The contractor must ensure the works are phased to allow the site to continually operate with as little disruption caused as possible. Phasing plan is to be discussed and approved with contract administrator.

.10 The contractor will make every effort to recycle all waste materials generated as part of this project. The contractor will allow to provide the Contract Administrator with details of percentage and type of waste recycled during the project.

.11 The contractor will make every effort to source materials from sustainable sources. This will include selecting materials with a high recycled content.

.12 Supply an independent welfare unit and storage container, inc power and water for the duration of the project. Allow for providing all Heras fencing and suitable signage to securely segregate the compound area from the remaining site, a clear and safe perimeter must be maintained by the contractor beneath any high-level works.

2.0 Strip out Works

.1 .1 Contractor to review Asbestos Register prior to any works commencing. Any issues should be addressed with the CA.

.2 Contractor to undertake R&D Survey 2 weeks prior to works commencing on site.

.3 Provisional Allowance Sum of £3000 for any asbestos found following the R&D Survey.

.2 *General Item*

.1 Allow to remove and store away all equipment (desks/chairs etc) from the classroom and corridor prior to the works taking place in this area.

.3 Flooring

.1 Contractor to allow for the removal and disposal of carpet tiles to the ramped area ahead of the removal of the ramp.

.2 Once the school is closed (over the Easter Holidays) the remaining corridor and classroom carpet tiles are to be removed and disposed of, as indicated in drawing NTBS3983/03.

.3 The contractor to allow to fully prepare the existing substrate prior to the new carpet floor tiles (to match existing) being laid, once the strip out works are complete.

.4 Accessible Lift/ Corridor Area

.1 Allow for the removal of the current accessible lift to the LHS of the ramped walkway. Contractor to allow for appropriate disposal of lift.

.2 Once carpet tiles have been removed to the ramped corridor area, contractor to allow for the removal and disposal of the timber ramp (dimensions 2500mm x 1170mm) including timber handrail to the RHS as indicated in drawing NTBS3983/02. Contractor to allow for the disposal of the timber ramp and handrail.

.3 Contractor to allow for the removal and disposal of joinery (timber frame, architrave, skirting, fire doors etc) to the corridor store cupboard (as indicated in drawing NTBS3983/03).

.4 Allow for the appropriate removal of masonry blockwork from floor to ceiling to the store cupboard. Contractor to ensure blockwork wall to the RHS of the cupboard door is retained with no damage. Teachers break out kitchen to be retained with no alterations. Contractor to allow for the disposal of all internal contents of cupboard. Contractor to make good surfaces.

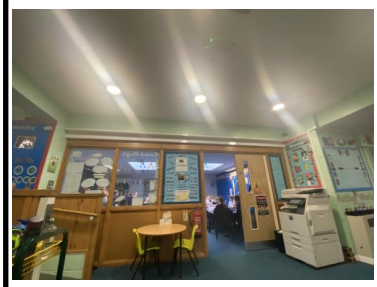
.5 M&E

.1 Contractor to remove and appropriately cap off light switch located to store cupboard, prior to removal of blockwork wall. Contractor to remove and dispose of all associated trunking.

.2 Contractor to remove and store away safely fire extinguisher located to timber partition to classroom ready to reinstate after partition works are completed.

.3 Contractor to remove and dispose of no.3 LED round downlighter to plaster ceiling. Contractor to prepare area for installation of no.3 Dextra Graduate LED Strip Lights (to classroom side of new partition).

.4 Contractor to remove and appropriately dispose of fluorescent No.6 tubes located to the No.3 strip lights within the classroom.



.4 Contractor to remove and dispose of current emergency light panel to central corridor, ready for the partition works. Note that emergency lighting is to be installed later in the works (M&E Section).

.5 Contractor to remove and store away safely PIR sensor located RHS above classroom entrance, ready for the installation prior to partition works.

.6 Contractor to allow for the removal and disposal of the Firescan Red Combined Sounder Beacon located above current classroom door. New Fire beacon to be installed after partition works (details with M&E section).

.7 Contractor to allow for the removal and disposal of current storage heater located to the RHS of the entrance doorway within the corridor area. Contractor to note new vertical radiator to be installed in place prior to partition works.

.8 Contractor to note that the current extract fan (mechanical ventilation) located within the corridor store cupboard is to be retained as part of the works.

3.0 Timber Partition with Glazing Panels

.1 Contractor to extend the current classroom as show on drawing NTBS3983/03. Contractor to install blockwork (440mm x 125mm x 100mm) with 10mm mortar joint.

.2 Contractor to supply and install timber partition with high level glazing panels (like existing partition). Timber partition frame to have adequate area left for double fire doors to be installed (same location as previous entrance) Door frame to be 2100mm high by 1800mm wide. Contractor to suitable secure and make good any affected surfaces.

.3 Partition is to meet a minimum of 30 minutes fire raring (including the fire doors).

.4 Partition to be built off the existing floor and to be secured above the current plasterboard ceiling.

.5 The blockwork finish must be ready to receive decoration. To be free from defect to provide good smooth surface to receive paint.

.8 Make good to any areas disturbed.

New partition to be similar to existing in design (as indicated on partition elevation drawing).

4.0 Joinery

4.1 *Skirting*

.1 To the inner and outer face of the new masonry blockwork, install side of the new square edge primed 120mm high MDF skirting boards 15mm thick.

.2 New skirting boards to be screw fixed into position at 400mm centres.

.3 All fixing holes to be filled and made good.

.4 All new skirting boards to be primed with 2nr coats of water-based undercoat prior to receiving decorations described elsewhere.

4.2 Double Leaf Fire Door set to Partition

.1 Contractor to source and Install timber FDR internal hardwood FD30 double leaf fire door set in line with the current classroom entrance. Lining depth to be approx. 125mm (to match thickness of timber glazed partition wall). Door frame to be 2100mm high by 1800mm wide.

.2 Doors to include vision panels to have 1550mm x 175mm vision panels with unwired safety glass tested to BS6206 and Approved Document Parts K, M & N. Vison panels to be 300mm from finished floor level.

.3 Double door set to corridor to incorporate sidelight vision panels with unwired safety glass tested to BS6206 and Approved Documents Parts K, M & N.

.4 Doors to include new kick plates are to receive new 100mm high SSS Kick plates (1.2mm) to both sides.

.5 Doors to be fitted with Briton 2003E or similar approved door closer. Adjust opening/closing forces to comply with BS8300:2009 and AD 'M'.

.6 Door to be hung on 1 ½ pair of Grade 13 stainless steel hinges unless detailed otherwise.

.7 Door ironmongery to be set at 900mm from FFL unless detailed otherwise.

.8 Door to be provided with where denoted, 2 nr aluminium 'Fire Door Keep Shut' of 'Fire Door Keep Locked' signs screw fixed, both sides as required @ 1500mm from FFL in accordance with BS: 5499.

.9 Allow to fit new satin stainless steel 94mm heavy duty puck door stops.

.10 Softwood timber door casings to have a minimum density of 450kg/m3, minimum thickness 30mm excluding stops. Allow for door to be fitted with Lorient DS 15mm x 4mm acoustic intumescent seals to the vertical sections and top edge of the door frame.

.11 The clearance gap between the door and the frame along the vertical sections and top edge should be no greater than 3mm +/- 1mm. The under-door threshold gap should be in accordance with the manufacturer's installation instructions for the doors, but should be no greater than 8mm. All as per BS8214:2008.

.12 Ensure door set finish matches that of the existing fire doors located to the classroom entrance.

.13 Contractor to make good work area and clean up debris, dust, offcuts etc.

5.0 Installation of timber ramp

0.1 Contractor to install timber ramp to location indicated by drawing NTBS3983/03.

0.2 Contractor to source quality timber that is not warped or damaged. Contractor to cut to size timber joists as required.

0.3 Note that raised floor (top of proposed ramp) is 350mm. Timber ramp to be 4000mm in length and 1:12 gradient as indicated on drawing NTBS3983/04. Contractor to ensure the proposed dimensions meet all Doc M requirements including gradient of slope to ensure wheelchair accessibility.

0.4 Contractor to supply 6x6 timber posts and install to the edges of the ramp. Contractor to supply and install into position the 2x8 ramp joists that will run in one continuous length (4000mm) from the top of the ramp to the corridor floor level. Timber ramp joists are to be secured with joist hangers to the timber joist running parallel to the top of the ramp. Ramp joists are to be secured to the bottom of the ramp with a timber slat attached to the floor. Note that all timbers are to be securely attached with screws (of the appropriate size).

0.5 Contractor to install double sheeted ply board to the continuous ramp joists. A minimum overall thickness of 1.5 inches is required to ensure the ramp can sustain adequate loading. Ply boards are to be suitably attached to joists with wood screws at a minimum of 400mm centres. with all joints taped to ensure even finish.

0.6 Contractor to appropriately secure timber ramp and ensure the timber ramp surface is level with no bumps, drops that could cause trip hazards.

0.7 Contractor to install timber handrail to new partition area at a hight of 1000mm as indicated on drawing NTBS3983/04.

0.8 Contractor to make good all surfaces prior to installations of carpet tiles (See Section 8.0 Floor Finishes). Contractor to ensure that contrasting carpet tiles are used to the ramp to distinguish a change in levels. Contractor to confirm carpet tiles colour with CA and client.

0.9 Contractor to make good all areas disturbed and clear any offcut carpet/debris.

6.0 Ceilings

.1 Make good painted plaster ceilings:

.1 Make good plaster ceiling to classroom where previous partition has been removed.

.2 Make good plaster ceiling to classroom where new partition has been installed, ready to receive decoration.

.3 Make good plaster ceiling to corridor where M&E installations have been undertaken (removal and installation of sensors/lighting etc).

.4 Note the contractor is to allow for the installation of LED Strip lights to the classroom area (Included in M&E section).

.5 Ensure installation is undertaken in conjunction with the associated mechanical and electrical specification as part of these tender documents.

.6 Make good to all areas disturbed.

7.0 Decoration

.1 Decorate extended classroom and corridor area, including the below elements:-

.1 Decorations to include for the following:

a) All blockwork walls to the corridor
b) All plaster ceilings to the corridor
c) All Joinery – Skirtings/architraves/ door frames to the corridor area
d) All plaster walls to the extended classroom
e) All plaster ceilings to the extended classroom
f) All joinery - skirting's / architraves/ door frame to the extended classroom

.2 Where joinery is new a primer coat is to be included. Colour to be confirmed with CA.

.3 All walls/ceilings to be given 2nr top coats of durable matt emulsion. Colour TBC.

.4 All previously varnished and stained work is to be thoroughly rubbed down to bare timber to provide a sound, smooth even surface ready to receive the new finish of 1nr base and 2nr top coats. Lightly sand between coats.

.5 All paints and other materials to be used strictly in accordance with the manufacturer's instructions and the primer, undercoats and finishing coats which from a painting system to be of the same brand name, **Johnstone paint**

.6 Allow for removing all furniture, fixtures and fittings away from walls, covering with dust sheets were required and repositioning upon completion.

.7 Allow to fill any cracks prior to painting as a standard pre paint preparation using flexible filler and sand to leave smooth ready to accept new décor.

Note: The contractor is to allow for all preparation of surfaces to existing internal surfaces, which are to receive new decorations e.g. burning off, rubbing down and the like. Including for filling all holes, chases and patch repairs prior to decoration.

8.0 Floor Finishes

.1 Contractor to supply and install new carpet floor tiles to classroom and corridor area, including ramp as hatched in drawing NTBS3983/05.

.2 Contractor to make good floor screed/surface and remove any previous adhesive, dirt, dust to ensure good key surface.

.3 Contractor to Apply appropriate adhesive residue to surface in line with manufactures guidance.

.4 Contractor to lay and secure carpet tiles that match remaining classroom tiles. Contractor to confirm colour with CA. Contractor to note that carpet tiles to the ramp will need to be a contrasting colour to ensure that a change in levels can be noted by all.

.5 Make good to all areas disturbed and remove any offcuts.

9.0 Mechanical and Electrical Works

9.1 Installation of vertical radiator

.1 The contractor is to undertake the design and installation of the electrical works – Contractors Design Portion

.2 Contractor to isolate all associated power during power supply/distribution works.

.3 Contractor to strip out current storage heater (as detailed in Section 2 – Strip Out Works). Contractor to allow for the removal and disposal of current storage heater located to the RHS of the entrance doorway within the corridor area.

.4 Contractor to source and Install Stelrad LST Standard Horizontal Line (height 650mm x Length 760mm) in white. Contractor to provide a minimum 5-year warranty with the works.

.5 Contractor to make good all areas disturbed.

9.2 Fire Provisions

.1 As detailed in Section 2 – Strip Out Works, the contractor is to remove the Firesafe beacon (pictured below) located above the current classroom entrance.

.2 Once partition works have been carried out, the contractor is to source and install new Firescan Red Combined Sounder Beacon (like previous). Works to include a minimum 1-Year guarantee. Fire Beacon to be located above new entrance door alongside PIR Sensor.

.3 Contractor to reinstate previously removed Fire extinguisher (as detailed in Section 2 – Strip Out Works). Fire extinguisher to be located and securely fixed to side of the classroom fire door to ensure easy access in the event of emergency.

.4 Contractor to make good all areas disturbed.

9.3 Lighting

.1 Contractor to allow for the replacement and reconfiguration of current Fluorescent tubed strip lights to the classroom area and LED PIR spotlights to the corridor. Inclusive of all sensors and light controls. Please note the below:

.1 As detailed in Section 2 – Strip Out Section, the contractor is to allow for removal of the first 3 round LED spotlights located to the corridor (closest to the current partition). Note that the contractor is to install No.3 Dextra Graduate LED Strip Lights 1800mm in place of the previous. Graduate LED Strip light are to face in the same direction and current Florescent strip lights within the room.

.2 Once the contractor has removed the current No.3 Florescent tubes to strip lights located to the classroom in line with the roof lights. Contractor to supply and install No.6 LED tubes to replace (contractor to check specification of LED tubes required).

.3 The contractor shall co-ordinate the layout of light fittings with all other ceiling mounted fittings both mechanical and electrical.

.4 The contractor shall supply and install surface mounted galvanised steel dado trunking where required to contain all wiring and accessories.

.5 Light fittings for rooms where visual display screens and computers are to be used shall comply with the current editions of CIBSE Lighting Guides LG3 and LG7.

.6 All light fittings to be supplied by Dextra Light Fittings –
Steve Derry (Specification Manager) Dextra Lighting plc.
Tel:07718966548.
Email: SDerry@dextragroup.co.uk

.7 Allow for the current light switches to be moved from the blockwork wall (LHS of current classroom entrance) to the new proposed external side of the classroom partition. Contractor to allow for light switches and PIR Sensors to corridor and classroom area.

.8 The Contractor shall co-ordinate the layout of light fittings with all other ceiling mounted fittings both mechanical and electrical and allow for any reinstatement of mechanical electrical items within the ceiling voids and tiles following replacement.

.9 Contractor to make good all disturbed areas.

9.4 Emergency Lighting to corridor

Note that the current Emergency lighting (pictured below) has been removed as part of Section 2 Strip-Out Works.

.1 The Contractor is to source and install No1 LED emergency light Eterna 7W LED Maintained Emergency Bulkhead IP65 White Fire to the central corridor after partition works have been completed. Contractor to confirm location with CA as works develop.

.2 All emergency light fittings shall be capable of being self-testing in accordance with BS 5266-1:2011. Emergency lighting. Code of practice for the emergency lighting of premises. British Standards Institution, 2011.

.3 Emergency escape lighting should be provided to all areas in accordance with BS 5266. Emergency escape lighting includes escape route lighting, open area lighting and high-risk task area lighting, each of which has specific recommendations in terms of location and luminance.

.4 All emergency escape lighting should have a minimum duration time of three hours and should incorporate fully automatic network testing facilities.

.5 Where possible, central battery or self-contained emergency escape lighting fittings must derive power from essential circuits.

.6 Contractor to make good all disturbed areas.

10.0 Cleaning and Completion

.1 Prior to practical completion issue O and M file and Handover file to the Contract Administrator.

.2 Allow to undertake full builders clean of the entire working area prior to practical completion of the project.

.3 Allow a contingency of **£5,000.00** for additional works as may be directed by the contract administrator.

Carried to Collection

Page Nr 3/1

3/2

3/3

3/4

3/5

3/6

3/7

3/8

3/9

3/10

3/11

3/12

3/13

3/14

3/15

3/16

3/17

FINAL SUMMARY

TENDER TOTAL

Signed for Tender: - ……

Date: - ……..……

CARRIED TO FINAL SUMMARY £

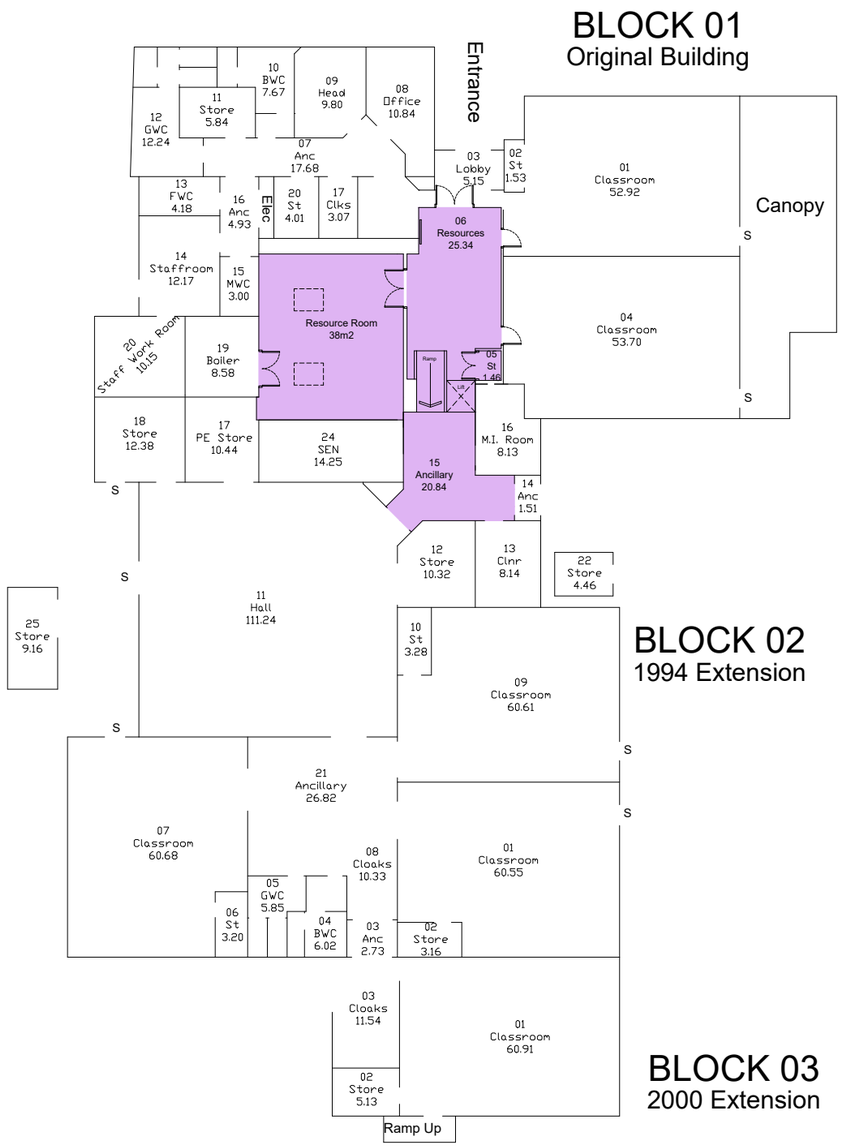
4

Drawings

This drawing may not be reproduced, made use of or issued to a third party without permission of : Gleeds Building Surveying Ltd. DO NOT SCALE - The contractor is responsible for checking all details and dimensions on site and using these in his tender submission and all subsequent work on site. THIS IS A CAD DRAWING - DO NOT ALTER

Legend

Working Areas



Rev.	Description	By	Date

Client

Lincolnshire COUNTY COUNCIL
Working for a better future

Project

Reepham Primary School

High Street, Reepham. LN3 4DP.

Drawing Title

Site Plan

Drawing No. NTBS3983 / 01

Scale 1:250

Original Sheet Size A3

Drawing Status

gleeds

Drawn	Checked
pmb	CR
Date	Rev.
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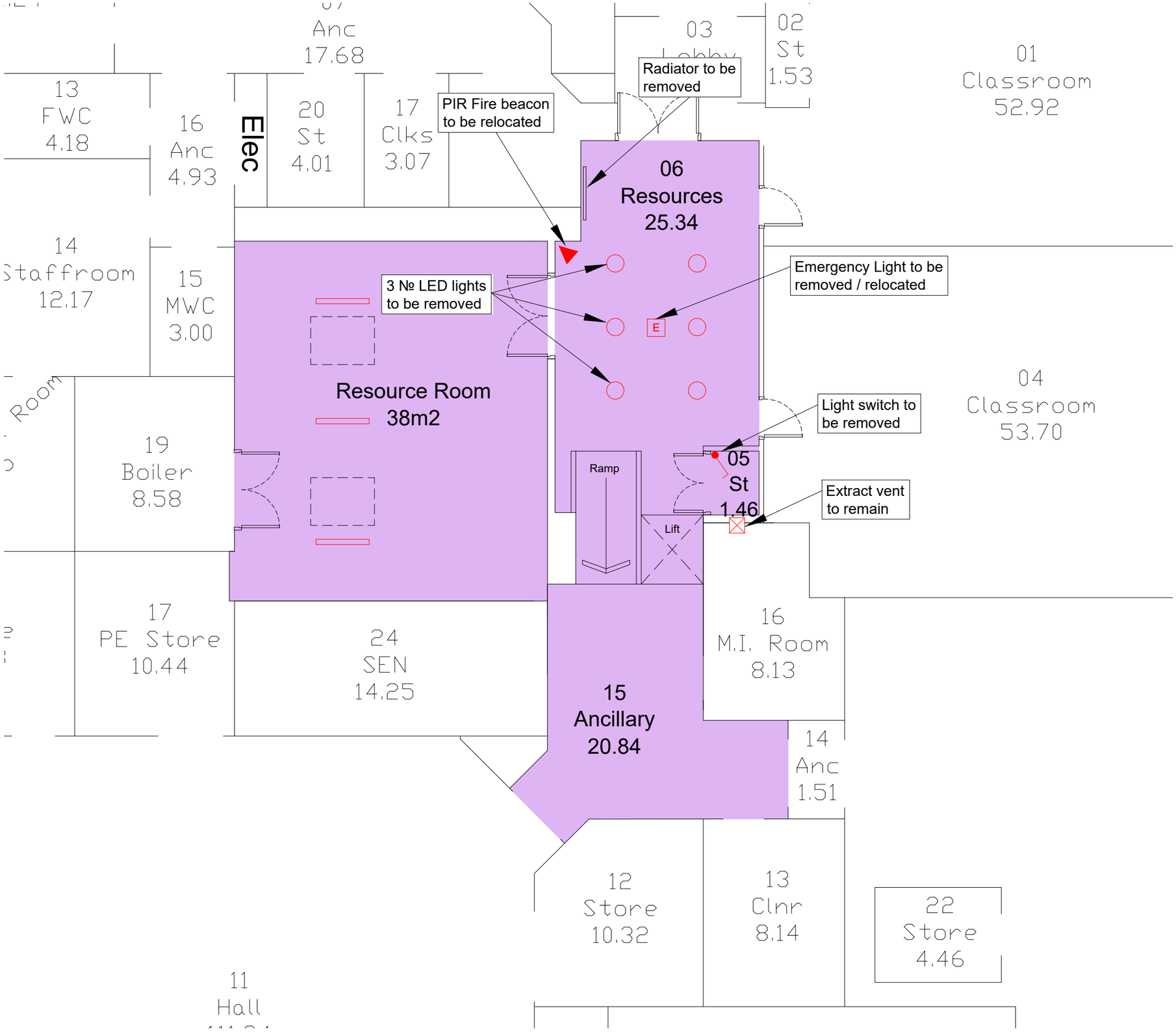

Rev.	Description	By	Date

Client

Lincolnshire COUNTY COUNCIL
Working for a better future

Project

Reepham Primary School

High Street, Reepham. LN3 4DP.

Drawing Title

Existing Plan

Drawing No. NTBS3983 / 02

Scale 1:75 Original Sheet Size A3

Drawing Status

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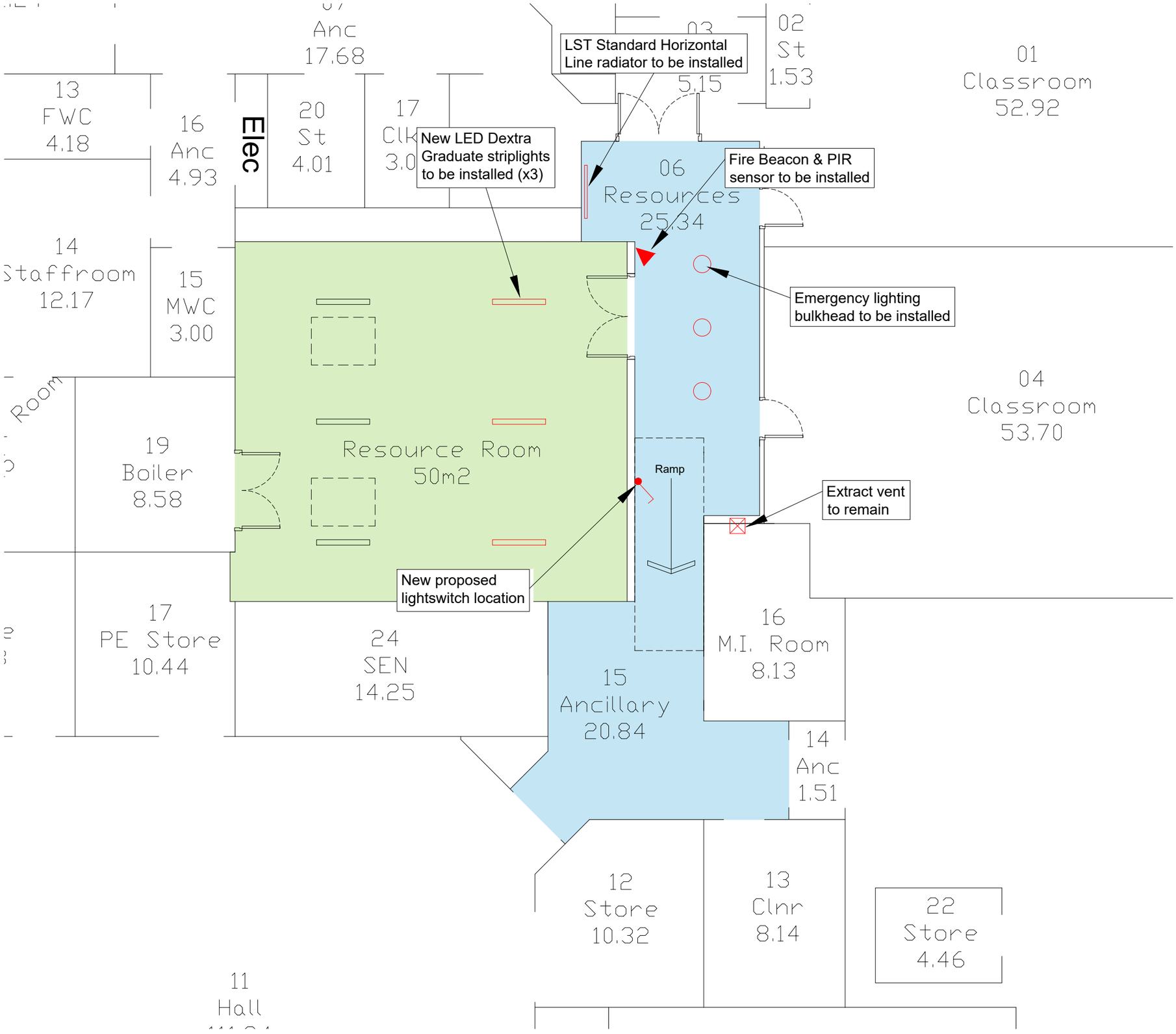

Rev.	Description	By	Date

Client

Lincolnshire COUNTY COUNCIL
Working for a better future

Project

Reepham Primary School

High Street, Reepham. LN3 4DP.

Drawing Title

Proposed Plan

Drawing No. NTBS3983 / 03

Scale 1:75 Original Sheet Size A3

Drawing Status

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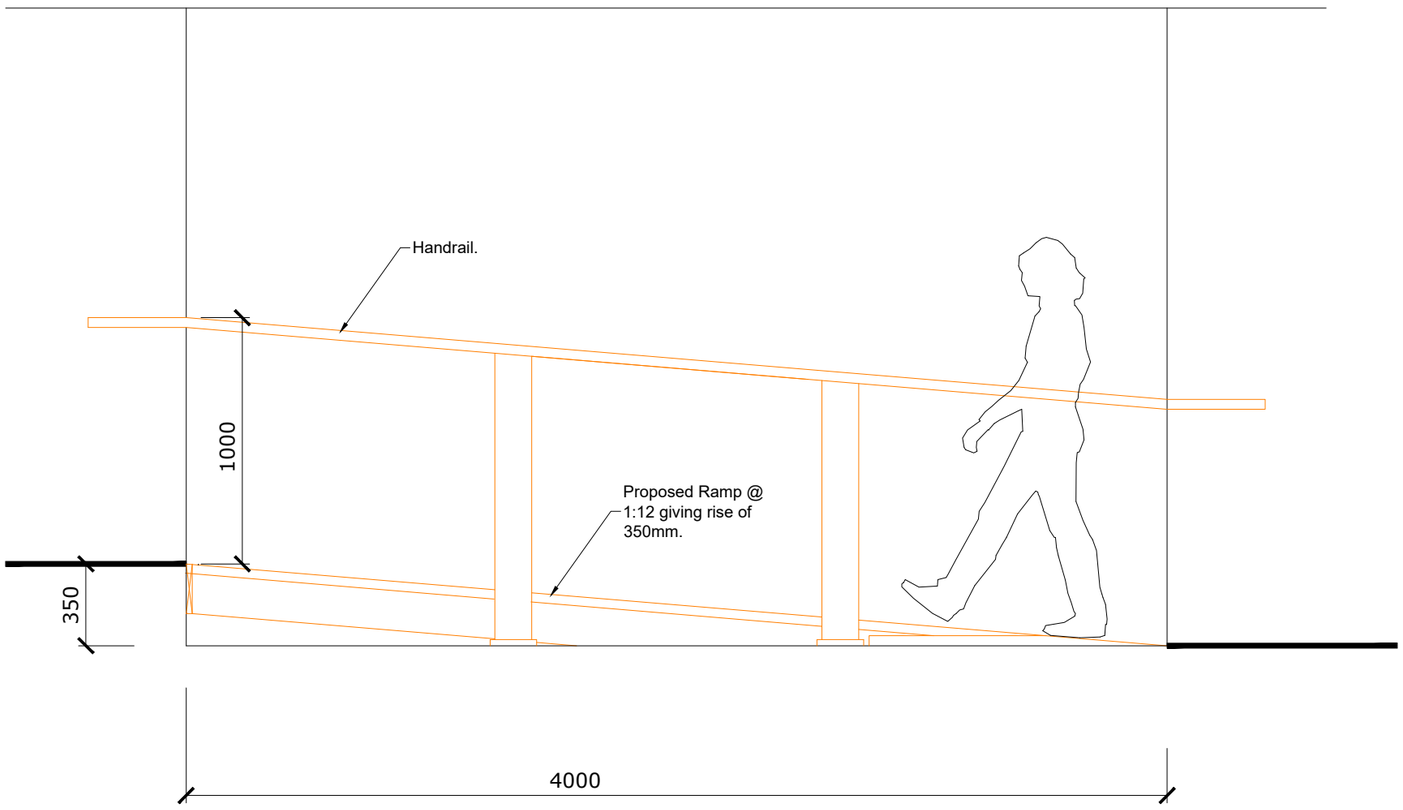

Typical Section

Rev.	Description	By	Date

Client

Lincolnshire COUNTY COUNCIL
Working for a better future

Project

Reepham Primary School

High Street, Reepham. LN3 4DP.

Drawing Title

Proposed Ramp

Drawing No. NTBS3983 / 04

Scale 1:25

Original Sheet Size A3

Drawing Status

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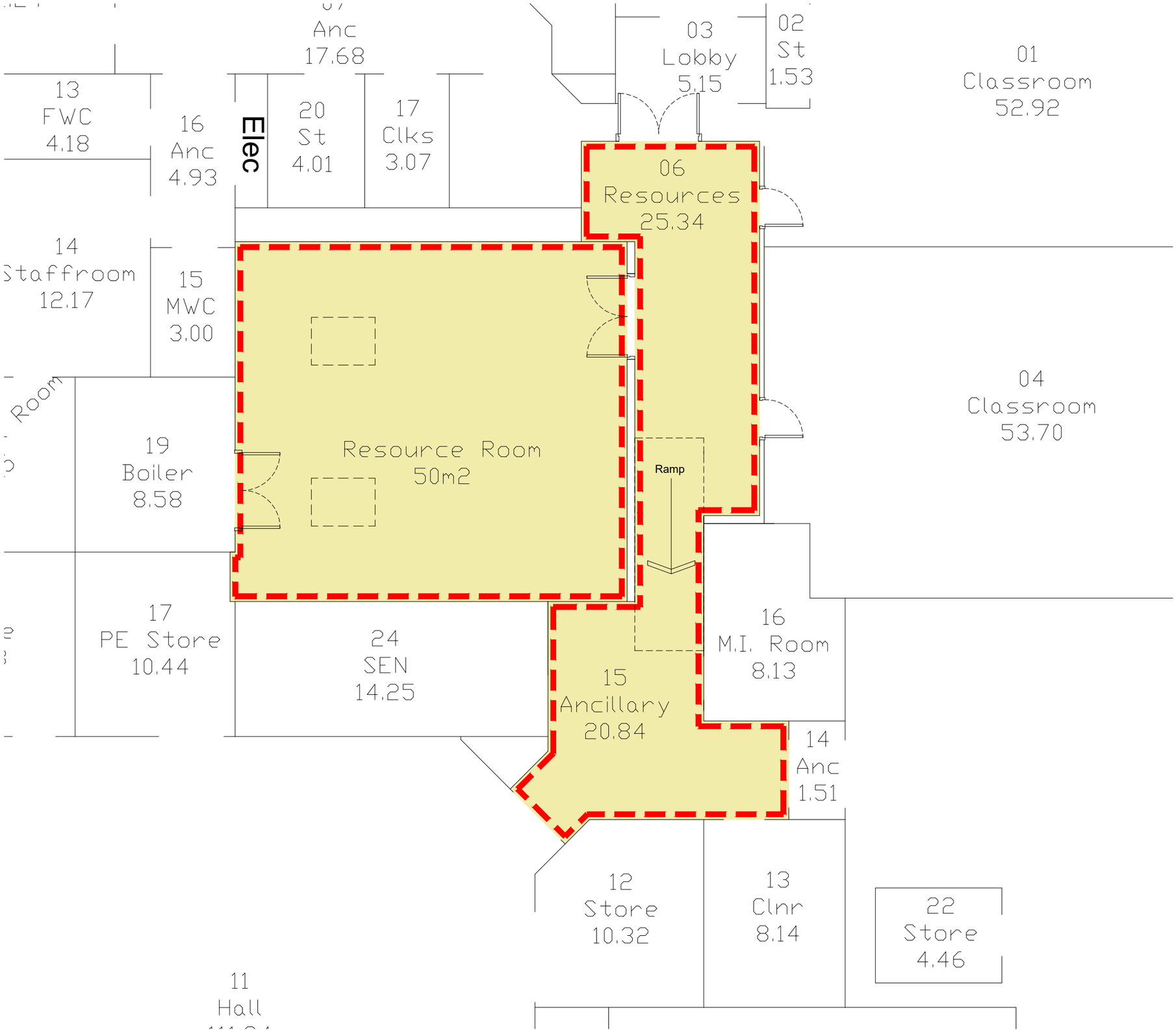

Legend

- Decoration
- Carpet tiles / making good

Rev.	Description	By	Date

Client

Lincolnshire COUNTY COUNCIL
Working for a better future

Project

Reepham Primary School

High Street, Reepham. LN3 4DP.

Drawing Title

Proposed Plan

Decorations / Carpet tiles

Drawing No. NTBS3983 / 05

Scale 1:75 Original Sheet Size A3

Drawing Status

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Date	Rev.
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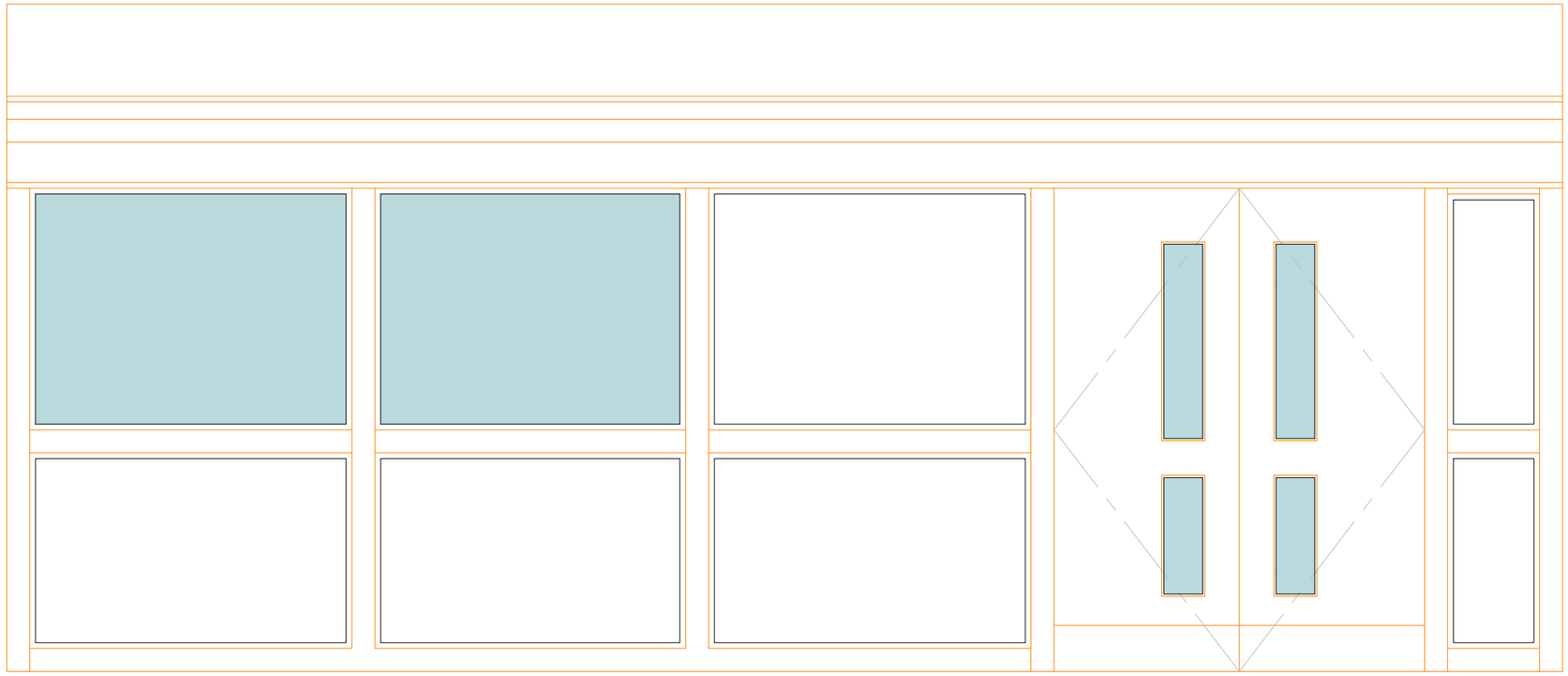
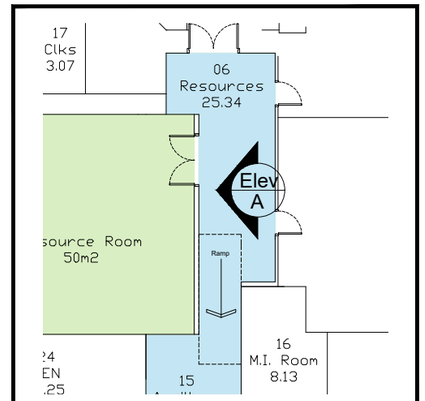


Elevation A



Location n.t.s.

Rev.	Description	By	Date

Client

Lincolnshire COUNTY COUNCIL
Working for a better future

Project

Reepham Primary School

High Street, Reepham. LN3 4DP.

Drawing Title

Proposed New Screen

Drawing No. NTBS3983 / 06

Scale 1:25

Original Sheet Size A3

Drawing Status

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5

Preambles

Gleeds Technology Limited

Lincolnshire County Council

Reepham C. E. Primary School

NTBS3983

Pre-ambles

Final

01

16-02-2024

Classroom Alteration Works

Contents

C20
Demolition

To be read with preliminaries/ general conditions.

5 Desk study/ survey

1. Scope: Before starting deconstruction/ demolition work, examine available information, and carry out a survey of: …….
2. Report and method statements: Submit, describing:
   - 2.1. Form, condition and details of the structure or structures, the site and the surrounding area.
     - 2.1.1. Extent:
   - 2.2. Type, location and condition of features of historical, archaeological, geological or ecological importance.
   - 2.3. Type, location and condition of adjoining or surrounding premises that might be adversely affected by removal of the structure or structures or by noise, vibration and dust generated during deconstruction or demolition.
   - 2.4. Identity and location of services above and below ground, including those required for the contractor's use, and arrangements for their disconnection and removal.
   - 2.5. Form and location of flammable, toxic or hazardous materials, including lead-based paint, and proposed methods for their removal and disposal.
   - 2.6. Form and location of materials identified for reuse or recycling, and proposed methods for removal and temporary storage.
   - 2.7. Proposed programme of work, including sequence and methods of deconstruction or demolition.
   - 2.8. Details of specific pre-weakening required.
   - 2.9. Arrangements for protection of personnel and the general public, including exclusion of unauthorized persons.
   - 2.10. Arrangements for control of site transport and traffic.
   - 2.11. Special requirements:
3. Format of report:

10 Extent of deconstruction/ demolition

1. General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures down to …….

13 Groundworks

1. Old foundations, slabs and the like: Break out in locations and to the extents stated.
2. Contaminated material:
3. Removal of deleterious material:
4. Ancillary items:

15 Benchmarks

1. Unrecorded benchmarks and other survey information:
2. Give notice when found. Do not remove marks or destroy the fabric on which they are found

20 Features to be retained

1. General: Keep in place and protect the following: …….

25 Location and marking of services

1. Services affected by deconstruction/ demolition work:
2. Mains services marking:
   2.1. Marking standard: In accordance with Street Works UK publication 'Guidance on the Positioning and Colour Coding of Underground Utilities' Apparatus'.

30 Services disconnection arranged by contractor

1. General:
2. Arrange with the appropriate authorities and responsible private organizations for disconnection of services, and removal of fittings and equipment owned by those authorities prior to starting deconstruction or demolition

31 Services disconnection arranged by employer

1. General: The employer will arrange with the appropriate authorities and responsible private organizations for disconnection of services, and removal of fittings and equipment owned by those authorities prior to deconstruction or demolition, as follows: …….
2. Timing: Do not start deconstruction or demolition until disconnections are completed.

32 Disconnection of drains

1. General:
2. Sealing:

35 Live foul and surface water drains

1. Drains and associated manholes, inspection chambers, gullies, vent pipes and fittings:
2. Other requirements:

40 Service bypass connections

1. General:
2. Minimum notice to adjoining owners and all affected occupiers:
3. Timing:

45 Services to be retained

1. Damage to services:
2. Repairs to services:

50 Workmanship

1. Standard: Demolish structures in accordance with BS 6187.
2. Operatives
   2.1. Appropriately skilled and experienced for the type of work.
   2.2. Holding, or in training to obtain, relevant Construction Skills certification of competence.
3. Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of deconstruction and demolition to be used.

55 Site hazards

1. Precautions: Prevent fire or explosion caused by gas and vapour from tanks, pipes, etc.
2. Dust:
   2.1. Lead dust: Submit method statement for control, containment and clean-up regimes.

3. Site operatives and general public: Protect from health hazards associated with vibration, dangerous fumes and dust arising during the course of the works.

60 Adjoining property

1. Temporary support and protection: Provide. Maintain and alter, as necessary, as work proceeds. Do not leave unnecessary or unstable projections.
2. Defects: Report immediately on discovery.
3. Damage: Minimize disturbance. Repair promptly to ensure safety, stability, weather protection and security.
4. Support to foundations: Do not disturb.

65 Structures to be retained

1. Extent:
2. Parts which are to be kept in place: Protect. Give notice and notify service authority or owner of damage arising from the execution of the works.
3. Interface between retained structures and deconstruction or demolition:

70 Partly demolished structures

1. General: Leave in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Make secure outside working hours.
2. Temporary works: Prevent overloading due to debris.
3. Access: Prevent access by unauthorized persons.

71 Dangerous openings

1. General: Provide guarding at all times, including outside of working hours. Illuminate during hours of darkness.
2. Access: Prevent access by unauthorized persons.

75 Asbestos-containing materials – known occurrences

1. General: Materials containing asbestos are known to be present in: …….
2. Removal:
3. Timing:

76 Asbestos-containing materials – unknown occurrences

1. Discovery: Give notice immediately of suspected asbestos-containing materials when discovered during deconstruction and demolition work. Avoid disturbing such materials.
2. Removal: Submit statutory risk assessments and details of proposed methods for safe removal.

78 Unforeseen hazards

1. Discovery: Give notice immediately when hazards, such as unrecorded voids, tanks, chemicals, are discovered during deconstruction or demolition.
2. Removal: Submit details of proposed methods for filling, removal, etc.

80 Open basements, etc.

1. Temporary support:
2. Safety:
3. Water movement:

81 Filling of basements, etc.

1. Temporary support:
2. Safety:
3. Water movement:
4. Filling: Remove organic material and soil from basements and other voids. Fill and consolidate with …….

85 Site condition at completion

1. Debris: Clear away and leave the site in a clean, tidy and secure condition.
2. Other requirements:

86 Site surface at completion

1. Topography:
2. Temporary surface: Cover the site with …….

90 Contractor's property

1. Components and materials arising from the deconstruction and demolition work:
2. Action:

91 Employer's property

1. Components and materials to remain the property of the employer:
2. Protection:
3. Specific limitations:

95 Recycled materials

1. Materials arising from deconstruction and demolition work: Can be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.
2. Evidence of compliance: Submit full details and supporting documentation.
   2.1. Verification: Allow adequate time in programme for verification of compliance.

Ω End of Section

C40
Cleaning masonry/ concrete

General/ preparation

110 Scope of work

1. …… .

120 Related repair and remedial works

1. Work to be carried out before cleaning work:
2. Work to be carried out after cleaning work:

142 Removal of fittings

1. Timing:
2. Disturbance to surfaces: Minimize.
3. Items for disposal:
4. Items to be kept for reuse:

160 Protection

1. Surfaces not designated for cleaning: Prevent damage, including marking and staining.
2. Openings: Prevent ingress of water, cleaning agents, and detritus.
   2.1. Vents and grilles: Seek instructions before sealing up.
3. Temporary mechanical fastenings
   3.1. In masonry: Locate in joints.
   3.2. In other surfaces: Seek instructions.
4. Additional protection:

175 Control and disposal of wash water and detritus

1. Disposal: Safely. Obtain approvals from relevant Authority.
2. Control of wash water: Collect and divert to prevent ingress and damage to building fabric and adjacent areas.
3. Above and below ground drainage systems: Keep free from detritus and maintain normal operation.

190 Cleaning generally

1. Timing:
2. Operatives: Appropriately trained and experienced for each type of cleaning work.
   2.1. Evidence of training: Submit on request.
3. Control of cleaning: Confine cleaning processes and materials to designated areas. Prevent wind drift.
4. Detritus: Remove regularly. Dispose of safely.
5. Monitoring
   5.1. Frequently check results of cleaning compared to approved trial samples. If results established by trials are not achieved, seek instructions.
   5.2. Works to be inspected and approved in accordance with the requirements of the local planning authority.
6. Modifications to cleaning methods and materials: Seek instructions.

215 Record of cleaning works

1. Written report: Record cleaning methods and procedures used for each type of surface and deposit.
    1.1. Content: Relevant attributes of cleaning methods used including:
        1.1.1. Equipment and settings.
        1.1.2. Dwell times.
        1.1.3. Number of applications.
        1.1.4. Ambient temperatures.
2. Additional documentation:
3. Submission: At completion of cleaning works.

230 Trial samples

1. Trial sample reference:
    1.1. Surface:
    1.2. Location/ Size:
    1.3. Type of soiling:
    1.4. Cleaning methods:
2. Records: Maintain written records for each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

Products/ equipment

312 Surface biocides

1. Types: Registered by the Health and Safety Executive (HSE) and listed on the HSE website under non-agricultural pesticides.
2. Compatibility with surface: Free from staining or other harmful effects.

322 Abrasive cleaning equipment

1. Manufacturer/ Supplier:
    1.1. Product reference:
2. Nozzle types:
3. Abrasives:

332 Water spray (mounted nozzles)

1. Equipment
    1.1. Spray/ Nozzle types:
    1.2. Nozzles: Position and direction adjustable, relative to surfaces and profiles.
    1.3. Controls:

342 Pressurized water cleaning equipment

1. Manufacturer:
    1.1. Product reference:
2. Operational pressure:
3. Nozzles:

352 Steam cleaning equipment

1. Manufacturer:
   1.1. Product reference:

362 Chemical agents

1. Description:
2. Manufacturer:
   2.1. Product reference:

372 Plain poultices

1. Description:
2. Poulticing medium manufacturer:
   2.1. Product reference:
3. Softening agent: Deionised water.

Application

412 Removal of loosely adhered deposits

1. Timing: Before commencement of other cleaning methods.
2. Surfaces: Prevent damage, including abrasion.

422 Biocide application

1. Preparation:
2. Surfaces: Prevent damage, including abrasion.
3. Biocide treatment: Appropriate solutions to kill growths and inhibit further growths.
   3.1. Dead growths: Remove.

432 Tooling

1. Tooling of surfaces:

442 Abrasive blocks

1. Types: Suitable grades of carborundum or gritstone.
2. Application: Lubricate with water. Remove detritus.
3. Abrasive power tools: Prohibited.

452 Abrasives cleaning

1. Surfaces: Minimize abrasion.
   1.1. Ingrained deposits: Seek instructions.
2. Equipment settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.
3. Detritus: Remove with clean water.

462 Water sprayed cleaning (mounted nozzles)

1. Surfaces: Minimize water run-off. Prevent damage.
2. Adjustment of washing cycle and nozzle positions: Regularly to achieve optimum cleaning performance.

472 Pressurized water cleaning

1. Surfaces: Prevent damage, including abrasion.
2. Equipment settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.

482 Steam cleaning

1. Surfaces: Prevent damage, including abrasion.
2. Equipment settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.

495 Testing pH. values for chemical cleaning

1. pH indicator: To distinguish pH values between 1-14.
2. Testing before cleaning
   2.1. Clean rinsing water, wetted surfaces and joints: Test for pH. Record as 'control' values.
3. Testing after water rinsing and neutralization
   3.1. Wetted surfaces and joints: Record pH values.
   3.2. Acceptance criteria:

500 Chemical cleaning

1. Surfaces: Prevent damage, including discolouration, bleaching and efflorescence.
2. Product variables (including concentrations, dwell times and number of applications): Adjust for each surface to achieve optimum cleaning performance.
3. Application: To wetted surfaces.
   3.1. Drying out: Prevent unless recommended otherwise by cleaning product manufacturer.
4. Removal of chemicals and neutralization: As recommended by product manufacturer, including rinsing with clean water.
   4.1. Additional treatment: Where water rinsing is insufficient to neutralize surface, apply compatible neutralizing agent.
   4.2. Surfaces and joints: Minimize absorption of chemicals. Prevent damage, including abrasion.

515 Plain poulticing

1. Surfaces: Prevent damage, including abrasion.
2. Application: To wetted surfaces. Maintain contact with surfaces as poultice dries out.
3. Poultice reinforcement:
   3.1. Drying: Prevent excessively rapid or localized drying out.
4. Spent poultice material: Do not reuse.

Ω End of Section

C90
Alterations - repair, refurbish, refit

General

110 Descriptions

1. Location of alterations:
2. Details of alterations:

115 Survey report

1. Submittal:
2. Timing:

120 Employer's property

1. Components and materials arising from alterations that are to remain the property of the employer:
   1.1. Protection: Maintain until items listed above are removed by the employer or reused in the works, or until the end of the contract.
2. Special requirements:

130 Recycled materials

1. Materials arising from alterations: May be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.
2. Evidence of compliance: Submit full details and supporting documentation.
   2.1. Verification: Allow adequate time in programme for verification of compliance.

140 Removal

1. Scope of removal:
2. Special requirements:

150 Refixing

1. Scope of refixing:
2. Special requirements:

Ω End of Section

L40
General glazing

General requirements

110 Pre-glazing

1. Pre-glazing of components: Not permitted.

111 Pre-glazing

1. Pre-glazing of components: Permitted.
2. Prevention of displacement: Submit details of precautions to be taken to protect glazing and compound/ seals during delivery and installation.
3. Defective/ displaced glazing/ compound/ seals: Reglaze components in situ.

130 Removal of glass/ plastics for reuse

1. Existing glass/ plastics and glazing compound, beads, etc.: Remove carefully, avoiding damage to frame, to leave clean, smooth rebates free from obstructions and debris.
2. Deterioration of frame/ surround: Submit report on defects revealed by removal of glazing.
   2.1. Affected areas: Do not reglaze until instructed.
3. Reusable materials: Clean glass/ plastics, beads and other components that are to be reused.

140 Material samples

1. Representative samples of designated materials: Submit before cutting panes.
   1.1. Sample size (minimum):
   1.2. Designated materials:

150 Workmanship and positioning generally

1. Glazing generally: In accordance with BS 6262 series.
2. Integrity: Glazing must be wind and watertight under all conditions with full allowance made for deflections and other movements.
3. Dimensional tolerances: Panes/ sheets to be within ± 2 mm of specified dimensions.
4. Materials
   4.1. Compatibility: Glass/ plastics, surround materials, sealers, primers and paints/ clear finishes to be used together to be compatible. Avoid contact between glazing panes/ units and alkaline materials such as cement and lime.
   4.2. Protection: Keep materials dry until fixed. Protect insulating glass units and plastics glazing sheets from the sun and other heat sources.

151 Preparation

1. Surrounds, rebates, grooves and beads: Cleaned and prepared by others.

152 Preparation

1. Surrounds, rebates, grooves and beads: Clean and prepare before installing glazing; ensure compliance with any certified installation requirements.

155 Glass generally

1. Standards: To BS 952 and relevant parts of:
   1.1. BS EN 572 for basic soda lime silicate glass.

1.2. BS EN 1748-1-1 for borosilicate glass.
1.3. BS EN 1748-2-1 for ceramic glass.
1.4. BS EN 1863 for heat-strengthened soda lime silicate glass.
1.5. BS EN 12150 for thermally toughened soda lime silicate safety glass.
1.6. BS EN 12337 for chemically strengthened soda lime silicate glass.
1.7. BS EN 13024 for thermally toughened borosilicate safety glass.
1.8. BS EN ISO 12543 for laminated glass and laminated safety glass.

2. Panes/ sheets: Clean and free from obvious scratches, bubbles, cracks, rippling, dimples and other defects.
   2.1. Edges: Generally undamaged. Shells and chips not more than 2 mm deep and extending not more than 5 mm across the surface are acceptable if ground out.

160 Linear patterned/ wired glass

1. Alignment: Vertical/ Horizontal as appropriate, and pattern matched across adjacent panes in close proximity.

165 Heat-soaking of thermally toughened glass

1. Standard: To BS EN 14179-1 and -2.
   1.1. Holding period (minimum):
2. Certified evidence of treatment: Submit.
3. Designated locations:

170 Plastics glazing sheet

1. Condition: Free from scratches, edge splits and other defects.
2. Preparation for use: Protective coverings carefully peeled back from edges and trimmed off to facilitate glazing. Remainder retained in place until completion unless instructed otherwise.

180 Bead-fixing with pins

1. Pin spacing: Regular at maximum 150 mm centres, and within 50 mm of each corner.
2. Exposed pin heads: Punched just below wood surface.

181 Bead-fixing with screws

1. Screw spacing: Regular at maximum 225 mm centres, and within 75 mm of each corner.

190 Glass to glass jointing

1. Sealant: Silicone.
   1.1. Standard:
      1.1.1. Evidence of compliance: Submit.
      1.1.2. Class:
   1.2. Colour:
2. Fire performance:
3. Joints
   3.1. Width: Consistent and suitable to receive sealant.
   3.2. Gap between panes: Completely filled, leaving no voids or bubbles.
   3.3. Surplus sealant: Removed to leave a clean, neatly finished weathertight joint.

195 Glass to glass jointing

1. Sealant:
2. Standard: To BS EN 15651-2.
   2.1. Evidence of compliance: Submit.
3. Manufacturer:
   3.1. Product reference:
4. Fire performance:
5. Colour:
6. Joints:
7. Width: Consistent and suitable to receive sealant.
8. Gap between panes: Completely filled, leaving no voids or bubbles.
   8.1. Surplus sealant: Removed to leave a clean, neatly finished weathertight joint.

Types of glazing

210 Putty-fronted single-glazing

1. Description:
2. Pane material:
3. Surround:
   3.1. Sealer:
4. Type of putty:
5. Thermal performance (U-value maximum):
6. Glass installation
   6.1. Glass: Located centrally in surround using setting and location blocks, and secured with glazing sprigs/ cleats/ clips at 300 mm centres.
   6.2. Finished thickness of back bedding after inserting glazing (minimum): 1.5 mm.
   6.3. Front putty: Finished to a smooth, neat triangular profile stopping 2 mm short of sight line. Surface lightly brushed to seal putty to glass and left smooth with no brush marks.
7. Sealing putty: Seal as soon as sufficiently hard but not within 7 days of glazing. Within 28 days apply either:
   7.1. The full final finish, suitably protected until completion and cleaned down and made good as necessary, or
   7.2. Two coats of …… applied locally to the compound, to be followed nearer completion with the full specified finish.
8. Opening lights: Keep in closed position until putty has set sufficiently to prevent displacement of glazing when opened.

230 Bead-fixed single-glazing

1. Description:
2. Pane material:
3. Surround/ bead:
   3.1. Preparation:
   3.2. Bead location:
   3.3. Bead-fixing:
4. Glazing compound:
5. Thermal performance (U-value maximum):

6. Glazing installation
    6.1. Glass: Located centrally in surround using setting and location blocks and distance pieces.
    6.2. Finished thickness of back bedding after inserting glazing (minimum): 3 mm.
    6.3. Front bedding: Applied to fill voids.
    6.4. Beads: Bedded in glazing compound and fixed securely.
    6.5. Visible edge of glazing compound: Finished internally and externally with a smooth chamfer.

250 Bead-fixed single-glazing

1. Description:
2. Pane material:
3. Surround/ bead:
    3.1. Preparation:
    3.2. Bead location:
    3.3. Bead-fixing:
4. Glazing system
    4.1. Tape:
    4.2. Bead bedding sealant:
    4.3. Capping sealant:
5. Thermal performance (U-value maximum):
6. Glazing installation
    6.1. Glass: Located centrally in surround using setting and location blocks.
    6.2. Glazing tape: Top edge approximately 6 mm short of sight line on external side of glazing, to allow for capping sealant. Corners butt-jointed with no gaps.
    6.3. Thickness of glazing tape bed (minimum): 3 mm on both sides of glazing after compression.
    6.4. Beads: Bedded in sealant, pressed firmly into position to compress tape, and fixed securely.
    6.5. Excess tape on internal side: Carefully trimmed to a smooth chamfer.
    6.6. Capping sealant: Applied to fill void between bead and glazing and finished to a smooth chamfer.

260 Bead-fixed single-glazing

1. Description:
2. Pane material:
3. Surround/ bead:
    3.1. Bead location:
    3.2. Bead-fixing:
4. Glazing system: Extruded gaskets supplied with frame.
5. Thermal performance (U-value maximum):
6. Glazing installation
    6.1. Glass: Located centrally in surround using setting and location blocks.
    6.2. Gaskets and beads: Installed as recommended by frame manufacturer.
        6.2.1. Gasket fit at corners: Tight, without gaps.

310 Bead-fixed single-glazing

1. Description:
2. Pane material:

3. Surround/ bead:
    3.1. Preparation:
    3.2. Bead location: Inside.
    3.3. Bead-fixing:
4. Glazing system
    4.1. Tape:
    4.2. Heel bead sealant:
    4.3. Internal trim:
5. Thermal performance (U-value maximum):
6. Glazing installation
    6.1. Glass: Located centrally in surround using setting and location blocks.
    6.2. Loadbearing glazing tape: Applied to rebate upstand allowing minimum 3 mm contact of heel bead sealant onto external face of glazing. Top edge flush with sight line on external side of glazing. Corners butt-jointed with no gaps.
    6.3. Thickness of glazing tape bed after compression (minimum): 3 mm.
    6.4. Sealant: Applied to fill void between tape and rebate platform, and edge clearance between glazing and rebate platform.
    6.5. Beads: Bedded in sealant and fixed securely.
    6.6. Internal trim: Inserted under compression between glazing and beads in continuous lengths leaving no gaps.

330 Bead-fixed single-glazing

1. Description:
2. Pane material:
3. Surround/ bead:
    3.1. Preparation:
    3.2. Bead location: Inside.
    3.3. Bead-fixing:
4. Glazing system
    4.1. Tape:
    4.2. Heel bead sealant:
    4.3. Internal trim:
    4.4. External capping sealant:
5. Thermal performance (U-value maximum):
6. Glazing installation
    6.1. Glass: Located centrally in surround using setting and location blocks.
    6.2. Loadbearing glazing tape: Applied to rebate upstand allowing minimum 3 mm contact of heel bead sealant onto external face of glazing. Top edge approximately 6 mm short of sight line to allow for capping sealant. Corners butt-jointed with no gaps.
    6.3. Thickness of glazing tape bed after compression (minimum): 3 mm.
    6.4. Heel bead sealant: Applied to fill void between tape and rebate platform, and edge clearance between glazing and rebate platform.
    6.5. Beads: Bedded in sealant and fixed securely.
    6.6. Internal trim: Inserted under compression between glazing and beads in continuous lengths leaving no gaps.
    6.7. Capping sealant: Applied to fill void between rebate upstand and glazing, and finished to a smooth chamfer.

350 Bead-fixed single-glazing

1. Description:
2. Pane material:
3. Surround/ bead:
   - 3.1. Bead location: Inside.
   - 3.2. Preparation:
   - 3.3. Bead-fixing:
4. Glazing system
   - 4.1. Heel bead sealant:
   - 4.2. Internal trim:
5. Thermal performance (U-value maximum):
6. Glazing installation
   - 6.1. Glass: Located centrally in surround using setting and location blocks and distance pieces.
   - 6.2. Finished thickness of back bedding after inserting glazing (minimum): 3 mm.
   - 6.3. Beads: Pressed firmly into position to compress heel bead sealant, and fixed securely.
   - 6.4. Excess sealant: Trimmed to a smooth chamfer.
   - 6.5. Internal trim: Inserted under compression between glazing and beads in continuous lengths leaving no gaps.

370 Bead-fixed insulating glass units

1. Description:
2. IGU: As clause …….
   - 2.1. Perimeter taping: Do not use.
3. Surround/ bead:
   - 3.1. Preparation:
   - 3.2. Bead location:
   - 3.3. Bead-fixing:
4. Glazing system:
5. Thermal performance (U-value maximum):
6. Glazing installation
   - 6.1. Insulating unit: Located centrally in surround using setting and location blocks.
   - 6.2. Gaskets and beads: Installed as recommended by frame manufacturer.
     - 6.2.1. Gasket fit at corners: Tight, without gaps.
   - 6.3. Drainage and ventilation holes: Unobstructed.

371 Bead-fixed insulating glass units

1. Description:
2. IGU: As clause …….
   - 2.1. Perimeter taping: Do not use.
3. Surround/ bead:
   - 3.1. Preparation:
   - 3.2. Bead location:
   - 3.3. Bead-fixing:
4. Glazing system:
5. Thermal performance (U-value maximum):

6. Glazing installation
    6.1. Insulating unit: Located centrally in surround using setting and location blocks.
    6.2. Glazing sections/ strips/ tapes: Applied to rebate upstands and beads in positions recommended by manufacturer.
    6.3. Beads: Installed using sufficient pressure to compress inner and outer sections/ strips/ tapes and fixed securely.
    6.4. Drainage and ventilation holes: Unobstructed.

372 Bead-fixed insulating glass units

1. Description:
2. IGU: As clause …….
    2.1. Perimeter taping: Do not use.
3. Surround/ bead:
    3.1. Preparation:
    3.2. Bead location:
    3.3. Bead-fixing:
4. Glazing system:
5. Thermal performance (U-value maximum):
6. Glazing installation
    6.1. Insulating unit: Located centrally in surround using setting and location blocks.
    6.2. Glazing sections/ strips/ tapes: Applied to rebate upstands and beads finishing approximately 5 mm short of sight line to allow for capping sealant.
    6.3. Beads: Installed using sufficient pressure to compress inner and outer sections/ strips/ tapes and fixed securely.
    6.4. Capping sealant: Applied to both sides of glazing unit and finish to a smooth chamfer.
    6.5. Drainage and ventilation holes: Unobstructed.

380 Bead-fixed insulating glass units

1. Description:
2. IGU: As clause …….
    2.1. Perimeter taping: Do not use.
3. Surround/ bead:
    3.1. Preparation:
    3.2. Bead location:
    3.3. Bead-fixing:
4. Glazing system
    4.1. Inner sealant:
    4.2. Outer sealant:
5. Thermal performance (U-value maximum):
6. Glazing installation
    6.1. Insulating unit: Located centrally in surround using setting and location blocks and distance pieces.
    6.2. Inner sealant: Applied to full height of rebate.
    6.3. Outer sealant: Applied to fill edge clearance void and space between unit and beads up to sight line.
    6.4. Finished thickness of back and front bedding after inserting glazing (minimum): 3 mm.

6.5. Beads: Bedded on outer sealant and fixed securely.

6.6. Excess sealant: Trimmed to a smooth chamfer.

381 Bead-fixed insulating glass units

1. Description:
2. IGU: As clause …….
   2.1. Perimeter taping: Do not use.
3. Surround/ bead:
   3.1. Preparation:
   3.2. Bead location:
   3.3. Bead-fixing:
4. Glazing system
   4.1. Inner sealant:
   4.2. Outer sealant:
5. Thermal performance (U-value maximum):
6. Glazing installation
   6.1. Insulating unit: Located centrally in surround using setting and location blocks and distance pieces.
   6.2. Outer sealant: Applied to full height of rebate.
   6.3. Inner sealant: Applied to fill edge clearance void and space between unit and beads up to sight line.
   6.4. Finished thickness of back and front bedding after inserting glazing (minimum): 3 mm.
   6.5. Beads: Bedded on inner sealant and fixed securely.
   6.6. Excess sealant: Trimmed to a smooth chamfer.

410 Single-glazing into grooves

1. Description:
2. Pane material:
3. Channel/ surround:
   3.1. Preparation:
4. Beads
   4.1. Material:
   4.2. Location:
   4.3. Preparation:
   4.4. Fixing:
5. Glazing system:
6. Glazing installation
   6.1. Glass: Located centrally in grooves using setting blocks of appropriate thickness.
   6.2. Internal and external gasket sections: Inserted accurately into grooves.
      6.2.1. Fit at corners: Tight with no gaps.
   6.3. Sill beads: Fixed securely.
7. Thermal performance (U-value maximum):

430 Single-glazing into grooves

1. Description:

2. Pane material:
3. Channel/ surround:
   3.1. Preparation:
4. Beads
   4.1. Material:
   4.2. Location:
   4.3. Preparation:
   4.4. Fixing:
5. Glazing system:
6. Thermal performance (U-value maximum):
7. Glazing installation
   7.1. Glass: Located centrally in grooves using setting blocks and distance pieces of appropriate thickness.
   7.2. Glazing compound: Applied to fill grooves, back of sill rebate, edge clearance void and space between glass and beads up to sight line.
   7.3. Sill beads: Fixed securely.
   7.4. Excess sealant: Trimmed to a smooth chamfer.

450 Single-glazing into grooves

1. Description:
2. Pane material:
3. Channel/ surround:
   3.1. Preparation:
4. Beads
   4.1. Material:
   4.2. Location:
   4.3. Preparation:
   4.4. Fixing:
5. Glazing system:
6. Thermal performance (U-value maximum):
7. Glazing installation
   7.1. Glass: Located centrally in grooves using setting blocks and distance pieces of appropriate thickness.
   7.2. Backing strip: Expanded polyethylene, inserted at head and jambs, ensuring a tight fit and allowing a minimum distance of 6 mm between strip and sight line.
   7.3. Sill beads: Fixed securely with backing strip between bead and glazing.
   7.4. Capping sealant: Applied to fill recesses on both sides of glass and finished to a smooth chamfer.

470 Zipper gasket glazing

1. Description:
2. Pane material:
   2.1. Edge treatment:
3. Surround:
4. Gasket: Zipper type to BS 4255-1.
5. Thermal performance (U-value maximum):

6. Fixing surfaces: Smooth, undistorted and free from burrs, weld spatter, pitting and projections.
7. Gaskets supplied in single continuous lengths: Butt-jointed centrally in top section of frame.
8. Setting and location blocks: Use as necessary to equalize edge clearances.
9. Zipper strips: Cut 50-75 mm longer than required.
    9.1. Mitred corners: Formed at least 24 hours after inserting strips, to allow for retraction. Strips pressed into position leaving no gaps.

490 Single-sided gasket glazing

1. Description:
2. Pane material:
3. Surround:
4. Gasket: Single-sided type to BS 4255-1.
5. Back bedding strip:
6. Thermal performance (U-value maximum):
7. Glazing installation
    7.1. Glass: Located centrally in surround using setting and location blocks.
    7.2. Back bedding strip:
        7.2.1. Excess tape: Carefully trim to a smooth chamfer.
    7.3. Gasket: Inserted into groove and tamped down to ensure a tight seal, with no gaps. Allow for retraction/ shrinkage.

495 U-profiled single-glazing

1. Description:
2. Supporting structure:
3. U-profiled glazing system
    3.1. Manufacturer:
        3.1.1. System reference:
    3.2. Arrangement:
4. Framing system
    4.1. Type and reference:
    4.2. Finish:
5. Glazing
    5.1. Material and reference:
    5.2. Dimensions:
    5.3. Colour:
    5.4. External surface finish:
    5.5. Coating:
6. Joints
    6.1. Width (minimum): 2 mm.
    6.2. Sealant depth (minimum): 8 mm.
    6.3. Sealant:
7. Ancillary components:
8. Accessories:
9. Thermal performance (U-value maximum):
10. Other requirements …….

496 U-profiled double-glazing

1. Description:
2. Supporting structure:
3. U-profiled glazing system
   - 3.1. Manufacturer:
     - 3.1.1. System reference:
   - 3.2. Arrangement:
4. Framing system
   - 4.1. Type and reference:
   - 4.2. Finish:
5. Glazing: Outer pane:
   - 5.1. Material and reference:
   - 5.2. Dimensions:
   - 5.3. Colour:
   - 5.4. External surface finish:
   - 5.5. Coating:
6. Glazing: Inner pane:
   - 6.1. Material and reference:
   - 6.2. Dimensions:
   - 6.3. Colour:
   - 6.4. External surface finish:
   - 6.5. Coating:
7. Core insulation:
8. Joints
   - 8.1. Width (minimum): 2 mm.
   - 8.2. Sealant depth: 8 mm.
   - 8.3. Sealant:
9. Ancillary components:
10. Accessories:
11. Thermal performance (U-value maximum):
12. Other requirements:

505 Fire-resistant tape/ Strip glazing

1. Description:
2. Fire performance
   - 2.1. Fire resistance:
3. Pane material:
   - 3.1. Orientation:
4. Frame/ Surround material:
5. Beads
   - 5.1. Material:
   - 5.2. Location:
   - 5.3. Fixing:
6. Glazing system

6.1. Tape/ Strip:

6.2. Pointing sealant:

7. Thermal performance (U-value maximum):
8. Installation: By a firm currently registered under a UKAS-certified accreditation scheme for the installation of fire-resistant glazing, in accordance with glazing manufacturer's recommendations.
9. Certification: Submit test certification for system, including any framing, installation and maintenance requirements or restrictions.

510 Fire-resistant channel glazing

1. Description:
2. Fire performance
   2.1. Fire resistance:
3. Pane material:
   3.1. Orientation:
4. Frame/ Surround material:
5. Fire-resistant channel:
   5.1. Dimensions:
   5.2. Intumescent aperture lining/ filler:
6. Cover strips:
7. Thermal performance (U-value maximum):
8. Installation: By a firm currently registered under a UKAS-certified accreditation scheme for the installation of fire-resistant glazing, in accordance with glazing manufacturer's recommendations.
9. Certification: Submit test certification for system, including any framing, installation and maintenance requirements or restrictions.

515 Fire-resistant channel glazing

1. Description:
2. Fire performance
   2.1. Fire resistance:
3. Pane material:
   3.1. Orientation:
4. Frame/ Surround material:
5. Beads
   5.1. Material:
   5.2. Fixing:
6. Fire-resistant channel:
   6.1. Aperture lining: Intumescent sheet/ strip recommended for the purpose by channel manufacturer.
7. Thermal performance (U-value maximum):
8. Installation: By a firm currently registered under a UKAS-certified accreditation scheme for the installation of fire-resistant glazing, in accordance with glazing manufacturer's recommendations.
9. Certification: Submit test certification for system, including any framing, installation and maintenance requirements or restrictions.

520 Fire rating

1. Assessment of capability: Submit proposed construction details of designated items to a UKAS/ EA accredited laboratory or other approved authority for assessment of capability of achieving specified fire ratings.
   1.1. Test standard:
2. Assessment/ test results and reports: Submit immediately they are available, and before installing glazing.
3. Designated items:

530 Internal tape glazing

1. Description:
2. Pane material:
3. Surround/ bead:
   3.1. Bead-fixing:
4. Tape/ Section:
5. Glazing installation: Beads bedded dry to rebate and glazing tape/ section and fixed securely. Tape trimmed flush with sight line on both sides.

550 Glass mirrors

1. Description:
2. Standard: To BS EN 1036.
   2.1. BS EN 1036-2 characteristics:
3. Mirror material: Float glass, silvered to give maximum reflection, free from tarnishing, discoloration, scratches and other defects visible in the designed viewing conditions.
   3.1. Thickness:
   3.2. Backing:
   3.3. Edge treatment:
4. Background:
5. Fixing method:
6. Installation: Fixed accurately and securely without overtightening fasteners, to provide a flat surface giving a distortion free reflection.

560 Plastics mirrors

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Mirror material: Silvered finish to give maximum reflection, free from tarnishing, discoloration, scratches and other defects visible in the designed viewing conditions.
   3.1. Thickness:
   3.2. Backing:
4. Background:
5. Fixing method:
6. Installation: Fixed accurately and securely without overtightening fasteners, to provide a flat surface giving a distortion free reflection.

610 Window film

1. Type:

2. Manufacturer:
    2.1. Product reference:
3. Colour:
4. Application: Carried out by a firm approved by the film manufacturer in accordance with manufacturer's recommendations.
    4.1. Evidence of applicator's competence and experience: Submit on request.
    4.2. Sample area: Complete as part of the finished work, in an approved location and obtain approval of appearance before proceeding.
    4.3. Ambient air temperature at time of application: Above 5°C.
5. Installed film: Fully adhered to the glass with no peeling, and free from bubbles, wrinkles, cracks or tears.
6. Further contact with applied films: Avoid until bonding adhesive has cured.
7. Cleaning and maintenance instructions: Submit copies.

630 Manifestation

1. Description:
2. Design:
    2.1. Art work:
    2.2. Media:
3. Technique:

650 Insulated glass units (IGUs)

1. Description:
2. Type:
3. Standard: To BS EN 1279.
4. Performance characteristics to BS EN 1279-5
    4.1. Fire performance
        4.1.1. Fire resistance:
        4.1.2. Reaction to fire:
    4.2. Safety in use
        4.2.1. Bullet resistance:
        4.2.2. Explosion resistance:
        4.2.3. Burglar resistance:
        4.2.4. Pendulum body impact resistance:
        4.2.5. Resistance against sudden temperature changes and temperature differentials:
        4.2.6. Resistance against wind, snow, permanent load and/ or imposed loads:
    4.3. Direct airborne sound reduction:
    4.4. Energy
        4.4.1. Thermal properties:
        4.4.2. Light transmittance and reflectance:
        4.4.3. Solar energy characteristics:
5. Unit thickness:
6. Location of relevant glass panes:
7. Spacer:
8. Other requirements:

655 Insulated glass units (IGUs)

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Standard: BS EN 1279.
4. Thermal performance (centre pane):
5. Construction
   5.1. Inner pane:
   5.2. Cavity:
   5.3. Intermediate pane:
   5.4. Cavity:
   5.5. Outer pane:
   5.6. Spacer:
6. Unit thickness:
7. Other requirements:

Ω End of Section

M51
Edge fixed carpeting

Types of carpeting

110 Carpeting

1. Location:
2. Base:
    2.1. Preparation:
3. Fabricated underlay:
4. Interlay:
5. Underlay to BS 5808 and BS EN 14499
    5.1. Manufacturer:
        5.1.1. Product reference:
    5.2. Type:
    5.3. Class:
    5.4. Recycled content:
6. Carpet
    6.1. Manufacturer:
        6.1.1. Product reference:
    6.2. Type:
    6.3. BS EN 1307 classification
        6.3.1. Level of use class:
        6.3.2. Luxury rating class:
        6.3.3. Additional performance properties to BS EN 1307:
    6.4. Recycled content:
    6.5. Colour/ pattern:
    6.6. Width:
7. Method of seaming:
8. Method of fixing: Carpet gripper.
9. Methods of fixing at openings/ free edges:

150 Carpeting for stairs

1. Location:
2. Base:
3. Nosings:
4. Carpet:
5. Method of fixing: Adhesive.

160 Floor finish materials specification

1. Minimum BRE 'Green Guide to Specification Online' rating:

General/ preparation

210 Workmanship generally

1. Finished carpeting: Tightly seamed, accurately fitted, neatly and securely fixed, smooth and evenly tensioned.

220 Samples

1. Carpet samples: Before placing orders, submit representative sample of …….
   1.1. Size (minimum):

230 Control samples

1. General: Complete areas of finished work in approved locations as follows, and obtain approval of appearance before proceeding: …… .

250 Carpet layout – pre-order requirements

1. Setting out: Agree seam locations and pattern.

251 Carpet layout

1. Setting out: Keep seams and cross seams to a minimum.
2. Cross seams: Not permitted in following locations: …….

270 Extra material

1. Provision of extra material: At completion hand to Employer.
   1.1. Quantity:

290 Conditioning carpet

1. Requirements: As recommended by manufacturer.

310 Condition of works prior to laying

1. General requirements
   1.1. Building weathertight and well dried out.
   1.2. Wet trades complete.
   1.3. Paintwork complete and dry.
   1.4. Floor service outlets, duct covers and other fixtures around which carpet is to be cut, fixed.

315 Notification of commencement

1. Give notice: Before laying is due to start.
   1.1. Period of notice (minimum):

320 Environment

1. Temperature and humidity: Before, during and after laying, maintain approximately at levels which will prevail after building is occupied.

330 Suitability of bases

1. General: Commencement of laying carpeting will be taken as acceptance of suitability of bases.

340 New wet laid bases

1. Base drying aids: Not used for at least four days prior to moisture content testing.

2. Base moisture content test: Carry out in accordance with BS 5325, Annexe A.
    2.1. Locations for readings: In all corners, along edges, and at various points over area being tested.
3. Commencement of laying carpeting: Not until all readings show 75% relative humidity or less.

350 Timber boarding/ strip flooring

1. Substrate: Boards securely fixed and acceptably level with no protruding fasteners. Plane, sand or apply smoothing underlayment compound as necessary to give smooth, even surface.

360 Existing floor coverings to be overlaid

1. Substrate: Make good by local rebedding, sanding or applying smoothing underlayment compound to give a secure, smooth, even surface. Allow to dry before laying carpeting.

370 Hardboard underlay

1. Standard: To BS EN 622-2.
    1.1. Type:
2. Thickness:
3. Sheet size:
4. Substrate: Existing floor boards securely fixed and acceptably level with no gross irregularities or protruding fasteners.
5. Conditioning sheets: Prior to fixing.
    5.1. Requirement: To restrict in situ expansion and prevent consequential disfigurement to floor coverings.
6. Laying sheets:
    6.1. Cross joints: Staggered, and not coincident with joints in base.
        6.1.1. Joint width: 1-2 mm.
7. Fasteners: 25 mm ringed shank or twisted shank nails or divergent staples:
    7.1. Location: Commence at centre of one side of each sheet, at 150 mm grid centres over area of each sheet and at 100 mm centres along perimeter, set in 12 mm from edge.
    7.2. Placement: Not to project above sheet surface or through underside of base. Not deformed.
8. Underlay conditioned by wetting: Do not lay coverings until underlay is dry.

371 Plywood underlay

1. Standard: Manufactured to an approved national standard.
2. Bonding quality: To BS EN 314-2 class …….
3. Appearance: To BS EN 635 class …….
4. Finish:
5. Thickness:
6. Sheet size:
7. Substrate: Existing floor boards securely fixed and acceptably level, with no gross irregularities or protruding fasteners.
8. Laying sheets
    8.1. Cross joints: Staggered and not coincident with joints in base.
        8.1.1. Joint width: 0.5-1 mm.
9. Fasteners: 25 mm ringed shank or twisted shank nails or divergent staples.
    9.1. Location: Commencing at the centre of one side of each sheet, at 150 mm grid centres over the area of each sheet and at 100 mm centres along perimeter, set in 12 mm from edge.

9.2. Placement: Driven with heads set flush with surface and not projecting through the underside of base. Not deformed.

Laying carpeting

410 Carpet gripper

1. Manufacturer:
   1.1. Product reference:
2. Types and method of fixing: As recommended by gripper manufacturer to suit specified carpet, base and conditions of use.
3. Fixing: Secure to form continuous length along all edges adjacent to vertical surfaces leaving a 'gully width' of approximately three quarters the thickness of carpet. Do not place across openings.
   3.1. Adhesive fixed gripper strip unit length (maximum): 200 mm.

420 Interlay

1. Placement: Fully cover base, with no wrinkles, folds, overlapping or gaps (other than to allow for expansion). Lay at right angles to direction of boarded floors.

430 Underlay on floors

1. Setting out: Seams not to coincide with those in carpet.
2. Placement: Cut to size, butted to grippers and secured at perimeter by stapling or adhering to base.
   2.1. Surface of installed underlay: Flat, smooth and free from wrinkles or bubbles.
3. Seams: Butt joints secured with staples, adhesive or top-taped with no shadow shown through carpet.

440 Underlay on stairs

1. Extent: Underlay pads to cover tread and riser in one piece to full width of carpet (except where edges will be exposed).
2. Placement: Butted to grippers and secured to prevent movement and wrinkling.

450 Carpet seams/ joints

1. General: Straight, flat, evenly tensioned and butted, with no surface pile trapped between edges.
2. Method and materials: Compatible with carpet and as recommended by manufacturers.
3. Bond strength: Consistent for full length of seam, sufficient to withstand stretching without opening up and to last the life of carpet.
4. Pattern matching: (where applicable): Accurately matched for full length of seam.

460 Raw edge seams (including cross seams)

1. Treatment prior to seaming: Strengthen with cross straps and make secure by sealing, whipping or binding.

470 Laying carpet generally

1. Appearance of laid carpet: Pieces of the same carpet type capable of being seen together to be of consistent appearance with pile lying in the same direction.
2. Carpet perimeter: Accurately and closely fitted leaving no gaps. Edges turned down and secured to grippers.
3. Carpet tension: Even, and such that carpet lies flat and will not ruck, ripple or become slack.
4. Doorways and recesses: Cut carpet in. Do not piece in without prior approval.

480 Power stretching

1. General: Power stretch carpets greater than 5 metres in any dimension.

490 Doorways

1. Carpet joint: On centre line of door leaf.

510 Edgings and cover strips

1. Manufacturer:
    1.1. Product reference:
2. Material/ finish:
3. Fixing: Secure with edge of carpet firmly gripped. Use matching fasteners where exposed to view.

530 Laying stair carpet with gripper

1. Shifting allowance: Provide a minimum additional length of carpet equivalent to one tread and riser. Conceal by substituting for underlay at top or bottom of stairs.
2. Gripper locations
    2.1. One on each tread and each riser, close to intersection.
    2.2. To edge of each winder over 300 mm deep and abutting a wall.
    2.3. Along a landing over 300 mm deep and abutting wall.
3. Pile direction: Towards bottom of stairs and perpendicular to nosings.

540 Laying stair carpet with adhesive

1. Placement: Fit carpet after fixing nosings. Bond to base with a suitable permanent bond adhesive. Achieve a smooth flat finish with no trapped air.

550 Stair nosings and trims

1. Manufacturer:
    1.1. Product reference:
2. Material/ finish:
3. Fixing: Secure, level and, where required, with mitred joints. Adjusted to suit thickness of carpet with continuous packing strips of hardboard or plywood. Nosings and packing strips bedded in gap-filling adhesive recommended by the manufacturer.
    3.1. Screw fixing with matching plugs:

570 Completion

1. Debris: Remove stay tacks and cut away partly loose warp and face yarns.
2. Surface irregularities and tension: Check and make necessary tension adjustments.

580 Waste

1. Spare covering material: Retain suitable material for patching. On completion submit pieces for selection. Hand over selected pieces to Employer.

Ω End of Section

M60
Painting/clear finishing

Coating systems

110 Emulsion paint

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Surfaces:
    3.1. Preparation:
4. Initial coats:
5. Number of coats:
6. Undercoats:
    6.1. Number of coats:
7. Finishing coats:
    7.1. Number of coats:

130 Gloss paint

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Surfaces:
    3.1. Preparation:
4. Initial coats:
    4.1. Number of coats:
5. Undercoats:
    5.1. Number of coats:
6. Finishing coats:
    6.1. Number of coats:

150 Eggshell/ satin paint

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Surfaces:
    3.1. Preparation:
4. Initial coats:
    4.1. Number of coats:
5. Undercoats:
    5.1. Number of coats:
6. Finishing coats:
    6.1. Number of coats:

160 Decorative woodstain/ varnish/ preservative

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Surfaces:
   3.1. Preparation:
4. Initial coats:
   4.1. Number of coats:
5. Finishing coats:
   5.1. Number of coats:

165 Multicoloured coating

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Surfaces:
   3.1. Preparation:
4. Initial coats:
   4.1. Number of coats:
5. Undercoats:
   5.1. Number of coats:
6. Finishing coats:
   6.1. Application:
   6.2. Number of coats:
7. Glaze:
   7.1. Number of coats:

170 Masonry coating

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Surfaces:
   3.1. Preparation:
4. Initial coats:
   4.1. Number of coats:
5. Undercoats:
   5.1. Number of coats:
6. Finishing coats:
   6.1. Number of coats:

172 Flame-retardant coating system

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Reaction to fire rating:

4. Surfaces:
    4.1. Preparation:
5. Initial coats:
    5.1. Number of coats:
    5.2. Application:
6. Undercoats:
    6.1. Number of coats:
    6.2. Application:
7. Finishing coats:
    7.1. Number of coats:
    7.2. Application:

175 Protective coating

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Surfaces:
    3.1. Preparation:
4. Initial coats:
    4.1. Number of coats:
5. Undercoats:
    5.1. Number of coats:
6. Finishing coats:
7. Application:
    7.1. Number of coats:
    7.2. Slip resistance value - water wet (minimum):

180 Floor coating

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Surfaces:
    3.1. Preparation:
4. Initial coats:
    4.1. Number of coats:
5. Finishing coats:
    5.1. Number of coats:
    5.2. Slip resistance value - water wet (minimum):

185 Faux finish/ coating

1. Description:
2. Surfaces:
    2.1. Preparation:
3. Initial/ priming coats:
    3.1. Number of coats:

4. Undercoats:
    4.1. Number of coats:
5. Base coats:
    5.1. Number of coats:
6. Faux finish
    6.1. Specialist applicator:
    6.2. Effect:
    6.3. Workings layers:
7. Sealing coats:
    7.1. Number of coats:
8. Other requirements:

190 Oil gilding

1. Description:
2. Surfaces:
    2.1. Preparation:
3. Initial/ priming coat:
    3.1. Number of coats:
4. Undercoat:
    4.1. Number of coats:
5. Base coat:
    5.1. Number of coats:
6. Gilding
    6.1. Applicator:
    6.2. Adhesive:
    6.3. Leaf:
        6.3.1. Quality:
        6.3.2. Colour:
7. Finish coat:
    7.1. Number of coats:
8. Other requirements:

195 Special coating

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Surfaces:
    3.1. Preparation:
4. Initial coats:
    4.1. Number of coats:
5. Undercoats:
    5.1. Number of coats:
6. Finishing coats:
    6.1. Number of coats:
    6.2. Slip resistance value - water wet (minimum):

Generally

210 Coating materials

1. Manufacturers: Obtain materials from any of the following:
2. …….
3. Selected manufacturers: Submit names before commencement of coating work.

215 Handling and storage

1. Coating materials: Deliver in sealed containers, labelled clearly with brand name, type of material and manufacturer's batch number.
2. Materials from more than one batch: Store separately. Allocate to distinct parts or areas of the work.

220 Compatibility

1. Coating materials selected by contractor
   1.1. Recommended by their manufacturers for the particular surface and conditions of exposure.
   1.2. Compatible with each other.
   1.3. Compatible with and not inhibiting performance of preservative/fire-retardant pretreatments.

240 Surfaces not to be coated

1. …….

250 Surfaces to be cleaned but not coated

1. …….

280 Protection

1. 'Wet paint' signs and barriers: Provide where necessary to protect other operatives and general public, and to prevent damage to freshly applied coatings.

300 Control samples

1. Sample areas of finished work: Carry out, including preparation, as follows:
2. Types of coating Location
3. M60/ ……. …….
4. Approval of appearance: Obtain before commencement of general coating work.

310 Supervised control samples

1. Sample areas of finished work: Carry out, including preparation, as follows:
2. Types of coating Location
3. M60/ ……. …….
4. Inspection: Give notice when each stage is ready for inspection.
5. Approval of appearance: Obtain before commencement of general coating work.

320 Inspection by coating manufacturers

1. General: Permit manufacturers to inspect work in progress and take samples of their materials from site if requested.

321 Inspection of work stages

1. Programme for inspections: Submit as follows:
2. Types of coating Inspection at completion of
3. M60/ ……. …….
4. Inspection: Give prior notice when each stage is ready for inspection.

Preparation

400 Preparation generally

1. Standard: In accordance with BS 6150.
2. Refer to any pre-existing CDM Health and Safety File.
3. Refer to CDM Construction Phase Plan where applicable.
4. Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
5. Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
6. Substrates: Sufficiently dry in depth to suit coating.
7. Efflorescence salts: Remove.
8. Dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.
9. Surface irregularities: Remove.
10. Joints, cracks, holes and other depressions: Fill flush with surface, to provide smooth finish.
11. Dust, particles and residues from preparation: Remove and dispose of safely.
12. Water based stoppers and fillers
    12.1. Apply before priming unless recommended otherwise by manufacturer.
    12.2. If applied after priming: Patch prime.
13. Oil based stoppers and fillers: Apply after priming.
14. Doors, opening windows and other moving parts
    14.1. Ease, if necessary, before coating.
    14.2. Prime resulting bare areas.

420 Fixtures and fittings

1. Removal: Before commencing work remove: …….
2. Replacement: Refurbish as necessary, refit when coating is dry.

425 Ironmongery

1. Removal: Before commencing work: Remove ironmongery from surfaces to be coated.
2. Hinges:
3. Replacement: Refurbishment as necessary; refit when coating is dry.

430 Existing ironmongery

1. Refurbishment: Remove old coating marks. Clean and polish.

440 Previously coated surfaces generally

1. Preparation: In accordance with BS 6150, clause 11.5.
2. Contaminated or hazardous surfaces: Give notice of:

2.1. Coatings suspected of containing lead.
2.2. Substrates suspected of containing asbestos or other hazardous materials.
2.3. Significant rot, corrosion or other degradation of substrates.

3. Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
4. Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
5. Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
6. Alkali affected coatings: Completely remove.
7. Retained coatings
   7.1. Thoroughly clean to remove dirt, grease and contaminants.
   7.2. Gloss-coated surfaces: Provide key.
8. Partly removed coatings
   8.1. Additional preparatory coats: Apply to restore original coating thicknesses.
   8.2. Junctions: Provide flush surface.
9. Completely stripped surfaces: Prepare as for uncoated surfaces.

451 Previously coated surfaces – blast cleaning

1. Operatives
   1.1. Trained/ experienced in blast cleaning.
   1.2. Submit evidence of training/ experience on request.
2. Dust and nuisance: Minimize.

456 Previously coated surfaces – burning off

1. Risk assessment and method statement: Prepare, and obtain approval before commencing work.
2. Adjacent areas: Protect from excessive heat and falling scrapings.
3. Exposed resinous areas and knots: Apply two coats of knotting.
4. Removed coatings: Dispose of safely.

461 Previously coated wood

1. Degraded or weathered surface wood: Take back to provide suitable substrate.
2. Degraded substrate wood: Repair with sound material of same species.
3. Exposed resinous areas and knots: Apply two coats of knotting.

471 Preprimed wood

1. Areas of defective primer: Take back to bare wood and reprime.

481 Uncoated wood

1. General: Provide smooth, even finish with arrises and moulding edges lightly rounded or eased.
2. Heads of fasteners: Countersink sufficient to hold stoppers/fillers.
3. Resinous areas and knots: Apply two coats of knotting.

490 Previously coated steel

1. Defective paintwork: Remove to leave a firm edge and clean bright metal.
2. Sound paintwork: Provide key for subsequent coats.

3. Corrosion and loose scale: Take back to bare metal.
4. Residual rust: Treat with a proprietary removal solution.
5. Bare metal: Apply primer as soon as possible.
6. Remaining areas: Degrease.

500 Preprimed steel

1. Areas of defective primer, corrosion and loose scale: Take back to bare metal. Reprime as soon as possible.

511 Galvanized, sherardized and electroplated steel

1. White rust: Remove.
2. Pretreatment: Apply one of the following:
   2.1. Mordant solution to blacken whole surface.
   2.2. Etching primer recommended by coating system manufacturer.

521 Uncoated steel – manual cleaning

1. Oil and grease: Remove.
2. Corrosion, loose scale, welding slag and spatter: Remove.
3. Residual rust: Treat with a proprietary removal solution.
4. Primer: Apply as soon as possible.

531 Uncoated steel – blast cleaning

1. Oil and grease: Remove.
2. Blast cleaning
   2.1. Atmospheric conditions: Dry.
   2.2. Abrasive: Suitable type and size, free from fines, moisture and oil.
   2.3. Surface finish: To BS EN ISO 8501-1, preparation grade …….
3. Primer: Apply as soon as possible and within four hours of blast cleaning.

541 Uncoated aluminium/ copper/ lead

1. Surface corrosion: Remove and lightly key surface.
2. Pretreatment: Etching primer if recommended by coating system manufacturer.

552 Uncoated PVC-U

1. Dirt and grease: Remove. Do not abrade surface.

560 Uncoated concrete

1. Release agents: Remove.

570 Uncoated masonry/ Rendering

1. Loose and flaking material: remove.

580 Uncoated plaster

1. Nibs, trowel marks and plaster splashes: Scrape off.
2. Overtrowelled ‘polished’ areas: Key lightly.

590 Uncoated plasterboard

1. Depressions around fixings: Fill with stoppers/ fillers

601 Uncoated plasterboard – to receive textured coating

1. Joints: Fill, tape and feather out with materials recommended by textured coating manufacturer.

611 Wall coverings

1. Retained wall coverings: Check that they are in good condition and well adhered to substrate.
2. Previously covered walls: Wash down to remove paper residues, adhesive and size.

622 Organic growths

1. Dead and loose growths and infected coatings: Scrape off and remove from site.
2. Treatment biocide: Apply appropriate solution to growth areas and surrounding surfaces.
3. Residual effect biocide: Apply appropriate solution to inhibit re-establishment of growths.

631 Previously painted window frames

1. Paint encroaching beyond glass sight line: Remove.
2. Loose and defective putty: Remove.
3. Putty cavities and junctions between previously painted surfaces and glass: Clean thoroughly.
4. Finishing
    4.1. Patch prime, reputty as necessary, and allow to set.
    4.2. Seal and coat as soon as fully set.

640 External pointing to existing frames

1. Defective sealant pointing: Remove.
2. Joint depth: Approximately half joint width; adjust with backing strip if necessary.
3. Sealant
    3.1. Manufacturer:
        3.1.1. Product reference:
    3.2. Preparation and application: As section Z22.

645 Sealing of internal movement joints

1. General: To junctions of walls and ceilings with architraves, skirtings and other trims.
2. Sealant: Waterborne acrylic.
    2.1. Manufacturer:
        2.1.1. Product reference:
    2.2. Preparation and application: As section Z22.

651 Existing gutters

1. Dirt and debris: Remove from inside of gutters.
2. Defective joints: Clean and seal with suitable jointing material.

Application

711 Coating generally

1. Application standard: In accordance with BS 6150, clause 9.

2. Conditions: Maintain suitable temperature, humidity and air quality during application and drying.
3. Surfaces: Clean and dry at time of application.
4. Thinning and intermixing of coatings: Not permitted unless recommended by manufacturer.
5. Overpainting: Do not paint over intumescent strips or silicone mastics.
6. Priming coats
    6.1. Thickness: To suit surface porosity.
    6.2. Application: As soon as possible on same day as preparation is completed.
7. Finish
    7.1. Even, smooth and of uniform colour.
    7.2. Free from brush marks, sags, runs and other defects.
    7.3. Cut in neatly.
8. Doors, opening windows and other moving parts: Ease before coating and between coats.

720 Priming joinery

1. Preservative treated timber: Retreat cut surfaces with two flood coats of a suitable preservative before priming.
2. End grain: Coat liberally allow to soak in, and recoat.

730 Workshop coating of concealed joinery surfaces

1. General: Apply coatings to all surfaces of components.

731 Site-coating of concealed joinery surfaces

1. General: After priming, apply additional coatings to surfaces that will be concealed when fixed in place.
    1.1. Components:
    1.2. Additional coatings:

740 Concealed metal surfaces

1. General: Apply additional coatings to surfaces that will be concealed when component is fixed in place.
    1.1. Components:
    1.2. Additional coatings:

751 Staining wood

1. Primer: Apply if recommended by stain manufacturer.
2. Application: Apply in flowing coats and brush out excess stain to produce uniform appearance.

760 Varnishing wood

1. First coat:
    1.1. Brush well in and lay off avoiding aeration.
2. Subsequent coats: Provide light key and smooth along the grain between coats.

770 External doors

1. Bottom edges: Prime and coat before hanging doors.

780 Bead glazing to coated wood

1. Before glazing: Apply first two coats to rebates and beads.

790 Linseed oil putty glazing

1. Setting: Allow putty to set for seven days.
2. Sealing
   2.1. Within a further 14 days, seal with a solvent-borne primer.
   2.2. Fully protect putty with coating system as soon as it is sufficiently hard.
   2.3. Extend finishing coats on to glass up to sight line.

800 Glazing

1. Etched, sand blasted and ground glass: Treat or mask edges before coating to protect from contamination by oily constituents of coating materials.

810 Water-repellent

1. Application: Liberally flood surface, giving complete and even coverage.

Ω End of Section

N10
General fixtures/ furnishings/ equipment

Products

110 Purpose-made

1. Description:
2. Manufacturer:
3. Standard:
4. Timber: To BS EN 942.
    4.1. Species:
    4.2. Appearance class:
    4.3. Moisture content on delivery:
5. Wood-based boards:
6. Metal:
    6.1. Grade:
7. Other materials:
8. Finishes:
9. Adhesive:
10. Fixings:
    10.1. Fasteners:
11. Joinery workmanship: As section Z10.
12. Metalwork materials and workmanship: As section Z11.
13. Other requirements:

125 Desks and tables

1. Item:
2. Manufacturer:
    2.1. Product reference:
3. Plan shape:
4. Dimensions
    4.1. Plan size:
    4.2. Height:
5. Worktops
    5.1. Material:
    5.2. Finish/ Colour:
    5.3. Exposed edges:
6. Pedestal units
    6.1. Material:
    6.2. Finish/ Colour:
    6.3. Exposed edges:
7. Supports:
8. Accessories/ Other requirements:

130 Laboratory furniture

1. Description:
2. Item:
3. Design and installation: To BS EN 14056.
4. Manufacturer:
   4.1. Product reference:
5. Dimensions:
6. Worktops
   6.1. Standard: To BS EN 13150.
   6.2. Material:
   6.3. Finish/ Colour:
   6.4. Exposed edges:
7. Pedestal units
   7.1. Material:
   7.2. Finish/ Colour:
   7.3. Exposed edges:
8. Supports:
9. Accessories/ Other requirements:

135 Storage and display units

1. Description:
2. Item:
3. Manufacturer:
   3.1. Product reference:
4. Dimensions:
5. Doors/ Drawers
   5.1. Material:
   5.2. Finish/ Colour:
6. Outer panels/ Plinths/ Shelves
   6.1. Material:
   6.2. Finish/ Colour:
7. Frames/ Legs
   7.1. Material:
   7.2. Finish/ Colour:
8. Integral accessories:
9. Other requirements:

145 Vanity and washroom furniture

1. Description:
2. Item:
3. Manufacturer:
   3.1. Product reference:
4. Form:
5. Dimensions:

6. Worktop:
    6.1. Finish/ Colour:
    6.2. Edges:
7. Doors/ Drawers/ Shelves
    7.1. Material:
    7.2. Finish/ Colour:
    7.3. Exposed edges:
8. Supports:
9. Other requirements:

160 Shelving system

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Dimensions:
    3.1. Shelf Spacing:
4. Shelves
    4.1. Material:
    4.2. Finish/ Colour:
5. Carcass or frame
    5.1. Material:
    5.2. Finish/ Colour:
6. Other components:

170 Benches and linked seats

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Seat/ Back
    3.1. Material:
    3.2. Finish/ Colour:
4. Frame
    4.1. Material:
    4.2. Finish/ Colour:
5. Fixing:
6. Fittings/ Other requirements:

171 Fixed seating

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Dimensions
    3.1. Seat height:
    3.2. Seat spacing (lateral):
    3.3. Row spacing:

4. Seat/ Back
    4.1. Material:
    4.2. Finish/ Colour:
5. Frame
    5.1. Material:
    5.2. Finish/ Colour:
6. Fixing:
7. Accessories/ Other requirements:

172 Retractable/ demountable seating system

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Type:
4. Dimensions:
5. Telescopic platform
    5.1. Unit width:
    5.2. Number of rows:
    5.3. Row depth:
    5.4. Row rise:
    5.5. Seat spacing (lateral):
    5.6. Row spacing:
6. Seat/ Back
    6.1. Material:
    6.2. Finish/ Colour:
7. Frame
    7.1. Material:
    7.2. Finish/ Colour:
8. Fixing:
9. Accessories/ Other requirements:

173 Stacking chair systems

1. Description:
2. Type:
3. Manufacturer:
    3.1. Product reference:
4. Seat/ Back
    4.1. Material:
    4.2. Finish/ Colour:
5. Frame
    5.1. Material:
    5.2. Finish/ Colour:
6. Fixing:
7. Accessories/ Other requirements:

177 Chairs

1. Description:
2. Standard:
3. Manufacturer:
   3.1. Product reference:
4. Size:
5. Adjustability:
6. Seat/ Back/ Arms
   6.1. Material:
   6.2. Finish/ Colour:
7. Frame
   7.1. Material:
   7.2. Finish/ Colour:
8. Other requirements:

178 Demountable podia and staging

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
   3.1. Shape:
   3.2. Size:
4. Floor surface:
   4.1. Colour:
5. Frame/ Support:
   5.1. Height:
6. Accessories/ Other requirements:

180 Free-standing screens

1. Description:
2. Standard: To BS EN 1023-1 and -2.
3. Format:
4. Manufacturer:
   4.1. Product reference:
5. Dimensions:
6. Screen Surfaces
   6.1. Material:
   6.2. Finish/ Colour:
7. Frames
   7.1. Material:
   7.2. Finish/ Colour:
8. Add-on elements:
9. Accessories:

184 Wall rails

1. Purpose:
2. Manufacturer:
    2.1. Product reference:
3. Material:
4. Finish/ Colour:
5. Accessories/ Other requirements:

190 Cages

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Form:
4. Dimensions:
5. Frame:
    5.1. Material:
    5.2. Section size:
    5.3. Finish/ Colour:
6. Infill panels:
    6.1. Finish/ Colour:
7. Roof:
8. Floor:
9. Door
    9.1. Size:
    9.2. Operation:
    9.3. Lock:
10. Underfloor barrier:
11. Other requirements:

193 Writing boards

1. Description:
2. Type:
3. Manufacturer:
    3.1. Product reference:
4. Dimensions:
5. Frame
    5.1. Material:
    5.2. Finish/ Colour:
6. Surface
    6.1. Type:
    6.2. Markings:
    6.3. Colour:
7. Size:
8. Accessories:

195 Noticeboards

1. Description:
2. Type:
3. Use:
4. Manufacturer:
   4.1. Product reference:
5. Size:
6. Fire resistance:
7. Board surface
   7.1. Material:
   7.2. Covering finish/ colour:
8. Frame
   8.1. Material:
   8.2. Finish/ Colour:
9. Accessories/ Other requirements:

200 Worktops

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Material:
4. Finish/ Colour:
5. Dimensions:
   5.1. Plan size:
   5.2. Thickness:
   5.3. Height:
6. Front edges:
   6.1. Cut edges:
7. Support:
8. Cutouts:
9. Integral accessories:

210 Coat racks

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Arrangement:
4. Mounting:
5. Dimensions
   5.1. Overall length:
   5.2. Overall height:
6. Material:
   6.1. Finish/ Colour:
7. Integral accessories:

220 Lockers

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Standard: To BS 4680.
   3.1. Test level:
4. Dimensions
   4.1. Overall length:
   4.2. Overall height:
5. Arrangement:
6. Material:
   6.1. Finish/ Colour:
7. Lock type:
8. Fittings:
9. Other requirements:

230 Curtain supports

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Dimensions
   3.1. Opening dimensions:
   3.2. Overall length:
4. Material:
5. Finish/ Colour:
6. Fixing:
7. Operation:
8. Accessories:

235 Curtains

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Standard: To BS 5867-1 and -2.
4. Dimensions
   4.1. Width:
   4.2. Drop:
5. Heading style:
6. Material
   6.1. Fabric:
   6.2. Colour/ Pattern:
7. Lining
   7.1. Fabric:
   7.2. Colour:

8. Integral accessories:

240 Blinds

1. Description:
2. Standard: To BS EN 13120.
3. Manufacturer:
   3.1. Product reference:
4. Type:
5. Dimensions:
6. Material:
   6.1. Finish/ Colour:
7. Operation:
8. Operating effort:
9. Testing:
10. Mechanism endurance:
11. Accessories/ Other requirements:

250 Telephone booths

1. Manufacturer:
   1.1. Product reference:
2. Form:
3. Dimensions:
4. Material:
5. Finish/ Colour:
6. Other requirements:

270 Mirrors

1. Description:
2. Dimensions
   2.1. Length:
   2.2. Width:
   2.3. Thickness:
3. Material:
4. Quality: Free from tarnishing, discoloration, scratches and other defects visible in the designed viewing conditions. Reflection undistorted.
5. Backing:
6. Edges
   6.1. Treatment:
   6.2. Profile:
7. Fixing:
8. Installation: Accurately with sides vertical.

275 Framed mirrors

1. Description:
2. Overall dimensions

2.1. Length:
2.2. Width:
2.3. Thickness:

3. Mirror
3.1. Material:
4. Quality: Free from tarnishing, discoloration, scratches and other defects visible in the designed viewing conditions. Reflection undistorted.
5. Backing:
6. Frame
6.1. Material:
6.2. Finish/ Colour:

290 Matwell frames

1. Description:
2. Manufacturer:
2.1. Product reference:
2.2. Format:
3. Material:
3.1. Finish:
3.2. Colour:
4. Size:
5. Angles
5.1. Corners: Mitred and welded.
5.2. Angle size:
6. Predrilled:

300 Entrance matting

1. Description:
2. Manufacturer:
2.1. Product reference:
3. Arrangement:
4. Material:
5. Pattern:
6. Colour:
7. Size:
8. Integral accessories:

310 Loose laid matting

1. Purpose/ location:
2. Manufacturer:
2.1. Product reference:
3. Material:
4. Size:
5. Colour:

330 Fireplace surrounds

1. Standard: To BS 1251.
2. Manufacturer:
   2.1. Product reference:
3. Surround
   3.1. Material:
   3.2. Finish:
   3.3. Dimensions:
   3.4. Fixing:
4. Other requirements:

335 Fireplace hearths

1. Standard: To BS 1251.
2. Manufacturer:
   2.1. Product reference:
3. Hearth
   3.1. Material:
   3.2. Finish:
   3.3. Colour:
   3.4. Dimensions:

400 Mailboxes

1. Standard: To BS EN 13724.
2. Manufacturer:
   2.1. Product reference:
3. Size:
4. Material:
5. Aperture
   5.1. Type of aperture:
   5.2. Aperture size:

410 Solid fuel room heaters

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Fuel:
4. Back boiler:
5. Output to air:
6. Boiler output:
7. Integral controls:
8. Flues:
9. Installation : To BS 8303-2 by an SFA/ HETAS Ltd registered installer.
10. Other requirements:

415 Wood-burning stoves

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Form:
4. Base design:
5. Output:
6. Flues
    6.1. Outlet:
    6.2. Material:
    6.3. Size:
7. Installation: To BS 8303-2 by an SFA/ HETAS Ltd registered installer.
8. Other requirements:

440 Inset open fires

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standard: To BS 4834.
4. Opening:
5. Components:
6. Installation: To BS 8303-2.
7. Other requirements:

450 Inset open fires with convection

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standard: To BS 3376.
4. Opening:
5. Components:
6. Installation: To BS 8303-2.
7. Other requirements:

460 Sealant

1. Description:
2. Standard:
3. Type:
    3.1. Manufacturer:
        3.1.1. Product reference:
    3.2. Cure:
4. Colour:
5. Other requirements:

Execution

710 Moisture content of wood and wood-based boards

1. Standard:
2. Moisture content on delivery:
3. Temperature and humidity: During delivery, storage, fixing and to handover maintain conditions to suit specified moisture contents of timber components.

720 Installation generally

1. General:
2. Fixing and fasteners: As section Z20.
3. Services:

760 Sealant bedding and pointing

1. Application: As section Z22.
2. Bedding:
3. Pointing:

770 Trims

1. Lengths: Wherever possible, unjointed between angles or ends of runs.
2. Running joints: Where unavoidable, obtain approval of location and method of jointing.
3. Angle joints: Mitred.

Completion

910 General

1. Doors and drawers: Accurately aligned, not binding. Adjusted to ensure smooth operation.
2. Ironmongery: Checked, adjusted and lubricated to ensure correct functioning.

920 Appliances

1. Test: Ensure that all functions and features work correctly.
2. Documentation: Submit guarantees, instruction manuals, etc.

Ω End of Section

N14
General internal signage systems

General

110 Signage system

1. Description:
2. System manufacturer:
    2.1. Product reference:
3. Sign type:
4. Layout and dimensions:
5. Lettering
    5.1. Language:
    5.2. Font:
    5.3. Colour:
    5.4. Size:
6. Symbols and graphics:
    6.1. Colour:
    6.2. Size:
7. Background colour:
    7.1. Inserts:
8. Supports/ fixings:
9. Accessories:

120 Inclusive signage systems

1. Description:
2. System manufacturer:
    2.1. Product reference:
3. Sign type:
4. Layout and dimensions:
5. Surface:
6. Lettering
    6.1. Language:
    6.2. Font:
    6.3. Colour:
7. Characters and symbols:
    7.1. Position:
    7.2. Characters:
    7.3. Colour:
    7.4. Size:
8. Background colour:
    8.1. Inserts:
9. Supports/ fixings:
10. Accessories:

System performance

210 General requirements

1. Signage system: Complete to BS 559, including facing information, components, inserts, accessories and fixings necessary to complete the system.
    1.1. Comply with the requirements of:
2. Geometric shapes, colours and layout: In accordance with BS ISO 7001.
3. Design standard for disabled people: In accordance with BS 8300-2.
4. Proposals: Submit drawings, schedules, technical information, calculations and manufacturer's literature.

240 Fire performance

1. Description:
    1.1. Reaction to fire:

280 Design life

1. Description:
2. Duration:
    2.1. Subject to reasonable wear and tear.
3. Condition of use: Subject to regular maintenance.

290 Signage samples

1. Sign type:
    1.1. Action: Submit labelled samples.
    1.2. Conformity: Retain samples on site for the duration of the contract, or until instructed to remove them.
    1.3. Delivered product: To conform with labelled samples.

295 Signage samples board

1. Samples board: Submit.
    1.1. Content: Selected labelled signs, showing methods of fixing.
    1.2. Conformity: Retain samples on site for the duration of the contract or until instructed to remove.
    1.3. Delivered product: To conform with labelled samples.

Products

310 Adhesive vinyl

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standard:
4. Component thickness:
5. Finish:

320 Aluminium

1. Description:

2. Manufacturer:
    2.1. Product reference:
3. Standard:
4. Component thickness:
5. Finish:
6. Perimeters:

330 Brass

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Component thickness:
4. Finish:
5. Perimeters:

340 Glass

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standard:
4. Component thickness:
5. Finish:
6. Perimeters:

350 Plastics

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Material:
4. Standard:
5. Component thickness:
6. Finish:
7. Perimeters:

360 Stainless steel

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standard:
4. Component thickness:
5. Grade:
6. Finish:
7. Perimeters:

370 Stove-enamelled metal plate

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Standard:
4. Base material:
5. Component thickness:
6. Finish:
7. Perimeters:

380 Wood

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Material:
4. Standard:
5. Component thickness:
6. Finish:
7. Perimeters:

390 In situ signs

1. Description:
2. Signwriter/ artist:
3. Substrate and element:
   3.1. Finish:
4. In situ work:

Execution

610 Fixing signs generally

1. Installation: Secure, plumb and level.
2. Strength of fasteners: Sufficient to support all live and dead loads.
3. Fasteners and or adhesives: As section Z20.
4. Fixings showing on surface of sign: Must not detract from the message being displayed.

620 Fixing signs for the visually impaired

1. Protection of users
   1.1. Fasteners for tactile/ Braille signs must not have sharp edges or protrusions that would cause confusion or injury to users.

670 Electrical and data services

1. Services connection required:
2. Standard: In accordance with BS 7671.
3. Coordinate with services trades.

Completion

910 Documentation

1. Submit
   1.1. Manufacturer's maintenance instructions.
   1.2. Guarantees, warranties, test certificates, record schedules and logbooks.

920 Spares

1. Supply as follows
   1.1. Type:
   1.2. Quantity:

930 Specialist tools

1. Supply as follows:

Ω End of Section

P21
Door/ window ironmongery

Pre-tender

10 Quantities and locations

1. Quantities and locations of ironmongery are …… .
2. Fixing: As sections L10 and L20.

General

120 Ironmongery range selected by Contractor

1. Source: Single co-ordinated range.
2. Notification: Submit details of selected range, manufacturer and/ or supplier.
3. Principal material/ finish:
4. Items unavailable within selected range: Submit proposals.

121 Ironmongery from single proprietary range

1. Manufacturer:
   1.1. Product reference:
2. Principal material/ finish:
3. Items unavailable within selected range: Submit proposals.

122 Ironmongery from listed proprietary ranges

1. Source: One only of the following manufacturers/ suppliers and ranges: …… .
2. Notification: Submit details of selected range, manufacturer and/ or supplier.
3. Principal material/ finish:
4. Items unavailable within selected range: Submit proposals.

130 Approved suppliers

1. Source: Obtain ironmongery from one of the following: …… .
2. Notification: Submit details of selected supplier.

140 Samples

1. General: Before placing orders with suppliers submit labelled samples of the following: …… .
   1.1. Conformity: Retain samples on site for the duration of the Contract. Ensure conformity of ironmongery as delivered with labelled samples.

141 Sample boards

1. General: Before placing orders with suppliers submit a sample board, containing labelled samples of ironmongery and showing methods of fixing.
2. Range: Include …… .
   2.1. Conformity: Retain board on site in an approved location for the duration of the Contract. Ensure conformity of ironmongery as delivered with labelled samples.

170 Ironmongery for fire doors

1. Relevant products: Ironmongery fixed to, or morticed into, the component parts of a fire resisting door assembly.
2. Compliance: Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.
   2.1. Certification:
3. Melting point of components (except decorative non-functional parts): 800°C minimum.

180 Strength class or category of duty for door ironmongery

1. Requirement:
2. General: Durability of ironmongery components to be compatible with stated category of duty of each door leaf.
   2.1. Exclusions: Ironmongery with specific duty or 'category of use' defined elsewhere.
   2.2. Documentation: Before placing orders with suppliers submit documentation showing product compliance with stated category of duty.

Door hanging devices

310 Single axis door hinges

1. Description:
2. Standard: To BS EN 1935.
3. Manufacturer:
   3.1. Product reference:
4. Type:
5. Size:
6. Material/ finish:
7. Hinge grade:
8. Other requirements:

315 Performance specification for single axis door hinges

1. Description:
2. Standard: To BS EN 1935.
3. Minimum classification grades
   3.1. Category of use:
   3.2. Durability:
   3.3. Test door mass:
   3.4. Suitability for use on fire/ smoke doors:
   3.5. Safety: 1.
   3.6. Corrosion resistance:
   3.7. Security - Burglar resistance:
   3.8. Hinge grade:
4. Type:
5. Size:
6. Material/ finish:
7. Other requirements:

320 Door hinges

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:
6. Other requirements:

350 Door track and running gear

1. Description:
2. Standard: To BS EN 1527.
3. Manufacturer:
    3.1. Product reference:
4. Track type:
5. Category of door:
6. Opening dimensions:
7. Accessories:
8. Operation: Smooth and quiet.
    8.1. Safety: Doors not able to come off track when in use.

360 Performance specification for door track and running gear

1. Description:
2. Standard: To BS EN 1527.
3. Minimum classification grades
    3.1. Category of use: - (no classification).
    3.2. Durability:
    3.3. Door mass:
    3.4. Fire resistance:
    3.5. Safety: - (no classification).
    3.6. Corrosion resistance:
    3.7. Security: - (no classification).
    3.8. Category of door:
    3.9. Initial friction:
4. Opening dimensions:
5. Accessories:
6. Operation: Smooth and quiet.
    6.1. Safety: Doors not able to come off track when in use.

Window hanging devices

365 Single axis window hinges

1. Description:
2. Standard: To BS EN 1935.
3. Manufacturer:

3.1. Product reference:
4. Type:
5. Size:
6. Material/ finish:
7. Hinge grade:
8. Other requirements:

370 Window hinges

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:

380 Sliding friction stay hinges

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:

385 Pivot hinges

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Material/ finish:

390 Spiral sash balances

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Sash heights:
4. Sash weight:
5. Type:
6. Material/ finish:

395 Boxed sash hanging fittings

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Axle pulleys:
4. Cords/ Chains:

5. Weights:
    5.1. Matched to weights of glazed sashes.
6. Other requirements:

Door operating devices

410 Overhead door closers

1. Description:
2. Standard: To BS EN 1154.
3. Manufacturer:
    3.1. Product reference:
4. Type:
5. Power size:
6. Other functions:
7. Casing finish:
8. Operational adjustment
    8.1. Variable power: Matched to size, weight and location of doors.
    8.2. Latched doors: Override latches and/ or door seals when fitted.
    8.3. Unlatched doors: Hold shut under normal working conditions.
    8.4. Closing against smoke seals of fire doors: Positive. No gaps.

412 Performance specification for overhead door closers

1. Description:
2. Standard: To BS EN 1154.
3. Minimum classification grades
    3.1. Category of use:
    3.2. Durability: 8.
    3.3. Door closer power size:
    3.4. Suitability for use on fire/ smoke doors:
    3.5. Safety: 1.
    3.6. Corrosion resistance:
4. Type:
5. Other functions:
6. Casing finish:
7. Operational adjustment
    7.1. Variable power: Matched to the sizes and weights of doors.
    7.2. Latched doors: Override latches and/ or door seals when fitted.
    7.3. Unlatched doors: Hold shut under normal working conditions.
    7.4. Closing against smoke seals of fire doors: Positive. No gaps.

450 Floor springs

1. Description:
2. Standard: To BS EN 1154.
3. Manufacturer:
    3.1. Product reference:

4. Power size:
5. Other functions:
6. Material/ finish:
7. Operational adjustment
    7.1. Variable power: Matched to size, weight and location of doors.
    7.2. Latched doors: Override latches and/ or door seals when fitted.
    7.3. Unlatched doors: Hold shut under normal working conditions.
    7.4. Closing against smoke seals of fire doors: Positive. No gaps.

452 Performance specification for floor springs

1. Description:
2. Standard: To BS EN 1154.
3. Minimum classification grades
    3.1. Category of use:
    3.2. Durability: 8.
    3.3. Door closer power size:
    3.4. Suitability for use on fire/ smoke doors:
    3.5. Safety: 1.
    3.6. Corrosion resistance:
4. Other functions:
5. Material/ finish:
6. Operational adjustment
    6.1. Variable power: Matched to size, weight and location of doors.
    6.2. Latched doors: Override latches and/ or door seals when fitted.
    6.3. Unlatched doors: Hold shut under normal working conditions.

471 Electromagnetic hold open/ swing free devices

1. Description:
2. Standard: To BS EN 1155.
3. Manufacturer:
    3.1. Product reference:
4. Type:
5. Material/ finish:
6. Electric supply:
7. Means of release: Alarm system and/ or failure of power supply.
8. Test switch: Located in a convenient position adjacent to door.
9. Operational adjustment of integral closer
    9.1. Variable power: Matched to size, weight and location of doors.
    9.2. Latched doors: Override latches and/ or door seals when fitted.
    9.3. Unlatched doors: Hold shut under normal working conditions.

472 Performance specification for electromagnetic hold open/ swing Free devices

1. Description:
2. Standard: To BS EN 1155.

3. Type:
4. Minimum classification grades
   4.1. Category of use: 3.
   4.2. Durability:
   4.3. Hold open power size:
   4.4. Suitability for use on fire/ smoke doors: 1.
   4.5. Safety: 1.
   4.6. Corrosion resistance:
5. Material/ finish:
6. Means of release: Alarm system and/ or failure of power supply.
7. Test switch: Located in a convenient position adjacent to door.
8. Operational adjustment of integral closer
   8.1. Variable power: Matched to size, weight and location of doors.
   8.2. Latched doors: Override latches and/ or door seals when fitted.
   8.3. Unlatched doors: Hold shut under normal working conditions.

481 Door coordinators

1. Description:
2. Standard: To BS EN 1158.
3. Manufacturer:
   3.1. Product reference:
   3.2. Material/ finish:
4. Application: To all single swing double doors with rebated meeting stiles and fitted with self closers.

482 Performance specification for door coordinators

1. Description:
2. Standard: To BS EN 1158.
3. Minimum classification grades
   3.1. Category of use: 3.
   3.2. Durability:
   3.3. Door coordinator size:
   3.4. Suitability for use on fire/ smoke doors:
   3.5. Safety: 1.
   3.6. Corrosion resistance:
4. Material/ finish:
5. Application: To all single swing double doors with rebated meeting stiles and fitted with self closers.
6. Selection criteria: Provide types that:
   6.1. Require the minimum amount of material to be removed from the door and frame.
   6.2. Are suitable for the size of rebates.

490 Uncontrolled door closers

1. Description:
2. Manufacturer:

2.1. Product reference:

3. Type:
4. Material/ finish:
5. Action:
6. Operation
   6.1. Power: To suit the size and weight of doors to which they are fitted.
   6.2. Unlatched doors: Hold closed under normal conditions.

Door securing devices

510 Thief resistant door locks

1. Description:
2. Standard: To BS 3621 and Kitemarked.
3. Manufacturer:
   3.1. Product reference:
4. Type:
5. Backset:
6. Material/ finish:
7. Keying:

515 Door locks

1. Description:
2. Standard: To BS EN 12209.
3. Manufacturer:
   3.1. Product reference:
4. Type:
5. Backset:
6. Material/ finish:
7. Keying:

525 Performance specification for door locks and latches

1. Description:
2. Standard: To BS EN 12209.
3. Minimum classification grades
   3.1. Category of use:
   3.2. Durability:
   3.3. Door mass and closing force:
   3.4. Suitability for use on fire/ smoke doors:
   3.5. Safety: 0.
   3.6. Corrosion resistance and temperature:
   3.7. Security and drill resistance:
   3.8. Field of door application:
   3.9. Type of key operation and locking:
   3.10. Type of spindle operation:
   3.11. Key identification requirement:

4. Backset:
5. Material/ finish:
6. Keying:

530 Special function door locks

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Backset:
5. Material/ finish:
6. Keying:

540 Door latches

1. Description:
2. Standard: To BS EN 12209.
3. Manufacturer:
   3.1. Product reference:
4. Type:
5. Backset:
6. Material/ finish:
7. Latch spring strength: Select to prevent unsprung lever handles drooping.

565 Padlocks

1. Description:
2. Standard: To BS EN 12320.
3. Manufacturer:
   3.1. Product reference:
4. Size:
5. Case:
6. Shackle:
7. Accessories:
8. Keying:

566 Performance specification for padlocks

1. Description:
2. Standard: To BS EN 12320.
3. Minimum classification grades
   3.1. Category of use: – Grade 1.
   3.2. Durability:
   3.3. Corrosion resistance:
   3.4. Security:
4. Size:
5. Case:
6. Shackle:

7. Accessories:
8. Keying:

571 Emergency exit devices

1. Description:
2. Standard: To BS EN 179.
3. Manufacturer:
   3.1. Product reference:
4. Type:
5. Material/ finish:
6. Additional requirements:

572 Performance specification for emergency exit devices

1. Description:
2. Standard: To BS EN 179.
3. Minimum classification grades
   3.1. Category of use: 3.
   3.2. Durability:
   3.3. Door mass:
   3.4. Suitability for use on fire/ smoke doors:
   3.5. Safety: 1.
   3.6. Corrosion resistance:
   3.7. Security:
   3.8. Projection of operating element:
   3.9. Type of operation:
4. Material/ finish:
5. Additional requirements:

577 Panic exit devices

1. Description:
2. Standard: To BS EN 1125.
3. Manufacturer:
   3.1. Product reference:
4. Type:
5. Material/ finish:
6. Additional requirements:

578 Performance specification for panic exit devices

1. Description:
2. Standard: To BS EN 1125.
3. Minimum classification grades
   3.1. Category of use: 3.
   3.2. Durability:
   3.3. Door mass:
   3.4. Suitability for use on fire/ smoke doors:

3.5. Safety: 1.
3.6. Corrosion resistance:
3.7. Security: 2.
3.8. Projection of bar:
3.9. Type of bar operation:
4. Material/ finish:
5. Additional requirements:

582 Door bolts

1. Description:
2. Standard: To BS EN 12051.
3. Manufacturer:
   3.1. Product reference:
4. Type:
5. Size:
6. Material/ finish:
7. Additional requirements:

584 Performance specification for door bolts

1. Description:
2. Standard: To BS EN 12051.
3. Minimum classification grades
   3.1. Category of use:
   3.2. Number of test cycles:
   3.3. Door mass: - (no classification).
   3.4. Fire safety:
   3.5. Safety in use:
   3.6. Corrosion resistance:
   3.7. Security:
4. Type:
5. Size:
6. Material/ finish:
7. Additional requirements:

586 Privacy indicator bolts

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Material/ finish:
5. Emergency release facility: Required.

Window securing devices

590 Window espagnolette bolts

1. Description:

2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Backset:
6. Material/ finish:
7. Additional requirements:

592 Sash fasteners

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:
6. Additional requirements:

593 Sash screws

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:
6. Additional requirements:

594 Fanlight catches

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Material/ finish:
5. Additional requirements:

596 Casement/ Sash mortice bolts

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:
6. Additional requirements:

Door furniture

610 Lever handles

1. Description:
2. Standard: To BS EN 1906.
3. Manufacturer:
   3.1. Product reference:
4. Style:
5. Size:
6. Material/ finish:
7. Mounting:
8. Additional requirements:

620 Door knobs

1. Description:
2. Standard: To BS EN 1906.
3. Manufacturer:
   3.1. Product reference:
4. Style:
5. Size:
6. Material/ finish:
7. Mounting:
8. Additional requirements:

622 Performance specification for lever handle sets

1. Description:
2. Standard: To BS EN 1906.
3. Minimum classification grades
   3.1. Category of use:
   3.2. Durability:
   3.3. Door mass: - (no classification).
   3.4. Fire resistance:
   3.5. Safety:
   3.6. Corrosion resistance:
   3.7. Security:
   3.8. Type of operation:
4. Style:
5. Size:
6. Material/ finish:
7. Mounting:
8. Additional requirements:

625 Performance specification for knob sets

1. Description:
2. Standard: To BS EN 1906.

3. Minimum classification grades
    3.1. Category of use:
    3.2. Durability:
    3.3. Door mass: - (no classification).
    3.4. Fire resistance:
    3.5. Safety:
    3.6. Corrosion resistance:
    3.7. Security:
    3.8. Type of operation:
4. Style:
5. Size:
6. Material/ finish:
7. Mounting:
8. Additional requirements:

641 Pull handles

1. Description:
2. Standard: To BS 8424.
3. Manufacturer:
    3.1. Product reference:
4. Shape:
5. Diameter:
6. Distance between centres:
7. Material/ finish:
8. Mounting:
9. Additional requirements:

651 Performance specification for pull handles

1. Description:
2. Standard: To BS 8424.
3. Minimum classification grades
    3.1. Category of use:
    3.2. Durability: 2.
    3.3. Door mass: - (no classification).
    3.4. Suitability for use on fire/ smoke doors:
    3.5. Safety: 1.
    3.6. Corrosion resistance:
4. Shape:
5. Diameter:
6. Distance between centres:
7. Material/ finish:
8. Mounting:
9. Additional requirements …….

670 Push plates

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Size:
4. Material/ finish:
5. Mounting:
6. Additional requirements:

680 Midrail plates

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Size:
4. Material/ finish:
5. Mounting:
6. Additional requirements:

690 Kick plates

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Size:
4. Material/ finish:
5. Mounting:
6. Additional requirements:

710 Escutcheons

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Material/ finish:
4. Keyhole type:
5. Usage:

720 Door stops

1. Manufacturer:
    1.1. Product reference:
2. Type:
3. Usage:

730 Letter plates

1. Description:
2. Standard: To BS EN 13724.
3. Manufacturer:

3.1. Product reference:
4. Operation:
5. Size:
6. Material/ finish:
7. Features:

731 Performance specification for letter plates

1. Description:
2. Standard: To BS EN 13724.
3. Minimum classification grades
   3.1. Type of aperture: 4.
   3.2. Aperture size:
   3.3. Corrosion resistance:
   3.4. Security: 2.
4. Operation:
5. Material/ finish:
6. Features:

735 Internal letter flaps

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:

750 Limiting door stays

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:
6. Features:

760 Door holders

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:

770 Padlock hasp and staple

1. Manufacturer:

1.1. Product reference:
2. Type:
3. Size:
4. Material/ finish:

811 Door mounted coat hooks

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Material/ finish:

850 Threshold weatherstrip

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:

855 Weatherstrip to door head and jambs

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:

860 Door seals for

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:

890 Door viewers

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Angle of vision:
4. Material/ finish:
5. Viewer body diameter:
6. Door thickness:

895 Door mounted air transfer grilles

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:

896 Door mounted fire resisting air transfer grilles

1. Manufacturer:
    1.1. Product reference:
2. Type:
3. Size:
4. Fire resistance:
5. Material/ finish:

897 Door mounted fire resisting air transfer grilles with smoke shutter

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Type:
4. Size:
5. Fire resistance:
6. Material/ finish:
7. Activator: Smoke detection and/ or fire alarm system.

Window furniture

900 Casement handles

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Type:
4. Material/ finish:
5. Features:

905 Casement stays

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:
6. Features:

910 Window lever handles

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Material/ finish:
5. Features:

925 Over centre casement stays

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:
6. Features:

930 Friction restrictor casement stays

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish:
6. Features:

935 Remote window openers

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Material/ finish:
5. Features:

940 Sash lift handles

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ finish …… .

950 Sash eyes

1. Description:
2. Manufacturer:

2.1. Product reference:

3. Type:
4. Size:
5. Material/ finish:

960 Weatherstrip to windows

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Type:
4. Size:
5. Material/ Finish:

Ω End of Section

V90
Electrical systems

General

110 Low-voltage supply

1. Nature of current: Alternating.
2. Phase:
3. Voltage:
4. Source:
5. Metering:
6. Accessories:

115 Low-voltage electrical installation

1. Connection to low-voltage supply:
2. Switchgear:
3. Cable types
    3.1. Distribution circuit cabling:
4. Final circuit cabling:
5. Containment:
6. Containment accessories:
7. Small power electrical accessories:
8. Fixed electrical equipment:
9. Lighting accessories:
10. Luminaires:
11. Automated lighting controls:

System performance

210 Design of low-voltage electrical installation generally

1. Design and detailing: Complete for the electrical installation.
2. Standards: In accordance with BS 7671 and the requirements of the electricity distributor.
3. Distribution circuits
    3.1. Spare capacity:
    3.2. Conductor sizes (minimum):
4. Spare capacity of distribution equipment:
5. Protective devices:
6. Final circuits
    6.1. Spare capacity:
    6.2. Conductor sizes (minimum):
7. Selection of cables, conduit, trunking and ducting:
8. Equipment:
9. Proposals:

220 Design of low-voltage incoming supply

1. Design and detailing: Complete for the low-voltage incoming supply.
2. Spare capacity:
3. Proposals:
4. Evidence of agreement with electricity distributor:
5. General: Manage and liaise with the electricity distributor and determine: …….
6. Electricity supplier:
   6.1. Coordination:

222 Design of photovoltaic system

1. Design and detailing: Complete for the photovoltaic system.
2. Standards:
3. Output: Determine a suitable rating for the installation.
4. Proposals:
5. Evidence of agreement with electricity distributor:
6. General:
7. Testing and commissioning: Incorporate adequate measures to allow full testing and commissioning of the completed system.

225 Design of small-scale wind generating system

1. Design and detailing: Complete for the small-scale wind generating system.
2. Standards: To BS EN 61400-2, BS EN 50549-1 and in accordance with ENA EREC G98/1-4.
3. Output: Determine a suitable rating for the installation.
4. Proposals:
5. Evidence of agreement with electricity distributor:
6. General:

235 Arrangement of particular circuits

1. Separation: Divide installation into separately controlled circuits.
   1.1. Separately controlled circuits:
2. Further subdivision:

240 Design of general lighting system

1. Purpose:
2. Design and detailing: Complete for the general lighting system.
3. Standard:
4. Room:
   4.1. Maintained average illuminance:
   4.2. Glare index:
   4.3. Controls:
5. Maintenance:

250 Design of emergency lighting system

1. Purpose:
2. Design and detailing: Complete for the emergency lighting system.

3. Standards
   3.1. Emergency escape lighting: In accordance with BS 5266-1.
   3.2. Escape route, open area, high risk task area and standby lighting: To BS EN 1838 and BS EN 50172.
4. System classification:
5. Method of testing:

260 Design of external lighting system

1. Description:
2. Purpose:
3. Design and detailing: Complete for the external lighting system.
4. Standards:
5. Maintained average illuminance:
6. Minimum illuminance at any point:
   6.1. Uniformity:

265 Design and lighting calculations

1. Proposals:
2. Lighting calculations
   2.1. Type:
3. Submit the following:

270 Control of external luminaires

1. Individual control:
2. Group control:

275 Small power system design

1. Purpose:
2. Small power outlets:
3. Room …….
   3.1. Outlets:
4. Fixed equipment:

280 Earthing and bonding design

1. Design: Complete the design of the earthing and bonding systems.
2. Earthing, main protective bonding, supplementary bonding and protective conductors:
3. Requirements:

Products

312 Photovoltaic system

1. Manufacturer:
   1.1. Product reference:
2. Standards
   2.1. Photovoltaic modules:
   2.2. Junction boxes and switchgear assemblies: To BS EN IEC 61439-1 and -2.

2.3. Surge protection devices: To BS EN 61643-31.

3. Module mounting:
4. Rating:
5. Colour:

315 Small-scale wind turbines

1. Manufacturer:
   1.1. Product reference:
2. Standard: To BS EN 61400-2.
3. Mounting:
4. Hub height (maximum):
5. Rotor diameter (maximum):
6. Rating:

319 Cable distribution cabinets

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Standards: To BS EN IEC 61439-1 and BS EN 61439-5.
4. Rated operational voltage (Ue):
5. Rated operational frequency:
6. Number of phases:
7. Incoming device:
8. Number of outgoing ways:
9. Outgoing devices:
10. Busbars and connections
    10.1. Type: Fully shrouded.
    10.2. Rated operational current (Ie):
11. Neutral and earth bars: Individual terminal for each outgoing circuit.
12. Spare ways:
13. Identification
    13.1. Neutral and earth bar terminals: Label with the outgoing circuit reference.
    13.2. Cable terminations:
14. Spare outgoing devices:
15. Enclosure
    15.1. Ingress protection (minimum):
    15.2. Impact protection (minimum):
    15.3. Dimensions:
    15.4. Material:
    15.5. Finish:
    15.6. Colour:
    15.7. Doors:
    15.8. Backboard:
16. Accessories:

320 Distribution boards

1. Manufacturer:
    1.1. Product reference:
2. Standards:
3. Third-party certification:
4. Rated operational voltage (Ue):
5. Rated operational frequency:
6. Rating:
7. Number of phases:
8. Incoming devices:
9. Number of outgoing ways:
10. Outgoing devices:
11. Enclosure
    11.1. Ingress protection (minimum):
    11.2. Material:
12. Accessories:

330 Cable trays

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standard: To BS EN 61537.
4. Material:
5. Resistance against flame propagation:
6. Electrical properties
    6.1. Continuity characteristics:
    6.2. Conductivity characteristics:
7. Resistance against corrosion:
8. Temperature properties for transport, storage, installation and application
    8.1. Minimum:
    8.2. Maximum:
9. Mechanical properties
    9.1. Cable tray free base area:
    9.2. Resistance to impact:
10. Width:
11. Features
    11.1. Flange type:
    11.2. Segregation:
    11.3. Protective covers:
12. Accessories and fittings:

335 Cable baskets

1. Description:
2. Manufacturer:

2.1. Product reference:

3. Standard: To BS EN 61537.
4. Material:
5. Resistance against corrosion:
6. Width:
7. Side height:
8. Features
   8.1. Segregation:
   8.2. Protective covers:
9. Accessories and fittings:

336 Above-ground warning markers

1. Manufacturer:
   1.1. Product reference:
2. Material:
3. Height:
4. Width:
5. Depth:
6. Legend:

337 Cable guards

1. Manufacturer:
   1.1. Product reference:
2. Material:
3. Finish:
4. Diameter:
5. Colour:
6. Accessories:

338 Underground cable marker tape

1. Manufacturer:
   1.1. Product reference:
2. Standard: To BS EN 12613.
3. Material:
4. Wire detection aid:
5. Size
   5.1. Width:
   5.2. Thickness:
6. Format
   6.1. Background colour: Yellow.
   6.2. Text colour: Black.
7. Legend: 'CAUTION ELECTRIC CABLE BELOW' continuous along the tape length.

339 Underground concrete cable protection covers

1. Manufacturer:

1.1. Product reference:
2. Standard:
3. Type:
4. Length:
   4.1. Width:
   4.2. Thickness at outer edge:

340 Underground plastics cable protection covers

1. Manufacturer:
   1.1. Product reference:
2. Standard:
3. Material:
4. Wire detection aid:
5. Size
   5.1. Length:
   5.2. Width:
   5.3. Thickness:
6. Jointing method:
7. Identification:

342 Rigid conduit and fittings

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Standards: To BS EN 61386-1 and BS EN IEC 61386-21.
4. Mechanical properties
   4.1. Resistance to compression:
   4.2. Resistance to impact:
5. Transport, installation and application
   5.1. Lower temperature range (minimum):
   5.2. Upper temperature range (maximum):
6. Resistance to bending: Rigid.
7. Electrical characteristics:
8. Resistance to external influences
   8.1. Protection against ingress of solid objects (minimum):
   8.2. Protection against ingress of water (minimum):
9. Resistance against corrosion:
10. Tensile strength:
11. Resistance to flame propagation:
12. Suspended load capacity:
13. Hologen content:
14. Colour:
15. Sizes:
16. Accessories and fittings:

350 Cable trunking and cable ducting for wall and ceiling mounting

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standards: To BS EN 50085-1 and BS EN 50085-2-1.
4. Installation position:
5. Type:
6. Resistance to compression:
7. Resistance to impact:
8. Temperature properties
    8.1. Storage and transport temperature (minimum):
    8.2. Installation temperature (minimum):
    8.3. Application temperature (maximum):
9. Resistance to flame propagation:
10. Electrical continuity properties:
11. Electrical insulating properties:
12. Protection by enclosure
    12.1. Protection against ingress of solid objects (minimum):
    12.2. Protection against ingress of water (minimum):
    12.3. Protection against access to hazardous parts (minimum):
13. Means of opening access covers:
14. Without tools
15. With tools
16. Contractor's choice
17. Submit proposals
18. Sizes:
19. Compartments:
20. Accessories and fittings:
    20.1. Types:

353 Cable trunking and cable ducting for floor mounting

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standards: To BS EN 50085-1 and BS EN 50085-2-2.
4. Installation position:
5. Resistance to impact:
6. Temperature properties
    6.1. Storage and transport temperature (minimum):
    6.2. Installation temperature (minimum):
    6.3. Application temperature (maximum):
7. Resistance to flame propagation:
8. Electrical continuity properties:
9. Electrical insulating properties:

10. Protection by enclosure
    10.1. Protection against ingress of solid objects (minimum):
    10.2. Protection against ingress of water (minimum):
    10.3. Protection against access to hazardous parts (minimum):
11. Means of opening access covers:
12. According to floor treatment:
13. Resistance to vertically applied load:
14. Screening:
15. Sizes:
16. Compartments:
17. Accessories and fittings:
    17.1. Types:
18. Service outlet units:

356 Intumescent trunking pads

1. Manufacturer:
    1.1. Product reference:
2. Standard:
3. Third-party certification:
4. Size:
5. Fixing:

357 Intumescent trunking pillows

1. Manufacturer:
    1.1. Product reference:
2. Standard:
3. Third-party certification:
4. Size:
5. Fixing:

411 Fire-resistant screened low-smoke halogen-free (LSHF) cables

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS 7629-1.
3. Third-party certification:
4. Size:
5. Insulation:
6. Fire resistance category:
7. Screen:

412 Light-duty mineral-insulated cables

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS EN 60702-1.
3. Third-party certification:

4. Size:
5. Metallic sheath:
6. Outer covering
    6.1. Material:
    6.2. Colour:

414 Polyvinyl chloride (PVC)-insulated and sheathed cables

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS 6004.
3. Third-party certification:
4. Cable type:
5. Size:
6. Sheath colour: Grey.
7. Reaction to fire class
    7.1. Fire behaviour:
    7.2. Additional classification for smoke production:
    7.3. Additional classification for flaming droplets and or particles:
    7.4. Additional classification for acidity:

415 Cross-linked polyolefin-insulated low-smoke halogen-free (LSHF) non-sheathed single-core cables

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS EN 50525-1 and BS EN 50525-3-41.
3. Third-party certification:
4. Cable type:
5. Size:
6. Reaction to fire class
    6.1. Fire behaviour:
    6.2. Additional classification for smoke production:
    6.3. Additional classification for flaming droplets and or particles:
    6.4. Additional classification for acidity:

416 Polyvinyl chloride (PVC)-insulated non-sheathed single-core cables

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS EN 50525-1 and BS EN 50525-2-31.
3. Third-party certification:
4. Cable type:
5. Size:
6. Reaction to fire class
    6.1. Fire behaviour:
    6.2. Additional classification for smoke production:
    6.3. Additional classification for flaming droplets and or particles:

6.4. Additional classification for acidity:

417 Thermosetting-insulated thermoplastic-sheathed low-smoke halogen-free (LSHF) cables

1. Manufacturer:
   1.1. Product reference:
2. Standard: To BS 7211.
3. Third-party certification:
4. Cable type:
5. Size:
6. Reaction to fire class
   6.1. Fire behaviour:
   6.2. Additional classification for smoke production:
   6.3. Additional classification for flaming droplets and or particles:
   6.4. Additional classification for acidity:

418 Thermosetting-insulated polyvinyl chloride (PVC)-sheathed armoured cables

1. Manufacturer:
   1.1. Product reference:
2. Standard: To BS 5467.
3. Third-party certification:
4. Size:
5. Insulation:
6. Sheath colour:
7. Reaction to fire class
   7.1. Fire behaviour:
   7.2. Additional classification for smoke production:
   7.3. Additional classification for flaming droplets and or particles:
   7.4. Additional classification for acidity:

419 Thermosetting-insulated thermoplastic-sheathed low-smoke halogen-free (LSHF) armoured cables

1. Manufacturer:
   1.1. Product reference:
2. Standard: To BS 6724.
3. Third-party certification:
4. Size:
5. Insulation:
6. Sheath colour:
7. Reaction to fire class
   7.1. Fire behaviour:
   7.2. Additional classification for smoke production:
   7.3. Additional classification for flaming droplets and or particles:
   7.4. Additional classification for acidity:

420 Protective conductors

1. Type:

430 Electrical accessories

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Standards
   3.1. Generally: To BS 5733.
   3.2. Switches: To BS EN 60669-1.
4. Finish:
5. Mounting:

432 Ceiling power switches

1. Manufacturer:
   1.1. Product reference:
2. Standards: To BS EN 60669-1 and BS EN 60669-2-4.
3. Current rating:
4. Poles:
5. Indicator lamp:
6. Flag indicator:
7. Mounting:
8. Ingress protection (minimum):
9. Cable termination:
10. Material:
11. Colour:

433 Double-pole switches

1. Manufacturer:
   1.1. Product reference:
2. Standards: To BS EN 60669-1 and BS EN 60669-2-4.
3. Current rating:
4. Indicator lamp:
5. Mounting:
6. Ingress protection (minimum):
7. Cable termination:
8. Plate
   8.1. Material:
   8.2. Finish:
   8.3. Insert colour:

435 Fused connection units

1. Manufacturer:
   1.1. Product reference:
2. Standard: To BS 1363-4.

3. Control
    3.1. Type:
    3.2. Indicator lamp:
4. Mounting:
5. Flex outlet:
6. Ingress protection (minimum):
7. Cable termination:
8. Fuse carrier access:
9. Plate
    9.1. Material:
    9.2. Finish:
    9.3. Insert colour:

440 Standard socket outlets

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS EN 1363-2.
3. Arrangement:
4. Control
    4.1. Type:
    4.2. Switch position:
    4.3. Indicator lamp:
    4.4. Interlock:
5. Mounting:
6. Features:
7. Ingress protection (minimum):
8. Cable termination:
9. Plate
    9.1. Material:
    9.2. Finish:
    9.3. Insert colour:

441 Standard socket outlet residual current devices (SRCDs)

1. Manufacturer:
    1.1. Product reference:
2. Standards: To BS 1363-2 and BS 7288.
3. Voltage rating:
4. Current rating:
5. Rated residual operating current:
6. Poles:
7. Arrangement:
8. Control
    8.1. Type:
    8.2. Switch position:
    8.3. Indicator lamp:

8.4. Interlock:
8.5. Response to line voltage failure:
9. Operating characteristic:
10. Mounting:
11. Ingress protection (minimum):
12. Cable termination:
13. Plate
13.1. Material:
13.2. Finish:
13.3. Insert colour:

455 Lighting switches

1. Manufacturer:
1.1. Product reference:
2. Standard: To BS EN 60669-1.
3. Current rating:
4. Actuating method:
5. Poles:
6. Arrangement:
7. Mounting:
8. Ingress protection (minimum):
9. Cable termination:
10. Plate
10.1. Material:
10.2. Finish:
10.3. Insert colour:

456 Dimmer switches and controls

1. Manufacturer:
1.1. Product reference:
2. Standards: To BS EN 60669-1 and BS EN 60669-2-1.
3. Rated load:
4. Arrangement:
5. Actuating method:
6. Control function:
7. Suitable for the following loads:
8. Mounting:
9. Ingress protection (minimum):
10. Cable termination:
11. Plate
11.1. Material:
11.2. Finish:
11.3. Insert colour:

460 Shaver supply units

1. Manufacturer:
    1.1. Product reference:
2. Standards: To BS EN IEC 61558-1 and BS EN 61558-2-5.
3. Rating: 20 V A.
4. Output voltage: 115 V and 230 V.
5. Isolating transformer: Integral.
6. Mounting:
7. Ingress protection (minimum):
8. Plate
    8.1. Material:
    8.2. Finish:
    8.3. Insert colour:

510 General purpose luminaires

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standards:
4. Third-party certification:
5. Luminaire description:
6. Photometric performance: To BS EN 13032-1.
7. Mounting:
8. Ingress protection (minimum):
9. Impact protection (minimum):
10. Lamp:
    10.1. Wattage:

511 Lamps generally

1. Manufacturer:
    1.1. Lamps of the same type and rating: Same manufacturer.
2. Standards
    2.1. Compact fluorescent lamps: To BS EN 60901 and BS EN 61199.
    2.2. High-pressure mercury lamps: To BS EN 60188 and BS EN 62035.
    2.3. High-pressure sodium lamps: To BS EN 62035.
    2.4. Light-emitting diodes (LEDs): To BS EN IEC 62031.
    2.5. Metal halide lamps: To BS EN 62035.
    2.6. Tubular fluorescent lamps
        2.6.1. Single-capped lamps: To BS EN 60901 and BS EN 61199.
        2.6.2. Double-capped lamps: To BS EN 60081 and BS EN 61195.
    2.7. Tungsten halogen lamps: To BS EN 60432-2 and BS EN 60357.

515 Luminaire supporting couplers

1. Manufacturer:
    1.1. Product reference:

2. Standards:
3. Current rating:
4. Material:
5. Colour:
6. Mounting:

516 Ceiling roses

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS 67.
3. Current rating:
4. Material:
5. Colour:
6. Mounting:

517 Bayonet batten lampholders

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS EN 61184.
3. Pin arrangement:
4. Material:
5. Operating temperature (minimum):
6. Accessories:
7. Arrangement:

518 Pendant sets

1. Manufacturer:
    1.1. Product reference:
2. Standards
    2.1. Cable: To BS EN 50525-1 and BS EN 50525-2-11.
    2.2. Ceiling roses: To BS 67.
    2.3. Lampholders to BS 7895 and BS EN 61184.
3. Cable
    3.1. Colour:
    3.2. Size:
    3.3. Length:

520 Safety isolating transformers

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Safety isolating transformer: To BS EN IEC 61558-1 and BS EN 61558-2-6.
    3.1. Type:
    3.2. Rating:
    3.3. Voltage tappings:

4. Enclosure
    4.1. Material and finish:
    4.2. Ingress protection (minimum):

530 Self-contained emergency luminaires

1. Manufacturer:
    1.1. Product reference:
2. Standards: To BS EN IEC 60598-1 and BS EN 60598-2-22.
3. Third-party certification:
4. Luminaire type:
5. Lamp:
    5.1. Wattage:
6. Type: X.
7. Mode of operation:
8. Facilities:
9. Duration of emergency mode:
10. Indicators
    10.1. Charging:
    10.2. Fault:
11. Test in progress:
    11.1. Position within luminaire:
12. Batteries:
13. Material:
14. Colour:
    14.1. Labelling: Indelibly mark with year of manufacture and installation.
15. Legend:

540 Central battery power supply units

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS EN 50171.
3. Third-party certification:
4. Voltage output:
5. Type of battery:
6. Fault alarms:
7. Mode of operation:
    7.1. Full load duration under rated load conditions (minimum):
8. Ambient temperature of battery store:

550 Centrally supplied emergency luminaires

1. Manufacturer:
    1.1. Product reference:
2. Standards: To BS EN IEC 60598-1 and BS EN 60598-2-22.
3. Third-party certification:
4. Luminaire type:

5. Lamp:
    5.1. Wattage:
6. Type: Z.
7. Mode of operation:
8. Facilities:
9. Material:
10. Colour:
11. Legend:

561 Floodlights

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standards: To BS EN IEC 60598-1 and BS EN 60598-2-5.
4. Third-party certification:
5. Luminaire description:
6. Photometric performance: To BS EN 13032-1.
7. Mounting:
8. Ingress protection (minimum):
9. Impact protection (minimum):
10. Lamp:
    10.1. Wattage:
    10.2. Colour temperature:
11. Accessories:

562 Ground-recessed luminaires

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standards: To BS EN IEC 60598-1 and BS EN 60598-2-13.
4. Third-party certification:
5. Luminaire description:
6. Photometric performance: To BS EN 13032-1.
7. Voltage source:
8. Ingress protection (minimum):
9. Impact protection (minimum):
10. Lamp:
    10.1. Wattage:
    10.2. Colour temperature:
11. Accessories:

567 Road and amenity lighting luminaires:

1. Description:
2. Manufacturer:
    2.1. Product reference:

3. Standard: To BS EN IEC 50598-1 and BS EN 60598-2-3.
4. Third-party certification:
5. Luminaire description:
6. Photometric performance: To BS EN 13032-1.
7. Ingress protection (minimum):
8. Impact protection (minimum):
9. Mounting:
10. Lamp:
    10.1. Wattage:
    10.2. Colour temperature:
11. Accessories:

570 Underwater luminaires

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standards: To BS EN IEC 60598-1 and BS EN 60598-2-18.
4. Third-party certification:
5. Luminaire description:
6. Photometric performance: To BS EN 13032-1.
7. Mounting:
8. Ingress protection (minimum):
9. Impact protection (minimum):
10. Voltage source:
11. Controlgear position:
12. Lamp:
    12.1. Wattage:
    12.2. Colour temperature:
13. Accessories:

575 Lighting columns

1. Manufacturer:
    1.1. Product reference:
2. Standards:
3. Material and type:
4. Nominal column height:
5. Base arrangement:
6. Corrosion protection:
    6.1. Decorative finish:
7. Identification:
8. Electrical cut outs:
9. Column door locks and keys:
10. Accessories:

580 Earthing and bonding equipment

1. Earth electrodes: In accordance with BS 7430.
2. Electrode type:
3. Earth clamps: To BS 951.

585 Earth bars

1. Separate earth bar:
2. Size:
3. Material:

590 Equipment

1. Description:
2. Manufacturer:
    2.1. Product reference:
3. Standards:
4. Third-party certification:
5. Features:
6. Material:
7. Colour:
8. Mounting:

592 Time switches

1. Manufacturer:
    1.1. Product reference:
2. Standards: To BS EN 60730-1 and BS EN IEC 60730-2-7.
3. Third-party certification: BEAB-approved.
4. Equipment interconnectivity:
5. Type:
6. Features:
7. Programme capability:
8. Programme method:
9. Number of switching channels:
10. Enclosure
    10.1. Mounting type:
    10.2. Mounting arrangement:

594 Photoelectric control units

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS 5972.
3. Features:
4. Mounting:

596 Occupancy detectors

1. Manufacturer:

1.1. Product reference:

2. Standards: To BS EN 60669-1 and BS EN 60669-2-1
3. Sensor type:
4. Features:
5. Mounting:

Execution

610 Electrical installation generally

1. Standard: In accordance with BS 7671.

615 Installing connection to incoming supply

1. Main switchboard/ distribution board: Connect to main incoming metering equipment.
2. Nature of connection: Liaise with the DNO to ensure the correct size, quantity and type of cable is provided for connection to their equipment.

620 Installing photovoltaic systems

1. Standards:
2. Installer:
3. Location of collector modules:
4. Location of inverter and controls:
5. Connection to building installation:

625 Installing small-scale wind generating systems

1. Installer:
2. Location of turbine:
3. Turbine support poles and fixings:
4. Location of inverter and controls:
5. Connection to building installation:

630 Installing switchgear

1. Orientation:
2. Clearance in front of switchgear (minimum):
3. Labelling:
4. Padlock identification:

635 Installing cables directly in the ground

1. Cables:
2. Cable bedding:
3. Cable pulling: Prevent kinks and twisting of the cable.
4. Installation method:
5. Cable formation within trench:
6. Cables below roads and hard-standings:
7. Cable marker tape:
8. Backfilling:

636 Installing above-ground warning markers

1. Installation:
2. Locations:

640 Installing cables entering buildings from below ground

1. Pipeducts:
2. Proposals:

645 Installing cable tray

1. Support:
2. Access:
3. Supports and fasteners: Avoid contact between dissimilar metals. Use corrosion-resistant components in locations where moisture may occur.
4. Cutting:
5. Earth protection: Ensure that, where utilized, tray jointing pieces are properly fixed and provide satisfactory continuity between the separate sections of containment.

650 Installing cable basket

1. Support:
2. Access:
3. Supports and fasteners: Avoid contact between dissimilar metals. Use corrosion-resistant components in locations where moisture may occur.
4. Earth protection: Ensure that, where utilized, basket jointing pieces are properly fixed and provide satisfactory continuity between the separate sections of containment.

655 Installing steel conduit and fittings

1. Fixing:
2. Conduit drainage:
3. Location: Position vertically and horizontally in line with equipment served, and parallel with building lines. Locate where accessible.
4. Jointing
   - 4.1. Number of joints: Minimize.
   - 4.2. Lengths of conduit: Maximize.
   - 4.3. Cut ends: Remove burrs, and plug during construction works.
   - 4.4. Movement joints in structure: Manufactured expansion coupling.
   - 4.5. Threaded steel conduits: Tightly screw to ensure electrical continuity, with no thread showing.
   - 4.6. Conduit connections to boxes and items of equipment, other than those with threaded entries:
   - 4.7. Changes of direction:
5. Connections to boxes, trunking, equipment and accessories: Screwed couplings, adaptors, connectors and glands: …….
6. Mounting and support:
7. Earth protection:

660 Installing PVC conduit and fittings

1. Fixing

1.1. Spacing of conduit saddles (maximum):
1.2. Fix boxes independently of conduit.
1.3. At fittings and changes of direction:
1.4. Thermal expansion: Allow for expansion couplings in accordance with manufacturer's recommendations.

2. Conduit drainage:
3. Location: Position vertically and horizontally in line with equipment served, and parallel with building lines. Locate where accessible.
4. Jointing
   4.1. Number of joints: Minimize.
   4.2. Lengths of conduit: Maximize.
   4.3. Cut ends: Remove burrs.
   4.4. Movement joints in structure: Manufactured expansion coupling.
   4.5. Adhesive:
5. Changes of direction:
6. Connections to boxes, trunking, equipment and accessories: Use threaded adaptors.
7. Mounting and support:

665 Installing conduit in concrete

1. Fixing:
2. Concrete cover to conduit (minimum):
3. Draw wires: Install to all conduit runs and confirm integrity immediately after the concrete pour.

670 Installing trunking/ ducting systems

1. Positioning: Accurate with respect to equipment served, and parallel with other services and where relevant, floor level and other building lines.
2. Access: Provide space encompassing cable trunking to permit access for installing and maintaining cables.
3. Jointing
   3.1. Number of joints: Minimize.
   3.2. Lengths of trunking/ ducting: Maximize.
   3.3. Steel systems: Mechanical couplings. Do not weld. Fit a copper link at each joint to ensure that satisfactory electrical continuity is maintained between the separate sections of trunking, equipment and accessories.
4. Movement: Fix securely. Restrain floor-mounted systems during screeding.
5. Junctions and changes of direction: Proprietary jointing units.
6. Cable entries:
7. Internal fire barriers: Provide to maintain integrity of fire compartment.
8. Protection:
9. Service outlet units:

675 Partial installation

1. Equipment to be installed only:
2. Provide power supplies and final connections to the following equipment:
3. Containment: Provide for the following: …….
   3.1. Draw cords: Required.

3.2. Proposals:

680 Cable routes

1. Cables generally:
   1.1. Concealed cable runs to wall switches and outlets: Align vertically or horizontally with the accessory.
2. Exposed cable runs:
   2.1. Orientation: Straight, vertical and/ or horizontal and parallel to walls.
3. Distance from other services running parallel:
   3.1. Heating pipes:

685 Installing cables

1. General: Install cables neatly and securely. Protect against accidental damage, adverse environmental conditions, mechanical stress and deleterious substances.
2. Timing:
3. Jointing: At equipment and terminal fittings only.
4. Cables passing through walls:
5. Cables surrounded or covered by thermal insulation:
6. Cable guards:

690 Installing cables in plaster

1. Protection:

695 Installing cables in vertical trunking/ ducts

1. Support:
2. Heat barrier centres (maximum):
3. Heat barriers:

700 Installing cables in accessible roof spaces

1. Cables running across ceiling joists:

705 Installing armoured cable

1. Temperature: Do not start installation if cable or ambient temperature is below 0°C, or has been below 0°C during the previous 24 hours.
2. Joints and terminations:
3. Earthing:
4. Connections to apparatus:

710 Installing PVC-sheathed cable

1. Temperature: Do not install cables if ambient temperature is below 5°C.

715 Installing MICC cable

1. Bending: Do not corrugate sheath.
2. Sealing cable ends: Fit terminations as soon after cable installation as practicable. Temporarily seal open cable ends to prevent the ingress of moisture where terminations are not fitted immediately.
3. Testing:

4. Terminations: To BS EN 60702-2.
5. Connection to equipment and boxes:

720 Installing electrical accessories and equipment

1. Location:
2. Arrangement: Coordinate with other wall- or ceiling-mounted equipment.
3. Positioning: Accurately and square to vertical and horizontal axes.
4. Alignment: Align adjacent accessories on the same vertical or horizontal axis.
5. Mounting:
6. Mounting heights (finished floor level to underside of equipment/ accessory):
7. Accessory face plates: Free from any traces of plaster, grout and paint or similar.

725 Final connections

1. Size:
2. Cable:
3. Length:

730 Installing multigang switches

1. General:
2. Segregation:

735 Installing luminaires

1. Location:
2. Orientation:
3. Supports: Adequate for weight of luminaire.

740 Installing emergency luminaires

1. Permanent electrical supplies:
2. Charge indicator:

745 Installing external luminaires

1. Locations:
2. Seals:

746 Installing luminaire controlgear

1. Location:
2. Labelling of controlgear enclosures:

750 Installing lighting columns generally

1. Standard:
2. Position:
3. Hinged columns: Site to allow lowering to horizontal.
4. Access door:
5. Location marking for inspection and maintenance purposes:

751 Setting components in concrete foundations and bases

1. Foundation holes:
2. Locating components:
3. Cable ducts:
4. Concrete surround:
5. Concrete foundations
    5.1. Concrete
        5.1.1. Standards: To BS 8500-2 and BS EN 206.
        5.1.2. Mix:
        5.1.3. Admixtures:
        5.1.4. Concealed:
        5.1.5. Exposed:

752 Setting components in earth

1. Foundation holes: Form as small as practicable to allow refilling.
2. Locating components:
3. Cable ducts: Connect to column cable entry slot and protect against collapse during backfilling.
4. Earth for backfilling:
5. Backfilling:

753 Site-painting of columns

1. Timing:

755 Installing earth bars

1. Location:
2. Mounting:

760 Equipment labelling

1. Electrical equipment: Install labels indicating purpose.
2. Voltage warning notices
    2.1. Location: Apply to equipment in a position where it can be seen prior to gaining access to live parts when the voltage within exceeds 230 V.
    2.2. Format: To BS EN ISO 7010, functional reference number, W012, includes warnings of the voltage present.
3. Distribution boards:
4. Sub-main cables:

765 Engraving

1. Metal and plastic accessories:
2. Emergency lighting test key switches:
3. Multigang light switches:

Completion

810 Final fix

1. Accessory faceplates, luminaires and other equipment:

820 Cleaning

1. Electrical equipment:
2. Equipment not supplied but installed under the electrical works:

830 Inspection and testing generally

1. Standard: In accordance with BS 7671.
2. Notice before commencing tests (minimum):
3. Labels and signs:
4. Certificates:
   4.1. Number of copies:

840 Testing and commissioning of photovoltaic systems

1. Standards: To BS EN 62446-1, BS EN 50549-1 and in accordance with ENA EREC G98/1-4.
2. Microgeneration Certification Scheme:
3. Documentation:

850 Testing and commissioning of small-scale wind generating systems

1. Standards: To BS EN 61400-2 and BS EN 50549-1 and in accordance with EREC G98/1-4.
2. Microgeneration Certification Scheme:

860 Inspection and testing of emergency lighting systems

1. Standard: In accordance with BS 5266-1.
2. Certificate of testing:
   2.1. Standard:
   2.2. Number of copies:
3. System log book: To BS 5266-1.

870 Inspection and testing of external lighting systems

1. Switching:
2. Orientation:
3. Additional requirements:

871 Photometric surveys

1. Standards:
2. Locations:
3. Time of test:
4. Average illuminance measurement method:
5. Measured values:
6. Maintained average illuminance:
7. Illuminance variation:
8. Environmental conditions:
9. Survey photographs:
10. Extraneous light:
11. Test equipment:

880 Documentation

1. Timing:
2. Contents:

886 Spares

1. Type:

890 Maintenance

1. Servicing and maintenance:
   1.1. Duration:

Ω End of Section

V91
Electrical systems - landscape

General

110 Low-voltage supply

1. Nature of current: Alternating.
2. Phase:
3. Voltage:
4. Source: Electricity Distributor.
5. Metering:
6. Accessories:

115 External lighting system

1. Description:
2. Origin of supply:
   2.1. Type:
3. Final circuit cabling:
   3.1. Containment:
4. Rewireable installation:
5. Concealed installation:
6. Cable identification and protection:
7. Luminaires:
8. Lighting columns:
9. Lamps: Required.
   9.1. Lamp controlgear: Required.
10. Individual control of luminaires:
11. Group control of luminaires:
12. Final connections: Required.
13. Accessories:

120 Small power system

1. Description:
2. Origin of supply:
3. Final circuit cabling:
4. Containment:
5. Rewireable installation:
6. Concealed installation:
7. Cable identification and protection:
8. Outlets:
9. Final connections: Required.
10. Accessories:

System performance

205 Design of low-voltage electrical installation generally

1. Design and detailing: Complete for the electrical installation.
2. Standards: In accordance with BS 7671 and the requirements of the Electricity Distributor.
3. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

210 Design of low-voltage incoming supply

1. Design and detailing: Complete for the low-voltage incoming supply.
2. Spare capacity:
3. Proposals: Submit drawings showing equipment positions and routes, technical information and calculations.
4. Evidence of agreement with Electricity Distributor: Submit.
5. General: Liaise with the Electricity Distributor and determine the following:
   - 5.1. Maximum demand of the installation.
   - 5.2. Nature of the supply, its suitability for the installation and type of earthing arrangement.
   - 5.3. Location of the incoming supply.
   - 5.4. Space requirements and location of the cut-outs, switches, fuses and meters.
6. Electricity supplier:
   - 6.1. Coordination: Liaise with the electricity supplier, complete an application for supply of electricity and manage installation of metering equipment.

220 Design of low-voltage distribution and small power systems

1. Design: To cater for the complete working installation.
2. Spare capacity of distribution equipment:
3. Equipment: Provide electrical supplies to equipment requiring power.

230 Design of external lighting system

1. Purpose:
2. Design and detailing: Complete for the external lighting system.
3. Standards: To SLL ‘Code for lighting’, CIBSE ‘Lighting guide 6’ and BS 5489-1.
4. Illuminances
   - 4.1. Maintained average:
   - 4.2. Minimum at any point:
   - 4.3. Uniformity:

235 Arrangement of particular circuits

1. Separation: Divide installation into separately controlled circuits.
   - 1.1. Separately controlled circuits:
2. Further subdivision: As required.

245 Design and lighting calculations

1. Lighting calculations
   - 1.1. Type: Computer generated point calculations.
2. Submit the following
   - 2.1. Luminaire layout drawings.

2.2. Luminaire photometric data including flux fraction ratios and polar intensity curves.
2.3. Lamp technical information.
2.4. Maintenance factor calculations, including proposals for luminaire maintenance and lamp replacement.
2.5. Reflectance values used for all wall, ceiling and floor surfaces.
2.6. Isolux contour plots for all relevant working planes, horizontal and vertical.
2.7. Schedule of design and calculated maintained average illuminance values.
2.8. Schedule of design and calculated uniformity values.

260 Cables generally

1. Cable sizes not stated: Submit proposals and calculations.

Products

303 Products generally

1. Standard: In accordance with BS 7671.
2. CE marking: Required.
3. Cables: BASEC approved.

305 Particular product standards

1. Mineral insulated copper sheathed cables: To BS EN 60702-1.
   1.1. Mineral insulated copper sheathed cable terminations: To BS EN 60702-2.
2. Cable distribution cabinets: BS EN 61439-1 and -5.
3. Trunking and ducting: To BS EN 50085-1.
4. Luminaires: To BS EN 60598-1.
5. Safety isolating transformers: To BS EN 61558-2.1.
6. Lighting columns
   6.1. Aluminium: To BS EN 40-6.
   6.2. Steel: To BS EN 40-5.
7. Discharge lamp controlgear: To BS EN 60923 and BS EN 61347-2-9 or to BS EN 62386-101, -102, and -203.
8. High frequency fluorescent lamp controlgear: To BS EN 60929 and BS EN 61347-2-3 or to BS EN 62386-101, -102, and -201.
9. LED module controlgear: To BS EN 61347-2-13 or to BS EN 62386-101, -102, and BS EN IEC 62386-207.
10. Low-voltage halogen lamp dimmable digital addressable lighting interface (DALI) controlgear: To BS EN 62386-101, -102, and -204.
11. Incandescent lamp digital addressable lighting interface (DALI) controlgear: To BS EN 62386-101, -102 and -205.
12. Lamps
    12.1. Compact fluorescent lamps: To BS EN 60901 and BS EN 61199.
    12.2. High-pressure mercury lamps: To BS EN 60188 and BS EN 62035.
    12.3. High-pressure sodium lamps: To BS EN 62035.
    12.4. Light-emitting diode (LED) modules to BS EN 62031.
    12.5. Metal halide lamps: To BS EN 62035.
    12.6. Tubular fluorescent lamps: Single-capped: To BS EN 60901 and BS EN 61199.
    12.7. Tubular fluorescent lamps: Double-capped: To BS EN 60081 and BS EN 61195.

12.8. Tungsten halogen lamps: To BS EN 60432-2 and BS EN 60357.
13. Incandescent (tungsten filament) lamps: To BS EN 60432-1.
14. Photoelectric control units: To BS 5972.
15. Time switches: BS EN 60730-1 and BS EN 60730-2-7.
    15.1. Approval: BEAB.
16. Underground cable marker tape: To BS EN 12613.
17. Underground concrete cable protection covers: To BS 2484.

315 Cable distribution cabinets

1. Description:
2. Standards: To BS EN 61439-1 and -5.
3. Manufacturer:
4. Product reference:
5. Rated operational voltage (Ue):
6. Rated operational current (Ie):
7. Rated operational frequency:
8. Number of phases:
9. Incoming device:
10. Number of outgoing ways:
11. Outgoing devices:
12. Busbars and connections: Fully shrouded.
13. Neutral and earth bars: Individual terminal for each outgoing circuits.
14. Spare ways:
15. Identification
    15.1. Neutral and earth bar terminals: Label with the outgoing circuit reference.
    15.2. Cable terminations: Label with circuit reference, with push on plastic markers.
16. Spare outgoing devices: Mount two of each size and rating used within cabinet.
17. Enclosure
    17.1. Ingress protection to BS EN 60529:
    17.2. Dimensions:
    17.3. Material:
    17.4. Finish:
    17.5. Colour:
    17.6. Doors:
    17.7. Backboard:
18. Accessories:

320 Distribution boards

1. Description:
2. Standards: To BS EN 61439-1 and BS EN 61439-3.
3. Manufacturer:
4. Product reference:
5. Third-party certification: ASTA-certified.
6. Rated operational voltage (Ue):
7. Rated operational frequency:

8. Rating:
9. Number of phases:
10. Incoming devices:
11. Number of outgoing ways:
12. Outgoing devices:
13. Enclosure
    13.1. Ingress protection to BS EN 60529:
    13.2. Material:
    13.3. Finish:
    13.4. Colour:
14. Accessories:

330 Rigid conduit and fittings

1. Description:
2. Standards: To BS EN 61386-1 and BS EN 61386-21.
3. Manufacturer:
    3.1. Product reference:
4. Resistance to compression:
5. Resistance to impact:
6. Transport, installation and application
    6.1. Lower temperature range (minimum):
    6.2. Upper temperature range (maximum):
7. Resistance to bending: Rigid.
8. Electrical characteristics:
9. Resistance to external influences
    9.1. Protection against ingress of solid objects (minimum): To BS EN 60529, IP3X.
    9.2. Protection against ingress of water objects (minimum): To BS EN 60529, IPX0.
10. Resistance against corrosion:
11. Tensile strength:
12. Resistance to flame propagation:
13. Suspended load capacity:
14. Colour:
15. Sizes:
16. Accessories and fittings: Factory made of the same material type, finish and manufacturer as conduit.

332 Cable trunking and ducting for wall and ceiling mounting

1. Description:
2. Standards: To BS EN 50085-1 and BS EN 50085-2-1.
3. Manufacturer:
    3.1. Product reference:
4. Installation position:
5. Type:
6. Resistance to compression:
7. Resistance to impact:

8. Temperature properties
    8.1. Storage and transport temperature (minimum):
    8.2. Installation and application temperature (minimum):
    8.3. Application temperature (maximum):
9. Resistance to flame propagation:
10. Electrical continuity properties:
11. Electrical insulating properties:
12. Protection by enclosure
    12.1. Protection against ingress of solid objects (minimum): To BS EN 60529, IP4X.
    12.2. Protection against ingress of water objects (minimum): To BS EN 60529, IPX1.
    12.3. Protection against access to hazardous parts (minimum): To BS EN 60529, IPXX-D.
13. Means of opening access covers:
14. Sizes:
15. Compartments:
16. Accessories and fittings: Factory made of the same material type, finish, and manufacturer as cable trunking.
    16.1. Types:

335 Luminaires generally

1. Standard: To BS EN 60598-1.

340 Luminaires for road and street lighting

1. Description:
2. Standard:
    2.1. Approval: Kitemark-certified.
3. Photometric performance: To BS EN 13032-1.
4. Manufacturer:
    4.1. Product reference:
5. Ingress protection to BS EN 60529:
6. Material:
    6.1. Finish and colour:
7. Mounting:
    7.1. Type:
8. Lamp:
    8.1. Wattage:
    8.2. Colour temperature:
9. Controlgear:
10. Accessories:

345 Floodlights

1. Description:
2. Standard: To BS EN 60598-2-5.
    2.1. Approval: Kitemark-certified.
3. Photometric performance: To BS EN 13032-1.
4. Manufacturer:

4.1. Product reference:
5. Ingress protection to BS EN 60529:
6. Body material:
6.1. Finish and colour:
7. Lens:
8. Mounting:
8.1. Type:
9. Lamp:
9.1. Wattage:
9.2. Colour temperature:
10. Spill lighting control:
11. Controlgear:
12. Accessories:

348 Ground-recessed luminaires

1. Description:
2. Standard: To BS EN 60598-2-13.
3. Approval:
4. Photometric performance: To BS EN 13032-1.
5. Manufacturer:
5.1. Product reference:
6. Voltage source:
7. Lamp:
7.1. Wattage:
7.2. Colour:
8. Body material:
8.1. Finish and colour:
9. Shape:
10. Dimensions:
11. Ingress protection to BS EN 60529:
12. Impact protection (minimum):
13. Accessories:

350 Portable luminaires for garden use

1. Description:
2. Standard: To BS EN 60598-2-4.
2.1. Approval: Kitemark-certified.
3. Photometric performance: To BS EN 13032-1.
4. Manufacturer:
4.1. Product reference:
5. Ingress protection to BS EN 60529:
6. Body material:
6.1. Finish and colour:
7. Lens:
8. Mounting:

8.1. Type:

9. Voltage source:
10. Lamp:
    10.1. Wattage:
    10.2. Colour temperature:
11. Spill lighting control:
12. Controlgear:
13. Accessories:

355 Underwater luminaires

1. Description:
2. Standard: To BS EN 60598-2-18.
    2.1. Approval: Kitemark-certified.
3. Photometric performance: To BS EN 13032-1.
4. Manufacturer:
    4.1. Product reference:
5. Ingress protection to BS EN 60529: IP68.
6. Body material:
    6.1. Finish and colour:
7. Lens:
8. Mounting:
9. Voltage source: 12 V separated extra-low-voltage (SELV) system.
10. Lamp:
    10.1. Wattage:
    10.2. Colour temperature:
11. Accessories:

360 Safety isolating transformers

1. Description:
2. Standard: To BS EN 61558-2-1.
3. Manufacturer:
    3.1. Product reference:
4. Type:
    4.1. Rating:
    4.2. Voltage tappings:
5. Enclosure
    5.1. Degree of ingress protection to BS EN 60529 (minimum):
    5.2. Material and finish:

365 Lighting columns

1. Standards:
2. Manufacturer:
    2.1. Product reference:
3. Material and type:
4. Nominal column height:

5. Base arrangement:
6. Corrosion protection:
   6.1. Decorative finish:
7. Electrical cut outs: To BS 7654.
8. Column door locks and keys: Door lock pattern to be the same for all columns installed. Keys to be the same for each group of columns.
9. Accessories:

385 Lamps generally

1. Standards
   1.1. Compact fluorescent lamps: To BS EN 60901 and BS EN 61199.
   1.2. High-pressure mercury lamps: To BS EN 60188 and BS EN 62035.
   1.3. High-pressure sodium lamps: To BS EN 62035.
   1.4. Light-emitting diodes (LEDs): To BS EN 62031.
   1.5. Metal halide lamps: To BS EN 62035.
   1.6. Tubular fluorescent lamps: Single-capped: To BS EN 60901 and BS EN 61199.
   1.7. Tubular fluorescent lamps: Double-capped: To BS EN 60081 and BS EN 61195.
   1.8. Tungsten halogen lamps: To BS EN 60432-2 and BS EN 60357.
2. Manufacturer:
   2.1. Lamps of the same type and rating: Same manufacturer.

390 Lamp controlgear

1. High frequency fluorescent lamp controlgear: To BS EN 60929 and BS EN 61347-2-3 or to BS EN 62386-101, -102, and -201.
2. Discharge lamp controlgear: To BS EN 61347-2-9 and BS EN 60923 or to BS EN 62386-101, -102, and -203.
3. Light-emitting diode (LED) module controlgear: To BS EN 61347-2-13 or to BS EN 62386-101, -102, and -207.
4. Low-voltage halogen lamp dimmable digital addressable lighting interface (DALI) controlgear: To BS EN 62386-101, -102, and -204.

397 Movement detectors

1. Manufacturer:
   1.1. Product reference:
2. Features:

400 Photoelectric control units

1. Standard: To BS 5972.
2. Manufacturer:
   2.1. Product reference:
3. Features:
4. Mounting:

405 Time switches

1. Standards: To BS EN 60730-1 and BS EN 60730-2-7.
   1.1. Approval: BEAB.
2. Manufacturer:

2.1. Product reference:
3. Type:
4. Features:
5. Programme capability:

410 Cable guards

1. Manufacturer:
   1.1. Product reference:
2. Material:
3. Diameter:
4. Colour:
5. Accessories:

415 Above-ground warning markers

1. Manufacturer:
   1.1. Product reference:
2. Material:
3. Height:
4. Width:
5. Depth:
6. Legend:

420 Enclosures for controlgear

1. Material:
   1.1. Finish:
2. Ingress protection to BS EN 60529:
3. Hardware: Cylinder lock and handle. Standardize key type.

425 Underground cable marker tape

1. Standard: To BS EN 12613.
2. Manufacturer:
   2.1. Product reference:
3. Material: Polyethylene.
4. Wire detection aid:
5. Size
   5.1. Width: 150 mm.
   5.2. Thickness: 0.1 mm.
6. Format
   6.1. Background colour: Yellow.
   6.2. Text colour: Black.
7. Labelling: 'CAUTION ELECTRIC CABLE BELOW' continuous along the tape length.

430 Underground plastics cable protection covers

1. Manufacturer:
   1.1. Product reference:

2. Material: Polyethylene.
3. Size
   3.1. Width: 150 mm.
   3.2. Thickness:
4. Jointing method: Peg.
5. Identification: Laminate underground cable marker tape to top face.

435 Underground concrete cable protection covers

1. Standard:
2. Type:
3. Manufacturer:
   3.1. Product reference:
4. Size:
5. Width:
6. Thickness at outer edge:

440 Padlocks and keys

1. Description:
2. Locking mechanism:
   2.1. Material:
3. Padlock keys: Two for each padlock.

Execution

605 Electrical installation generally

1. Standard: In accordance with BS 7671.

612 Installing switchgear

1. Orientation: Accurate and square to vertical and horizontal axis. Align adjacent items of switchgear on the same horizontal axis.
2. Clearance in front of switchgear (minimum): 1 m.
3. Labelling: Permanently label each way, identifying circuit function, rating and cable size.
4. Padlock identification: Stamp padlock describing its function.

615 Installing steel conduit and fittings

1. Fixing: Fix securely. Fix boxes independently of conduit.
2. Conduit drainage: Provide drainage outlets at lowest points.
3. Location: Position vertically and horizontally in line with equipment served, and parallel with building lines. Locate where accessible.
4. Jointing
   4.1. Number of joints: Minimize.
   4.2. Lengths of conduit: Maximize.
   4.3. Cut ends: Remove burrs, and plug during construction works.
   4.4. Movement joints in structure: Manufactured expansion coupling.
   4.5. Threaded steel conduits: Tightly screw to ensure electrical continuity, with no thread showing.
5. Movement: Fix securely.

5.1. Conduit connections to boxes and items of equipment, other than those with threaded entries: Earthing coupling and male brass bush and protective conductor.

6. Changes of direction:
7. Connections to boxes, trunking, equipment and accessories: Screwed couplings, adaptors, connectors and glands: Attach rubber bushes at open ends.
8. Mounting and support:
9. Earth protection: Ensure that satisfactory continuity is maintained between the separate sections of conduit, equipment and accessories

616 Installing PVC-U conduit and fittings

1. Fixing
   1.1. Spacing of conduit saddles (maximum): 900 mm on horizontal, 1250 mm on vertical. Reduce spacing in areas of high ambient temperature in accordance with manufacturer's instructions.
   1.2. Fix boxes independently of conduit.
   1.3. At fittings and changes of direction: Fit conduit saddles 150 mm either side.
   1.4. Thermal expansion: Allow for expansion couplings in accordance with manufacturer's recommendations.
2. Conduit drainage: Provide drainage outlets at lowest points.
3. Location: Position vertically and horizontally in line with equipment served, and parallel with building lines. Locate where accessible.
4. Jointing
   4.1. Number of joints: Minimize.
   4.2. Lengths of conduit: Maximize.
   4.3. Cut ends: Remove burrs.
   4.4. Movement joints in structure: Manufactured expansion coupling.
   4.5. Adhesive: Use water resistant solvent cement to form watertight joints. Use water resistant lubricant sealant at expansion couplers.
5. Changes of direction:
6. Connections to boxes, trunking, equipment and accessories: Threaded adaptors.
7. Mounting and support:

620 Installing cables entering buildings from below ground

1. Pipeducts: Seal at both ends.
2. Proposals: Submit drawings.

630 Installing cables

1. General: Install cables neatly and securely. Protect against accidental damage, adverse environmental conditions, mechanical stress and deleterious substances.
2. Temperature: Do not start installation if cable or ambient temperature is below 0°C, or has been below 0°C during the previous 24 hours.
3. Cable routes:
4. Joints: At luminaires and electrical accessories only.
5. Fixings: Corrosion-resistant and compatible with the environment where they are installed.

635 Installing cables directly in the ground

1. Cables: Lay on newly prepared bedding.
2. Cable bedding: 75 mm of sand.

3. Cable pulling: Prevent kinks and twisting of the cable.
4. Installation method: Submit proposals.
5. Cable formation within trench:
6. Cables below roads and hard standings: Duct and derate if longer than 10 m. Extend ducts 1 m each side of hard standing.
7. Cable marker tape:
8. Backfilling: 75 mm of sand over cables, then as-dug material.

637 Installing underground cable protection covers

1. Locations:
2. Installation: During backfilling.
   2.1. Depth:

645 Installing above-ground warning markers

1. Installation:
2. Locations:

647 Installing cable guards

1. Cable guards: Provide where exposed cables are vulnerable to mechanical damage.
2. Height:

648 Concrete mix

1. Standards: To BS 8500-2 and BS EN 206.
2. Mix:
3. Admixtures: Do not use.

650 Setting components in concrete foundations and bases

1. Foundation holes:
2. Locating components: Accurately position, plumb and provide secure temporary support.
3. Cable ducts: Connect to column cable entry slot and protect against collapse during backfilling.
4. Concrete surround:
5. Concrete foundations
   5.1. Concealed: Finish by bedding and haunching at a depth suitable to receive the overlying finish.
   5.2. Exposed:

655 Setting components in earth

1. Foundation holes: Form as small as practicable to allow refilling.
2. Locating components: Accurately position, plumb and provide secure temporary support.
3. Cable ducts: Connect to column cable entry slot and protect against collapse during backfilling.
4. Earth for backfilling:
5. Backfilling: Refill with earth. Fully compact in 50 mm layers as filling proceeds.

660 Handling and erecting lighting columns

1. Standard: To Highways England's 'Specification for highway works Volume 1'.
2. Position:

3. Hinged columns: Site to allow lowering to horizontal.
4. Access door:

665 Site painting

1. Timing: Prepare surfaces and apply finishes immediately after fixing.

670 Lighting column identification

1. Manufacturer's marking: To Highways England's 'Specification for highway works Volume 1', clause 1304.
2. Location marking for inspection and maintenance purposes:

675 Installing luminaires and lamps generally

1. Location:
2. Orientation:
3. Supports: Adequate for weight of luminaire.

680 Installing controlgear

1. Location:
2. Labelling of controlgear enclosures: Describe controlgear purpose.

Completion

810 Final fix

1. Accessory faceplates, luminaires and other equipment: Fit after completion of building painting.

820 Cleaning

1. Electrical equipment: Clean immediately before handover.

825 Photometric survey

1. Standards:
2. Locations:
3. Time of test:
4. Average illuminance measurement method:
5. Measured values: Submit.
6. Maintained average illuminance: Submit based upon measured values.
7. Illuminance variation: Submit details.
8. Environmental conditions: Submit details.
9. Survey photographs: Submit for each location.
10. Extraneous light: Measure and submit results.
11. Test equipment: Submit calibration details.

830 Inspection and testing generally

1. Standards:
2. Notice before commencing tests (minimum): 24 h.
3. Certificates: Submit.
    3.1. Number of copies:

870 Inspection and testing of external lighting systems

1. Switching: Check correct operation of photoelectric control units, time switches and other switching devices over at least one switching cycle.
2. Orientation: Adjust luminaires to achieve optimal performance.
3. Additional requirements:

880 Documentation

1. Timing: Submit at completion.
2. Contents
   - 2.1. Full technical description of each system installed.
   - 2.2. Manufacturers' operating and maintenance instructions for fittings and apparatus including relamping instructions for luminaire types. Identify hazardous lamps that require specialist disposal.
   - 2.3. Recommended frequency of testing and inspection, both for electrical safety, and for matters such as the corrosion and security of lighting columns and luminaire fixings.
   - 2.4. Manufacturers' guarantees and warranties.
   - 2.5. As-installed drawings showing circuits and their ratings and locations of fittings, apparatus and underground cable routes.
   - 2.6. List of normal consumable items and their sources.

886 Spare lamps

1. Quantity to be supplied:
2. Labelling: Label the lamps with the corresponding luminaire reference.

890 Maintenance

1. Servicing and maintenance: Undertake.
   - 1.1. Duration:

Ω End of Section

W90
Communications and security systems

General

110 Television distribution system

1. System manufacturer:
   1.1. Approval: Member of the CAI.
2. Incoming service:
3. Distribution
   3.1. Type:
4. Equipment interconnectivity: Coaxial cable.
5. Audio-video sources for distribution:
6. Television outlets: Required.

120 Fire detection and alarm system in domestic premises

1. System manufacturer:
   1.1. Approval:
2. Equipment interconnectivity:
3. Detection devices:
4. Supplementary devices:
5. Remote alarm:

125 Fire detection and alarm system in non-domestic premises

1. System manufacturer:
   1.1. Approval:
2. System type:
3. Equipment interconnectivity:
4. Detection devices:
5. Alarms:
6. Supplementary devices:
7. Remote alarm:
8. Controls:
9. System accessories:

130 Electronic access control system

1. System manufacturer:
2. System type:
3. Equipment interconnectivity:
4. Control software:
5. Method of authorization:
6. Readers:
7. Door release:
8. Controls:
9. Door monitoring status:

10. System accessories:

140 Intercom system

1. System manufacturer:
2. Method of access control:
3. Equipment interconnectivity:
4. Door release:

160 Intrusion and hold-up alarm system

1. System manufacturer:
2. Control and indicating equipment (CIE):
3. Equipment interconnectivity: Multicore alarm cables.
4. Notification equipment:
5. Protected premises:
6. Detectors:

170 Surveillance CCTV system

1. System manufacturer:
2. Automatic activation of cameras:
3. Equipment interconnectivity:
4. System components:
5. Accessories:

System performance

215 Design of television distribution systems

1. Standard: In accordance with the CAI 'COP 2'.
2. System performance
    2.1. Digital broadcast: Carrier-to-noise ratio to Table 6 or modulation error ratio to Table 7.

220 Design of fire detection and alarm systems in domestic premises

1. System designer:
2. Standard: Complete the design of the fire detection and alarm system in accordance with BS 5839-6.
3. Category:
4. Grade:
5. Coverage:
6. Integration with other alarm systems
    6.1. Objectives:
    6.2. Systems to be integrated:
7. Requirement: Submit proposals, including detailed design drawings, technical information, calculations and manufacturers' literature.
8. System design certificate: Submit with design proposals.

221 Design of fire detection and alarm systems in non-domestic premises

1. System designer:

2. Standard: Complete the design of the fire detection and alarm system in accordance with BS 5839-1.
3. Category:
4. Grade:
5. Coverage:
6. Detection zones:
7. Alarm zones
   7.1. Zoning:
   7.2. Mode of operation:
   7.3. All zone evacuate control:
8. Integration with other alarm systems
   8.1. Objectives:
   8.2. Systems to be integrated:
9. Requirement: Submit proposals, including detailed design drawings, technical information, calculations and manufacturers' literature.
10. System design certificate:

225 Design of electronic access control systems

1. Standards: To BS EN 60839-11-1 and -11-2.
2. Access control points:
   2.1. Grade classification:
   2.2. Environmental classification:
3. Number of users (minimum):
4. Number of transactions (minimum):
5. Spare capacity:
6. Database
   6.1. Redundancy:
   6.2. Backup arrangements:
7. Operation in the event of mains failure:
8. Anti-passback:
9. Functional requirements:
10. Standby power capacity (minimum):
11. Operation in the event of a fire signal:
12. Integration with other alarm systems
   12.1. Objectives:
   12.2. Systems to be integrated:

226 Design of intercom systems

1. Calling method:
2. Method of authorization:
3. Remote handset intercommunication:
4. External calls:
5. Functional requirements:
6. Integration with other systems:

230 Design of intrusion and hold-up alarm systems

1. Standard: In accordance with PD 6662.
2. Security grading:
3. Environmental classification:
4. Power supply:
5. Alarm setting and unsetting devices: Locate to suit the following routes:
    5.1. Entry:
    5.2. Exit:
6. Zoning: Divide the installation into separately controlled and identifiable zones.
7. Device identification: Individual addressing.
8. Internal signalling: Separately identifiable from fire alarm.
9. Alarm unset: Internal alarm signalling only.
10. Continuous monitoring:
11. Confirmation of alarm condition:
    11.1. Standard: In accordance with BS 8243.
    11.2. Means of confirmation:
12. Connection to fire alarm:
13. Integration with other alarm systems
    13.1. Objectives:
    13.2. Systems to be integrated:

235 Design of surveillance CCTV systems

1. Design: Complete the design of the surveillance CCTV system.
2. Standards:
3. Type:
4. Security grading:
5. Operational requirements
    5.1. Objectives:
    5.2. Limitations of surveillance:
    5.3. Area under surveillance:
    5.4. Activity to be captured:
    5.5. Picture performance:
    5.6. Period of operation:
    5.7. Site conditions:
    5.8. Resilience:
    5.9. Image monitoring:
    5.10. Image storage:
    5.11. Image transfer:
    5.12. Routine actions:
    5.13. Operational response:
    5.14. Training:
    5.15. Future expansion:
6. Video image:
7. Integration with other alarm systems

7.1. Objectives:
7.2. Systems to be integrated:

Products

310 Television antennae

1. Manufacturer:
   1.1. Product reference:
2. Standards: In accordance with CAI 's 'Aerial certification scheme'.
3. Size and arrangement:

315 Coaxial cables

1. Standards
   1.1. General: In accordance with CAI's 'Cable certification scheme'.
   1.2. Type:
2. Sheath:
3. Colour:
4. Reaction to fire class
   4.1. Fire behaviour:
   4.2. Additional classification for smoke production:
   4.3. Additional classification for flaming droplets and or particles:
   4.4. Additional classification for acidity:

317 Satellite dishes

1. Manufacturer:
   1.1. Product reference:
2. Input frequency range
   2.1. Low band: 10.7-11.7 GHz.
   2.2. High band: 11.7-12.75 GHz.
3. Output frequency range
   3.1. Low band: 950-1950 MHz.
   3.2. High band: 1100-2150 MHz.
4. Output connector: 75 ohm F-type female.
5. Size, arrangement and configuration:

320 Television outlets

1. Manufacturer:
   1.1. Product reference:
2. Standards: To BS 5733 and BS EN 60669-1.
   2.1. Approvals: Kitemark-certified.
3. Faceplate configuration: Single coaxial outlet.
4. Connection:
5. Finish:

325 Fire detection and alarm control and indicating equipment

1. Manufacturer:

1.1. Product reference:
2. Standard:
3. Third-party certification:
4. Standby power supply
   4.1. Standard: To BS EN 54-4.
   4.2. Capacity:
5. Main display:
6. Zone indication:
7. Installed capacity:
8. Monitored sounder circuits (minimum):
9. Printer:
10. Indications:
11. Controls:
12. Outputs:
13. Input device:
14. Features:
15. Enclosure
    15.1. Ingress protection (minimum):
    15.2. Material:
    15.3. Finish:
    15.4. Colour:
16. Mounting:

326 Point flame detectors

1. Manufacturer:
   1.1. Product reference:
2. Standard: To BS EN 54-10.
3. Third-party certification:
4. Mounting:
5. Classification:
6. Detector type:
7. Operating range (minimum):
8. Ingress protection (minimum):
9. Power source:
10. Accessories:

327 Point heat detectors

1. Manufacturer:
   1.1. Product reference:
2. Standard:
3. Third-party certification:
4. Classification:
5. Suffix:
6. Power source:

328 Point smoke detectors

1. Manufacturer:
    1.1. Product reference:
2. Standard:
3. Third-party certification:
4. Detector type:
5. Power source:

329 Optical beam smoke detectors

1. Manufacturer:
    1.1. Product reference:
2. Standard:
3. Third-party certification:
4. Detector type:
5. Operating range (minimum):
6. Ingress protection (minimum):
7. Controller
    7.1. Display type:
    7.2. Display the following information:
    7.3. Functions:
8. Submit proposalsPower source:

330 Smoke alarms

1. Manufacturer:
    1.1. Product reference:
2. Standards:
3. Third-party certification:
4. Detector type:
5. Alarm indicator:
6. Power source
    6.1. Primary: 230 V a.c., 50 Hz.
    6.2. Battery backup:
7. Manufacturer's warranty (minimum):
8. Alarm interlink:

331 Carbon monoxide alarms

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS EN 50291-1.
3. Third-party certification:
4. Detector type:
5. Control features:
6. Power source
    6.1. Primary: 230 V a.c., 50 Hz.
    6.2. Battery backup:

7. Manufacturer's warranty (minimum):
8. Alarm interlink:

332 Combined smoke and carbon monoxide detectors

1. Manufacturer:
   1.1. Product reference:
2. Third-party certification:

335 Heat alarms

1. Manufacturer:
   1.1. Product reference:
2. Standards:
3. Third-party certification:
4. Class:
5. Alarm indicator:
6. Power source
   6.1. Primary: 230 V a.c., 50 Hz.
   6.2. Battery backup:
7. Manufacturer's warranty (minimum):
8. Alarm interlink:

336 Manual call points

1. Manufacturer:
   1.1. Product reference:
2. Standard:
3. Third-party certification:
4. Designation: Type A.
5. Frangible element: Non-resettable.
6. Integral red visual indicator: Required.
7. Environmental category:
8. Mounting:
9. Protective covers:
10. Power source:

337 Sounders

1. Manufacturer:
   1.1. Product reference:
2. Standard:
3. Third-party certification:
4. Sounder type:
5. Rated voltage:
6. Sound pattern: In accordance with BS 5839-1.
7. Enclosure protection:
8. Sound pressure level (minimum):
9. Integral beacon:

10. Mounting:
11. Power source:

338 Visual alarm devices

1. Manufacturer:
    1.1. Product reference:
2. Standard:
3. Third-party certification:
4. Device type:
5. Enclosure protection:
6. Category:
7. Power source:
8. Body colour:
9. Lens colour:

339 Electrically powered hold-open devices

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS EN 1155.
3. Third-party certification:
4. Mounting:
5. Power supply:
6. Durability:
7. Hold-open power size:
8. Corrosion resistance:
9. Integral manual release button: Required.

340 Digital cameras

1. Manufacturer:
    1.1. Product reference:
2. Effective pixels:
3. Lens
    3.1. Focal length:
    3.2. Zoom:
    3.3. Features:
4. Integral flash:
5. Battery type:
6. Image file format:
7. Connectivity:
8. Tripod:

345 Swipe cards

1. Manufacturer:
    1.1. Product reference:
2. Standard: Physical characteristics to BS ISO/IEC 7810.

3. Magnetic swipe cards
    3.1. Read symbology: ABA track 2.
    3.2. Material:
    3.3. Colour:
4. Barcode cards
    4.1. Read symbology:
    4.2. Material:
    4.3. Colour:
5. Read direction:
6. Manufacturer's warranty against electronic failure (minimum):
7. Printing capability: Suitable for two-sided dye sublimation.
8. Code: Unique preprogrammed to BS 7227.
9. Unique visible identification number:
10. Operating temperature range:
11. Accessories:

347 Active proximity credentials

1. Manufacturer:
    1.1. Product reference:
2. Operating frequency: 125 kHz proximity chip and antenna.
3. Proximity read range:
4. Battery life (minimum):
5. Replaceable battery:
6. Physical characteristics
    6.1. Material:
    6.2. Colour:
7. Operating temperature range:
8. Device identification:
9. Accessories:

348 Passive proximity credentials

1. Manufacturer:
    1.1. Product reference:
2. Operating frequency: 125 kHz proximity chip and antenna.
3. Proximity read range:
4. Contactless cards
    4.1. Standard: Physical characteristics: To BS ISO/IEC 14443-1.
    4.2. Material:
    4.3. Colour:
    4.4. Magnetic stripe:
5. Tokens
    5.1. Material:
    5.2. Colour:
6. Adhesive tags
    6.1. Material:

6.2. Colour:

7. Printing capability:
8. Programming:
9. Code: Unique preprogrammed to BS 7227.
10. Unique visible identification number:
11. Authentication:
12. Format:
13. Manufacturer's warranty against electronic failure (minimum):
14. Operating temperature range:
15. Accessories:

349 Smart credentials

1. Manufacturer:
   1.1. Product reference:
2. Standards:
3. Operating frequency:
4. Read range:
5. Contactless cards
   5.1. Material:
   5.2. Colour:
6. Tokens
   6.1. Material:
   6.2. Colour:
7. Adhesive tags
   7.1. Material:
   7.2. Colour:
8. Proximity circuit:
9. Magnetic stripe:
10. Printing capability:
11. Authentication:
12. Format:
13. Read and write capability (minimum): 100 000 cycles.
14. Electrically erasable programmable read-only memory (EEPROM):
15. Data retention (minimum): Ten years.
16. Application areas with individual 64-bit unique security key:
17. Removal of card from the radio frequency field: complete write cycle.
18. Manufacturer's warranty against electronic failure (minimum):
19. Operating temperature range:
20. Accessories:

353 Biometric fingerprint readers

1. Manufacturer:
   1.1. Product reference:
2. Security grading:
3. Environmental classification:

4. Enclosure
    4.1. Material:
    4.2. Colour:
    4.3. Mounting:
    4.4. Impact protection (minimum):
    4.5. Ingress protection (minimum):
5. Type of operation:
6. Technology type:
7. Communication interface:
8. Number of users (minimum):
9. Fingerprint capture:
10. Image resolution (minimum):
11. Credential matching arrangement:
12. False acceptance rate:
13. False rejection rate:
14. Fingerprints for each user:
15. Identification time per 100 fingerprint templates (maximum):
16. Integral keypad:
17. Integral credential reader:
18. Integral event memory capacity (minimum):
19. Remote door opening:
20. Visual indication:
21. Audio status indication:
22. Accessories:

354 Biometric hand geometry readers

1. Manufacturer:
    1.1. Product reference:
2. Security grading:
3. Environmental classification:
4. Enclosure
    4.1. Material:
    4.2. Colour:
    4.3. Mounting:
    4.4. Impact protection (minimum):
    4.5. Ingress protection (minimum):
5. Relative humidity (non-condensing):
6. Type of operation:
7. Communication interface:
8. Number of users (minimum):
9. Hand geometry capture method:
10. Hand position method:
11. False acceptance rate:
12. False rejection rate:

13. Integral keypad:
14. Integral credential reader:
15. Remote door opening:
16. Visual indication:
17. Accessories:

355 Multi-technology readers

1. Manufacturer:
    1.1. Product reference:
2. Security grading:
3. Environmental classification:
4. Enclosure
    4.1. Material:
    4.2. Colour:
    4.3. Mounting:
    4.4. Impact protection (minimum):
    4.5. Ingress protection (minimum):
5. Relative humidity (non-condensing):
6. Communication interface:
7. Operating frequency: 125 kHz and 13.56 MHz.
8. Read range:
9. Integral keypad:
10. Visual indication:
11. Audio status indication:
12. Accessories:

356 Proximity readers

1. Manufacturer:
    1.1. Product reference:
2. Security grading:
3. Environmental classification:
4. Enclosure
    4.1. Material:
    4.2. Colour:
    4.3. Mounting:
    4.4. Impact protection (minimum):
    4.5. Ingress protection (minimum):
    4.6. Relative humidity (non-condensing):
    4.7. Integral keypad:
5. Type of operation:
6. Communication interface:
7. Number of users (minimum):
8. Operating frequency: 125 kHz.
9. Proximity read range:
10. Remote door opening:

11. Visual indication: LED displaying red when access point status secure, green when unlocked.
12. Audio indication:

357 Smart readers and writers

1. Manufacturer:
    1.1. Product reference:
2. Security grading:
3. Environmental classification:
4. Enclosure
    4.1. Material:
    4.2. Colour:
    4.3. Mounting:
    4.4. Impact protection (minimum):
    4.5. Ingress protection (minimum):
5. Relative humidity (non-condensing):
6. Operating frequency:
7. Communication interface:
8. Integral keypad:
9. Antenna: Integral.
10. Read range:
11. Reread delay: One second.
12. Visual indication:
13. Audio status indication:
14. Accessories:

358 Swipe card readers

1. Manufacturer:
    1.1. Product reference:
2. Security grading:
3. Environmental classification:
4. Enclosure
    4.1. Material:
    4.2. Colour:
    4.3. Mounting:
    4.4. Impact protection (minimum):
    4.5. Ingress protection (minimum):
5. Type of operation:
6. Communication interface:
7. Credential reader:
    7.1. Read direction:
8. Integral keypad:
9. Remote door opening:
10. Visual indication: LED displaying red when access point status secure, green when unlocked.
11. Audio indication:

359 Card printers

1. Manufacturer:
    1.1. Product reference:
2. Format:
3. Print
    3.1. Method: Colour dye sublimation.
    3.2. Resolution:
    3.3. Operation:
    3.4. Speed (minimum):
4. Laminate:
5. Card feeder capacity:

362 Keypads

1. Manufacturer:
    1.1. Product reference:
2. Security grading:
3. Environmental classification:
4. Enclosure
    4.1. Material:
    4.2. Colour:
    4.3. Mounting:
    4.4. Impact protection (minimum):
    4.5. Ingress protection (minimum):
5. Type of operation:
6. Communication interface:
7. Keypad arrangement:
8. User codes:
9. Key characteristics:
10. Number of users (minimum):
11. Remote door opening:
12. Doorbell function:
13. Visual indication: LED displaying red when access point status secure, green when unlocked.
14. Audio indication:

363 Access control units

1. Manufacturer:
    1.1. Product reference:
2. Security grading:
3. Environmental classification:
4. Enclosure
    4.1. Material:
    4.2. Colour:
    4.3. Mounting:
    4.4. Impact protection (minimum):

4.5. Ingress protection (minimum):
5. Rated operational voltage (Ue):
6. Rated operational current (In):
7. Battery backup
   7.1. Battery location:
   7.2. Battery backup capacity:
8. Type of operation:
9. Number of doors per controller:
10. Number of users (minimum):
11. Communication interface:
12. Visual indication:
13. Interfaces
   13.1. Door lock relays:
   13.2. Door status monitoring:
   13.3. Readers:
   13.4. Volt-free relays:
   13.5. Request-to-exit buttons:
14. Data encryption:
15. Random access memory (RAM) capacity (minimum):
16. Storage memory capacity:
17. Administration access: Password protected.
18. Database:
19. Information fields per user:
20. Spare information fields per user (minimum):
21. Import and export of database in ASCII format:
22. Incorporation of external data:
23. Integral event memory capacity (minimum):
24. Monitor and record the following transactions and events:
25. Events and transactions: Data and time stamp.
26. Customised event alarms: Display.
27. Control features
   27.1. Include the following:
   27.2. Anti-passback:
   27.3. Time between credential presentation and door unlock (maximum): 0.3 seconds.
28. Reports
   28.1. Transaction and event reports:
   28.2. Other reports:
   28.3. Publishing:
29. Accessories:

364 Door status monitoring devices

1. Manufacturer:
   1.1. Product reference:
2. Security grading:

3. Environmental classification:
4. Device type: Magnetic reed switch.
5. Material:
6. Mounting:

365 Intercom entrance panels

1. Manufacturer:
   1.1. Product reference:
2. Enclosure
   2.1. Material:
   2.2. Colour:
   2.3. Impact protection (minimum):
   2.4. Ingress protection (minimum):
3. Rated operational voltage (Ue): 12 V d.c.
4. Type of operation:
5. Communication interface:
6. Entrance panel call buttons:
7. Integral keypad
   7.1. Key type:
   7.2. Features:
8. Integral credential reader:
9. LCD display:
10. Microphone: Integral.
11. Speaker: Integral.
12. Visual indication: LEDs providing visible indication and reassurance of call made.
13. Camera:
14. Remote door opening:
15. Accessories:

370 Intercom remote handsets

1. Manufacturer:
   1.1. Product reference:
2. Enclosure
   2.1. Material:
   2.2. Colour:
   2.3. Impact protection (minimum):
   2.4. Ingress protection (minimum):
3. Type of operation:
4. Communication interface:
5. Monitor
   5.1. Screen display:
   5.2. Controls:
6. Mounting:
7. Visual indication: LEDs providing visible indication of door lock status and mute function operational indication.

8. Audio indication:
9. Accessories:

371 Emergency break glass units

1. Manufacturer:
   1.1. Product reference:
2. Security grading:
3. Environmental classification:
4. Enclosure
   4.1. Material:
   4.2. Colour: Green.
   4.3. Mounting:
   4.4. Protective cover:
5. Frangible elements:
6. Test method: Key.
7. Number of poles:
8. Switch rating:
9. Audible indication:
10. Visual indication:
11. Engraving: 'EMERGENCY DOOR RELEASE'.

372 Request-to-exit buttons

1. Manufacturer:
   1.1. Product reference:
2. Security grading:
3. Environmental classification:
4. Enclosure
   4.1. Material:
   4.2. Finish:
   4.3. Colour:
5. Mounting:
6. Engraving:
7. Operation:
8. Switch rating:
9. Button characteristics:

373 Request-to-exit detectors

1. Manufacturer:
   1.1. Product reference:
2. Security grading:
3. Environmental classification:
4. Enclosure
   4.1. Material:
   4.2. Colour:
5. Mounting: Surface.

6. Detection range (minimum):
7. Adjustment capability:
8. Audible indication:
9. Visual indication:
10. Features:
11. Accessories:

375 Electromechanically operated locks and striking plates

1. Manufacturer:
    1.1. Product reference:
2. Standard: To BS EN 14846.
3. Classification grades
    3.1. Category of use:
    3.2. Durability and load on latchbolt:
    3.3. Door mass and closing force:
    3.4. Suitability for use on fire and smoke doors:
    3.5. Safety: No requirement.
    3.6. Corrosion resistance, temperature and humidity:
    3.7. Security:
    3.8. Security - electrical function:
    3.9. Security - electrical manipulation:
4. Rated operational voltage (Ue):
5. Operation in the event of mains failure:
6. Mobnitoring:
7. Features:
8. Ingress protection (minimum):
9. Fire rating:
10. Material:
11. Colour:
12. Operating temperature range:
13. Accessories:

376 Electromagnetic locking devices

1. Manufacturer:
    1.1. Product reference:
2. Standard: In accordance with the Door and Hardware Federation's 'Best practice guide' - TS 010.
3. Classification grades
    3.1. Category of use: Grade 3.
    3.2. Durability:
    3.3. Suitability for use on fire and smoke doors:
    3.4. Safety bolts and straps:
    3.5. Corrosion resistance:
    3.6. Holding force without additional brackets:
    3.7. Security - electrical function:
    3.8. Type of device:

4. Rated operational voltage (Ue):
5. Operation in the event of mains failure:
6. Material:
7. Colour:
8. Operating temperature range:
9. Accessories:

380 Intrusion and hold-up alarm control panels

1. Manufacturer:
   1.1. Product reference:
2. Standards: To BS EN 50131-3 and BS EN 50131-6.
3. Security grading:
4. Environmental classification:
5. Control features
   5.1. User input: 32 (2 x 16) alphanumeric backlit LCD, digital keypad and LED indicating power 'On'.
   5.2. Event log capacity (minimum):
   5.3. Communication interfaces:
   5.4. Access door control:
   5.5. Number of zones (minimum):
   5.6. Number of groups (minimum):
   5.7. Number of users (minimum) …….

385 Multicore alarm cables

1. Manufacturer:
   1.1. Product reference:
2. Standard: To BS 4737-3.30.
3. Cable type:
4. Conductor
   4.1. Number of cores:
   4.2. Type:
   4.3. Size:
5. Sheath
   5.1. Type:
   5.2. Colour:
6. Screen:
7. Reaction to fire class
   7.1. Fire behaviour:
   7.2. Additional classification for smoke production:
   7.3. Additional classification for flaming droplets and or particles:
   7.4. Additional classification for acidity:

390 Internal warning devices

1. Manufacturer:
   1.1. Product reference:

2. Standard: To BS EN 50131-4.
3. Security grading:
4. Environmental classification:
5. Category:
6. Storage device type:
7. Enclosure
   7.1. Material:
   7.2. Colour:
8. Sound pressure level (minimum): 75 dB(A) @ 1 m, with automatic cut off after 15 minutes and selectable alternating or continuous tone.
9. Strobe: Integral xenon strobe.
10. Status indicators: Alternating LEDs indicating alarm condition.

395 External warning devices

1. Manufacturer:
   1.1. Product reference:
2. Standard: To BS EN 50131-4.
3. Security grading:
4. Environmental classification: To BS EN 50131-1, Class IV.
5. Category:
6. Storage device type:
7. Enclosure
   7.1. Material:
   7.2. Body colour:
8. Lens colour:
9. Strobe: Integral xenon strobe.
10. Status indicators: Alternating LEDs indicating power supply 'On' and 'Tamper/ fault'.
11. Sound pressure level (minimum): 95 dB(A) @ 1 m with automatic cut off after 15 minutes.

410 Intrusion and hold-up alarm remote keypads

1. Manufacturer:
   1.1. Product reference:
2. Backlight: Required.
3. Individual zone identification: Required.
4. Individual device identification: Required.
5. Panic button: Integral.

415 Passive infrared detectors

1. Manufacturer:
   1.1. Product reference:
2. Standard: To BS EN 50131-2-2.
3. Security grading:
4. Environmental classification:
5. Mounting:
6. Range:

7. Features:
8. Power supply: From main control panel.

425 Dual technology detectors

1. Manufacturer:
   1.1. Product reference:
2. Standard:
3. Security grading:
4. Environmental classification:
5. Mounting:
6. Range:
7. Features:
8. Power source: From main control panel.

430 Door contacts

1. Manufacturer:
   1.1. Product reference:
2. Standard:
3. Security grading:
4. Environmental classification:
5. Device type: Magnetic reed switch.
6. Circuit configuration:
7. Material:
8. Mounting:

435 Deliberately operated devices

1. Manufacturer:
   1.1. Product reference:
2. Standard: To BS 4737-3.14.
3. Security grading:
4. Environmental classification:
5. Device type:
6. Operating mechanism:
7. Device operation:

440 Supervised premises transceivers

1. Standards: To BS EN 50136-1 and BS EN 50136-2.
2. Approval: To LPS 1277.
3. SPT type:

450 Fixed dome cameras

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Image sensor:

4. Video system:
5. Spectrum:
6. Resolution (minimum):
7. Minimum illumination:
8. Integrated illumination:
9. Camera functions
    9.1. Focus:
    9.2. Shutter:
    9.3. Signal-to-noise ratio (minimum): 50 dB with automatic gain control off.
    9.4. Automatic gain control:
    9.5. White balance control:
    9.6. Backlight compensation: Required.
    9.7. Wide dynamic range: On/ off/ automatic.
    9.8. Day/ night mode switching:
    9.9. Privacy masks:
    9.10. Display type:
10. Lens
    10.1. Format:
    10.2. Iris:
    10.3. Focal length:
    10.4. Aperture range:
    10.5. Angle of view:
11. Video motion detection:
12. Power supply:
13. Telemetry protocol:
14. Network connectivity:
15. Network protocol:
16. Video compression formats:
17. Video streaming:
18. Integral memory storage (minimum):
19. Alarm inputs:
20. Alarm outputs:
21. Environmental classification:
22. Housing
    22.1. Material:
    22.2. Finish:
    22.3. Colour:
    22.4. Impact protection (minimum):
    22.5. Ingress protection (minimum):
23. Accessories:

452 Pan-tilt-zoom (PTZ) cameras

1. Description:
2. Manufacturer:

2.1. Product reference:
3. Image sensor:
4. Video system:
5. Spectrum:
6. Resolution (minimum):
7. Minimum illumination:
8. Integrated illumination:
9. Camera functions
   9.1. Focus:
   9.2. Shutter:
   9.3. Signal-to-noise ratio (minimum): 50 dB with automatic gain control off.
   9.4. Automatic gain control:
   9.5. White balance control:
   9.6. Backlight compensation: Required.
   9.7. Wide dynamic range: On/ off/ automatic.
   9.8. Day/ night mode switching:
   9.9. Privacy masks:
   9.10. Audio facility:
   9.11. Display type:
10. Lens
   10.1. Focal length:
   10.2. Aperture range:
   10.3. Angle of view:
11. Pan-and-tilt functions
   11.1. Pan angle:
   11.2. Pan speed:
   11.3. Tilt angle:
   11.4. Tilt speed:
   11.5. Presets (minimum):
   11.6. Tours (minimum):
   11.7. Image flip: Required.
12. Anti-condensation heater: Required.
13. Video motion detection:
14. Sunshield: Required.
15. Wiper:
16. Power supply:
17. Telemetry protocol:
18. Network connectivity:
19. Network protocol:
20. Video compression formats:
21. Video streaming:
22. Integral memory storage (minimum):
23. Alarm inputs:
24. Alarm outputs:

25. Environmental classification:
26. Housing
    26.1. Material:
    26.2. Finish:
    26.3. Colour:
    26.4. Impact protection (minimum):
    26.5. Ingress protection (minimum):
    26.6. Dome colour:
27. Accessories:

458 Digital video recorders

1. Manufacturer:
    1.1. Product reference:
2. Video system:
3. Video compression formats:
4. Bandwidth (minimum):
5. Recording speed and resolution:
6. Recording mode:
7. Digital watermarking: Apply at point of recording and include time and date.
8. Playback function:
9. Video search function:
10. Video inputs:
11. Video outputs:
12. Alarm inputs:
13. Alarm outputs:
14. Alarms:
15. Screen display
    15.1. Window arrangement:
    15.2. Display the following information:
16. Display resolution (minimum):
17. Storage media
    17.1. Type: Hard disk.
    17.2. Capacity:
18. Network connectivity: 10/100 base T via RJ45.
19. Video backup:
20. Telemetry protocol:
21. Power supply: 230 V a.c.
22. Mounting:

460 Surveillance monitors

1. Manufacturer:
    1.1. Product reference:
2. Approval: BEAB.
3. Type:
4. Size (nominal diagonal):

5. Video system:
6. Resolution (minimum):
7. Response time (maximum): 5 ms.
8. Video inputs:
9. Audio inputs:
10. Mounting:
11. Accessories:

461 Video matrix switch controller

1. Manufacturer:
    1.1. Product reference:
2. Video inputs:
3. Video outputs:
4. Adjustable dwell time:
    4.1. Switching speed:
    4.2. Alarm inputs:
    4.3. Alarm outputs:
5. Serial interface:

462 Telemetry transmitters

1. Manufacturer:
    1.1. Product reference:
2. Display type:
3. Control keyboard:
4. Communications interface:
5. Control functions:
6. Alarm inputs:
7. Mounting:
8. System configuration: Password protection.

463 Telemetry receivers

1. Manufacturer:
    1.1. Product reference:
2. Controller type: Microprocessor.
3. Control functions:
4. Telemetry protocol:
5. Enclosure
    5.1. Material:
    5.2. Finish:
    5.3. Colour:
    5.4. Impact protection (minimum):
    5.5. Ingress protection (minimum):

465 Balanced twisted pair cables

1. Manufacturer:

1.1. Product reference:
2. Standard:
3. Category:
4. Cable type:
5. Number of pairs: Four.
6. Size:
7. Sheath
   7.1. Type:
   7.2. Colour:
8. Rebaction to fire class
   8.1. Fire behaviour:
   8.2. Additional classification for smoke production:
   8.3. Additional classification for flaming droplets and or particles:
   8.4. Additional classification for acidity:

Execution

605 Installing cables generally

1. Standard: In accordance with BS 7671.
2. General: Install cables neatly and securely. Conceal wherever possible. Protect against accidental damage, adverse environmental conditions, mechanical stress and deleterious substances.
   2.1. Concealed cable runs to outlets: Align vertically with the accessory.
3. Exposed cable runs: Submit proposals.
   3.1. Orientation: Straight, vertical and/ or horizontal and parallel to walls.
4. Distance from other services running parallel: 150 mm minimum.
   4.1. Heating pipes: Position cables below.
5. Timing: Do not start internal cabling until building enclosure provides permanently dry conditions.
6. Jointing: At equipment and terminal fittings only.
7. Cables passing through walls: Sleeve with conduit bushed at both ends.
8. Cables running across ceiling joists:
9. Length of final connection: Sufficient for equipment removal and maintenance.

610 Installing outlets and equipment generally

1. Location: Coordinate with other wall or ceiling-mounted equipment.
2. Positioning: Accurate and square to vertical and horizontal axes.
3. Alignment: Align adjacent accessories on the same vertical or horizontal axis.
4. Mounting heights (finished floor level to underside of equipment/ accessory):

620 Installing television antennae

1. Standard: In accordance with CIA ‘COP 2’.
2. Signal field strength: Survey at the intended location for reception. Submit results.
3. Location: Submit proposals.
4. Fixing: Submit proposals.

630 Installing television cabling and outlets

1. Standard: In accordance with CIA ‘COP 2’.

2. Appearance:
3. Cable route:
4. Fixing:
5. External wall entry:
6. Containment:
7. Outlet locations:

640 Installing fire detection and alarm systems in domestic premises

1. Installation: In accordance with BS 5839-6.
2. Detection devices:
3. Environment at installation: Clean and dust free.
4. Power supply: Dedicated circuit from main distribution board.

645 Installing fire detection and alarm systems in non-domestic premises

1. Installation: In accordance with BS 5839-1.
2. Cable route: Segregate from other cabling. Where installed in trunking, locate in a dedicated fire cabling compartment.
3. Cable topology …….
4. Cable pulling: Submit proposals.
5. Timing: Do not start internal cabling until building enclosure provides permanently dry conditions.
6. Mechanical protection:
7. Fastening cables
    7.1. To building fabric:
    7.2. To cable supports:
8. Cables passing through the building fabric: Sleeve and seal to prevent transmission of gas and dust.
9. Jointing: At equipment and terminal fittings only.
10. Cable terminals:
11. Maximum circuit resistance: Measure before concealment. Submit results.

650 Installing fire detection and alarm main control and indicating equipment

1. Location:
2. Power supply:

651 Installing point detectors

1. Location:
2. Protective cages:

652 Installing optical beam smoke detectors

1. Location:
2. Mounting:

653 Installing manual call points

1. Location:
2. Mounting height:

654 Installing sounders

1. Location:
2. Circuit wiring:
3. Protective cages:

655 Installing visual alarm devices

1. Location:
2. Mounting height:

656 Installing electrically powered hold-open devices

1. Method of operation:

670 Installing electronic access control systems

1. Standards:

675 Installing keypads and readers

1. Location:
2. Mounting arrangement:
3. Height (finished floor level to underside of equipment):
4. Administration reader:

700 Installing intercom systems

1. Entrance panel
    1.1. Location:
    1.2. Mounting:
    1.3. Height (finished floor level to underside of equipment):
2. Remote handset
    2.1. Location:
    2.2. Mounting:
    2.3. Height (finished floor level to underside of equipment):
3. Labelling: Identify call buttons.

705 Installing electronic access control units

1. Location:
2. Mounting position: Ensure that controllers are fixed securely and allow clear access for cabling.

710 Installing electric locks

1. Location:
2. Mounting arrangement:
3. Operation: Align door and frame-mounted components to provide a clean break during release - free egress should be provided with minimal effort. Ensure that locks do not restrict access through the door or cause an injury hazard.

715 Installing emergency break glass units and request-to-exit buttons

1. Location:
2. Mounting position:

3. Mounting arrangement:
4. Height (finished floor level to underside of equipment):

716 Installing request-to-exit detectors

1. Location:
2. Mounting arrangement:
3. Operation: Adjust the detection pattern for precise activation of the door.

720 Installing intrusion and hold-up alarm systems

1. Standard: To DD CLC/TS 50131-7.
2. Location of intruder alarm equipment:
3. Main power supply: From an unswitched fused connection unit. Permanently wire with a dedicated circuit from the building's main switchboard/ consumer unit.
4. Dummy external sounder:

730 Installing multicore alarm cables

1. Appearance:
2. Containment:
3. Route:
4. Device wiring: Individual radial circuit from control panel.

750 Installing surveillance CCTV systems

1. Standard:
2. Site survey:
3. Surveillance camera locations:
4. Surveillance camera mounting heights:
5. Fixing equipment
   5.1. Generally: Fix independently of wiring installation. Protect from interference by unauthorized individuals.
   5.2. Orientation: Accurate and square to vertical and horizontal axis.
6. Final connections:
7. Installing signage:

760 Installing surveillance CCTV cables

1. Appearance:
2. Containment:
3. Route:
4. Jointing: At equipment terminals only.
5. Device wiring: Individual radial circuit from control equipment.

Completion

800 Television distribution systems testing and commissioning

1. Standards: In accordance with CIA 'COP 2'.

810 Testing and commissioning fire detection and alarm systems in domestic premises

1. System commissioning agent:
2. Standard:
3. Notice before commencing tests (minimum):

815 Testing and commissioning fire detection and alarm systems in non-domestic premises

1. System commissioning agent:
2. Standard: In accordance with BS 5839-1.
3. Notice before commencing tests (minimum):

830 Electronic access control system testing and commissioning

1. Standard: To BS EN 60839-11-1.
2. Credentials to be supplied:
3. System programming
   - 3.1. Set up credentials with holder information.
   - 3.2. Set up access permissions.
   - 3.3. Set up access times.
4. Access points: Verify the correct operation of reader, and of release/ closure mechanism.
5. Test report in accordance with BS EN 60839-11-1, clause 8.11: Provide.

840 Intercom system testing and commissioning

1. Call button: Verify the operation of call buttons.
2. Audio communication: Verify two-way audio communication.
3. Video image: Verify the operation of the video camera and remote display.
4. Remote release: Verify the operation of remote door release facilities.

860 Intrusion and hold-up alarm system testing and commissioning

1. Standard: To DD CLC/TS 50131-7.
2. Zone names:
3. Cable insulation resistance and continuity tests: Submit results.
4. Charger: Verify operation.
5. Detection devices: Verify the operation, and adjust to provide maximum coverage.
6. Device voltage: Submit details of the voltage at powered devices.
7. Local warning devices: Verify operation.
8. Remote signalling: Verify operation.
9. Standby supply: Verify operation in the event of a mains failure.
10. Tamper detection: Verify operation.
11. Timers: Set up and adjust entry and exit timers.
12. User codes: Set up and commission.

870 Surveillance CCTV system testing and commissioning

1. Standard: To BS EN 62676-4.
2. System commissioning agent:

3. Notice before commencing tests (minimum):
4. Cable testing: Submit results, including insulation resistance and earth continuity.
5. Camera coverage: Adjust to obtain optimal performance with normal and infrared illumination.
6. Infrared illuminators: Accurately adjust to suit angle of associated cameras.
7. Pan-and-tilt units: Check accuracy of preset positions and demonstrate movement covers whole of relevant surveillance area.
8. Alarm and motion detection devices: Verify the operation, and adjust to provide maximum coverage.
9. Image storage time: Confirm.
10. Live and recorded images: Demonstrate from each camera and provide digital copies for reference purposes.

880 Documentation for television distribution systems

1. Standard: In accordance with CAI 'COP 2', Appendix C.
2. Record drawings
    2.1. Content:
    2.2. Drawing format:
    2.3. Number of copies:
    2.4. Submittal date:
3. Certification:

881 Documentation for fire detection and alarm systems in domestic premises

1. Standard: In accordance with BS 5839-6.
2. Record drawings
    2.1. Content:
    2.2. Drawing format:
    2.3. Number of copies:
    2.4. Submittal date:
3. Certification:

882 Documentation for fire detection and alarm systems in non-domestic premises

1. Standard: In accordance with BS 5839-1.
2. Operating and maintenance instructions
    2.1. Scope: Submit for the system giving optimum settings for controls.
    2.2. Product information: Include product description, date of purchase, performance characteristics, application (suitability for use), method of operation and control, and cleaning and maintenance requirements.
    2.3. Format: Paper copy.
    2.4. Number of copies:
3. Logbook: Submit one copy in accordance with BS 5839-1, annex F.
4. Record drawings
    4.1. Content:
    4.2. Drawing format:
    4.3. Number of copies:
    4.4. Submittal date:

5. Fire evacuation plan:
6. Certification:

883 Documentation for electronic access control systems

1. Standard: To BS EN 60839-11-1 and -11-2.
2. Operating and maintenance instructions
    2.1. Scope: Submit for the system giving optimum settings for controls.
    2.2. Product information: Include product description, date of purchase, performance characteristics, application (suitability for use), method of operation and control, and cleaning and maintenance requirements.
    2.3. Format:
    2.4. Number of copies:
3. Record drawings
    3.1. Content:
    3.2. Drawing format:
    3.3. Number of copies:
    3.4. Submittal date:

884 Documentation for intrusion and hold-up alarm systems

1. Standard: In accordance with DD CLC/TS 50131-7.
2. Operating and maintenance instructions
    2.1. Scope: Submit for the system giving optimum settings for controls.
    2.2. Product information: Include product description, date of purchase, performance characteristics, application (suitability for use), method of operation and control, and cleaning and maintenance requirements.
    2.3. Format:
    2.4. Number of copies:
3. Logbook:
4. Record drawings
    4.1. Content:
    4.2. Drawing format:
    4.3. Number of copies:
    4.4. Submittal date:

885 Documentation for surveillance CCTV systems

1. Standard: in accordance with BS EN 62676-1-1.
2. Operating and maintenance instructions
    2.1. Scope: Submit for the system giving optimum settings for controls.
    2.2. Product information: Include product description, date of purchase, performance characteristics, application (suitability for use), method of operation and control, and cleaning and maintenance requirements.
    2.3. Format:
    2.4. Number of copies:
3. Logbook:
4. Record drawings
    4.1. Content:

4.2. Drawing format:

4.3. Number of copies:

4.4. Submittal date:

890 Maintenance

1. Servicing and maintenance: Undertake.
   1.1. Duration:

Ω End of Section

Specification created using NBS Chorus

6

Prelims

NTBS3983

Gleeds Technology Limited

Lincolnshire County Council

Reepham C. E. Primary School – Internal Classroom Alteration Works

Reepham C.E. Primary School

Alteration Works

Contents

A10
Project particulars

Clauses

110 The Project

1. Name: Reepham C. E. Primary School
2. Nature: Internal Classroom Alteration Works
3. Location: Reepham C. E. Primary School, High Street, Reepham, Lincoln LN3 4DP
4. Timescale for construction work: 20th May 2024 – 17th June 2024 (3 weeks)

120 Employer (client)

1. Name: Lincolnshire County Council
2. Address: Lincolnshire County Council
   County Offices
   Newland,
   Lincoln
   LN1 1YL
3. Contact: Alison Toyne
4. Tel: 07501508466
5. Email: Alison.Toyne@lincolnshire.gov.uk

140 Architect/ contract administrator

1. Name: Gleeds Cost Management Ltd
2. Address: 95 New Cavendish Street, London, W1W 6XF
3. Contact: Christopher Ross
4. Telephone: 0115 9778000
5. Email: christopher.ross@gleeds.com

150 Principal designer

1. Name: Gleeds Cost Management Ltd
2. Address: 95 New Cavendish Street, London, W1W 6XF
3. Contact: Christopher Ross
4. Telephone: 0115 9778000
5. Email: christopher.ross@gleeds.com

Ω End of Section

A11
Tender and contract documents

Clauses

110 Tender drawings

1. The tender drawings are: NTBS3983/01 – Reepham Primary School Existing
   NTBS4114/02 – Reepham Primary School Proposed

120 Contract drawings

1. The Contract Drawings: The same as the tender drawings.

160 Preconstruction information

1. Format: The preconstruction information is described in these preliminaries in section A34. It refers to information given elsewhere in the preliminaries and other tender documents.

Ω End of Section

A12
The site/ existing buildings

Clauses

110 The site

Description: Reepham C. E. Primary School is located off High Street in a residential area, in the village of Reepham. The Primary School is of traditional construction with a pitched slate roof to the front elevation with masonry brickwork in stretcher bond. Over the years the school has received various flat roof and pitched roof extensions. The building offers classrooms, toilet and kitchen facilities as well as a main hall and corridor areas. The works are limited to the corridor and classroom area. The works include the removal of the current ramp and accessible lift, removal of current storage cupboard and extension of current classroom boundary to provide more space to this area. The current timber and glazed partition will be removed and a new installed. Associated M&E works are to be undertaken.

The works are as indicated within the specification and schedule of works and associated drawings within the tender documents. The site will remain fully occupied during the course of the works.

120 Existing buildings on/ adjacent to the site

1. Description: Reepham C. E. Primary School is located off High Street in a residential area.

140 Existing utilities and services

1. Drawings: (Information shown is indicative only): None provided.
2. Other information: Service drawings provided for the site.

180 Health and safety file

1. Availability for inspection: The health and safety file for the site/ building may be seen by appointment during normal office hours at: Please see the pre-construction information, H&S File can be reviewed during the site inspection to ascertain the full extent of the works.
2. Other documents: N/A
3. Arrangements for inspection: Contact the contract administrator.

200 Access to the site

1. Description: Access by prior arrangement only via Contract Administrator.
2. Limitations: Access to be arranged via the contract administrator / LCC.
3. Access for inspections: Provide access at reasonable times for both on-site and off-site work.

210 Parking

1. Restrictions on parking of the Contractor's and employees' vehicles: Parking available on site. Deliveries to be of short duration only and to be managed by the contractor to avoid disrupting the site.

220 Use of the site

1. General: Do not use the site for any purpose other than carrying out the works.
2. Limitations: N/A

230 Surrounding land/ building uses

1. General: Adjacent or nearby uses or activities are as follows: Residential area which may give rise to problems of trespass and vandalism.

240 Health and safety hazards

1. General: The nature and condition of the site/ building cannot be fully and certainly ascertained before it is opened up. However, the following hazards are or may be present: Asbestos materials.
2. Information: The accuracy and sufficiency of this information is not guaranteed. Ascertain if any additional information is required to ensure the safety of all persons and the works.
3. Site staff: Draw to the attention of all personnel working on the site the nature of any possible contamination and the need to take appropriate precautionary measures.

250 Site visit

1. Assessment: Ascertain the nature of the site, access thereto and all local conditions and restrictions likely to affect the execution of the Works.
2. Arrangements for visit: All site visits to be arranged with the contract administrator.

Ω End of Section

A13
Description of the work

Clauses

110 Preparatory work by others

1. Details: Review Asbestos survey prior to commencement
2. Timescale: N/A

120 The works

1. Description:

- Removal of accessible lift and current timber ramp
- Removal of storage cupboard
- Removal of current classroom timber and glazed panel partition including fire door
- Decoration works
- M&E works
- Installation of new ramp
- New carpet flooring
- New classroom partition including fire door

140 Completion work by others

1. Description: Make sure all areas are clean and tidy. Ensure all O&M manuals have been provided to client.

Ω End of Section

A20
JCT Minor Works with Contractor Design Proportion Contract 2016

Clauses

JCT minor works building contract

- The contract: JCT Minor Works with Contractor Design Proportion Contract 2016
- Requirement: Allow for the obligations, liabilities and services described.

The recitals

First - The Works and the Contract Administrator

- The work comprises: Internal alteration works to corridor and classroom.
- Architect/ Contract Administrator: See clause A10/140.

Second - Contract documents

- Contract drawings: As listed in clause A11/120.
- Contract documents: The following have been prepared which show and describe the work to be done: Work Schedules.

Third - Priced documents

- Documents to be priced or provided by the Contractor: Work schedules.

Articles

3 - Architect/ Contract Administrator

- Architect/ Contract Administrator: See clause A10/140.

4 and 5 - Principal Designer/ Principal Contractor

- Principal Designer: See clause A10/150.
- Principal Contractor: See clause A10/130.

Contract particulars

Fourth Recital and Schedule 2 - Base date

- Base date: 25th March 2024 (commence on site)

Fourth Recital and clause 4.2 - Construction industry scheme (CIS)

- Employer at the Base Date is not a 'contractor' for the purposes of the CIS.

Fifth Recital - CDM Regulations

- The project is not notifiable.

Seventh Recital and Schedule 3 - Supplemental provisions

- Collaborative working: Supplemental Provision 1 applies.

- Health and safety: Supplemental Provision 2 applies.
- Cost savings and value improvements: Supplemental Provision 3 applies.
- Sustainable development and environmental considerations: Supplemental Provision 4 applies.
- Performance indicators and monitoring: Supplemental Provision 5 applies does not apply.
- Notification and negotiation of disputes: Supplemental Provision 6 applies. Where Supplemental Provision 6 applies, the respective nominees of the parties are:
  - Employer's nominee: TBC
  - Contractor's nominee: TO BE COMPLETED BY CONTRACTOR
- Or such replacement as each party may notify to the other from time to time.

Article 7 - Arbitration

- Article 7 and Schedule 1 do not apply.

Clause 2.2 - Commencement and Completion

- Works commencement date: 25th March 2024
- Date for Completion: 1st April 2024

Clause 2.8 - Liquidated damages

- At the rate of 500 per calendar week or pro-rata thereto.

Clause 2.10 - Rectification period

- Period: Twelve months from the date of practical completion.

Clause 4.3 - Interim payments

- Interim Valuation Dates
  - The first Interim Valuation Date is: 28 days following commencement date
  - Thereafter at intervals of: 28 days
- Payments due prior to practical completion
  - Percentage of total value of the work etc.: 95 per cent
- Payments becoming due on or after practical completion
  - Percentage of the total amount to be paid: 97½ per cent

Clause 4.3 and 4.8 - Fluctuations provision

- The following fluctuations provision applies: No fluctuations provision applies

Clause 4.8.1 - Supply of documentation for computation of amount to be finally certified

- Period: Three months from the date of practical completion.

Clause 5.3 - Contractor's Public Liability insurance - injury to persons or property

- The required level of cover for any one occurrence or series of occurrences arising out of one event
  - Not less than: 10 Million

Clauses 5.4A, 5.4B and 5.4C - Insurance of the works, etc. - alternative provisions

- Clause 5.4B applies.
- Where clause 5.4A or 5.4B applies, percentage to cover professional fees: 15 per cent

Clause 7.2 - Adjudication

- The Adjudicator is: TBC
- Nominating body: Royal Institution of Chartered Surveyors

The conditions - No Amendments

Section 1: Definitions and Interpretation - No Amendments

Section 2: Carrying out the Works - No Amendments

Section 3: Control of the Works - No Amendments

Section 4: Payment - No Amendments

Section 5: Injury, Damage and Insurance - No Amendments

Section 6: Termination - No Amendments

Section 7: Settlement of Disputes - No Amendments

Execution

Execution

- The contract: Will be executed under hand.

Contract guarantee bond - No Amendments

Ω End of Section

A30
Tendering/ subletting/ supply

Main contract tendering

110 Scope

1. General: These conditions are supplementary to those stated in the Invitation to Tender and on the form of tender.

145 Tendering procedure

1. General: In accordance with the principles of: JCT Practice Note 2017.
2. Arithmetical errors: Overall price Pricing document Overall price is dominant.

160 Exclusions

1. Inability to tender: Immediately inform if any parts of the work as defined in the tender documents cannot be tendered.
2. Relevant parts of the work: Define those parts, stating reasons for the inability to tender.

170 Acceptance of tender

1. Acceptance: No guarantee is offered that any tender will be recommended for acceptance or be accepted, or that reasons for non acceptance will be given.
2. Costs: No liability is accepted for any cost incurred in the preparation of any tender.

190 Period of validity

1. Period: After submission or lodgement, keep tender open for consideration (unless previously withdrawn) for not less than 90 days.
2. Date for possession/ commencement: See section A20.

Pricing/ submission of documents

210 Preliminaries in the specification

1. The Preliminaries/ General conditions sections (A10-A56 inclusive) must not be relied on as complying with SMM7/ NRM2.

250 Priced documents

1. Alterations: Do not alter or qualify the priced documents without written consent. Tenders containing unauthorised alterations or qualifications may be rejected.
2. Measurements: Where not stated, ascertain from the drawings.
3. Deemed included: Costs relating to items, which are not priced, will be deemed to have been included elsewhere in the tender.
4. Submit: With tender

310 Tender

1. General: Tenders must include for all work shown or described in the tender documents as a whole or clearly apparent as being necessary for the complete and proper execution of the Works.

440 Schedule of rates

1. Schedule of rates (unpriced): Included with the tender documents. The Contractor may insert additional items. All items must be fully priced.

2. Fully priced copy: Submit with the tender.

530 Substitute products

1. Details: If products of different manufacture to those specified are proposed, submit details with the tender giving reasons for each proposed substitution. Substitutions, which have not been notified at tender stage, may not be considered.
2. Compliance: Substitutions accepted will be subject to the verification requirements of clause A31/200.

550 Health and safety information

1. Content: Describe the organization and resources to safeguard the health and safety of operatives, including those of subcontractors, and of any person whom the Works may affect.
2. Include
   - 2.1. A copy of the health and safety policy document, including risk assessment procedures.
   - 2.2. Accident and sickness records for the past five years.
   - 2.3. Records of previous Health and Safety Executive enforcement action.
   - 2.4. Records of training and training policy.
   - 2.5. The number and type of staff responsible for health and safety on this project with details of their qualifications and duties.
3. Submit: With the Tender

570 Outline construction phase health and safety plan

1. Content: Submit the following information within one week of request:
   - 1.1. Method statements on how risks from hazards identified in the pre-construction information and other hazards identified by the contractor will be addressed.
   - 1.2. Details of the management structure and responsibilities.
   - 1.3. Arrangements for issuing health and safety directions.
   - 1.4. Procedures for informing other contractors and employees of health and safety hazards.
   - 1.5. Selection procedures for ensuring competency of other contractors, the self-employed and designers.
   - 1.6. Procedures for communications between the project team, other contractors and site operatives.
   - 1.7. Arrangements for cooperation and coordination between contractors.
   - 1.8. Procedures for carrying out risk assessment and for managing and controlling the risk.
   - 1.9. Emergency procedures including those for fire prevention and escape.
   - 1.10. Arrangements for ensuring that all accidents, illness and dangerous occurrences are recorded.
   - 1.11. Arrangements for welfare facilities.
   - 1.12. Procedures for ensuring that all persons on site have received relevant health and safety information and training.
   - 1.13. Arrangements for consulting with and taking the views of people on site.
   - 1.14. Arrangements for preparing site rules and drawing them to the attention of those affected and ensuring their compliance.
   - 1.15. Monitoring procedures to ensure compliance with site rules, selection and management procedures, health and safety standards and statutory requirements.
   - 1.16. Review procedures to obtain feedback.

Subletting/ supply - No Amendments

Ω End of Section

A31
Provision, content and use of documents

Definitions and interpretations

110 Definitions

1. Meaning: Terms, derived terms and synonyms used in the preliminaries/ general conditions and specification are as stated here or in the appropriate referenced document.

120 Communication

1. Definition: Includes advise, inform, submit, give notice, instruct, agree, confirm, seek or obtain information, consent or instructions, or make arrangements.
2. Format: In writing to the person named in clause A10/140 unless specified otherwise.
3. Response: Do not proceed until response has been received.

130 Products

1. Definition: Materials, both manufactured and naturally occurring, and goods, including components, equipment and accessories, intended for the permanent incorporation in the Works.
2. Includes: Goods, plant, materials, site materials and things for incorporation into the Works.

135 Site equipment

1. Definition: Apparatus, appliances, machinery, vehicles or things of whatsoever nature required in or about the construction for the execution and completion of the Works but not materials or other things intended to form or forming part of the Permanent Works.
2. Includes: Construction appliances, vehicles, consumables, tools, temporary works, cabins and other site facilities.
3. Excludes: Products and equipment or anything intended to form or forming part of the permanent works.

140 Drawings

1. Definitions: To BSRIA BG 6, 'A design framework for building services: Design activities and drawing definitions'.
2. CAD data: In accordance with ISO 19650.

145 Contractor's choice

1. Meaning: Selection delegated to the Contractor, but liability to remain with the specifier.

155 Submit proposals

1. Meaning: Submit information in response to specified requirements.

160 Terms used in specification

1. Remove: Disconnect, dismantle as necessary and take out the designated products or work and associated accessories, fixings, supports, linings and bedding materials. Dispose of unwanted materials. Excludes removal and disposal of associated pipework, wiring, ductwork or other services.
2. Remediate: Action or measures taken to lessen, clean up, remove or mitigate the existence of hazardous materials; in accordance with standards, or requirements as may be set out by statutes, rules, regulations or specification.
3. Fix: Receive, unload, handle, store, protect, place and fasten in position; dispose of waste and surplus packaging. To include all labour, materials and site equipment for that purpose.

4. Supply and fix: As above, but including supply of products, components or systems to be fixed, together with everything necessary for their fixing. All products, components or systems are to be supplied and fixed unless stated otherwise.
5. Keep for reuse: Do not damage designated products or work. Clean off bedding and jointing materials. Stack neatly, protect adequately and store until required by the employer/ purchaser, or until required for use in the works as instructed.
6. Keep for recycling: As 'keep for reuse', but relates to a naturally occurring material rather than a manufactured product.
7. Make good: Execute local remedial work to designated work. Make secure, sound and neat. Excludes redecoration and/ or replacement.
8. Replace: Supply and fix new products matching those removed. Execute work to match original new state of that removed.
9. Repair: Execute remedial work to restore something to its original working state. Make secure, sound and neat. Excludes redecoration and/ or replacement.
10. Refix: Fix removed products.
11. Ease: Adjust moving parts of designated products, or work to achieve free movement and good fit in open and closed positions.
12. Match existing: Provide products and work of the same appearance and features as the original, excluding ageing and weathering. Make joints between existing and new work as inconspicuous as possible.
13. System: Equipment, accessories, controls, supports and ancillary items (including installation) necessary for that section of the work to function.

170 Manufacturer and product reference

1. Definition: When used in this combination:
   1.1. Manufacturer: the person or legal entity under whose name or trademark the particular product, component or system is marketed
   1.2. Product reference: the proprietary brand name and/ or identifier by which the particular product, component or system is described.
2. Currency: References are to the particular product as specified in the manufacturer's technical literature current on the date of the invitation to tender.

200 Substitution of products

1. Products: If an alternative product to that specified is proposed, obtain approval before ordering the product.
2. Reasons: Submit reasons for the proposed substitution.
3. Documentation: Submit relevant information, including:
   3.1. manufacturer and product reference;
   3.2. cost;
   3.3. availability;
   3.4. relevant standards;
   3.5. performance;
   3.6. function;
   3.7. compatibility of accessories;
   3.8. proposed revisions to drawings and specification;
   3.9. compatibility with adjacent work;
   3.10. appearance;
   3.11. copy of warranty/ guarantee.
4. Alterations to adjacent work: If needed, advise scope, nature and cost.

5. Manufacturers' guarantees: If substitution is accepted, submit before ordering products.

210 Cross references

1. Accuracy: Check remainder of the annotation or item description against the terminology used in the section or clause referred to.
2. Related terminology: Where a numerical cross-reference is not given the relevant sections and clauses of the specification will apply.
3. Relevant clauses: Clauses in the referred to specification section dealing with general matters, ancillary products and execution also apply.
4. Discrepancy or ambiguity: Before proceeding, obtain clarification or instructions.

220 Referenced documents

1. Conflicts: Specification prevails over referenced documents.

230 Equivalent products

1. Inadvertent omission: Wherever products are specified by proprietary name the phrase 'or equivalent' is to be deemed included.

240 Substitution of standards

1. Specification to British Standard or European Standard: Substitution may be proposed complying with a grade or category within a national standard of another Member State of the European Community or an international standard recognised in the UK.
2. Before ordering: Submit notification of all such substitutions.
3. Documentary evidence: Submit for verification when requested as detailed in clause A31/200. Any submitted foreign language documents must be accompanied by certified translations into English.

250 Currency of documents and information

1. Currency: References to published documents are to the editions, including amendments and revisions, current on the date of the Invitation to Tender.

260 Sizes

1. General dimensions: Products are specified by their co-ordinating sizes.
2. Timber: Cross section dimensions shown on drawings are:
    2.1. Target sizes as defined in BS EN 336 for structural softwood and hardwood sections.
    2.2. Finished sizes for non-structural softwood or hardwood sawn and further processed sections.

Documents provided on behalf of the employer

410 Additional copies of drawings/ documents

1. Additional copies: Issued free of charge.

440 Dimensions

1. Scaled dimensions: Do not rely on.

450 Measured quantities

1. Ordering products and constructing the Works: The accuracy and sufficiency of the measured quantities is not guaranteed.
2. Precedence: The specification and drawings shall override the measured quantities.

460 The specification

1. Coordination: All sections must be read in conjunction with Main Contract Preliminaries/ General conditions.

Documents provided by contractor/ subcontractors/ suppliers

640 Maintenance instructions and guarantees

1. Components and equipment: Obtain or retain copies, register with manufacturer and hand over on or before completion of the Works.
2. Information location: In Building Manual.
3. Emergency call out services: Provide telephone numbers for use after completion. Extent of cover: …….

Ω End of Section

A32
Management of the works

Generally

110 Supervision

1. General: Accept responsibility for coordination, supervision and administration of the Works, including subcontracts.
2. Coordination: Arrange and monitor a programme with each subcontractor, supplier, local authority and statutory undertaker, and obtain and supply information as necessary for coordination of the work.

120 Insurance

1. Documentary evidence: Before starting work on site submit details, and/ or policies and receipts for the insurances required by the Conditions of Contract.

130 Insurance claims

1. Notice: If any event occurs which may give rise to any claim or proceeding in respect of loss or damage to the Works or injury or damage to persons or property arising out of the Works, immediately give notice to the employer/ client, the person administering the Contract on their behalf and the Insurers.
2. Failure to notify: Indemnify the employer/ client against any loss, which may be caused by failure to give such notice.

140 Climatic conditions

1. Information: Record accurately and retain:
    1.1. Daily maximum and minimum air temperatures (including overnight).
    1.2. Delays due to adverse weather, including description of the weather, types of work affected and number of hours lost.

150 Ownership

1. Alteration/ clearance work: Materials arising become the property of the Contractor except where otherwise stated. Remove from site as work proceeds.

Programme/ progress

210 Programme

1. Master programme: Immediately when requested and before starting work on site submit in an approved form a master programme for the Works, which must include details of:
    1.1. Planning and mobilisation by the Contractor
    1.2. Subcontractor's work.
    1.3. Running in, adjustment, commissioning and testing of all engineering services and installations.
    1.4. Work resulting from instructions issued in regard to the expenditure of provisional sums.
    1.5. Work by others concurrent with the Contract.
2. Submit one copy.

245 Start of work on site

1. Notice: Before the proposed date for start of work on site give minimum notice of two weeks.

250 Monitoring

1. Progress: Record on a copy of the programme kept on site.
2. Avoiding delays: If any circumstances arise which may affect the progress of the Works submit proposals or take other action as appropriate to minimize any delay and to recover any lost time.

260 Site meetings

1. General: Site meetings will be held to review progress and other matters arising from administration of the Contract.
2. Frequency: Every two weeks
3. Location: On site
4. Accommodation: Ensure availability at the time of such meetings.
5. Attendees: Attend meetings and inform subcontractors and suppliers when their presence is required.
6. Chairperson (who will also take and distribute minutes): Contract Administrator

290 Notice of completion

1. Requirement: Give notice of the anticipated dates of completion of the whole or parts of the Works.
2. Associated works: Ensure necessary access, services and facilities are complete.
3. Period of notice (minimum): Two weeks

310 Extensions of time

1. Notice: When a notice of the cause of any delay or likely delay in the progress of the works is given under the contract, written notice must also be given of all other causes which apply concurrently.
2. Details: As soon as possible submit:
    2.1. Relevant particulars of the expected effects, if appropriate, related to the concurrent causes.
    2.2. An estimate of the extent, if any, of the expected delay in the completion of the Works beyond the date for completion.
    2.3. All other relevant information required.

Control of cost

420 Removal/ replacement of existing work

1. Extent and location: Agree before commencement.
2. Execution: Carry out in ways that minimize the extent of work.

430 Proposed instructions

1. Estimates: If a proposed instruction requests an estimate of cost, submit without delay and in any case within seven days.

440 Measurement

1. Covered work: Give notice before covering work required to be measured.

450 Daywork vouchers

1. Before commencing work: Give reasonable notice to person countersigning daywork vouchers.
2. Content: Before delivery each voucher must be:
    2.1. Referenced to the instruction under which the work is authorised.

2.2. Signed by the Contractor's person in charge as evidence that the operatives' names, the time daily spent by each and the equipment and products employed are correct.

3. Submit: By the end of the week in which the work has been executed.

470 Products not incorporated into the Works

1. Ownership: At the time of each valuation, supply details of those products not incorporated into the Works which are subject to any reservation of title inconsistent with passing of property as required by the Conditions of Contract, together with their respective values.
2. Evidence: When requested, provide evidence of freedom of reservation of title.

Ω End of Section

A33
Quality standards/ control

Standards of products and executions

110 Incomplete documentation

1. General: Where and to the extent that products or work are not fully documented, they are to be:
   1.1. Of a kind and standard appropriate to the nature and character of that part of the Works where they will be used.
   1.2. Suitable for the purposes stated or reasonably to be inferred from the project documents.
2. Contract documents: Omissions or errors in description and/ or quantity shall not vitiate the Contract nor release the Contractor from any obligations or liabilities under the Contract.

120 Workmanship skills

1. Operatives: Appropriately skilled and experienced for the type and quality of work.
2. Registration: With Construction Skills Certification Scheme.
3. Evidence: Operatives must produce evidence of skills/ qualifications when requested.

130 Quality of products

1. Generally: New. (Proposals for recycled products may be considered).
2. Supply of each product: From the same source or manufacturer.
3. Whole quantity of each product required to complete the Works: Consistent kind, size, quality and overall appearance.
4. Tolerances: Where critical, measure a sufficient quantity to determine compliance.
5. Deterioration: Prevent. Order in suitable quantities to a programme and use in appropriate sequence.

135 Quality of execution

1. Generally: Fix, apply, install or lay products securely, accurately, plumb, neatly and in alignment.
2. Colour batching: Do not use different colour batches where they can be seen together.
3. Dimensions: Check on-site dimensions.
4. Finished work: Without defects, e.g. not damaged, disfigured, dirty, faulty, or out of tolerance.
5. Location and fixing of products: Adjust joints open to view so they are even and regular.

140 Evidence of Compliance

1. Proprietary products: Retain on site evidence that the proprietary product specified has been supplied.
2. Performance specification: Submit evidence of compliance, including test reports indicating:
   2.1. Properties tested.
   2.2. Pass/ fail criteria.
   2.3. Test methods and procedures.
   2.4. Test results.
   2.5. Identity of testing agency.
   2.6. Test dates and times.
   2.7. Identities of witnesses.
   2.8. Analysis of results.

150 Inspections

1. Products and executions: Inspection or any other action must not be taken as approval unless confirmed in writing referring to:
    1.1. Date of inspection.
    1.2. Part of the work inspected.
    1.3. Respects or characteristics which are approved.
    1.4. Extent and purpose of the approval.
    1.5. Any associated conditions.

160 Related work

1. Details: Provide all trades with necessary details of related types of work. Before starting each new type or section of work ensure previous related work is:
    1.1. Appropriately complete.
    1.2. In accordance with the project documents.
    1.3. To a suitable standard.
    1.4. In a suitable condition to receive the new work.
2. Preparatory work: Ensure all necessary preparatory work has been carried out.

170 Manufacturer’s recommendations/ instructions

1. General: Comply with manufacturer's printed recommendations and instructions current on the date of the Invitation to tender.
2. Exceptions: Submit details of changes to recommendations or instructions.
3. Execution: Use ancillary products and accessories supplied or recommended by main product manufacturer.
4. Products: Comply with limitations, recommendations and requirements of relevant valid certificates.

180 Water for the works

1. Mains supply: Clean and uncontaminated.
2. Other: Do not use until:
    2.1. Evidence of suitability is provided.
    2.2. Tested to BS EN 1008 if instructed.

Samples/ approvals

210 Samples

1. Products or executions: Comply with all other specification requirements and in respect of the stated or implied characteristics either:
    1.1. To an express approval.
    1.2. To match a sample expressly approved as a standard for the purpose.

220 Approval of products

1. Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
2. Approval: Relates to a sample of the product and not to the product as used in the Works. Do not confirm orders or use the product until approval of the sample has been obtained.
3. Complying sample: Retain in good, clean condition on site. Remove when no longer required.

230 Approval of execution

1. Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
2. Approval: Relates to the stated characteristics of the sample. (If approval of the finished work as a whole is required this is specified separately). Do not conceal, or proceed with affected work until compliance with requirements is confirmed.
3. Complying sample: Retain in good, clean condition on site. Remove when no longer required.

Accuracy/ setting out generally

320 Setting out

1. General: Submit details of methods and equipment to be used in setting out the Works.
2. Levels and dimensions: Check and record the results on a copy of drawings. Notify discrepancies and obtain instructions before proceeding.
3. Inform: When complete and before commencing construction.

330 Appearance and fit

1. Tolerances and dimensions: If likely to be critical to execution or difficult to achieve, as early as possible either:
   1.1. Submit proposals; or
   1.2. Arrange for inspection of appearance of relevant aspects of partially finished work.
2. General tolerances (maximum): To BS 5606, tables 1 and 2.

360 Record drawings

1. Site setting out drawing: Record details of all grid lines, setting-out stations, benchmarks and profiles. Retain on site throughout the Contract and hand over on completion.

Services generally

410 Services regulations

1. New or existing services: Comply with the Byelaws or Regulations of the relevant Statutory Authority.

Supervision/ inspection/ defective work

525 Access

1. Extent: Provide at all reasonable times access to the Works and to other places of the Contractor or subcontractors where work is being prepared for the Contract.
2. Designate:

540 Defects in existing work

1. Undocumented defects: When discovered, immediately give notice. Do not proceed with affected related work until response has been received.
2. Documented remedial work: Do not execute work which may:
   2.1. Hinder access to defective products or work; or
   2.2. Be rendered abortive by remedial work.

560 Tests and inspections

1. Timing: Agree and record dates and times of tests and inspections to enable all affected parties to be represented.

2. Confirmation: One working day prior to each such test or inspection. If sample or test is not ready, agree a new date and time.
3. Records: Submit a copy of test certificates and retain copies on site.

610 Defective products/ executions

1. Proposals: Immediately any work or product is known, or appears, to be not in accordance with the Contract, submit proposals for opening up, inspection, testing, making good, adjustment of the Contract Sum, or removal and re-execution.
2. Acceptability: Such proposals may be unacceptable and contrary instructions may be issued.

Work at or after completion

710 Work before completion

1. General: Make good all damage consequent upon the Works.
2. Temporary markings, coverings and protective wrappings: Remove unless otherwise instructed.
3. Cleaning: Clean the Works thoroughly inside and out, including all accessible ducts and voids. Remove all splashes, deposits, efflorescence, rubbish and surplus materials.
4. Cleaning materials and methods: As recommended by manufacturers of products being cleaned, and must not damage or disfigure other materials or construction.
5. COSHH dated data sheets: Obtain for all materials used for cleaning and ensure they are used only as recommended by their manufacturers.
6. Minor faults: Touch up in newly painted work, carefully matching colour and brushing out edges. Repaint badly marked areas back to suitable breaks or junctions.
7. Moving parts of new work: Adjust, ease and lubricate as necessary to ensure easy and efficient operation, including doors, windows, drawers, ironmongery, appliances, valves and controls.

720 Security at completion

1. General: Leave the Works secure with, where appropriate, all accesses closed and locked.
2. Keys: Account for and adequately label all keys, and hand over together with an itemized schedule, retaining duplicate schedule signed as a receipt.

730 Making good defects

1. Remedial work: Arrange access with Contract Administrator.
2. Rectification: Give reasonable notice for access to the various parts of the Works.
3. Completion: Notify when remedial works have been completed.

Ω End of Section

A34
Security/ safety/ protection

Security, health and safety

120 Execution hazards

1. Common hazards: Not listed. Control by good management and site practice.
2. Significant hazards: The design of the project includes the following:
   2.1. Hazard: Not Applicable – detailed in H&S pre Construction.

130 Product hazards

1. Hazardous substances: Site personnel levels must not exceed occupational exposure standards and maximum exposure limits stated in the current version of HSE document EH40: Workplace Exposure Limits.
2. Common hazards: Not listed. Control by good management and site practice.
3. Significant hazards: Specified construction materials include the following:
   3.1. Hazard: Refer to the pre construction information
   3.2. Material: Refer to the pre construction information
   3.3. Specification reference: Refer to the pre construction information

140 Construction phase health and safety plan

1. Submission: Present to the employer/ client no later than one week prior to commencement on site.
2. Confirmation: Do not start construction work until the employer has confirmed in writing that the construction phase health and safety plan includes the procedures and arrangements required by the CDM Regulations.
3. Content: Develop the plan from and draw on the outline construction phase health and safety plan, clause A30/570, and the pre-tender health and safety plan/ preconstruction information.

150 Security

1. Protection: Safeguard the site, the Works, products, materials, and any existing buildings affected by the Works from damage and theft.
2. Access: Take all reasonable precautions to prevent unauthorized access to the site, the Works and adjoining property.

160 Stability

1. Responsibility: Maintain the stability and structural integrity of the works and adjacent structures during the contract.
2. Design loads: Obtain details, support as necessary and prevent overloading.

170 Occupied premises

1. Extent: Existing buildings will be occupied and/ or used during the contract as follows: …….
2. Works: Carry out without undue inconvenience and nuisance and without danger to occupants and users.
3. Overtime: If compliance with this clause requires certain operations to be carried out during overtime, and such overtime is not required for any other reason, the extra cost will be allowed, provided that such overtime is authorized in advance.

190 Occupier's rules and regulations

1. Compliance: Conform to the occupier's rules and regulations affecting the site.

200 Mobile telephones and portable electronic equipment

1. Restrictions on use
   1.1. Not applicable.

210 Safety provisions for site visits

1. Safety: Submit details in advance of safety provisions and procedures (including those relating to materials, which may be deleterious), which will require their compliance when visiting the site.
2. Protective clothing and/ or equipment: Provide and maintain on site for visitors to the-site.

Protect against the following

340 Pollution

1. Prevention: Protect the site, the works and the general environment including the atmosphere, land, streams and waterways against pollution.
2. Contamination: If pollution occurs inform immediately, including to the appropriate authorities and provide relevant information.

360 Nuisance

1. Duty: Prevent nuisance from smoke, dust, rubbish, vermin and other causes.
2. Surface water: Prevent hazardous build-up on-site, in excavations and to surrounding areas and roads.

370 Asbestos containing materials

1. Duty: Report immediately any suspected materials discovered during execution of the works.
   1.1. Do not disturb.
   1.2. Agree methods for safe removal or encapsulation.

371 Dangerous or hazardous substances

1. Duty: Report immediately suspected materials discovered during execution of the works.
   1.1. Do not disturb.
   1.2. Agree methods for safe removal or remediation.

380 Fire prevention

1. Duty: Prevent personal injury or death, and damage to the Works or other property from fire.
2. Standard: Comply with Joint Code of Practice 'Fire Prevention on Construction Sites', published by Construction Industry Publications and The Fire Protection Association (The 'Joint Fire Code').

390 Smoking on-site

1. Smoking on-site: Not permitted.

400 Burning on-site

1. Burning on-site: Not permitted.

410 Moisture

1. Wetness or dampness: Prevent, where this may cause damage to the Works.

2. Drying out: Control humidity and the application of heat to prevent:
    2.1. Blistering and failure of adhesion.
    2.2. Damage due to trapped moisture.
    2.3. Excessive movement.

420 Infected timber/ Contaminated materials

1. Removal: Where instructed to remove material affected by fungal/ insect attack from the building, minimize the risk of infecting other parts of the building.
2. Testing: carry out and keep records of appropriate tests to demonstrate that hazards presented by concentrations of airborne particles, toxins and other microorganisms are within acceptable levels.

430 Waste

1. Waste: Includes rubbish, debris, spoil, containers and packaging, and surplus material requiring disposal.
2. Requirement: Minimize production and prevent accumulation of waste. Keep the site and works clean and tidy. Clean out voids and cavities in the construction before closing.
3. Disposal: Collect and store in suitable containers. Remove from site and dispose of in a safe and competent manner, as approved and directed by the waste regulation authority.
4. Recyclable material: Sort and dispose of at a materials recycling facility approved by the waste regulation authority.
5. Documentation: Retain on-site.

440 Electromagnetic interference

1. Duty: Prevent excessive electromagnetic disturbance to apparatus outside the site.

460 Powder actuated fixing systems

1. Use: Not permitted.

470 Invasive species

1. General: Prevent the spread of species (e.g. plants or animals) that may adversely affect the site or works economically, environmentally or ecologically.
2. Special precautions:
3. Duty: Report immediately any suspected invasive species discovered during execution of the works.
    3.1. Do not disturb.
    3.2. Agree methods for safe eradication or removal.

Protect the following

510 Existing services

1. Confirmation: Notify all service authorities, statutory undertakers and/ or adjacent owners of proposed works not less than one week before commencing site operations.
2. Identification: Before starting work, check and mark positions of utilities/ services. Where positions are not shown on drawings obtain relevant details from service authorities, statutory undertakers or other owners.
3. Work adjacent to services
    3.1. Comply with service authority's/ statutory undertaker's recommendations.
    3.2. Adequately protect, and prevent damage to services: Do not interfere with their operation without consent of service authorities/ statutory undertakers or other owners.

4. Identifying services
   4.1. Below ground: Use signboards, giving type and depth;
   4.2. Overhead: Use headroom markers.
5. Damage to services: If any results from execution of the Works:
   5.1. Immediately give notice and notify appropriate service authority/ statutory undertaker.
   5.2. Make arrangements for the work to be made good without delay to the satisfaction of service authority/ statutory undertaker or other owner as appropriate.
   5.3. Any measures taken to deal with an emergency will not affect the extent of the Contractor's liability.
6. Marker tapes or protective covers: Replace, if disturbed during site operations, to service authority's/ statutory undertakers recommendations.

520 Roads and footpaths

1. Duty: Maintain roads and footpaths within and adjacent to the site and keep clear of mud and debris.
2. Damage caused by site traffic or otherwise consequent upon the Works: Make good to the satisfaction of the Employer, Local Authority or other owner.

530 Existing topsoil/ subsoil

1. Duty: Prevent over compaction of existing topsoil and subsoil in those areas which may be damaged by construction traffic, parking of vehicles, temporary site accommodation or storage of materials and which will require reinstatement prior to completion of the Works.
2. Protection: Before starting work submit proposals for protective measures.

540 Retained trees/ shrubs/ grassed areas

1. Protection: Preserve and prevent damage, except those not required.
2. Replacement: Mature trees and shrubs if uprooted, destroyed, or damaged beyond reasonable chance of survival in their original shape, as a consequence of the Contractor's negligence, must be replaced with those of a similar type and age at the Contractor's expense.

550 Retained trees

1. Protected area: Unless agreed otherwise do not:
   1.1. Dump spoil or rubbish, excavate or disturb topsoil, park vehicles or plant, store materials or place temporary accommodation within an area which is the larger of the branch spread of the tree or an area with a radius of half the tree's height, measured from the trunk.
   1.2. Sever roots exceeding 25 mm in diameter. If unintentionally severed give notice and seek advice.
   1.3. Change level of ground within an area 3 m beyond branch spread.

555 Wildlife species and habitats

1. General: Safeguard the following: …….
2. Protected habitats and species: Upon discovery immediately advise. Do not proceed until instruction is received.
3. Education: Ensure that employees and visitors to the site receive suitable instruction and awareness training.

560 Existing features

1. Protection: Prevent damage to existing buildings, fences, gates, walls, roads, paved areas and other site features, which are to remain in position during execution of the Works.

2. Special requirements:

570 Existing work

1. Protection: Prevent damage to existing work, structures or other property during the course of the work.
2. Removal: Minimum amount necessary.
3. Replacement work: To match existing.

580 Building interiors

1. Protection: Prevent damage from exposure to the environment, including weather, flora, fauna, and other causes of material degradation during the course of the work.

600 Existing furniture, fittings and equipment

1. Protection: Prevent damage or move as necessary to enable the Works to be executed. Reinstate in original positions.
2. Extent: Before work in each room starts, the following will be removed:
   2.1. …….

610 Especially valuable/ vulnerable items

1. Protection: Ensure provision and maintenance of special protective measures to prevent damage to the following:
   1.1. …….
2. Method statement: Submit within one week of request describing special protection to be provided.

620 Adjoining property

1. Agreement: Access to and/ or use of the following has been agreed with adjacent owners:
   1.1. …….
2. Permission: Obtain as necessary from other owners if requiring to erect scaffolding on or otherwise use adjoining property.

625 Adjoining property restrictions

1. Precautions
   1.1. Prevent trespass of workpeople and take precautions to prevent damage to adjoining property.
   1.2. Pay all charges.
   1.3. Remove and make good on completion or when directed.
2. Damage: Bear cost of repairing damage arising from execution of the Works.

630 Existing structures

1. Duty: Check proposed methods of work for effects on adjacent structures inside and outside the site boundary.
2. Supports: During execution of the Works:
   2.1. Provide and maintain all incidental shoring, strutting, needling and other supports as may be necessary to preserve stability of existing structures on the site or adjoining that may be endangered or affected by the Works.
   2.2. Do not remove until new work is strong enough to support existing structure.
   2.3. Prevent overstressing of completed work when removing supports.
3. Adjacent structures: Monitor and immediately report excessive movement.

4. Standard: Comply with BS 5975 and BS EN 12812.

640 Materials for recycling/ reuse

1. Duty: Sort and prevent damage to stated products or materials, clean off bedding and jointing materials and other contaminants.
2. Storage: Stack neatly and protect until required by the Employer or for use in the Works as instructed.

Ω End of Section

A35
Specific limitations on method/ sequence/ timing

Clauses

160 Use or disposal of materials

1. Specific limitations: All skips to be lockable.

170 Working Hours

1. Specific limitations: Between the hours of 7.00am - 7.00pm (Evening and Weekend Working available with arrangement through CA and LCC).

Ω End of Section

A36
Facilities/ temporary work/ services

Generally

110 Spoil heaps, temporary works and services

1. Location: Give notice and details of intended siting.
2. Maintenance: Alter, adapt and move as necessary. Remove when no longer required and make good.

Accommodation

230 Temporary accommodation

1. Proposals for temporary accommodation and storage for the Works: Submit two weeks prior to starting on site.
2. Details to be included: Type of accommodation and storage, its siting and the programme for site installation and removal.

Temporary works - No Amendments

Services and facilities - No Amendments

Ω End of Section

A37
Operation/ maintenance of the finished works

Generally

110 The building manual

1. Responsibility: The Contractor
2. Content: Obtain and provide comprehensive information for owners and users of the completed Works. Include an overview of the main design principles and describe key components and systems within the finished Works, so affording a complete understanding of the Works, including all buildings and their systems to enable efficient and safe operation and maintenance.
3. Specific requirements: Technical, warranty and H&S information.
4. Format: Hard copy and electronic
5. Number of copies: 2
6. Delivery to: Contract administrator by (date) before practical completion.

155 Content of the building manual

1. General: Details of the property, the parties, fire safety strategy, operational requirements and constraints of a general nature.
2. Building fabric: Design criteria, maintenance details, product details, and environmental and trafficking conditions.
3. Building services: Description and operation of systems, diagrammatic drawings, record drawings, identification of services, product details, equipment settings, maintenance schedules, consumable items, spares and emergency procedures.
4. Documentation: Guarantees, warranties, maintenance agreements, test certificates and reports.

160 Presentation of building manual

1. Format: A4 size, plastics covered, loose leaf, four ring binders with hard covers, each indexed, divided and appropriately cover titled.
2. Selected drawings needed to illustrate or locate items mentioned in the Manual: Where larger than A4, to be folded and accommodated in the binders so that they may be unfolded without being detached from the rings.
3. As-built drawings: The main sets may form annexes to the Manual.

Ω End of Section

A40
Contractor's general cost items: management and staff

Clauses - No Amendments

Ω End of Section

A41
Contractor's general cost items: site accommodation

Clauses - No Amendments

Ω End of Section

A42
Contractor's general cost items: services and facilities

Clauses - No Amendments

Ω End of Section

A43
Contractor's general cost items: mechanical plant

Clauses - No Amendments

Ω End of Section

A44
Contractor's general cost items: temporary works

Clauses - No Amendments

Ω End of Section

A50
Work/ products by/ on behalf of the employer

Clauses - No Amendments

Ω End of Section

A53
Work by statutory authorities/ undertakers

Clauses - No Amendments

Ω End of Section

A54
Provisional work/ items

Clauses - No Amendments

Ω End of Section

A55
Dayworks

Clauses - No Amendments

Ω End of Section

Specification created using NBS Chorus

7

Pre-Construction Information

gleeds

Reepham C. E. Primary School Classroom Works

Pre-Construction Information

Lincolnshire County Council
Gleeds Cost Management Ltd
NTBS3983

Version: 01
Date: March 2024

DOCUMENT CONTROL

Project name	**Reepham C. E. Primary School Classroom Works**	**Project number**	NTBS3983
Date of Issue	March 2024	**Version number**	01
Reason for issue	Tender		

Document author	Christopher Ross	**Grade**	Executive Surveyor
Contributors	Fiona Harmer	**Grade**	Assistant Building Surveyor
Approved by	Tom Shipmen	**Grade**	Senior Director
Security classification	N/A		
Distribution to	Tender Pack		
Related project documents	NTBS3983 Reepham C. E. Primary School– Tender Pack		

Contents

1

Pre-Construction Information

1.0 Introduction

1.1 Under the Construction (Design and Management) Regulations 2015 ('CDM 2015'), it is a requirement that clients provide Pre-construction Information ('PCI') as soon as is practicable to every Designer or Contractor appointed, or being considered for appointment, to the project.

1.2 Where there is more than one contractor, the Principal Designer should provide advice and help compile this PCI and provide it to the designers and contractors.

1.3 The CDM 2015 define PCI as information in the client's possession or which is reasonably obtainable by or on behalf of the client, which is relevant to the construction work and is of an appropriate level of detail and proportionate to the risks involved, including information about:

- The project;
- Planning and management of the project;
- Health and safety hazards, including design and construction hazards and how they will be addressed; and Information in any existing health and safety file.

1.4 This PCI has been developed from the pre-construction information provided by the Client, Designers and other parties involved with the project, and will be further developed throughout the pre-construction phase. All persons involved with the project will be made aware of the availability of this plan and its contents.

2

Duty Holders & Roles and Responsibilities

2.0 Duty Holders & Roles and Responsibilities

2.1 Duty Holders

2.1.1 The following are identified as duty holders under CDM 2015:

- Client;
- Principal Designers;
- Designers;
- Principal Contractors; and
- Contractors.

2.2 Client's Role and Responsibilities

2.2.1 The client is required to:

- Ensure that suitable arrangements are made by them for managing a project, including the allocation of sufficient time and other resources.
- Confirm that people and organisations appointed by them have the necessary skills, knowledge and experience to carry out the work in a way that secures health and safety.
- Ensure that the construction work can be carried out, so far as is reasonably practicable, without risks to the health or safety of any person affected by the project.
- Ensure that suitable welfare facilities are provided.
- Provide pre-construction information to every designer and contractor appointed or being considered for appointment.
- Ensure that the contractor or Principal Contractor prepares a Construction Phase Plan before construction begins.
- Where applicable, appoint in writing a Principal Designer and a Principal Contractor as soon as is practicable and before the construction phase begins. (Note that these roles default to the client if no appointments are made).
- Ensure that the Principal Designer prepares a Health and Safety File (for projects involving more than one contractor).

2.3 Principal Contractor's Role and Responsibilities

2.3.1 A Principal Contractor must be appointed where there is more than one contractor working on a project or where the project is notifiable. The Principal Contractor's duties are as follows:

- Plan, manage and monitor the construction phase and coordinate matters relating to health and safety during the pre-construction phase to ensure that, so far as is reasonably practicable, the project is carried out without risks to health or safety.
- Organise cooperation and coordination between contractors.
- Ensure that site inductions are provided.
- Prepare the Construction Phase Plan.
- Ensure that necessary steps have been taken to prevent access by unauthorised persons to the construction site.
- Ensure that suitable welfare facilities are provided throughout the construction phase.
- Liaise with the Principal Designer for the duration of the Principal Designer's appointment and share with them relevant information.
- Where the Principal Designer's appointment does not extend to the end of the project, hand over the Health and Safety File to the client.

2.4 Contractor's Role and Responsibilities

2.4.1 Contractors are required to:

- Confirm that the client is aware of the client's duties under CDM 2015.
- Plan, manage and monitor their own work and that of their workers.
- Comply with directions given by the Principal Designer and the Principal Contractor (when such appointments apply).
- Prepare the Construction Phase Plan (where there is no Principal Contractor).
- Check that any appointee has, or is in the process of obtaining, the necessary skills, knowledge, training and experience.
- Provide each worker under their control with appropriate supervision, instructions and information.
- Not begin work on a construction site unless reasonable steps have been taken to prevent access by unauthorised persons to that site.
- Ensure that suitable welfare facilities are provided.

2.5 All Parties

2.5.1 More generally, CDM 2015 imposes duties as follows on everyone involved in the project to:

- Be able to demonstrate they have the necessary health and safety skills, knowledge and experience to carry out the work.
- Co-operate with others involved with the project or any project on an adjoining site.
- Report instances where they or others are working in a way that puts them or anyone else in danger.
- Where they are required to provide health and safety information or instructions to anyone else, to ensure that this is easy to understand and is provided in a timely manner.

3

Project Description

3.0 Project Description

3.1 Location of the site(s) & Description of the Building(s)

3.1.1 Reepham C. E. Primary School
High Street
Reepham
Lincolnshire
LN3 4DP

Reepham C. E. Primary School is located off High Street in a residential area, in the village of Reepham. The Primary School is of traditional construction with a pitched slate roof to the front elevation with masonry brickwork in stretcher bond. Over the years the school has received various flat roof and pitched roof extensions. The building offers classrooms, toilet and kitchen facilities as well as a main hall and corridor areas. The works are limited to the corridor and classroom area. The works include the removal of the current ramp and accessible lift, removal of current storage cupboard and extension of current classroom boundary to provide more space to this area. The current timber and glazed partition will be removed and a new installed. Associated M&E works are to be undertaken.

The works are as indicated within the specification and schedule of works and associated drawings within the tender documents. The site will remain fully occupied during the course of the works.

3.2 Nature of the construction works

3.2.1 Works consist of the following:

- Removal of accessible lift and current timber ramp
- Removal of storage cupboard
- Removal of current classroom timber and glazed panel partition including fire door
- Decoration works
- M&E works
- Installation of new ramp
- New carpet flooring
- New classroom partition including fire door

3.3 Timescales for completion of the construction work

3.3.1 We have set out below an approximate timescale for the completion of the construction work. It should be noted that the contractor has been requested to submit with their tender an outline programme, including their lead-in time from instruction / contract award:

- Contract Award: April 2024 (indicative)
- Lead-in Period: 1-2 weeks
- Contract Period: 2-3 weeks

3.4 Timescales for completion of the construction work

3.4.1 The structure will be used as a Primary School. Works need to be undertaken from 01 April 2024 to the 20th May 2024 – 17th June 2024.

3.5 Project Directory

3.5.1 Employer (Client):

Name:	Lincolnshire County Council
Address:	Lincolnshire County Council
	County Offices
	Newland,
	Lincoln
	LN1 1YL
Contact:	Alison Toyne
Tel:	07501508466
Email:	Alison.Toyne@lincolnshire.gov.uk

3.5.2 Contract Administrator / Principal Designer:

Name:	Gleeds Cost Management Ltd
Address:	First Floor
	11 Station Street
	Nottingham
	NG2 3AJ

Contact:	Christopher Ross
Tel:	01159 977 8000
Mob:	07718 804331
Email:	christopher.ross@gleeds.com

3.5.6 Further information about the project team is contained in Section A10 – Project Particulars of the preliminaries within section 1 of the specification.

4

List of Existing Documents

4.0 Existing Record

4.1 List of Existing Documents

4.1.1 We have been provided with a number of existing documents, where present, these have been provided within the tender documentation.

Documents available include:

Asbestos Management Plan January 2021
NGED Safety Look Out Look Up Booklet
NGED Charging Structure
NGED Avoidance of Danger
Guidelines when working in vicinity of gas apparatus
NGED Webmap Letter and Guidance Notes
Sewerage Map
Line search confirmation
Gas Map
British Telecom Map
ESP Utilities Group Gas Map
NGED East Midlands Electric Map
Anglian Water – Water Map
Virgin Media – Cables Map
Cadent Gas – Gas network Map

5

Clients Considerations & Management Arrangements

5.0 Clients Considerations & Management Arrangements

5.1 Arrangements for planning and managing construction works

5.1.1 The arrangements for planning and managing the refurbishment work, and the effort devoted to planning and managing health and safety should be in proportion to the risks and complexity associated with the project i.e. working in occupied premises and working in secure areas, working at night and any noisy works.

5.1.2 The Clients health and safety goals for the project are:

1) No reportable accidents or incidents;
2) Managing construction safely especially with regard to protecting the building users from exposure to dust / deleterious materials and any other hazards / dangers etc.
3) Continued safe use of the existing facilities by staff and members of the public.

5.1.3 The Principal Contractor will be responsible for developing the Construction Phase Plan ('CPP'). The CPP will provide details of the arrangements for communication, coordination and the dissemination of health and safety information within the construction site. These arrangements will include appropriate site inductions for new personnel on site and visitors to the site.

5.1.4 Further information on the CPP is contained in Section 9 of this PCI.

5.2 Communication and liaison between clients and others

5.2.1 Communications throughout the project team are to be direct. The Contract Administrator is to be kept advised of all communications exchanged and information needed by the Project Team and is to be copied in all correspondence. The Principal Contractor is to advise via the construction phase plan, on the following communications for the duration of the works:

- Consultation with the workforce
- Liaison between parties on site
- Exchange of design information between designers, client and contractors.

5.3 Security of the site

5.3.1 The works are within an operational building (School). Overall building security is to be maintained, and liaison with School Management to ascertain protocols for contractor entry, deliveries and traffic management.

5.3.2 The work areas will need to be secured to prevent unauthorised access. The Principal Contractor must put in place procedures for signing in all personnel on the site.

5.4 Welfare provisions

5.4.1 The Principal Contractor is responsible for ensuring that suitable welfare facilities are provided on the site in accordance with the 13(4)(c) of the Construction (Design & Management) Regulations 2015. The welfare facilities should be sufficient enough to comply with the requirements of Schedule 2 and are to be provided throughout the construction phase, and these include provisions for:

- Sanitary conveniences (male and female).
- Washing facilities (hot and cold running water, soap, towels).
- Drinking water (and cups).
- Changing rooms and lockers (where special clothing or changing facilities are needed).
- Facilities for rest (tables, seating, kettle, meal preparation and eating area).

5.4.2 The principal contractor’s proposals for welfare facilities should be detailed in their CPP and locations set out on a site layout plan.

5.4.3 Subject to the principal contractor deeming them acceptable they may be permitted to use the existing on site welfare facilities.

5.5 Monitoring and review of health & safety performance

5.5.1 There should be regular progress meetings throughout the duration of the project, which shall include evidence to demonstrate to the Client that suitable monitoring and reviewing of health and safety performance is being implemented, in accordance with the Principal Contractor’s CPP.

6

Health & Safety of Client End Users & Employees

6.0 Health & Safety of Client End Users & Employees

6.1 Site Hoarding Requirements

6.1.1 Some work areas may need to be segregated from operational areas to ensure the safety of the occupants (if in School hours).

6.1.2 These arrangements are to be specified in the Construction Phase Plan. Where this is to be the case existing fire escape routes are to be kept clear.

6.2 Site transport arrangements of vehicle movement restrictions

6.2.1 The Principal Contractor will put into place procedures for managing the delivery and removal of materials from the site. To be confirmed at the pre-start meeting if adequate space can be made available for a skip(s) to facilitate the strip out and enabling works.

6.2.2 Roads, carparks, footpaths to be kept clean at all times.

6.2.3 Banksman to be used for all reversing of vehicles.

6.2.4 The Principal Contractor must put systems in place to ensure the safety of all vehicles and pedestrians using the building and surrounding area.

6.3 Clients permit-to-work systems

6.3.1 An agreement on issue of permit to work will be decided at site set up meeting if required.

6.4 Existing fire precautions and emergency procedures

6.4.1 The Principal Contractor will comply with the requirements of Regulation 32 (Fire detection and fire-fighting) of The Construction (Design and Management) Regulations 2015.

6.4.2 The Principal Contractor will comply with the requirements of Regulation 30 (Emergency Procedures) and Regulation 40 (Emergency routes and exits) of The Construction (Design and Management) Regulations 2015.

6.4.3 Existing fire and emergency precautions must be taken into account where the Contractor's working areas affects current egress routes. All undertaking on site should not affect current fire and emergency strategies.

6.4.4 The Principal Contractor is to plan and maintain fire access routes at all times for emergency vehicles.

6.4.5 The Principal Contractor must ensure that any necessary contacts with external services are arranged, particularly with regards to first aid, emergency medical care and rescue work.

6.4.6 The nearest accident and emergency hospital to the site is;

Lincoln County Hospital
Greetwell Road
Lincoln
Lincolnshire
LN2 5QY

6.5 "No-go" Areas or Other Authorised Requirements

6.5.1 The Principal Contractor is to ensure that access within the building is only within the areas designated for the refurbishment works. The Principal Contractor will be responsible for their personnel and the subsequent sub-contractors appointed.

6.6 Confined spaces

6.6.1 Works may be required within confined spaces.

6.7 Smoking restrictions

6.7.1 No smoking is permitted on-site.

6.8 Parking restrictions

6.8.1 Consideration should be given to ambulance access/egress. Main access/egress routes should be maintained for the use of emergency services at all times during the sites normal working hours.

6.8.2 Obstructing disabled parking bays is not permitted at any time during practice operating hours.

6.8.3 Existing local parking restrictions apply if vehicles are parked off away from the sites.

6.9 Clients rules for contractors

6.9.1 In addition to the restrictions specified in the ITT document the following Client rules will apply:

1. Site works will not commence until the emergency, fire, and first aid arrangements have been put in place.
2. Site works will not commence until the appropriate welfare arrangements have been put in place.
3. Construction activities will not be carried out without a documented safe system of working.
4. A documented lifting plan will be in place prior to any lifting activities; this will include arrangements for ensuring that lifting activities will not export any hazards to the areas adjacent to the site.
5. Flammable materials stored on site will be secured in appropriate containers at all times. Stored flammable materials will not be permitted to export any risks into the residential areas adjacent to the site.
6. A high standard of housekeeping will be maintained at all times. Waste will not be permitted to accumulate and will be removed from site at regular intervals. Waste will not be permitted to contaminate the public highway or the residential areas adjacent to the site. The burning of waste and rubbish on site is prohibited. If necessary, housekeeping arrangements will include measures to discourage vermin on site.
7. The Principal Contractor will put in place suitable arrangements to brief site personnel and visitors to the site about the hazards, safety precautions to be taken and the emergency procedures.
8. A high standard of conduct is required at all times; specifically
    - no horse-play;
    - no cat-calling; and
    - no use of inappropriate or coarse language in presence of members of the public.
9. Construction personnel will be properly dressed at all times.
10. Illegal drugs and alcohol are not permitted on site, anyone caught bringing these to site will be banned from the site.

7

Environmental Restrictions & Existing On-Site Risks

7.0 Environmental Restrictions & Existing On-Site Risks

7.1 Boundaries and access including temporary access

7.1.1 Entrance to the site is via High Street.

7.2 Restrictions on deliveries, waste collection or storage

7.2.1 Principal Contractor to refer to the Building Management regarding restrictions on deliveries, waste collection and storage.

7.2.2 Deliveries and waste disposal must not impede the operations of staff. Please liaise with the local authority.

7.3 Current use of the site

7.3.1 Live, primary school.

7.4 Previous use of the site

7.4.1 Unknown.

7.5 Adjacent land uses

7.5.1 Residential properties.

7.6 Noisy Working Restrictions

7.6.1 The main contractor must plan for any noisy works with the building manager. Any noisy works are to be undertaken outside of working hours.

7.6.2 The main contractor must comply with local statutory restrictions on noisy works.

7.7 Existing storage of hazardous materials

7.7.1 To be confirmed at pre-start meeting.

7.8 Existing services

7.8.1 Contractors are to ensure that all relevant isolation points, fuse boards, and water stop cocks are located prior to commencement of works.

7.9 Ground conditions and contaminated land

7.9.1 The areas around the site are hard landscaped tarmacked areas. No ground investigation records or records of previous contamination are available.

7.10 Information about existing structures

7.10.1 No information has been provided to us in relation to the existing structure.

7.11 Previous structural modifications

7.11.1 No information has been provided to us in relation to previous structural modifications.

7.12 Fire damage, ground shrinkage or movement

7.12.1 None known.

7.13 Difficulties relating to plant and equipment

7.13.1 No information has been provided to us in relation to electrical and mechanical layouts.

7.14 Asbestos

7.14.1 The Asbestos Management Surveys January 2021 will be provided by the client to all parties prior to any works being undertaken on site.

The contractor is to review current asbestos documents. The contractor is to undertake a targeted R&D survey prior to works starting.

During the works, site operatives should remain vigilant for the presence of potential ACMs and should suspect materials be encountered they should be referred to a competent asbestos surveyor for appraisal.

7.15 Health risks from clients activities

7.15.1 No health risks from the client's activities have been identified.

7.16 Manual handling

7.16.1 The Contractor should ensure that manual handling training has been undertaken by site operatives. Materials being moved along busy public areas, corridors, car parks, etc, must be escorted by a trained banksman. Where possible materials and equipment must be wheeled to the rather than carried.

7.17 Working at height

7.17.1 All working at height will should be managed in accordance with the Work at Height Regulations 2005.

7.17.2 All work at height to be risk assessed and control measures put in place to prevent falls from height.

7.17.3 All work at height to be done from safe working platforms with adequate edge protection and fall restrain harnesses as necessary.

7.18 Covid-19 Precautions

Contractors must take precautions during the ongoing Covid-19 pandemic with restrictions expected to reduce the risk of further outbreaks for some time. Please note that this advice is for guidance only, is not exhaustive and will be subject to continual review, it reflects good standards of good hygiene and the latest advice from the UKs public health bodies.

7.18.1 Workers should not come to site if they display symptoms of COVID-19. If symptoms are detected they should notify their employer and self-isolate for two weeks.

7.18.2 Onsite work should not take place if it is non-essential that requires close contact or skin-to-skin contact between workers.

7.18.3 A staggered schedule in all areas of operation is a key measure that sites should take to minimise any contact between operatives on site. This applies to arriving and leaving the site, as well as for changing rooms and lunch breaks.

7.18.4 Non-essential visitors should not be allowed to site. Fingerprint scanners and similar touch-based entry systems should be disabled.

7.18.5 Face-to-face meetings should only include “absolutely essential” participants, who should remain two metres apart at all times.

7.18.6 Canteens are an area where large groups of workers often gather on sites, and these will have to drastically change the way they operate. Workers should sit at least two metres apart from each other when eating. Employers should ask employees to bring in their own pre-prepared meals and refillable drinking bottles, and where catering is provided on site, food should be wrapped up.

7.18.7 All areas where possession has been taken of a site(s) should be thoroughly.

7.18.8 Reusable PPE should be thoroughly cleaned after use and not shared between workers. Single-use PPE should be disposed of after use.

8

Significant Design & Construction Hazards

8.0 Significant Design & Construction Hazards

8.1 Significant design assumptions

8.1.1 It has been assumed that the majority of the works will take place during out of hours and weekend working (Easter School Holidays) however should works be undertaken during normal working hours it should be noted that the building proposed for works will be fully operational for the whole period of the works. A suitable and sufficient phasing plan is to be developed and implemented, ensuring that fire escapes are not compromised and are signed accordingly.

8.2 Design co-ordination

8.2.1 Arrangements to facilitate on-going communication and liaison between all design parties will be established by the principal contractor. Progress meetings are to be held at regular intervals throughout the duration of the project. The meetings will cover developing issues and changes required during the construction phase.

8.3 Significant risks identified during design

8.3.1 The following significant risks have been identified:

- Carrying out works in an operational building/vulnerable persons
- Working at height
- Large vehicles on an operational site.
- Building users may need to pass through works area as part of fire escape routes.
- Loading of existing temporary building (to be confirmed as part of contract works)
- COVID 19 measures in operation

8.3.2 The following potentially dangerous work sequences have been identified:

- Unloading materials,
- Lifting operations,
- Dust control,
- Working adjacent to public and private properties,
- Traffic control both on and beyond the site,
- Means of escape during construction.
- Electrical works

8.3.3 Commonplace site hazards not identified above are considered to be within the expertise of a competent contractor and must be controlled by normal good site management practice.

8.4 Materials & Use of materials requiring particular precautions

8.4.1 The following list of materials has been identified as requiring particular attention or precautions:

- Storage of gas cylinders – fire and explosion,
- Hot works – burns,
- Plumbing works – solvents for welding, naked flames for welding, flux for preparation of joints, rust inhibitors, cleaning solutions within heating, hot and cold-water supplies, comfort cooling system – fumes, fire, skin irritation,
- Working with lead, Handling and cutting of all timber and board materials – splinters, dust, irritation,
- Handling and cutting of materials producing sharp edges – cuts,
- Use of paints – fumes,
- Use of solvents – fumes,
- Use of adhesives, grouts, expanded foam etc – fire, fumes, skin irritation,
- Use of lagging and mechanical tools – shocks, noise, dust, fumes,
- Use of pneumatic tools,
- Use of percussion tools,
- Use of mortar, concrete, cement, use of powdered materials, generally – dust and skin irritation.
- Handling of refrigerant gases

9

Construction Phase Plan

9.0 Construction Phase Plan

9.1 The contractor or, where there is more than one contractor, the Principal Contractor, must draw up or make arrangements for a Construction Phase Plan to be drawn up during the pre-construction phase, and before setting up a construction site. The plan must address health and safety issues as work proceeds. The plan will take into account the pre-construction information provided by the client and should include:

- A description of the project such as key dates and details of key members of the project team.
- The health and safety aims for the project.
- Phasing programme – in and out of hours working
- Arrangements to ensure cooperation between project team members and coordination of their work, e.g. regular site meetings.
- COVID measures for contractors and sub-contractors
- Arrangements for involving workers.
- Site induction and site rules
- Welfare facilities.
- Fire and emergency procedures.
- Site security.
- The control of any specific high-risk site matters (including those listed in Schedule 3 to CDM 2015) where they are relevant to the work involved. 9.2 The HSE draft guidance states that the plan should not include documents that get in the way of a clear understanding of what is needed to manage the construction phase, such as generic risk assessments, records of how decisions were reached or detailed safety method statements.

10

The Health & Safety File

10.0 The Health & Safety File

10.1 Where a project involves more than one contractor, the Principal Designer must prepare a Health and Safety File and hand it over to the client at the end of the project, or to the Principal Contractor where the Principal Designer's appointment does not extend to the end of the project.

10.2 The Health and Safety File is defined as a file appropriate to the characteristics of the project, containing relevant health and safety information to be taken into account during any subsequent project.

10.3 The file must contain information about the current project that is likely to be needed to ensure health and safety during any subsequent work such as maintenance, cleaning, refurbishment or demolition. When preparing the health and safety file, information on the following should be considered for inclusion:

- A brief description of the work carried out.
- Any hazards that have not been eliminated through the design and construction processes, and how they have been addressed (e.g. surveys or other information concerning asbestos or contaminated land).
- Key structural principles (e.g. bracing, sources of substantial stored energy including pre or post-tensioned members) and safe working loads for floors and roofs.
- Hazardous materials used (e.g. lead paints and special coatings).
- Health and safety information about equipment provided for cleaning or maintaining the structure.
- The nature, location and markings of significant services, including underground cables, gas supply equipment, fire-fighting services, etc.
- Information and as-built drawings of the building, its plant and equipment.

10.4 The HSE's CDM 2015 guidance says that, as the project progresses, the client must ensure that the Principal Designer regularly updates, reviews and revises the health and safety file to take account of the work and any changes that have occurred.

10.5 The client must then retain the file and ensure that it is available to anyone who may need it for as long as it is relevant - normally the lifetime of the building - to enable them to comply with health and safety requirements during any subsequent project. It can be kept electronically, on paper, on film, or in any other durable form.

10.6 If a client disposes of their interest in the building, they must provide the file to the individual or organisation who takes on the client duties and ensure that the new client is aware of the nature and purpose of the file. If they sell part of a building, any relevant information in the file must be passed or copied to the new owner. If the client leases out all or part of the building, arrangements should be

made for the file to be made available to leaseholders. If the leaseholder acts as a client for a future construction project, the leaseholder and the original client must arrange for the file to be made available to the new Principal Designer.

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