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Specification

For the

Proposed Remodelling and Extensions

at

Wivenhoe Town Council Offices,
77 High Street, Wivenhoe, CO7 9AB

Project Ref: 3550
Document Ref: TI-SPEC
Revision: -
Date: October 2022
Written By: IJ

PART 1 PRELIMINARIES

1 Firm Price

a The Contractor is required to submit a FIRM PRICE TENDER based on the tender documentation and no adjustment will be made to the Contract Sum in respect of any fluctuations in the prices of Labour or Materials.

2 Employer

a The term "The Employer", used in the documents shall mean Wivenhoe Town Council, 77 High Street, Wivenhoe, Essex, CO7 9AB. Tel: 01206 822864.

3 Architect

a The term "The Architect", used in the documents shall mean Duncan Clark and Beckett, 12a William's Walk, Colchester, Essex, CO1 1TS. Tel: 01206 578732.

4 CDM Co-ordinator

a The term "CDM Co-ordinator", used in the documents shall mean Daniel Connal Partnership, 780 The Crescent, Colchester Business Park, Colchester, Essex, CO4 9YQ. Tel: 01206 751284.

5 Structural Engineer

a The term "The Structural Engineer", used in the documents shall mean Morgan Engineering Consultants, Innovation Centre, Knowledge Gateway, Boundary Road, Colchester, CO4 3ZQ. Tel: 01206 259360.

6 Contractor

a The term "The Contractor", shall mean the individual or firm or Company undertaking the Works and shall include the legal personal representatives of such individual or the persons comprising such firm or Company and the permitted assignee of such individual or firm or company.

7 Visit Site

a The Contractor should in his own interest visit the site and satisfy himself as to the local conditions, accessibility, available working and storage space, supply of and conditions affecting labour and materials, nature of the ground and the full extent and nature of the operations and any other matters relating. Do not use the site for any purpose other than carrying out the works.

b The Contractor will be deemed to have complied with this clause and no claim will be entertained for non-compliance. The Contractors attention is drawn to the close proximity of the adjoining properties and working in close proximity with the general public. The Contractor is to arrange an appointment to view the property with the town clerk, Jo Beighton-Emms. Tel: 01206 822864. Email: townclerk@wivenhoe.gov.uk

8 Extent of Works

a The works comprise but is not limited to the remodelling and extension of the existing offices to form new council offices at ground floor level and a separate office at first floor level, including refurbishment of existing walls, floor and ceiling finishes, electrical and mechanical services installations and drainage alterations.

e The Contractor must make full allowance within his Tender to execute all works and builders work in connection to a high standard. Variation claims due to lack of knowledge about the installation described, the existing occupied properties, etc., will not be accepted. The Contractor must visit site whilst compiling his Tender and make full allowance for, but not limited to:

Protection and careful man-handling of existing fixtures and fittings.
Removal of existing services, and making good to match existing
Sequence of works and programming
Access arrangements, and informing the occupants of all planned works with a minimum 5 working days notice

9 Contract Definitions

a The Project shall mean the whole of the main project works.

b The Tenderer shall mean any Firm or Company who submits a Tender for the execution of the Works specified herein.

c The Works shall mean the supply, delivery, Installation, erection, setting to work, testing and commissioning of the Works as described in the Specification and/or shown or complied on the Tender Drawings or Schedules referred to herein.

d Concealed shall mean hidden from normal sight within enclosed duct spaces, shafts, ceiling spaces, walls, partitions.

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e Exposed shall mean visible to the building components.

f Provide shall mean supply, install and connect complete.

g Install shall mean install only.

h Working Plans & Drawings shall mean documents prepared by the Sub-Contractor for Construction purposes and approved by the Architect / Services Consulting Engineers.

i Approved by or Approval of shall mean approved by or to the approval of the Architect and Services Consulting Engineer.

10 Form of Contract

a The form of contract is to be the Intermediate Building Contract with Contractors Design 2016 edition issued by the Joint Contracts Tribunal including all latest revisions and subject to any initialled amendments in the signed Articles of Agreement and/or the Conditions of Contract.

b The Tenderer is to allow to include for alterations of these conditions as briefly referred to hereunder.

Conditions:

Fourth Recital - Employer's Requirements	Contract drawings and specifications
Sixth Recital - Contractor's Proposals	To be provided by Contractor
Sixth Recital - CDP Analysis	Specification sections identified as 'Contractor designed works'
Eighth Recital - Construction Industry Scheme	Employer at the Base Date is a 'contractor for the purposes of the CIS.
Tenth Recital - CDM Regulations	The project is notifiable
Thirteenth Recital - Supplemental Provisions	Collaborative working applies
	Health and safety applies
	Cost savings and value improvements applies
	Sustainable development applies
	Performance Indicators and monitoring does not apply
	Notification and negotiation of disputes does not apply

2.23.2 Liquidated damages shall be £1,000.00 per week or part thereof
2.30 Rectification Period shall be 12 months from the date of practical completion for all Works
2.34.3 Contractor's Designed Portion liability for loss of use etc. shall be £500,000.00
4.3 and 4.9 Fluctuations Provision: No Fluctuations Provision applies
4.7 Advance payment does not apply
4.7 Advance payment bond is not required
4.9.1 Confirm Interim payments is 95% before practical completion and 97 ½% after practical completion
6.4.1 Confirm Contractor's Public Liability insurance to be £2,000,000 for any one occurrence or series of occurrences arising out of one event
6.5.1 Confirm Insurance liability of Employer is required to be £2,000,000 for any one occurrence or series of occurrences arising out of one event
6.7 and Schedule 1 Insurance of the Works confirm Insurance Option A applies and percentage to be 15%. Where insurance Option A applies and cover is to be provided under the Contractor's annual policy, the annual renewal date is to be advised by the Contractor
6.15 The Joint Fire Code does not apply
6.19 Contractor's Designed Portion (CDP) Professional Indemnity Insurance to be £2,000,000 for any one occurrence or series of occurrences arising out of one event
6.19 Cover for pollution and contamination claims is not required
6.19 Confirm expiry of required CDP Professional Indemnity Insurance shall be 12 years
7.2.1 A Performance bond is not required
7.2.2 Guarantee from Contractor's parent company is not required

11 Tenders

a Tendering procedure will be in accordance with the principles of the 'Code of Procedure for Single Stage Selective Tendering' 1994. If the Contractor cannot tender for any part(s) of the work as defined in the tender documents he must inform the Architect as soon as possible, defining the relevant part(s) and stating the reasons for his inability to tender.

b The Employer and his representatives offer no guarantee that the lowest or any tender will be recommended for acceptance or accepted and will not be responsible for any cost incurred in the preparation of any tender.

c Tenders are to remain open for acceptance within three months from the date of receipt of Tenders, after which period they shall be subject to confirmation. 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.

d Alterations and qualifications to the specification must not be made without the written consent of the Architect. Tenders containing unauthorised alterations or qualifications may be rejected. Costs relating to items in the specification which are not priced will be deemed to have been included elsewhere in the tender. Pricing shall be in BLACK INK to enable fair photocopies to be made.

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e It is to be understood by all persons tendering that on no account will the amount of the Tender (or contract sum) be altered by reason of arithmetical errors in pricing which may have been made by the Contractor in the preparation of his tender. Responsibility for the accuracy and completeness of the quantities and descriptions will rest with the Tenderers and no adjustment will be made in the tendered price in respect of any alleged inaccuracies. The exclusion of any item in the Schedule will not relieve the Contractor of any obligation under the Specification or Drawings.

f A statement must be submitted with the tender describing the organisation and resources which the contractor proposes and undertakes to provide to safeguard the health and safety of operatives, including those of subcontractors and of any person who may be affected by the works, including:

i A copy of the contractors health and safety policy document, including risk assessment procedures.
ii Records of previous Health and Safety Executive enforcement action.
iii Records of training and training policy
iv The number and type of staff responsible for health and safety on this project with details of their qualifications and duties.
v Accident and illness records for the past five years.

g The Tenderer will be deemed to have visited the site and to have taken into consideration all local and existing conditions and prevailing trade and National Agreements relating to employment of labour and the rates and prices included by the Tenderer in the Tender and shall be inclusive of all establishment charges and profit, fares and out-of-town allowances, travelling times and any other charges arising out of the possible lack of accommodation in the immediate vicinity of the site.

h The Specification and Tender Drawings shall be read conjointly, and the Tenderer shall, before submitting his Tender, draw the Architects attention to any discrepancies which may appear between the Documents and/or Drawings and to anything which, in his opinion, may be unsuitable, undesirable or inconsistent with his guarantees and responsibilities.

i No claim will be entertained by the Architect for additional payments which may be required by the Contractor in respect of contingencies which, in the opinion of the Architect, arise out of the failure of the Tenderer to acquaint himself thoroughly with the details of the work or the working conditions before the submission of his Tender.

12 Equivalent Products

a Where the specification permits substitution of a product of different manufacture to that specified and such substitution is desired, before ordering the product notify the Architect and, when requested, submit for verification documentary evidence that the alternative product is equivalent in respect of material, safety, reliability, function, compatibility with adjacent construction, availability of compatible accessories and, where relevant, appearance. Submit certified English translations of any foreign language documents.

b Any proposal for use of an alternative product must also include proposals for substitution of compatible accessory products and variation of details as necessary, with evidence of equivalent durability, function and appearance of the construction as a whole. If such substitution is sanctioned, and before ordering products, provide revised drawings, specification and manufacturer's guarantees as required by Architect.

c Wherever products are specified by proprietary name and the phrase 'or equivalent' is not included, it is to be deemed included. However, where makes of materials or equipment are specified the tender must be based on these, alternative makes will not be accepted at the time of tendering.

13 Parking

a Parking on site will only be allowed for the Contractors principle operatives and all access routes must be kept clear at all times. The Contractors allowed working area is indicated on the site plan.

14 Access to and possession or use of the site

a The Contractors access to the site may be via the access to the front and rear of the property. The Contractor's attention is drawn to the fact that these are public highways and the footpaths must be kept clean, safe and free from obstruction at all times. Contractors must allow for partial use only of the car park for working space and storage. The Contractor is to provide a plan indicating his work areas at Tender stage, and describe how access will be maintained for others.

b The Contractor shall be granted possession of the site and he will be required to demarcate and provide protection with temporary fencing or boardings to inhibit unauthorised access to the site by others and unauthorised trespass onto other areas of the site by operatives working on site. Any work required to be undertaken outside the site will be permitted only by prior authorisation and arrangement with the Architect. Unloading, storing, hoisting and distribution of all materials for the Works will be executed by the Contractor, who shall provide all necessary locked storage, labour to unload, necessary equipment to hoist and move materials within site.

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c The Contractor shall confine all activities to the site taken into possession for the purposes of executing the works with the exception of the work necessary to undertake service and sewer connections and external works. The site shall be used only for the purposes of carrying out the works.

d The Contractor will not be permitted to enter any adjoining building except as absolutely necessary to execute the works and only by prior arrangement with the Architect and Employer.

e The works shall be undertaken in such a manner to secure the safety and freedom of the public, adjoining owners and tenants, persons using the existing and adjoining premises, persons employed on the site and all other persons from injury or inconvenience.

f The Contractor is required to take particular care and allow for all necessary temporary works in order to maintain safe vehicular and pedestrian routes at all times. The Contractor shall comply with the requirements of the Local Authorities and the police with regard to the delivery, unloading and clearing away of plant, materials etc.

g The Contractor shall protect all existing buildings, roads, pavings, grassed areas, other surfaces, fences, wall channels, drains, water courses, trees and shrubs adjacent to the site and any damage nevertheless occurring is to be made good to the satisfaction of the Architect at the Contractor's expense.

h The Contractor shall in conjunction with the Architect and such third party as may be appropriate, prepare and agree a photographic and written record as a schedule of condition of the existing building and the boundary walls, fences, road, kerbs, pavements etc., adjacent to the site before any building work commences.

i Any sand, gravel, stone or ballast etc. found on the site is to remain the property of the Employer. No such materials arising shall be reused in the new work without the written sanction of the Architect.

15 Working hours

a The Contractor will be expected to limit working hours of all operatives employed upon the works to times between 0800 and 1800 hours on Mondays to Fridays and between 0800 and 1200 hours on Saturdays. Should the Contractor wish operatives to work outside these hours he must first obtain permission in writing from the Architect, specifying time, types and locations of work to be done. Concealed work executed during overtime for which notice has not been given may be required to be opening up for inspection and reinstated, at the contractors expense.

16 Watching & lighting

a Allow for all necessary watching and lighting protection of materials from theft or damage including works, materials and plant.

17 Temporary lighting and Power

a Allow for providing all temporary lighting and power required for the carrying out of works and for installing all temporary wiring, fittings, electric meter etc.

b Free use of the existing electricity supply for the purposes of the works only will be allowed subject to prior agreement with the Employer as to the location of point of the supply.

18 Water for the works

a Allow for providing clean water for the whole of the works. Provide all temporary plumbing, storage, etc.

b Free use of the existing water supply for the purposes of the works only will be allowed subject to prior agreement with the Employer as to the location of point of the supply.

19 Meter Readings

a Where charges for services need to be apportioned, ensure that meter readings are taken by relevant authority at possession and / or completion as appropriate. Ensure that copies of readings are supplied to interested parties.

20 Plant

a Allow for providing all implements, tools, plant, working platforms etc., necessary for the proper execution of the works.

21 Maintain Live Services

a The Contractor shall protect, uphold and maintain all public and private services including pipes, ducts, sewers, service mains, overhead cables, etc. during the execution of the works. The Contractor is to make good any damage due to any cause within his control at his own expense or pay any costs or charges in connection therewith. Any work carried out to, or which affects new or existing services must be in accordance with the Bye Laws or Regulations of the relevant Statutory Authority.

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b The Contractor shall notify all service authorities and / or adjacent owners of the proposed works not less than one week before commencing site operations.

c Before starting work the Contractor is required to check positions of existing services. Where positions are not shown on drawings he is to obtain relevant details from service authorities or other owners. Service authority's recommendations for work adjacent to existing services must be observed.

d The Contractor must adequately protect and prevent damage to all services and not interfere with their operation without the consent of the service authorities or other owners. If any damage to services results from the execution of the Works, the Contractor shall notify the Architect and appropriate service authority without delay and make arrangements for the work to be made good without delay to the satisfaction of the service authority or other owner as appropriate. Any measures taken by the Architect to deal with an emergency will not affect the extent of the Contractor's liability.

e The Contractor must replace any marker tapes or protective covers disturbed during site operations to the service authority's recommendations.

f All excavation works shall be carried out with reasonable care and any existing unforeseen services encountered brought to the immediate attention of the Architect.

g The Contractor shall maintain live services to adjoining buildings and neighbouring properties at all times, including providing any temporary diversions / extensions etc. and allow for the disconnecting and reconnecting of services are necessary to carry out the construction of the new works.

22 Protection/Security

a Allow for covering up and protecting any works during frosty or inclement weather or from any other cause, and for reinstating any work so damaged to the satisfaction of the Architect. He is also required to prevent the work from becoming wet or damp where this may cause damage, dry out the works thoroughly and control the drying out and humidity of the works and the application of heat to present;

Blistering and failure of adhesion.
Damage due to trapped moisture.
Excessive movement.

Use all reasonable and suitable building aids and methods to prevent, or minimise, delays during adverse weather conditions.

b Store all materials as manufacturers instructions, keep different types and grades of products separately and adequately identified. Keep products in their original wrappings, packings or containers until immediately before they are used. Wherever possible retain protective wrappings after fixing and until shortly before practical completion.

c Adequately safeguard the site, the Works, products, materials, plant, and any existing buildings affected by the Works from damage and theft. Take all reasonable precautions to prevent unauthorised access to the site, the Works and adjoining property.

23 Noise / Portable radios etc.

a Comply generally with the recommendations of BS 5228-1, Clause 9.3 for minimising noise levels during the works. Noise levels from the works are to be kept below 85dB when measured from site boundary. Fit all compressors, percussion tools and vehicles with effective silencers of a type recommended by manufacturers of the compressors, tools or vehicles.

24 Rubbish

a Remove all rubbish, dirt and residues from voids and cavities in the construction before closing in. Allow for carting away all rubbish and materials from time to time as necessary or as directed by the Architect to keep the site and works clean and tidy and for leaving the site finally clear and tidy.

25 Road and Top Soil Maintenance and Protection

a Allow for making good, at the Contractors own expense, any damage to roads and footways whether public or private and caused by or attributable in any way to the cartage of plant or materials and indemnify the Client against loss or damage or claims by the Local Authority or others for damage to roads, paths, etc., by reason of unusual traffic or other causes.

b Keep all roads and paths clear of mud and debris at all times. The Contractor shall ensure that surplus materials, sub-soil or rubbish arising from the works is carried away in adequate vehicles or containers so constructed and loaded to prevent leakage or spill. Any leakage or droppings shall be immediately cleared from the private and public footpath or highways etc. by the Contractor at his own expense.

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c Protect existing topsoil and subsoil from overcompaction 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. Agree extent of reinstatement with the Architect and bear any costs arising.

26 Sheds

a Provide and erect all necessary sheds, messrooms, latrines, etc., and clear away at completion. Confirm at tender stage how these facilities will or will not be provided.

27 National Health and other Insurances

a Provide for all liabilities under the National Insurance Acts, Employers Liability and third Party Insurances. The successful contractor will be required to produce independent evidence of insurance cover for the duration of construction period.

b Before starting work on site, submit documentary evidence and / or policies and receipts for the insurances required by the conditions of contract. If any event occurs which may give rise to any claim or proceeding in respect of loss or damage to persons or property arising out of the works, forthwith give notice in writing to the employer, the Architect and the insurers. Indemnify the employer against any loss which may be caused by failure to give such notice.

28 Holidays with pay

a Provide for all the expenses incurred under the Holiday with Pay and Paid Public Holiday Scheme.

29 Control of Pollution Act 1974

a The attention of the Contractor is drawn to the provisions of Section 60 of the Control of Pollution Act 1974 with reference to the Control of noise in relation to any demolition or construction works and the need particularly where a high sensitivity to noise may be anticipated. No instructions issued to the Contractor by the Architect or his authorised representative shall relieve the Contractor from compliance with the Control of Pollution Act 1974. Take all necessary precautions to prevent nuisance from smoke, dust, rubbish, vermin and other causes.

30 Protect against Fire

a No smoking or burning will be allowed within the premises. Take all necessary precautions to prevent personal injury, death, and damage to the Works or other property from fire. Comply with Joint Code of Practice 'Fire Prevention on Construction Sites' published by the Building Employers Confederation, the Loss Prevention Council and the National Contractors' Group.

31 Asbestos based materials

a Report immediately to the Architect any suspected asbestos based materials discovered during demolition / refurbishment work. Avoid disturbing such materials. Agree with the Architect methods for safe removal or encapsulation.

32 Existing features/Interiors

a Prevent damage to existing buildings, fences, gates, walls, roads, paved areas and other site features which are to remain in position during the execution of the Works.

b Protect building interiors exposed to the weather during the course of alteration work with temporary enclosures of sufficient size to permit execution of the work and which will remain weathertight in severe weather.

c Prevent damage to any furniture, fittings or equipment left in the existing property. Move as necessary to enable the Works to be executed, cover and protect as necessary and replace in original positions.

33 Waste Management

a The contractor is to fully comply with the Environmental Protection Act 1990 which prohibits the keeping, treating and disposing of any controlled waste, unless a waste management license is in force. Section 34 of the Environment Protection Act 1990 states that waste should be stored safely and securely in order to prevent pollution or harm to anyone. The waste should be only transferred to an authorised person. This could be a registered waste carrier or to a suitably permitted or exempt waste management facility. The waste should be described in writing by filling in and signing a waste transfer note for the waste. Copies of these notes should be retained for two years. Waste should not be burnt on site.

b The demolition of buildings can uncover waste items that may be classed as hazardous in character and these must be handled in accordance with the hazardous waste regulations 2005, and segregated from all other wastes once analysed as part of the waste acceptance criteria rules and procedures regarding disposal of hazardous wastes.

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c For projects with a build cost of more than £300,000.00 it is a legal requirement to have a site waste management plan (SWMP) prepared and on site before work is commenced. The contractor is to comply with all clauses as necessary.

d Compliance with the above does not exclude the contractor from complying with all other relevant legislation and all other aspects of environmental legislation, such as water quality.

34 Safety Regulations

a Allow for complying with all current regulations regarding Safety of Persons and Property including Health and Safety at Work Act, 1974. Including any amendments thereto and for granting access to and assisting an Officially Authorised person in ensuring reasonable safety precaution and safeguards for all persons engaged upon or adjacent to the premises at which the work is being carried out. The Contractor, using portable electronically operated appliances or temporary electrical installations of any kind on the site, must ensure that such appliances or installations are provided with proper cords and fused plugs and comply in all respects with the requirements of the Factories Act, the Building (Safety, Health and Welfare) Regulations and the Institution of Electrical Engineering Regulations for Electrical Installations (latest edition). Failure to do so will result in the Contractor being held financially responsible for the repair of any resulting damage liable for injury so caused to site personnel.

b Risks To Health & Safety: In addition to complying with statutory requirements use plant, scaffolding, products, methods of work and protective measures which will minimise health and safety hazards.

c Provide all necessary personal protective equipment to ensure safety of all persons either working on or visiting the site, include for providing all equipment to carry out the works to best practice and provide all warning signs, competency certificates and gain all permits to work as required. Provide all access platforms etc. for the carrying out of the work. Particular care shall be exercised by the Contractor to protect all persons using the existing premises on or adjoining the site and the Contractor shall at all times maintain adequate fire precautions and exit routes.

d Construction (Design & Management) Regulations 2015: The Contractor shall accept the appointment of Principal Contractor for the project and undertake all responsibilities of the Project Supervisor under the CONDAM Regulations in relation to the execution stage and responsibilities of the execution stage co-ordinator.

e All requirements of the Health and Safety Executive and the CDM Regulations are to be complied with. Tenders will be deemed to include all related costs.

f A Hazard Identification for this project is attached to this specification.

g All of the hazards and requirements are to be controlled by the application of good site management practices. The accuracy and sufficiency of this information is not guaranteed by the Employer or the Architect and the Contractor must ascertain for himself any information he may require to ensure the safety of all persons and the Works.

h The Contractor must accept responsibility for the stability and structural integrity of the Works during the Contract, and support as necessary. Overloading shall be prevented.

i Non-compliance with the requirements of the First Stage and pre-Tender Health and Safety Plan on the part of the Contractor, as Principal Contractor, will not form grounds for an extension of time or for claiming loss and expense or in any way affect the period stated (if any) of Deferment of the Date of Possession in the form of Contract to be executed between the Employer and the Contractor.

j The Contractor shall not commence any construction work (as defined in the said Regulations) associated with the Works until receipt of a written notice from or on behalf of the Client named in the notice given to the Executive under regulation 7 of the Regulations stating that the Client is satisfied with the adequacy and sufficiency of the Health and Safety Plan for the project and that construction work may commence.

k From the start of the construction work on site, the Contractor shall, as Principal Contractor:

1 Comply with the Regulations.

2 Be responsible for and implement the Health and Safety Plan, including any amendments required thereto to keep it up to date during the construction phase.

3 Co-operate fully with the CDM Co-ordinator, including the prompt provision of information for incorporation in the Health and Safety File.

Health and Safety Information

l Unless previously completed, the Contractor will be required to submit with his tender a statement describing the organisation and resources which the Contractor proposes and undertakes to provide to safeguard the health and safety of operatives including those of sub-contractors and of any person who may be effected by the works including;

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a) A copy of the Contractor's health and safety policy documents, including risk assessment procedures.

b) Accident and illness records for the past five years.

c) Records of previous Health and Safety Executive enforcement action.

d) Records of training and training policy.

e) The number and type of staff responsible for health and safety on this project with details of their qualifications and duties.

m An Outline Construction Phase Health and Safety Plan must be submitted within two weeks of request and will include the following:

a) Method statements related to the hazards identified in the pre-tender health and safety plan and / or statements on how the hazards will be addressed and other significant hazards identified by the Contractor.

b) Details of the management structure and responsibilities.

c) Arrangements for issuing health and safety directions.

d) Procedures for informing other Contractors and employees of health and safety hazards.

e) Selection procedures for ensuring competency of other contractors, the self-employed and designers.

f) Procedures for communications between the project team, other contractors and site operatives.

g) Arrangements for co-operation and co-ordination between contractors.

h) Procedures for carrying out risk assessment and for managing and controlling the risk.

i) Emergency procedures including fire precautions.

j) Arrangements for ensuring that all accidents, illness and dangerous occurrences are recorded.

k) Arrangements for welfare facilities.

l) Procedures for ensuring that all persons on site have received relevant health and safety information and any training.

m) Arrangements for consulting with and taking the views of people on site.

n) Arrangements for preparing site rules and drawing them to the attention of those affected and ensuring their compliance.

o) Monitoring procedures to ensure compliance with site rules, selection and management procedures, health and safety standards and statutory requirements.

p) Review procedures to obtain feedback.

35 Foreman

a A competent Site Foreman is to be kept on site in charge of the works at all times up to the date of practical completion and be responsible at all times, and no diversion to other sites will be tolerated. The Contractor must accept responsibility for co-ordination, supervision and administration of the works, including all sub-contracts, arrange and monitor a programme with each subcontractor, supplier, Local Authority and statutory undertaker, and obtain and supply information as necessary for co-ordination of the work.

36 Climate Control

a Keep an accurate record of daily maximum and minimum air temperatures (including overnight) and delays due to adverse weather, including description of the weather, type(s) of work affected and number of hours lost.

37 Programme

a As soon as possible and before starting work on site prepare a programme for the Works, which must make allowance for all:
Planning and mobilisation by the Contractor,
Subcontractor's work,
Running in, adjustment and testing of engineering services.
Work resulting from instructions issued in regard to the expenditure of provisional sums
Work by others concurrent with the Contract
Submit to Architect.

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b The programme must show earliest and latest start and finish dates for each activity, and identify all critical activities and showing the critical path. Progress shall be recorded on a copy of the programme kept on site. If any circumstances arise which may affect the progress of the works, proposals shall be taken as appropriate to minimise any delay and to recover any lost time.

38 Quality of Work

a All materials and workmanship are to be the best quality of their respective kinds and specified descriptions and shall conform, unless otherwise stated, to the latest issue or revision of the appropriate Codes of Practice and British Standards applicable and to the satisfaction of the Architect. Ensure that the whole quantity of each product required is of consistent kind, size, quality and overall appearance. Allow for additional finishing work etc. to achieve correct matching and standards. Where practical, allow for the removal of ironmongery on doors prior to decoration and the secure refixing after decoration. Allow for masking where removal is not possible. The work is to be thoroughly well executed and completed as indicated by the drawings and Specification with the best workmanship and shall conform with the appropriate current B.S. Code of Practice. No substitution of specified materials will be permitted except by permission of the Architect in writing and which will only be given when it can be proved that specified material is not available either by reason of delay in delivery or other like circumstances. The true intent and meaning of the Specification being that the whole of the Works is to be completed to the satisfaction of the Architect so as to be perfect in all parts. Electrical apparatus and work in connection therewith shall comply with the latest Edition of the IEE Regulations.

b The Contractor will be required to submit proposals prior to commencement on site describing the organisation and resources which the contractor proposes and undertakes to provide to control the quality of the works, including the work of subcontractors. The statement must include the number and type of staff responsible for quality control, with details of their qualifications and duties.

39 Mode of Work

a The order of work items in the specification is not intended to guide Contractors. Prior to commencement of works Contractors should indicate on a bar chart their proposed sequence of operations. The Contractor shall progress the works with due regard to the work of other trades or sub-contractors, including co-operation of positions and sequences of installation.

40 Setting out

a The Contractor is to be responsible for providing all stakes, lines, and labour and for the accurate setting out of the works at all times, and shall rectify any errors at his own expense.

b The figured dimensions on drawings are to be followed in preference to scaled dimensions. The Contractor should check the dimensions against those shown on the drawings, and record the results on a copy of the drawings. Notify the Architect in writing of any discrepancies and obtain instructions before proceeding.

41 Samples

a Where approval of a product is specified the requirement for approval relates to a sample of the product and not to the product as used in the Works. Submit a sample or other evidence of suitability. Do not confirm orders or use the product until approval of the sample has been obtained. Retain approved sample in good, clean condition on site. Ensure that the product used in the Works matches the approved sample.

42 Copy Orders

a Should he be called upon to do so, the Contractor shall supply the Architect with copies of orders for the materials; the provision of such copy orders will not prejudice the acceptance by the Architect of the material concerned.

43 Drawings

a The tender drawings are as attached schedule, the contract drawings will be the same as the tender drawings. All work is to be carried out and in accordance with drawing numbers 3550/5, 6, 15B, 16, 20A, 21B, 22B, 23, 24A, 25A, 30A, 31A, 32A, 33A, 40, 41, 42, 43 & 44. **A copy of these drawings and this specification is to be kept on site at all times.**

b The Contractor is advised to keep copies of the following on site, readily accessible for reference by all supervisory personnel:

Manufacturer's current literature relating to all products to be used in the works.
Relevant BS Codes of Practice.
Relevant parts of BS 8000 "Workmanship on Building Sites".

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44 Nameboard

a Obtain approval for and provide a suitable temporary name board displaying:
Title of project,
Name of Employer,
Names of Consultants as follows,
Architect.
Structural Engineer
CDM Co-ordinator.
Contractor and Subcontractors.

45 Statutory Notices

a Serve all notices on Local and Statutory Authorities as may be required and pay all fees legally demandable.

46 Variations

a No variations are to be made from this specification without the written consent of the Architect.

b In the event of instructions being given by the Architect to the Contractor on site, these verbal instructions shall be followed up with written confirmation via email. The issuing of a Site Instruction does not necessarily infer a variation to the Contract.

47 Claims

a If, due to circumstances on the site beyond his control, the Contractor is involved in extra costs which could not be foreseen at the time of Tender and for which he intends to submit a Claim, the Contractor must inform the Architect immediately these circumstances arise.

b If the Contractor should fail to inform the Architect immediately the circumstances arise and should fail to furnish full information, the claim will not be considered.

48 Attendance

a Attend upon specialists and generally assist, cutting away, making good etc. Allow for occasional assistance / movement of equipment as required by client, with previous reference to Architect.

49 Practical Completion of Works

a The Date of Practical Completion of the Works shall be the date of practical completion agreed for the Project, provided that the Contractor shall have prior to that date:

a) Made the tests specified or reasonably required by them.
b) Handed to the Contract Administrator copies in triplicate of preliminary operating and maintenance instructions sufficient for the satisfactory operation of the Works prior to receipt of the full and final record instructions and drawings.
c) Instructed the Employer's staff in the correct operation of the installation.
d) Completed all labelling and circuit lists to the satisfaction of the Contract Administrator/Client.
e) Supplied all spares as specified elsewhere, with a duplicate receipt ready for signing.
f) Cleaned all equipment to the satisfaction of the Contract Administrator/Client.
g) Given a written agreement to outstanding defects or items of incomplete or unacceptable work, with written undertaking that the items listed will be cleared within 28 days.

50 Clear Away/Completion

a Remove all superfluous materials from time to time as they accumulate, and clear away promptly at completion. Remove all temporary markings and protective coverings. Touch up minor faults in newly painted / repainted work, carefully matching colour, and brushing out edges. Repaint badly marked areas back to suitable breaks or junctions. Clean glass inside and out, mirrors sanitaryware etc. and leave the entire works clean and tidy and ready for immediate occupation. Adjust, ease and lubricate all moving parts to ensure easy and efficient operation. Leave the works secure with all accesses locked. Account for and adequately label all keys (supply 2 sets) and hand over to Employer with itemised schedule, retaining duplicate schedule signed by Employer as a receipt.

51 Testing

a The Contractor, having ensured that electricity, water, fuel and other necessary supplies are available, shall set to work the completed Works or part thereof, at the selection of the Architect and make all necessary adjustments to ensure correct functioning.

b After the installation or part thereof has been set to work and adjusted, the Contractor shall demonstrate its operation, at a time selected by, and to the satisfaction of, the Architect.

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c The tests shall demonstrate, amongst other things:

i) that equipment provided complies with the Specification in all particulars and is of adequate capacity for its full duty.
ii) that all items of plant and equipment operate sufficiently quietly to meet the specified requirements.
iii) that all instruments, protective devices, etc., are correctly calibrated and accurate.
iv) that all electrical circuits are properly fused and protected and conduit systems are electrically continuous and properly earthed.

d The details and methods of carrying out and recording the tests should be agreed with the Architect. The representative of the Employer be at liberty to be present and to participate in the tests. This shall not relieve the Contractor of his responsibility for carrying out the tests satisfactorily.

e The Contractor shall make all necessary records during the tests and, on completion thereof, shall provide the Architect with a test report and record, both in triplicate.

f The Contractor shall provide all test instruments together with skilled labour for carrying out the tests.

g If the tests fail to demonstrate the satisfactory nature of the installation thereof then the Architect shall decide whether such failure is due to incorrect, inadequate or defective materials, installation and/or adjustment. If this is so, then the Contractor shall, at his own expense, carry out such alterations or replacements as are required to the Architect's complete satisfaction. The Architect shall be at liberty to call for further tests when such alterations have been made and his decisions as to what constitute satisfactory tests shall be final.

h The above general requirement as to testing shall be read in conjunction with any particular requirements specified elsewhere.

52 Maintenance

a The Building Manual (incorporating the Health and Safety File and subtitled accordingly) is to be a comprehensive information source and guide for the Employer and end users providing a complete understanding of the building and its systems and enabling it to be operated and maintained efficiently and safely. The Contractor is required to obtain or prepare all the information to be included in the Manual, produce the required number of copies of the Manual and submit them to the Architect for delivery to the Employer.

b The record drawings and schedules shall be adequate for the following:

i) To record clearly the arrangement of the various sections of the Works as actually installed and to identify and locate all component parts thereof.
ii) To make it possible to comprehend the extent and purpose of the Works and the method of operation.
iii) To set out clearly the extent to which maintenance and servicing is required and how, in detail, it should be executed.
iv) To provide sufficient and readily accessible information properly to facilitate the ordering of spares and replacements.

c The record drawings and schedules shall be correlated so that the terminology and the numerical and/or other references used therein are consistent with and similar to those used in the physical identification of component parts of the Works.

d The Electrical Contractor's "as fitted" drawings shall show all cable runs, positions of all junction boxes, outlet and draw-in boxes and where any work is to be buried or hidden, the Contractor shall be responsible for making such records as will show work before it is buried or hidden.

e Prior to completion of the Installation the Contractor will be required to submit to the Architect or Services Consulting Engineer preliminary detailed operating and maintenance instructions for the whole of the plant and upon completion provide three complete sets comprising the following (all contained in volumes strongly bound in flexible covers and suitable for heavy usage over a long period) and written to be read in conjunction with the Record Drawings.

b The Manual is to consist of the following three parts:

THE BUILDING MANUAL PART 1: GENERAL must include:
A description of the building.
Details of all consultants and designers.
Copies of all consents and approvals obtained.
Drawings showing emergency escape routes, location of emergency and fire fighting systems, services shut-off valves, switches, etc.

THE BUILDING MANUAL PART 2: BUILDING FABRIC: Provide such information as is reasonably required by the CDM Co-ordinator including;
Copies of manufacturers current literature for all products chosen by the Contractor, including COSHH dated data sheets and recommendations for cleaning and maintenance.
Names, addresses, telephone and fax numbers of all subcontractors, suppliers and manufacturers.

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Copies of all guarantees, warranties and maintenance agreements offered by subcontractors and manufacturers.
Copies of all test certificates and reports required in the specification.
As-built drawings.

THE BUILDING MANUAL PART 3: BUILDING SERVICES must include:
A full description of each of the systems installed including their mode of operation and extent and frequency of maintenance written to ensure that the Employer's staff fully understand the scope and facilities provided.
Instruction in respect of any precautionary measures necessary from time to time (eg. against freezing or corrosion) and the care of apparatus normally subject to seasonal disuse.
Diagrammatic drawings of each system indicating principal items of plant, equipment, valves etc. A general description of the purpose and manner of working of each system.
The name, address and telephone number of the manufacturer of every item of plant and equipment together with catalogue list numbers.
Manufacturers' technical literature for all items of plant and equipment, including operating and maintenance instructions.
A copy of Test Certificates for all items of plant and equipment used in the installation.
A copy of all manufacturers' guarantees, warranties and maintenance agreements offered by subcontractors and manufacturers.
Emergency procedures, including telephone numbers for emergency services.

c PRESENTATION OF BUILDING MANUAL: The Manual is to be contained in A4 size, plastic covered, loose leaf, four ring binders with hard covers, indexed, cross referenced, divided and appropriately cover titled. Selected drawings larger than A4, are to be folded and accommodated in the binders so that they may be unfolded without being detached from the rings. Final payment cannot be made until these documents are received.

d TRAINING: Before Practical Completion explain and demonstrate the operation of the installation to the Employer representatives.

e SPARE PARTS: At least 2 weeks before Practical Completion submit to the Architect a schedule of spare parts that the Contractor recommends should be obtained and kept in stock by the Employer for maintenance of the services installations. State against each item the manufacturer's current price, including packaging and delivery to site.

f Emergency telephone contact: the Contractor shall provide emergency telephone contacts who can be contacted on a day basis for any urgent repairs during the defects liability periods(s).

53 Making Good Defects

a Defects reported to the Contractor after Practical Completion and before the expiry of the Defects Liability Period(s) shall be rectified by arrangement with the Tenant as soon as practically possible by the Contractor. The Contractor shall indemnify the Employer and/or the Contractor against any damage caused to the Buildings and/or contents and occupants caused by defects or faults.

b Defects of an emergency or urgent nature report in normal working hours shall be rectified within 24 hours, or made safe if a lengthy job. Defects of an emergency nature reported out of normal working hours shall be completed within 24 hours or made safe until the next working day. Emergency defects can be defined as items affecting safety, security and health of the occupants or where the structure of the property is threatened.

c Defects which cause serious inconvenience must be remedied within 5 working days. Other defects must be completed before the end of the Defects Liability Period. These defects are those that can be deferred without serious inconvenience to the Tenant or its' activities. If, during this period, any defects or faults develop which, in the opinion of the Architect are due to faulty materials, workmanship of design components, then the Contractor shall remedy these at his own cost.

d At expiry of the Defects Liability Period, a representative of the Contractor will be required to attend a defects inspection meeting and in consultation with the Architect to agree a list of any defects.

e On receipt of the Architect's written list of defects the Contractor will be required to remedy all items on the list within one month of its receipt. As soon as all the defects on the list have been remedied the Contractor will inform the Architect who will arrange for a further confirmation inspection within two weeks with the Contractor's representative, in attendance, if he so wishes.

f If all remedial works are satisfactory a Making Good of Defects Certificate will be issued as soon as possible. Items not correctly remedied will require further remedial work and approval before issue of the above certificate.

g If the Contractor fails to carry out such remedial work within a reasonable time after having received instruction, then the Architect may make other arrangements to proceed to do the works, at the expense and risk of the Contractor and without prejudice to such other rights as the Contractor may have in respect of the works.

h NOTE: IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE ARCHITECTS WHEN THEIR PRESENCE IS REQUIRED ON SITE FOR INSPECTIONS. THIS APPLIES TO INITIAL AND LATER SNAGGING, MAKING GOOD DEFECTS ETC.

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54 Priced Specification

a The specification is to be priced out in the columns provided **AND** must be submitted along with the Form of Tender in the envelope provided. **Tenders will not be considered unless a copy of the priced specification (Part 3 only) is submitted.**

55 Labour

a The contractor shall allow for provision of all labour necessary for the proper execution of the works.

56 Dayworks

a Daywork will be allowed only for such work as will be explicitly directed or authorised by the Architect or services consultant in writing. Daywork sheets must be delivered in duplicate to the Architect. Daywork sheets (including those of sub-contractors) not so submitted will be liable to rejection.

b Charges in respect of daywork shall be based on classes of labour adequate for, but not in excess of, that necessary in order to execute the particular work.

c Daywork sheets and materials recording the labour expended and materials used on authorising Daywork fully monied out shall be forwarded, after signature of the Architect, for checking, as a basis for payment.

d Such sheets shall not be valid for this purpose unless countersigned by a representative of the Architect or by the Clerk of Works or other representative of the Employer and the sheets must be presented not later than the end of the week in which the work was carried out.

e Countersigning of daywork sheets will be regarded only as certification that the work shown has been carried out and not authorisation to carry out such work.

f State here labour and materials rates required for any authorised dayworks.

Tradesmen	Labourer	Materials
£	£	£

g Basic labour rates – the nett rates of pay of all categories of labour required to execute the works are set out below and are the basic rates on which the tender is based, the rates also form the basis for payment in respect of non-productive overtime where such is chargeable.

Tradesmen	Labourer
£	£

57 Overtime

a The Contractor shall be deemed to have included any out of hours working within his tender package.

58 Alternatives to specified equipment

The Tender is required to indicate below basic details of any alternatives offered to specified equipment.

All alternatives offered on this list are to be supported by means of full technical and pictorial information submitted separately with the Tender.

Equipment / Material	**Type**	**Manufacturer**	**Total Saving**

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COLLECTIONS

PART 1 PRELIMINARIES

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TOTAL CARRIED FORWARD TO SUMMARY

PART 2

C20 Demolition/Removals

5 SURVEY
Scope: Before starting work, carry out a survey and submit a report and method statement covering the following:
Form, condition and details of the structures, site and surrounding area.
Extent: Sufficient to cover areas of work.
Condition and demolition methods and sequences for the structures.
Removal methods of hazardous materials.
Form, location and removal methods of materials for reuse or recycling.
Type and location of features of historical, archaeological, geological or ecological importance.
Identification, location, disconnection and removal of services.
Arrangements for protection of personnel and the public.
Arrangements for control of site transport and traffic.
Format of report: A4

10 EXTENT OF DEMOLITION
General: Subject to retention requirements specified elsewhere, demolish structures structures sufficiently to allow works to progress.

15 BENCH MARKS
Unrecorded bench marks and other survey information: Give notice when found.
Do not remove or destroy.

25 LOCATION OF SERVICES
Services affected by the Works: Locate and mark positions.
Mains services: Arrange with the appropriate authorities for locating and marking

30 DISCONNECTION OF SERVICES ARRANGED BY CONTRACTOR
Responsibility: Before starting demolition arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment.

32 DISCONNECTION OF DRAINS
General: Locate and disconnect disused drain connections. Permanently seal within the site.

35 DRAINS IN USE
General: Protect drains and fittings still in use and keep free of debris.
Damage: Make good damage arising from demolition work. Leave clean and in working order at completion.

40 BYPASS CONNECTIONS
General: Provide as necessary to maintain continuity of services to occupied areas of the same and adjoining properties.
Notice: Give adequate notice to occupiers if shutdown is necessary.

45 SERVICES WHICH ARE TO REMAIN
Damage: Give notice and notify the service authority or owner of damage arising from the execution of the Works.
Repairs: Complete to the satisfaction of service authority or owner.

50 WORKMANSHIP
Standard: Demolish structures in accordance with BS 6187.
Operatives: Appropriately skilled and experienced for the type of work. Holding or in training for relevant CITB Certificates of Competence.
Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of demolition to be used.

55 SITE HAZARDS
Precautions: Prevent fire or explosion caused by gas or vapour: Prevent.
Dust: Reduce by periodically spraying with an appropriate wetting agent, or contain.
Site operatives and general public: Protect from vibration, dangerous fumes and dust arising during the course of the Works.

65 STRUCTURES TO BE RETAINED
Parts which are to be kept in place: Protect.
Extent of work: Cut away and strip out the minimum necessary.

70 PARTLY DEMOLISHED STRUCTURES
General: Leave partly in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Keep safe outside working hours.
Debris: Prevent from overloading scaffolding platforms.
Unauthorized persons: Prevent access.

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71 DANGEROUS OPENINGS
General: Illuminate and protect as necessary.

76 ASBESTOS CONTAINING MATERIALS
Discovery: Give note immediately of suspected asbestos containing materials discovered.
Avoid disturbing such materials and submit details of methods for safe removal and statutory risk assessments.

78 UNFORESEEN HAZARDS
Unrecorded voids, tanks, chemicals, etc discovered during demolition: Give notice.
Method for safe removal: Submit proposals.

85 SITE CONDITION AT COMPLETION
Debris: Clear away and leave the site tidy on completion.

86 SITE LEVELS AT COMPLETION
Levels: Grade the site to follow the levels of adjacent areas.

90 CONTRACTOR'S PROPERTY
Components and materials arising from the demolition work: Property of the Contractor except where otherwise provided. Remove from site as work proceeds.

95 RECYCLED MATERIALS
Materials arising from demolition work: May be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification.

D20 Excavating and filling

20 STRIPPING TOPSOIL
General: Excavate from areas where there will be regarding or construction work.
Depth of removal: 150mm

30 OBSTRUCTIONS
Recorded foundations, beds, drains, etc: Break out and seal off drain ends. Remove contaminated earth.
Unrecorded foundations, beds, basements, filling, tanks, service pipes, drains, etc: Give notice.

35 EXCESS EXCAVATIONS
Excavation taken wider than required: Backfill.
Excavation taken deeper than required: Backfill.

40 SURPLUS EXCAVATED MATERIAL
Topsoil: Spread and level on site.
Remaining material: Remove from site.

50 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS
Generally: Do not import or use fill materials which would, either in themselves or in combination with other material or ground water, give rise to a health hazard, damage to building structures or instability in the filling.

53 WATER
General: Keep excavations free from water until foundations and below ground constructions are completed.

55 PLACING FILL GENERALLY
Excavations and areas to be filled: Free from loose soil, rubbish and standing water.
Freezing conditions: Do not use frozen materials or materials containing ice. Do not place fill on frozen surfaces.
Fill against structures, membranes or buried services: Place and compact in a sequence and manner which will ensure stability and avoid damage.

60 BACKFILLING AROUND FOUNDATIONS
Under oversite concrete and pavings: Hardcore.
Under grassed or landscaped areas: Material excavated from the trench, laid and compacted in 300 mm layers.

62 FROST SUSCEPTIBILITY
General: Except as allowed below, fill must be non frost-susceptible as defined in Highways Agency 'Specification for Highway Works', clause 801.17.
Frost-susceptible fill: Use only within the external walls of buildings below spaces that will be heated. Protect from frost during construction.

65 HARDCORE
Fill: Granular material, free from harmful matter and excessive dust or clay, well graded, all pieces less than 75 mm in any direction, and in any one layer only one of the following:
Crushed hard rock or quarry waste.
Crushed concrete, brick or tile, free from plaster.
Gravel or hoggin.
Filling: Spread and level both backfilling and general filling in layers not exceeding 150 mm. Thoroughly compact each layer.

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75 BLINDING TO HARDCORE
Surfaces to receive sheet overlays or concrete: Blind with:
Concrete where shown on drawings; or
Sand, fine gravel, or other approved fine material applied to provide a closed smooth surface.
Permissible deviation on surface level: +0 -25 mm.

E10 In situ concrete

15 SPECIFICATION
Concrete generally: To BS 8500-2.
Exchange of information: Provide concrete producer with information required by BS 8500-1, clauses 4 and 5.

16 CEMENT
Cement and partial replacements where permitted shall comply with the appropriate British Standard. OPC and RHPC to BS12. SRPC to BS 4027.PFA for structural concrete to BS 3892 Pt 1. Ground granulated blast furnace slag to BS 6699.

20 CONCRETE GENERALLY
Concrete shall generally comply with CP114 part 2 and unless otherwise stated shall be formed with sulphate resisting cement.

25 CONCRETE IN FOUNDATIONS
Concrete for foundations shall be C20 to BS 5328.
Durability: Class 1 to BRE Digest 363.

26 DESIGN MIXES
Design mixes shall be designed to have at least the required minimum cement content maximum free water/cement ratio, workability and comply with the specified compressive strength in accordance with clause 16 of BS 5328.

45 PROPERTIES OF FRESH CONCRETE
Adjustments to suit construction process: Determine with concrete producer. Maintain conformity to the specification.

50 PREMATURE WATER LOSS
Requirement: Prevent water loss from concrete laid on absorbent substrates.
Underlay: Polyethylene sheet 250 micrometres thick.
Installation: Lap edges 150 mm.

60 PLACING AND COMPACTING
Surfaces to receive concrete: Clean, with no debris, tying wire clippings, fastenings or free water.
Timing: Place as soon as practicable after mixing and while sufficiently plastic for full compaction.
Temperature limitations for concrete: 30°C (maximum) and 5°C (minimum). Do not place against frozen or frost covered surfaces.
Compaction: Fully compact to full depth to remove entrapped air especially around reinforcement, cast-in accessories, into corners of formwork and at joints. Continue until air bubbles cease to appear on the top surface.
Methods of compaction: To suit consistence class and use of concrete.

70 CURING AND PROTECTING
Evaporation from surfaces of concrete: Prevent throughout curing period.
Surfaces covered by formwork: Retain formwork in position and, where necessary to satisfy curing period, cover surfaces immediately after striking.
Top surfaces: Cover immediately after placing and compacting. Replace cover immediately after any finishing operations.
Curing periods:
Surfaces which in the finished building will be exposed to the elements, and wearing surfaces of floors and pavements: 10 days (minimum).
Other structural concrete surfaces: 5 days (minimum).
Protection: Protect concrete from shock, indentation and physical damage.

E20 Formwork for in situ concrete

60 BOARD SUBSTRUCTURE FORMWORK
General: Lay tightly butted and fully supported on firm, even substrate. Restrain against movement during concrete placement. Seal joints to prevent penetration of concrete.
Collapsible boards with cellular cardboard cores: Keep dry. Seal joints in polyethylene underlay/ overlay sheets and reseal cut polyethylene bags.

70 FORMWORK
General: Accurately and robustly constructed to produce finished concrete to the required dimensions.
Formed surfaces: Free from twist and bow with intersections, lines and angles square, plumb and true.
Joints between forms and completed work: Prevent loss of grout and formation of steps.
Holes and chases: Form with inserts or box out as required.

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E30 Reinforcement for in situ concrete

30 MESH REINFORCEMENT B385
Standard: To BS 4483.

40 CONDITION OF REINFORCEMENT
At time of placing concrete: Free from corrosive pitting, loose millscale, loose rust and contaminants which may adversely affect the reinforcement, concrete, or bond between the two.

70 FIXING REINFORCEMENT
Standard: To BS 7973-1 and -2.
Installation: Provide adequate support, tie securely and maintain the specified cover.
Tying wire: 16 gauge black annealed. Prevent intrusion into the concrete cover.

E41 Worked finishes to in situ concrete

10 FINISHING
Timing: Carry out at optimum times in relation to setting and hardening of concrete.
Prohibited treatments to surfaces:
Wetting to assist surface working.
Sprinkling cement.

20 SMOOTH FLOATED FINISH
Surface on completion: Even, with no ridges or steps.

30 TROWELLED FINISH
Surface on completion: Uniform, smooth but not polished, free from trowel marks and blemishes, and suitable to receive specified flooring material.

50 FINISH FOR EXTERNAL PAVING
Surface on completion: Finished to a light tamp with ironed edges. Ensure inspection covers/gullies are level with surrounding surfaces.

E60 Precast concrete floors/ roof decks

10 PRECAST BEAM AND BLOCK FLOORING
Design: The floor beams are designed to comply with BS 8110: Part 1
Beams: T150.
Manufacturer: Milbank (or similar).
Infill blocks: The density of the infill blocks used should not exceed the value shown on the Milbank drawings.
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Type: Solid rectangular concrete to BS 6073:Part 1.
Work size: 440x215x100mm.
Density: 1450kg/m3.
Transverse load capacity (minimum): 3.5kN on a span of 420mm.
Infilling at beam bearings:
Installation: Infill gaps in walling below built in standard flooring blocks.
Concrete infill: Designated concrete to BS 8500-2.
Aggregate size (maximum): 20mm.
Grouting:
Mix: 1:6 cement:sharp sand (1:4 if soft sand or in wet weather).
Execution: Brush floor clean, wet thoroughly and brush in grout to fill all joints and surface irregularities.
Other requirements: Special format blocks/infill may be used in accordance with the block manufacturers recommendations.

20 CAMBER
All beams are prestressed and have an upward camber. The degree of the camber is dependent on the span; leveling screeds may be required prior to laying floating finishes.

30 LOADING
The loadings for which the floors are designed are shown on the Milbank drawings. The Main Contractor shall ensure that these design loads are not exceeded during construction.

35 DIMENSIONS
The beams are manufactured to the lengths shown on the drawings. The Main Contractor shall check and approve all the setting out dimensions shown on the drawings and return a copy of the drawing "signed as approved", before manufacture can commence.

40 PROTECTION
The beam and block floors as laid can, with due care, safely cater for normal foot traffic. The Main Contractor shall provide protection under barrow runs and at work positions for following trades.

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50 DETAILING
Installation details: Submit location and assembly drawings showing incorporated components and features, trimming for voids, holes for services, and related work by others.
Purpose: To allow checking of compatibility with surrounding structure and coordination of services.
Method statement and risk assessment for installation: Submit.
Programme: Submit in advance of construction.

70 CONCRETE INFILL
Preparation: Thoroughly clean and wet surfaces of precast units.
Placing to troughs, slots and other holes: Avoid segregation and compact thoroughly to eliminate voids.

80 LATERAL RESTRAINT STRAPS
Preparation: Floors/ roof decks must tightly abut walls.
Type: As recommended by floor manufacturer.
Length: To extend minimum 800mm from inside face of wall.
Form: Both ends cranked 100mm.
Position: As required by floor manufacturer..
Build in:
External cavity walls: One cranked end in tight contact with cavity face of wall inner leaf, the other cranked end grouted into floor/ roof deck joint.

90 INSTALLATION
Access and hard standing shall be provided by the Main Contractor for a mobile crane and transport as stated in the Milbank quotation. The Main Contractor shall re-route and/or remove and reinstate any overhead obstructions that may hinder the installation of the flooring units. All bearing surfaces must be constructed to the correct levels, be true and mature at the time of installing the floor units. The builder shall supply and bed all DPC's under the floor bearings, before the flooring units are fixed. The under floor voids should be ventilated to comply with the building regulations and the N.H.B.C. requirements. All vegetable soil must be removed from under the floor and the top surface of the oversite treated with weed killer.

F10 Brick/ block walling

5 FACING BRICKWORK
Bricks: To BS EN 771-1.
Manufacturer: Contractors choice.
Product reference: Submit proposals.
Special shapes: None.
Mortar: As section Z21.
Bond: To match existing.
Joints: To match existing.

36 CONCRETE COMMON BLOCKWORK
Blocks: To BS EN 771-3.
Manufacturer: H&H UK Ltd.
Product reference: Celcon Standard.
Compressive strength: 3.6N/mm2.
Thermal properties: 0.15W/m2K
Work sizes (length x width x height): 440 x 100 x 215mm
Mortar: As section Z21.
Bond: Half lap Stretcher.

51 BASIC WORKMANSHIP
Bond where not specified: Half lap stretcher.
Mortar joints: Fill all vertical joints. Lay bricks, solid and cellular blocks on a full bed.
Quoins and advance work: Rack back.
Locations for equal levelling of cavity wall leaves:
Every course containing vertical twist type ties or other rigid ties.
Every third tie course for double triangle/ butterfly ties.
Courses in which lintels are to be bedded.
Lift height (maximum): 1.2m above any other part of work at any time.
Daily lift height (maximum): 1.5m for any one leaf.

55 FACEWORK
Commencement of facework: Not less than 150mm below finished level of adjoining ground or external works level.
Brick/ block selection: Do not use units with damaged faces or arrises.
Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
Coursing: Evenly spaced using gauge rods. To produce satisfactory junctions and joints with built-in elements and components.

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60 ALTERATIONS/ EXTENSIONS
Coursing: Line up with existing work.
Block bonding new walls to existing: Unless agreed otherwise cut pocket requirements as follows:
Width: Full thickness of new wall.
Depth (minimum): 100mm.
Vertical spacing: As follows:
Brick to brick: 4 courses high at 8 course centres.
Block to block: Every other course.
Pocket joints: Fully filled with mortar.
New and existing facework in the same plane: Bonded together at every course to achieve continuity of bond and coursing.
Support of existing work: Fully consolidate joint above inserted lintel or masonry with semidry mortar to support existing structure.

66 FIRE STOPPING
Avoidance of fire and smoke penetration: Fit tightly between cavity barriers and masonry.
Leave no gaps.

90 CRACKED BRICKS IN EXISTING FACEWORK
Replacement: Prior to repointing adjacent cracked joints, cut out and replace with matching sound bricks to approval.
Jointing mortar: As section Z21.

95 REPOINTING
Preparation: Cut out joints to form a rectangular recess of 15-20 mm depth. Clean and dampen joints sufficiently to control suction.
Joint profile: To match existing.
Mortar: As section Z21.

F30 Accessories/ sundry items for brick/ block/ stone walling

5 CAVITIES
Concrete fill to base of cavity:
Concrete generally: To BS EN 206-1 and BS 8500-2.
Designated concrete: GEN1 or Standard mix ST2 with high workability.
Extent: Maintain 75 mm between top of fill and external ground level and a minimum of 225 mm between top of fill and ground level dpc.
Cleanliness: Keep cavity faces, ties and dpcs free from mortar and debris.

8 PERPEND JOINT PLASTICS WEEP HOLES
Manufacturer: Rytons Building Products.
Product reference: Slim vent minor, ref: SVMIN.
Locations: Through outer leaf, immediately above base of cavity at cavity trays, stepped dpcs and external openings. 75mm above top of cavity fill at base of cavity.
Provision: At not greater than 1000mm centres and not less than two over openings.

10 FULL FILL CAVITY INSULATION
Insulation: Rigid Polyisocyanurate (PIR)
Manufacturer: EcoTherm.
Product reference: Eco-Versal.
Thermal Conductivity: 0.022W/mK
Face size: 1200x450mm .
Thickness: 90mm.
Placement: Continuous and free of mortar and debris.

15 PERISCOPIC AIRVENTS IN EXTERNAL WALLING
Standard: To BS 493, class 1.
Manufacturer: Rytons Building Products.
Product reference: Periscope underfloor ventilator, ref: PUFV.
Material: Polypropylene.
Colour: Black.
Apertures: 215 x 65mm.
Accessories: Rytons periscopic vertical extension ref: PUFVVEXT. Multifix airbick, ref: MFAB.
Material/ colour: Terracotta.
Placement: Built in with no gaps at joints.

18 CAVITY CLOSERS
Manufacturer: Kingspan Thermabate.
Product reference: Thermabate 100.
Accessories: N/A.
Fixing: as recommended by manufacturer.

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20 CAVITY WALL TIES
Standard: To BS EN 845-1.
Type: Double triangle.
Manufacturer: Ancon Building Products.
Product reference: Double Triangle Wall Tie.
Material/ finish: Stainless steel grade 1.4301 (304).
Sizes: 200mm.

28 FIXING TIES IN MASONRY CAVITY WALLS
Embedment in mortar beds (minimum): 50mm.
Placement: Sloping slightly downwards towards outer leaf without bending. Drip centred in the cavity and pointing downwards.
Spacing: Staggered in alternate courses.
Horizontal centres: 900mm.
Vertical centres: 450mm.
Provisional of additional ties: Within 225mm of reveals of unbonded openings..

39 WALL STARTERS/ CONNECTORS
Manufacturer: Ancon Staifix or similar .
Product reference: Universal Wall starter system .
Material/ finish: Stainless steel.
Sizes: 50mm wide, length to suit.
Sealant to external vertical joint: one part polysulphide sealant .
Colour: to be agreed .
Joint preparation and sealant application: As section Z22.

46 DAMP PROOF COURSE - POLYETHYLENE
Standard: To BS 6515.
Manufacturer: RIW or similar.
Product reference: Sheetseal 9000.

47 VERTICAL DAMP PROOF COURSE - POLYETHYLENE
Standard: To BS 6515.
Manufacturer: RIW or similar.
Product reference: Sheetseal 9000.

56 PREFORMED CAVITY TRAYS
Manufacturer: Contractors choice .
Product locations: Over lintels to doors and windows. Where single storey roof abuts two storey external wall.
Placement: Seal all laps with dpcs and/ or cavity trays to provide a free draining and watertight installation.

66 INSTALLATION OF HORIZONTAL DPCS
Placement: In continuous lengths on full even bed of fresh mortar, with 100mm laps at joints and full laps at angles.
Width: At least full width of masonry leaf. Edges of dpc not covered with mortar or projecting into cavity.
Overlying construction: Immediately cover with full even bed of mortar to receive next masonry course.
Overall finished joint thickness: As close to normal as practicable.
Ground level dpcs joint with damp proof membrane: Continuous and effectively sealed.
Low level dpcs in external walls: Install not less than 150 mm above adjoining finished ground level.
Sill dpcs form and placement: In one piece and turned up at the back when the sill is in contact with inner leaf.
Dpcs crossing cavity: Provide support to prevent sagging.

72 INSTALLATION OF GAS RESISTANT DPCS/ CAVITY TRAYS
Joint treatment: Use unjointed wherever possible, otherwise lap at least 150mm and seal to form gas and watertight installation.
Joint with damp proof membrane: Overlap dpc/ cavity tray not less than 150mm.

74 INSTALLATION OF VERTICAL DPCS
Form: In one piece wherever possible.
Joints: Upper part overlapping lower not less than 100mm.
Dpcs to jambs of openings: Fully lap behind cavity tray/ lintel at head and over horizontal dpc at sill. Project not less than 25mm into cavity and maintain full contact with frames.
Fixing of jamb dpcs to back of built in timber frames: Secure using galvanized clout nails or staples.

76 MOVEMENT JOINTS WITH SEALANT
Joint preparation and sealant application: As section Z22.
Filler: Contractors choice.
Placement: Build in as work proceeds ensuring no projections into cavities and to correct depth to receive sealant system.
Sealant: One part polysulphide.
Colour: Clear.

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85 PREFABRICATED STEEL LINTELS - CAVITY WALLS
Standard: To BS EN 845-2.
Manufacturer: Catnic.
Product reference: CG90/100.
Types: Cougar open back.
Material/ finish: Galvanised steel.
Placement: Bed on mortar used for adjacent work.
Bearing length (minimum): 150mm.

86 PREFABRICATED STEEL LINTELS - INTERNAL WALLS
Standard: To BS EN 845-2.
Manufacturer: Catnic.
Product reference: BSD100.
Types: Internal wall lintel.
Material/ finish: Galvanised steel.
Placement: Bed on mortar used for adjacent work.
Bearing length (minimum): 150mm.

86 TILE SILLS
Tiles: Plain clay to BS EN 1304.
Manufacturer: Contractors choice.
Product reference: To match existing.
Size: To match existing.
Placement: Two courses, broken jointed on full bed of 1:0.25:3 cement:lime:sand mortar as section Z21.
Joints: Full and finished flush.

G10 Structural steel framing

10 DESIGN
Design standard: The structural steelwork has been designed to BS 5950 where applicable.
Completion of design: Design and detail connections to BS 5950.
Loading requirements: As specified or otherwise calculable.
Fixings to foundations/ walls: As structural engineers details.

15 SPECIFICATION STANDARD
Standard: Comply with latest edition of National Structural Steelwork Specification

17 GENERAL STEEL SECTIONS
Standard: To BS EN 10025-2 and BS 4360.
Grade: 43.
Source: Obtain steel from a source accredited to a national or internationally accepted quality standard.

30 COLD-FORMED STEEL
Manufacturer: Contractors choice.
Product reference: Contractors choice.

40 BOLT/ SCREW ASSEMBLIES
Designation: To latest BS.
Nuts and washers: All structural bolts to be not less than M20 grade 8.8 unless noted otherwise.
Connections: minimum steelwork connection to be 4 No. M20 grade 8.8 bolts.

50 COLUMN BASES
Levels: Adjust using steel shims or folding wedges no larger than necessary, positioned symmetrically around perimeter of base plate. Do not use a single central pack.
Accuracy of erection: Check, and correct errors before filling and bedding beneath bases and carrying out other adjacent work.

55 MORTAR FILLING/ BEDDING OF COLUMN BASES
Bolt pockets: Completely filled with neat cement slurry.
Spaces beneath base plates: Completely filled with 1:1 cement:sand mortar, just fluid enough to pour, tamped well as filling proceeds. Provide temporary shuttering as necessary.
Cement: Portland cement BS EN 197-1 - CEM I 42.5 or 52.5.
Sand: To BS EN 12620, grade 0/4 or 0/2 (MP).

65 SHOP PRIMING
Preparation: To BS EN ISO 12944-4. Remove fins, burrs,sharp edges and weld spatter, clean out crevices
Surface finish: Manually cleaned to BS EN ISO 8501-1, grade St 2.
Prepared surfaces: Keep in a dry atmosphere and apply first coating without delay.
Priming:
Primer: One coat zinc phosphate modified alkyd, minimum dry film thickness 40 micrometres.
Application: To BS EN ISO 12944-7.

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80 INSTALLATION
Accuracy: Members positioned true to line and level using, if necessary, steel packs of sufficient area to allow full transfer of loads to bearing surfaces.
Fixing: Use washers under bolt heads and nuts.
Tapered washers: Provide under bolt heads and nuts bearing on sloping surfaces.
Match taper to slope angle and align correctly.

G12 Isolated structural metal members

10 STEEL SECTIONS AND PLATE
Section properties and dimensions: To BS 4-1, BS EN 10055, BS EN 10056 or BS EN 10210, as appropriate.
Steel: To BS EN 10025-2 or BS EN 10210-1, as appropriate.
Grade: 43.
Surface condition: Free from heavy pitting and rust, burrs, sharp edges and flame cutting dross.
Cuts and holes: Accurate and neat.
Welding: Metal arc method to BS EN 1011-2.
Welded joints: Fully fused, with mechanical properties not less than those of the parent metal.
Site welding: Obtain approval.

20 SHOP PRIMING
Preparation: To BS EN ISO 12944-4. Remove fins, burrs,sharp edges and weld spatter, clean out crevices
Surface finish: Manually cleaned to BS EN ISO 8501-1, grade St 2.
Prepared surfaces: Keep in a dry atmosphere and apply first coating without delay.
Priming:
Primer: One coat zinc phosphate modified alkyd, minimum dry film thickness 40 micrometres.
Application: To BS EN ISO 12944-7.

40 INSTALLATION
Accuracy: Members positioned true to line and level using, if necessary, steel packs of sufficient area to allow full transfer of loads to bearing surfaces.
Fixing: Use washers under bolt heads and nuts.
Tapered washers: Provide under bolt heads and nuts bearing on sloping surfaces.
Match taper to slope angle and align correctly.

G20 Carpentry/ timber framing/ first fixing

2 TIMBER PROCUREMENT
Timber (including timber for wood based products): Obtained from well managed forests/ plantations in accordance with:
The laws governing forest management in the producer country or countries.
International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
Documentation: Provide either:
Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied, or
Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.

5 STRUCTURAL SOFTWOOD
Grading standard: To BS 4978, BS EN 14081-1, or other national equivalent and so marked.
Timber of a target thickness less than 100 mm and not specified for wet exposure:
Graded at an average moisture content not exceeding 20% with no reading being in excess of 24% and clearly marked as 'DRY' or 'KD' (kiln dried).
Timber graded undried (green) and specified for installation at higher moisture contents:
Clearly marked as 'WET' or 'GRN'.
Strength class to BS EN 338: C24
Treatment: Organic solvent impregnation as heading Z12 and British Wood Preserving and Damp Proofing Association commodity specification C8, service life: 40 years.

10 UNGRADED SOFTWOOD
Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.
Surface finish: Sawn
Treatment: Organic solvent impregnation as Section Z12 and Wood Protection Association Commodity specification C8, service life 40 years.

15 PLYWOOD
Substrate: Timber framing
Additional supports: As clause 50.
Plywood: Manufactured to the relevant standards and quality control procedures specified in BS 5268-2, and so marked.
Type: WBP external quality plywood to BS 6566:Part 8 or equivalent.
Nominal thickness: As shown on drawings with square edges.
Setting out: Long edges running across supports. End joints central over supports and staggered.

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Fixing centres (maximum): Countersunk screws at 150mm along all supported edges; 300mm along intermediate supports.

30 SELECTION AND USE OF TIMBER
Timber members damaged, crushed or split beyond the limits permitted by their grading:
Do not use.
Notches and holes: Position in relation to knots or other defects such that the strength of members will not be reduced.
Scarf joints, finger joints and splice plates: Do not use.

35 PROCESSING TREATED TIMBER
Cutting and machining: Carry out as much as possible before treatment.
Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
Surfaces exposed by minor cutting/ drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

40 MOISTURE CONTENT
Moisture content of wood and wood based products at time of installation: Not more than:
Covered in generally unheated spaces: 24%.
Covered in generally heated spaces: 20%.

43 BOLTED JOINTS
Bolt spacings (minimum): To BS 5268-2, table 81.
Holes for bolts: Located accurately and drilled to diameters as close as practical to the nominal bolt diameter and not more than 2mm larger.
Washers: Placed under bolt heads and nuts that would otherwise bear directly on timber.
Use spring washers in locations which will be hidden or inaccessible.
Bolt tightening: So that washers just bite the surface of the timber. Ensure that at least one complete thread protrudes from the nut.
Checking: At agreed regular intervals. Tighten as necessary.

45 FRAMING ANCHORS
Manufacturer: Contractors choice.
Product reference: Contractors choice to suit application.
Material/ finish: Galvanised.
Fasteners: Galvanized or sherardized square twist nails.
Size: Not less than size recommended by anchor manufacturer.
Fixing: Secure using not less than the number of nails recommended by anchor manufacturer.

50 ADDITIONAL SUPPORTS
Provision: Position and fix additional studs, noggings and/ or battens to support edges of sheet materials, and wall/ floor/ ceiling mounted appliances, fixtures, etc. shown on drawings.
Material properties: Timber to be of adequate size and have the same treatment as adjacent timber supports.

55 RAFTERS GENERALLY
Centres: Equal, and not exceeding designed spacing.
End rafters: Positioned about 50mm from masonry walls.
Double rafters: to be bolted together with M12 bolts at 600mm centres.

60 RAFTERS ON HANGERS
Hangers: Bedded directly on and hard against supporting construction. Do not use packs or bed on mortar.
Rafters: Cut to leave not more than 6mm gap at each end. Rebated to lie flush with underside of hangers.
Fixing to hangers: A nail in every hole.

65 HANGERS
Manufacturer: Contractors choice.
Product reference: Contractors choice to suit application.
Material/ finish: Galvanised.
Size: To suit joist, design load and crushing strength of supporting construction, all to suit manufacturers instructions.

70 TRIMMING OPENINGS
Trimmers and trimming rafters: Not less than 25mm wider than general joists.

85 VERTICAL RESTRAINT STRAPS
Type: Bent.
Manufacturer: Contractors choice.
Product reference: Contractors choice to suit application.
Material/ finish: Galvanised steel.
Size:
Cross section: Not less than 30 x 2.5mm.
Length: 1200mm.
Centres: Not more than 1500mm.
Fixing:

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To timber members with not less than four screws evenly spaced.
To masonry with not less than six screws evenly spaced.
At least one screw to be located within 150 mm of the bottom end of each strap.

90 LATERAL RESTRAINT STRAPS
Manufacturer: Contractors choice.
Product reference: Contractors choice to suit application.
Material/ finish: Galvanised.
Size: Not less than 30x5mm cross section, 150mm cranked end and 1200mm long.
Fixing: To top of joists/ rafters/ ties at not more than 1.5m centres and as shown on drawings.
Ensure that cranked end is in tight contact with cavity face of wall inner leaf and is not pointing upwards.
Straps spanning joists/ rafter/ ties running parallel to wall: Fix noggings and packs tightly beneath straps.
size of noggings and packs: Not less than three quarters of joist/ rafters/ tie depth and not less than 38mm thick.
Notching: Notch joists so that straps fit flush with surface. Do not notch rafters/ ties.
Fasteners: Not less than four 50mm x 8 gauge sherardized countersunk screws per strap, evenly spread.

96 TIMBER PACKING TO STEELS
Material: softwood.
Size: to suit steels, to be full depth of web.
Fixing: bolted through web using minimum M10 bolts at 450mm centres.

H61 Fibre cement slating

3 ROOF SLATING to extensions
Substrate: Timber battens on membrane on rafters.
Pitch: 15° and 35°
Underlay: Permavent Dry breather membrane.
Head-lap (minimum): 150mm.
Battens:
Size: 25mm x 50mm.
Fixing: To be 65x3.35mm galvanized batten nails, see clause 32.
Fibre Cements Slates:
Supplier: Contractors choice
Product reference: Contractors choice.
Colour: Blue-Black
Head-lap (minimum): 110mm.
Fixing: Two nails each slate with Permavent Easy Slate fixed between each slate in accordance with manufacturers instructions.

25 UNDERLAY
Laying: Maintain consistent tautness.
Vertical laps (minimum): 100mm wide, coinciding with supports.
Fixing: Galvanized steel, copper or aluminium 20x3mm extra large clout head nails.
Eaves: Where exposed, underlay must be BS 8747 Annex B, type 5U, or equivalent UV durable type.
Penetrations: Use proprietary underlay seals or cut underlay neatly.

30 BATTENS/ COUNTERBATTENS
Timber: Sawn softwood.
Standard: BS 5534.
Moisture content at time of fixing and covering (maximum): 22%.
Preservative treatment: As section Z12 and Wood Protection Association Commodity Specification C8.
Type: Organic solvent.

32 BATTEN FIXING
Batten length (minimum): Sufficient to span over three supports.
Joints in length: Butt centrally on supports. Joints must not occur more than once in any group of four battens on one support.
Additional battens: Provide where unsupported laps in underlay occur between battens.

35 SLATE FIXING
General: Fix slating and accessories to make the whole sound and weathertight at earliest opportunity.
Exposed fittings and accessories: To match slate colour and finish.
Setting out: To true lines and regular appearance. Lay slates to a half lap bond with not more than 5 mm gaps. Align tails.
Cut slates: Cut only where necessary, to give straight, clean edges.
Ends of courses: Use extra wide slates to maintain bond and to ensure that cut slates are as large as possible.
Top courses: Cut top two slate courses to maintain gauge. Head-nail top course.
Fixings: Nails/ rivets as recommended by slate manufacturer into Permavent Easy Slate.

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47 EAVES
Fascias:
Manufacturer: PBS-Limited or similar.
Product reference: 18mm square fascia M150WB.
Colour: Black Ash
Sheet fasteners: Polytop Nails (black tops).
Fastener profile location: to suit manufacturers details.
Soffits:
Manufacturer: PBS-Limited or similar.
Product reference: 10mm vented soffit board V250WB.
Colour: Black Ash
Sheet fasteners: Polytop Nails (black tops).
Fastener profile location: to suit manufacturers details.
Accessories/ Other requirements: as required to complete installation, provide additional support at joints.
Support: Timbers.
Installer: A contractor approved by the system manufacturer.

52 BEDDED VERGES WITH BEDDED UNDERCLOAK
Underlay: Carry 50mm onto outer leaf of gable wall and bed on mortar.
Undercloak: Fibre cement sheet, sloping towards verge and projecting 38-50mm beyond face of wall.
Bedding: On mortar identical to that used in gable walling.
Slating battens: Carry onto undercloak and finish 100mm from verge edge.
Verge closer battens: Fix between ends of slating battens.
Verge slates: Bed flush with undercloak on 75mm wide bed of mortar. Point with a struck weathered profile, 5 mm back from verge slates.

68 MITRED VALLEYS
Underlay: Lay strips not less than 600mm wide centred on valleys. Overlap with general roof underlay.
Mitred slates: Cut double width slates and fix to form a straight, close mitred junction.
Soakers: Interleave and turn down over head of mitred slates.

70 SIDE ABUTMENTS
Underlay: Turn up not less than 100mm at abutments.
Abutment slates: Cut as necessary. Fix close to abutments.
Soakers: Interleave and turn down over head of abutment slates.

71 TOP EDGE ABUTMENTS
Underlay: Turn up not less than 100mm at abutments.
Top slate courses: Fix close to abutments.

75 DRY VENTILATED RIDGES
Underlay: Lay top courses to provide an air gap at apex.
Dry ridge tiles:
Manufacturer: Contractors choice.
Product reference: Submit proposals.

H71 Lead sheet coverings/ flashings

35 COVER FLASHINGS
Lead:
Thickness: 1.75 or 1.80 mm (Code 4).
Dimensions:
Lengths: Not more than 1500mm.
End to end joints: Laps of not less than 100mm.
Cover: Overlap to upstand not less than 75mm.
Fixing:
Top edge: Lead wedges into bed joint.
Bottom edge: Clips.
Material: As clause 80

41 SOAKERS AND STEP FLASHINGS
Lead soakers:
Lead:
Thickness: 1.25 or 1.32 mm (Code 3).
Dimensions:
Length: Slate/ tile gauge + lap + 25mm.
Upstand: Not less than 75mm.
Underlap: Not less than 100mm.
Lead step flashings:
Lead:
Thickness: 1.75 or 1.80mm (Code 4).
Dimensions:
Lengths: Not more than 1500mm.
End to end joints: Laps not less than 100mm.

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Cover: Overlap to soaker upstands of not less than 65mm.
Fixing: Lead wedges at every course.

45 STEP AND COVER FLASHINGS
Lead:
Thickness: 1.75 or 1.80mm (Code 4).
Dimensions:
Lengths: Not more than 1500mm.
End to end joints: Laps not less than 100mm.
Upstand: Not less than 85mm.
Cover to roof: Not less than 150mm.
Fixing:
Top edge: Lead wedges at every course.
Bottom edge: Clips.
Material: As clause 80

50 FLASHINGS
Lead:
Thickness: 1.75-2.00mm (code 4).
Dimensions:
Lengths: Not more than 1500mm.
Fixing: Nail top edge at 150mm centres and welt edge. Clip bottom edge at laps and 500mm centres.

60 MATERIALS AND WORKMANSHIP GENERALLY
Lead production method:
Rolled, to BS EN 12588.
Machine cast: Agrément certified.
Identification: Colour marked for thickness/ code, weight and type.
Workmanship standard: To BS 6915 and latest editions of 'Rolled lead sheet. The complete manual' published by the Lead Sheet Association.
Fabrication and fixing: To provide a secure, free draining and weathertight installation.
Marking out: Do not use scribers or other sharp instruments to mark out lead without approval.
Solder: Use only where specified.
Finished leadwork: Fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.
Patination oil: Apply smear coating to all visible lead, evenly in one direction and in dry conditions.

62 LEADWELDING
In situ leadwelding: Not permitted.

75 TIMBER FOR USE WITH LEADWORK
Quality: Planed, free from wane, pitch pockets, decay and insect attack (ambrosia beetle excepted).
Moisture content: Not more than 22% at time of fixing and covering. Give notice if greater than 16%.
Preservative treatment: Organic solvent as section Z12 and Wood Protection Association Commodity Specification C8.

76 UNDERLAY
Handling: Prevent tears and punctures.
Laying: Butt or overlap jointed onto a dry substrate.
Fixing edges: With copper or stainless steel staples or clout nails.
Do not lay over roof edges.
Turn up at abutments.
Wood core rolls: Fixed over underlay.
Protection: Keep dry and cover with lead at the earliest opportunity.

78 FIXING LEAD SHEET
Top edge: Secured with two rows of fixings, 25 and 50mm from edge.
Fixings:
Nails to timber substrates: Copper clout nails to BS1202-2 , or stainless steel (austenitic) clout nails to BS 1202-1.
Shank type: Annular ringed, helical threaded or serated.
Length: Not less than 20 mm or equal to substrate thickness.
Screws to concrete or masonry substrates: Brass or stainless steel to BS 1210.
Diameter: Not less than 3.35 mm.
Length: Not less than 19 mm.
Washers and plastics plugs: Compatible with screws.

80 CLIPS
Material:
Lead clips: Cut from sheets of the same thickness/ code as sheet being secured.
Copper clips: Cut from 0.70 mm thick sheet to BS EN 1172, temper R220 (soft) or R240 (half hard) depending on position, dipped in solder if exposed to view.
Stainless steel: Cut from 0.38 mm sheet to BS EN 10088, grade 1.4301(304), terne coated if exposed to view.
Dimensions:

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Width: 50mm where not continuous.
Length: To suit detail.
Fixing clips: Secure each to substrate with either two screw or three nail fixings not more than 50 mm from edge of lead sheet. Use additional fixings where lead downstands exceed 75 mm.
Fixing lead sheet: Welt clips around edges and turn over 25 mm.

98 WELTED JOINTS
Joint allowance: 50mm overlap, 25mm underlap.
Copper or stainless steel clips: Fix to substrate at 450mm centres.
Overlap: Welt around underlap and clips and lightly dress down.

J40 Flexible sheet tanking/ damp proofing

20 LOOSE LAID POLYETHYLENE DAMP PROOFING
Substrate: Beam and block suspended floor.
Membrane:
Manufacturer: RIW or similar
Product reference: Sheetseal.
Thickness/ Gauge: 300 micrometres (1200 gauge).
Joints:
Surfaces to be joined: Clean and dry beyond full width of joint.
Laps (minimum): End and side, 150mm.
Sealing: Continuous mastic strip between overlaps, edge of top sheet sealed with jointing tape.

50 WORKMANSHIP GENERALLY
Condition of substrate:
Clean and even textured, free from voids and sharp protrusions.
Moisture content: Compatible with damp proofing/ tanking.
Air and surface temperature: Do not apply sheets if below minimum recommended by membrane manufacturer.
Condition of membrane at completion:
Neat, smooth and fully supported, dressed well into abutments and around intrusions.
Completely impervious and continuous.
Undamaged. Prevent puncturing during following work.
Permanent overlying construction: Cover membrane as soon as possible.

60 JUNCTIONS WITH PROJECTING DPCS/ CAVITY TRAYS
Adjoining surfaces: Clean and dry.
Dpcs/ cavity trays: Lap and fully bond/ seal with sheeting.
Laps (minimum): 100mm.
Bonding/ Sealing: As manufacturers recommendations.

65 JUNCTIONS WITH FLUSH DPCS/ CAVITY TRAYS
Adjoining surfaces: Clean and dry.
Dpcs/ Cavity trays:
Expose edge where concealed.
Lap and fully bond/ seal sheeting to wall.
Dressing of sheeting beyond dpc/ cavity tray (minimum): 50mm.
Bonding/ Sealing: As manufacturers recommendations.

K10 Plasterboard dry linings/ partitions/ ceilings

10 LINING ON TIMBER STUDWORK PARTITIONS to central corridor area and first floor partition.
Background: Timber studs.
Linings: 2 layers 12.5 mm Gyproc Fireline (Duplex to wet areas).
Fixing: Drywall screws.
Finishing: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of paper tape, fully bedded.
Primer/ Sealer: As recommended by board manufacturer for vapour control.
Accessories: Beads/stops etc., as necessary to complete installation.
Other requirements: None.

15 LINING ON TIMBER STUDWORK PARTITIONS
Background: Timber studs.
Linings: 2 layers 12.5 mm Gyproc wallboard (wallboard Duplex to wet areas).
Fixing: Drywall screws.
Finishing: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of paper tape, fully bedded.
Primer/ Sealer: As recommended by board manufacturer for vapour control.
Accessories: Beads/stops etc., as necessary to complete installation.
Other requirements: None.

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20 WALL LINING ON DABS TO BLOCKWORK WALL GENERALLY
Background: Blockwork.
Linings: 12.5mm Gyproc Wallboard (wallboard Duplex to wet areas).
Fixing: Mounted on dabs
Finishing: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of paper tape, fully bedded.
Primer/ Sealer: As recommended by board manufacturer for vapour control.
Accessories: Beads/stops etc., as necessary to complete installation.
Other requirements: None.

25 LINING ON TIMBER FRAMED CEILINGS to first floor
Background: Timber trusses/existing plasterboard.
Linings: 12.5mm Gyproc wallboard Duplex
Fixing: Drywall screws.
Finishing: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of paper tape, fully bedded.
Primer/ Sealer: As recommended by board manufacturer for vapour control.
Accessories: Beads/stops etc., as necessary to complete installation.
Other requirements: None.

30 LINING ON TIMBER FRAMED CEILINGS to ground floor
Background: Timber joists/existing plasterboard.
Linings: 15mm Gyproc Fireline
Fixing: Drywall screws.
Finishing: Fill joints, gaps, internal angles and perimeters with intumescent sealant and cover with continuous lengths of paper tape, fully bedded.
Battens: 25x50mm timber fixed below Fireline board.
Linings: 12.5mm Gyproc wallboard Duplex
Fixing: Drywall screws.
Finishing: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of paper tape, fully bedded.
Primer/ Sealer: As recommended by board manufacturer for vapour control.
Accessories: Beads/stops etc., as necessary to complete installation.
Other requirements: None.

65 DRY LINING GENERALLY
General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
Plasterboards: To BS 1230-1 with exposed surface and edge profiles suitable to receive the specified finish.
Cutting plasterboards: Neatly and accurately without damaging core or tearing paper facing. Minimize cut edges.
Two layer boarding: Stagger joints between layers.
Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

67 SKIM COAT PLASTER FINISH
Plaster type: Contractors choice.
Thickness: 2-3mm.
Joints: Fill and tape except where coincident with metal beads.
Finish: Tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks.

69 INSTALLING BEADS/ STOPS
Cutting: Neatly using mitres at return angles.
Fixing: Securely using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate.
Finishing: After joint compounds/ plasters have been applied, remove surplus material while still wet from surfaces of beads exposed to view.

70 ADDITIONAL SUPPORTS
Framing: Accurately position and securely fix to give full support to:
Partition heads running parallel with, but offset from main structural supports.
Fixtures, fittings and services.
Board edges and lining perimeters.

75 NEW WET LAID BASES
Dpcs: Install under full width of partitions/ freestanding wall linings.

85 MINERAL WOOL INSULATION
Fitting insulation: Closely butted joints and no gaps. Prevent slumping.
Electrical cables overlaid by insulation: Size accordingly.

87 SEALING GAPS AND AIR PATHS
Sealing: Apply sealant to perimeter abutments and around openings as a continuous bead with no gaps.
Gaps between floor and underside of plasterboard: After sealing, fill with joint

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90 SEAMLESS JOINTING
Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of tape, fully bedded.
Finishing: Feather out jointing compound to give a flush, smooth, seamless surface.
Nail/ screw depressions and minor indents: Fill to give a flush surface.

K11 Rigid sheet flooring/ sheathing/ decking/ sarking/linings/ casings

30 PARTICLEBOARD/CHIPBOARD FLOORING to first floor
Substrate: Existing timber joists.
Additional supports: As clause 67.
Acoustic bar: Gyproc Gypframe SIT Floor channel fixed over existing joists.
Acoustic board: 19mm Gyproc Plank board tightly fitted between joists.
Flooring: Particleboard to BS EN 312, Type P5.
Thickness: 22mm.
Edges: Tongued and grooved all edges.
Setting out: Long edges running across joists. End joints central over joists and staggered.
Fixing to joists:
Fasteners: Countersunk screws.
Fixing centres (maximum): 200mm around floor perimeter and along short edges of each board; 400mm along intermediate supports.
Joint adhesive: PVA to BS EN 204, class D3.
Expansion provision: 10mm clear expansion gap around floor perimeter of floor area and any upstands.

40 PLYWOOD
Substrate: Timber Joists at 400mm centres.
Additional supports: As clause 67.
Plywood: Manufactured to the relevant standards and quality control procedures specified in BS 5268-2, and so marked.
Type: WBP external quality plywood to BS 6566:Part 8 or equivalent.
Nominal thickness: 18mm with square edges.
Setting out: Long edges running across supports. End joints central over supports and staggered.
Fixing centres (maximum): Countersunk screws at 150mm along all supported edges; 300mm along intermediate supports.

67 ADDITIONAL SUPPORTS
Additional studs, noggings and battens:
Provision: In accordance with board manufacturer's recommendations and as follows:
Tongue and groove jointed rigid board areas: To all unsupported perimeter edges.
Butt jointed rigid board areas: To all unsupported edges.
Size: Not less than 50mm wide and of adequate thickness.
Treatment (where required): As for adjacent timber supports.

72 BOARD MOISTURE CONTENT AND CONDITIONING
Moisture content of boards at time of fixing: Appropriate to end use.
Conditioning regime: Submit proposals.

85 FIXING GENERALLY
Timing: Building to be weathertight before fixing boards internally.
Moisture content of timber supports (maximum): 18%.
Fasteners: Evenly spaced in straight lines and in pairs across joints.
Distance from edge of board: Sufficient to prevent damage.

90 OPEN JOINTS
Perimeter joints and joints between boards: Free from plaster, mortar droppings and other debris.
Temporary wedges/ packings: Remove on completion of board fixing.

L10 Windows/ Rooflights/ Screens/ Louvres

10 WOOD WINDOWS existing window refurbished and repositioned
Existing window to be fully refurbished, including replacing any cracked glass, repairing/replacing ironmongery and repainting. Replace any rotten timbers as required.
Timber: To match existing.
Moisture content of new timbers on delivery: 12-19%.
Preservative treatment: None.
Glazing details: Single glazed.
Fixing: Stainless steel screws.
Fastener spacing: When not predrilled or specified otherwise, position fasteners not more than 150mm from ends of each jamb, adjacent to each hanging point of opening lights, and at maximum 450mm centres.

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20 STEEL WINDOWS existing windows refurbished and repositioned as noted.
Existing windows to be fully refurbished, including replacing any cracked glass, repairing/replacing ironmongery and repainting.
Glazing details: Single glazed.
Fixing: Stainless steel screws.
Fastener spacing: Where not predrilled or specified otherwise, position fasteners not less than 50mm and not more than 190mm from ends of each jamb, adjacent to each hanging point of opening lights, and at maximum 900mm centres.
Windows fixed direct into openings: After fixing, fill back of steel frame with waterproof cement fillet.

30 PVC-U WINDOWS new window to extension
Standard: Agrément certified.
Manufacturer: Contractors choice.
Product reference: Submit proposals.
Colour/ Texture: White.
Glazing details: Sealed double glazed units, 28mm with 6mm inner/outer panes and 16mm Argon filled airgap.
Ironmongery: Supplied by window providers.
Other requirements: Trickle vents to head, u-value to be 1.4W/m2K.
Fixing: As manufacturers recommendations.
Fastener spacing: When not predrilled or specified otherwise, position fasteners 150-250mm from ends of each jamb, adjacent to each hanging point of opening lights, but no closer than 150mm to a transom or mullion centre line, and at maximum 600mm centres.

35 PATENT GLAZING TO ENTRANCE LOBBY
Standard: To BS 5516-1.
Manufacturer: Contractors choice.
Product reference: Submit proposals.
Material: Aluminium.
Finish: Powder coated
Colour: White.
Roof slope: 35°.
Glazing: Sealed double glazed units, 28mm with 6mm inner/outer toughened panes and 16mm Argon filled airgap (final glass thickness to be confirmed by manufacturer).
Ironmongery: To be provided by manufacturer.
Fixings: As required to by manufacturer.
Other requirements: Doors to be power operated and self-closing.

45 ROOFLIGHTS
Manufacturer: Velux.
Product reference: PK06.
Size: 940x1180mm.
Frame:
Finish: Internal finish to be white.
Glazing details: Double glazed with toughened outer pane, glazing ref: 0050.
Other requirements: Trickle vent to head, u-value to be 1.3W/m2K.
Fixing: As recommended by manufacturer.

56 GLAZED SCREEN SYSTEM to clerks office
Manufacturer: Contractors choice
Product reference: Submit proposals
Size: 1200x975mm
Fire resistance rating of complete system: 30 minutes.
Materials:
Frame: Timber
Finish: Painted
Colour: White
Fixing: Stainless steel screws.
Fastener spacing: When not predrilled or specified otherwise, position fasteners not more than 150mm from ends of each jamb and at maximum 450mm centres.
Glazing details: Pilkington Pyrostop
Thickness: As recommended by manufacturer to suit size.
Accessories/ Other requirements: Sufficient to complete installation.
Fixing: As recommended by manufacturer.

58 SECONDARY GLAZING SYSTEM to all existing windows
Manufacturer: Contractors choice.
Product reference: Submit proposals.
Material: Aluminium.
Finish: Powder coated
Colour: White.
Glazing: Single glazed, 6mm toughened panes (final glass thickness to be confirmed by manufacturer).
Ironmongery: To be provided by manufacturer.
Fixings: As required to by manufacturer.
Other requirements: Openings to match existing windows..

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60 PRIMING/ SEALING
Wood surfaces inaccessible after installation: Prime or seal as specified before fixing components.

70 FIRE RESISTING FRAMES
Gap between back of frame and reveal: Completely fill with intumescent compound.

75 SEALANT JOINTS
Sealant:
Manufacturer: Contractors choice.
Product reference: One part polysulphide sealant.
Colour: White.
Application: As section Z22 to prepared joints. Finish triangular fillets to a flat or slightly convex profile.

80 IRONMONGERY
Fixing: Assemble and fix carefully and accurately using fasteners with matching finish supplied by ironmongery manufacturer. Do not damage ironmongery and adjacent surfaces.
Checking/ adjusting/ lubricating: Carry out at completion and ensure correct functioning.

90 REPLACEMENT WINDOW INSTALLATION
Standard: To BS 8213-4.

L20 Doors/ shutters/ hatches

10 TIMBER EXTERNAL DOORS
Manufacturer: Contractors choice.
Product reference: Submit proposals.
Finish as delivered: Painted colour to be confirmed.
Glazing details: Sealed double glazed units as clause L40 to achieve a U-value of 1.4W/m^2k.
Ironmongery/ Accessories: Supplied by the door manufacturer.
Fixing: Stainless steel screws.
Fastener spacing: When not predrilled or specified otherwise, position fasteners not more than 250mm from ends of each jamb, adjacent to each hanging point of opening lights, and at maximum 600mm centres.

15 TIMBER EXTERNAL DOOR FRAMES
Manufacturer: Contractors choice.
Product reference: None.
Species: Hardwood from FSC certified supplier.
Assembly:
Adhesive: PVAC to BS EN 204, Class D4
Joinery workmanship: As section Z10.
Preservative treatment: Organic solvent as section Z12 and BWPDA Commodity Specification C5.
Desired service life: 30 years
Moisture content on delivery: 9-13%.
Finish as delivered: Painted White as Heading M60
Perimeter seals: Not required
Fixing: Preferred method of fixing using stainless steel wood screws
Spacing of fixings (frames not predrilled): Maximum 150mm from ends of each jamb, adjacent to each hanging point and at 600mm maximum centres.

55 INTERNAL DOORSETS
Manufacturer: Contractors choice
Product reference: Submit proposals
Frame:
Material: Timber
Size: 32mm, width to suit wall construction.
Moisture content on delivery: 9-13%.
Finish as delivered: Planed ready for decoration.
Doors:
Material: Timber solid core
Thickness: 44mm
Finish as delivered: Wood veneered with hardwood lipping to all edges.
Glazing details: Toughened safety glazing
Ironmongery: See provisional sums (to be supplied by doorset manufacturer)
Perimeter seals: Sealmaster N30/N60 fire and smoke seals (to suit rating of door)
Fixing: Screwed to blockwork or timber frame.
Spacing of fixings (frames not predrilled): Maximum 150mm from ends of each jamb and at 600mm maximum centres.

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60 SLIDING/FOLDING DOORS
Manufacturer: Croxton (or similar)
Product reference: Multifold
Material: Aluminium framed system
Mounting: Top hung with bottom trackx
Sound Rating: 35dB RW
Fire rating: 30 minutes
Ironmongery: As supplied by door manufacturer
Acoustic seals: Preinstalled as supplied by manufacturer.
Finish as delivered: Veneer (to match internal doors).
Fixing: Screwed to blockwork or steel beam with fixings and spacings as recommended by the manufacturer.

70 FIRE RESISTANCE
Requirement: Specified performance to be the minimum period attained when tested for integrity in accordance with BS 476-22, BS EN 1634-1 or BS EN 1634-3.

75 FIRE RESISTING/ SMOKE CONTROL DOORS/ DOORSETS
Gaps between frames and supporting construction: Filled as necessary in accordance with door/ doorset manufacturer's instructions.

80 SEALANT JOINTS
Sealant:
Manufacturer: contractors choice.
Product reference: One part polysulphide.
Colour: White.
Application: As section Z22 to prepared joints. Triangular fillets finished to a flat or slightly convex profile.

85 FIXING IRONMONGERY GENERALLY
Fasteners: Supplied by ironmongery manufacturer.
Finish/ Corrosion resistance: To match ironmongery.
Holes for components: No larger than required for satisfactory fit/ operation.
Adjacent surfaces: Undamaged.
Moving parts: Adjusted, lubricated and functioning correctly at completion.

L40 General glazing

10 WORKMANSHIP GENERALLY
Glazing:
Generally: To BS 6262.
Integrity: Wind and watertight under all conditions. Make full allowance for deflections and other movements.
Glass:
Standards: Generally to BS 952 and to the relevant parts of:
BS EN 572 for basic soda lime silicate glass.
BS EN 1096 for coated glass.
BS EN 12150 for thermally toughened soda lime silicate glass.
BS EN ISO 12543 for laminated glass.
Quality: Free from scratches, bubbles and other defects.
Dimensional tolerances: Panes/ sheets to be accurately sized.
Material compatibility: Glass/ plastics, surround materials, sealers primers and paints/clear finishes to be compatible. Comply with glazing/ sealant manufacturers'

30 PREPARATION
Surrounds, rebates, grooves and beads: Clean and prepare before installing glazing.

40 PUTTY FRONTED SINGLE GLAZING to existing windows where replacing cracked glass
Putty: To BS 544.
Glass installation:
Glass: Located centrally in surround using setting and location blocks and secured with glazing sprigs/ cleats/ clips at 300mm centres.
Finished thickness of back bedding after inserting glazing (minimum): 1.5mm.
Front putty: Finished to a smooth, neat triangular profile stopping 2mm short of sight line. Surface lightly brushed to seal putty to glass.
Sealing putty: Seal as soon as sufficiently hard by applying either the full final finish, or two coats of undercoat applied locally.

55 BEAD FIXED INSULATING GLASS UNITS to new upvc window
Pane material: 28mm sealed glass unit.
Inner pane: 6mm laminated.
Outer pane: 6mm toughened.
Perimeter taping: Do not use.
Surround/ bead: Hardened.
Preparation: Sealant primer.
Bead location: Inside.
Bead fixing: Countersunk brass screws.

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Glazing system: Preformed gasket sections supplied by window manufacturer.
Glazing installation:
Insulating unit: Located centrally in surround using setting and location blocks.
Gaskets and beads: Installed as recommended by frame manufacturer.
Gasket fit at corners: Tight, without gaps.
Drainage and ventilation holes: Unobstructed.

111 PREGLAZING
Preglazing of components: Permitted.
Prevention of displacement: Submit details of precautions to be taken to protect glazing and compound/ seals during delivery and installation.
Defective/ displaced glazing/ compound/ seals: Reglaze components in situ.

M10 Cement based levelling/ wearing screeds

4 CEMENT:SAND LEVELLING SCREEDS
Substrate: Insulation over beam and block floor.
Screed construction: Level throughout.
Thickness:
Nominal: 75mm.
Mix:
Proportions (cement:sand): 1:3-4.5.
Finish: Smooth floated, as clause 70.
To receive: Floor coverings.

40 FLOATING CONSTRUCTION
Insulation:
Type: 150mm EcoTherm Eco-Versal board rigid insulation.
Installation: Lay with tight butt joints. Continue up at perimeter abutments for full depth of screed.
Separating layer:
Type: 500 gauge polythene vapour check.
Installation: Lay over insulation and turn up at perimeter abutments. Lap 100mm at joints

45 AGGREGATES AND CEMENTS
Sand: To BS EN 13139.
Grading limits: To BS 8204-1, Table B.1.
Coarse aggregates:
Standard: To BS EN 12620.
Cement:
Cement types: In accordance with BS 8204-1, clause 5.1.3.

47 ADMIXTURES
Standards; In accordance with BS 8204-1, Table 1.
Calcium chloride: Do not use in admixtures.

50 MIXING
Water content: Minimum necessary to achieve full compaction.
Mixing: Mix materials thoroughly to uniform consistency in a suitable forced action mechanical mixer.

52 COMPACTION
General: Compact thoroughly over entire area.
Screeds over 50mm thick: Lay in two layers of equal thickness. Roughen surface of compacted lower layer then immediately lay upper layer.

55 JOINTS IN LEVELLING SCREEDS
Laying screeds: Lay continuously using 'wet screeds' between strips or bays. Minimize defined joints.

70 SMOOTH FLOATED FINISH
Finish: Even texture with no ridges or steps.

90 CURING
Curing period (minimum): As soon as screed has set sufficiently, closely cover with polyethylene sheeting for seven days.
Drying after curing: Allow screeds to dry gradually.

M20 Plastered/ Rendered/ Roughcast coatings

19 RENDER ON SINGLE STOREY ELEMENT AND FRONT GABLE
Substrate: Blockwork/Brickwork.
Preparation: As recommended by manufacturer.
Manufacturer: Submit proposals.
Undercoats:
Product reference: Contractors choice.
Thickness (excluding dubbing out and keys): As recommended by manufacturer.

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Final coat:
Product reference: Submit proposals. To be through colour render.
Thickness: As recommended by manufacturer.
Finish: Submit proposals.

30 LIGHTWEIGHT GYPSUM PLASTER
Substrate: Blockwork walling.
Preparation: Bonding agent recommended by plaster manufacturer.
Manufacturer: Contractors choice.
Undercoats: To BS EN 13279-1.
Product reference: Premixed lightweight browning plaster (min. 10Kg/m2)
Thickness (excluding dubbing out): 11-13mm.
Final coat: Finish plaster to BS EN 13279-1, class B.
Product reference: Premixed lightweight finish plaster (min 10Kg/m2).
Thickness: 2-3mm.
Finish: Smooth.

50 GYPSUM PLASTER SKIM COAT ON PLASTERBOARD
Plasterboard manufacturer: Gyproc.
Product reference: As Heading K10.
Plaster: Board finish plaster to BS EN 13279-1, class B.
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Thickness: 2-3mm.
Finish: Smooth.

60 CEMENTS FOR MORTARS
Cement: To BS EN 197-1 and CE marked.
Types: Portland cement, CEM I.
Portland slag cement, CEM II.
Portland fly ash cement, CEM II.
Strength class: 32.5, 42.5 or 52.5.
Sulphate resisting cement: To BS 4027 and Kitemarked.
Strength class: 42.5.
Masonry cement: To BS EN 998-1 and Kitemarked
Class: MC 12.5 (with air entraining agent).

62 ADMIXTURES FOR CEMENT GAUGED MORTARS
Air entraining (plasticizing) admixtures: To BS EN 934-2 and compatible with other mortar constituents.
Other admixtures: Submit proposals.
Prohibited admixtures: Calcium chloride and admixtures containing calcium chloride.

65 MIXING
Render mortars (site-made):
Batching: By volume using gauge boxes or buckets.
Mix proportions: Based on damp sand. Adjust for dry sand.
Mixes: Of uniform consistence and free from lumps.

67 COLD WEATHER
Internal work: Take precautions to prevent damage to internal coatings when air temperature is below 3°C.
External work: Avoid when air temperature is at or below 5°C and falling or below 3°C and rising.

71 SUITABILITY OF SUBSTRATES
General: Suitable to receive coatings. Sound, free from contamination and loose areas.

80 PLASTERBOARD BACKINGS
Additional framing supports:
Fixtures, fittings and service outlets: Accurately position to suit fasteners.
Board edges and perimeters: To suit type and performance of board.
Joints:
Joint widths (maximum): 3mm.
End joints: Stagger between rows.
Two layer boarding: Stagger joints between layers.
Joint reinforcement tape: Apply to joints and angles except where coincident with metal beads.

82 BEADS/ STOPS
Location: External angles and stop ends.
Materials:
External render: Stainless steel.
Internal plaster/ render: Galvanized steel.
Fixing: Secure and true to line and level.
Beads/ stops to external render: Fix mechanically.

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87 APPLICATION OF COATINGS
General: Apply coatings firmly and achieve good adhesion.
Appearance of finished surfaces: Even and consistent. Free from rippling, hollows, ridges, cracks and crazing.
Accuracy: Finish to a true plane with walls and reveals plumb and square.
Drying out: Prevent excessively rapid or localized drying out.
Keying undercoats: Cross scratch (plaster coatings) and comb (render coatings). Do not penetrate undercoat.

93 CURING AND DRYING OF RENDER COATINGS
Curing: Keep each coat damp by covering with polyethylene sheet and/ or spraying with water
Curing period (minimum): As recommended by manufacturer..
Drying: Allow each coat to dry thoroughly, with shrinkage substantially complete before applying next coat.

99 RENDER FINAL COAT - PLAIN FLOATED FINISH
Finish: Even, open texture free from laitance.

M40 Stone/ concrete/ quarry/ ceramic tiling

5 TILING TO WALLS
Tiles:
Manufacturer/ Supplier: Contractors choice.
Product reference: Metro.
Colour: White.
Size: 200x100mm.
Other requirements: 3 courses above worktops and basins and full height to shower.
Background/ Base: existing and new plaster.
Preparation: As recommended by tile manufacturer.
Bedding: Ribbed adhesive as clause 50.
Adhesive: Contractors choice.
Joint width: 2mm.
Grout: Ardex UK Ltd. Ref: C2 or similar.
Colour: White.
Accessories: None.

15 NEW BACKGROUNDS/BASES
Background drying times (minimum):
Brick/block walls: 6 weeks.
Gypsum plaster: 4 weeks.

20 EXISTING BACKGROUNDS/BASES GENERALLY
Efflorescence, laitance, dirt, loose and defective material: Remove and make good defective areas with materials compatible with background/base and bedding.
Deposits of oil, grease and other materials incompatible with the bedding: Remove.
Tile, paint and other nonporous surfaces: Clean.
Wet backgrounds: Dry before tiling.
Paint with unsatisfactory adhesion: Remove so as not to impair bedding adhesion.

25 NEW PLASTER
Plaster primer: Apply if recommended by adhesive manufacturer.

30 FIXING GENERALLY
Colour/shade: Avoid unintended variations within tiles for use in each area/room.
Variegated tiles: Mix thoroughly.
Adhesive: Compatible with background/base.
Cut tiles: Neat and accurate.
Fixing: Provide adhesion over entire background/base and tile backs.
Final appearance: Before bedding material sets, make adjustments necessary to give true, regular appearance to tiles and joints.
Deviation of surface: Variations in gap under a 2m straightedge (with feet) placed anywhere on the surface to be not more than 3mm.
Surplus bedding material: Clean from joints and face of tiles.

35 SETTING OUT
Joints: True to line, continuous and without steps.
Joints on walls: Horizontal, vertical and aligned round corners.
Cut tiles: Minimise number, maximise size and locate unobtrusively.

50 RIBBED ADHESIVE BEDDING TO WALLS
Application: Apply 3 mm floated coat of adhesive to dry background. Trowel to ribbed profile.
Tiling: Press tiles firmly onto float coat.

70 GROUTING
Sequence: Grout when bed/adhesive has set sufficient to prevent disturbance of tiles.
Joints: 6mm deep (or depth of tile if less). Free from dust and debris.
Grouting: Fill joints completely, tool to profile, clean off surface. Leave free from blemishes.

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M50 Rubber/ plastics/ cork/ lino/ carpet tiling/ sheeting

15 CARPET TILING
Location: Council Chamber, Meeting Room, Ground Floor Offices, Clerks Office and First Floor Offices.
Base: New and existing screed and new chipboard.
Preparation: As requested by manufacturer.
Fabricated underlay: As requested by manufacturer.
Carpet tiles:
Manufacturer: IVC Commercial (or similar)
Product reference: Creative Spark 989
Size: 500x500mm
Colour/ pattern: Grey (To be confirmed)
Method of laying: Each tile at 90° to next.

20 SHEETING
Location: Reception, Corridors, Staff Lobby, Stores, Lobby, Staircase and First Floor Landing
Base: New and existing screed and new chipboard.
Preparation: As requested by manufacturer.
Fabricated underlay: As requested by manufacturer.
Flooring roll: PVC to BS EN 13553.
Manufacturer: Altro.
Product reference: Classic 25.
Width: to suit room dimensions.
Thickness: 2.5mm.
Colour/ pattern: Graphite (To be confirmed).
Adhesive (and primer if recommended by manufacturer): As manufacturers recommendations.
Seam welding: Hot welding with complimentary coloured rod.
Accessories: None.
Finishing: N/A.
Other requirements: None.

25 SHEETING
Location: All WCs, Shower, Kitchen and Tea Point.
Base: New and existing screed and new chipboard.
Preparation: As requested by manufacturer.
Fabricated underlay: As requested by manufacturer.
Flooring roll: PVC to BS EN 13553.
Manufacturer: Altro.
Product reference: Aquarius.
Width: to suit room dimensions.
Thickness: 2mm.
Colour/ pattern: Hippo (To be confirmed).
Adhesive (and primer if recommended by manufacturer): As manufacturers recommendations.
Seam welding: Hot welding with complimentary coloured rod.
Accessories: 20R cove former.
Finishing: N/A.
Other requirements: 150mm high skirting with suitable capping to all WCs and Shower.

40 LAYING COVERINGS ON NEW WET LAID BASES
Base drying aids: Not used for at least four days prior to moisture content test.
Base moisture content test: Carry out in accordance with BS 5325, Annexe A or BS 8203, Annexe A.
Commencement of laying coverings: Not until all readings show 75% relative humidity or less.

45 EXISTING FLOOR COVERING REMOVED
Substrate: Clear of covering and as much adhesive as possible. Skim with smoothing compound to give smooth, even surface.

60 SETTING OUT TILES
Method: Set out from centre of area/ room so that wherever possible:
Tiles along opposite edges are of equal size.
Edge tiles are more than 50% of full tile width.

65 LAYING COVERINGS
Base/ substrate condition: Rigid, dry, smooth, free from grease, dirt and other contaminants.
Use a primer where recommended by adhesive manufacturer. Allow to dry thoroughly.
Adhesive: As specified, as recommended by covering manufacturer or, as approved.
Conditioning of materials prior to laying: As recommended by manufacturer.
Environment: Before, during and after laying, provide adequate ventilation and maintain temperature and humidity approximately at levels which will prevail after building is occupied.
Finished coverings: Accurately fitted, tightly jointed, securely bonded, smooth and free from air bubbles, rippling, adhesive marks, stains, trowel ridges and high spots.

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70 EDGINGS AND COVER STRIPS
Manufacturer: Contractors choice
Product reference: Submit proposals
Material/ finish: Aluminium.
Fixing: Secure (using matching fasteners where exposed to view) with edge of covering gripped.

75 STAIR NOSINGS AND TRIMS
Manufacturer: Gradus.
Product reference: AKSA aluminium nosing.
Material/ finish: Interiors to be Buttercup, Ref LRV55:54 and Poppy, Ref: LRV:10:39.
Fixing: Secure, level and with mitred joints. Adjusted to suit thickness of covering with continuous packing strips of hardboard or plywood. Nosings and packing strips bedded in gap-filling adhesive recommended by nosing manufacturer.
Screw fixing with matching plugs: Screwed and glued.

80 SKIRTINGS
Types: Wet room with flooring turned up walls 100 mm.
Manufacturer: Altro.
Product reference: 20R cove former.
Fixing: Secure with top edge straight and parallel with floor.
Corners: Mitre joints.

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

M60 Painting/ clear finishing

10 EMULSION PAINT TO WALLS AND CEILINGS
Manufacturer: Dulux.
Product reference: Vinyl Matt Emulsion.
Surfaces: New and existing plaster skim coat.
Preparation: As clauses 30 and 32 and as manufacturers recommendations.
Initial coats: Mist coat.
Number of coats: 1.
Undercoats: As recommended by manufacturer.
Number of coats: 1.
Finishing coats: Matt vinyl.
Number of coats: 2.
Colour: White.

15 MOISTURE RESISTANT EMULSION PAINT TO WCs AND SHOWER
Manufacturer: Dulux.
Product reference: Moisture Resistant Vinyl Matt Emulsion.
Surfaces: New and existing plaster skim coat.
Preparation: As clauses 30 and 32 and as manufacturers recommendations.
Initial coats: Mist coat.
Number of coats: 1.
Undercoats: As recommended by manufacturer.
Number of coats: 1.
Finishing coats: Matt vinyl.
Number of coats: 2.
Colour: White

18 GLOSS PAINT TO INTERNAL JOINERY
Manufacturer: Dulux.
Product reference: Trade Gloss
Preparation: Degrease and abrade to provide key.
Undercoats: As recommended by manufacturer.
Number of coats: 1.
Finishing coats: Full gloss.
Number of coats: 2
Colour: White (to be confirmed)

20 COATING MATERIALS
Manufacturers: Obtain materials from any of the following:
Selected manufacturers: Submit name before commencement of coating work.

30 PREPARATION GENERALLY
Standard: In accordance with BS 6150.
Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.

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Substrates: Sufficiently dry in depth to suit coating.
Efflorescence salts, dirt, grease and oil: Remove.
Surface irregularities: Provide smooth finish.
Organic growths and infected coatings:
Remove with assistance of biocidal solution.
Apply residual effect biocidal solution to inhibit regrowth.
Joints, cracks, holes and other depressions: Fill with stoppers/ fillers. Provide smooth finish.
Dust, particles and residues from preparation: Remove and dispose of safely.
Doors, opening windows and other moving parts:
Ease, if necessary, before coating.
Prime resulting bare areas.

32 PREVIOUSLY COATED SURFACES GENERALLY
Preparation: In accordance with BS 6150, clause 11.5.
Contaminated or hazardous surfaces: Give notice of:
Coatings suspected of containing lead.
Substrates suspected of containing asbestos.
Significant rot, corrosion or other degradation of substrates.
Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
Alkali affected coatings: Completely remove.
Retained coatings:
Thoroughly clean.
Gloss coated surfaces: Provide key.
Partly removed coatings: Apply additional preparatory coats.
Completely stripped surfaces: Prepare as for uncoated surfaces.

35 FIXTURES AND FITTINGS
Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
Removal: Before commencing work.
Replacement: Refurbish as necessary, refit when coating is dry.

37 WOOD PREPARATION
General: Provide smooth, even finish with lightly rounded arrises.
Degraded or weathered surface wood: Take back surface to provide suitable substrate.
Degraded substrate wood: Repair with sound material of same species.
Heads of fasteners: Countersink sufficient to hold stoppers/ fillers.
Resinous areas and knots: Apply two coats of knotting.
Defective primer: Take back to bare wood and reprime.

39 STEEL PREPARATION
Corrosion and loose scale: Take back to bare metal.
Residual rust: Treat with a proprietary removal solution.
Bare metal: Apply primer as soon as possible.

41 MASONRY AND RENDERING PREPARATION
Loose and flaking material: Remove.

43 PLASTER PREPARATION
Nibs, trowel marks and plaster splashes: Scrape off.
Overtrowelled 'polished' areas: Provide suitable key.

45 PREVIOUSLY PAINTED WINDOW FRAMES
Paint encroaching beyond glass sight line: Remove.
Loose and defective putty: Remove.
Putty cavities and junctions between previously painted surfaces and glass: Clean thoroughly.
Finishing:
Patch prime, reputty, as necessary and allow to harden.
Seal and coat as soon as sufficiently hard.

50 EXTERNAL POINTING TO EXISTING FRAMES
Defective sealant pointing: Remove.
Joint depth: Approximately half joint width; adjust with backing strip if necessary.
Sealant:
Manufacturer: Contractors choice
Product reference: Submit proposals
Preparation and application: As section Z22.

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55 EXISTING GUTTERS
Dirt and debris: Remove from inside of gutters.
Defective joints: Clean and seal with suitable jointing material.
Suspected hazardous materials: submit method statement.

61 COATING GENERALLY
Application standard: In accordance with BS 6150, clause 9.
Conditions: Maintain suitable temperature, humidity and air quality.
Surfaces: Clean and dry at time of application.
Thinning and intermixing: Not permitted unless recommended by manufacturer.
Priming coats: Apply as soon as possible on same day as preparation is completed.
Finish:
Even, smooth and of uniform colour.
Free from brush marks, sags, runs and other defects.
Cut in neatly.
Doors, opening windows and other moving parts: Ease before coating and between coats.

65 CONCEALED JOINERY SURFACES
General: After priming, apply additional coatings to surfaces that will be concealed when component is fixed in place.

66 CONCEALED METAL SURFACES
General: Apply additional coatings to surfaces that will be concealed when component is fixed in place.

70 EXTERNAL DOORS
Bottom edges: Prime and coat before hanging.

75 BEAD GLAZING TO COATED WOOD
Before glazing: Apply first two coats to rebates and beads.

80 PUTTY GLAZING
Setting: Allow putty to set for seven days.
Sealing:
Within a further 14 days, seal with an oil based primer.
Fully protect putty with coating system as soon as it is sufficiently hard.
Extend finishing coats on to glass up to sight line.

N10 General fixtures/ furnishings/ equipment

40 ROLLER SHUTTERS – to reception desk
Manufacturer: SimFlex (or similar).
Product reference: SGFS Solid Steel.
Material: Steel
Fire Rating: 1Hr
Operation: Electrically operated with manual override and battery backup
Colour: Powder Coated White
Fixing: As recommended by manufacturer.
Other requirements: To be connected to the fire alarm system

50 MOISTURE CONTENT OF WOOD AND WOOD BASED BOARDS
Temperature and humidity: During delivery, storage, fixing and to handover maintain conditions to suit specified moisture contents of timber components.
Testing: When instructed, test components with approved moisture meter to manufacturer's recommendations.

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

80 SEALANT
Manufacturer: Contractors choice.
Product reference: One part polysulphide.
Colour: White.
Application: As section Z22.

N11 Domestic kitchen fittings, furnishings and equipment

10 FITTED BASE UNITS AND WALL UNITS – See part 4 provisional sums
Manufacturer: To be confirmed.
Product reference: Submit proposals.
Dimensions: To BS EN 1116.
Surface finishes: To BS 6222-3.
Doors and drawer fronts:
Material: Submit proposals.

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Finish and colour: To be confirmed.
Side panels, plinths and shelves:
Material: Submit proposals.
Finish and colour: To be confirmed.
Accessories: As required by manufacturer.

20 KITCHEN WORKTOP – See part 4 provisional sums
Standard: To BS 6222-3.
Manufacturer: To be confirmed.
Product reference: Submit proposals.
Material: Laminate covered particle board.
Dimensions: 38 x 602mm.
Colour: To be confirmed.
Exposed edges: Laminated, side to have cover strip added.
Support: Base units.
Other requirements: None.

30 SINKS, TAPS, TRAPS AND WASTES– See part 4 provisional sums
Sinks:
Standard: To BS EN 13310.
Manufacturer: To be confirmed.
Product reference: Submit proposals.
Taps:
Manufacturer: To be confirmed.
Product reference: Submit proposals.
Operation: Lever.
Wastes: Basket strainer.
Manufacturer: To be confirmed.
Product reference: Submit proposals.
Size: To fit sink.
Traps: Bottle trap.
Standard: To BS EN 274-1, -2 and -3.
Manufacturer: Contractor's choice.
Product reference: Contractor's choice.
Size: To fit waste.
Material: Plastic.
Depth of seal (minimum): 75 mm.
Accessories: None.

40 APPLIANCES – See part 4 provisional sums
Items: 4 No. Fridge/Freezers, Dishwasher, Washer/Dryer 3 No. Microwaves.
Manufacturer: To be confirmed.
Product reference: Submit proposals.
Colour and finish: To be confirmed.
Service connections: As recommended by manufacturer.

50 SEALANT
Standard: To latest BS.
Manufacturer: Contractors choice.
Product reference: One part polysulphide.
Colour: White.

60 MOISTURE CONTENT OF WOOD AND WOOD BASED BOARDS
Control and monitoring:
Method statement: Submit.

65 INSTALLATION GENERALLY
Fixings and adhesives: As section Z20.
Services: As sections S90 and V90.

70 INSTALLING UNITS AND WORKTOPS
General: Well fitting, stable and secure.

75 INSTALLING SINKS, TAPS AND WASTES
Water supply: To BS 6700 and BS EN 806-2.
Taps:
Fixing: Secure, watertight seal with the appliance.
Positioning: Hot tap to left of cold tap as viewed by the user of the appliance.
Wastes:
Bedding: Waterproof jointing compound.
Fixing: With resilient washer between appliance and backnut.

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80 SEALANT BEDDING AND POINTING
Application: As section Z22.
Bedding: Sink to top of worktop.
Pointing: Between units and floor.

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

95 APPLIANCE COMMISSIONING
Appliance operation, functions and controls: Verify.
Documentation: Submit guarantees, instruction manuals, etc.

N13 Sanitary appliances and fittings

5 WC AND CISTERN - Ambulant WC – See part 4 provisional sums
Standard: Vitreous china to BS3402.
Type: Close coupled.
Pan:
Manufacturer: Contractor's choice.
Product reference: Submit proposals.
Material: Vitreous china.
Seat and cover:
Manufacturer: Contractor's choice.
Product reference: Submit proposals.
Material: Stainless steel hinges.
Cistern:
Manufacturer: Contractor's choice.
Product reference: Submit proposals.
Material: Vitreous China.
Colour and finish: White.

30 WASH BASINS - Ambulant WC – See part 4 provisional sums
Type: Wall Mounted
Manufacturer: Contractor's choice.
Product reference: Submit proposals.
Size: To be confirmed
Material: Vitreous China.
Fixing: Concealed hangers, Contractor's choice.
Tap/ Chainstay/ Overflow holes: Only one tap hole required.
Water supply fittings: Mixer tap.
Manufacturer: Contractor's choice.
Product reference: Submit proposals.
Operation: Self closing.
Wastes: Chain and plug.
Standards: To BS EN 274-1, -2 and -3.
Size: 40mm diam.
Material: Brass, chrome plated.
Tail: Slotted.
Traps: Bottle.
Standards: To BS EN 274-1, -2 and -3.
Manufacturer: Contractor's choice.
Product reference: Contractor's choice.
Size: To suit waste.
Material: Plastics, self colour.
Depth of seal (minimum): 75mm.

40 SHOWER UNITS - See part 4 provisional sums
Tray:
Manufacturer: Contractor's choice.
Product reference: Submit proposals.
Size: 900x750mm.
Material: Acrylic.
Shower fittings:
Manufacturer: Contractor's choice.
Product reference: Submit proposals.
Finish: Chrome plated.
Operating control: Submit proposals.
Wastes:
Standards: To BS EN 274-1, -2 and -3.
Manufacturer: Contractor's choice.
Product reference: Supplied with tray.
Size: DN 40.
Material: Chrome plated.

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Tail: Unslotted.
Traps:
Standards: To BS EN 274-1, -2 and -3.
Manufacturer: N/A.
Product reference: N/A.
Size: DN 40.
Material: N/A.
Depth of seal (minimum): 50mm.
Enclosure:
Manufacturer: Contractor's choice.
Product reference: Submit proposals.
Accessories: None.

50 DOCUMENT M PACKAGE – Disabled WC - See part 4 provisional sums
Manufacturer: Armitage Shanks.
Product reference: DOC M PACK.
Type approval certificate: Submit.

55 MIRRORS TO WCs AND SHOWERS
Manufacturer: Contractors choice.
Product reference: Submit proposals.
Size: 300x400mm.

456 SOAP DISHES
Manufacturer: Contractors choice.
Product reference: Submit proposals.
Material: High quality Polyamide.

462 TOILET PAPER HOLDERS
Manufacturer: Contractors choice.
Product reference: Submit proposals.
Material/ finish: High quality Polyamide.

68 SEALANT FOR POINTING
Standard: To latest BS.
Manufacturer: Contractors choice.
Product reference: One part polyshlphide.
Colour: White.

70 INSTALLATION GENERALLY
Assembly and fixing: Fix appliances securely to structure, without taking support from pipelines, level and plumb and so that surfaces designed to fall drain as intended.
Jointing and bedding compounds: Recommended by manufacturers of appliances, accessories and pipes, to form watertight joints between appliances and backgrounds (except cisterns) and between appliances and discharge pipes.

75 CISTERNS
Cistern operating components: Obtain from cistern manufacturer.
Float operated valve: Matched to pressure of water supply.
Overflow pipe: Fixed to falls, and located to give visible warning of discharge. Agree position.

N15 Fire and safety signage systems

10 GENERAL REQUIREMENTS
Signage system design:
Complete to: BS 559 and BS ISO 16069.
Comply with the requirements of: Spiller Ironmongery and signage specification .
Proposals: Submit drawings, schedules, technical information, calculations and manufacturer's literature.

20 SIGNAGE SYSTEM SPECIFICATION
Content: Signs including facing information, components, inserts, accessories and fixings necessary to complete the system.
Geometric shapes, colours and layout: To BS 5499-1.
Font: Helvetica medium.
Escape route: In accordance with BS 5499-4 and BS ISO 16069
Safety meaning: In accordance with BS 5499-5.
Water safety: In accordance with BS 5499-11.

60 FIXING SIGNS GENERALLY
Installation: To BS 559.
Secure, plumb and level.
Fasteners and adhesives: As section Z20.
Strength of fasteners: Sufficient to support live and dead loads.

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Fasteners for external signs: Corrosion resistant material or with a corrosion resistant finish. Isolate dissimilar metals to avoid electrolytic corrosion.
Fixings showing on surface of sign: Must not detract from the message being displayed.

90 DOCUMENTATION
Submit:
Manufacturer's maintenance instructions.
Guarantees, warranties, test certificates, record schedules and logbooks.

P10 Sundry insulation/ proofing work/ fire stops

10 LOFT INSULATION – To existing roofspace
Material: Glasswool to BS EN 13162.
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Depth/ Thickness: Existing insulation to be topped up to give total thickness of 400mm.
Installation requirements:
Joints: Butted, no gaps.
Fasteners: Used where necessary to prevent slumping.
Air space above insulation: min. 50mm at eaves.

11 INSULATION AT GROUND FLOOR CEILING LEVEL LAID BETWEEN JOISTS
Material: Glasswool to BS EN 13162.
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Depth/ Thickness: 100mm.
Installation requirements:
Joints: Butted, no gaps.
Fasteners: Used where necessary to prevent slumping.
Electric cables overlaid by insulation: Sized accordingly.

15 INSULATION FITTED BETWEEN RAFTERS - To ground floor extensions
Insulation: Rigid Polyisocyanurate (PIR)
Manufacturer: EcoTherm
Product reference: Eco-Versal.
Thickness: 125mm.
Installation requirements:
Joints: Butted, no gaps.
Fasteners: Used where necessary to prevent slumping.
Air space above insulation: min. 25mm.

16 INSULATION FITTED BELOW RAFTERS - To ground floor extensions
Insulation: Rigid Polyisocyanurate (PIR)
Manufacturer: EcoTherm
Product reference: Eco-Liner insulated plasterboard.
Thickness: 52.5mm.
Fixing: As recommended by manufacturer
Finishing: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of paper tape, fully bedded.
Primer/ Sealer: As recommended by board manufacturer for vapour control.
Accessories: Beads/stops etc., as necessary to complete installation.
Other requirements: None.

20 FULL FILL CAVITY INSULATION
Insulation: Rigid Polyisocyanurate (PIR)
Manufacturer: EcoTherm.
Product reference: Eco-Versal.
Thermal Conductivity: 0.022W/mK
Face size: 1200x450mm .
Thickness: 90mm.
Placement: Continuous and free of mortar and debris.

25 WALL LINING ON BATTENS - To existing external walls
Background: 25x50mm timber battens on existing plaster.
Insulation: Rigid Polyisocyanurate (PIR)
Manufacturer: EcoTherm
Product reference: Eco-Liner insulated plasterboard.
Thickness: 62.5mm
Fixing: As recommended by manufacturer
Finishing: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of paper tape, fully bedded.
Primer/ Sealer: As recommended by board manufacturer for vapour control.
Accessories: Beads/stops etc., as necessary to complete installation.
Other requirements: None.

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45 INSULATION TO GROUND FLOOR
Insulation: Rigid Polyisocyanurate (PIR)
Manufacturer: EcoTherm
Product reference: Eco-Versal.
Thickness: 150mm.
Installation requirements:
Joints: Butted, no gaps.
Service openings: Sealed.

50 SOUND DEADENING QUILT INSULATION TO PARTITIONS
Manufacturer: Saint-Gobain Isover.
Product reference: Isover APR 1200 acoustic partition roll.
Thickness: 50mm.
Installation requirements:
Joints: Butted, no gaps.
Fasteners: Used to prevent slumping.

60 VAPOUR CONTROL LAYER FIXED TO STUDS/ JOISTS/ FRAMING
Material: Polythene.
Manufacturer: Contractors choice.
Product reference: 1000 gauge.
Moisture content of timber at time of fixing (maximum): 20%.
Installation requirements:
Setting out: Joints minimized.
Fixing: Staples at 250mm centres maximum along all supports. Membrane not sagging.
Joints: At supports only, lapped 150mm minimum.
Openings: Membrane fixed to reveals.
Joints and edges: Sealed with double sided tape.
Penetrations: Sealed.

65 BREATHER MEMBRANE
Manufacturer: Permavent.

Product reference: Permavent Dry
Installation requirements:
Set out: Joints minimized. Membrane to form a continuous barrier to prevent water, snow and wind blown dust reaching the substrate.
Joints: Lapped 100mm minimum horizontally and 150mm minimum vertically.
Fixings: Galvanized, sherardized or stainless steel large head nails or stainless steel staples.
Bottom edges: Membrane lapped over flashings, sills, etc. to allow free drainage to the exterior.
Penetrations: Sealed.

75 WIRED SMALL CAVITY BARRIERS
Material: Wire reinforced mineral wool minimum 50mm.
Fire resistance rating: 30 minutes
Installation requirements.
Fasteners: Staples at maximum 150mm centres. Fold cavity barrirer if necessary to ensure a tight fit.
Joints and intersections: Butted, no gaps.

P20 Unframed isolated trims/ skirtings/ sundry items

10 SOFTWOOD INTERNAL DOOR FRAMING
Quality of wood and fixing: To BS 1186-3.
Species: Softwood from FSC certified supplier.
Moisture content at time of fixing: 9-13%
Preservative treatment: Organic solvent as section Z12 and Wood Protection Association commodity specification – C8.
Profile: Rectangular.
Finished size: 32mm wide, depth to suit wall thickness.
Finish as delivered: Primed ready for clear oak varnish.
Fixing: Plugged, screwed and pelleted at 400mm c/s.
Other requirements: Sealmaster fire and smoke seals to be rebated into frames.

15 SOFTWOOD DOOR STOPS
Quality of wood and fixing: To BS 1186-3.
Species: Softwood from FSC certified supplier.
Moisture content at time of fixing: 9-13%
Preservative treatment: Organic solvent as section Z12 and Wood Protection Association commodity specification – C8.
Profile: Rectangular.
Finished size: 18x40mm.
Finish as delivered: Primed ready for clear oak varnish.
Fixing: Screwed at 300mm centres.

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35 MEDIUM DENSITY FIBREBOARD TO SKIRTING, ARCHITRAVES AND CILL BOARDS
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Standard: To BS EN 622-5.
Type: MDF
Formaldehyde class: To BS EN 622-1, Class E1.
Size: Pencil rounded edged skirtings and architraves sizes to match existing and 15mm bull nose cills, depth to suit reveals.
Finish: Prepared and primed as heading M60.
Support/ Fixing: 50mm single thread woodscrews, to be positioned in pairs minimum 50mm apart horizontally (minimum 25mm from edge) at 400mm centres.

80 INSTALLATION GENERALLY
Joinery workmanship: As section Z10.
Metal workmanship: As section Z11.
Methods of fixing and fasteners: As section Z20.
Straight runs: To be in one piece, or in long lengths with as few joints as possible.
Running joints: Location and method of forming to be agreed where not detailed.
Joints at angles: Mitred, unless shown otherwise.
Position and level: To be agreed where not detailed.

P21 Door/ window ironmongery

1 IRONMONGERY TO EXTERNAL DOORS AND WINDOWS
To be provided by manufacturer.

8 DOOR HINGES: 3 per door – See part 4 provisional sums
Manufacturer: Contractor's choice.
Product reference: Stainless steel butt hinges. Submit samples for approval.
Type: Washered Butt Hinge.
Size: 102x76mm.
Material/ finish: Satin stainless steel.
Other requirements: None.

12 OVERHEAD DOOR CLOSERS: fitted to all doors (except wcs and shower rooms) – See part 4 provisional sums
Standard: To BS EN 1154.
Devices to fire/ smoke control doors: CE marked.
Manufacturer: Contractor's choice.
Product reference: Submit samples for approval.
Power size: Adjustable 2-6.
Other functions: Delayed closing.
Casing finish: Anodized, colour silver.
Variable power: Matched to size, weight and location of doors. Fully closing latched doors and holding unlatched doors closed.
Closing against smoke seals of fire doors: Positive. No gaps.

24 DOOR LOCKS: 1 per door – See part 4 provisional sums
Standard: To BS EN 12209.
Manufacturer: Contractor's choice.
Product reference: Submit samples for approval.
Type: 3 lever mortice deadlock.
Backset: 57mm.
Material/ finish: Stainless steel faceplate.

36 PRIVACY INDICATOR BOLTS: to wcs and ensuite and shower – See part 4 provisional sums
Manufacturer: Contractor's choice.
Product reference: Thumbturn. Submit samples for approval.
Material/ finish: Satin stainless steel.
Emergency release facility: Required.

38 LEVER HANDLES – See part 4 provisional sums
Manufacturer: Contractor's choice.
Product reference: Submit samples for approval.
Material/ finish: Satin stainless steel.
Mounting: Face fix.

46 KICK PLATES TO ALL DOORS – See part 4 provisional sums
Manufacturer: Contractor's choice.
Product reference: Submit samples for approval.
Size: 150mm high, length to suit door.
Material/ finish: Satin stainless steel, grade 1.4301 (304).
Mounting: Face fix.

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48 ESCUTCHEONS – See part 4 provisional sums
Manufacturer: Contractor's choice.
Product reference: Submit samples for approval.
Material/ finish: Satin stainless steel.
Keyhole type: To suit specified lock.

50 SIGNAGE – See part 4 provisional sums
Manufacturer: Contractors choice, to complying DDA regulations.
Product reference: Disabled/Unisex sign.
Material/ finish: Satin stainless steel.
Mounting: Face fix.

100 WORKMANSHIP
Carefully fix using fastenings with matching finish supplied by ironmongery manufacturers, prevent damage to ironmongery and adjacent surfaces, ensure that all sharp edges are removed from striking plates or other components. All fixings/ironmongery to be fitted in accordance with manufacturers instructions

P30 Trenches, pipeways and pits for buried engineering services

10 ROUTES OF SERVICES BELOW GROUND
Locations of new service runs: Submit proposals.
Temporary marking: Indicate service runs with marker posts.

20 TRENCHES
Width: As small as practicable.
Trench sides: Vertical.
Trench bottoms: Remove mud, rock projections, boulders and hard spots. Trim level.
Give notice: To inspect trench for each section of the work.

30 PIPEDUCTS
Types, colour and sizes: As recommended by the service undertaker.
General: Lay pipes straight to line, true to gradient or level on an even, continuous bed.
Bedding thickness: As recommended by the service undertaker.
Clearance between pipe ducts where they cross (minimum): 50 mm.
Drawlines: During laying, thread through pipeducts.
Material, strength and length: As specified by service undertaker.
Protection: Protect from ingress of debris. During construction, temporarily seal all exposed ends.
Inspection: Before backfilling, allow service undertakers to inspect installation.
Surround material: Lay and compact to 150 mm (minimum) above pipeduct crown.
Markers: Lay marker, 200 mm above pipeduct.
Type: As recommended by the service undertaker.

40 BEDDING/ SURROUND FOR PIPEDUCTS
Bedding: Size 4/ 10 to BS EN 12620. Compact uniformly in 100mm maximum layers.
Surround: As recommended by the service undertaker.

50 BACKFILLING
Backfill from top of pipeduct surround: Material excavated from the trench.
Backfilling: Lay and compact in 300mm maximum layers. Do not use heavy compactors before backfill is 600mm deep.

P31 Holes, chases, covers and supports for services

10 HOLES, RECESSES AND CHASES IN MASONRY
Locations: To maintain integrity of strength, stability and sound resistance of construction.
Sizes: Minimum needed to accommodate services.
Holes (maximum): 300x300mm.
Walls of hollow or cellular blocks: Do not chase.
Walls of other materials:
Vertical chases: No deeper than one third of single leaf thickness, excluding finishes.
Horizontal or raking chases: No longer than 1m. No deeper than one sixth of the single leaf thickness, excluding finishes.
Chases and recesses: Do not set back to back. Offset by a clear distance at least equal to the wall thickness.
Cutting: Do not cut until mortar is fully set. Cut carefully and neatly. Avoid spalling, cracking and other damage to surrounding structure.

20 NOTCHES AND HOLES IN STRUCTURAL TIMBER
General: Avoid if possible.
Sizes: Minimum needed to accommodate services.
Position: Do not locate near knots or other defects.
Notches and holes in same joist: Minimum 100mm apart horizontally.
Notches in joists: Locate at top. Form by sawing down to a drilled hole.
Depth (maximum): 0.125 x joist depth.
Distance from supports: Between 0.07 and 0.25 x span.

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Holes in joists: Locate on neutral axis.
Diameter (maximum): 0.25 x joist depth.
Centres (minimum): 3 x diameter of largest hole.
Distance from supports: Between 0.25 and 0.4 of span.
Notches in roof rafters, struts and truss members: Not permitted.
Holes in struts and columns: Locate on neutral axis.
Diameter (maximum): 0.25 x minimum width of member.
Centres (minimum): 3 x diameter of largest hole.
Distance from ends: Between 0.25 and 0.4 of span.

30 INSTALLING PIPE SLEEVES
Sleeves: Fit to pipes passing through building fabric.
Material: Match pipeline.
Size: One or two sizes larger than pipe to allow clearance.
Finish: Install sleeves flush with building finish. In areas where floors are washed down, install protruding 100mm above floor finish.
Masking plates: Fit at visible penetrations, including through false ceilings of occupied rooms.

40 SEALING AROUND SERVICES
Service: Electric cables and hot and cold water pipes
Location: Pipe sleeves through walls and floors
Sealing material: Silicone sealant
Method: Completely fill gaps with sealant and finish neatly and watertight

Q20 Granular sub-bases to roads/ pavings

10 THICKNESSES OF SUB-BASES
Thicknesses: As specified in the relevant paving section.

30 EXCAVATION AND COMPACTION OF SUBGRADES
Final excavation to formation level: Carry out immediately before compaction of subgrade.
Soft spots and voids: Give notice.
Wet conditions: Do not excavate or compact when the subgrade may be damaged or destabilized.
Compaction: Thoroughly, by roller or other suitable means, adequate to resist subsidence or deformation of the subgrade during construction and of the completed roads/ pavings when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.

40 SUB-BASES
Granular material: Free from ice, harmful matter and excessive dust or clay, well graded, all pieces less than 75mm in any direction, and selected from one of the following:
Crushed rock (other than argillaceous rock) or quarry waste.
Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
Gravel or hoggin with not more clay content than is required to bind the material together, and with no large lumps of clay.
Natural sand or gravel.

45 LAYING AND COMPACTING SUB-BASES
Subgrade: Not frozen and free from loose soil, rubbish and standing water.
Structures, membranes and buried services: Ensure stability and avoid damage.
General: Spread and level in layers.
Compaction:
Timing: As soon as possible after laying.
Method: By roller or other suitable means, adequate to resist subsidence or deformation of the sub-base during construction and of the completed paving when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.

50 ACCURACY
Permissible deviation from required levels, falls and cambers (maximum):
Subgrade: ± 20mm.
Sub-base: ± 12mm.

70 PROTECTION
Sub-bases: As soon as practicable, cover with subsequent layers, specified elsewhere.
Subgrades and sub-bases: Prevent degradation by construction traffic, construction operations and inclement weather.

Q21 In situ concrete roads/ pavings/ bases

11 UNREINFORCED PAVING (DESIGNATED CONCRETE)
Granular sub-base: Granular material free from ice, harmful matter and excessive dust or clay.
Thickness: must pass through a 75mm BS sieve.
Separation membrane: Polyethylene sheet 125 micrometres thick, edges lapped 300mm.
Concrete: To BS 8500-2.
Designation: as section E.

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Fibres: Not required.
Aggregate:
Size (maximum): Contractor's choice.
Coarse recycled concrete aggregate: Not permitted.
Additional aggregate requirements: None.
Consistence class: Contractor's choice.
Additional mix requirements: None.
Slab thickness (minimum): 150mm.
Finish: Tamped with ironed margins.

14 READY-MIXED CONCRETE
Production plant: Currently certified by a body accredited by UKAS to BS EN 45011 for product conformity certification of ready-mixed concrete.
Source of ready-mixed concrete: Obtain from one source if possible. Otherwise, submit proposals.
Name and address of depot: Submit before any concrete is delivered.
Delivery notes: Retain for inspection.
Declarations of nonconformity from concrete producer: Notify immediately.

24 SUB-BASE PREPARATION
Surface: Sound, free of debris, mud and soft spots, and suitably close textured.
Levels and falls: Within specified tolerances:
Vehicular areas: ±20mm.
Pedestrian areas: ±12mm.
Drainage outlets: +0 to -10mm of required finished level.

31 TRANSPORTING CONCRETE
General: Avoid contamination, segregation, loss of ingredients, excessive evaporation and loss of workability. Protect from heavy rain.
Entrained air: Anticipate effects of transport and placing methods in order to achieve specified air content.
Placing: Use suitable walkways and barrow runs for traffic over reinforcement and freshly placed concrete.

32 LAYING CONCRETE GENERALLY
Timing: Place as soon as practicable after mixing and while sufficiently plastic for full compaction. After discharge from the mixer do not add water or retemper.
Temperature of concrete at point of delivery:
In hot weather (maximum): 30°C.
In cold weather (minimum): 5°C.
Cold weather:
Do not use frozen materials.
Do not place concrete against frozen or frost covered surfaces.
Do not place concrete when air temperature is below 3°C on a falling thermometer. Do not resume placing until rising air temperature has reached 3°C.
Surfaces on which concrete is to be placed: Free from debris and standing water.
Placing in final position: Place in one continuous operation up to construction joints.
Do not place concrete simultaneously on both sides of movement joints.
Spreading: Spread and strike off with surcharge sufficient to obtain required compacted thickness.
Adjacent work: Form neat junctions and prevent damage. Keep clean all channels, kerbs, inspection covers, etc.

33 COMPACTING
General: Fully compact concrete to full depth (until air bubbles cease to appear on the surface) especially around reinforcement, cast-in accessories, into corners and at joints.
Poker vibrators: Do not use to make concrete flow into position. Do not allow to come into contact with fabric reinforcement.
Wet formed joint grooves: Rectify any irregularities by means of a vibrating float.
Finish: A dense, even textured surface free from laitance or excessive water.
Excess concrete: Remove from top of groove formers.

34 MANHOLE COVER AND GULLY GRATING FRAMES
General: Set frames in independent concrete slabs placed over, but slightly larger than, exterior of manhole shaft or gully pot and any concrete surround.
Positioning of joints in main slab: Set out so that manhole/ gully slabs are adjacent to a main transverse joint, wherever possible.
Joints: Separate the independent slabs from main slabs with 25mm thick joint filler board.
Set board 20mm below top of slab to form a sealing groove.

35 LEVELS
Lines and levels of finished surface: Smooth and even, with regular falls to prevent ponding.
Finished surfaces: Within ±6mm of required levels (+6 or -0mm adjacent to gullies and manholes).

36 SURFACE REGULARITY
General: Where appropriate in relation to the geometry of the surface, the variation in gap under a 3m straightedge (with feet) placed anywhere on the surface to be not more than 5mm.
Sudden irregularities: Not permitted.

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41 JOINTS GENERALLY
Layout: All joints to be accurately located, straight and well aligned.
Construction joints made at end of working day: Form as contraction joints.
Modifications to joint design or location: Submit proposals.
Temporary support: Prior to concreting, set formwork, dowel bars, tie bars, joint filler boards, sealing groove fillets and the like rigidly in position and support to prevent displacement. Maintain support until concrete has set.
Keep clean:
Do not allow concrete to enter any gaps or voids in formwork or to render movement joints ineffective.
Do not allow concrete to impregnate or penetrate materials used as compressible joint fillers.

47 EXPANSION JOINTS
Joint filler board:
Type: Bitumen impregnated fibre board.
Standard: To Highway Agency 'Specification for Highway Works', clause 1015.
Thickness: 25mm.
Depth: Joint filler board must extend from underside of sealing groove fillet to full depth of slab to provide complete separation of adjacent slabs.
Holes for dowel bars: Accurately bored or punched holes to form a sliding fit for dowel bars.
Completion: Round upper edges of slabs at joints to 5mm radius. Do not overwork concrete.

61 CURING
General: Immediately after completion of surface treatment prevent evaporation from surface and exposed edges of slabs for a minimum period of seven days.
Early curing:
Cover with waterproof sheeting held clear of surface. Seal against draughts at edges and junctions.
Do not apply sprayed compounds or sheets in direct contact until surface is in a suitable state and will not be marked.
Coverings for curing: Contractor's choice of:
Impervious sheet material.
Resin based aluminized curing compound containing a fugitive dye and with an efficiency index of 90% when tested to BS 7542.
Sprayed plastics film.

66 PROTECTION
Prevent damage to concrete:
From rain, indentation, physical damage, dirt, staining, rust marks and other disfiguration.
From thermal shock.
In cold weather, from freezing expansion of water trapped in pockets, etc.
By use as a building platform or for storing, mixing or preparing materials.

Q25 Slab/ brick/ sett/ cobble pavings

11 LAYING PAVINGS
Cutting: Cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.
Lines and levels of finished surface: Smooth and even with falls to prevent ponding.
Bedding of units: Firm so that rocking or subsidence does not occur or develop.
Appearance: Even and regular with even joint widths and free of mortar and sand stains.

16 LEVELS OF PAVING
Permissible deviation from specified levels (generally): ± 6mm.
Height of finished paving above features:
At gullies: +6 to +10mm.
At drainage channels and kerbs: +3 to +6mm.

21 PROTECTION FROM TRAFFIC
Mortar bedded pavings: Keep free from pedestrian traffic for 4 days and vehicular traffic for 10 days after laying.
Access: Restrict access to paved areas to prevent damage from site traffic and plant.

26 STONE SLAB PAVING – existing relaid
Granular sub-base: Compacted Type 1 MOT aggregate.
Thickness: 100mm.
Laying and jointing: Bound construction - on mortar, site category IV, to BS 7533-4.
Laying course: Full mortar bed, nominal thickness after compaction 15-25mm.
Mortar: As section Z21, mix 1:3 cement:sand.
Stone/ Finish: Existing
Sizes: Existing
Jointing: Mortar filled.
Width: 5-10mm.
Mortar: As section Z21, mix: 1:4 cement:sand.

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Q28 Topsoil and growing media

10 PREPARATION OF UNDISTURBED TOPSOIL
General: Prepare as necessary for subsequent cultivation operations.
Hard ground: Break up thoroughly.
Ground covered with turf or a thick sward: Plough or dig over to full depth of topsoil.

20 IMPORTED TOPSOIL
Quantity: Provide as necessary to make up any deficiency existing on site and to complete the work.
Classification: Multipurpose to BS 3882.

30 SPREADING TOPSOIL
Temporary roads or surfacing: Remove before spreading topsoil.
Spreading: Spread when reasonably dry, maintaining crumb structure. Do not compact.
Layers:
Depth (maximum): 150mm.
Gently firm each layer before spreading the next.
Depths after firming and settlement (minimum): 100mm

40 FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT
Above adjoining paving or kerbs: 30mm.
Within the root spread of existing trees: Unchanged.
Below dpc of adjoining buildings: Not less than 150mm.
Shrub areas: Higher than adjoining grass areas by 30mm.
Within root spread of existing trees. Unchanged.
Adjoining soil areas. Marry in.

R10 Rainwater drainage systems

16 PVC-U GUTTERS
Standard: Agrement certified.
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Profile: 100mm diameter half round.
Colour: Grey.
Accessories: As required to complete installation.
Fixing: Proprietary brackets at recommended centres.

35 PVC-U PIPEWORK
Standard: Agrement certified.
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Sections: Round.
Nominal sizes: 65mm diameter.
Colour: Grey.
Accessories: As required to complete installation.
Fixing: Proprietary clips at recommended centres.

50 INSTALLATION GENERALLY
Discharge of rainwater: Complete, and without leakage or noise nuisance.
Components: Obtain from same manufacturer for each type of pipework and guttering.
Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
Fixings and fasteners: As section Z20.

60 GUTTERS LAID TO FALL
Setting out: To true line and even gradient to prevent ponding or backfall. Position high points of gutters as close as practical to the roof and low points not more than 50mm below the roof.
Joints: Watertight.
Roofing underlay: Dressed into gutter.

70 PIPEWORK
Fixing: Securely, plumb and/ or true to line with additional supports as necessary to support pipe collars, particularly at changes in direction.
Cut ends of pipes and gutters: Clean and square with burrs and swarf removed.

80 INTERNAL PIPEWORK TEST
Preparation: Temporarily seal open ends of pipework with plugs.
Testing: Connect a 'U' tube water gauge and pump air into pipework until gauge registers 38 mm.
Required performance:
Allow a period for temperature stabilization, after which the pressure of 38 mm is to be maintained without loss for not less than 3 minutes.

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R11 Above ground foul drainage systems

11 PLASTICS BRANCH PIPEWORK
Materials and standards: pvcU to latest BS.
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Colour: White where exposed, grey elsewhere.
Jointing: Contractors choice.
Fixing: Plastic brackets at 500mm centres.
Accessories: Access fittings.

21 PVC-U SOIL/ VENT PIPEWORK AND WC BRANCHES
Standard:
To BS EN 1329-1, Kitemark certified; or
To BS 4514, Kitemark certified.
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Colour: Grey.
Jointing: Contractors choice.
Fixing: Plastic brackets at 1800mm centres.
Accessories: Access fittings.

45 AIR ADMITTANCE VALVES
Standard: To BS EN 12380 or Agrément certified.
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Position: Vertical.
Unheated locations: Fit manufacturer's insulating cover.

50 INSTALLATION GENERALLY
Standards: To BS EN 12056-1, BS EN 12056-2 (including National Annexes NA-NG) and BS EN 12056-5.
Drainage from appliances: Quick, quiet and complete, without blockage, crossflow, backfall, leakage, odours, noise nuisance or risk to health.
Components: From same manufacturer for each type of pipework.
Access: Provide access fittings in convenient locations to permit cleaning and testing of pipework.
Thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
Fixings: Allow the pipe to slide.
Finish: Plated, sherardized, galvanized or other nonferrous.
Compatibility: Suitable for the purpose, material being fixed and substrate.

60 PIPEWORK
Fixing: Securely plumb and/ or true to line. Fix lengths of discharge stack pipes at or just below socket collar or coupling.
Additional supports: Provide as necessary at junctions and changes in direction.
Cut ends of pipes: Clean and square with burrs and swarf removed.

70 PIPEWORK TEST
Preparation: Temporarily seal open ends of pipework using plugs.
Testing: Connect a 'U' tube water gauge and pump air into pipework until gauge registers 38mm.
Required performance: Allow a period for temperature stabilisation, after which the pressure of 38mm is to be maintained without loss for at least 3 minutes.

R12 Below ground drainage systems

2 EXISTING DRAINS
Setting out: Before starting work, check levels and positions of existing drains, inspection chambers and manholes against drawings. Report discrepancies.

4 IN SITU CONCRETE FOR USE IN DRAINAGE BELOW GROUND
Standard: To BS 8500-2.
Concrete: Designated GEN1.

14 PLASTICS PIPELINES
Pipes, bends and junctions: PVC-U to BS EN 1401-1, class SN4, Kitemark certified.
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Recycled content: Contractors choice.
Sizes: 100mm diam.
Type of subsoil: Unknown.
Bedding class: F.
Warning marker tape: Not required.

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19 EXCAVATING PIPE TRENCHES
Trench from bottom up to 300mm above crown of pipe: With vertical sides.
Width: As small as practicable but not less than external diameter of pipe plus 300mm.
Type of subsoil: Where the type of subsoil at the level of the crown of the pipe differs from that stated for the type of pipeline, give notice.
Timing: Excavate to formation immediately before laying beds or pipes.
Mud, rock projections, boulders and hard spots: Remove. Replace with bedding material, well consolidated.
Local soft spots: Harden by tamping in bedding material.

21 BEDDING AND JOINTING
Laying pipes: To true line and regular gradient on even bed for full length of barrel with sockets (if any) facing up the gradient.
Jointing: Lubricate. Leave gaps at ends of spigots to allow for movement.

25 CLASS F GRANULAR BEDDING
Granular material: to BS EN 12620, size 4/10.
Bedding: Compacted granular material.
Thickness: 150mm.
Laying pipes: Scoop out locally at couplings and sockets and lay pipes digging slightly into bed and resting uniformly on their barrels. Adjust to line and gradient.
Backfilling: After initial testing, backfill to 150 mm above crown of pipe with a protective cushion of selected fill, free from vegetable matter, rubbish and frozen soil and material retained on a 40 mm sieve. Thoroughly hand compact in 100 mm layers.

39 CLASS Z CONCRETE SURROUND
Concrete blinding: 25mm thick, over full width of trench.
Temporary pipe support: Folding wedges of compressible board, pipe inverts 100mm (minimum) above blinding.
Vertical construction joints: At face of flexible pipe joints using 18mm thick compressible board precut to profile of pipe. Fill gaps between spigot and socket with resilient material to prevent entry of concrete.
Concrete surround: After testing, place and compact concrete for full width of trench to encase pipe to 150mm above crown.

41 TRENCHES LESS THAN 1 M FROM FOUNDATIONS
Class Z concrete surround: Provide in locations where bottom of trench is lower than bottom of foundation.
Top of concrete: Higher than bottom of foundation.

44 BENDS AT BASE OF SOIL STACKS
Bends: 90° nominal rest bend with a minimum radius of 200mm to centreline of the pipe.
Height of invert of horizontal drain at base of stack below centreline of lowest branch pipe (minimum): 450mm.
Stabilizing bends: Bed in concrete without impairing flexibility of couplings.

50 GULLIES
Standards:
Clay: To BS EN 295-1 and Kitemark certified, or Agrément certified.
Plastics: To BS 4660 and Kitemark certified, or Agrément certified.
Material: PVCU .
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Outlet sizes: 100mm.
Covers: Cast Iron.

58 INSTALLATION OF FITTINGS
Appearance: Square with and tightly jointed to adjacent construction as appropriate.
Bedding and surround of fittings, traps, etc: Concrete, 150mm thick.
Permissible deviation in level of gullies: +0 to -10mm.

64 PLASTICS INSPECTION CHAMBERS
Manufacturer: Osma or equal approved.
Product reference: Contractors choice.
Bedding: 1:3 cement: sand mortar.
Surround: 150mm concrete.
Backfilling: as recommended by manufacturer.
Access covers and seating: As clause 79.

67 GRANULAR FILL SOAKAWAYS
Geotextile membrane:
Manufacturer: Contractors choice.
Product reference: Contractors choice .
Perforations: Full depth of granular fill, unperforated above.
Granular material: Clean broken bricks, crushed rock or gravel, size range 150mm to 50mm.
Construction: Line bottom and sides of pit with geotextile membrane. Insert vertical inspection and distributor pipes and horizontal distributor pipes if required. Fill up to invert level of inlet pipe with granular material. Cover

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top with geotextile membrane before connecting inlet pipe to inspection and distribution pipe. Backfill with as-dug material.

69 CONVENTIONAL CHANNELS, BRANCHES AND BENCHING
Main channel: Bedded solid in 1:3 cement:sand mortar, branches connected to main channel at half channel level, so that discharge flows smoothly in direction of main flow.
Benching: Concrete rising vertically from main channel to a height not lower than soffit of outlet pipe, then sloping upwards at 10% to walls, and with dense smooth uniform finish.

71 PREFORMED PLASTICS CHANNELS, BRANCHES AND BENCHING
Manufacturer: Contractors choice .
Product reference: Contractors choice .
Sizes and integral branches: To suit each manhole.
Bedding: 1:3 cement:sand mortar.
Benching: Concrete, with 10% fall from manhole walls to component rim, and with dense smooth uniform finish.

74 SEALED ACCESS FITTINGS – to tea point
Manufacturer: Contractors choice .
Product reference: Contractors choice .
Sizes and integral branches: To suit each fitting.
Bedding: 1:3 cement:sand mortar.
Benching: Concrete, with 10% fall from manhole walls to component rim, and with dense smooth uniform finish.

79 CAST IRON ACCESS COVERS AND SEATING
Covers: Grey iron or ductile iron to BS EN 124.
Manufacturer: Contractors choice.
Types: Vehicle traffic in road.
Seating:
Brickwork: Engineering brickwork.
Bedding and haunching to frame: Solid, in 1:3 cement:sand mortar, square with joints in surrounding finishes. Cut back top of haunching to 30mm below top of cover.

84 TESTING AND INSPECTION GENERALLY
Obstructions and debris: Remove. Check that the installation is clear before testing.

85 INITIAL TESTING OF PIPELINES
Before testing:
Cement mortar jointing: Leave 24 h.
Solvent welded pipelines: Leave 1 h.
Timing: Before backfilling .
Method: Block open ends of pipelines to be tested and pressurise. Air test short lengths to BS EN 1610

88 FINAL TESTING OF DRAINS
Before testing:
Cement mortar jointing: Leave 24 h.
Solvent welded pipelines: Leave 1 h.
Standard: In accordance with latest BS.
Method: To approval of local authority.

89 WATER TESTING OF MANHOLES AND INSPECTION CHAMBERS
Timing: Before backfilling.
Standard:
Exfiltration: To BS EN 1610, water testing (method W).
Infiltration: No identifiable flow of water penetrating the chamber.

91 BACKFILLING TO PIPELINES GENERALLY
Backfill from top of surround or protective cushion: Material excavated from trench, compacted in 300 mm layers. Do not use heavy compactors before there is 600 mm of material over pipes.

94 BACKFILLING UNDER ROADS AND PAVINGS
Backfill from top of specified surround or protective cushion up to formation level: Well graded gravel or hardcore passing a 75 mm sieve, well compacted in 150 mm layers.

97 CLEANING
General: Flush out the whole installation and remove silt and debris immediately before handing over.

S90 Hot and cold water supply systems

10 MAINS COLD WATER SUPPLY
Position of incoming mains water supply: Unknown.
Pipelines: Copper.
Valves: Stop valves.
Insulation: Preformed flexible closed cell.
Sanitary appliances: As drawings.

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Controls: Submit design and cost proposals.
Accessories: As required to complete installation.
Completion: Testing, commissioning and labels.

20 DESIGN
Design: Complete the design of the hot and cold water supply system.
Standard: To BS 6700 or BS EN 806-2.
Proposals: Submit drawings (showing equipment positions and pipeline routes), technical information, calculations and manufacturers' literature.

24 PIPELINE SIZES
Sizing: Calculate sizes to meet simultaneous demand for the building in accordance with BS 6700 Appendix D. Submit proposals.
Performance:
Water velocity (maximum): 1.3m/s for hot water and 2.0m/s for cold water.

25 DRAW OFF REQUIREMENTS
WC cisterns (to fill in 2 minutes):
Type of supply: Cold
Discharge rate (design): 0.13 L/s.
Handbasins (pillar or mixer taps):
Type of supply: Hot and cold
Discharge rate (design): 0.1 L/s.
Shower heads:
Type of supply: Cold
Discharge rate (minimum): 0.2 L/s.
Kitchen sinks:
Type of supply: Hot and cold
Discharge rate (design): 0.3 L/s.
Dish-washing machine:
Type of supply: Cold
Discharge rate (design): 0.15 L/s.
Washing machine:
Type of supply: Cold
Discharge rate (design): 0.2 L/s.

30 DEZINCIFICATION
Fittings, pipelines, equipment located below ground or in concealed or inaccessible locations: Resistant to dezincification, e.g. gunmetal.

34 INSTANTANEOUS SHOWER UNITS, ELECTRIC
Standard: To BS EN 60335-2-35, BEAB approved.
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Accessories: Hose, rail, soap dish and high performance shower head.
Service connections: As required to complete installation.

50 COPPER PIPELINES FOR GENERAL USE
Standard: To BS EN 1057, Kitemark certified.
Temper: Half hard R250.
Finish: Painted.
Colour: White.
Wall thickness (nominal):
OD 6, 8, 10 and 12mm: 0.6mm.
OD 15mm: 0.7mm.
OD 22 and 28mm: 0.9mm.
OD 35 and 42mm: 1.2mm.
Jointing:
Chromium plated: Type A compression fittings to BS EN 1254-2, chromium plated.
Plain: Integral lead free solder ring capillary fittings to BS EN 1254-1, Kitemark certified.
Plastics coated: Type A compression fittings to BS EN 1254-2.
Connections to appliances and equipment: Select from:
Compression fittings: To BS EN 1254-2, Kitemark certified.
Fittings with threaded ends: To BS EN 1254-4.
Supports: Plastic spacers, single screw fixing.

54 WARNING/ OVERFLOW PIPES TO CISTERNS
Material: Copper.
Jointing: Solvetn welded.
Minimum OD: Greater than inlet pipe OD and at least 22mm.

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55 INSULATION TO PIPELINES
Material: Preformed flexible closed cell or mineral fibre split tube.
Thermal conductivity (maximum): 0.04W/m·K.
Thickness:
Hot water pipelines: Equal to the outside diameter of the pipe up to a maximum of 40mm.
Internal cold water pipelines: 25mm.
Roof space cold water pipelines: 32mm.
External cold water pipelines: 38mm.
Fire performance: Class 1 spread of flame when tested to BS 476-7.

56 MASKING PLATES
Locations: All visible locations through walls, floor and ceilings
Type: split
Material: plastic
Finish: white
Fixing: snapfit

58 TIMERS
Standards: To BS EN 60730-2-7, -2-1 and BS EN 61058-2-5, and BEAB approved.
Manufacturer: Contractors choice.
Product reference: Contractors choice.

59 THERMOSTATS
Standards: To BS EN 60730-2-9 and BS EN 61058-2-5.
Type: Strap-on.
Manufacturer: Contractors choice.
Product reference: Contractors choice.

60 VALVES GENERALLY
Types: Approved for the purpose by local water supply undertaker and of appropriate pressure and/ or temperature ratings.
Control of valves: Fit with handwheels for isolation and lockshields for isolation and regulation of circuits or equipment.

61 BALL VALVES
Standard: To BS EN 331.

62 DRAINING TAPS
Standard: Copper alloy to BS 2879, Type 1, hose connection pattern, Kitemark certified.

64 GATE VALVES
Standard: To BS 5154, Series B, Kitemark certified or BS EN 12288.

65 STOP VALVES AND DRAW-OFF TAPS, ABOVE GROUND
Standard: Copper alloy to BS 1010-2, Kitemark certified.

67 THERMOSTATIC MIXING VALVES
Manufacturer: Contractors choice.
Product reference: Contractors choice.

70 INSTALLATION GENERALLY
Installation: To BS 6700.
Performance: Free from leaks and the audible effects of expansion, vibration and water hammer.
Fixing of equipment, components and accessories: Fix securely, parallel or perpendicular to the structure of the building.
Preparation: Immediately before installing tanks and cisterns on a floor or platform, clear the surface completely of debris and projections.
Corrosion resistance: In locations where moisture is present or may occur, provide corrosion resistant fittings/ fixings and avoid contact between dissimilar metals by use of suitable washers, gaskets, etc.

71 INSTALLING CISTERNS
Outlet positions: Connect lowest outlets at least 30mm above bottom of cistern.
Access: Fix cistern with a minimum clear space of 350mm above, or 225mm if the cistern does not exceed 450mm in any dimension.

72 INSTALLING WARNING/ OVERFLOW PIPES TO CISTERNS
Difference (minimum) between normal water level and overflow level:
Cold water storage cisterns: The greater of 32mm or the bore of warning pipe.
Feed and expansion cisterns: Sufficient to allow 20% increase in the volume of water in the tank, plus 25mm.
Vertical distance (minimum) of water supply inlet above overflow level: Bore of warning pipe.
Fall (minimum): 1 in 10.
Installation: Support to prevent sagging. Terminate pipes separately in prominent positions with turned down ends. Turn down within the cistern. Terminate 50mm below normal water level.
Insulation: Insulate within the building where the pipe is in an uninsulated space and subject to freezing.

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77 INSTALLING FLUE PIPES
Joints and bends: Minimize number.
Slope: Not more than 30° from the vertical.
Joints: Install with sockets uppermost, fully supported and fixed securely with brackets supplied for the purpose. Do not locate joints within the depth of floors.
Seals: Seal joints in accordance with manufacturer's installation instructions, to provide a gas-tight installation.
Expansion and contraction: Accommodate thermal movement.
Fire safety: Locate a safe distance from combustible materials.
Roof junction: Weatherproof. Fit terminal and flashings, collars, and the like.

79 PIPELINES INSTALLATION
Appearance: Install pipes straight, and parallel or perpendicular to walls, floors, ceilings, and other building elements.
Pipelines finish: Smooth, consistent bore, clean, free from defects, e.g. external scratching, toolmarks, distortion, wrinkling, and cracks.
Concealment: Generally conceal pipelines within floor, ceiling and/ or roof voids.
Access: Locate runs to facilitate installation of equipment, accessories and insulation and allow access for maintenance.
Arrangement of hot and cold pipelines: Run hot pipelines above cold where routed together horizontally. Do not run cold water pipelines near to heating pipelines or through heated spaces.
Electrical equipment: Install pipelines clear of electrical equipment. Do not run pipelines through electrical enclosures or above switch gear distribution boards or the like.
Insulation allowance: Provide space around pipelines to fit insulation without compression.

80 PIPELINES FIXING
Fixing: Secure and neat.
Joints, bends and offsets: Minimize.
Pipeline support: Prevent strain, e.g. from the operation of taps or valves.
Drains and vents: Fix pipelines to falls. Fit draining taps at low points and vents at high points.
Thermal expansion and contraction: Allow for thermal movement of pipelines. Isolate from structure. Prevent noise or abrasion of pipelines caused by movement. Sleeve pipelines passing through walls, floors or other building elements.
Dirt, insects or rodents: Prevent ingress.

82 SUPPORTS FOR PIPELINES
Spacing for copper pipelines: Fix securely and true to line at the following maximum centres:
15 and 22mm pipe OD: 1200mm horizontal, 1800mm vertical.
28 and 35mm pipe OD: 1800mm horizontal, 2400mm vertical.
42 and 54mm pipe OD: 2400mm horizontal, 3000mm vertical.
Spacing for thermoplastics pipelines: Fix securely and true to line at the following maximum centres:
Up to 16mm pipe OD: 300mm horizontal, 500mm vertical.
17-25mm pipe OD: 500mm horizontal, 800mm vertical.
26-32mm pipe OD: 800mm horizontal, 1000mm vertical.
Additional supports: Locate within 150mm of connections, junctions and changes of direction.

83 PIPELINE SPACING
Clearance (minimum) to face of wall-fixed pipes or pipe insulation:
From floor: 150mm.
From ceiling: 50mm.
From wall: 15mm.
Between pipes: 25mm.
From electrical conduit, cables, etc: 150mm.

84 JOINTS IN PIPELINES
Copper pipelines:
Preparation: Cut pipes square. Remove burrs.
Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
Bends: Do not use formed bends on exposed pipework, except for small offsets. Form changes of direction with radius fittings.
Adaptors for connecting dissimilar materials: Purpose designed.
Substrate and plastics pipes and fittings: Do not damage, e.g. by heat when forming soldered joints.
Flux residue: Clean off.
Capillary joints in plastics coated pipelines.
Plastics coating: Do not damage, e.g. by direct or indirect heat. Wrap completed joint (when cool) with PVC tape of matching colour, half lapped.
Thermoplastics pipelines:
Fittings and accessories for joints: Purpose designed.
Preparation: Cut pipes square. Remove burrs.
Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
Compression fittings: Do not overtighten.

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86 INSTALLING INSULATION TO PIPELINES
Cold water pipelines: Insulate in unheated spaces. Insulate potable cold water pipelines.
Hot water pipelines: Insulate, except for short lengths in prominent positions next to appliances.
External supply pipelines exposed to air or less than 750mm below finished ground level: Insulate.
Appearance: Fix securely and neatly. Make continuous over fittings and at supports.
Leave no gaps. Locate split on 'blind' side of pipeline.
Timing: Fit insulation after testing.

88 INSTALLING VALVES
Isolation and regulation valves: Provide on equipment and subcircuits.
Access: Locate where valves can be readily operated and maintained and next to equipment which is to be isolated.
Connection to pipework: Fit with joints to suit the pipe material.

90 FLUSHING AND FILLING
Standard: To BS 6700.

91 SYSTEM DISINFECTION
Disinfection: To BS 6700.

92 TESTING
Standard: To BS 6700.
Notice (minimum): 3 days.
Preparation: Secure and clean pipework and equipment. Fit cistern and tank covers.
Leak testing: Start boiler and run the system until all parts are at normal operating temperatures and then allow to cool to cold condition for a period of 3 h.
Pressure testing: At both hot and cold conditions joints, fittings and components must be free from leaks and signs of physical distress when tested for at least 1 h as follows:
Systems fed directly from the mains, and systems downstream of a booster pump:
Apply a test pressure equal to 1.5 times the maximum pressure to which the installation or relevant part is designed to be subjected in operation.
Systems fed from storage: Apply a test pressure equal to the pressure produced when the storage cistern is filled to its normal maximum operating level.
Inaccessible or buried pipelines: Carry out hydraulic pressure test to twice the working pressure.

93 COMMISSIONING
Standard: To BS 6700.
Equipment: Check and adjust operation of equipment, controls and safety devices.
Outlets: Check operation of outlets for satisfactory rate of flow and temperature.

94 TESTING SERVICE PIPELINES
Test method: Disconnect from the mains, fill with potable water, exclude air, and apply at least twice the working pressure for 1 h.
Test criterion: No leakage.

95 DOCUMENTATION
Manufacturers' operating and maintenance instructions: Submit for equipment and controls.
System operating and maintenance instructions: Submit for the system as a whole giving optimum settings for controls.
Record drawings: Submit drawings showing the location of circuits and operating controls.

96 OPERATING TOOLS
Tools: Supply tools for operation, maintenance and cleaning purposes.
Valve keys: Supply keys for valves and vents.

97 LABELS
Valve labels: Provide labels on isolating and regulating valves on primary circuits, stating their function.

S91 Natural gas supply systems

10 INCOMING GAS SUPPLY
Gas supplier: As existing
Position of meter: Unknown

20 DESIGN
Design: Complete the design of the gas supply system.
Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

21 PIPELINE SIZES
Sizing: Calculate sizes of gas pipes for the equipment proposed.

30 SAFETY AND CONTROL DEVICES
Standard: To BS EN 13611.

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31 SECONDARY GAS METERS
Meter and housing installation: To BS 6400.
Gas meter: To BS EN 1359.
Unions and adaptors: To BS 746.
Manufacturer: Contractors choice.
Product reference: Contractors choice.

32 LOW PRESSURE GAS SUPPLY PIPELINES
Standard: To BS 6891.
Materials: Copper.
Fittings: As required to complete installation.

33 GAS PLUG COCKS
Standard: To BS 1552.
Manufacturer: Contractors choice.
Product reference: Contractors choice.

34 GAS BALL VALVES
Standard: To BS EN 331.
Manufacturer: Contractors choice.
Product reference: Contractors choice.

60 INSTALLATION GENERALLY
Domestic gas pipelines: To BS 6891.
Secondary gas meters: To BS 6400.

90 TESTING, COMMISSIONING AND PURGING GAS PIPELINES
Standard: To BS 6891.

91 DOCUMENTATION
Manufacturers' operating and maintenance instructions: Submit for equipment and controls.
Record drawings: Submit drawings showing the location of circuits and operating controls.

92 OPERATING TOOLS
Tools: Supply tools for operation, maintenance and cleaning purposes.
Valve keys: Supply keys for valves, vents and meter housing.

T90 Heating systems

10 HEATING SYSTEM – separate systems to ground and first floor
System: Gas fired.
Heat sources: Boiler with balanced flue.
Pipelines: Copper.
Valves: Contractors choice.
Circulating pumps: Contractors choice.
Insulation: Armaflex.
Heat emitters: Radiators.
System control: Submit proposals.
Completion: Testing, commissioning, documentation, operating tools and labels.

20 DESIGN
Design: Complete the design of the heating system.
Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

21 BASIC DESIGN TEMPERATURES
Room temperatures: Design the system to provide the following temperatures for the specified air change rates and an external air temperature of -4°C:
Offices: 21°C, for 1.5 air changes per hour.
Meeting rooms: 21°C, for 1.5 air changes per hour.
Corridors and landings: 18°C, for 1.5 air changes per hour.
Kitchens: 18°C, for 2 air changes per hour.
Shower: 18°C, for 2 air changes per hour.
Toilets: 18°C, for 2 air changes per hour.
Submittals: Submit heat loss calculations for each room using the HEVACOMP suite of programmes.

22 THERMAL INSULATION OF BUILDING FABRIC
Heat loss calculations: Base on the following maximum U-values:
Floors: 0.12W/m^2K (new floor)
Walls: 0.19W/m^2K to new walling, 0.21W/m^2K to existing
Roofs: 0.16W/m^2K

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26 HEATING AND HOT WATER SUPPLY SYSTEM CAPACITY
Output of total heating surface area in a space: As near as practicable to, but not less than, the design heat loss for that space.
Boiler output (minimum): Total calculated heat loss, including emission from the system pipelines, and sufficient to meet the hot water supply requirements.

27 SYSTEM CONTROL
Temperature and time control: Fully automatic and independent.
Controls: Compatible with each other and with central heating boiler.

31 BOILERS, GAS FIRED COMBINATION
Standards: To BS 5258-15, BS EN 483 or BS EN 297 and BS EN 625.
Type: High efficiency (91% minimum) condensing system with automatic ignition, rated SEDBUK A, and fan assisted flue.
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Output: 30KW (DHW).
Casing finish: White vitreous enamel.
Integral controls: required, time and temperature zone control.
Integral accessories: sufficient to complete full installation.
Integral flues: Required.

48 COPPER PIPELINES FOR GENERAL USE
Standard: To BS EN 1057, Kitemark certified.
Temper: Half hard R250.
Wall thickness (nominal):
OD 6, 8, 10 and 12mm: 0.6mm.
OD 15mm: 0.7mm.
OD 22 and 28mm: 0.9mm.
OD 35 and 42mm: 1.2mm.
Microbore temper: Soft coil R220.
Microbore wall thickness (nominal):
OD 6 and 8mm: 0.6mm.
OD 10mm: 0.7mm.
Jointing: Integral lead-free solder ring capillary fittings.
Standard: To BS EN 1254-1, Kitemark certified.
Connections to appliances and equipment: Select from:
Compression fittings: To BS EN 1254-2, Kitemark certified.
Fittings with threaded ends: To BS EN 1254-4.
Supports: plastic spacers, single screw fixing.

51 VENT PIPELINES
Materials: To BS EN 1057.
Jointing: Compression or capillary to BS 864-2.
Compression: To BS 864-2 or BS EN 1254-2.
Capillary: To BS 864-2 or BS EN 1254-1.

53 VALVES GENERALLY
Types: Approved for the purpose by local water supply undertaker and of appropriate pressure and temperature ratings.
Control of valves: Fit with handwheels for isolation and lockshields for isolation and regulation of circuits or equipment.

56 THERMOSTATIC RADIATOR VALVES
Standard: To BS EN 215 and capable of providing isolation.
Manufacturer: Honeywell or similar approved.
Product reference: Thermostatic.
Material: Copper alloy.
Lockshield valves: To BS 2767 with matching finish fitted to return side of radiator.

58 INSULATION TO PIPELINES
Material: Preformed flexible closed cell or mineral fibre split tube.
Thermal conductivity (maximum): 0.04 W/m²·K.
Thicknesses (minimum):
Heating and primary pipelines: Equal to the outside diameter of the pipe up to a maximum of 40mm.
Internal cold water pipelines: 25mm.
Roof space cold water pipelines: 32mm.
External cold water pipelines: 38mm.
Fire performance: Class 0 spread of flame when tested to BS 476-7.

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61 RADIATORS
Standard: To BS EN 442-1, -2, -3.
Type: Low surface temperature.
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Finish: White.
Sizes: Designed to suit room size.

64 PROGRAMMERS
Standards: To BS EN 60730-1, -2-1, -2-7, -2-10 and BS EN 61058-1, -2-5. BEAB approved.
Manufacturer: Honeywell or similar approved.
Product reference: Submit proposals.

65 THERMOSTATS
Standards: To BS EN 60730-1, -2-7, -2-8, -2-9, -2-14 and BS EN 61058-1, -2-5. BEAB approved.
Manufacturer: Honeywell or similar approved.
Product reference: Submit proposals.

66 TIMERS
Standards: To BS EN 60730-1, -2-1, -2-7, -2-10 and BS EN 61058-1, -2-5. BEAB approved.
Manufacturer: Honeywell or similar approved.
Product reference: Submit proposals.

70 STRIPPING OUT
Extent of stripping out: Sufficient to complete new installation.

71 INSTALLATION GENERALLY
Performance: Free from leaks and the audible effects of expansion, vibration and water hammer.
Fixing of equipment, components and accessories: Fix securely, parallel or perpendicular to the structure of the building.
Preparation: Immediately before installing tanks and cisterns on a floor or platform, clear the surface completely of debris and projections.
Corrosion resistance: In locations where moisture is present or may occur, use corrosion resistant fittings/ fixings and avoid contact between dissimilar metals by use of suitable washers, gaskets, etc.

73 PIPELINE INSTALLATION
Appearance: Install pipes straight, and parallel or perpendicular to walls, floors, ceilings, and other building elements.
Pipelines finish: Smooth, consistent bore, clean, free from defects, e.g. external scratching, toolmarks, distortion, wrinkling, and cracks.
Concealment: Generally conceal pipelines within floor, ceiling and/ or roof voids.
Access: Locate runs to facilitate installation of equipment, accessories and insulation and allow access for maintenance.
Arrangement of hot and cold pipelines: Run hot pipelines above cold where routed together horizontally. Do not run cold water pipelines near to heating pipelines or through heated spaces.
Electrical equipment: Install pipelines clear of electrical equipment. Do not run pipelines through electrical enclosures or above switch gear distribution boards or the like.
Insulation allowance: Provide space around pipelines to fit insulation without compression.

74 PIPELINE FIXING
Fixing: Secure and neat.
Joints, bends and offsets: Minimize.
Pipeline support: Prevent strain, e.g. from the operation of taps or valves.
Drains and vents: Fix pipelines to falls. Fit draining taps at low points and vents at high points.
Thermal expansion and contraction: Allow for thermal movement of pipelines. Isolate from structure. Prevent noise or abrasion of pipelines caused by movement. Sleeve pipelines passing through walls, floors or other building elements.
Dirt, insects or rodents: Prevent ingress.

75 JOINTS IN COPPER PIPELINES
Preparation: Cut pipes square. Remove burrs.
Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
Bends: Do not use formed bends on exposed pipework, except for small offsets. Form changes of direction with radius fittings.
Adaptors for connecting dissimilar materials: Purpose designed.
Substrate and plastics pipes and fittings: Do not damage, e.g. by heat when forming soldered joints.
Flux residue: Clean off.

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90 TESTING
Notice (minimum): 3 days.
Preparation: Secure and clean pipework and equipment. Fit cistern/ tank covers.
Leak testing: Start boiler and run the system until parts are at normal operating temperatures and then allow to cool to cold condition for a period of 3 h.
Pressure testing: At both hot and cold conditions joints, fittings and components must be free from leaks and signs of physical distress when tested for at least 1 h as follows:
Systems fed directly from the mains and systems downstream of a booster pump: Apply a test pressure equal to 1.5 times the maximum pressure to which the installation or relevant part is designed to be subjected in operation.
Systems fed from storage: Apply a test pressure equal to the pressure produced when the storage cistern is filled to its normal maximum operating level.
Inaccessible or buried pipelines: Carry out hydraulic pressure test to twice the working pressure.

91 SETTING TO WORK AND COMMISSIONING
Equipment: Check and adjust operation of equipment, controls and safety devices.
Outlets: Check operation of outlets for satisfactory rate of flow and temperature.

92 DOCUMENTATION
Manufacturers' operating and maintenance instructions: Submit for equipment and controls.
System operating and maintenance instructions: Submit for the system as a whole giving optimum settings for controls.
Record drawings: Submit drawings showing the location of circuits and operating controls.

93 LABELS
Valve labels: Provide labels on isolating and regulating valves on primary circuits, stating their function.

U90 General ventilation

20 DESIGN
Design: Complete the design of the ventilation system.
Proposals: Submit drawings (showing equipment positions and ductwork routes), technical information, calculations and manufacturers' literature.

45 FLEXIBLE DUCTWORK AND FITTINGS
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Diameter: 100mm.
Accessories: Necessary to complete installation.

46 RIGID DUCTWORK AND FITTINGS
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Sizes: 100mm.
Sleeves: Sheet metal.
Accessories: Necessary to complete installation.

64 ROOF SLOPE EXHAUST TERMINALS
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Accessories: Necessary to complete installation.

85 FLEXIBLE DUCTWORK
Installation: Fully extend without overstretching.
Support: Form smooth flowing curves without kinking, sagging or slumping.

86 RIGID DUCTWORK GENERALLY
Joints: Seal. Provide a robust airtight installation.
Support: Do not distort ductwork or reduce cross-sectional area. Do not strain joints.
Falls: Fall away from fans, dampers and other in-line accessories.
Sleeves: Locate where ducts pass through building fabric. Bed solidly to the surrounding construction. Leave a gap of 10-20 mm between sleeve and duct and fill completely.

88 SITE APPLIED INSULATION
Location: Fit insulation to ductwork in unheated spaces.
Installation: Fix securely. Leave no gaps. Make continuous.

90 COMMISSIONING
Ventilation system: Balance airflow using methods recommended by the system manufacturer.
Operation: Examine ductwork for leakage. Test the operation of fans, equipment, controls and sensors. Verify correct operation. Submit report.

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91 OPERATION AND MAINTENANCE
Operating and maintenance instructions: Submit copies of manufacturers' operating and maintenance instructions for equipment and controls.
Tools: Supply tools for operation, maintenance and cleaning purposes, including keys for valves and vents.

V90 Electrical systems

20 GENERAL DESIGN
Standards: To BS 7671 and the requirements of the electricity distributor.
Design: Complete the design and detailing of the electrical installation.
Design information: Submit calculations, manufacturer's literature and drawings showing equipment positions and routes.

24 GENERAL LIGHTING DESIGN
Purpose: To illuminate room.
Design: To CIBSE 'Code for lighting'.
Room: Various.
Illuminance level (maintained average): Minimum required to suit each room type.
Controls: Light switch and pull cords.
Maintenance: Submit proposals for the maintenance/ relamping regime.

25 DESIGN OF EXTERNAL LIGHTING DESIGN
Purpose: To illuminate external doors and pathways.
Design: To CIBSE 'Code for lighting' and Lighting Guide 6.
Area: See drawings.
Illuminance level (maintained average): 25 lux.
Illuminance level at any point (minimum): 10 lux .

27 DESIGN AND LIGHTING CALCULATIONS
Design: Complete the design of the following lighting systems: Internal and External.
Proposals: Submit drawings, technical information, calculations and manufacturers' literature.
Lighting calculations:
Type: Computer generated point calculations.
Submit the following:
Luminaire layout drawings.
Luminaire photometric data including flux fraction ratios and polar intensity curves.
Lamp technical information.
Maintenance factor calculations, including proposals for luminaire maintenance and lamp replacement.
Schedule of design and calculated maintained average illuminance values.
Schedule of design and calculated uniformity values.

28 SMALL POWER DESIGN
Purpose: To provide power to all switches, sockets, etc.
Small power outlets: Provide to serve the building and its equipment.
Room Various.
Outlets: As shown on drawings.
Fixed equipment: Provide supplies.

28 PV PANEL DESIGN
Purpose: To generate electricity.
Design: Complete the design of the PV array and system.
Proposals: Submit drawings, technical information, calculations and manufacturers' literature.
Type: Roof mounted (not integrated)
Accreditation: MCS.
Inverter location: Roof space, final location to be agreed.
Fixings: As required to complete installation.
Maintenance: Submit proposals for the maintenance/cleaning regime.

30 PRODUCTS GENERALLY
Standard: To BS 7671.
CE Marking: Required.

32 DISTRIBUTION BOARDS AND CONSUMER UNITS
Standards: To BS EN 60439-3 and ASTA certified.
Manufacturer: MEM.
Product reference: Submit proposals.
Number of ways: Determine.
Spare capacity: 2 ways to each board.

33 CABLE TRAYS
Standard: To BS EN 61537.
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Accessories and fittings: Factory made of the same material type, pattern, finish and thickness as cable tray.

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35 CONDUIT
Standard: To BS EN 50086-1 or BS EN 61386-1.
Type: Suitable for location and use.

37 STEEL CONDUIT AND FITTINGS
Standards: To BS 4568-1, or BS EN 50086-1 and BS EN 50086-2-1, or BS EN 61386-1 and BS EN 61386-21.
Manufacturer: Contractors choice.
Product reference: Contractors choice.

38 PVC CONDUIT AND FITTINGS
Standards: To BS 4607-5, or BS EN 50086-1 and BS EN 50086--2-1, or BS EN 61386-1 and BS EN 61386-21.
Manufacturer: Contractors choice.
Product reference: Contractors choice.

39 CABLES
Standard: To BS 7671.
Approval: British Approvals Service for Cables (BASEC) certified.
Cable sizes not stated: Submit proposals and calculations.

40 PROTECTIVE CONDUCTORS
Type: Cable conductors with yellow/ green sheath.

41 ELECTRICAL ACCESSORIES
Standard: To BS 5733.
Switches: To BS EN 60669-1.
Manufacturer: MK.
Product reference: Logic Plus.
Finish: White plastic.
Mounting: Recessed.

45 LUMINAIRES
Standards: To BS EN 60598-1 and BS EN 55015.
Approval: Agrement certified.
Manufacturer: Contractors choice.
Product reference: Submit proposal.
Mounting: To suit fitting.
Lamp: Energy efficient.
Wattage: To suit room.

47 LAMPS GENERALLY
Standards:
Compact fluorescent lamps: To BS EN 60901 and BS EN 61199.
High pressure mercury lamps: To BS EN 60188 and BS EN 62035.
High pressure sodium lamps: To BS EN 62035.
Metal halide lamps: To BS EN 62035.
Tubular fluorescent lamps:
Single-capped lamps: To BS EN 60901 and BS EN 61199.
Double-capped lamps: To BS EN 60081 and BS EN 61195.
Tungsten halogen lamps: To BS EN 60432-2 and BS EN 60357.
Manufacturer: As recommended by Luminaire manufacturer.
Lamps of the same type and rating: Same manufacturer.

50 EXTERNAL LUMINAIRES
Standards: To BS EN 60598-1 and BS EN 55015.
Approval: Kitemark certified.
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Mounting: Surface fixed.
Ingress protection to BS EN 60529: IP65.

60 GENERAL EXECUTION
Standards: To BS 7671.

62 INSTALLING CONDUIT AND FITTINGS
Fixing: Fix securely. Fix boxes independently of conduit.
Drainage outlets: Locate at lowest points in conduit installed externally, and where condensation may occur.
Location: Position vertically and horizontally in line with equipment served, and parallel with building lines. Locate where accessible.
Jointing:
Number of joints: Minimize.
Lengths of conduit: Maximize.
Cut ends: Remove burrs, and plug during building works.
Movement joints in structure: Manufactured expansion coupling.

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Threaded steel conduits: Tightly screw to ensure electrical continuity, with no thread showing.
Conduit connections to boxes and items of equipment, other than those with threaded entries: Earthing coupling/ male brass bush and protective conductor.
Changes of direction: Site machine-formed bends, junction boxes and proprietary components. Do not use elbows or tees. Alternatively, use conduit boxes.
Connections to boxes, trunking, equipment and accessories: Screwed couplings, adaptors, connectors and glands, with rubber bushes at open ends.

64 INSTALLING TRUNKING
Positioning: Accurate with respect to equipment served, and parallel with other services and, where relevant, floor level and other building lines.
Access: Provide space encompassing cable trunking to permit access for installing and maintaining cables.
Jointing:
Number of joints: Minimize.
Lengths of trunking: Maximize.
Steel systems: Mechanical couplings. Do not weld. Fit a copper link at each joint to ensure electrical continuity.
Movement: Fix securely. Restrain floor mounted systems during screeding.
Junctions and changes of direction: Proprietary jointing units.
Cable entries: Fit grommets, bushes or liners.
Protection: Fit temporary blanking plates. Prevent ingress of screed and other extraneous materials.
Service outlet units: Fit when cables are installed.

66 CABLE ROUTES
Cables generally: Conceal wherever possible.
Concealed cable runs to wall switches and outlets: Align vertically with the accessory.
Exposed cable runs: Submit proposals.
Orientation: Straight, vertical and/ or horizontal and parallel to walls.
Distance from other services running parallel: 150mm minimum.
Heating pipes: Position cables below.

68 INSTALLING ELECTRICAL ACCESSORIES AND EQUIPMENT
Location: Coordinate with other wall or ceiling mounted equipment.
Positioning: Accurately and square to vertical and horizontal axes.
Alignment: Align adjacent accessories on the same vertical or horizontal axis.
Mounting: Recessed.
Mounting heights (finished floor level to underside of equipment or accessory): 450-1100mm.

70 INSTALLING FINAL CONNECTIONS
Size: Determine.
Cable: Heat resisting white flex.
Length: Allow for equipment removal and maintenance.

72 INSTALLING LUMINAIRES
Supports: Adequate for weight of luminaire.
Locations: Submit proposals.

74 LABELLING
Identification and notices:
Standards: To BS 5499-5 and BS 5378-2.
Equipment: Label when a voltage exceeding 230 V is present.
Distribution boards and consumer units: Card circuit chart within a reusable clear plastic cover. Fit to the inside of each unit. Include typed information identifying the outgoing circuit references, their device rating, cable type, size, circuit location and details. Label each outgoing way corresponding to the circuit chart.
Sub-main cables: Label at both ends, with proprietary cable marker sleeves.

76 ENGRAVING
Metal and plastic accessories: Engrave, indicating their purpose.
Emergency lighting test key switches: Describe their function.
Multigang light switches: Describe the luminaire arrangement.

78 FINAL FIX
Accessory faceplates, luminaires and other equipment: Fit after completion of building painting.

80 CLEANING
Electrical equipment: Clean immediately before handover.
Equipment not supplied but installed under the electrical works: Clean immediately before handover.

97 INSPECTION AND TESTING
Standard: To BS 7671.
Notice before commencing tests (minimum): 24 hours.
Labels and signs: Fix securely before system is tested.
Inspection and completion certificates: Submit.
Number of copies: 2.

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99 MAINTENANCE
Servicing and maintenance: Undertake.
Duration: Until 12 months after practical completion.

W53 Assistance call systems

21 DESIGN
Design: Complete the design of the assistance call system.
Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

23 INTERFACES TO EQUIPMENT
Interfaces to equipment not forming part of the assistance call system: Design system to interact with the equipment in the event of an alarm or fault signal.

33 PULL CORDS
Manufacturer: Contractors choice
Product reference: Submit proposals
Mounting: Ceiling.
Cord:
Material: Nylon.
Colour: Orange.
Pull handles: 2 triangular pull handles.
Length: Sufficient so that maximum height above floor to the lowest pull handle is 200mm and the maximum height to the highest pull handle is 1200mm.

34 OVERDOOR INDICATORS
Manufacturer: Contractors choice
Product reference: Submit proposals
Wall mounting: Flush.
Material: White plastics.
Visual indicator: Red.
Integral buzzer: Required.

37 RESET UNITS
Manufacturer: Contractors choice
Product reference: Submit proposals
Mounting: Wall recessed.
Integral visual and audible alarm: Required.

38 POWER SUPPLY UNITS
Integral replaceable fuse: Required.
Neon power-on indicator: Required.

39 CIRCUIT MONITORING
End of line devices: Provide for open and short circuit monitoring.

40 BATTERY BACKUP SUPPLY
Charge indicator: Green light emitting diode.
Battery enclosure: White plastics.

62 INSTALLING ASSISTANCE CALL SYSTEMS GENERALLY
Standard: To BS 7671.

91 TESTING AND COMMISSIONING
Standard: To BS 7671.
Controls: Check operation.
Alarm signalling: Check operation.
Results: Submit.

92 DOCUMENTATION
Operation and maintenance instructions: Submit.
Record drawings: Submit.

W90 Communications and security systems

20 DESIGN REQUIREMENTS
Design: Complete the design of the communications, fire and security systems.
Proposals: Submit drawings showing equipment positions and routes, technical information, calculations and manufacturers literature.
Individual smoke alarms: Design to maintain individual smoke alarm operation during an interconnection wiring fault.
Zoning: Divide the installation into separately controlled and identifiable zones.
Internal signalling: Intruder alarm to be separately identifiable from fire alarm.

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Standards: CCTV to be in accordance with BS EN 50132-7 and Police Scientific Development Branch 'CCTV operational requirements manual'.
Integration: To BS 7807.

34 SMOKE ALARMS
Standard: To BS 5446-1.
Approvals: Kitemark certified.
Manufacturer: Contractors choice.
Product reference: Submit proposals.
Power Supply: Mains.
Local alarm: Audible indication integral within detectors.
Reset switch: Required.

36 CARBON MONOXIDE ALARMS
Standards: To BS EN 50291 and in accordance with BS EN 50292.
Manufacturer: Contractors choice.
Product reference: Submit proposals.
Power supply: Mains.
Standby supply: Integral battery.
Reset switch: Required.

37 LOW VOLTAGE CABLE
Standard:
PVC: To BS 6004.
LSZH: To BS 7211.
Conductor size and number of cores: Submit proposals.

50 INTRUDER ALARM CONTROL PANEL
Standard: To BS EN 50131-1.
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Controller: Microprocessor based.
Features:
Event time recording.
Alarm and fault indication.

51 INTRUDER ALARM CABLES
Standard: To BS 4737-3.30.
Conductor: 0.22 m², 7 x 0.2 mm stranding.
Sheath: As recommended by manufacturer.
Cores (minimum): 6.
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Colour: White.

52 INTERNAL SOUNDERS
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Colour: White.

53 EXTERNAL SOUNDERS
Type: Self activating bell, foam proof.
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Stand by power supply: Integral.
Colour: Submit proposals.
Strobe: Integral.
Visual indication: LED.
Ingress protection to BS EN 60529: IP65.

54 REMOTE KEYPADS
Backlight: Required.
Individual zone identification: Required.
Individual device identification: Required.
Panic button: Integral.

56 PASSIVE INFRA RED DETECTORS
Standard: To DD CLC/ TS 50131-2.2.
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Power supply: From main control panel.

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59 DOOR CONTACTS
Standard: To BS 4737-3.3.
Type: Magnetic reed switch.
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Mounting: To door heads

61 DIGITAL COMMUNICATORS
Standards: To BS EN 50136-1-3 and BS EN 50136-2-3.

62 DIRECT LINE SIGNALLING
Standards: To BS EN 50136-1-2 and BS EN 50136-2-2.

65 CLOSED CIRCUIT TELEVISION CAMERAS
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Power supply: Mains with battery backup
Resolution (minimum): HD
Ingress protection to BS EN 60529: To suit location.
Accessories: As required by manufacturer.

66 CLOSED CIRCUIT TELEVISION CONTROL MATRIX
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Video inputs: Determine.
Video outputs: Determine.
Control keyboard: Required.
Screen mode: Sequential switching and split screen.
Lost camera input: Alarm displayed on monitor.
Titling: Time, date, and camera identification.
Accessories: As required by manufacturer.

67 DIGITAL RECORDING EQUIPMENT
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Format: Hard drive
Pre event buffer: 20s.
Video output: Real time.
Capacity (minimum): Submit proposals
Accessories: As required by manufacturer.

68 CLOSED CIRCUIT TELEVISION MONITORS
Approval: BEAB.
Manufacturer: Submit proposals.
Product reference: Submit proposals.
Size (nominal diagonal): 19 inch (minimum)
Resolution (minimum): HD
Mounting: To be agreed

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

71 INSTALLING OUTLETS AND EQUIPMENT GENERALLY
Location: Coordinate with other wall or ceiling mounted equipment.
Positioning: Accurate and square to vertical and horizontal axes.
Alignment: Align adjacent accessories on the same vertical or horizontal axis.
Mounting heights (finished floor level to underside of equipment/ accessory): 450-1100mm.

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74 INSTALLING SMOKE ALARMS
Installation: In accordance with BS 5839-6.
Interlink individual smoke detectors.
Location: Submit proposals.
Maintenance: Locate to provide safe access for maintenance and testing.
Environment at installation: Clean and dust free.
Power supply: Dedicated circuit from the buildings main switchboard or consumer unit.

75 INSTALLING CARBON MONOXIDE ALARMS
Standards: To BS EN 50291 and in accordance with BS EN 50292.
Location: Submit proposals.
Maintenance: Locate to provide safe access for maintenance and testing.
Environment at installation: Clean and dust free.

82 INSTALLING INTRUDER DETECTION AND ALARM SYSTEMS
Standards: To BS EN 50131-1.
Location of intruder alarm equipment: Submit proposals.
Main power supply: From an unswitched fused connection unit. Permanently wire with a dedicated circuit from the building's main switchboard/ consumer unit.
Dummy external sounder: Required.

83 INSTALLING INTRUDER ALARM CABLES
Route: Submit proposals.
Jointing: At equipment terminals only.
Device wiring: Individual radial circuit from control panel.
Containment: As recommended by manufacturer.

85 INSTALLING CLOSED CIRCUIT TELEVISION SYSTEMS
Standards: To BS 7671 and BS EN 50132-7.
Site survey: Assess the site conditions and available artificial light.
Maintenance: Locate to provide safe access for maintenance and testing.
Camera locations: Submit proposals.
Camera connections: Conceal where practical, otherwise contain within flexible metal conduit.
Brackets and fixings: Submit proposals.
Mounting heights: Submit proposals.

86 INSTALLING CLOSED CIRCUIT TELEVISION CABLES
Route: Submit proposals.
Jointing: At equipment terminals only.
Device wiring: Individual radial circuit from control equipment.
Containment: As recommended by manufacturer.

91 FIRE ALARM DETECTION AND ALARM SYSTEM TESTING AND COMMISSIONING
Testing and commissioning: In accordance with BS 5839-6.
Smoke alarms: Verify the operation using smoke canisters.
Standby operation: Verify.
Certification:
Grade A systems: To BS 5839-6, Annex E.
Grade B, C, D, E and F systems: To BS 5839-6, Annex F.

92 CARBON MONOXIDE ALARM TESTING AND COMMISSIONING
Standby operation: Verify.
Customer guidance: Submit guidance and advice to the user.

96 INTRUDER DETECTION AND ALARM SYSTEM TESTING AND COMMISSIONING
Standards: To BS 4737 and BS EN 50131-1.
Cable insulation resistance tests: Submit results.
Standby supply: Verify operation in the event of a mains failure.
Charger: Verify operation.
Device voltage: Submit details of the voltage at powered devices.
Zone names: Submit proposals.
Detection devices: Verify the operation, and adjust to provide maximum coverage.
Tamper detection: Verify operation.
Local warning devices: Verify operation.
Remote signalling: Verify operation.
User codes: Set up and commission.
Timers: Set up and adjust entry and exit timers.

97 CLOSED CIRCUIT TELEVISION SYSTEM TESTING AND COMMISSIONING
Standard: To BS EN 50132-7.
Evaluation of system performance: Rotakin test.
Commissioning video: Display image quality and camera coverage, using Rotakin test target.
Camera coverage: Adjust to obtain optimal performance.
Quantity: Submit proposals based upon the specified update time.

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98 DOCUMENTATION
Timing: Submit at completion.
Contents: Full technical description of each system installed.
Manufacturers' operating and maintenance instructions for fittings and apparatus.
Manufacturers' guarantees and warranties.
As-installed drawings showing circuits and their ratings and locations of fittings and apparatus.
List of normal consumable items.

99 MAINTENANCE
Servicing and maintenance: Undertake.
Duration: Until 12 months after practical completion.

Z10 Purpose made joinery

10 FABRICATION
Standard: To BS 1186-2.
Sections: Accurate in profile and length, and free from twist and bowing. Formed out of solid unless shown otherwise.
Machined surfaces: Smooth and free from tearing, wooliness, chip bruising and other machining defects.
Joints: Tight and close fitting.
Assembled components: Rigid. Free from distortion.
Screws: Provide pilot holes. Heads of countersunk screws sunk at least 2 mm below surfaces visible in completed work.
Adhesives: Compatible with wood preservatives applied and end uses of timber.

20 CROSS SECTION DIMENSIONS OF TIMBER
General: Dimensions on drawings are finished sizes.
Maximum permitted deviations from finished sizes:
Softwood sections: To BS EN 1313-1.
Hardwood sections: To BS EN 1313-2.

30 PRESERVATIVE TREATED WOOD
Cutting and machining: Completed as far as possible before treatment.
Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
Surfaces exposed by minor cutting and/ or drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

40 MOISTURE CONTENT
Wood and wood based products: Maintained within range specified for the component during manufacture and storage.

50 FINISHING
Surfaces: Smooth, even and suitable to receive finishes.
Arrises: Eased unless shown otherwise on drawings.
End grain in external components: Sealed with primer or sealer as section M60 and allowed to dry before assembly.

Z11 Purpose made metalwork

31 METAL PRODUCTS
Grades of metals, section dimensions and properties: To the appropriate British Standards and suitable for the purpose.
Fasteners: Generally, same metal as component, with matching coating and finish.

50 PREPARATION FOR APPLICATION OF COATINGS
General: Fabrication complete, and fixing holes drilled before applying coatings.
Paint, grease, flux, rust, burrs and sharp arrises: Removed.

51 FABRICATION GENERALLY
Contact between dissimilar metals in components: Avoid.
Finished components: Rigid and free from distortion, cracks, burrs and sharp arrises.
Moving parts: Free moving without binding.
Corner junctions of identical sections: Mitre.
Prefinished metals: Do not damage or alter appearance of finish.

52 COLD FORMED WORK
Profiles: Accurate, with straight arrises.

53 WELDING AND BRAZING GENERALLY
Surfaces to be joined: Clean thoroughly.
Tack welds: Use only for temporary attachment.
Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
Surfaces of materials that will be self-finished and visible in completed work: Protect from weld spatter.
Flux residue, slag and weld spatter: Remove.

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54 WELDING OF STEEL
Method: Metal arc welding to BS EN 1011-1 and -2.

56 FINISHING WELDED AND BRAZED JOINTS VISIBLE IN COMPLETE WORK
Butt joints: Smooth, and flush with adjacent surfaces.
Fillet joints: Neat.
Grinding: Grind smooth where indicated on drawings.

58 GALVANIZING
Standard: To BS EN ISO 1461.
Vent and drain holes:
Location: Location to be hidden from view when installed.
Sealing after galvanizing: Required. Submit proposals.

Z12 Preservative/ fire retardant treatment

10 TREATMENT APPLICATION
Timing: After cutting and machining timber, and before assembling components.
Processor: Licensed by manufacturer of specified treatment solution.
Certification: For each batch of timber provide a certificate of assurance that treatment has been carried out as specified.

20 COMMODITY SPECIFICATIONS
Standard: Current edition of the British Wood Preserving and Damp-proofing Association (BWPDA) Manual.

25 PRESERVATIVE TREATMENT SOLUTION STRENGTHS/ TREATMENT CYCLES
General: Select to achieve specified service life and to suit treatability of specified wood species.

30 COPPER BASED PRESERVATIVE TREATMENT
Solution:
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Application: High pressure impregnation.
Moisture content of timber at time of treatment: Not more than 28%. After treatment, allow timber to dry before using.

40 ORGANIC SOLVENT PRESERVATIVE TREATMENT
Solution:
Manufacturer: Contractors choice.
Product reference: Contractors choice.
Application: Double vacuum + low pressure impregnation, or immersion.
Moisture content of wood at time of treatment: As specified for the timber/ component at time of fixing. After treatment, timber to be surface dry before use.

Z20 Fixings and adhesives

10 FIXINGS AND FASTENERS GENERALLY
Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers or sleeves to avoid bimetallic corrosion.
General usage: To recommendations of fastener manufacturers and/ or manufacturers of components, products or materials fixed and fixed to.
Fixings: To be in straight lines, at regular centres.

25 FASTENER DURABILITY
Materials: To have:
Bimetallic corrosion resistance appropriate to items being fixed.
Atmospheric corrosion resistance appropriate to fixing location.
Appearance: Submit samples on request.

30 FIXINGS THROUGH FINISHES
Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

35 PACKINGS
Materials: Noncompressible, corrosion proof.
Area of packings: Sufficient to transfer loads.

40 CRAMP FIXINGS
Fasteners: Fix cramps to frames with screws of same material as cramps.
Fixings in masonry work: Fully bed in mortar.

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50 PELLETED COUNTERSUNK SCREW FIXINGS
Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
Pellets: Cut from matching timber, grain matched, glued in to full depth of hole.
Finished level of pellets: Flush with surface.

55 PLUGGED COUNTERSUNK SCREW FIXING
Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
Plugs: Glue in to full depth of hole.
Finished level of plugs: Projecting above surface.

60 APPLYING ADHESIVES
Surfaces: Clean. Regularity and texture to suit bonding and gap filling characteristics of adhesive.
Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
Finished adhesive joints: Fully bonded. Free of surplus adhesive.

Z21 Mortars

10 MORTAR MIXES
Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

20 SAND FOR SITE MADE CEMENT GAUGED MASONRY MORTARS
Standard: To BS EN 13139.
Grading: 0/2 (FP or MP).
Fines content where the proportion of sand is specified as a range (e.g. 1:1: 5-6):
Lower proportion of sand: Use category 3 fines.
Higher proportion of sand: Use category 2 fines.
Sand for facework mortar: Maintain consistent colour and texture. Obtain from one source.

25 SAND FOR LIME:SAND MASONRY MORTARS
Type: Sharp, well graded.
Quality, sampling and testing: To BS EN 13139.
Grading/ Source: As specified elsewhere.

30 READY-MIXED LIME:SAND FOR CEMENT GAUGED MASONRY MORTARS
Standard: To BS EN 998-2.
Lime: Nonhydraulic to BS EN 459-1.
Type: CL 90S.
Pigments for coloured mortars: To BS EN 12878.

40 CEMENTS FOR MORTARS
Cement: To BS EN 197-1 and CE marked.
Types: Portland cement, CEM I.
Portland limestone cement, CEM ll/A-LL.
Portland slag cement, CEM II/B-S.
Portland fly ash cement, CEM II/B-V.
Strength class: 32.5, 42.5 or 52.5.
White cement: To BS EN 197-1 and CE marked.
Type: Portland cement, CEM I.
Strength class: 52.5.
Sulphate resisting Portland cement:
Types: To BS 4027 and kitemarked.
To BS EN 197-1 flay ash cement, CEM ll/B-V and CE marked.
Strength class: 32.5, 42.5 or 52.5.
Masonry cement: To BS EN 413-1 and CE marked.
Class: MC 12.5.

50 ADMIXTURES FOR SITE MADE MORTARS
Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
Other admixtures: Submit proposals.
Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

60 MAKING MORTARS GENERALLY
Batching: By volume. Use clean and accurate gauge boxes or buckets.
Mix proportions: Based on dry sand. Allow for bulking of damp sand.
Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
Mortars containing air entraining admixtures: Mix mechanically. Do not overmix.
Contamination: Prevent intermixing with other materials.

70 MAKING HYDRAULIC LIME:SAND MORTARS
Mixing hydrated hydraulic lime:sand: Follow the lime manufacturer's recommendations for each stage of the mix.
Water quantity: Only sufficient to produce a workable mix.

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Z22 Sealants

31 JOINTS
Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

61 SUITABILITY OF JOINTS
Presealing checks:
Joint dimensions: Within limits specified for the sealant.
Substrate quality: Surfaces regular, undamaged and stable.
Joints not fit to receive sealant: Submit proposals.

62 PREPARING JOINTS
Surfaces to which sealant must adhere:
Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
Clean using materials and methods recommended by sealant manufacturer.
Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
Protection: Keep joints clean and protect from damage until sealant is applied.

63 APPLYING SEALANTS
Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.
Environmental conditions: Do not dry or raise temperature of joints by heating.
Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
Sealant profiles:
Butt and lap joints: Slightly concave.
Fillet joints: Flat or slightly convex.
Protection: Protect finished joints from contamination or damage until sealant has cured.

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Part 3 - THE WORKS

Note: The following listings are an 'Aide memoire' to pricing information on the drawings. The Contractor will have been deemed to include all pricings required from the content of the drawings and from on site within this section.

Demolition / removals

1 Allow for isolating any services which are to be removed and for removing sufficiently back to suitable locations.

2 Allow for stripping out existing floor finishes, fittings and fixtures as necessary, include for setting aside sanitaryware and units from first floor where required to be reused.

3 Allow for removing existing steps and ramps from front and side doors.

4 Allow for carefully removing 4 No. windows from rear elevation and for setting aside for reuse later, include for setting aside tiled and concrete cills.

5 Allow for removing existing lean-to roof over the front door.

6 Allow for removing 2 No. doors and frames from rear elevation and 1 No. window from front elevation, including removing wall construction below.

7 Allow for removing internal walls, doors and frames to ground and first floors, all as shown on the drawings, include for all temporary propping as necessary.

8 Allow for removing existing balcony construction to first floor external doors.

9 Allow for removing sections of the existing rear wall all as shown, include for all propping as necessary.

10 Allow for removing existing soil pipe hanging below first floor construction, include for removing boxing.

11 Allow for removing existing manhole and draw connection to front of building, leave existing main drain for later connection.

12 Allow for removing existing shelter construction from rear of building.

Construction

1 Allow for excavating for and casting new concrete foundation to front and rear extensions, all as structural engineers details, including new pad foundations for new columns.

2 Allow for extending existing drainage as shown to suit new SVP, stacks and gulley locations, to include new drainage, manholes and inspection chambers and leave ready for later connections. Allow for making good to existing floors where new drains are installed all in construction to match.

3 Allow for constructing new external walls below dpc level to lines shown on the drawings, include for all periscopic airbricks, dpc, etc., to front and rear extensions.

4 Allow for excavating subfloor and applying weed killer and lay 50mm blinding maintaining min. 150mm ventilation void below new floor construction.

5 Allow for providing and laying new beam and block flooring to both extensions.

6 Allow for constructing new cavity walls to rear extension and form up all new openings all as shown on drawings, include for all lintels, wall ties, insulation, etc., to complete installation. DPCs to be stepped as necessary to suit final ground levels.

7 Allow for constructing new internal blockwall to rear extension, include for creating new opening with lintel over and all starter bar connections etc.

8 To front extension allow for providing and installing new steel frame, all as structural engineers details.

9 To existing building allow for providing and installing new steel beams and columns, all as structural engineers details, include for all padstones, plates etc., to complete installation and for all timber packing to webs.

10 Allow for constructing new brick and block partitions, piers etc., to existing building all as shown, include for infilling openings and packing above beams.

11 Allow for providing and fixing new wall plates to walls as shown, include for all straps etc.

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12 Allow for providing and fixing new rafters to both extensions, include for forming openings for roof lights and for all layboards, gable ladders, straps and bracing etc. as required to complete installation.

13 Allow for providing and fixing new fascias, vented soffits and bargeboards to all eaves and verges, include for all battens, cover pieces etc., to complete installation.

14 Allow for providing and laying new roof coverings to both extensions, including all slates, permavent easy slates fittings, battens, membranes etc. Allow for providing all underlay boards to eaves to allow for membrane to neatly dress into gutter. Allow for providing lead flashings at abutments and dress neatly over slates.

15 Allow for carefully refitting existing windows into new openings, include for refitting tiled and concrete cills, make good to any damage caused during removal/refitting works.

16 Allow for providing and installing 1 No. new double glazed upvc window to rear extension, include for all fixings, ironmongery etc., and seal as work progresses.

17 Allow for providing and installing 5 No. new rooflights to rear extension, include for all fittings, ironmongery, seals and flashings required to complete installation.

18 Allow for providing and installing 3 No. new double glazed timber doors, 2 No. to rear extension and 1 No. to new opening on front elevation, include for glazed sidelights as shown and all fixings, ironmongery etc., and seal as work progresses.

19 To existing front entrance door and existing side door allow for removing raised concrete thresholds and for making thresholds level with existing floor levels, allow for extending existing timber frame down to suit and replace existing doors with new larger doors to suit, include for rehanging side door as shown and for all ironmongery as necessary. Main entrance door to be power assisted.

20 Allow for fixing shut existing double doors to first floor office, include for providing new seals as necessary.

21 Allow for providing and installing new patent glazing to front lobby, to be double glazed aluminium, include for providing new level threshold power assisted entrance doors and all ironmongery, seals, cills, flashings etc., to complete installation, include for manifestations as shown (final design to be confirmed).

22 Allow for providing and installing new insulation and aluminium cladding to the steel columns to the front porch both internally and externally, include for all fixings and seals to windows.

23 Allow for providing and installing new through coloured render system, (final colour to be confirmed) to new rear extension and to front gable, include for providing all necessary stops, beads etc., to complete installation and for neatly finishing into reveals.

24 Allow for providing and laying new floor construction to both extensions, including dpm, insulation and screed, dpm to be lapped with new dpcs and existing dpms. Insulation to be turned up walls at perimeter.

25 Allow for removing existing floor boarding from the first floor construction and remove from site. Provide and lay new acoustic insulation between existing floor joists and provide and fix new Gyproc plank board between joists supported on Gypframe SIP floor channels and cover with new chipboard flooring.

26 Allow for providing and installing new layer of fireline plasterboard over existing ground floor ceilings, include for taping all joints and sealing with intumescent sealant. Provide and install new battens to create service void and line with new layer of plasterboard.

27 Allow for providing and installing new layer of plasterboard over existing first floor ceiling.

28 To underside of existing staircase allow for providing and installing new acoustic insulation and line with 2 layers of fireline plasterboard, include for taping all joints and sealing with intumescent sealant. Provide and fix new battens to create service void and line with new layer of plasterboard.

29 Allow for providing and constructing new internal partitions to lines shown on drawings to ground and first floors, include for forming openings, installing acoustic insulation and for cladding both sides with 2 layers of plasterboard (type noted on plans).

30 To all new blockwork and to remaining sections of rear walls at ground floor level allow for providing and installing new plasterboard on dabs, include for neatly fixing into reveals.

31 Allow for providing and fixing to all existing external walls new insulated plasterboard on timber battens, include for providing insulated plasterboard to all existing window and door reveals.

32 To new roof constructions allow for providing and installing new rigid insulation between rafters and new insulated plasterboard fixed underneath, all joints to be taped and sealed, include for small flat sections at ridge comprising new joists with plasterboard finish and for providing insulated reveal to rooflights.

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33 Allow for providing skim coat to all new plasterboard to walls and ceilings.

34 Allow for providing and laying new glassfibre insulation to existing roof spaces to provide a total thickness of 400mm, include for maintaining space at eaves for ventilation of roof space.

35 Allow for providing and installing new door linings to previously formed openings and provide and hang new doors, including ironmongery stops and architraves etc., to complete installation (see provisional sums for ironmongery).

36 Allow for replacing 3 No. existing doors at first floor level with new doors, including new ironmongery.

37 Allow for providing and installing new fire resisting glazed screen to the clerk's office, include for all timber framing and intumescent sealant as required to complete installation.

38 Allow for providing and installing 2 No. new sliding/folding doors including all tracks, ironmongery etc., and all fire and smoke seals.

39 Allow for providing and installing 2 No. new fire rated roller shutters to reception area, include for all tracks etc.

40 Allow for providing and fixing new skirtings and window cills, throughout, include for replacing existing as necessary.

41 Allow for providing and fitting new aluminium secondary glazing to all existing and relocated windows, include for all seals etc., and for openings to match existing.

42 Allow for providing and installing new separate heating systems to each floor to include new boilers, radiators etc., to complete installation.

43 Allow for altering existing cold water supplies and provide new supplies to all new sanitaryware and kitchen fittings, include for providing new hot feeds from new boiler locations. Remove any redundant pipework.

44 Allow for altering existing first floor section of svp and extend down and connect to previously installed drain. Allow for altering existing ground floor section of svp and extend up through first floor and roof, include for providing lead flashing where svp passes through existing roof covering and terminate with suitable cover.

45 Allow providing and installing new stubstack, sealed floor socket and BI gulley and connect to previously installed drains. To ground floor provide and install new wastes to sanitaryware and kitchen fittings locations and connect to outlets. To first floor allow for altering existing wastes and connect to new and existing svps.

46 Allow for providing and installing new timber framed boxings to new svp locations where none exist, include for sound insulation and plasterboard covers.

47 Allow for altering existing electrics and for providing new check meter and distribution boards to first floor office (located in ground floor lobby). Allow for altering electrics and connect to new fittings, outlets, lights etc., as shown (layout is diagrammatic and will need to be confirmed). Include for upgrading supplies as necessary.

48 Allow for providing and installing new pv panels to existing roof slopes, including invertors, generation meter etc., and leave fully functioning.

49 To ground floor allow for installing new sanitaryware and connect to previously installed services, include for all taps, plugs, wastes etc. (see provisional sums for supply of sanitaryware).

50 To first floor allow for reconnecting existing sanitaryware to existing and new services.

51 To ground and first floor allow for fitting new kitchen and tea point units, including white goods etc., and connect to all previously installed services (see provisional sums for supply of units).

52 Allow for providing and installing new reception desks to include high and low areas and sloping counter sides all as shown.

53 Allow for providing and installing 3 rows of new wall tiling to kitchen areas, tea points and basins and full height tiling around shower, include for all spacers and grout to complete installation.

54 Allow providing and laying new carpets and vinyl flooring throughout, include for all underlays, aluminium thresholds necessary to complete installation.

55 Allow for altering existing vinyl wall boarding to first floor WC to suit works to external wall, include for all cover junctions etc., as necessary.

56 Allow for carrying out complete internal decoration to all rooms.

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Externals

1 Allow for excavating for and supply and lay new surface water drainage system, including crates, drains, manholes etc., to complete installation and leave ready for connection to rainwater pipes.

2 Allow for providing and installing new gutters and rainwater pipes as shown, include for all brackets, junctions etc., to complete installation. Allow for providing new downpipes to existing gutters including new junction pieces and connect all pipes to previously installed drainage.

3 Allow for excavating for and casting new concrete foundations for brick walling. Provide and construct new brick walls as shown and provide and install new powder coated metal handrailing, include for all baseplates, bolts etc., to complete installation.

4 Allow for excavating for and casting new concrete steps and ramps as shown, include for all reinforcement necessary.

5 Allow for altering existing front path to suit new platforms and regrade existing lawn to suit.

6 Allow for excavating for and providing concrete slab with 3 No. Cambridge cycle hoops cast in, to front of site.

7 Allow for making good to all areas disturbed.

Completion

1 Allow for carrying out testing and commissioning of all fixtures, fittings and systems, and provide all certification.

2 Allow for carrying out sound tests required by building control.

3 Allow thoroughly cleaning and clearing site.

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TOTAL CARRIED FORWARD TO SUMMARY

Part 4 – PROVISIONAL SUMS

1	Allow the provisional sum for contingencies.	£25,000.00
2	Allow the provisional sum for ironmongery.	£2,500.00
3	Allow the provisional sum for supply of sanitaryware.	£3,000.00
4	Allow the provisional sum for supply of kitchen/tea point units and white goods.	£6,000.00
5	Allow the provisional sum for fixtures, display screens, reception desks, shelving, coat hooks etc.	£4,000.00
6	Allow the provisional sum for removal of asbestos.	£2,500.00

TOTAL CARRIED FORWARD TO SUMMARY £43,000.00

SUMMARY

TOTAL CARRIED TO FORM OF TENDER