



**Consulting Engineers**

**University College  
London**

**22 - 26 Gordon Square**

**Document Status:**

Issue/ Revision	Issue 1	Revision 1	Revision 2	Revision 3
Remarks	Client Issue			
Date	22 nd February 2010			
Prepared By: Signature:	PH			
Checked By: Signature:	PH			
Authorised By: Signature:	ED			

**Replacement Emergency  
Lighting and Fire Alarm  
Systems**

**Specification for the  
Electrical Engineering  
Services**

**Building Services Consulting  
Engineers:**

**TGA Consulting Engineers LLP  
Armstrong House  
Norton Road  
Stevenage  
Hertfordshire  
SG1 2LX**

**Tel: 01438 314422  
Fax: 01438 314433  
Email: [stevenage@tgace.co.uk](mailto:stevenage@tgace.co.uk)**

**February 2010**

**6888-Specs-E001**

**UNIVERSITY COLLEGE LONDON  
ELECTRICAL ENGINEERING SERVICES  
REPLACEMENT EMERGENCY LIGHTING AND FIRE ALARM SYSTEMS**

---

**CONTENTS**

- 1.0 GC WORKS 3 PRELIMINARIES AND GENERAL CONDITIONS OF CONTRACT**
- 2.0 V90 PARTICULAR SPECIFICATION**
- 2.0 V90 PARTICULAR SPECIFICATION**
- 3.0 SCHEDULES**
- 4.0 SUMMARY OF TENDER**

**APPENDIX A PROPOSED EMERGENCY LIGHTING ADDRESS SCHEDULE**

**UNIVERSITY COLLEGE LONDON  
ELECTRICAL ENGINEERING SERVICES  
REPLACEMENT EMERGENCY LIGHTING AND FIRE ALARM SYSTEMS**

---

**1.0 GC WORKS 3 PRELIMINARIES AND GENERAL CONDITIONS OF CONTRACT**



## **Standard GC Works/3 Preliminaries**

July 2004

## Table of Contents

Title	Page
GC/ Works/3	
GCW/A10 PROJECT PARTICULARS	
GCW/A11 TENDER AND CONTRACT DOCUMENTS	
GCW/A12 THE SITE/ EXISTING BUILDINGS	
GCW/A13 DESCRIPTION OF THE WORK	
GCW/A20 GC/WORKS/3	
GCW/A30 TENDERING/ SUBLETTING/ SUPPLY	
GCW/A31 PROVISION, CONTENT AND USE OF DOCUMENTS	
GCW/A32 MANAGEMENT OF THE WORKS	
GCW/A33 QUALITY STANDARDS/ CONTROL	
GCW/A34 SECURITY/ SAFETY/ PROTECTION	
GCW/A35 SPECIFIC LIMITATIONS ON METHOD/ SEQUENCE/ TIMING	
GCW/A36 FACILITIES/ TEMPORARY WORK/ SERVICES	
GCW/A37 OPERATION/ MAINTENANCE OF THE FINISHED INSTALLATIONS	
GCW/A53 WORK BY STATUTORY AUTHORITIES/ UNDERTAKERS	
GCW/A54 PROVISIONAL WORK/ ITEMS	
GCW/A55 DAYWORKS	
APPENDIX A: Tender drawings inc site plan	
APPENDIX B: Pre-tender health and safety plan	
APPENDIX C: Asset Register	
APPENDIX D: Permit to Work Systems	
APPENDIX E: Pressure Regulations	

## GCW/A10 PROJECT PARTICULARS

- 110 The Project
- Name: *Standard GC Works/3 Preliminaries.*
  - Nature: *Refurbishment.*
  - Location: *22-26 Gordon Square.*
- 120 Employer (Client)
- Name: University College London.
  - Address: Estates and Facilities Division, Gower Street, LONDON, WC1E 6BT.
  - Telephone: 0207 6791246.
- 130 Project Manager (herein referred to as 'PM')
- Name: TGA Consulting Engineers
  - Address: Armstrong House, Norton Road, Stevenage, SG1 2LX.
  - Telephone: 01438 314422.
- 140 CDM Co-ordinator
- Name: *DBK Goyne Adams Consultancy*
  - Address: 33 Soho Square, London, W1D 3QU
  - Telephone: 0203 2062342
- 141 Architect
- Name: N/A.
  - Address: \_\_\_\_\_.
  - Telephone: \_\_\_\_\_.
- 142 Quantity Surveyor
- Name: N/A.
  - Address: \_\_\_\_\_.
  - Telephone: \_\_\_\_\_.
- 143 Structural Engineer
- Name: N/A.
  - Address: \_\_\_\_\_.
  - Telephone: \_\_\_\_\_.
- 144 Mechanical Engineer
- Name: N/A.
  - Address: \_\_\_\_\_.
  - Telephone: \_\_\_\_\_.
- 145 Electrical Engineer
- Name: TGA Consulting Engineers.
  - Address: Armstrong House, Norton Road, Stevenage, SG1 2LX.
  - Telephone: 01438 314422.
- 190 Principal contractor
- Name: For the purposes of the CDM Regulations the Main Contractor shall be the Principal Contractor, (if an engineering project, the M&E Contractor).

## GCW/A11 TENDER AND CONTRACT DOCUMENTS

- 110 Tender drawings
  - The tender drawings are: Listed in Appendix A.
- 120 Contract drawings
  - The Contract Drawings: The same as the tender drawings.
- 140 Pre-tender Health and Safety Plan
  - A separate Pre-tender Health and Safety Plan is available from the CDM Co-ordinator.
- 150 Other documents – none.

## GCWA12 THE SITE/ EXISTING BUILDINGS

- 110 The site – 22 - 26 Gordon Square.  
• Description: *Basement up to Fourth Floor level. As per drawings in Schedule of Drawings.*
- 120 Existing buildings on/adjacent to the site  
• Description: *21 & 27 Gordon Square.*
- 125 Demolition and/ or removal – N/A
- 130 EXISTING MAINS AND SERVICES  
• Drawings: (Information shown is indicative only): Not indicated.
- The existing services have been identified by visual inspection only and the precise routes/locations of some services cannot be established at this stage.
- The Contractor is to inspect the existing services installation prior to tender and to establish any further information needed to programme and accurately price the works.
- The Contractor's attention is drawn to the drawings showing known existing services and drainage within the site. No claims for want of knowledge of the location/depth of services shall be awarded.
- The Contractor shall establish all necessary levels for the setting out of the works and the location of all services passing through the site, whether necessary for the Contract works or not.
- The Contractor shall protect and maintain all pipes, ducts, sewers, service mains cables and the like until the completion of the works. If they are damaged due to any cause within the Contractor's control he shall arrange for their prompt reinstatement to the satisfaction of the authorities concerned and pay any costs or charges in connection therewith.
- The Contractor shall not interfere with the operation of existing services.
- 140 HEALTH AND SAFETY FILE  
• Availability for inspection: The Health and Safety File for the site/ building may be seen by appointment during normal office hours at: the office of Estates and Facilities Division, UCL, by arrangement with the Project Manager.
- ADDITIONAL DETAILS
- 160 ACCESS TO THE SITE  
• Description: Refer to the site layout drawings in Schedule of Drawings.  
• Limitations: *Access to the site for all construction materials, debris removal and vehicular access/egress shall be via Gower Court.*
- Access to the area of work will only be granted by prior arrangement with UCL Estates and Facilities Division.
- The Contractor will not be given possession of any passenger lifts serving the building(s).



The Contractor will be given possession of the relevant plant rooms in the building under the UCL 'Permit to Work' procedure in order to carry out mechanical and electrical work. Access is to be maintained and allowed at all times for UCL maintenance staff to those plant rooms.

Access for operatives will be available during normal working hours Monday to Friday 08.00 to 18.00 (except Public Holidays) and at other times by special permission from the PM at least 72 hours in advance of commencement of works.

All temporary access work into the buildings is to be kept secure and watertight and is to be made good on completion of works.

All rubbish debris and bulk materials to be bagged at its point of origin before being moved through the building.

#### 161 PARKING

- Restrictions on parking of the Contractor's and employees' vehicles:

The 'site' lies within the Congestion Charging Zone and the Contractor is deemed to have included all such costs from complying with the congestion charge with its tender.

Parking of the Contractor's vehicles will not be permitted other than for delivery and/or collection of materials.

The Contractor will not be able to use UCL property for car parking and it will not be able to use, for storage or temporary accommodation, any accommodation outside the boundaries of the site of which it is given possession.

A space equivalent to one parking space will be permitted for the storage of a skip (refer to the site plan in Appendix A). No other skip location will be provided and the Contractor is to allow for transporting waste material to this collection point.

Adequate arrangements for reception of materials and equipment shall be made with suppliers to ensure rapid unloading and to minimise time spent on UCL premises.

Adequate notice shall be given to the Project Manager to arrange temporary parking and access for unloading of equipment or removal of rubbish etc., where such parking will cause an obstruction on UCL premises.

#### 162 USE OF THE SITE

- General: Do not use the site for any purpose other than carrying out the works.
- Limitations: *In occupied buildings as required.*

The Contractor is to note that existing buildings will be occupied by staff and students at all times.

Some works in connection with mechanical and electrical installations may also be required to be carried out in areas outside the Contractor's possession.

The Contractor will be responsible for maintaining access for UCL staff and students through corridors, staircases and lifts within the building at all times and is to allow for the cost that this will involve.

Entrances and exits are to be kept clear and unobstructed at all times.

## 163 SITE RESTRICTIONS

The Contractor shall keep all workmen including those employed by Sub Contractors under his control and within the boundaries of the site. Workmen are only to occupy or to be in that part of UCL or other buildings as necessary for the performance of the works and special instructions are to be given by the Contractor to enforce this requirement.

The playing of portable radios will not be permitted under any circumstances on UCL premises. The Contractor's attention is drawn to the fact that teaching and research will be in progress in adjacent buildings and the Contractor should arrange his programme of work so that all noisy operations are carried out prior to 10.00am. Where this is impossible the Contractor must give the Contract Administrator a minimum of 7 days notice and be prepared to stop such work temporarily during lectures or when otherwise requested to do so.

All staircases, corridors and entrances must be kept free of all plant, materials and rubbish during UCL hours.

Provide, maintain and remove upon completion dust proof screens between dirty work and preserved circulation areas for occupants. Include for dust mats where appropriate to stop the tread of dirt around the building. Provide and maintain all necessary temporary runways, ramps, hardstandings etc. that may be required. Clear away and make good on completion.

The Contractor shall provide all his staff and visitors entering UCL property with means of identification to be produced when requested to do so by any member of UCL staff.

## 164 SURROUNDING LAND/ BUILDING USES

- General: Adjacent or nearby uses or activities are as follows:

A certificate of clearance will be obtained from the 'Occupying Departments' prior to work commencing on site. The site will then become the Contractor's responsibility under the terms of the Contract.

**Restricted Areas:** Where it is essential to work outside of his designated site area, it will be necessary for the Contractor to obtain a 'Permit to Enter/Work'. This will include the following areas:

- a) all laboratories
- b) all biological services
- c) all plant rooms
- d) all switch rooms
- e) all lift motor rooms
- f) all water tank rooms
- g) all telephone exchange rooms

The Contractor must obtain the approval of the Project Manager before any work is carried out beyond the perimeter of the site. At least 7 days notice must be given to enable the Project Manager to obtain the necessary safety and security clearances. If required by the Project Manager suitable warning notices shall be provided by the Contractor.

## 165 PERMIT TO WORK SYSTEMS

UCL operates a number of Permit to Work systems. The Contractor will require a permit to work for the following:

- a) permit to work/enter a restricted area
- b) entry into confined spaces

c) hot work - use of heat or flame producing equipment (welding/burning)  
d) permit to work on specific system  
Permit to Work procedures are attached at Appendix C. The Contractor shall allow in his tender for all costs associated with complying with these requirements.

The Contractor shall allow for co-ordinating all permits for subcontractors and be responsible for signing for access keys. Access keys and permits shall be returned to issuing officer at expiry of the permit. Failure to return a key may result in the Contractor being charged £100 for its replacement.

166      **USE OF UCL PLANT OR EQUIPMENT INCLUDING ELECTRICAL SUPPLY SYSTEMS, HOISTS, LIFTING APPLIANCES**

The Contractor or his employees must not use without written permission any of UCL's plant or equipment including electrical supply systems, hoists, lifting equipment, tools and ladders, etc. If use of such equipment is permitted within the Contract, application must be made to the Contract Administrator who when satisfied of the competence of the person nominated to use the plant or equipment will give written permission for its use.

Where a Permit to Work is required it will be issued to the Contractor's foreman or person in charge of the works.

167      **MISCONDUCT**

If any of the employees of the Contractor or their Sub Contractors misconduct themselves or in the opinion of the Contract Administrator are incompetent, the Contractor shall, if so directed, remove such employees from employment on the works.

Smoking, Alcohol and Drugs; The consumption of alcohol and drugs will not be permitted on site and the Contractor is to make all endeavours to control this.

170      **SITE VISIT**

Before tendering, ascertain the nature of the site, access thereto and all local conditions and restrictions likely to affect the execution of the contract Works. Site visit may be made by the contractor by prior arrangement with Mr Chris Marshall, UCL Electrical Building Services, telephone: 0207 679 1246.

## GCW/A13 DESCRIPTION OF THE WORK

### 130 PREPARATORY WORK BY OTHERS

- Description: *(In existing buildings and laboratories).*

Prior to the Contract commencing the Employer will remove all items of loose equipment from the area. Fixtures and fittings will not be removed by the Employer.

Each area of work will be disinfected and decontaminated by the Employer prior to commencement of the works. Drains and wastes will be flushed through. Safety Clearance Certificates confirming that areas of work are safe to work in will be issued by the Employer.

### 140 The works

- Description: *Replacement fire alarm and emergency lighting systems.*

### 160 COMPLETION WORK BY OTHERS

- Description: -None

### 240. ELECTRICAL SUPPLY:

Where systems are specified as being maintained 'under fire conditions' ensure wiring selected is suitable for the temperatures to be encountered.

### 250 PLANT OPERATING CONDITIONS:

Ensure all plant items are suitable for operation in the environment in which they are to be located.

### 260 ROOM TERMINAL LOCATIONS:

The positions of all connection points, accessories, apparatus, equipment and other room terminals shown on the tender drawings are approximate and for guidance in the preparation of the tender.

Agree, with PM, which terminals are subject to final positioning onsite.

Allow for the movement of all such terminals up to a radius of 2.0m from the positions shown on the drawings.

Mounting heights indicated in tender documents are for tender purposes only. Confirm mounting heights with the CA before commencing work on site.

### 270 ELECTROMAGNETIC COMPATIBILITY:

Ensure all equipment and systems are installed to provide electromagnetic compatibility within the system and with any other systems installed in the same area. Ensure all systems and buildings are assessed for protection to, and that such protection meets the requirements of BS 6651. Ensure all equipment meets the requirements of the appropriate electromagnetic compatibility standard.

271 ELECTROMAGNETIC COMPATIBILITY:

Ensure all equipment and systems are installed to provide electromagnetic compatibility within the system and with any other systems installed in the same area. Ensure all systems and buildings are assessed for protection to, and that such protection meets the requirements of, BS 6651. Ensure all equipment meets the requirements of the appropriate electromagnetic compatibility standard.

- Standard
- Particular equipment
- Industrial, Scientific and Medical
  - BS EN 61000-6-4.
  - BS EN 55011.
- Fluorescent lamps and Luminaires
  - BS EN 55015.
- Information technology equipment
  - BS EN 55022.
- Mains signaling
  - BS EN 50065.
- Broadcast receivers and associated equipment
  - BS EN 55013 and BS EN 55020.
- Industrial process measurement and control
  - BS EN 60801-2.
- Other equipment to generic standards
- Emissions
  - Domestic, commercial and light industrial
    - BS EN 61000-6-3.
    - BS EN 55014-1.
- Immunity
  - Domestic, commercial and light industrial
    - BS EN 61000-6-1.
    - BS EN 55014-2.
- Ensure all apparatus covered by the Wireless Telegraphy Act meets regulations issued by the Radio communications Agency.
- Ensure all equipment and systems meet the requirements of BS 6328, BS 6701 and BS EN 41003.
- Ensure that all cable installations meet the minimum guidance separation in Recommended Cable Separations to Achieve Electromagnetic Compatibility (EMC) in Buildings, current editions, published by the ECA.

28 PERFORMANCE CHARACTERISTIC DETAILS:

Details of the equipment as selected for inclusion into the Works and shall include, in a format to be agreed, the following information

- Plant item description, reference identification and serial number.
- Electrical input rating - kVA, Volts, Phase.
- Operating mode - duty, standby, generator etc.

- Starting characteristics - starter type, current, starts/hour and starting time.
- Performance characteristics - (full load current and power factor).
- Noise level.
- Weight.

290

**SOFTWARE:**

Obtain on behalf of the end user all appropriate licences, permissions, copyright waivers, rights of use and the like from the owners of the software rights.

Ensure that the end user is properly registered with the software supplier for support and appropriate updating.

Ensure that application software is written in compliance with BS 7649.

## **GCW/A20 GC/WORKS/3**

### **GC/WORKS/3**

- The contract: The General Conditions of Contract for Mechanical and Electrical Engineering Works, GC/Works/3 (1998) and an Abstract of Particulars.
- Allow for the obligations, liabilities and services described therein against the headings below:

It is a requirement that the Contract shall be executed as a Deed.

### **THE CONDITIONS**

- ~~Standard Conditions: Supplementary Conditions:~~ Special Conditions and amendments and/ or additions to the printed General Conditions of Contract will be set out in the Abstract of Particulars.

## **CONTRACT DOCUMENTATION INFORMATION AND STAFF**

### **1 - Definitions**

#### **1A - Fair dealing and team working**

### **2 - Contract documents**

### **3 - Bills of Quantities**

### **4 - Delegations and representatives**

### **5 - Contractor's agent**

### **6 - Contractor's employees**

## **GENERAL OBLIGATIONS**

### **7 - Conditions affecting Works**

### **8 - Insurance**

#### **8A - Professional indemnity insurance for design**

### **9 - Setting out**

### **10 - Design**

### **11 - Statutory notices and CDM Regulations**

### **12 - Intellectual property rights**

### **13 - Protection of Works**

14 - Nuisance and pollution

15 - Returns

16 - Foundations

17 - Covering work

18 - Measurement

19 - Loss or damage

21 - Defects in Maintenance Periods

22 - Occupier's rules and regulations

23 - Discrimination

24 - Corruption

25 - Records

#### **SECURITY**

26 - Site admittance

27 - Passes

28 - Photographs

29 - OFFICIAL SECRETS AND CONFIDENTIALITY  
*Shall apply.*

#### **MATERIALS AND WORKMANSHIP**

30 - Vesting

31 - Quality

32 - Excavations

#### **COMMENCEMENT OF PROGRAMME, DELAYS AND COMPLETION**

33 - Programme

34 - Commencement and completion

35 - Progress meetings

36 - Extensions of time



37 - Early possession

38 - Acceleration and cost savings

38A - Bonuses

39 – Tests on Completion and Certifying Work

39a- Tests After Completion

## **INSTRUCTIONS AND PAYMENT**

40 - PM's Instructions

41 - Valuation of Instructions - Principles

42 - Valuation of Variation Instructions

43 - Valuation of other Instructions

45 - VAT

46 - Prolongation and disruption

47 - Finance charges

48 - Advances on account

48A - Retention payment bond

48B - Mobilisation payment

48C - Payment for Things off site

49 - Final account

50 - Certifying payment

50A - Withholding payment

51 - Recovery of sums

## **PARTICULAR POWERS AND REMEDIES**

52 - Suspension for non payment

53 - Non compliance with Instructions

54 - Emergency work

55 – Damages for Delay

56 - Determination by Employer

57 - Consequences of determination by Employer

58 - Determination by Contractor

58A - Determination following suspension of Works

59 - Adjudication

60 - Arbitration and choice of law

#### **ASSIGNMENT, SUB LETTING, SUB CONTRACTING SUPPLIERS AND OTHER**

61 - Assignment

62 - Subletting

63 - Nomination

63A - Insolvency of nominated subcontractors or suppliers

64 - Provisional sums

65 - Other works

#### **PERFORMANCE BOND, PARENT COMPANY GUARANTEES AND COLLATERAL WARRANTIES**

66 - Performance bond

67 - Parent company guarantee

68 - Collateral warranties

#### **ABSTRACT OF PARTICULARS**

##### **Works**

- Comprise: *Replacement fire alarms and emergency lighting systems.*

##### **Site**

- Location: See clause A12/110.

##### **1(1) - Employer**

- The Employer: See clause A10/120.

- 1(1) and 4(1) - Project Manager - Delegations and representatives
- The Project Manager: See clause A10/130, who shall act generally on behalf of the Employer in carrying out those duties described in the Contract, subject to the following excluded matters: *None (Option except as follows: Approval of drawing/technical submissions as stipulated in the tender document will be undertaken by the Design Consultants who will request confirmation of their approval to be issued by the Project Manager).*
- In relation to such excluded matters, the person or persons authorised to act for the Employer are: TGA Consulting Engineers.

- 1(1) - CDM Regulations
- CDM Co-ordinator: See clause A10/140.
- All the CDM Regulations apply.

- 8(2) - Insurance
- Employer's liability: Minimum amount insured in respect of employer's liability referred to in Condition 8(2) shall be £10,000,000.

- 8(3) - Insurance
- Construction all risks and public liability: Alternative C is required.

- 8(3)(a) - Insurance
- Professional fees: This item in the Abstract of Particulars will be deleted.

- 8(3)(A) - Insurance
- Professional fees: The percentage referred to in Condition 8(3)(a) shall be 15%.  
(Omit - This Clause to be used if the Contractor's design).

- 8(3)(b) - Insurance
- Public liability: Minimum amount insured referred to in Condition 8(3)(b) shall be £5,000,000 for any one occurrence or series of occurrences arising out of one event.

8 – Insurance Forms of certificates referred to in Condition 8 are available on request from UCL's insurers.

- 8A - Professional indemnity insurance for design.
- Condition 8A shall not apply. *(Normal Clause for refurbishment).*

- 10 - Design
- Design: The Contractor (or a subcontractor) is required to undertake the design of the following part or parts of the Works:  
Ductwork manufacturing drawings, control wiring diagrams, support brackets, anchors and guides.

- 10(1) - Design
- Contractor's design documents: The drawings, design documents and design information shall be supplied in four copies, and not 2 copies.

- 21 - Defects in Maintenance Periods
- The Maintenance Period for the Works (or each Section where completion is required in Sections): shall be twelve months and shall apply from the day after that on which the Works (or each Section) are completed as certified by the PM.

22 – Occupiers rules and regulations

- Condition 22 shall apply: Occupier's rules and regulations are appended. See clause A34

27 - Passes

- Condition 27 shall apply. The Contractor's staff and sub contractors shall wear compulsory company photo ID cards at all times.

28 - Photographs

- Condition 28 shall apply.  
*(Optional) Progress photographs in digital format are to be taken.*

30 - Vesting

- Nothing shall be supplied by the contractor where title of the goods is withheld.

34 - Commencement and completion

- Period within which notice of date of possession be given: *14 days from the Acceptance of the tender.*

34 - Commencement and completion

- Period for the completion of the Works: The Day after the expiration of a period of 17 weeks from the *4 January 2010*.

34 - Commencement and completion

- Period for the completion of the Sections: The Day after the expiration of the period set out below opposite each Section from the *(omit unless phases known before tender)*.
  - Section: Not Applicable.
  - Period: Not Applicable.

38A - Bonuses

- Condition 38A shall not apply.

47 - Finance charges

- Rate at which finance charges shall be payable: 2% over the rate charged during the relevant period by the Bank of England for lending money to the clearing banks.

48 - Advances on account

- Alternative C (Valuation) is required.
- Retentions shall be applied to valuation of variations as well as valuation of contract sum.

48A - Retention payment bond

- Condition 48A will be deleted.

48B - Mobilisation payment

- Condition 48B shall not apply.

48C – Payment for things off site

- Condition 48C shall apply compulsorily in respect of pre ordered goods and shall not apply in respect of the rest of the works.

50 – Certifying payments

- The prescribed form of certificate will be in accordance with this form of Contract.

55 - Liquidated damages

- Damages for delay shall be: £(contract sum x 15%/52") per week

58 – Determination by contractor

- The period of suspension referred to in Condition 58(3)(e) shall be 182 days.

58A – Determination following suspension of works

- The period of suspension referred to in Condition 58A(1) shall be 182 days

59 - Adjudication

- Adjudicator:  
- Name: The Adjudicator shall be appointed by the President or Vice President of The Institution of *Mechanical/Electrical* Engineers.

or, if he is deceased or unwilling or unable to act, or is not or ceases to be independent of the Employer, the Contractor, the PM and the QS, such other person as the Employer and the Contractor choose by mutual agreement in writing or, failing such agreement, such other person as may be chosen by the President or a Vice President of the Chartered Institute of Arbitrators (or, where the Contract is a Scottish contract, by the Chairman or a Vice Chairman of the Chartered Institute of Arbitrators (Arbiter)(Scottish Branch) at the request of either the Employer or the Contractor.

60 – Arbitration and choice of law .

- Arbitrator:  
- Name: The Adjudicator shall be appointed by the President or Vice President of The Institution of *Mechanical/Electrical* Engineers.

61 - Assignment

- The Employer may assign or transfer the benefit of the Contract, or any part, share or interest under it only after certification by the PM under Condition 39 (Certifying completion) of the completion of the Works or the last Section thereof in respect of which completion is certified, or the determination of the Contract for any reason whatsoever, including (without limitation) breach by the Employer, whichever is the earlier.

62 - SUBLETTING

Sub contracts shall be "back to back" with these Conditions of Contract

63A - Insolvency of nominated subcontractors or suppliers

- Condition 63A shall not apply.

66 - Performance bond

- Condition 66 shall not apply.

- 67 - Parent company guarantee
- Condition 67 shall apply.

- 68 - Collateral warranties
- Condition 68 shall not apply.

SUPPLEMENTARY CONDITIONS AND ANNEXES  
*There are no supplementary conditions.*

ADDENDUM TO THE ABSTRACT OF PARTICULARS  
*There are no addenda.*

## GCW/A30 TENDERING/ SUBLETTING/ SUPPLY

### 110 SCOPE

- General: These conditions are supplementary to those stated in the invitation to tender and on the form of tender.

### 120 TENDERING PROCEDURE

Shall be in accordance with the principles of the "Code of Procedure for Single Stage Tendering 1996" (Alternative 2).

### 130 EXCLUSIONS

- Inability to tender: Immediately inform if any parts of the work as defined in the tender documents cannot be tendered.
- Relevant parts of the work: Define those parts, stating reasons for the inability to tender.

### 140 ACCEPTANCE OF TENDER

- The Employer and Employer's representatives:
  - Offer no guarantee that any tender will be recommended for acceptance or be accepted.
  - Will not be responsible for any cost incurred in the preparation of any tender.

### 160 PERIOD OF VALIDITY

- Period: After submission or lodgement, keep tender open for consideration (unless previously withdrawn) for not less than 8 weeks
- Date for possession/ commencement: See section A20.

### 280 CONTRACT SPECIFICATION WITHOUT QUANTITIES:

Where and to the extent that quantities are not included in the specification, 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.

### 332 A SCHEDULE OF RATES:

A schedule of rates must be submitted

- within one week of request.
- It must include all items and materials included in the tender, together with their rates, extended and totalled. Price Preliminaries separately. Such totals shall agree with the Contract Sum and subtotals shall agree with the priced breakdown of the tender.
- Correction of errors in the quantification will not lead to adjustment of the Contract Sum.

### 360 PROGRAMME

- Content: As specified in clause A32/130
- Submit: With the tender.

### 370 TENDER STAGE METHOD STATEMENTS

- Method statements: Prepare, describing how and when the following is to be carried out:
  - *(Insert any job specific statements ie. builders' work, temporary work, etc..)*
- Statements: *At the same time and at the Contractor's discretion method statements may be submitted for other parts of work*

380 ALTERNATIVE TENDERS:

In addition to and at the same time as his tender for the Contract Works as defined in the tender documents, the Contractor may, at his discretion, submit alternative design proposals and/or method(s) of construction/installation for consideration. Alternatives which would involve significant changes to other work will not be considered.

Such alternative(s) must include all additional costs arising from necessary changes to the details of the installation, including changes to the design and drawings, as well as any associated ancillary equipment items.

Such alternative(s) is/are deemed to be alternative tender(s) and each must include a complete and precise statement of the effects on cost and programme.

- Full technical data for each such alternative must be submitted with the Tender together with details of any consequential amendments to the design and/or construction/ installation of other parts of the Works.
- Full technical data for each such alternative must be submitted within one week of request together with details of any consequential amendments to the design and/or construction/ installation of other parts of the Works.

390 ALTERNATIVE MANUFACTURERS/SUPPLIERS:

In addition to and at the same time as the tender for the Subcontract Works as defined in the tender documents, the Contractor may, at his discretion, submit alternative manufacturers or suppliers for consideration. Alternatives which would involve significant changes to other work will not be considered.

Such alternative(s) must include all additional costs arising from necessary changes to the details of the installation, including changes to the design and drawings, as well as any associated ancillary equipment items.

Such alternative(s) is/are deemed to be alternative tender(s) and each must include a complete and precise statement of the effects on cost and programme.

- Full technical data for each such alternative must be submitted with the Tender together with details of any consequential amendments to the design and/or construction/installation of other parts of the Works.
- Full technical data for each such alternative must be submitted within one week of request together with details of any consequential amendments to the design and/or construction/installation of other parts of the Works.
- Full technical data for each such alternative must be submitted before the execution of the Contract together with details of any consequential amendments to the design and/or construction/installation of other parts of the Works.

440 HEALTH AND SAFETY INFORMATION

- Content: Describe the organisation and resources to safeguard the health and safety of operatives, including those of subcontractors, and of any person whom the works may affect.
- Include:
  - A copy of the contractor's health and safety policy document, including risk assessment procedures.
  - Accident and sickness records for the past five years.
  - Records of previous Health and Safety Executive enforcement action.
  - Records of training and training policy.
  - The number and type of staff responsible for health and safety on this project with details of their qualifications and duties.
- Submit: With the tender:

Where such information has been supplied to the Employer within the previous 6 months, provide details of that submission and either confirm that the information



is still valid or provide updated information where appropriate.

- 450      **OUTLINE CONSTRUCTION PHASE HEALTH AND SAFETY PLAN**
- Content: Submit the following information within one week of request:
    - Method statements on how risks from hazards identified in the pre-tender health and safety plan and other hazards identified by the contractor will be addressed.
    - Details of the management structure and responsibilities.
    - Arrangements for issuing health and safety directions.
    - Procedures for informing other contractors and employees of health and safety hazards.
    - Selection procedures for ensuring competency of other contractors, the self-employed and designers.
    - Procedures for communications between the project team, other contractors and site operatives.
    - Arrangements for cooperation and coordination between contractors.
    - Procedures for carrying out risk assessment and for managing and controlling the risk.
    - Emergency procedures including those for fire prevention and escape.
    - Arrangements for ensuring that all accidents, illness and dangerous occurrences are recorded.
    - Arrangements for welfare facilities.
    - Procedures for ensuring that all persons on site have received relevant health and safety information and training.
    - Arrangements for consulting with and taking the views of people on site.
    - Arrangements for preparing site rules and drawing them to the attention of those affected and ensuring their compliance.
    - Monitoring procedures to ensure compliance with site rules, selection and management procedures, health and safety standards and statutory requirements.
    - Review procedures to obtain feedback.

#### **SUBLETTING/ SUPPLY**

- 505      **DOMESTIC SUBCONTRACTS**
- General: Comply with the Construction Industry Board 'Code of Practice for the selection of subcontractors'.
  - List: Provide details of all subcontractors and the work for which they will be responsible.
- 510      **'LISTED' DOMESTIC SUBCONTRACTORS**
- General: The work listed below and described in the Contract Documents must be carried out by persons identified in a list as provided for in clause A30/511:
    - The work: None.
- 511      **'LISTED' DOMESTIC SUBCONTRACTORS**
- General: Where the Contract Documents provide that certain work must be carried out by a person of the Contractor's choice selected from a list of persons given therein.
  - The selected person: Will become a subcontractor as provided for in the Contract Condition for Subletting.
  - Additions to lists:
    - The Contractor may, but only with consent, which will not be unreasonably withheld, add additional persons to the list and must, if requested, submit (in an approved form) evidence of the suitability of such additional person(s). Wherever possible, submissions for addition of person(s) must be made, and consent obtained, before return of the tender. When any submission for addition of person(s) is made with the tender the consequences, if any, to the tender price

compared to the use of the listed persons are to be made clear or the tender will be treated as qualified.

- Shortage of names: If at any time prior to the tender return date the persons named in the list (including any persons added as provided above) are unable and unwilling to carry out the relevant work, give notice without delay. The Employer will then forthwith add the names of other persons as provided above, or confirm that no names will be added. If the Employer fails to do either within one week of the Contractor's notification the Contractor may subcontract in accordance with the Contract.

Agreement: Before the start of work to which the list relates enter into a binding subcontract agreement and confirm that this has been done, giving the name of the selected subcontractor.

## GCW/A31 PROVISION, CONTENT AND USE OF DOCUMENTS

### DEFINITIONS AND INTERPRETATIONS

#### 120 DEFINITIONS

- Meaning: Terms, derived terms and synonyms used in the preliminaries/ general conditions and specification are as stated therein or in the appropriate British Standard or British Standard glossary.

#### 121 TERMS USED IN CONTRACT

"CA" means "PM" or their authorised representative.

#### 122 COMMUNICATION

- Definition: Includes advise, inform, submit, give notice, instruct, agree, confirm, seek or obtain information, consent or instructions, or make arrangements.
- Format: In writing to the person named in clause A10/140 unless specified otherwise.
- Response: Do not proceed until response has been received.

#### 123 PRODUCTS

- Definition: Materials, both manufactured and naturally occurring, and goods, including components, equipment and accessories, intended for the permanent incorporation in the Works.
- Includes: Goods, plant, materials, site materials and things for incorporation into the Works.

#### 124 SITE EQUIPMENT

- Definition: All appliances or things of whatsoever nature required in or about the construction for completion of the Works but not materials or other things intended to form or forming part of the Permanent Works.
- Includes: Construction appliances, vehicles, consumables, tools, temporary works, scaffolding, cabins and other site facilities.

#### 125 TERMS USED IN SPECIFICATION

- Remove: Isolate, drain, make safe, disconnect, dismantle as necessary and take out the designated products or work and associated accessories, fastenings, supports, linings and bedding materials. Dispose of unwanted materials.
- Fix: Unload, handle, store, place and fasten in position including all labours and use of site equipment.
- Supply and fix: Includes all labour and site equipment for unloading, handling, storing and execution. All products to be supplied and fixed unless stated otherwise.
- Keep for reuse: Do not damage designated products or work. Clean off bedding and jointing materials. Stack neatly, adequately protect and store until required by the Employer or for use in the Works as instructed.
- Make good: Execute local remedial work to designated work. Make secure, sound and neat. Includes local redecoration and/ or replacement.
- Replace: Supply and fix new products matching those removed. Execute work to match original new state of that removed.
- Repair: Execute remedial work to designated products. Make secure, sound and neat. Excludes redecoration and/ or replacement.
- Refix: Fix removed products.
- Replace: Supply and fix new products matching those removed. Execute work to match original new state of that removed.

- Ease: Adjust moving parts of designated products or work to achieve free movement and good fit in open and closed positions.
- Match existing: Provide products and work of the same appearance and features as the original, excluding ageing and weathering. Make joints between existing and new work as inconspicuous as possible.
- System: Equipment, accessories, controls, supports and ancillary items, including installation, necessary for that section of the work to function.

#### 140 MANUFACTURER AND REFERENCE

- Definition: When used in this combination:
  - Manufacturer: The firm under whose name the particular product is marketed.
  - Reference: The proprietary brand name and/ or reference by which the particular product is identified.
- Currency: References are to the particular product as specified in the manufacture's technical literature current on the date of the invitation to tender.

#### 141 SUBSTITUTION OF PRODUCTS

- Products: If an alternative product to that specified is proposed, obtain approval before ordering the product.
- Reasons: Submit reasons for the proposed substitution.
- Documentation: Submit relevant information, including:
  - manufacturer and product reference;
  - cost;
  - availability;
  - relevant standards;
  - performance;
  - function;
  - compatibility of accessories;
  - proposed revisions to drawings and specification;
  - compatibility with adjacent work;
  - appearance;
  - copy of warranty/ guarantee.
- Alterations to adjacent work: If needed, advise scope, nature and cost.
- Manufacturers' guarantees: If substitution is accepted, submit before ordering products.

#### 142 CROSS REFERENCES

- Accuracy: Check remainder of the annotation or item description against the terminology used in the section or clause referred to.
- Related terminology: Where a numerical cross-reference is not given the relevant sections and clauses of the specification will apply.
- Relevant clauses: Clauses in the referred to specification section dealing with general matters, ancillary products and workmanship also apply.
- Discrepancy or ambiguity: Before proceeding, obtain clarification or instructions.

#### 143 REFERENCED DOCUMENTS

- Conflicts: Specification prevails over referenced documents.

#### 144 EQUIVALENT PRODUCTS

- Inadvertent omission: Wherever products are specified by proprietary name the phrase 'or equivalent' is to be deemed included.

#### 145 SUBSTITUTION OF STANDARDS

- Specification to British Standard or European Standard: Products complying with a grade or category within a national standard of another Member State of the European Community or an international standard recognised in the UK may be substituted.
- Before ordering: Submit notification of all such proposals.

- Documentary evidence: Submit for verification when requested as detailed in clause A31/200. Any submitted foreign language documents must be accompanied by certified translations into English.

146 CURRENCY OF DOCUMENTS

- Currency: References to published documents are to the editions, including amendments and revisions, current on the date of the Invitation to tender.

220 ADDITIONAL COPIES OF DRAWINGS/ DOCUMENTS

Two copies of drawings (not counting any certified copies of the Contract drawings) will be issued to the Contractor free of charge.

- Additional copies: Issued on request and charged to the Contractor.

221 SPECIFICATION

After execution of the Contract one copy of the specification will be issued to the Contractor. Additional copies will be issued on request but charged to the Contractor.

222 OMISSIONS OR ERRORS

- Specification and/ or drawings: Omissions or errors in description and/ or quantity shall not vitiate the Contract nor release the Contractor from any obligations or liabilities under the Contract.

231 DIMENSIONS

The accuracy of dimensions scaled from the drawings is not guaranteed. Obtain from the PM any dimensions required but not given in figures on the drawings or calculable from the figure on the drawings.

232 THE SPECIFICATION

- Specification: All sections must be read in conjunction with Main Contract Preliminaries/ General conditions.

233 DIVERGENCE FROM THE STATUTORY REQUIREMENTS

- Divergence: Between the drawings or specification and the requirements of the Building Regulations, other Statutes, statutory undertakers and other regulatory authorities.
- Action: Inform immediately.

240 DRAWINGS BY THE ENGINEER

The drawings show the general arrangement of the works and design intent but do not necessarily show the exact runs of the pipes, ducts, cables or conduits nor the exact number of fittings required. The Installation Contractor shall visit site prior to tender to assess the full extent of the work and shall include in his tender for every service and fitting necessary for the proper execution of the work. Dimensions are to be checked on site.

This Specification is to be read in conjunction with the Contract Drawings, one elucidation the other.

In the event of any discrepancy arising between the Drawings and the Specification the Engineer shall decide which is to be followed. Such discrepancies must be pointed out at the time of tendering and will not be accepted as a claim for extra works or materials costs.

DOCUMENTS PROVIDED BY CONTRACTOR/ SUBCONTRACTORS/  
SUPPLIERS

315

INSTALLATION DRAWINGS BY THE CONTRACTOR

The Contractor shall provide co-ordinated installation drawings, builder's work details and comprehensive wiring diagrams in good time for perusal and comment by the Engineer before any installation work is commenced.

The Contractor shall bear any costs he may incur as a result of delay in providing such drawings, samples, patterns, models or information or as a result of errors, omissions or discrepancies therein, for which the Contractor is responsible.

The Contractor shall at his own expenses carry out, or bear the reasonable cost of, any alterations or remedial work necessary for such errors, omissions or discrepancies for which he is responsible and modify the drawings, samples, patterns, models or information accordingly.

The Contractor shall at no extra cost to the Employer, amend Working Drawings during the course of the works to show the proposed works whether occasioned by additional works, omitted works, omitted works or for clarity.

Setting out of all works must be approved by the Engineer before final fixing.

When preparing the master programme make reasonable allowance, based on the information in Section A30, for completing such design/production information, checking, including submission to the Planning Supervisor for comment, inspection by the Project Manager and any subsequent amendment (s), re-submission(s) and re-inspection(s).

Obtain all the information which Sub Contractors are required to provide in time to meet the programme Thoroughly check, on the basis of the information available, that dimensions are correct, that account is taken of all related work and that construction is practicable. Note any comments on one copy of the design/production information then submit to Project Manager with the required number of additional unmarked copies. Such checking will not relieve the Project Manager or the Sub Contractor(s) of their respective responsibilities for design, co-ordination and documentation.

The Project Manager will note any comments on one copy, then return to the Contractor. Inspection and any comments made by the Project Manager will not relieve the Sub Contractor(s) of responsibility for design and documentation.

Ensure that any necessary amendments are made without delay. Unless and until the Project Manager confirms that re-submission is not required, obtain copies of amended drawings, etc., check, re-submit to Project Manager and ensure incorporation of necessary.

Obtain final version of the information and submit to the Project Manager the number of copies required. On behalf of the Project Manager distribute additional copies as appropriate to all affected Sub Contractors and others and keep at least one copy on site.

316

AS BUILT DRAWINGS AND INFORMATION must be provided to the Project Manager not less than two weeks before the date for Completion as follows:

Record drawings and operating manuals/Building Log book.

## MAINTENANCE INSTRUCTIONS AND GUARANTEES

Retain copies delivered with components and equipment (failing which, obtain), register with manufacturer as necessary and hand over to Project Manager on or before Practical Completion.

Notify the Project Manager of telephone number for emergency services by Sub Contractors after Completion.

## GCW/A32 MANAGEMENT OF THE WORKS

### 110 SUPERVISION

- General: Accept responsibility for coordination, supervision and administration of the Works, including subcontracts.
- Coordination: Arrange and monitor a programme with each subcontractor, supplier, local authority and statutory undertaker, and obtain and supply information as necessary for coordination of the work.

### 111 INSURANCES

Before starting work on site submit documentary evidence and/or policies and receipts for the insurances required by the Conditions of the Contract.

### 112 INSURANCE CLAIMS

- Notice: If any event occurs which may give rise to any claim or proceeding in respect of loss or damage to the Works or injury or damage to persons or property arising out of the Works, immediately give notice to the Employer, the person named in clause A10/140 and the Insurers.
- Failure to notify: Indemnify the Employer against any loss, which may be caused by failure to give such notice.

### 113 OWNERSHIP

- Alteration/ clearance work: Materials arising become the property of the Contractor except where otherwise stated. Remove from site as work proceeds.

### 130 PROGRAMME

- Include details of:
  - Design, production information and proposals provided by the Contractor/ Subcontractors/Suppliers, including inspection and checking (see clause A31/560).
  - Earliest and latest start and finish dates for each activity, identify all critical activity stages.
  - Planning and mobilisation by the Contractor.
  - Running in, adjustment, commissioning and testing of all engineering services and installations.
  - Work resulting from instructions issued in regard to the expenditure of provisional sums (see section A54).
  - Work by or on behalf of the Employer and concurrent with the Contract (see section A50) the nature and scope of which, the relationship with preceding and following work and any relevant limitations, are suitably defined in the Contract Documents.
- Exclusions: Where and to the extent that the programme implications for work which is not so defined are impossible to assess the Contractor should exclude it and confirm this when submitting the programme.
- Submitted programme: Agreement (or lack of agreement) will not relieve the Contractor of responsibility for progress and completion of the Works by the due dates.
- Submit: In an approved form, *4 copies to the PM.*

### 132 COMMENCEMENT OF WORK

- Notice: Before the proposed date for commencement of work on site give minimum notice of 5 working days and confirm 2 working days before the proposed date for commencement of work on site or to any individual work area.



- 140 MONITORING
- Progress: Record on a copy of the programme kept on site.
  - Avoiding delays: If any circumstances arise which may affect the progress of the Works submit proposals or take other action as appropriate to minimize any delay and to recover any lost time.
- The Contractor shall monitor the progress of the works by "marking up" at not more than monthly intervals a copy of the final agreed master programme to indicate the actual progress of all activities shown thereon. The "marked up" programme shall be kept on site.
- 141 PROJECT MANAGER'S SITE MEETINGS
- The PM will hold regular site meetings to review the progress and other matters arising from the administration of the Contract.
- Meetings will normally be held fortnightly or monthly (monthly for larger projects). They shall be attended by representatives of the Contractors and Consultants. The Contractor is to attend all meetings and to inform sub contractors or suppliers when their presence is required. The PM will chair the meetings and distribute the minutes.
- 142 CONTRACTOR'S PROGRESS REPORT
- Submit a progress report to the PM 2 days prior to each Project Management site meeting. Notwithstanding the Contractor's obligations under the contract the report must include:
- Contractor's Report to PM with name of site, report number, name of contractor and the date.
- (1) Contract Completion Date with note of any extension of time agreed or claimed with reasons.
  - (2) Progress Programme & Progress Achieved with comments and reasons where behind programme and note of actions being taken, referenced to the master programme for the works.
  - (3) Labour, Plant and Materials note on any shortage and action being taken.
  - (4) Information Required note of any information or instructions required.
  - (5) Details of any matters materially affecting the regular progress of the works.
  - (6) Details of sub contractors and suppliers progress reports.
  - (7) Any requirements for further drawings or details or instructions to enable the PM to fulfill their obligations under the Conditions of Contract.
- 143 CONTRACTOR'S SITE MEETINGS
- Hold meetings with appropriate sub contractors and suppliers shortly before main site meetings to facilitate accurate reporting of progress.
- 144 EARLY POSSESSION
- Possession of parts of the Works: As completed, provided all necessary access, services and other associated facilities are also complete. (*Only use for partial possession*).
- 145 NOTICE OF COMPLETION
- Description: Give notice of the anticipated dates of completion of the whole or parts of the works.
  - Period of notice (minimum): *at least 2 weeks*.
- 146 ADVERSE WEATHER
- Use all reasonable and suitable building aids and methods to prevent or minimise delays during adverse weather conditions.

- 147      EXTENSIONS OF TIME  
When a notice of the cause of any delay or likely delay in the progress of the works is given under the Contract Conditions, written notice must also be given of all other causes which apply concurrently. The Contractor shall as soon as possible submit to the Project Manager:  
a) Relevant particulars of the expected effects, if appropriate, related to the concurrent causes,  
b) An estimate of the extent, if any, of the expected delay in the completion of the works beyond the date for completion and any other relevant information required by the PM.
- 148      DISTURBANCE OF REGULAR PROGRESS  
Any application under contract condition in respect of the direct loss and/or expense must be made as soon as practicable and with (or to be followed by) the requisite supporting information so as to afford the PM the opportunity to issue instructions designed (according to the circumstances) to minimise or avoid that loss and/or expense.
- 160      COVERING-UP:  
Ensure no section of the Works are covered, concealed or insulated until completion of a witnessed satisfactory test.  
Give notice when Works which are to be covered or concealed are ready for examination and/or measurement, not less than 7 days.  
Give notice to  
• PM.  
• (Services) Engineering Site Staff.
- 200      REMOVAL/ REPLACEMENT OF EXISTING WORK  
• General: Before commencement:  
- Agree extent and location.  
- Carry out in ways that minimize the extent of work.
- 210      VALUATION OF VARIATION INSTRUCTIONS  
• Quotations: If a proposed instruction requests a lump sum total price for complying, submit without delay.  
• Include:  
- A detailed breakdown of the cost including any allowance for direct loss and expense.  
- Details of any additional resources required.  
- Details of any adjustments to be made to the programme for the Works.  
- Any other information as is reasonably necessary to fully assess the implications of issuing such an instruction.  
• Inability to comply: Inform immediately if it is not possible to comply with any of the above requirements.
- 220      PROPOSED INSTRUCTIONS  
If the PM issues details of a proposed instruction with a request for an estimate of cost, submit and estimate without delay and in any case within 7 days.
- 230      DAYWORK VOUCHERS  
• Before commencing work: Give 7 days notice to the PM before commencement of any work for which daywork is required.  
• Content: Before delivery each voucher must be:  
- Referenced to the instruction under which the work is authorised.  
- Signed by the Contractor's person in charge as evidence that the operatives' names, the time spent by each, the plant and materials shown are correct.

240 PROVISIONAL SUMS

Where Provisional Sums are included the PM shall issue instructions as to their expenditure.

In an instruction for the expenditure of a Provisional Sum the PM may require work to be executed by a named person who is to be employed by the Contractor as a sub contractor.

The Contractor shall include in his tender where required a sum based on a percentage of the Provisional Sum to be added to the named person's tender, to cover the Contractor's attendance and profit on that sub contract. The sum shall be adjusted pro rata to the actual value of the sub contract tender.

250 VARIATIONS

No variations are to be made from the drawings or specifications unless so directed by the PM.

The Contractor shall not be entitled to any payment in respect of work omitted either by way of profit, compensation or otherwise. The Employer shall not be liable for the cost of any additions unless instructions for these are given by the PM in writing.

260 INTERIM VALUATIONS

At least two days before the end of each established period for interim valuations submit to the PM details of amounts due under the Contract together with all necessary supporting information.

270 UNFIXED MATERIALS

At the time of each valuation disclose to the PM which of the unfixed materials and goods on site are free from, and which are subject to, any reservation of title inconsistent with passing of property as required by the Conditions of Contract, together with their respective values. When requested provide evidence of freedom from reservation of title.

271 LISTED OFF SITE MATERIALS OR GOODS

The information submitted to the PM in accordance with the Conditions of Contract as reasonable proof that the property in "listed items" is vested in the Contractor must include:

For items purchased from a supplier -

A copy of the contract of sale and a written statement from the supplier that any conditions of the sale relating to the passing of property have been fulfilled and the listed items are not subject to any encumbrance or charge.

For items purchased from a supplier by a sub contractor or manufactured or assembled by any sub contractor -

A copy of the sub contract with a sub contractor and a written statement from the sub contractor that any conditions relating to the passing of property have been fulfilled.

280 LABOUR AND EQUIPMENT RETURNS

At the beginning of each week provide for verification by the PM records showing for each day of the previous week:

The number and description of craftsmen, labourers and other persons employed on or in connection with the works, including those employed by sub contractors.

The number, type and capacity of all mechanical and power operated plant employed on the works.

## GCW/A33 QUALITY STANDARDS/ CONTROL

### 110 GOOD PRACTICE

Where and to the extent that products or work are not fully documented, they are to be:

- Of a kind and standard appropriate to the nature and character of that part of the Works where they will be used.
- Suitable for the purposes stated or reasonably to be inferred from the project documents.

In accordance with good engineering practice.

### 111 WORKMANSHIP SKILLS

- Operatives: Appropriately skilled and experienced for the type and quality of work.
- Registration: With Construction Skills Certification Scheme.
- Evidence: Operatives must produce evidence of skills/ qualifications when requested.

### 112 SUSTAINABLE RESOURCES

Materials to be used from sustainable resources where practicable.

### 113 QUALITY OF PRODUCTS

- Generally: New.
- Supply of each product: From the same source or manufacturer.
- Whole quantity of each product required to complete the Works: Consistent in kind, size, quality and overall appearance.
- Tolerances: Where critical, measure a sufficient quantity to determine compliance.
- Deterioration: Prevent. Order in suitable quantities to a programme and use in appropriate sequence.

### 114 PROPRIETARY PRODUCTS

Handle, store, prepare, use or fix each product in accordance with its manufacturer's current, printed or written recommendations/instructions. Inform the PM if these conflict with other specified requirements. Submit copies to the PM when requested.

The tender will be deemed to be based on the products specified and their recommendations or their use as described in the manufacturer's literature, current at date of specification.

### 115 COMPLIANCE

Check all delivery tickets, labels, identification marks and, where appropriate, the products themselves to ensure that all products comply with the project documents. Where different types of any product are specified, check to ensure that the correct type is being used in each location. In particular, check that:

The sources, types, qualities, finishes and colours are correct and match any approved samples.

All accessories and fixings which should be supplied with the goods have been supplied.

Sizes and dimensions are correct. Where tolerances of components are critical, measure a sufficient quantity to ensure compliance.

The delivered quantities are correct, to ensure that shortages do not cause delays in the work.

The products are clean, undamaged and otherwise in good condition.

Any products which have a limited shelf life are not out of date.

#### 116 PROTECTION OF PRODUCTS

Prevent over stressing, distortion and any other type of physical damage. Keep clean and free from contamination. Prevent staining, chipping, scratching or other disfigurement, particularly of products exposed to view in the finished work.

Keep dry and in a suitably low humidity atmosphere to prevent premature setting, moisture movement and similar defects. Where appropriate store off the ground and allow free air movement around and between stored products. Prevent excessively high or low temperatures and rapid changes of temperature in the products.

Protect adequately from rain, damp, frost, sun and other elements as appropriate.

Ensure that products are at a suitable temperature and moisture content at time of use.

Ensure that sheds and covers are of ample size, in good weatherproof condition and well secured.

Keep different types and grades of products separately and adequately identified.

So far as possible 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 completion.

Ensure that protective measures are fully compatible with and not prejudicial to the products/materials.

#### 117 GENERAL QUALITY OF WORKMANSHIP

Operatives must be appropriately skilled and experienced for the type and quality of the work.

Take all necessary precautions to prevent damage to the work from frost, rain and other hazards.

Inspect components and products carefully before fixing or using and reject any which are defective.

Fix or lay securely, accurately and in alignment.

Where not specified otherwise, select fixing and joining methods and types, sizes and spacings of fastenings in compliance with Section Z20. Fastenings to comply with relevant British Standards.

Provide suitable, tight packings at screwed and bolted fixing points to take up tolerances and prevent distortion. Do not over tighten fixings.

Adjust location and fixing of components and products so that joints which are to be finished with mortar or sealant or otherwise left open to view are even and regular.

Ensure that all moving parts operate properly and freely. Do not cut, grind or plane pre-finished components and products to remedy binding or poor fit without approval.

Materials to be new unless otherwise specified. For materials and workmanship, comply with the appropriate current British or European Standards, where such standards exist. Obtain certificates of compliance from manufacturers when requested by the CA. Where this specification conflicts with the appropriate current British or European standard, the requirements of this specification take precedence.

#### 150 SETTING OUT

Check the levels and dimensions of the site against those shown on the drawings and record the results on a copy of the drawings. Notify PM in writing of any discrepancies and obtain instructions before proceeding.

151 APPEARANCE AND FIT

Arrange the setting out, erection, juxtaposition of components and application of finishes (working within the practical limits of the design and the specification) to ensure that there is satisfactory fit at junctions, that there are no practically or visually unacceptable changes in plane, line or level and that the finished work has a true and regular appearance.

Wherever satisfactory accuracy, fit and/or appearance of the work are likely to be critical or difficult to achieve, obtain approval of proposals or of the appearance of the relevant aspects of the partially finished work as early as possible.

Without prejudice to the above and unless specified otherwise, tolerances will (where applicable) be not greater than those given in BS 5606, Tables 1 and 2.

170 DELETERIOUS MATERIALS

No material generally known to be deleterious are to be used in, or incorporated into, any temporary or permanent Works forming part of the Project.

In particular none of the following items are to be used

- : Asbestos or asbestos based products
- : Urea formaldehyde or materials which may release formaldehyde in quantities which may be hazardous with reference to the limits set by the HSE
- : Material containing fibres less than three microns diameter or 200 microns long
- : Lead or any material or product containing lead which may be ingested, inhaled or absorbed
- : Polychlorinated biphenyl
- : Fibres not sealed or otherwise stabilised to ensure that migration is prevented
- : Vermiculite containing fibrous dust
- : Polytetrafluoroethylene (PTFE) except for pipework jointing
- : Calcium silicate bricks or materials

Any other products or materials which are generally known within the Building Industry to be deleterious or hazardous to health or safety or to the durability of the property in the circumstances in which they are used including:

- : High alumina cement and/or concrete
- : Woodwool slabs used as permanent shuttering
- : Calcium chloride in admixtures for use in reinforced concrete
- : Sea-dredged aggregates for use in reinforced concrete which do not comply with current British Standards
- : Aggregates for use in concrete which do not comply with current British Standards
- : Alkali reactive aggregates

The Contractor shall check with the manufacturers and/or suppliers of products and materials that any specified product contains such material. If any specified product contains such material, the Contractor shall request an alternative specification of product or manufacturer.

171 STANDARDS AND REGULATIONS:

Provide all materials and works in accordance with the appropriate British Standard or Code of Practice and where no BS or CP is applicable the Agreement Certificate for the particular item.

Comply with all statutory instruments and regulations, relating to the area of the site current at

- the date of tender.

Comply with the requirements of the Local Authority Building Inspector.  
Comply with all Statutory Obligations arising from current legislation and regulations, together with other requirements, including, but not limited to, the following:-

- Statutory Obligations
  - Health and Safety at Work etc Act 1974
  - Management of Health & Safety at Work Regulations 1999
  - The Working Time Regulations 1998
  - Gas Safety, management Regulations 1996
  - Gas Safety (Installation and Use) Regulations 1994
  - Building Regulations 2000 and current amendments
  - London Building Act and/or Building (Inner London) Regulations
  - Public Health Acts
  - Electricity Acts
  - Electricity, Safety, Quality and Continuity Regulations 2002
  - Electricity at Work Regulations 1989
  - The Factories Act 1961
  - Clean Air Act 1993
  - Clean air (Arrestment Plant) (exemption) Regulations 1969
  - The Control of Pollution Act 1974
  - Control of Pollution (Amendment) Act 1989
  - Workplace (Health, Safety and Welfare) Regulations 1992
  - The Construction (Design and Management) Regulations 1994
  - Construction (Design and Management) Amendment regulations 2000
  - Health and Safety (Display Screen Equipment) Regulations 1992
  - Control of Substances Hazardous to Health (COSHH) Regulations 1999
  - Control of Asbestos at work regulations 1987
  - Control of Asbestos at work Amendment, regulations 1998
  - Provision and Use of Work Equipment Regulations 1998
  - Personal Protective Equipment at Work Regulations 1992
  - The Construction (General Provisions) Regulations 1961
  - The Construction (Lifting Operations) Regulations 1961
  - The Docks Regulations 1988
  - The Mines and Quarries Act 1954 and General Regulations made thereafter
  - The Shipbuilding and Ship-repairing Regulations 1960
  - Other relevant Safety Regulations
  - Liquid Petroleum Regulations
  - Public Utility Company and/or Statutory Authority regulations, specifications, and requirements.
  - Other Requirements
  - British Standards and Codes of Practice.
- BS 7671 - Requirements for Electrical Installations (IEE Wiring Regulations).
  - BS EN 50110.
  - Insurance Company Requirements.
  - LDSA Fire Safety Code.
  - IEC Standards.
  - Notify all authorities in accordance with their regulations and obtain any required approvals for the installation.
  - Where no specific design, performance or installation standards are quoted the following shall apply.
  - C.I.B.S.E Guide Books A, B and C.
  - Institute of Plumbing - Plumbing Engineering services design guide.
  - C.I.B.S.E Code for Interior Lighting.
  - C.I.B.S.E Technical Memoranda.
  - Ensure all equipment and systems are designed and installed in accordance with the relevant standards and that operational compatibility exists between the systems and any other system installed at the same location.

Supply plant and equipment to achieve the specified design conditions and to provide stable control.

- 172 SERVICES REGULATIONS
- New or existing services: Comply with the Bye Laws or Regulations of the relevant Statutory Authority.
- 173 WATER REGULATIONS/ BYELAWS NOTIFICATION
- Requirements: Notify Water Undertaker of any work carried out to or which affects new or existing services and submit any required plans, diagrams and details.
  - Consent: Allow adequate time to receive Undertaker's consent before starting work. Inform immediately if consent is withheld or is granted subject to significant conditions.
- 174 WATER REGULATIONS/ BYELAWS CONTRACTOR'S CERTIFICATE
- On completion of the work: Submit (copy where also required to the Water Undertaker) a certificate including:
    - The address of the premises.
    - A brief description of the new installation and/or work carried out to an existing installation.
    - The Contractor's name and address.
    - A statement that the installation complies with the relevant Water Regulations or Bylaws.
    - The name and signature of the individual responsible for checking compliance.
    - The date on which the installation was checked.
- 190 TEST CERTIFICATES:
- Where testing specific to the project is required, ensure test certificates include
- Project title.
- Details and date of test.
- Instruments used, serial numbers, calibration dates.
- Signature of those witnessing test.
- Contractor's name.
- Specific location of the item in the Works.
- 191 GAS INSTALLATION CERTIFICATE
- Before the completion date stated in the contract: Submit a certificate stating:
    - The address of the premises.
    - A brief description of the new installation and/or work carried out to an existing installation.
    - Any special recommendations or instructions for the safe use and operation of gas appliances and flues.
    - The Contractor's name and address.
    - A statement that the installation complies with the Gas Safety (Installation and Use) Regulations.
    - The name and signature of the CORGI registered individual responsible for checking compliance.
    - The date on which the installation was checked.
- 220 TESTING AND COMMISSIONING OF SERVICES:
- Agree a programme for pre-commissioning checks, setting to work, commissioning and performance testing, and allow for all costs incurred.
- Where required, provide formal method statements supported by risk assessments detailing all commissioning procedures.



Give notice to the PM and state any requirements for the attendance and co-operation of others.

- Not less than fourteen working days.

Provide all necessary facilities to enable tests to be witnessed and inspections carried out either on site or at manufacturer's works.

The PM will only witness test proceedings, confirm recorded results and determine if the specified requirements have been satisfied.

If following test or inspection any plant or part thereof is shown to be defective or not conforming to the specification the PM will reject such defective parts by written notice, within reasonable time, indicating area of dispute.

- Appoint an "approved engineer", to supervise the whole of the testing, commissioning, performance testing and instruction of client's staff.

Provide all specialised personnel (including manufacturer's representatives) and co-ordinate their activities.

Test all equipment, material and systems as detailed in Sections. If an inspection or test fails, repeat the procedure, until satisfactory results are obtained.

- Complete all tests before any paint, cladding or similar materials are applied or before services are concealed.
- Ensure all requirements such as cleanliness, protection from harmful external and internal elements etc. are provided prior to commencement of commissioning.
- Following satisfactory completion of testing and when the installations are in a safe and satisfactory condition, set to work, regulate and adjust, as necessary, to meet the specified design requirements.
- Provide all necessary instruments and recorders to monitor systems during commissioning and performance testing.
- Provide test equipment subject to a quality assurance procedure complying with 10012BS EN ISO .
- Do not start performance testing, including system demonstration, system proving or environmental and capacity testing, until commissioning of the system is completed to the satisfaction of the PM.

Maintain on site full records of all commissioning and performance testing, cross referenced to system components and on completion of the Works include a copy in each Operating and Maintenance Manual.

Provide all certification documents for approval by the PM before any system is offered for final acceptance.

- Gas, fuel oil, electricity and water for testing and commissioning will be provided by the client

### 300 OPERATION OF SYSTEMS BEFORE THE PRODUCTION OF DRAWINGS AND/OR OPERATING AND MAINTENANCE MANUALS:

Provide attendance, at no expense to the Employer, to put into service, operate 24 hours a day and maintain the systems to the Employer's requirements, including the provision of suitable competent labour, in the event that the Record Drawings and/or Maintenance Manuals are not available when the Works would, in the opinion of the PM, otherwise qualify for Practical Completion.

In the event of the Contractor failing to provide this service satisfactorily the Employer shall be entitled to make his own arrangements and recover the full cost through the Contract.

### 400 SUPERVISION

- General: In addition to the constant management and supervision of the works provided by the Contractor's person in charge, all significant types of work must be under the close control of competent trade supervisors to ensure maintenance of satisfactory quality and progress.
- Replacement: Give maximum possible notice before changing person in charge or site agent.

- 410 COORDINATION OF ENGINEERING SERVICES
- The site organisation staff must include one or more persons with appropriate knowledge and experience of mechanical and electrical engineering services to ensure compatibility between engineering and the Works generally.
  - Submit to the PM when requested CVs or other documentary evidence relating to the staff concerned.
- 420 OVERTIME WORKING
- Notice: Prior to overtime being worked, submit details of times, types and locations of work to be done.
    - Minimum period of notice: 2 working days
  - Concealed work: If executed during overtime for which notice has not been given, it may be required to be opened up for inspection and reinstated at the Contractor's expense.
- 430 DEFECTS IN EXISTING WORK
- Undocumented defects: When discovered, immediately give notice. Do not proceed with affected related work until response has been received.
  - Documented remedial work: Do not execute work which may:
    - Hinder access to defective products or work; or
    - Be rendered abortive by remedial work.
- 440 ACCESS FOR INSPECTION
- Removal: Before removing scaffolding or other facilities for access, give notice of not less than: 7 days
- 450 Measures to establish acceptability
- General: Wherever inspection or testing shows that the work, materials or goods are not in accordance with the contract and measures (e.g. testing, opening up, experimental making good) are taken to help in establishing whether or not the work is acceptable, such measures:
    - Will be at the expense of the Contractor.
    - Will not be considered as grounds for extension of time.
- 500 GENERALLY
- Make good all damage consequent upon the work.  
Temporary markings, coverings and protective wrappings: Remove unless otherwise instructed.
  - Cleaning: Clean the works thoroughly inside and out, including all accessible ducts and voids. Remove all deposits, rubbish and surplus materials.
  - Moving parts of new work: Adjust, ease and lubricate as necessary to ensure easy and efficient operation appliances, valves and controls.
- 510 SECURITY AT COMPLETION
- General: Leave the Works secure with, where appropriate, all accesses locked.
- 520 MAKING GOOD DEFECTS
- Remedial work: When defect reported, arrange with Project Manager.
  - Rectification: Give reasonable notice for access to the various parts of the Works.
  - Completion: Notify when remedial works have been completed.

## GCW/A34 SECURITY/ SAFETY/ PROTECTION

### 111 PRE-TENDER HEALTH AND SAFETY PLAN

- Location: Integral with the project Preliminaries, including but not restricted to the following sections:
  - Description of project: Sections A10 and A11.
  - Client's consideration and management requirements: Sections A12, A13 and A36.
  - Environmental restrictions and on-site risks: Section A12, A35 and A34.
  - Significant design and construction hazards: Section A34.
  - The health and safety file: Section A37.

### 112 SAFETY AND WELFARE MEASURES

- The Contractor shall ensure that all safety and welfare measures required under or by virtue of the provisions of any enactment or regulations or the working rules of any industry are complied with strictly. The Contractor shall maintain on site all necessary facilities to comply with this Clause.
- The Contractor is to be familiar with the requirements of the following legislation:
  - Health & Safety at Work Act 1974
  - Management of Health & Safety at Work Regulations 1992
  - Provision and Use of Work Equipment Regulations 1992
  - Personal Protective Equipment at Work Regulations 1992
  - Manual Handling Operations Regulations 1992
  - Workplace (Health, Safety & Welfare) Regulations 1992
  - Control of Asbestos at Work Regulations 1987
  - Control of Substances Hazardous to Health Regulations 1988
  - Noise at Work Regulations 1989
  - Electricity at Work Regulations 1989
  - Reporting of Injuries, Diseases & Dangerous Occurrences Regulations 1985
  - Health and Safety Information for Employees Regulations 1989
  - Factories Acts 1961
  - Construction (General Provisions) Regulations 1961
  - Construction (Lifting Operations) Regulations 1961
  - Construction (Working Places) Regulations 1966
  - Construction (Health and Welfare) Regulations (1966)
  - Construction (Design and Management) Regulations 1994

This list of Legal Requirements is not exhaustive and does not excuse Contractors from compliance with any legislation not listed above. Contractors are required to be aware of all Regulations affecting their work operations on the behalf of UCL.

- All corridors, entrances and staircases must be left free from obstruction and in a safe condition at all times.
- The Contractor shall generally provide and maintain on the site all necessary facilities as required for his own employees, for those employed by nominated and other sub contractors and for Contractors or others employed direct.
- The Contractor shall be designated the use of the permanent sanitary accommodation in the building. The Contractor shall maintain the accommodation in proper running order and shall regularly clean all the facilities for the duration of the Contract. At the completion of the contract the Contractor shall replace or make good any fitting or surface damaged during the contract to the satisfaction of the PM.

- The Contractor shall prevent the use of other new and existing sanitary facilities in the building for the duration of the contract.

#### 116 CONSTRUCTION PHASE HEALTH AND SAFETY PLAN

- Submission: Present to the Employer (Client) not less than one week before commencement on site.
- Confirmation: Do not start construction work until the Employer has confirmed in writing that the Construction Phase Health and Safety Plan includes the procedures and arrangements required by CDM Regulation 15(4).
- Content: Develop the plan from and draw on the Outline Construction Phase Health and Safety Plan, clause A30/570, and the Pre-tender Health and Safety Plan.

#### 152 SECURITY

- Protection: Adequately safeguard the site, the Works, products, materials, and any existing buildings affected by the Works from damage and theft.
- Access: Take all reasonable precautions to prevent unauthorized access to the site, the Works and adjoining property.
- Special requirements: Scaffolding to be alarmed and to allow for adequate security measures to prevent access to adjacent premises. No step ladders, scaffolding or other plant shall be left accessible for unauthorised persons to enter the building or adjoining buildings..

#### 153 OCCUPIED PREMISES

Apart from the accommodation of which the Contractor will have possession, UCL will be in full occupation and operation and the Contractor will have to carry out his work with the minimum disturbance to occupants and staff. In particular: Noisy demolition and the operation of noisy mechanical plant is to be confined to the hours before 10.00 or after 16.00 Monday to Friday or on Saturdays with prior permission, unless the PM agrees otherwise.

Mechanical plant is to be electrically operated and baffled as much as possible. The spread of dust is to be reduced to a minimum.

The Contractor must be prepared to stop work at short notice and for short periods on the instructions of a representative of UCL Estates and Facilities Division. Any such interruption of work will constitute a variation upon the contract. All stoppages must be recorded and signed by the authorised person.

Existing buildings will be occupied and/or used during the contract as follows: Mondays to Sundays (except Public Holidays and Bank Holidays) 06.00 to 24.00 (all night on occasions).

Carry out the works without undue inconvenience and nuisance and without danger to occupants and users.

If it transpires that compliance with this Clause requires certain operations to be carried out during overtime and such overtime is not required for any other reason, the extra cost will be paid to the Contractor, provided that such overtime is authorised by the PM in advance.

#### 154 OCCUPIER'S RULES AND REGULATIONS

- Comply with the occupier's rules and regulations affecting the site.
- Copies: "Safety Rules for Contractors Employed on UCL Premises"
  - Location: from Emma Shirbon, Safety Manager, UCL Estates and Facilities Division.
  - Arrangements for inspection: Telephone Mrs Emma Shirbon on 020 7679 1963.

180 MAINTENANCE OF EXISTING SERVICES:

- Fully maintain all existing services to existing premises during the progress of the Works.
- Fully maintain the following services to existing premises during the progress of the Works.
- Gas
- Water
- Electricity
- Telephones
- Soil and Waste
- Rainwater
- Fire Alarms
- Emergency Lighting

Provide any additional work and materials necessary to maintain these services at all times during the duration of the Contract. Any existing services disturbed by the Works are to be reinstated fully in accordance with the standards of quality defined in the specification and to the satisfaction of the CA.

- Make all connections to existing services out of normal working hours.

200 MOBILE TELEPHONES

Use: Not permitted in the following areas:  
-All occupied areas and corridors.

210 EMPLOYER'S REPRESENTATIVES SITE VISITS

- Protective clothing and/ or equipment: Provide on site for the Employer and the person stated in clause A10/140 and other visitors to the site.

220 NOISE

- Standard: Comply generally with the recommendations of BS 5228 – 1, clause 9.3 to minimize noise levels during the execution of the Works.
- Noise levels from the works: Maximum level: 70dB(A) when measured from outside a window of any occupied building.
- Equipment: Fit compressors, percussion tools and vehicles with effective silencers of a type recommended by manufacturers of the compressors, tools or vehicles.
- Restrictions: Do not use:
  - Pneumatic drills and other noisy appliances without consent during the hours of 00.00 to 16.00 Mondays to Fridays or Saturdays without prior permission.
  - Radios or other audio equipment or permit employees to use in ways or at times that may cause nuisance.

The Contractor must also note the site lies within London Borough of Camden's domain where the following noise prohibition applies:

Permitted hours of working 08.00 to 18.00 Monday to Friday.

No working Sundays or Bank Holidays.

(Note: This will not apply to buildings in London Borough of Westminster).

All plant, compressors, percussion tools and vehicles shall be fitted with effective silencers of a type recommended by the manufacturer of such equipment.

Hoists are to be driven by electric motors.

The Contractor shall be aware that perceptible vibration, structure-borne noise and airborne noise resulting from the works shall be controlled to avoid

disturbance to normal UCL activities.

230 POLLUTION

- Prevention: Protect the site, the Works and the general environment including streams and waterways against pollution.
- Contamination: If pollution occurs inform immediately, including to the appropriate Authorities and provide relevant information.

240 NUISANCE

- Duty: Prevent nuisance from smoke, dust, rubbish, vermin and other causes.
- Surface water: Prevent hazardous build-up on site, in excavations and to surrounding areas and roads.

250 ASBESTOS BASED MATERIALS

- Duty: Report immediately any suspected materials discovered during execution of the works.
  - Do not disturb.
  - Agree methods for safe removal or encapsulation.

260 FIRE PREVENTION

- Duty: Prevent personal injury, death, and damage to the Works or other property from fire.
- Standard: Comply with Joint Code of Practice 'Fire Prevention on Construction Sites', published by the Construction Confederation and The Fire Protection Association (The "Joint Fire Code").

Remove rubbish from all areas of work as it arises.

The use of oil and gas heaters for anti-frost measures and drying out is only permitted away from combustible materials.

All fire exits and means of escape routes, including routes through the areas in the possession of the Contractor are to be kept clear and unobstructed at all times.

All fire fighting equipment is to be kept in a proper working order.

Plastic sheeting used in temporary screens is to be flame retardant.

The Contractor is to comply with UCL's Fire Safety requirements as displayed in the building or advised by UCL's Fire Officer and to make site operatives aware of these requirements.

Comply with UCL's hot work permit system.

270 SMOKING ON SITE

Smoking will not be permitted on site or in any UCL buildings.

280 WASTE

- Includes: Rubbish, debris, spoil, containers and surplus material.
- Minimize: Keep the site and Works clean and tidy.
- Remove: Frequently and dispose off site in a safe and competent manner:
  - Non-hazardous material: In a manner approved by the Waste Regulation Authority.
  - Hazardous material: As directed by the Waste Regulation Authority and in accordance with relevant regulations.
  - Documentation: Retain on site.
- Voids and cavities in the construction: Remove rubbish, dirt and residues before closing in.
- Waste transfer documentation: Retain on site.

300 ROADS AND FOOTPATHS

- Duty: Maintain roads and footpaths within and adjacent to the site and keep clear of mud and debris.
- Damage caused by site traffic or otherwise consequent upon the Works: Make good to the satisfaction of the Employer, Local Authority or other owner.

310 EXISTING FEATURES

- Protection: Prevent damage to existing buildings, fences, gates, walls, roads, paved areas and other site features, which are to remain in position during execution of the Works.
- Special requirements: Site security.

320 BUILDING INTERIORS

- Protection: Prevent exposure to weather during course of alteration work.

330 EXISTING FURNITURE, FITTINGS AND EQUIPMENT

- Protection: Prevent damage or move as necessary to enable the Works to be executed. Reinstall in original positions.
- Extent: Before work in each room starts the Employer will remove all items other than the following:
  - None.

340 ESPECIALLY VALUABLE/ VULNERABLE ITEMS

- Protection: Ensure provision and maintenance of special protective measures to prevent damage to the following:
  - (Use for specialist equipment).
- Method statement: Submit within one week of request describing special protection to be provided

400 ADJOINING PROPERTY

The Contractor's attention is drawn to the fact that adjoining and adjacent properties are in constant use by the Employer, staff, students and visitors. The Contractor is to arrange and carry out the works and take adequate precautions so as not to cause interference or interruption to the use of adjoining and adjacent properties including roads, footpaths and other access thereto by the Employer and shall maintain all instructions or directions given by the PM in these matters.

Should any works be required on or from any adjoining property, the necessary permission from the PM must first be obtained by the Contractor.

The Contractor will be required to prepare in conjunction with the PM a Schedule of Conditions with photographs of the existing building, boundary walls, fences, paved areas, road, kerbs, etc., which may be "at risk" during the course of the works. Photographs shall be mounted in a ring folder and shall be clearly cross-referenced to the site layout. One copy of such records is to be provided to the PM at the first meeting and a further copy is to be retained on site.

Should any damage occur as a result of the Contractor's activities on site then this Schedule will be basis for determining responsibility. The Contractor will be required to make good at his own cost and the PM's satisfaction any damage so caused by the carrying out of works.

## **GCWA35 SPECIFIC LIMITATIONS ON METHOD/ SEQUENCE/ TIMING**

### **110 SCOPE**

- General: The limitations described in this section are supplementary to limitations described or implicit in information given in other sections or on the drawings.

### **120 SPECIFIC LIMITATIONS**

- Details: Refer to specification.

### **140 METHOD/ SEQUENCE OF WORK**

- Limitations: Include the following in the programme:
  - The work must be undertaken with extreme care noting that this is a working campus. The Contractor is to be fully responsible for cordoning off areas of working and carefully co-ordinating with users. Dust proof screens to be provided by the Contractor to segregate the works from the operation areas.

Where the contract includes alterations to plumbing and engineering services in Plant Rooms the Contractor is to prepare and present to the PM a detailed programme showing the sequence and period of time in which he and his sub contractors will do all the work in Plant Rooms and the access route within UCL that he will use for each operation.

The Contractor shall give UCL at least two weeks notice before commencing any work in Plant Rooms but will be free to do the work in any sequence that he wishes although once the Contractor or any of his sub contractors start any alteration, he must finish that alteration and make good and clean up afterwards as quickly as economically possible so as to reduce to a minimum the time that it occupies that area. In complying with this requirement he will not have to work outside its normal working hours.

The Contractor is to allow for the following costs associated with each piece of work in the Plant Rooms:

Security.

Protection including any necessary temporary screens and making good, including the route used for access to the work.

Protecting other users of the building.

Scaffolding and other temporary supports to provide access to the work.

Removing all rubbish and surplus material as it arises and particularly before any work is suspended for drying out.

Cleaning all surfaces made dusty or dirty by the work when each alteration has been completed.

The Contractor is directed to inspect each compartment and to allow for the conditions under which it has to be done.

Shutting down and connecting into existing services.

All draining down of services or connecting into services is to be done at weekends. The Contractor is to allow for all extra costs that this involves.

The Contractor is to give the following notices to UCL before shutting down or connecting into existing services:

Minor shutdowns - 2 days

Major shutdowns - 7 days



150

#### USE OR DISPOSAL OF MATERIALS

The Contractor will remove all hazardous and non hazardous rubbish and debris as it occurs. Compounds and access routes shall be maintained in a clear and tidy condition throughout the contract. The exact location to be agreed prior to commencing the works.

Storage of materials shall be restricted to a site compound area which shall be determined prior to the date of possession. If the Contractor uses 'skips' or similar equipment they shall be the enclosed type the siting of which shall be approved by the PM at an agreed location. The Contractor is responsible for obtaining such statutory notices as may be necessary and within a timely programme.

Each skip shall:

Bear warning lights during hours of darkness.

Be clearly and permanently marked with the owner's name, telephone number and address.

Be removed promptly when full or otherwise as directed by the PM.

Nothing in the PM's consent shall be taken as authority to create a nuisance or a danger to users of roads or as imposing on the Employer any liability for any injury, damage or loss resulting from the presence on the roads of the skip to which the consent relates.

The PM reserves the right to remove untidy or badly stacked materials, rubbish and debris, etc. and contra-charge the Contractor all costs in consequence if the Contractor fails to comply with the above.

The Contractor will be restricted to delivering materials and removing rubbish to/from the agreed areas within the site compound area to comply with operational requirements.

16C

#### Working hours

- Specific limitations:

Working hours for all personnel employed on the Works will be limited to times between 0800 and 1800 hours, Monday to Friday and between 0800 and 1400 hours on Saturdays. Should the Contractor wish to work outside these hours, then he must obtain the prior consent of the Engineer.

The cost of any overtime necessary to complete the Works within the programme period shall be included in the Tender. The Contractor shall advise the Engineer 7 days prior to the evening of when he wishes to work outside working hours.

The College closes for an extended period at Easter and at Christmas, and the Tenderer shall acquaint himself of the dates involved if this is likely to affect the programme or progress of the Works.

17C

#### Completion in sections or parts

- General: Where the Employer is to take possession of any Section or part of the Works and such Section or part will, after its practical completion, depend for its adequate functioning on work located elsewhere on the site: Complete such other work in time to permit such possession to take place.
- Remainder of the Works: During execution, ensure that completed Sections or parts of the Works have continuous and adequate provision of services, fire precautions, means of escape and safe access.

## GCW/A36 FACILITIES/ TEMPORARY WORK/ SERVICES

- 110 SPOIL HEAPS, TEMPORARY WORKS AND SERVICES  
Inform PM of the intended siting of all spoil heaps, temporary works and services.
- Maintain, alter, adapt and move as necessary. Remove when no longer required and make good.
- 200 SANITARY ACCOMMODATION
- The Contractor shall be designated the use of the permanent sanitary accommodation in the building. The Contractor shall maintain in proper running order and shall regularly clean the facilities for the duration of the contract. On completion of the contract the Contractor shall replace or make good any fitting or surface damage during the contract to the satisfaction of the PM.
- 210 EXISTING ACCOMMODATION
- The existing accommodation not affected by the alterations and refurbishment may not be used as temporary accommodation
- 300 ROADS
- Permanent roads, hard standings and footpaths on the site may be used, subject to clause A34/300.
- 310 Name boards/ advertisements
- Name boards/ advertisements: Not permitted.
- 410 LIGHTING
- During finishing work and inspection provide temporary lighting, the intensity and direction of which closely resembles that delivered by the permanent installation. Routes for temporary cables to be agreed with PM.
- 420 LIGHTING AND POWER
- Supply: Electricity from the Employer's mains may be used for the Works as follows:
    - Supply: 400volts: 50Hz: three phase and 230volts: 50Hz: single phase.
    - Point of supply: Main electrical panel in various switch rooms..
    - Anticipated capacity: To be ascertained.
  - Continuity: The Employer will not be responsible for the consequences of failure or restriction in supply.
- 430 Water
- Supply: The Employer's mains may be used for the Works as follows:
    - Supply: This will be provided free of charge
    - Location of supply point: At various locations to be agreed with the PM.
    - Conditions/ Restrictions: A permanent supply to the building will be maintained at all times at the mains pressure.
  - Continuity: The Employer will not be responsible for the consequences of failure or restriction in supply.

440

#### EMPLOYERS' TELEPHONES

UCL will provide the Contractor with a telephone line as soon as practicable after request by the contractor, for use by the Contractor and sub contractors. However the Contractor will be responsible for and pay all charges in connection therewith. The Contractor must make arrangements (eg. an external bell) to ensure that all incoming calls are answered properly.

## GCW/A37 OPERATION/ MAINTENANCE OF THE FINISHED INSTALLATIONS

### 101 SUBMISSION OF RECORD DOCUMENTS:

To satisfy the provisions of the Health and Safety at Work Act the Employer will not accept handover of the installations until full and adequate information concerning the installations is in the possession of his operating and maintenance staff.

Provide Record Documents - being part of the Works - prior, and as a prerequisite, to Practical Completion to the satisfaction of the PM.

Prepare manuals in draft as the Works progress and make suitable arrangements where the Works are subject to Partial Possession or Sectional Completion.

Submit draft Record Documents to the PM for comment prior to commissioning.

Prepare two temporary Manuals with provisional record drawings and preliminary performance data available at commencement of commissioning to enable Employer's staff to familiarise themselves with the installation. These should be of the same format as the final Manuals with temporary insertions for items which cannot be finalized until the installations are commissioned and performance tested.

Provide the PM with copies of the final Manual TWO WEEKS prior to Practical Completion.

### 102 SUBMISSION OF DOCUMENTS FOR HEALTH AND SAFETY FILE:

To satisfy the provisions of the Health and Safety at Work Act the Employer will not accept handover of the installations until full and adequate information concerning the installations is in the possession of his operating and maintenance staff.

Provide Record Documents - being part of the Works - prior, and as a prerequisite, to Practical Completion to the satisfaction of the PM.

Prepare manuals in draft as the Works progress and make suitable arrangements where the Works are subject to Partial Possession or Sectional Completion.

Submit draft Record Documents to the PM for comment prior to commissioning.

Prepare two temporary Manuals with provisional record drawings and preliminary performance data available at commencement of commissioning to enable

Employer's staff to familiarise themselves with the installation. These should be of the same format as the final Manuals with temporary insertions for items which cannot be finalised until the installations are commissioned and performance tested.

Provide the PM with copies of the final Manual TWO WEEKS prior to Practical Completion.

Prepare electrical record drawings in accordance with BS EN 61082.

Prepare Operating and Maintenance Manuals for heating systems requiring a trained operator in accordance with BS EN 12170.

Prepare Operating and Maintenance Manuals for heating systems not requiring a trained operator in accordance with BS EN 12171.

### 110 RECORD DOCUMENTS:

Provide

Record Drawings and Schedules.

Plant room and switch room drawings, schedules and schematics.

Operating and Maintenance Manuals.

Blank maintenance logs.

Log book

Ensure record documents clearly record the arrangements of the various sections of the Works as actually installed and identify and locate all component parts.

Ensure record documents make it possible to comprehend the extent and purpose of the Works and the method of operation thereof.

Ensure record documents set out the extent to which maintenance and servicing is required and how, in detail, it should be executed.

Ensure record documents provide sufficient, readily accessible and proper information to enable spares and replacements to be ordered.

Correlate record documents so that the terminology and the references used are consistent with those used in the physical identification of the component parts of the installations.

Demonstrate as required throughout the execution of the Works that complete and accurate records are being maintained and that the record documents are being progressively compiled as the work on site proceeds.

Ensure the building log book contains the information outlined in Section 3.2 of the Building Regulations Part L2, Conservation of Fuel and Power 2000.

112

#### WATER HYGIENE RISK ASSESSMENTS/METHOD STATEMENTS

To satisfy the provisions of the Health and Safety at Work Act and specifically L8 – The control of legionella bacteria in water systems - the Employer will not accept handover of the installations until full and adequate information concerning the installations is in the possession of his operating and maintenance staff.

The contractor shall employ a specialist to carry out a risk assessment of the water systems and to prepare a method statement, for inclusion in the O&M manual, for maintenance of the control of legionella bacteria.

The specialist shall be:

Environmental Hygiene Services

Unit 5, Riverside Business Park,

Dogflud Way, Farnham, Surrey

GU97SS

Contact Craig Hoile (tele: 01252 735454)

The risk assessment shall cover the whole of the systems in new build situations and where dedicated systems are installed to serve a refurbished area.

In refurbishments where the existing systems are adapted then the risk assessment shall comprise a review/revision of the current assessment and method statement for the building. This requirement shall not apply should the works be limited to relocation of one or two draw-offs unless such minor works include a shower or similar atomizing spray device when this requirement shall apply.

120

#### RECORD DRAWINGS AND SCHEDULES:

Prepare Record Drawings and Schedules to a scale not less than 1:50 from the "As Installed Drawings" maintained on site as the Works progress. Endorse all such documents 'RECORD DRAWINGS'. Where agreed with the PM certain detailed information may be provided in schedule form. Prepare electrical drawings in accordance with BS EN 61082.

Provide reduced scale copies for inclusion in the operating and maintenance manuals as detailed in clause A37.150

Record Drawings and Schedules must include, but are not limited to:

Location, including level if buried, of Utility Service connections, including those provided by the appropriate Authority, indicating points of origin and termination, size and material of service, pressure and/or other relevant information.

Disposition and depth of all underground systems.

Schematic drawings of each system indicating principal items of plant, equipment, zoning, means of isolation, etc. in sufficient detail to make it possible to comprehend the system operation and the inter-connections between various systems.

Details of the principles of application of automatic controls and instrumentation.

Diagrammatic dimensioned plans and sections of each system or service showing sizes and locations of all ancillaries, plant, equipment controls, test points, and means of isolation etc. including any items forming an integral part of the engineering

systems provided by others (such as plenum ceilings, builders' work shafts, chimneys etc.).

Identification of all terminals/cables etc. by size/type and duty/rating as recorded from the approved commissioning results.

Detailed wiring drawings/diagrams/schedules for all systems, including controls, showing origin, route, cable/conduit size, type, number of conductors, length, termination size and identification, and measured conductor and earth continuity resistance of each circuit.

Ensure routes indicate if cable/conduit is surface mounted, concealed in wall chase, in floor screed, cast in-situ, above false ceiling etc.

Details of co-ordination of wiring and connections with cable core identification, notation of fire alarm, security, control and instrumentation and similar systems provided as part of the Works.

Details to show inter-connections between the Works and equipment or systems provided by others to which wiring and connections are carried out as part of the Works.

Location and identity of each room or space housing plant, machinery or apparatus.

Dimensioned plans and sections at a scale of 1:20 of plantrooms, service subways, trenches, ducts and other congested areas where in the opinion of the PM smaller scale drawings cannot provide an adequate record. Indicate the location, identity, size and details of each piece of apparatus.

Manufacturers' drawings of equipment indicating general arrangement and assembly of component parts which may require servicing. internal wiring diagrams together with sufficient physical arrangement details to locate and identify component parts.

schedules as required to locate, reference and provide details of ratings and duty of all items incorporated into the Works together with all fixed and variable equipment settings established during commissioning.

For each programmable control item, schedules indicating for each input and output point connected, full data in respect of that point including reference, type of input/output, connected equipment reference, set values of temperature or pressure etc., set values of start/stop/speed change times, alarm priority, control specification reference and any other such parameters as are applicable.

Each spare input and output point including reference, type of input/output and space for future entry of appropriate parameters as listed above.

Logic flow diagrams for each individual control or monitoring specification and for each building services engineering system to illustrate the logical basis of the software design.

Schedules setting out details of all initial values of user-defined variables, text statements for alarm messages etc.

130

#### PLANT ROOM AND SWITCH ROOM DRAWINGS, SCHEDULES AND SCHEMATICS:

Provide good quality plant and switch room drawings, schedules and schematics.

Hang the following in each plant room and switch room, any other appropriate location or where directed by the PM.

Schematic drawings of circuit layouts showing identification and duties of equipment, numbers and locations, controls and circuits.

Schedules in the form of printed sheets showing the number, type, location, application/service and symbol, and normal operating position of each means of isolation.

Control schematics.

Location of all plant and equipment items including plans and elevations of main switchgear showing physical disposition of switches.

First aid instructions for treatment of persons after electrical shock.

All other items required under Statutory or other regulations.

Location of all incoming service isolating and metering facilities.

Emergency operating procedures and telephone numbers for emergency call out service applicable to any system or item of plant and equipment.

Prepare electrical drawings in accordance with BS EN 61082.

Protect surface of drawings by pressure lamination framing under glass or other rigid, transparent, cleanable and protective surface.

150

#### OPERATING AND MAINTENANCE MANUALS:

The operating and maintenance manuals must include:

A full description of each of the systems installed, written to ensure that the Employer's staff fully understand the scope and facilities provided.

A description of the mode of operation of all systems including services capacity and restrictions.

Diagrammatic drawings of each system indicating principal items of plant, equipment, valves etc.

Details of how to re-commission so that complex plant services within the building can be re-commissioned by an engineer without any historic knowledge of the systems.

A photo-reduction of all record drawings together with an index. Reduced size A3.

Legend of all colour-coded services.

Schedules (system by system) of plant, equipment, valves, etc., stating their locations, duties and performance figures. Each item must have a unique number cross-referenced to the record and diagrammatic drawings and schedules.

The name, address and telephone number of the manufacturer of every item of plant and equipment together with catalogue list numbers.

Manufacturer's technical literature for all items of plant and equipment, assembled specifically for the project, excluding irrelevant matter and including detailed drawings, electrical circuit details and operating and maintenance instructions.

A copy of all Test Certificates, Inspection and Test Records, Commissioning and Performance Test Records (including, but not limited to, electrical circuit tests, corrosion tests, type tests, start and commissioning tests) for the installations and plant, equipment, valves, etc., used in the installations.

A copy of all manufacturers' guarantees or warranties, together with maintenance agreements offered by subcontractors and manufacturers.

Copies of Insurance & Inspecting Authority Certificates and Reports.

Starting up, operating and shutting down instructions for all equipment and systems installed.

Control sequences for all systems installed.

Schedules of all fixed and variable equipment settings established during commissioning.

Procedures for seasonal change-overs and/or precautions necessary for the care of apparatus subject to seasonal disuse.

Detailed recommendations for the preventative maintenance frequency and procedures which should be adopted by the Employer to ensure the most efficient operation of the systems.

Details of lubrication systems and lubrication schedules for all lubricated items.

Details of regular tests to be carried out (e.g. water cooling towers etc.)

Details of procedures to maintain plant in safe working conditions.

Details of the disposal requirements for all items in the works.

A list of normal consumable items.

A list of recommended spares to be kept in stock by the Employer, being those items subject to wear or deterioration and which may involve the Employer in extended deliveries when replacements are required at some future date.

A list of any special tools needed for maintenance cross referenced to the particular item for which required.

Procedures for fault finding.

Emergency procedures, including telephone numbers for emergency services.

Hospital Operational Policy.

Back-up copies of any system software.

Documentation of the procedures for updating and/or modifying software operating systems and control programmes.

Instructions for the creation of control procedure routines and graphic diagrams.

Details of the software revision for all programmes provided.

Two back-up copies of all software items, as commissioned.

Copies of relevant HSE/CIBSE/IEE Guidance notes etc.

Contractual and legal information including but not limited to details of local and public authority consents; details of design team, consultants, installation contractors and associated subcontractors; start date for installation, date of practical completion and expiry date for the defects liability period; details of warranties for plant and systems including expiry dates, addresses and telephone numbers.

152

#### BMS OPERATION AND MAINTENANCE MANUALS:

Confirm that an initial draft of the O&M manual has been submitted for approval prior to commissioning. Ensure that the O&M documentation is produced as the work proceeds and is updated when necessary. Ensure that this work commences at the start of the contract and is added to/updated as the contract progresses. Confirm that approved final copies of the O&M manuals are provided at handover. Ensure that the O&M manual is properly indexed. Ensure that terminology and references are consistent with the physical identification of component parts.

Confirm that the O&M manual includes the following and is included in the site health and safety file:

A written description of plant operation.

Control strategy/logic diagrams recording the final version of configuration software installed at handover.

Details of system application software configuration.

A points list including hard and soft-points (all points should have a unique mnemonic)

A description of user adjustable points.

Commissioning record details.

Detailed data sheets for all control components and equipment.

Wiring circuit details including origin, route and destination of each cable.

Basic security access to the system.

Comprehensive instructions for switching on, operation, switching off, isolation, fault finding and procedures for dealing with emergency conditions.

Instructions for any precautionary measures necessary.

Instructions for the routine operation of the control system including simple day-to-day guidance for those operating the control system with limited technical skill.

Instructions for servicing and system upkeep.

A provision for update and modification.

Confirm that the O&M manual includes comprehensive system operating instructions.

155

#### PRESSURE REGULATIONS

Where plant and equipment provided under this Contract falls in the scope of the 'Pressure Systems and Transportable Gas Containers Regulations 1989' then the following shall apply:

Regulation 5 states that "any person who.....supplies.....any pressure system or any such article shall provide sufficient written information concerning its design, construction, examination, operation and maintenance as may reasonably and foreseeably be needed to enable the provisions of these Regulations to be complied with".

A schedule of articles which shall be provided by the Contractor and returned to the Engineer at least 6 weeks before Practical Completion of the Contract.

Relevant articles include items such as steam traps, pressure reducing and safety valves, compressed air equipment, pressure vessels, chilling plant over 25kW, bottled gas systems, etc.

See appendix E for template



156 ASSET REGISTER

The appendices of this specification detail an asset register form on which the mechanical/electrical contractor shall enter the full details of items of plant, its position and estimated cost of replacement. This form shall be returned to the Estates and Facilities Division at least six weeks before practical completion of the contract to enable an asset number to be allocated. A copy of this form shall then be returned to the contractor quoting the asset number, which shall be used on record drawings and in maintenance manuals.

UCL maintenance section will produce labels and affix them to the plant.

An item of plant as defined as any item of equipment that will require routine maintenance or is permanently connected to the electrical supply. The location of any item shall accord with the finally allocated room numbers shown on the Architects drawings or a brief description if no such number is allocated (e.g. plant room or roof area). The cost of replacement should be at current prices.

160 PRESENTATION OF THE OPERATING AND MAINTENANCE MANUALS:

Agree format and contents with the PM.

Encase the Manuals in A4 size, plastic-covered, loose leaf, four ring binders with hard covers, each indexed, divided and appropriately cover- titled. Fold drawings larger than A4 and include in the binder so that they may be unfolded without being detached from the rings.

Final copies of the Manual:

- Number of copies: two hard copies and one electronic copy in Word format or in Adobe Acrobat format on CD.

As-built drawings:

- Number of copies: Provide two hard copies and electronic copy in AutoCAD 2007 drawing format.

170 RECOMMENDED SPARE PARTS:

Before practical completion submit to the PM a schedule of spare parts as called for in individual sections and any others that the contractor recommends should be obtained and kept in stock by the Employer for maintenance of the services installations. Time scale: 2 weeks before Practical Completion

State against each item the manufacturer's current price, including packaging and delivery to site. Identify those items which are additional to those specified for inclusion in individual Sections.

180 TOOLS

- General: Provide tools and portable indicating instruments for the operation and maintenance of all services plant and together with suitable means of identifying, storing and securing.
- Quantity: Two complete sets.
- Time of submission: At Completion.

190 TRAINING

- Before Completion, explain and demonstrate to the Employer's maintenance staff the purpose, function and operation of the installations including items and procedures listed in the Services Manual.

## 211 PLANT MAINTENANCE

The first year maintenance of "primary plant" within the defects liability period shall be included within the contract. This is particularly relevant to plant where the guarantee is dependent upon a prescriptive maintenance schedule such as chillers, boilers, compressors, etc.

### BS APPENDIX

BS 4737-4.2:1986	Intruder alarm systems in buildings. Part 4.2 Codes of practice. Code of practice for maintenance and records
BS 5839-1:2002	Fire detection and alarm systems for buildings. Part 1 Code of practice for system design, installation, commissioning and maintenance
BS 6651:1999	Code of practice for protection of structures against lightning
BS 7671:2008	Requirements for electrical installations. IEE Wiring Regulations. Seventeenth edition
BS EN 12170:2002	Heating systems in buildings. Procedure for the preparation of documents for operation, maintenance and use. Heating systems requiring a trained operator
BS EN 12171:2002	Heating systems in buildings. Procedure for the preparation of documents for operation, maintenance and use. Heating systems not requiring a trained operator
BS EN 50131-1:1997	Alarm systems. Intrusion systems. Part 1 General requirements
BS EN 61082-1:1993	Preparation of documents used in electrotechnology. Part 1 General requirements
BS EN 61082-2:1994	Preparation of documents used in electrotechnology. Part 2 Function-oriented diagrams
BS EN 61082-3:1994	Preparation of documents used in electrotechnology. Part 3 Connection diagrams, tables and lists
BS EN 61082-4:1996	Preparation of documents used in electrotechnology. Part 4 Location and installation documents

## GCW/A53 WORK BY STATUTORY AUTHORITIES/ UNDERTAKERS

### 120 WORK BY LOCAL AUTHORITY

- Item: Not Applicable.

### 130 WORK BY STATUTORY UNDERTAKERS

- Item: None.

## GCW/A54 PROVISIONAL WORK/ ITEMS

### 100 PROVISIONAL SUMS

Where provisional sums are indicated in the specification the Contract Administrator shall issue instructions as to their expenditure.

## GCW/A55 DAYWORKS

### 110 DAYWORKS

- Basis of charge for Dayworks:

Where additional work cannot be properly measured and valued, the Contractor will be allowed daywork rates at the labour, material and plant rates current at the date of tendering, including the percentage additions inserted by the Contractor in the Schedule of Daywork Rates accompanying the Standard Form of Tender. The Schedule of Daywork Rates shall be returned with the tender documents.

The Contractor's notice is drawn to the fact that the daywork rates form part of the tender sum, and that the rates should reflect the reduction in normal rates, for work carried out by on-site labour having continuity of work within the context of the project.

### 115 CONDITIONS

- No dayworks shall be undertaken without the written permission of the PM.
- Where authority given, all relevant time and material sheets shall be sent to the PM within 3 days from the last working day of the week in which the work was carried out.
- Each daywork sheet shall be referenced to the PM instruction under which the work is authorised.

APPENDIX A

SCHEDULE OF DRAWINGS AND SITE PLAN

Drawing No:

Description:

Refer to Schedule of Drawings in Section 3 of this specification.