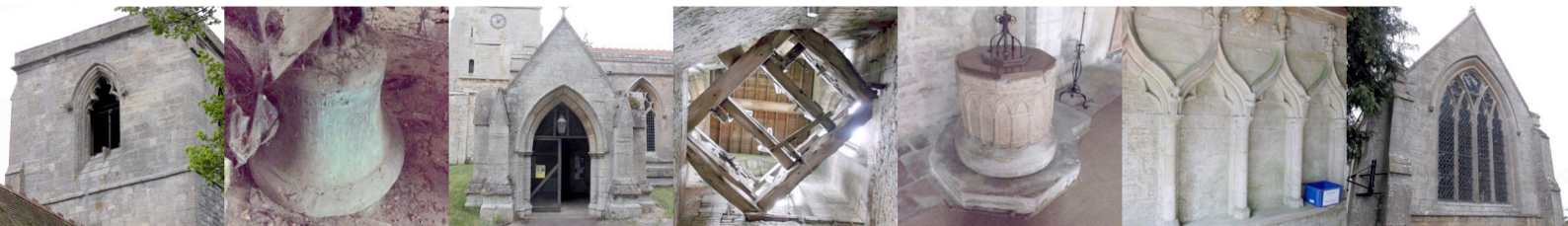


**church of ss. peter & paul • osbournby**  
**specification and schedule of works**



pcc of ss. peter & paul • osbournby

10 january 2022

**CHURCH OF SS. PETER & PAUL**  
OSBOURNBY • LINCOLNSHIRE

STONERWORK REPAIRS & DRAINAGE IMPROVEMENT WORKS

**PR·A**  
PETER ROGAN  
+ ASSOCIATES LIMITED  
ARCHITECTS +  
HISTORIC  
BUILDINGS  
CONSULTANTS

## **Specification & Schedule of Works**

### **Revision Date Clauses amended**

First draft 10/01/2022 Tender document

Contract document

## **C O N T E N T S**

A Introduction

B Pre-Construction Information

C Form of Contract

D Preliminaries

E Trade preambles

F Schedule of works

## **A INTRODUCTION**

### **1.0 Project Particulars**

1.1 Scope of Works: improvements to below-ground drainage and associated works.

### **2.0 Contract Details**

Site Church of Ss. Peter & Paul, High Street, Osbournby, Lincolnshire, NG34 0DP.

Employer Contact: Parish Administrator, Alison Scott  
Parochial Church Council of South Lafford  
Church of Ss. Peter & Paul, High Street, Osbournby, Lincolnshire, NG34 0DP.  
T 07399 548373  
E southlafford@gmail.com

Architect & Contact: Peter Rogan, Peter Rogan & Associates Limited  
Principal 46 St. Mary's Gate, The Lace Market, Nottingham, NG1 1QA  
Designer T 0115 9508047  
E peter@pr-architects.net

### **3.0 Schedule of Contract Documents**

The contract documents are:

3.1 This Specification;

3.2 The Schedule of Works;

3.3 The architect's drawings.

3.4 For tendering purposes it should be assumed that the works will be carried out under the terms of the JCT Minor Building Contract 2016 edition.

### **4.0 Tendering and Special Contract Conditions**

4.1 Tenders will need to be submitted on the supplied tender form by the due date: original tender forms must be submitted – faxed or emailed forms will not be accepted. The two (or, if prices are close, three) lowest tenderers will be required to submit priced schedules of work for checking within 7 days of request and which will be evaluated in accordance with JCT Practice Note "Tendering 2012" Alternative 2.

4.2 The Employer and representatives offer no guarantee that any tender will be accepted and will not be responsible for costs incurred by a contractor in the preparation of pre-contract information.

4.3 The tendering Contractor shall be responsible for visiting the site in order to acquaint themselves with the site conditions, access, storage provision, services etc., and to amplify the content of the Specification.

4.4 Access to the site should be arranged in advance by contacting the Employer unless otherwise stated.

4.5 The tendering Contractor shall be responsible for checking all dimensions and taking measurements on site, testing the condition of existing materials, using ladders and probes where necessary.

4.6 Pricing/Submission of Documents: the items given under sections A - F merely constitute a check list for the tendering contractor, being matters generally implicit in the Contract and, as such, at the discretion and wish of the Contractor. Where 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. Alterations or qualifications to the specification should not be made without consent of the Architect. Costs relating to items in the specification which are not priced will be assumed to have been included elsewhere in the tender.

4.7 Valuation and payment procedures: Construction Act 2011.

In order to aid the Contract Administrator in issuing payment notices (interim certificates) as required by the contract and the Construction Act, as a special condition of the contract the Contractor will be required to issue valuations of the work completed at 4 week intervals from the date of commencement, and at least 5 days before the due date, for consideration. A further valuation is required with 5 days of practical completion.

The contractor must provide a list of valuation dates and due dates to the Employer for agreement based on the agreed start date.

Valuations are to be presented as a spreadsheet indicating for each schedule of work item the tendered or contract value for the item and cumulative percentage complete together with a costed record of any variations. Variations should be calculated using rates for like or similar work already contained within the priced schedules of work – daywork rates should only be used to calculate the value of work where this is approved by the Architect in advance of the work being undertaken. The Contractor will also be required to identify separately in each valuation the items and value of work that is grant eligible and non-eligible under the terms of the grant where asked to do so.

Contractors must also ensure that the Construction Act procedures are properly complied with for all relevant subcontracts and supply contracts.

4.8 The Contractor must indicate in his first and subsequent valuations any items that are zero rated for VAT. The contractor will be required to provide receipted invoices to allow recovery of VAT by the Employer from the Listed Places of Worship Grant Scheme.

4.9 It is a requirement of the Contract that all sub-contracts or sub-letting of work made by the Contractor are made and completed on the basis of JCT Forms of Sub-contract appropriate for the JCT Minor Building Contract referred to in Section B. All costs associated with entering into JCT Sub-contracts must be included within tender costs. Evidence that subcontractors have been appointed on the basis of required subcontract forms will be requested. Any exceptions to the appointment of subcontractors (where the Contractor will not be able to appoint a sub-contractor on the basis of the JCT Sub-contract Forms) must be declared at tender submission stage.

4.10 Where works are being funded by grant bodies, insurers or other third party funders it is a special condition that funders or their agents be permitted to visit and observe the progress of works where the conditions of funding require this.

## **5.0 Special Insurance Provisions**

5.1 The client/employer will not be able to obtain/maintain cover for external metal theft or malicious damage whilst external scaffolding is in place. Note special provisions for security measures to scaffold which must be included in tenderer's pricing. Terrorism cover is not required.

## **6.0 Adjudication Procedures**

6.1 The President of the RIBA, is to nominate the Adjudicator.

## **B PRE-CONSTRUCTION INFORMATION (CDM 2015)**

### **1.0 Description of the Project**

1.1 The location of the project is the Church of Ss. Peter & Paul, High Street, Osbournby, Lincolnshire, NG34 0DP.

1.2 The project includes the following works:

- Renewal of below-ground surface water and French/land drains and creation of new soakaways;
- Modifications to above-ground rainwater goods and associated works;
- Stonework repairs to external masonry including at high level;
- Stonework repairs/stitching works inside the tower;
- Installation of a new belfry floor and tower access safety improvements;
- Re-hanging of 3 bells onto a steel beam for chiming.

### **2.0 Notification of Project to the the Health & Safety Executive (HSE)**

2.1 At this stage it is believed that the project will not exceed the threshold for Notification to the HSE, namely 30 construction days with 20 or more people working simultaneously, or if the project exceeds 500 person days. A Form F10 (Notification of Project) has therefore not been submitted.

If the contractor is aware at tendering stage or at any stage thereafter that the labour requirements for the project are likely to exceed the threshold for Notification then the Principal Designer should be notified as soon as possible to allow a Notification to be issued.

### **3.0 Project Programme**

3.1 The project is to commence on site in the spring of 2022 on a date to be agreed with the Client and the construction period is also to be agreed with the Client.

3.2 The minimum time allowed between appointment of the Principal Contractor and instruction to commence work on site is two weeks.

### **4.0 Details of Relevant Parties**

4.1 The relevant parties in the project are:-

Client                      Contact: Parish Administrator, Alison Scott  
Parochial Church Council of South Lafford  
Church of Ss. Peter & Paul, High Street, Osbournby, Lincolnshire, NG34 0DP  
T                      07399 548373  
E                      southlafford@gmail.com

Architect &  
Principal  
Designer                      Contact: Peter Rogan, Peter Rogan & Associates Limited  
46 St. Mary's Gate, The Lace Market, Nottingham, NG1 1QA  
T                      0115 9508047  
E                      peter@pr-architects.net

Principal  
Contractor                      The successful tenderer and main contractor appointed to the project will also act as the  
Principal Contractor for the purposes of the Construction (Design & Management)  
Regulations 2015 unless otherwise agreed.

### **5.0 Clients Considerations and Management Requirements**

5.1 Alison Scott represents the Client unless the PCC nominate another point of contact. Peter Rogan is the Contract Administrator and is authorised to instruct the works and administer the contract.

5.2 The Parochial Church Council, as Client, recognise that this construction project will create hazards and will be carried out in a location where hazards already exist. It is the aim of the Client to avoid or minimise these hazards, thereby reduce the risks and have an accident and incident-free project.

5.3 This Pre-Construction Information contains the hazards and risks in this project identified so far by the Client and the Designers. It is not necessarily exhaustive.

- 5.4 The Client and the Designers will assist in the management of health and safety in this project. They will do this by arranging a Pre-Start Meeting where the Pre-Construction Information will be discussed and all the parties can exchange health and safety information on the project. The Principal Contractor should then be able to prepare the Construction Phase Plan in accordance with Appendix 3 of the CDM Regulations
- 5.5 During the construction phase the Client and the Designers will monitor the minimising of hazards by arranging formal site meetings where health and safety will be an agenda item. Between meetings the Client will also discuss with the Principal Contractor any health and safety arrangements for the day-to-day activities.
- 5.6 At the end of the project the Client will carry out a review of the project in the form of a written report by the Client on any significant hazards that were not identified at the design stage and would assist in future projects and a written report by the Principal Contractor on any significant hazards that arose during the construction phase. These reports will be included in the Health and Safety File.
- 5.7 The Principal Contractor's supervisory staff will be briefed at the Pre-Start Meeting before they commence on site. This briefing will cover such issues as:
- Client Contacts
  - Site Rules and Restrictions
  - Welfare Facilities
  - Fire and Emergency Procedures
  - Access to the Site and the Working Area
  - Location for Site Accommodation and Storage
  - Car Parking
  - Codes of Conduct
  - Other Health and Safety Matters
- 5.8 The Client will discuss with the Principal Contractor the arrangements for maintaining the day-to-day security of the Church during the stages of the works.
- 5.9 For security purposes all Contractors are required to wear yellow hi-viz vests or jackets at all times. The company logo, in a legible size, must be printed on the back of the vests or jackets.
- 5.10 The Principal Contractor is to set out in the Construction Phase Plan his arrangements for his own welfare facilities to be provided in accordance with the CDM Regulations and for the provision of first aid. See Section 8 of the Specification Preliminaries regarding electric and water supplies and Section 18 regarding use of the Church.

## **6.0 Structure to be used as a Workplace**

- 6.1 The Church is not used as a workplace in accordance with the Workplace (Health, Safety & Welfare) Regulations 1992.

## **7.0 Extent and Location of Existing Records and Plans**

- 7.1 There is no Health and Safety File for the Church. A church log book is available which records some works undertaken to the church.
- 7.2 No asbestos survey has been undertaken, but work includes removal and disposal of rainwater goods believed to be asbestos cement. The Principal Contractor should take appropriate measures to ensure that operatives and others are not exposed to asbestos. The potential for asbestos to be present in the wider church and site cannot be ruled out.
- 7.3 No bat survey has been undertaken; the scope of works currently proposed is generally not believed to risk impact on bats or their potential habitats, but a check of deeper cracks/crevices in stonework for presence of bats should be included by a protected species surveyor.
- 7.4 The Principal Contractor is advised that the above documents and tender drawings may not be entirely accurate or provide a complete record. The Principal Contractor should verify their accuracy in consultation with the Client and the Designers prior to commencing work.

## **8.0 Site Requirements**

- 8.1 The Principal Contractor is required to comply with the requirements of the tender documents regarding site rules and restrictions. Any area of conflict between these documents and this Pre-Construction Information shall be brought to the attention of the Contract Administrator and the CDM Co-ordinator.

- 8.2 Before commencing any section of work the Principal Contractor shall set out safe routes for all third parties, vehicular or pedestrian, where they may come into contact with the construction work using fencing or barriers where there is a high risk or flicker tape or similar where the risk of injury or interference with the works is low. Mesh fencing is to be erected around any site accommodation and storage compound of such height as will secure the facilities.
- 8.3 The Principal Contractor is restricted in the areas he is permitted to enter during the course of the works. See paragraph 17 of the Specification Preliminaries.
- 8.4 No smoking is permitted on the site.
- 8.5 The Principal Contractor is to provide hand held fire extinguishers at all work places.
- 8.6 The Principal Contractor is required to bring tools and materials in at the commencement of each working day and take them away at the end of each working day. No tools or equipment are to be left in the Church unless a safe storage area is agreed with the Client. The site is to be left in a safe, clean and non-hazardous condition and all rubbish must be removed off site at the end of each working day.
- 8.7 Rubbish chutes are to be sealed and directed into covered containers to prevent the spread of dust. Scaffolding is to be designed to carry the loads imposed by any chutes.
- 8.8 All ladders are to be removed and all scaffolds are to be rendered inaccessible at the end of the working day. See Section 9 of the Specification Preliminaries.
- 8.9 No hot work involving blowlamps, welding equipment, soldering irons etc. may be carried out during the last two hours of the working day. Any hot work may only be carried out on the basis if not otherwise excluded and only on the basis of Hot Work Permits. The Principal Contractor shall inspect such areas before leaving site for the day. A fire extinguisher is to be kept close to all hot work. See also Section 7 of the Specification Preliminaries.

## **9.0 Environmental restrictions and existing on-site risks**

### ***Safety Hazards***

- 9.1 The Church will remain in public use during the construction period. See paragraphs 10.3 and 22.3 of the Specification Preliminaries.
- 9.2 Access to the Church is described in Section 14 of the Specification Preliminaries. The main access is through a gateway in the southern boundary from High Street; roadside parking is possible in this area but care needed to ensure that the road remains clear for other traffic. A regularly used footpath extends around the eastern side of the chancel to the north-east corner of the churchyard. Footpaths will need to be maintained as well as the main church access. The church is near a school and so especial care required when children are arriving/leaving the school.
- 9.3 A location for site accommodation and storage compound is to be agreed with the Client. There is no WC. or water supply to the church - separate hired-in WC and other facilities will need to be provided by the Contractor to satisfy welfare needs and bowsers for the supply of water for welfare purposes and for use in the works.
- 9.4 Any skips are to be lockable and kept as far away from the Church as possible.
- 9.5 The Principal Contractor will be expected to make all reasonable enquiries with the Client and the Designers and to carry out such further site investigations as may prove necessary to locate all existing services prior to commencing work on site. Locate, identify and protect, isolate or make safe as appropriate electrical and any other services.
- 9.6 The contractor should be aware of the potential for graves and other soft or made ground around the church and the potential for settlement of scaffolds and plant etc.

### ***Health Hazards***

- 9.9 No asbestos survey has been undertaken. The works include disposal of rainwater goods believed to contain asbestos cement; any asbestos to be removed and disposed to licenced disposal sites in accordance with HSE. requirements.
- 9.10 Works are planned inside the tower; bird nesting debris, guano and bat droppings/urine are evident and appropriate PPE will be required.

## **10.0 Significant Design and Construction Hazards**

- 10.1 The significant site operations and work sequences with hazards and risks identified so far by the Designers are contained in the tender documents and described below. The operations on site will require risk assessments by the Principal Contractor and procedures for safe methods of working.
- 10.2 The area of the Church to be refurbished may have undergone several alterations over its life and the nature and condition of the structure cannot be fully ascertained before it is opened up for inspection. Before any structural elements are removed or openings made investigative work is to be carried out to determine the load bearing status of the various elements in order to establish a removal sequence.
- 10.3 The work to rainwater goods and stonework is to be carried out with scaffolds, mobile tower scaffolds or other appropriate and safe forms of access.
- 10.4 Any scaffolding shall be considered as temporary works and the Principal Contractor is to set out in the Construction Phase Plan his arrangements for managing the risks and a temporary works register in accordance with BS 5975.
- 10.5 Any excavations for drainage work should be undertaken so as not to undermine any building walls or external retaining features.
- 10.6 Work includes working at height within the tower and re-hanging of bells. The bells have been removed from the bellframe and are currently stored on an internal floor of the tower - the loading capacity of this floor is unknown and propping from beneath may be required. The belfry floor is missing and the bellframe is decayed.

### ***Materials Requiring Particular Precautions***

- 10.8 The materials specified so far generally comprise normal materials used in a project of this nature. Some of these have inherent hazards and the Principal Contractor must take appropriate precautions as advised by manufacturers and suppliers.
- 10.9 The Principal Contractor shall comply with manufacturer's instructions regarding application of hazardous materials such as lead, limecrete, lime mortar, lead paints, adhesives, epoxy resin glues, epoxy resin paints, intumescent paint, fillers, fire stopping compounds, pitch polymers, wood preservatives etc. and take protective measures as necessary for the operative and any third party. Used containers shall be disposed of to a suitable tip. The Principal Contractor shall provide in his Construction Phase Plan a COSHH Assessment for the materials to be used and a statement describing how surplus materials will be disposed of.
- 10.10 Note risks associated with silica dust in respect of all relevant aspects of the work, whether stonemasonry work, demolition, plastering, concrete works or other works where silica-containing materials are used. Refer to HSE guidance including "Control of Exposure to Silica Dust" and ensure appropriate monitoring and protection of operatives and building users from excessively high levels of silica containing dust. Carry out appropriate risk assessments (written assessments for contractors/employers employing more than 5 people).

Measures to control silica dust may include:

- Minimise dust production;
- Manage and control dust;
- Where materials are not otherwise specified, consider using materials with lower silica content;
- Monitor dust levels and ensure levels are within acceptable limits;
- Provide personal protective equipment and ensure such equipment is well maintained;
- Provide adequate training and monitor effectiveness of control measures.

## **11.0 The Construction Phase Health & Safety Plan**

- 11.1 The format and contents of the Construction Phase Health and Safety Plan must include the information and be formatted as described by in Appendix 3 of CDM 2015 Guidance (L153). The Principal Contractor is to consider the information in this Pre-Construction Information in developing the Construction Phase Health and Safety Plan.
- 11.2 A copy of the Principal Contractor's Construction Phase Health & Safety Plan must be delivered to the Client, via the Principal Designer, for acceptance before any site work may start. Acceptance of the Construction Phase Health & Safety Plan will not remove the Principal Contractor's responsibilities and duties.
- 11.3 The Employer/Client will not be responsible for any costs or expense arising from delays to the commencement of work caused by the failure of the Principal Contractor to provide an adequate Construction Phase Health & Safety Plan in good time, prior to the commencement date, for acceptance by the Client.



## **12.0 The Health & Safety File**

12.1 The format and contents of the Health and Safety File must include the information and be formatted as described by Appendix 4 of CDM 2015 Guidance (L153).

The Principal Contractor is to compile and provide the information required for the file including marking up a set of contract drawings with any as-built variations and providing as-installed information for building services and equipment.

Any relevant design information produced for Contractor Design packages/responsibilities should also be included.

12.2 Draft information for the Health and Safety File is to be submitted to the Principal Designer two weeks before the anticipated date for practical completion.

12.3 Information for the Health and Safety File is to be submitted to the Principal Designer at practical completion.

## **C FORM OF CONTRACT**

- 1.0 The form of Contract will be the 2016 edition of the JCT Minor Building Contract with the latest amendments.
- 2.0 The Contract will be for works to be carried out on a fixed price basis and will not be subject to fluctuations.
- 3.0 The appendix of articles of agreement will be completed as follows:

Article 3 Architect/Contract Administrator: Peter Rogan & Associates Limited

Article 4 Principal Designer: Peter Rogan & Associates Limited

Article 5 Principal Contractor: To be the successful tenderer unless agreed otherwise.

### **Contract Particulars**

Fourth Recital and Schedule 2; Base Date: To be the date of the return of Tender.

Fourth Recital and Clause 4.2; Construction Industry Scheme (CIS): Employer is not a 'contractor'.

Fifth Recital; CDM Regulations: the project may be notifiable (CDM-R 2015).

Sixth Recital; Framework Agreement: not applicable.

Seventh Recital; Supplemental Provisions: the following Paragraphs will all apply –

Paragraph 1	Collaborative working
Paragraph 2	Health & Safety
Paragraph 3	Cost savings and value improvements
Paragraph 4	Sustainable development and environmental considerations
Paragraph 5	Performance indicators and monitoring
Paragraph 6	Notification and negotiation of disputes
	Employers Nominee: to be confirmed
	Contractor's Nominee: to be confirmed by the contractor

Article 7, Arbitration: applies – disputes to be resolved through arbitration and not legal proceedings.

Clause 1.1; CDM Planning Period: 21 days beginning from the date of letter of intent.

Clause 2.2; Date for Commencement of the Works: to be confirmed.

Clause 2.2; Date for Completion: to be confirmed.

Clause 2.8; Liquidated damages: at the rate of £100 per week.

Clause 2.10; Rectification period: 12 months.

Clause 4.3; Percentage of the total value of work etc.: 95%.

Clause 4.4; Percentage of the total amount to be paid to the contractor: 97.5%.

Clause 4.8.1; Supply of Documentation for computation of amount to be finally certified: 3 months.

Clause 4.11 and Schedule 2; Contribution, levy and tax changes (Fluctuations Option): does not apply

Clause 4.11 and Schedule 2; Percentage addition for Fluctuations Option; not applicable.

Clause 5.3.2; Contractor's insurance - injury to persons or property: £5 million.

Clause 5.4; Insurance of the Works: Clause 5.4B applies (insurance by the Employer in Joint Names).

Clause 5.4; Percentage to cover professional fees: 15%.

Clause 7.2; Adjudication: Nominating body – the Royal Institute of British Architects

Schedule 1; Arbitration: Arbitrator appointed by the President of the Royal Institute of British Architects

## **D PRELIMINARIES**

### **1.0 Terms and Definitions**

- 1.1 Architect: the person nominated in the contract as Architect.
- 1.2 Approval: approval in writing of the Architect. Unless otherwise specified in the approval, approval is limited to the visible appearance of the work, materials or components involved and shall not relieve the Contractor from compliance with the specification.
- 1.3 Equivalent products: where the specification states “or equivalent” or “similar approved” to permit substitution of a product to the specified, and such substitution is desired, submit evidence that the product is equivalent in material, safety, fitness for purpose and appearance (where relevant).
- 1.4 Fix only: all labour in unloading, handling, storage and fixing in position, including use of plant.
- 1.5 Supply and fix: unless otherwise stated, all items given in the specification and/or drawings are to be supplied and fixed complete.
- 1.6 Removing: disconnect, dismantle as necessary and remove the stated element and all associated accessories, fastenings, supports, bedding materials, and dispose of unwanted materials.
- 1.7 Setting aside for re-use: prevent damage to stated components or materials during removal and clean off bedding/jointing materials. Stack neatly, adequately protect and store until required by Employer for use in the Works.
- 1.8 Replacing: remove stated component, feature, finish etc. Provide and fit in lieu new component, feature, finish etc, which, unless specified otherwise, must be a new version of those removed. Make good as necessary.
- 1.9 Repairing: carry out local remedial work to components, features, finish, etc, as found in the existing building. Re-secure or refix as necessary and leave in sound, neat condition. It does not include:
- a] Forming up square jambs.
  - b] Cutting, toothing and bonding in-filling materials to the adjacent existing structure.
  - c] Cutting out for, providing and inserting new components (lintels, cills, etc) stated in description.
  - d] Making good any of existing structure to remain.
  - e] Extending and making good finishes and skirtings around/across the openings.

### **2.0 Schedule of existing conditions**

- 2.1 Before commencing work on site, prepare and agree with the Architect a schedule of the condition of existing structures, boundaries, fixtures, pavings etc. inside and adjacent to the site area, making a photographic record and handing one copy to the Architect prior to commencing the works.
- 2.2 Defects in Existing Construction are to be reported to the Architect without delay.

### **3.0 Prior notification**

- 3.1 The Contractor must notify the Architect before any Work is closed up in order for it to be inspected. The Architect reserves the right to order any part of the Works to be opened up for inspection if it has not been approved.
- 3.2 The Employer will give the Contractor seven days notice of any period during which work must not be carried out.

### **4.0 Preliminary inspection**

- 4.1 The Contractor will be responsible for visiting the site in order to acquaint themselves with the site conditions, access, storage provision, services etc., and to amplify the content of the Specification.
- 4.2 Access to site must be arranged in advance by contacting the Employer.
- 4.3 The General Contractor shall be responsible for checking all dimensions and taking measurements on site, testing the condition of existing materials, using ladders and probes where necessary.

## **5.0 Insurance**

- 5.1 The Employer and the Contractor will provide the insurance cover required by the Contract.
- 5.2 Additionally the Employer will notify their Insurance Company of the extent of the Works and be responsible for any additional premium that may be levied.
- 5.3 For the purposes of tendering it should be assumed that terrorism cover will not be required within insurances.
- 5.4 For the purposes of tendering it should be assumed that the Joint Fire Code does not apply – however, refer to fire precautions section below.
- 5.5 It is likely that the Employers insurers will remove cover for external building metal theft and malicious damage whilst any external scaffolding or platforms are in place. Metals should be brought to site only when needed for fixing. Spare metal materials should be kept away from the site in secure premises until needed. Note special requirements for security for scaffolding which should be included in tender figures and must be put in place during the contract. The contractor will be responsible for covering the cost of theft of any unfixed metals from the site.

## **6.0 Fire precautions**

- 6.1 The General Contractor must provide and maintain on site adequate hand operated fire extinguishers, kept available at the place of Work.
- 6.2 No smoking is permitted inside, on, or adjacent to the building, including scaffolds and other working areas.
- 6.3 Flammable materials, e.g. paint, oil, are not to be stored in the building, but outside, well away but a minimum of 5.0 metres from the building in a secure, well ventilated and locked compound/store, unless agreed otherwise with the architect.

## **7.0 Hot work**

- 7.1 Any lead-burning and use of flame-producing apparatus to be carried out at ground level away from the building unless otherwise specifically agreed with the Architect. Where there is no alternative to carrying out hot work on the building, and with the Architect's approval, the Contractor is to ensure that appropriate flame-guards are used to protect the fabric of the building during the course of any in-situ lead burning work. All hot work and other similar operations must be completed two hours before the end of work for the day by qualified plumbers. Two workmen must be on site at all times, with suitable firefighting equipment to hand. Prior to hot work the site should be cleared of readily flammable material. After hot work the site should be checked for heat or flame every half hour and appropriate action taken. The Contractor is to notify the Employer of any hot work to enable the Employer to arrange for further checks to be made in the evening. Any special requirements of insurers must also be followed.
- 7.2 Hot work is permitted only when deemed necessary by the Architect. Contractor to obtain and comply with hot work permit before executing any works.
- 7.3 The working area must be swept clear of all debris and combustible materials and flammable liquids removed prior to any hot work starting. Any holes or openings through which sparks could pass are to be covered over temporarily with a non-combustible material. Beware the potential for metal to retain and conduct heat. The contractor is to consult the architect in such circumstances.

## **8.0 Temporary services**

- 8.1 Electrical supply is available for use within the building. The contractor should check the suitability of the system prior to commencing work and should include for making temporary adjustments to supply arrangements (including making good on completion) or supply of generators if necessary to undertake the works.
- 8.2 There is no water supply to the church; the contractor will need to provide water bowsers to supply water for welfare purposes and for use in the works.
- 8.3 There is no WC. or washing facility; the contractor must provide suitable hired-in facilities and cover all supply and maintenance costs.
- 8.4 The Contractor is responsible for ensuring these supplies are adequate and meet any statutory obligations and costs.

8.5 Provide a site telephone during the works to allow the issue of instructions and summoning of emergency services if required. A mobile phone will be acceptable provided this is kept charged and has good signal. Also provide a contact phone number for the client for out-of-working-hours emergencies.

## **9.0 Scaffolding/Towers etc.**

- 9.1 Provide and erect any necessary scaffolding to the Works, including hoisting facilities, as required to carry out and complete the Works; alter and adapt as necessary, provide and maintain all necessary temporary lighting, provide and erect all necessary temporary barriers, signs etc., and when no longer required, remove, clear away and make good all disturbed.
- 9.2 The scaffold must provide safe access to the building to allow the execution and inspection of repair works; scaffolds must also be capable of being used to provide temporary support to masonry during consolidation.
- 9.3 At the end of each working day, and when there is no one on site, remove access ladders to at least the bottom two lifts of any external scaffold. External scaffolding must be enclosed in 3.5 metre high proprietary steel hoardings to prevent climbing and/or unauthorised access. Provide a beam-type scaffold alarm whilst scaffolds are in place.
- 9.4 Scaffolds must be designed as freestanding except where otherwise specified or pre-agreed with the Architect. Provide bearers or other protection to roof and floors/finishes under scaffolds/towers to protect those finishes.
- 9.5 No putlogs or other members shall be inserted or fixed into the Fabric.
- 9.6 All putlog ends facing masonry or other building fabric must be protected by plastic caps.
- 9.7 Ladders should be of appropriate type, in good condition, secured at the top, raked not steeper than 75° and to extend past the upper step-off point by not less than 1000mm. Where ladders are accessed through edge protection provide a safety gate. Comply with HSE and other regulations relevant to the safe use of ladders.
- 9.8 Scaffolds, access platforms and mobile towers should only be erected by operatives with appropriate training.
- 9.9 Obtain any permits, statutory consents etc, required for the scaffolding.

## **10.0 Working Hours**

- 10.1 Where dayworks are authorised, the General Contractor is responsible for obtaining dayworks sheets from subcontractors.
- 10.2 Working hours are to be limited to 7.30am-6.00pm Monday to Friday, 8.30am - 2.00pm Saturday and no work Sunday unless otherwise agreed.
- 10.3 The building will remain in use during the works. The building should be made available for Sunday: give a minimum of 14 days notice for any unavoidable closure of the church. Allow for quiet working for an average of 1.5 hours per week for funerals.

## **11.0 Care of the Works**

- 11.1 Use of the site is to be restricted to the construction of the Works.
- 11.2 Prevent damage to existing property which is to remain unaltered: make good any defects caused by the works, to match existing. Damage caused to adjoining property shall be reinstated by the appointed Contractor at his own expense. The Contractor shall inform the Architect immediately of any such damage and confirm this in writing, setting out the cause and intended remedial measures, within seven days of the occurrence.
- 11.3 Roads, footpaths and external areas: Make good any damage to public highway, footpaths, gravemarkers, grassed areas, verges etc, caused by site traffic or otherwise, to the satisfaction of the Architect.
- 11.4 Trees: there are number of mature trees within the churchyard and potentially close to working areas, scaffold locations or access routes. Trees are protected by Conservation Area status and consent from the local authority may be required for any pruning work if found necessary.
- a] Provide protection to any trees within vicinity of the work or access routes using either Herras fencing or other approved means to protect tree trunks and low-level vegetation
  - b] Ensure that any surface roots are not damaged by vehicle movements;

#### 11.5 Existing Services:

- a] Where necessary, notify all service authorities not less than one week before starting work on site. Before starting work check positions of existing services. Observe service authorities recommendations for work adjacent to existing services.
- b] Protect and prevent damage to all live services. Notify Architect and appropriate authority of any damage resulting from the Works and make arrangements for the work to be made good without delay.

#### 11.6 Security: Safeguard the Works and stored materials from theft, vandalism or other damage. Ensure the security of the building is maintained during the works.

#### 11.7 Cleaning:

- (a) During the works the site is to be kept in a clean, safe and workmanlike condition and all areas affected by the works are to be made good and all waste material to be carried away.
- (b) Inform the Architect of the intended siting of all spoil heaps, temporary works and services. Clear away when no longer required.

#### 11.8 Public/Employer's Access:

- (a) Footpaths through and around the site in clean and tidy state.
- (b) Thoroughly clean the works on completion.

#### 11.9 Provide and temporarily fix temporary protective coverings, including all necessary supporting framework, to protect the building and contents during the Works, maintain as required, and on completion clear away and make good all disturbed. Where protection to existing features is appropriate, the following may be considered a guide to appropriate protection measures, but subject to evaluation of appropriate measures for each case:

- Open Roofs, covered by tarpaulins or stout impermeable covers, well battened, supported underneath and regularly checked in all weathers. Working to be restricted to small sections to reduce the risk of the ingress of water.
- Walkways, Seating Areas etc. protected by polythene, dust sheets or soft covers to protect from dust; softwood framing and boarding to protect from physical damage where appropriate.
- Glazing (particularly stained glass and historic plain glazing) within three metres of any scaffolding to be temporarily fitted with protective 6mm plywood or rigid insulation board templates and on completion, remove, clear away and make good all disturbed. Templates are not to be forced but shaped correctly.
- Metal Roof Surfaces  
Stout softwood bearers (min.32mm thick) under scaffolding poles, ladders, and under masonry repairs. Steel shod shoes should not be allowed on the roofs.
- Slate/tiles Roofs  
As for lead, plus straw or other soft packing.
- Exposed Arrises, Reveals, Jambs, Plinths, Moulds, Gravestones etc.  
Should be protected with deals, planking and sheeting.
- Polished Surfaces  
Dust sheets.
- Floors where Re-plastering or Grouting is in progress  
Layer of sawdust or soft covers.
- Arches, Beams, Bulges, Trench Excavation etc.  
Should be shored, propped, strutted or braced as required.
- If required provide temporary rainwater disposal during the Works, maintain as required, and on completion remove, clear away and make good all disturbed.

#### 11.10 Take all reasonable measures to protect neighbouring properties from nuisance.

### 12.0 Cleaning

#### 12.1 During the works the site is to be kept in a clean, safe and workmanlike condition and all areas affected by the works are to be made good and all waste material to be carted away.

#### 12.2 On completion of the Works, clean the Works and areas affected by them to a satisfactory standard. 'Satisfactory' means to a standard whereby the Employer should have no need to undertake further cleaning work in order to make beneficial use of handed-over areas. Cleaning should include (list not exhaustive):

- Carefully remove and dispose of all protection in an appropriate order, minimising the impact of dust/dirt arising from the removal of dust sheets, especially where in proximity to the organ or similar musical instruments, or important features/historic artefacts.;
- Clean glass to remove dirt/dust and leave smear-free where glazing is a direct part of the works or in close proximity (eg. lime/dust from masonry works adjacent glazing). Where glass is painted/stained or historic first seek the Architect's approval for cleaning methods;
- Paint splashes and over-painting – generally take reasonable measures to avoid splashes/overpainting as elsewhere described; where splashes/overpainting has occurred remove to the satisfaction of the Architect. Where paint/splashes are on historic finishes/features then first seek Architect's approval for removal methods.
- Roofs where directly or indirectly affected by the works: check and clean out all roof areas, valley and parapet gutters, guttering and downpipes, outlets, ground level gulleys and leave in a clean state (includes cleaning out gulleys but not jetting of drains).
- External areas: level and re-seed any grassed areas affected by the works and maintain for the Rectification Period. Clean hard/paved surfaces.

All cleaning materials/products should be selected for compatibility and appropriateness for materials being cleaned.

### **13.0 Masonry work during dry or inclement weather conditions**

- 13.1 During warm, dry weather the work should be kept covered with dampened undyed /unbleached Hessian to inhibit excessive drying out.
- 13.2 During driving rain, the work should be kept covered with sheeting, laid over hessian as above.
- 13.3 In cold weather the work should be protected by breathable insulating material [sacking, boarding etc]. No work to be carried out when temperature is likely to be below +5°C and falling.
- 13.4 Where inclement weather is possible the protection of the works should remain in place for sufficient time to avoid damage occurring.
- 13.5 Any damage caused by dry, inclement or frosty weather is to be made good at the Contractor's expense.

### **14.0 Roofing or similar work during inclement weather conditions**

- 14.1 Provide temporary sheeting/covers and rainwater disposal methods as necessary to prevent water ingress during the contract period. Ensure that interiors are protected, boarding to leadwork is kept dry etc. Ensure adequate securing of tarpaulins and other covers against wind uplift. The Contractor will be required to make good any damage caused by inadequate protection at their own expense.

### **15.0 Access & parking**

- 15.1 There is no formal vehicular access into the churchyard; Most of the churchyard to boundary highways is formed by retaining walls. There is graded access into the churchyard from the southern entrance.
- 15.2 There is no off-road parking immediately adjacent the churchyard. On-road parking should be done with consideration for local residents and avoid blocking accessways or causing obstructions.
- 15.3 Public access to graves should be maintained where safe and reasonable to do so. The church will remain in use during the works and safe access through the south porch must be maintained at all times.

### **16.0 Archaeology**

- 16.1 Only the excavation works described in the schedule of works and/or as shown on drawings are to be undertaken unless otherwise agreed. Provisionally, any excavations must be undertaken with archaeological supervision (watching brief). All digging should be by hand.
- 16.2 Any bones found during excavation should be treated respectfully and placed in a container inside the church until they can be reburied under the direction of the vicar. Bones must not be removed from the boundaries of consecrated land (the churchyard).
- 16.3 Any other finds to remain the property of the Employer.

### **17.0 Contractor's Site Area**

- 17.1 The Contractor will generally restrict operations and access to the site, to an area to be agreed on site, prior to the commencement of the works and provisionally as shown on the site plan.

## **18.0 Contractor's facilities**

- 18.1 Provide any sanitary and welfare accommodation and facilities to satisfy all Health and Safety and other relevant Regulations and Acts. Provide toilet and welfare facilities and make arrangements for the supply of water for welfare purposes and use in the works.
- 18.2 Site accommodation will need to be placed in agreed locations within the churchyard. Protect ground surfaces during deliveries and removals and make good as required. Accommodation should be suitably robust.

## **18.0 Statutory approvals**

- 18.1 Some of the works will require Faculty Consent. The Contractor is to check and ensure that any works he is undertaking are covered by a current consent and that any conditions of that consent are adhered to.

## **19.0 Bats/Protected Species**

- 19.1 A bat survey has not been undertaken. Prior to the commencement of masonry repairs a protected species surveyor will need to check any deeper cracks and fissures in masonry for the possible presence of bats.
- 19.2 For the purposes of tendering assume that it is not necessary to complete the renovation works under a European Protected Species Derogation Licence.

If any bat is found at this time then works must be suspended in the local area and the bat ecologist called out. Whilst awaiting the bat ecologist works can continue upon any area approximately 5 metres away from the roosting bat.

- 19.3 In addition, the following procedures should be followed:

### General Procedure to be followed should bats be found during work

- i If at any point in any demolition/repair/alteration/felling, bats are discovered, contractors must stop work immediately and contact Barry Collins (Licensed Ecologist) on 0115 966 4468 or 07957 122217.
- ii Actions will then be taken following the advice given. This may include the removal of bats, but only where direct written or verbal permission has been given on behalf of Natural England or Barry Collins.
- iii Only when the Consultant Barry Collins and English Nature are satisfied that the risk to bats has ceased will work recommence.
- iv Should it transpire that the operation being carried out is of more risk to bats than originally thought, work will be stopped until supervised by an appropriately licensed person.
- v Should any bat/bats be found under a tile or any other aperture, work will stop immediately. If the bat doesn't voluntarily fly out, the aperture is to be carefully covered over to provide protection from the elements. A small gap should be left for the bat to make its own escape. Any covering must be free from any grease or other contaminant and should not be fibreglass based material. Advice should then be sought from Barry Collins.
- vi Bats are a protected species and there should be no attempt to handle a bat if discovered. The bat should be covered with a light material (clean cloth) and the bat ecologist called out to conduct the rescue.

## **20.0 Acts, Regulations, etc**

- 20.1 Comply with any and all regulations made by any authority having jurisdiction over or in connection with the works; Codes of Practice published by BSI and major trades organisations British Standards referred to in this specification; BRE digests and other authoritative documents prepared by the major government organisations; printed directions issued by the manufacturers of propriety materials used (whether specified or not). Provide any relevant part of the above documents for use on site if necessary for the efficient execution of the work or if so directed.

## **21.0 Health and Safety**

- 21.1 Refer to the Pre-Construction Information in Section B.

## **22.0 Management of the Works**

- 22.1 The Contractor will be responsible for co-ordination, supervision and administration of the Works, including all subcontractors. Arrange and monitor a programme with each subcontractor, supplier, Local Authority and statutory undertaker and obtain and supply information as necessary for co-ordination of the Works.



- 22.2 Include all expenses whatsoever in connection with labour, including overtime if necessary, to complete the works within the stated period or to ensure completion of parts of the Work within a given time to avoid deterioration of fabric.
- 22.3 Provide all mechanical and non-mechanical plant, haulage, scaffolding, gantries, walkways, road tarpaulins etc. and temporary services and other equipment necessary for the satisfactory completion of the works.
- 22.4 Include for temporary measures, watching, lighting, hoardings, shorings to buildings, protection of roads and paths etc. and other safety measures to the entire satisfaction of the Local and Statutory Authorities.
- 22.5 Site Foreman: The Contractor shall at all times keep upon the works a competent person-in-charge, and any written instructions given to him by the Architect shall be deemed to have been given to the contractor.
- 22.6 Sub-Letting/Sub Contracting: Work contained in this specification shall not be sub let without the prior consent of the Architect and the Employer. Contractors are invited to use subcontractors and suppliers where named in this specification. Such contractors/suppliers are to be domestic subcontractors to the Contractor. The Contractor is responsible for ensuring that subcontractors are made aware of the requirements of this specification and schedule of works and kept informed of any alteration or amendments to the specification, schedule of work, new or revised drawings.
- 22.7 Ownership: Products and materials salvaged from the alteration/demolition works are to become the property of the Contractor unless otherwise stated. All waste material is to be removed from site as work proceeds.

### **23.0 Records**

- 23.1 Keep a properly documented and dated job diary for inspection when so requested.
- 23.2 Record all events relevant to the construction of the Works including (but not limited to) the following:
  - a] Daily weather conditions.
  - b] Keep on site a maximum and minimum thermometer and keep a daily log of temperatures, recording the temperature at the start and completion of works each day as a minimum requirement.
  - c] All drawings or other documents issued or requested, all instructions issued to the Contractor and the action taken, including verbal instructions and the date of written confirmation; adequate details of daywork; weather conditions; records of tests (if not recorded elsewhere); any poor workmanship observed or reported and condemned work stating reasons; delays and their causes; details of labour and plant.
  - d] Details of work originally classified as provisional; details in support of claims for extra payment; measurements and cost information to support valuations and the final account; commencement and completion dates of significant elements of work, adequate photographs, names of personnel involved in critical activities.

### **24.0 Drawings**

- 24.1 Check any drawings issued after the start of the Works to ensure they do not conflict with those previously supplied, or with actual dimensions on site. Notify the Architect of any discrepancies.
- 24.2 Areas of work involved with the existing buildings where dimensions are stated on drawings/specification must always be checked on site by the Contractor.

### **25.0 Programme**

- 25.1 Provide start and completion dates for the work and key dates/periods for significant aspects of the work including periods when work is planned that may otherwise affect the function of the church as a place of worship. Provide this information to the Architect and Employer for review and in good time to allow any significant dates in the parish calendar to be planned or incorporated and the programme modified if necessary.

### **26.0 Inspections of Covering Up**

- 26.1 Give notice regarding any work that must be inspected prior to covering up, this includes:
  - a) Work of structural importance.
  - b) Functional work, e.g. drains.
  - c) Work treated as provisional at time of tendering.
- 26.2 Do not cover up such work until inspected and approved by the Architect or other authorised inspector.

## **27.0 Workmanship**

- 27.1 The Work shall be of the highest possible standard and carried out by reliable tradesmen experienced in the type of work in hand. It is a requirement of the Employer that the quality of workmanship and materials is to be of a standard acceptable to any relevant funding body.
- 27.2 In the event of any query on site or regarding the Specification, the Architect must be consulted before Work proceeds.
- 27.3 The working materials should be in accordance with the manufacturer's instructions, together with current Codes of Practice and the relevant Appendices attached to the Specification.
- 27.4 The Contractor is to make good any defective work and materials directed by the Architect at the Contractor's own expense.

## **28.0 Materials**

- 28.1 General Standards and Requirements.
- a] All new materials for the Works shall be the best of their respective kind, guaranteed free from defect and the current British Standards and Code of Practice will be deemed to apply to this Specification.
  - b] The type and colour of all materials shall be in accordance with the Specification/Schedule of Work; samples of materials visible in finished work are to be submitted to the Architect and (where applicable) to the Local Planning Authority (or Diocese Advisory Committee) for approval before being fixed.
  - c] In the event the Contractor is instructed to use materials reclaimed from the Works, prior to installation all such materials shall be submitted to and approved by the Architect.
  - d] The Contractor shall be responsible for providing adequate handling and storage facilities on site for materials including a lock-up shed for all perishables, toxic or inflammable materials.
- 28.2 Standard of Acceptance. Do not accept delivery of any materials that:
- a] Do not comply with specification.
  - b] Do not match approved samples.
  - c] Are damaged or contaminated.
  - d] Cannot be used within stated storage life.
- 28.3 Handling and Storage: As soon as materials are checked on to site, carefully handle and securely store them in a manner that provides adequate protection from mechanical damage, distortion, contamination and deterioration.
- 28.4 Source Restrictions: Use a single source of supply for materials and components having characteristics that differ according to source of supply or manufacture; or could affect their appearance or performance.
- 28.5 Unspecified Items: Ensure any and all materials which are left to the choice of the Contractor are of good quality, fit and for their intended purpose, comply with relevant codes of practice or British Standards, and comply with good building practice.
- 28.6 The Contractor is to make good any defective materials as directed by the Architect at the Contractors own expense.

## **29.0 Proprietary Materials, Components and Systems**

- 29.1 Observe all manufacturers written instructions, particularly regarding handling, storage life and conditions, preparing, fixing and protecting.
- 29.2 Specifications of propriety materials and components is not binding. The Contractor may suggest alternatives of a similar quality and performance.

## **30.0 Fixings**

- 30.1 Subject to specified requirements, fix everything that is intended to be fixed in such a manner that it stays fixed. Select fixings with proof against likely corrosion, suited to likely stresses, to suit visually the item being fixed.

### **31.0 Named craftsmen and suppliers**

- 31.1 The Contractor is invited to use the named craftsmen and suppliers included within this specification. If the Contractor proposes to use alternative craftsmen and suppliers this is to be confirmed in the tender and evidence of their skills and experience will be requested. The craftsmen and suppliers named are to be domestic subcontractors to the Contractor.

### **32.0 Contractor's Design**

- 32.1 Where Contractors design is required the Contractor is to provide sufficient detailed information for comments to be made by the Architect.
- 32.2 Contractor's design works are not to commence until approved by the Architect.
- 32.3 The Architect will within seven days of receipt of Contractor's design information advise whether the proposals are acceptable or require amendment.
- 32.4 Within seven days of receipt of amended proposals the Architect will further advise whether the proposals are acceptable or require further amendment.
- 32.5 Acceptance of the Contractor's design by the Architect will not be interpreted as approval of the Contractor's design or absolve the Contractor from their design responsibilities.

## **E TRADE PREAMBLES**

### **1.0 Below-Ground Drainage**

*Note special requirement for archaeological supervision/watching brief for all excavations; retain any bones found within the consecrated area (church or churchyard) and arrange for reburial by the Vicar.*

#### **1.1 General Requirements**

- 1.1.1 Comply with BS EN 752:2008 'Drain and sewer systems outside buildings' subject to any qualifications given below.
- 1.1.3 All pipe and duct sizes etc. given in this specification refer to nominal bore diameter, unless confirmed otherwise.
- 1.1.4 Encase all gullies, pre-formed inspection chamber, and other terminal fittings including bends in concrete min. 150mm thick. Similarly encase pipework rising at a steep angle to the fitting.

#### **1.2.2 Materials**

- 1.2.1 For clay drainage systems, execute the entire surface water drainage system in Hepworth Supersleve, or similar other approved clay drainage system.  
  
For plastics drainage systems, execute the entire surface water drainage system in Polypipe 'Terrain' or similar other approved plastics drainage system.  
  
Obtain all materials within the scope of this system from these manufacturers and undertake the work in accordance with BS.8301 and the manufacturer's printed instructions. Provide a copy of these instructions at the works while this work is being undertaken.
- 1.2.2 Land drains, where specified, to be flexible corrugated polypropylene of diameter 75mm or 100mm wrapped in approved geotextile and laid to falls.
- 1.2.3 Bricks: clay bricks to BS EN 771/772 Class B. Mortar cement, lime mortar (1:1/4:3) unless specified otherwise.
- 1.2.4 Where specified, plastic crate soakaways to be Polypipe 'Polystorm' or equivalent approved install in accordance with manufacturers instructions and cloaked on all sides with geotextile.
- 1.2.5 Granular bedding and surround: nominal single sized aggregate to BS.882 Table 4 as follows: 100mm pipes, 10mm size; 150mm pipes, 10mm or 14mm size; 200mm pipes and above, 10mm, 14mm or 20mm size.
- 1.2.6 Grade of concrete: mix C16/20 10/20 CEM2 (20N/20mm) for beds, manholes and other concrete in the ground; reinforced concrete for similar uses to be mix C20/25 10/20 CEM2 (25N/20mm), or as specified by the Structural Engineer.
- 1.2.5 Lean mix concrete: Not richer than 1:18.

#### **1.3 Benching**

- 1.3.1 Benching: completely fill all spaces between channels and chamber sides with concrete and slope away from channels at 1 in 12. Shape the benching so that it rises vertically above the channel lip to the level of the top of the bore of the incoming main drain and form a rounded nosing. Finish with monolithic cement mortar (1:2) steel trowelled dense and smooth.

#### **1.4 Jointing**

- 1.4.1 Cut pipes square and with proper pipe-cutting tools. Cut any plastic pipes or fittings with fine toother saw. Re-chamfer spigots if necessary. Push-fit flexible joints: do not use improvised methods for forcing spigots into pipe sockets or connectors. If a joint cannot be made hand-aided by lubricants and properly chamfered spigots, use a mechanical puller that grips the two pipe lengths being jointed. Always use lubricants recommended for the joints. Pus spigots fully home and slightly withdraw (approx 5mm). Joints between dissimilar materials: use adaptors with ends made to suit each type of pipe being joined; do not make improvised joints.

#### **1.5 Pipe runs near to Walls, Retaining Walls and under Pavings**

- 1.5.1 For drains laid within 1m of walls, the trench should be filled with concrete to the level of the underside of the footing. For drains laid further than 1m from walls, trench should be filled with concrete to a minimum level below the lowest part of the footing equal to the distance from the wall, plus an extra 150mm depth of concrete.

## **1.6 Pipes passing through walls**

- 1.6.1 Where pipes pass through walls, a lintelled opening, with minimum 50mm clearance for the pipe, should be provided, and both sides of the opening should be masked with mineral fibre board.

## **1.7 Pipes passing under Buildings**

- 1.7.1 Where pipes run under the building, provide minimum 100mm granular or flexible filling about the pipe. Where the crown of a pipe is within 300mm of the underside of a slab, concrete encasement should be used, integral with the slab, with 100mm concrete about the pipe.

## **2.0 Rainwater Goods**

### **2.1 General Specification**

- 2.1.1 Comply with BS.6367 'Drainage of Roofs' subject to any qualifications given below. Install pipes, fittings and accessories in accordance with BS.8000: Part 13 Section 3 and BS. 5572.

### **2.2 Materials**

#### **2.2.1 Cast Iron Systems**

Any new gutters and downpipes are to be in cast iron to BS 460:2002+A2:2007.

Sandcast (where specified) to be J & JW Longbottom Ltd, Bridge Foundry, Holmfirth, Huddersfield HD7 1AW [Tel: 01484 682 141], Hargreaves Foundry, Water Lane, Halifax, West Yorkshire, HX3 9HG [Tel: 01422 330607] or similar approved. Cast iron gutters and hopper types as specified in the schedules/drawings.

Diecast (where specified) to be J & JW Longbottom, Hargreaves, Saint Gobain or Alumasc cast iron ranges.

#### **2.2.2 Aluminium Systems**

Any new gutters and downpipes are to be in aluminium to BS 2997:1958(1980) and BBA Certified, factory powder coated finish.

New gutters to be Alumasc Heritage Cast Aluminium heavy grade. 125mm diameter beaded half-round with outlets for 100mm dia. circular section downpipes and all appropriate fixing brackets, stop ends, offsets etc. and include shoes to the bottoms of all high and low level downpipes.

Colour powder coat finish provisionally to be 'off-black', RAL to be confirmed.

#### **2.2.3 Fixings**

All bolts, nuts, washers and other metal components shall be protected against rust and electrolytic corrosion and compatible with specified rainwater goods systems in accordance with the manufacturers instructions.

### **2.3 Storage**

- 2.3.1 Store parts adequately supported (to prevent strain or deflection) on bearers/pallets or racks clear of the ground and in a manner that prevents accidental damage including to finishes.

### **2.4 Workmanship – Cast Iron**

- 2.4.1 Fix rainwater goods in accordance with manufacturers recommendations, ensuring that downpipes are fitted vertically and other fittings correctly aligned; gutters are to be fixed with slight downward fall to outlet positions.. Fix using stainless steel fixings or otherwise corrosion resistant compatible with aluminium parts. Seal joints in gutters with sealants recommended by the manufacturer; caulk joints in vertical pipes unless otherwise recommended by manufacturers – where this is the case then install a minimum of 3 lead wedges in joints to centralise pipes and prevent rattle.

### **2.5 Workmanship - Aluminium**

- 2.5.1 Fix rainwater goods in accordance with manufacturers recommendations, ensuring that downpipes are fitted vertically and other fittings correctly aligned; gutters are to be fixed with slight downward fall to outlet positions. Ensure that outlets at ground level are correctly aligned over gulleys so that water will drain cleanly into the gully without overflow.

- 2.5.2 Gutters to be bracket fixed at a minimum 915mm centres with additional brackets/fixings at or near fittings. Use no.12 x 50mm round headed twin thread screws bright zinc plated and passivated to BS EN 12329:2000. Use round heads and washers for direct fix. Good quality sherardized or cadmium stainless steel plated screws may be used but if stainless steel screws are used then all washers must be insulated.
- 2.5.3 Pipes are to be secured with eared sockets at 2.0m maximum centres. Use plugged fixings No.12 x 50mm (or longer to suit spigots with min. 40mm wall penetration) round headed twin thread screws with washers. Bright zinc plated and passivated or cadmium stainless steel plate screws may be used but if stainless steel are used then all washers must be insulated. The pipes are to be set off the wall on copper pipe spigots sufficiently to give a straight pipe drop and an even gap from the walls from the swan neck to the new gulley at ground level.
- 2.5.4 Allow for a 4mm thermal movement gap in joints. Seal gutter sections evenly across the joints with a low modulus silicon sealant (eg. Dow Corning 791), using polyethylene foam backing where advised by manufacturer, and retain with M6 aluminium screws, nuts and washers in accordance with the manufacturers jointing instructions.

## **2.6 Testing**

- 2.6.1 Block outlets and flood gutters, check for leaks and rectify to the satisfaction of the Architect.

## **3.0 Painting and Decoration**

### **3.1 General Specification**

- 3.1.1 Comply with BS.6150 'Painting of Buildings' subject to any qualifications given below.
- 3.1.2 As far as practicable, use methods and materials that do not cause damage to the environment, while ensuring that the standards and quality of the completed project are not compromised.
- 3.1.3 Obtain all coating materials from approved manufacturers. Obtain all non-specialist coatings from one manufacturer whose name shall be submitted with the tender.
- 3.1.4 Use paints in accordance with manufacturer's instructions and recommendations.
- 3.1.5 Abrasive and cleaning materials, knotting, fillers, white spirit and other ancillary materials; as recommended by the paint manufacturer or Architect.
- 3.1.6 Do not use paints containing lead. Take all necessary precautions, and follow manufacturer's guidelines when using products of potentially toxic or harmful nature.
- 3.1.7 Primers: as recommended by the manufacturer for the surfaces to be coated.
- 3.1.8 Undercoats: as recommended by the manufacturer for the surface and paint system.
- 7.1.9 Provide sample areas of all finished colours before proceeding with final painting.

### **3.2 Types of Coating System**

- 3.2.1 Cast and wrought ironwork and steelwork.

All ironwork to be primed with Zinc Phosphate primer and undercoated with Micaceous Iron Oxide paint (prior to installation for new ironwork), applied as manufacturers instructions, with any damage to the undercoat made good before application of top coats.

Apply black bitumen to BS 3416, type I or similar approved to concealed surfaces.

Apply 1 further coat of Micaceous Iron Oxide paint (dark grey) as finish coat on rainwater goods and general ironwork unless a gloss topcoat is specified in the schedule of works.

Apply two full coats of approved oil gloss paint system on metalwork requiring a gloss finish where specified.

### **3.3 Workmanship**

- 3.3.1 Ensure: timing and sequence agreed with others; work by others (that could affect decorations) completed; provision for clean conditions when the decorating work is in progress.

- 3.3.2 Ordering materials: obtain liquid materials in containers sized to suit the extent of work and to prevent the deterioration of residual quantities in opened containers. Maximum generally 5 litres. Order early for non-standard colours and other non-standard materials.
- 3.3.3 Order of working: work in a sequence that ensures that finished work is not spoiled by dust or debris arising from subsequent preparatory work; when planning the work, consider the need for heating or drying equipment.
- 3.3.4 Access: provide step ladders and towers etc.; do not stand on finished work and fittings etc.; do not lean ladders against finished surfaces.
- 3.3.5 Before commencing: remove any removable fittings etc. that could be contaminated by the painting work, or that obstruct the area to be painted, and do not refix until paint is fully hardened; protect surfaces not intended to be coated; protect other finishes; ensure lighting levels are adequate; check moisture content of backgrounds, arrange for the safe disposal of washings and waste materials (disposal into drains is forbidden).
- 3.3.6 Initial preparation of surfaces: remove all dirt and any contaminants before commencing abrasive cleaning; rub down with suitable abrasive paper or cloth, nylon pads and wire wool all surfaces that need smoothing (including sharp arisses) or to improve paint adhesion or to assist cleaning, using wet abrasives to avoid production of dust; rub down in a manner that does not cause damage to frail surfaces, arisses and mouldings etc.; remove dry abrasion dust by vacuum; remove wet abrasion dust by washing (but avoid saturating timber, and do not apply paints etc. while surface is damp); stop nails, screws and cracks etc; fill and smooth depressions, coarse grained surfaces and like defects and blemishes that cause the surfaces to be unsuitable for painting; remove any high spots and leave smooth; fill and stop as early as possible before decorating commences and in such a manner that this work cannot be detected when decorations are complete; seek instructions if any unsound substrates are encountered.
- 3.3.7 Preparation of coatings: generally, prepare coatings in accordance with manufacturers instructions; thoroughly stir liquid paints so that all solids are fully and evenly incorporated; thoroughly shake clear varnish containers, do not stir contents; do not thin paint, unless directed to do so by the manufacturer; take care to observe manufacturers' pot life, timing and curing directions when preparing two-part coatings; discard any coating materials that are lumpy or are suspected to have been frosted or that are in any other way suspect.
- 3.3.8 Final preparation of surfaces: examine the surfaces immediately before painting and, where necessary, undertake the following final preparation; wash, wipe or otherwise remove any dirt or contaminants (do not use a brush which merely moves dust to another surface); remove any moisture and condensation by drying the surface and applying general warmth if necessary.
- 3.3.9 Unsuitable conditions: do not apply coatings when: air borne dust and grit is present; air temperature is below 4°C; relative humidity exceeds 80°; the temperature of surfaces is too low; substrates have not dried out; lighting is inadequate; there is inadequate ventilation, particularly when volatile coatings are being prepared. Some relaxation of these requirements may be allowed provided the coatings being used are resistant to the described conditions, and approval is first obtained.
- 3.3.10 Redecorating: subject to Section 6 of BS.6150, all preceding clauses apply inasmuch as they can be applied to redecorating; remove flaking, peeling and poorly adhering coatings, either to a firm coating or to the original background; if paint failures are due to some unsuitable condition of the background, seek directions.

### **3.4 Inspection, Testing and Protection**

- 3.4.1 Final inspection: undertake a thorough visual inspection with the Architect. The general quality will be judged as follows: satisfactory stopping and filling; uniformity of gloss, sheen or texture; uniformity of colour and obstruction of the substrate; freedom from film defects such as runs, sags, wrinkling, bulking or thinning at edges, entrained dust, dirt or paint; accuracy of cutting in; general cleanliness and overall appearance of the work.
- 3.4.2 Sampling and testing: should any of the coating materials appear to be defective, arrange for tests in accordance with 47.3 of BS.6150 by an approved testing laboratory.
- 3.4.4 Protection: provide adequate general protection to painted/finished surfaces, as necessary for remainder of the Works.

## **4.0 Stonework Repairs**

### **4.1 Recording and Dismantling of Existing Facing/Dressed Stonework as Part of Repair**

- 4.1.1 Prior to dismantling any stonework to allow repair etc., stones should be numbered with chalk or otherwise labelled in a manner agreed with the Architect. Adequate photographs should be taken of the numbered stones in situ to assist in correct reinstatement.
- 4.1.2 Stones should be removed with care and progressively.
- i/ Cut out only/lift only stones where directed by the Architect.
  - ii/ Cut / rake out joints using fine toothed mason's saws and hooked blades to release the stone from surrounding work.
  - iii/ Lever from cavity ensuring surrounding work is not disturbed.
  - iv/ Support surrounding work with timber blocks until replacement or redressed stone is installed.
  - v/ Immediately notify Architect in the event any movement is detected.
  - vi/ Remove all loose material from cavity using a stiff bristle brush.
  - vii/ Rinse out with minimal quantity of clean water immediately prior to placing new or redressed stone.

At high level stones should be laid out in order on the lift of the scaffold which should have been designed to allow a working platform of adequate size as noted in the Preliminaries section. At low level stones should be laid out and stored on timber pallets.

- 4.1.3 Except where otherwise agreed by the Architect or where use of replacement stones has been agreed, stones should be reinstated in their original locations within the repair works. Prepare a set of drawings recording stone repairs carried out, including where reused stone is incorporated, indicating its original position prior to these repairs. Issue copies to the Architect.
- 4.1.4 On completion any labels should be removed or chalk marks brushed off.

#### **4.2 Re-bedding Existing Masonry**

- 4.2.1 Remove all loose particles from the surface of the stone (churn brush) by hand. Thoroughly dampen down all masonry before re-bedding allowing a period for any free water lying on surface of stone to dry out before applying mortar. In hot, dry weather sections of stone to be bedded should be immersed in water for up to ten minutes before allowing surface water to dry out for a short period immediately before bedding.
- 4.2.2 Stone to be bedded to follow line of existing (whether or not the existing is level or plumb) with joint thickness to correspond with that of surrounding masonry.
- 4.2.3 Lay stones on a full bed of mortar with all joints and voids filled. Where necessary use temporary lead or stainless steel distance pieces to ensure consistent joint width; remove when mortar is sufficiently strong.
- 4.2.4 Keep stonework clean during construction and until Practical Completion. Ensure that no mortar encroaches on face when laying. Turn back scaffolding boards at night and during heavy rain. Rubbing to remove marks or stains will not be permitted.

#### **4.3 Preparation of Stonework for Repointing**

- 4.3.1 Extent of all existing mortar to be removed to be agreed with Architect before proceeding with the work. Provisionally this is as shown on drawings.
- 4.3.2 Depth of raking out in preparation for re-pointing to be at least twice the height of the joint and, in any case, not less than 18mm.
- 4.3.3 Lime-based mortar to be removed by hand by scraping (not striking) a sharp chisel or quirk across the joint, ensuring that the back of the joint is square. For fine stone joints a fine toothed saw or hooked blade may be used.
- 4.3.4 Any cement-based mortar to be removed by scraping with a chisel where mortar is loose. Where directed by Architect, firm/sound cement-based mortar to be removed with a hammer and chisel but otherwise should be left untouched. Chisels should be kept sharp, and removal should be carried out by a stonemason and with appropriate care to minimise damage to the existing stonework. Where very hard cement based mortars are encountered, the use of a drill may be permitted to break the back of joints in order to gain an initial purchase for a chisel: pilot holes should be drilled into the centre line of joints using an electric drill with a diamond tipped bit (6mm dia for a 10mm joint) on a low speed and low torque setting. Use of drilling of holes is subject to a test sample of the method to be approved by the Architect.
- 4.3.5 Do not use mechanical chisels, angle grinders, etc. to remove existing mortar.



- 4.3.6 Remove all loose particles from joints and all organic growth (lichen, moss, etc.) from area of stone immediately adjacent to joint (25mm nominal).
- 4.3.7 Thoroughly dampen down masonry with water before re-pointing with lime mortar allowing a period for free water to dry out. As necessary, repeat dampening down of unpointed areas as the work proceeds to ensure masonry is damp when re-pointed.
- 4.3.8 Allow for executing sample panels of pointing in the mortar mix approved in 2.5 to a standard approved by the Architect prior to commencing the works, including a sample area of pointing removal. Sample area of pointing removal and repointing are to be 0.5 metre square in area. Location of sample panels to be agreed with the Architect.

#### **4.4 Repointing Stonework**

- 4.4.1 Point up raked out joints ensuring that mortar is forced well into joints to fill all voids. When mortar is semi-set firmly tamp joints with a churn brush to remove laitance. Face of mortar to be finished just behind the face of surrounding stone stones in ashlar work.
- 4.4.2 Where joints are large (i.e. deeper or wider than 30mm), it will be necessary to point up in more than one application (to avoid slumping of mortar or excessive shrinkage) allowing each application to dry to a semi-set condition before applying more mortar.
- 4.4.3 Mortar joints to be finished flush with surrounding stone with surface of joint robustly tamped with a churn brush when mortar is semi-set (i.e. when mortar surface can still be worked with a brush but without leaving brush marks in the surface of the mortar or smearing mortar onto surrounding stone) to re-compact the mortar and finish the joint.

#### **4.5 Preparation of Mixes**

- 4.5.1 Mortar mixed using a gauging box, mix provisionally 1 : 2<sup>1/2</sup> - lime : sand subject to approval of samples.

##### **4.5.2** *[Mix A] Non-hydraulic Lime Mortar*

Lime to be Singleton Birch Lime Putty or similar and approved.

Mortar to be mixed on site. For non-hydraulic mortar mix up enough lime/sand mortar at start of contract to complete the work set out in Schedule of Works, or in batch sizes to suit work stages. All coarse-stuff mortar (whether mixed on site or supplied to site) to be stored in plastic tubs (or dustbins) or on timber sheeting and protected from the weather and contamination by polythene sheeting/damp Hessian. Coarse-stuff to be remixed immediately before use.

##### *[Mix B] Hydraulic Lime Mortar*

Lime to be hydraulic lime hydrate [NHL 2.0 unless 3.5 specified in schedules] from Ionic (0800 505 3802) or similar approved by the Architect.

Hydraulic lime mortar to be mixed in accordance with manufacturers recommendations (where available) and in batches of appropriate size to suit setting rates, weather conditions and work stages. Hydraulic lime mortar will undergo an initial chemical set and therefore cannot be 'knocked up' but must be used as soon as possible after mixing.

##### *[Mix C] Hot-mixed Mortar*

Lime to be Singleton Birch or other approved fine ground quicklime powder. Mix proportion 1 quicklime to 3 sand subject to approval of samples. Use appropriate PPE and metal containers for mix. Mix by hand or, subject to training, pan mixers (not drum mixer).

Keep on site a suitable probe-type temperature gauge to allow safe monitoring of mix temperature. First mix the quicklime with damp sand and allow initial heat to dissipate (use temperature gauge to check) then form a dish in the mix and gradually add water, again allowing heat to dissipate, then mixing to achieve a

All operatives must have attended a training session for mixing and using hot-lime mortar before mixing or use (Nigel Copsey 07845 739594 or other approved/appropriately qualified trainer – training costs must be included in tender figure).

##### **4.5.3 Aggregates and inclusions for use in mortars (if specified in schedules)**

Sand provisionally to be Baston plastering sand (Peterborough – Hanson Aggregates 0330 123 4505).

Grit to be clean sharp grit, provisionally Chichester No.1 Grit (Tarmac Quarry Products). The proportion for the addition of grit is to be confirmed through approval of samples.

Fine ground stone dust to pass through a 0.6mm sieve.

Pozzolan to be Trass provisionally added at a rate of 5% by volume to lime (Cornish lime 01208 79779 or other approved supplier).

Other inclusions to be introduced only on discussion and approval of the Architect, approval of suppliers and agreement of samples.

#### **4.5.4 Samples and approvals**

Prepare biscuits of mortar samples, samples of raking-out and repointing/consolidation as required in the Schedule of Works. Undertake in-situ samples in locations pre-agreed with the Architect. Await approval before implementing samples elsewhere in the works.

#### **4.6 Repairs to Fractured Masonry**

4.6.1 All repairs to masonry to be agreed in detail with Architect before proceeding with the work.

4.6.2 Fractures in dressed masonry to be pinned using threaded stainless steel stud 8mm diameter, in a hole drilled with an 8mm bit, unless otherwise directed. Pins to be positioned skew at an angle of between 45° and 60° to the face of the fracture and anchored in an annulus of epoxy resin, Sikadur or similar and approved, type as recommended by manufacturer as appropriate for this use.

#### **4.7 Dowels and Cramps**

4.7.1 Dowels and cramps are to be of Delta bronze or stainless steel as directed by the Architect. Approved manufacturers of dowels and cramps are Abbey Building Supplies Co., 213 Stourbridge Road, Halesowen, West Midlands B63 3QY; Ancon Building Products, President Way, President Park, Sheffield, S4 7URACS Stainless Steel Fixings Ltd, Cross Green Approach, Leeds, LS9 0SG. Stainless steel to be grade 1.4401 to BS EN 10088 and BS EN 10027.

4.7.2 Existing rusting iron cramps are to be carefully removed where accessible during the works or where directed in the schedules/drawings and replaced with new cramps generally to match the design of the originals or, where agreed with the Architect, to new design.

#### **4.8 Protection**

4.8.1 Store dressed stone clear of the ground, separate with resilient spacers, protect from inclement weather and keep dry. Prevent soiling, chipping and contamination by salts and other deleterious substances. Prevent timber bearers, protective boards, etc. from staining facings in wet conditions by covering with polyethylene or tarpulins held off the face of the stone or separated by undyed hessian. Prevent damage and disfigurement to stonework during the course of the works. Ensure that arrises and projecting features are protected using securely fixed slats, boards, etc. Remove at Practical Completion. Repairs to damaged components must not be undertaken without approval. Such approval will not be given where components are badly damaged or where the proposed repair will impair appearance or performance.

4.8.2 Refer to section C13 for requirements and limitations on masonry works in respect of inappropriate and inclement weather conditions.

#### **4.9 Indent Repairs**

4.9.1 Cut back existing stone to the minimum amount required to accept stone insert, removing decayed stone, cutting back a minimum of 20mm and back to sound stone using narrow chisels (maximum 10mm cutting edge) or sharp saw blades.

4.9.2 As specified on the drawings generally to a minimum thickness of 20mm.

4.9.3 Profiles of indents to follow that of the original line of the stone into which they are being inserted. Where possible the edges of the stone are to be formed so as to undercut or be dovetailed to the existing. Where indent repairs continue through a designed joint in the existing stone the inserts should be cut to respect the existing breaks in the stone, with joints pointed-up.

4.9.4 Unless otherwise directed, Indents to be pinned with a minimum of two 8mm treaded steel pins set into holes drilled with an 8mm bit grouted and faced with neat lime putty slurry.

#### **4.10 New Stone Dressings etc.**

4.10.1 New stone to be pieced-in to follow line of coursing and perpend as existing with thickness of courses and perpend to correspond with existing. All voids between new stone and existing fabric to be packed thoroughly with mortar.

4.10.2 Avoid smearing mortar on face of stone. All mortar to be removed within one hour of stone being set in position.

4.10.3 Line of moulding/carving to stone dressing to be formed from templates/maquettes made by Contractor at no extra cost to be approved by Architect. Where there is no or limited evidence of the design of original stones/stones to be replace the Architect is to be consulted regarding the design of the new stones and the Contractor is to prepare templates/maquettes based on these recommendations.

#### **4.11 New Stone Dressing - Tolerance**

4.11.1 All new stone blocks to be finished to not more than + or - 2mm deviation from dimensions of void cut out from existing block or from line of templates/maquettes/architect's drawings.

#### **4.12 New Stone Dressing - Finish**

4.12.1 Provide coarse rubbed finish to all visible faces ensuring all machine marks are removed. Where existing or surrounding stone has a tooled finish, provide tooled finish to a design agreed with the Architect.

#### **4.13 New Stone Dressing - Structural Integrity and Defects**

4.13.1 Ensure that all blocks are free from defects that could affect the structural integrity of the stone in use. All blocks with vents, cracks or other structural defects will be rejected.

4.13.2 All stone which is chipped, pitted or cracked on the visible face will be rejected. Stone with chips/pitting/cracks filled with stone dust/resin will not be accepted.

#### **4.14 New Stone Dressing - Bedding**

4.14.1 Unless otherwise specified, stone to be laid on natural bed.

4.14.2 Where specified, stones not laid on natural bed to be edge-bedded.

#### **4.15 Replacement stone - Source**

4.15.1 Allow for advising on and sourcing samples of stone for consideration for use in repairs.

4.15.2 Provisionally any new limestone in the context of replacement of Lincolnshire limestone details to be Ancaster Hard White or Stretton Hooby Lane.

Samples should be provided for approval by the Architect. Stone to be selected from beds chosen to best match the existing stone in terms of colour and petrology.

## **5.0 Carpentry Works and Timber Repairs**

### **5.1 General Requirements**

5.1.1 Comply with BS.5268: Parts 2 & 3, 'The Structural Use of Timber' and BS.1186 'Timber and Workmanship in Joinery' Part 2.

### **5.2 Materials**

#### **5.2.1 New Hardwood**

To be FSC or equivalent certified chestnut, oak or other British and approved durable timber, free of bark, sapwood, decay and free from all other defects that may affect the strength or integrity of finished work. For high quality and/or joinery situations, to be free from decayed or loose knots, splits and any sign of fungus/insect attack except pinholes - defects to be excluded from finished surface are: checks and shakes wider than 3mm or longer than 300mm or deeper than one quarter the full corresponding dimension of the piece; pitch pockets and pith; arris and splay knots; knots or groups of knots over 6mm in diameter. Hardwood for splicing and piecing-in repairs, and where shrinkage or movement would be unacceptable, to be fully seasoned to 12-16% moisture content. Semi-

seasoned timber, where limited shrinkage or movement may be acceptable, to be moisture content 18-22%. Green/unseasoned timber is not to be used.

### **5.2.2 New Softwood**

To be FSC or equivalent certified slow grown/closegrained Douglas Fir *Pseudotsuga menziesii* or Baltic redwood, Strength Class C24 to BS5268-2. Timber generally to be merchantable, properly seasoned straight timber, free from any defects or combination of defects, natural or otherwise. Sorted and selected for suitability of purpose, and to be obtained from sustainable managed sources where practicable. For high quality and/or joinery situations the timber should display the following additional characteristics: growth rings minimum 10 per minimum per 25mm; grain slope maximum 1 in 10; free from decayed or loose knots, splits and any sign of fungus/insect attack except pinholes. Permissible defects to be excluded from finished surface are: checks and shakes wider than 3mm or longer than 300mm or deeper than one quarter the full corresponding dimension of the piece; pitch pockets and pith; arris and splay knots; knots or groups of knots over 6mm in diameter. Moisture content 9-16%, according to location of joinery.

### **5.2.3 Timber for Grounds, etc.**

Timber permanently concealed in the finished work shall be free from any defects likely to affect the stability of the work, and shall be treated with preservative and to comply with BS.5268.

### **5.2.4 Fixings**

Fixings for timber work shall be nails BS.1202 Part 1; screws BS.1210; coach screws BS.916; bolts BS.6105, straps etc. as hereafter specified, all to be stainless steel.

### **5.2.5 Plates and Bars**

T-bars, straps or fitch plates used for the reinforcement of timber members and joints are to be of stainless steel, unless otherwise approved by the Architect. Stainless steel to be grade 1.4401 to BS EN 10088 and BS EN 10027.

### **5.2.6 Adhesives**

Adhesive mortar for use in gluing repair joints, splice repairs etc., to be 'Sikadur 31' Epoxy Adhesive Mortar by Sika Ltd., Watchmead, Welwyn Garden City, Herts. AL7 1BQ (Tel: 017073 29241) or similar. Follow manufacturer's instructions for use.

If recommended by the adhesive manufacturer, neutralise acidic resins within new/cut oak by applying a weak alkali solution (eg. 1% sodium carbonate in water) to ensure setting of adhesive is not retarded. Allow surface to dry thoroughly before using adhesive.

For other situations, adhesive to be approved synthetic resin to BS.1203 or 1204 (as appropriate) of the correct class for the duty and type of joint. Glue bond: use WBP for external work, MR for internal work .

## **5.3 Preservative Treatments.**

5.3.1 Where specified as preservative treated, timber treatment should be vacuum/pressure with Tanalith E preservative to comply with Treatment Code HTE/BI. In addition, treatment should comply with BS.5268 and to British Property Federation (formerly British Wood Preserving and Damp Proofing Manual) commodity level C4 service life 60 years or better as appropriate. As much cutting/machining of timber to size should be carried out as possible before preservative treatment is carried out. Brush apply preservative as recommended by the main treatment manufacturer to all cut or machined surfaces before assembly/installation.

5.3.2 To existing timber in areas affected by decay (and where bats are not present) apply Deepkill Timber Paste Wood Preservative or two full coats of Sadolin Quick Drying Preservative to saturation, allowing to dry fully before applying coatings. Where risk of impact on bats is suspected consult the bat surveyor on suitable treatments products. Decayed timber should be cut away, cutting at least 25mm into sound timber and new timber spliced in or filler repairs used as directed by or agreed with the Architect.

## **5.4 General Timber Repair Requirements**

### **5.4.1 Selection and Marrying of timber in Splice Repairs**

New timber for use in splice repairs to existing members should be selected for similarity of grain pattern and grain alignment, with new grain to run parallel with the existing.

## **5.5 Typical Repair Joints**

5.5.1 Where any new timberwork that incorporates or replaces more than one jointed timber should be replaced to incorporate the original joint design, sizes etc. Jointing sections of timber should be carried out using traditional

splice joints of appropriate type and lap, to be agreed in advance with the Architect. Splice joints in rafters should be positioned over purlins where applicable.

5.5.2 Where possible, repairs are to be executed insitu.

5.5.3 Any externally exposed joints are to be formed/designed/executed to exclude moisture by means of sloping bearings to direct water out of joints etc.

5.5.4 Use diamond shaped pellets to cover bolt holes in finished work where if specified on drawings or schedules.

## **5.6 Matching of Profiles & Finish of Timber**

5.6.1 New sections of timber, whether a spliced-in repair or complete new timber, should be made up using the best available original profile of the relevant original member, even if this does not accord with the worn or damaged profile to which it will be attached. Unless stated otherwise, any replacement timbers should be of a similar size and form to those they replace.

5.6.2 Timbers or mouldings are not to be distressed to accord with their original neighbour as this creates a false impression of the historical and aesthetic value of the structure.

5.6.3 In visible work timbers are to be wrot/planed or machined finish unless agreed otherwise with the Architect. Where timbers are concealed sawn finish will be accepted.

## **5.7 Isolation of Timbers From Masonry etc.**

5.7.1 Where use of DPC's is specified these are to be Rubberoid Hiloal or similar and approved.

## **6.0 Metalwork**

### **6.1 Structural Steelwork**

Comply with BS EN 1090-1 & 2:2008+A1:2011, and the latest edition of the National Structural Steelwork Specification for Building Construction, subject to any qualifications given below. Where there is conflict between different standards, tolerances or special requirements that may have an impact on the works, seek clarification from the Architect.

### **6.2 Non-Structural Metalwork**

#### **6.2.1 General Requirements**

Where appropriate comply with BS EN 1993 and comply with all relevant BS.s in respect of other fabricating and finishing all other metalwork.

#### **6.2.2 Materials**

Contractor's responsibility regarding grades of metals: when a precise grade or alloy of metal is not specified, the contractor shall obtain the metal from a specialist supplier or fabricator who shall be informed of the particular application of the metal in the Works. By this method, or by otherwise obtaining specialised advice from reliable sources, it shall be the Contractor's responsibility to use the correct material suited to its application in the works.

Mild steel: the term 'steel' or 'mild steel' mean steel to BS.1449: Part I, BS EN ISO 18286:2010, BS 7668:2004, BS EN 10025-1:2004 or BS EN 10210-2:2006.

Stainless steel: austenitic steel, grade 1.4401 to BS EN 10088 and BS EN 10027 unless specified otherwise.

Aluminium: the term 'aluminium' means wrought aluminium alloys for general engineering purposes in accordance with BS EN 515:1993, BS EN 485-3:2003, BS EN 573-4:2004, BS EN 573-5:2007, BS EN 573-3:2009.

Brass and copper (copper alloys): BS EN 1172:2011.

Bronze to be phosphor bronze.

#### **6.2.3 Mechanical Fastenings**

Generally, unless otherwise specified, to be in the same metal and finish as the work being joined or fixed.

Bolts, screws and nuts: to BS 4190:2001 for general purposes. To BS 3692:2001 when a greater degree of precision is required. Unless stated otherwise, steel grade 4.6 with matching grade nuts.

Expanding bolts: a proprietary fixing comprising corrosion resistant expanding insert and removable bolt or threaded stud to suit the work being fixed. Set screws: to BS.4183 or BS EN ISO 1580:2011.

Self tapping screws: steel thread forming or thread cutting screws to BS EN ISO 1479:2011 or BS.4174 with rust-proofed finish.

#### **6.2.4 Coating Materials**

In addition to specified surface finishes, treat or seal permanently hidden parts of metalwork

#### **6.2.5 Storage and Handling**

Self-finished fabrications and components: wrap, tape or otherwise protect any self-finished work with nonabsorbent coverings; deliver to a programme to reduce or eliminate site storage; remove coverings sufficiently for jointing and assembly purposes and afterwards replace.

#### **6.2.6 Workmanship**

Generally: undertake metalwork in accordance with sound engineering and smithy practices, and as follows: undertake as much metalwork as possible in properly equipped workshops; restrict site work to fixings and other operations that cannot be undertaken as last stated; remove burrs, sharp edges and angles, coarse file marks, excess weld metal and similar imperfections from all classes of work; do not permit work to rust or otherwise deteriorate between fabrication and final treatment; prevent damage due to incorrect temperatures when carrying out work requiring heat; if necessary, undertake heat treatment to provide stress relief; fix in the works in a manner that prevents corrosion due to contact with incompatible metals and other materials.

Drawings: where necessary/appropriate, prepare fully-dimensioned shop drawings.

Cutting and holing: undertake in a manner that does not deform or damage the material. Generally, cut by shearing or sawing, form holes by drilling or punching. Do not cut by hand held flame. Do not use the same cutting mechanical cutting tools for incompatible materials.

Welding: undertake welding as follows: in accordance with the appropriate BS for the type of metal being joined; by welders who have recently passed the BS welding test appropriate to the type of metals being joined; form continuous welds suited to the type of work; finish welds to match the surface (on surfaces unseen in the finished work, the welds may be left as laid); spot welds are not permitted unless specified or used to assist assembly; clean off all welds and remove flux residues; apply quality control procedures with a suitable inspection and testing regime for welds serving stressed or critical duties; provide sheltered draught-free conditions for the welding of aluminium.

Bending metal: machine bend, press, cold roll, forge or otherwise shape metal without weakening or damaging. Complex bending or bending alloys for special purposes shall be undertaken under competent metallurgical supervision.

Joint faces: form to fit accurately in full contact. Use a suitable joint coating for bolted or screwed connections (eg. a primer for fabrications which will be painted).

Protective finishes generally: apply protective coatings after fabrication; make good any subsequent exposure to the standard of the coating. Subject to approval, and if an equivalent standard of protection and finish will be attained, pre-finished metal may be used. Before treatments, mechanically and chemically clean the metal.

Priming: prime the concealed parts of the joints (eg. spigots, sleeved ends, joint faces) as the joints are made. Use the specified primer and apply by brush. Do not apply any primers by spray. Do not spray any metalwork unless specified (ie. sprayed coating applied as temporary protection is not permitted).

Where galvanising is specified or appropriate as a coating this is to be Hot Dip Galvanising to BS EN ISO 14713-2:2009. Re-coat unavoidable damage (eg. post fabrication welding) by applying at least 2 coats of zinc rich primer to BS.4652. Where metalwork is described as galvanised finish, metalwork must be designed, fabricated and assembled in a manner that prevents damage to galvanised surfaces - remove all burrs, roughness, smooth welds and otherwise prepare finish of metalwork before galvanising to ensure a high standard of finish following coating without need for remedial work.

Sherardising: zinc coat all small articles (eg. bolts etc.) associated with galvanised work (and other small articles described as sherardized or zinc-plated) in accordance with BS.4921, Class 1 for general internal service, Class 2 for external service, or in humid conditions.

Stove Enameling: a glazed high gloss finish to BS EN 14431:2004. Coating to extend into concealed areas to afford adequate protection.

Stove Powder Coatings: approved proprietary system, eg. Syntha Pulvin, carried out strictly in accordance with manufacturers instructions.

Anodizing: to BS EN 12373-1:2001 (or BS.3987 if appropriate for external architectural features), grade AA10 (general use, with frequent washing), AA15 & AA20 (external use with frequent washing) or AA25 (windows etc.),

colour and finish to be agreed via samples.

Aluminium abutting masonry: apply two coats of bitumen to aluminium in contact with mortar, concrete, or other alkaline surfaces.

Assembly joints: fabricate metalwork with joints that will permit the work to be dismantled after workshop assembly into sections small enough for transport and site handling or small enough for tank immersion or other treatments that impose size limits. Unless joints are shown on the drawings, design them to incorporate the following characteristics: unobtrusive appearance; strength not less than the unjointed member; ease of assembly without damage to the surface treatment; moisture proof if exposed to moisture; weatherproof if exposed to weather.

### **6.2.7 Inspection**

Generally: carefully examine and test all work in which strength forms a critical factor (eg. safety rails, cat ladders) after final fixing.

### **6.2.8 Protection**

Self-finished metalwork: protect from all likely forms of damage. Upon completion (or when directed) remove all tapes, casings or other covers and clean and polish the metalwork.

### **6.3 Other Materials**

Where other materials are specified or incorporated into metalwork items, these should generally be to the standards and specifications as appropriate, stated elsewhere in this specification for other work sections, and should be included for in the items below, unless otherwise covered.

## **7.0 Joinery**

### **7.1 General Specification for Joinery Items.**

#### **7.1.1 General Requirements**

Comply with BS 1186 Part 2: 1988 Specification for Workmanship in Joinery; where appropriate, BS644 Part 1: 2003 Specification for Factory Assembled Windows.

#### **7.1.2 All Timber**

Merchantable, properly seasoned straight timber, free from any defects or combination of defects, natural or otherwise. Sorted and selected for suitability of purpose, and to be obtained from sustainable managed sources where practicable. Good quality second hand timber may be used in certain circumstances, subject to the approval of the Architect.

Materials and workmanship for metal and glass, etc. forming an integral part of the joinery fittings shall comply with specifications for the work sections concerned.

Paint prime, with approved primer, windows, doors, skirtings, architraves, linings etc, where to be decorated with opaque coatings, prior to installation, unless indicated otherwise.

#### **7.1.3 General Joinery for Painting etc.**

Timber for joinery to be decorated with opaque coatings, shall comply with BS EN 942:2007, as follows:

Hardwood or imported softwood, BS EN 350-2 or 460 durable, but excluding hardwood described as resinous, BS EN 942:2007 class J30 or better;

Average percentage of moisture content as recommended in BS EN 942:2007 Table 2 according to location and circumstance.

No exposed pith, arris knots, plugs or insertions permitted on any faces, concealed or otherwise, in external joinery.

#### **7.1.4 Joinery: High Quality Work**

Complying with comply with BS EN 942:2007 class J10 or better, timber for high quality joinery except where specified otherwise, to be selected merchantable Swedish, Finnish or Russian Redwood or selected merchantable Douglas Fir. Timber should be obtained from sustainable managed sources where practicable. Moisture content 9-16%, according to location of joinery. Growth rings minimum 10 per minimum per 25mm. Grain slope maximum 1 in 10. Free from decayed or loose knots, splits and any sign of fungus/insect attack except pinholes. Permissible defects to be excluded from finished surface are: checks and shakes wider than 3mm or longer than 300mm or deeper than one quarter the full corresponding dimension of the piece; pitch pockets and pith; arris and splay knots;

knots or groups of knots over 6mm in diameter.

#### **7.1.5 Timber for Grounds, etc.**

Timber permanently concealed in the finished work shall be free from any defects likely to affect the stability of the work, and shall be treated with preservative to BS.5589: 1989 Table 5 Performance Level B for minimum 30 years service life.

#### **7.1.6 Timber for Lippings and Beads**

Timber for lippings and beads to be straight grained, with good machining properties.

#### **7.1.7 Preservative Treatments**

Treat all external joinery, and all joinery directly fixed to solid external walls etc., or where there is a risk of damp, in accordance with BS EN 1995-1-1:2004+A1:2008 and treated to British Wood Preserving and Damp Proofing Manual commodity level C4 (or equivalent) service life 50 years or better. New joinery to be fabricated from pretreated timber: brush apply the preservative to all cut or machined surfaces before assembly.

#### **7.1.8 Fire Retardant Treatments**

Combined preservative and fire retardant treatment to be Dricon pressure treatment, to be carried out accordance with manufacturers instructions and BBA Agrément certification. Lonza, Wheldon Road, Castleford, West Yorkshire, WF10 2JT, 01977 714000.

#### **7.1.9 Plywood**

Manufactured from hardwood and in compliance with BS.636:2003: grades EN 636-1 S structural, for dry conditions; EN 636-2 S structural, for humid conditions; EN 636-3 S structural, for exterior conditions. Marine plywood to BS 1088. Avoid products known to emit significant amounts of formaldehyde or other noxious fumes.

#### **7.1.10 Chipboard**

Manufactured to BS EN 312: use generally grade P5; use P7 where higher load-bearing properties are appropriate. Avoid products known to emit significant amounts of formaldehyde or other noxious fumes.

#### **7.1.11 Fibreboard**

MDF (medium density fibreboard) in accordance with BS EN 622-5: MDF. LA load-bearing, dry conditions; MDF. HLS load-bearing, humid conditions.

Hardboard in accordance with BS EN 622-2: B.LA Load-bearing, dry conditions; HB.HLA1 load-bearing, humid conditions; HB.HLA2 heavy duty load-bearing, humid conditions.

Avoid products known to emit significant amounts of formaldehyde or other noxious fumes.

#### **7.1.12 Flakeboard**

To BS EN 300 Oriented strand boards (OSB). Definitions, classification and specifications. OSB/2 load-bearing, dry conditions; OSB/3 load-bearing, humid conditions; OSB/4 heavy duty load-bearing, humid conditions,

Avoid products known to emit significant amounts of formaldehyde or other noxious fumes.

#### **7.1.13 Adhesives**

Generally to be to BS EN 204 grade D4.

#### **7.1.14 Mechanical Fastenings**

Protect all metalwork, nails, screws and other fastenings by sherardising, galvanising or other suitable plating for all external work, work in areas of high humidity, or corrosive conditions. For acidic woods (such as oak) use brass or stainless steel.

Nails to BS.1202: for decorative work, lost headed nails suitable for stopping. Screws to BS.1210: brass or stainless steel when used for hardwood or clear finished work. Cups for screws: brass or stainless steel heavy pressed socket pattern to BS.1494: Part 2. Dowels: galvanised steel, not less than 12mm dia. x 100mm. Frame cramps: heavy galvanised steel cramps twice holed and fanged for building in. Expanding bolts: propriety fixing comprising corrosion resistant expanding insert and removable bolt or threaded stud to suit the work being fixed: to be approved by the Architect.



## **F SCHEDULE OF WORKS**

Submission of priced documents - all project costs, including preliminaries and management costs, are to be identified in the schedule below including costs related to works and liabilities referred to in sections A - E.

This Schedule of Works is a guide only and must be read in conjunction with the specification and drawings. Prices should include for all work reasonably apparent from all documents and site inspections as required to complete the work and to the appropriate standard for historic building conservation work. Whilst for convenience work is described in sections based on different trades, the Contractor must ensure that all interrelated work including necessary builders work is included as appropriate within pricing,

### **I.0 Preliminaries**

- I.1 Provide secure hired-in site WC, welfare and storage facilities as required during the contract period, ensuring the proposed accommodation provides an appropriate degree of security, paying all cleaning and hire costs.
- I.2 Provide water bowsers and supply all water required for welfare purposes and for use in the works.
- I.3 Provide all management costs to include site manager.
- I.4 Provide all plant, hoists, excavators, temporary props and shores, platforms, lighting, generators, specialist equipment etc as required to carry out the works.
- I.5 Provide temporary services including laying on/amending any services and paying all bills in order to carry out the works.
- I.6 Provide a site telephone to allow issuing of instructions and summoning of emergency services. A mobile phone will be acceptable provided that a single phone with fixed number is always on site and kept charged with adequate reception. Provide a contact number for out-of-hours emergencies.
- I.7 Provide all necessary fire fighting and detection equipment, including that required to comply with hot work restrictions and procedures.
- I.8 Provide all necessary personal protective equipment required to safely carry out the works. Keep available a minimum of 2 hard hats for use by visitors.
- I.9 Take all necessary measures to protect building users from risks associated with the works. Maintain escape routes. Protect from falling debris, dust, fumes, water, noxious chemicals etc. Keep access routes clear. Avoid noisy activities when the building is in use during working hours. Provisionally working hours are limited to 7.30am - 6pm Monday - Friday, 8.30am - 2pm Saturday with no work on Sundays. Provisionally allow for quiet working for an average of 2.5 hours per week for funerals etc.
- I.10 Scaffolds must be designed to provide both a working platform and to allow materials to be safely stored at high level as required.

Access and scaffolds: include for the following scaffolds and access as a minimum, and including for any phasing of scaffolds (if needed) to allow works to proceed in an appropriate and safe manner:

- a/ Provide fixed scaffolds or mobile towers as necessary to allow all works to rainwater goods;
- b/ Provide fixed scaffolds to all exterior sides of the North Aisle to allow the completion of stonework repairs.

c/ Provisionally provide scaffolding to the tower full height with boarded lifts at 2 metre intervals full height on the south and west elevations, boarded lift at belfry window level only on the north and east elevations.

d/ Provisionally allow for scaffolding inside the tower; allow for propping the internal upper floor from ground floor level and then installing scaffolding provisionally to the level of the bell frame top.

e/ Provide other platforms, guardings, ladders, platforms, harnesses or other access measures as necessary to safely allow works elsewhere described to be carried out.

Refer to preliminaries for additional information related to design of scaffolds including need for freestanding design and caps to putlog ends. Refer to preliminaries and I.11 below for security requirements.

I.11 Provide for ensuring the security of the site during the works. Any fixed scaffolds must be enclosed at ground level with solid metal hoardings to a height of min 4 metres, ladders to the first two lifts must be removed at the end of each day; external mobile towers must be removed and securely stored at the end of each working day. Additionally enclose external working areas with Herras fencing. Bring materials to site only when required and store all valuable materials in secure containers. Take all reasonable measures to ensure the security of the building and works.

Provide monitored scaffold alarms - whether PIR or Beam alarms, the coverage of the system must ensure that all elevations of scaffold are protected from unauthorised access. Note that the parish will have no cover for external metal theft whilst any fixed scaffolds are in place or under construction.

I.12 Provide all necessary protection to the existing building fabric, finishes, fittings and furnishings as necessary during the works including (list not exclusive):

- Sheeting over fittings and physical protection where potentially vulnerable to damage;
- Protect any vulnerable headstones/gravemarkers, enclosing gravemarkers vulnerable to physical damage with temporary plywood casings; other headstones in the vicinity of works to be protected with bubble wrap or similar;
- Protection to glazing in the vicinity to scaffolds and works as described in the preliminaries; the east window to the chancel must have boarded protection consisting of lightweight insulation board (eg. Celotex) installed before the commencement of scaffolding erection;
- Be aware of the historic significance of the font and pew ends and provide protection if any work underway in their vicinity that might cause damage.

I.13 Locate and protect all existing building services. Be aware that the routes of building services are all not known. Be aware of cables serving external flood/bollard lighting.

I.14 Include the provisional sum of £150 for an archaeologist to prepare a Written Scheme of Investigation/Watching Brief for approval by the Diocesan Archaeological Advisor.

I.15 Include for taking measurements and producing marquettes and drawings etc. as required to allow the works to be undertaken.

I.16 On completion of the Works, clean working areas and remove protection. External areas should be cleaned of debris; damaged surfaces and features must be repaired, bare grass seeded etc. Remove and dispose of all waste materials. Make good any damage caused by the works.

I.17 Any other preliminaries items or costs (identify below)

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## **2.0 Surface Water Below-Ground Drainage**

*All excavation to be by hand and to be supervised by an archaeologist under a Watching Brief.*

- 2.1 Install new clay roddable gullies under all existing or proposed downpipe locations. Ensure that gulleys and downpipes are correctly aligned and set in concrete as manufacturers recommendations (11 no. gullies in total).
- 2.2 To each new downpipe gully referred to in 2.1 provide raised kerbs using 50mm thick Yorkstone to 3 sides with a piece of slate against the church wall, all bedded with mortar/haunching, to direct water into the gully, height of Yorkstone 300mm with 200mm above gully level. Provide a further loose Yorkstone slab cut to fit on top of the kerbs and to fit around the base of the downpipe.
- 2.3 Provide new drains to connect all new gullies (described 2.1) to 5 no. new 450mm diameter inspection chambers locations and onward to soakaway locations. Excavate trench to an assumed average depth of 600mm. Lift turf to allow drain installation; provide granular fill around 100mm Polypipe drainage pipes, then backfill, compact and relay and level turf and seed any bare soil. Ensure that drains generally have a minimum 1 in 40 fall towards new manholes. Install Polypipe Terrain new inspection chamber with cover and backfill with concrete in accordance with manufacturers instructions and secure cover frames with mechanical fixings/concrete haunching. Additionally supply and install 1 no. rodding eye as shown on plans installed in concrete bedded and with cover as manufacturers recommendations.
- 2.3 Excavate 2 no. new soakaways in provisional locations as shown on plans of provisional size 1500 x 1500 x 1800mm deep; line with geotextile and backfill with clean broken stone/hardcore once the drainage pipe is installed; connect drains with a T-junction to a vertical pipe in the centre of the soakaway extended up to ground surface level with a proprietary bung inserted into the pipe top and covered with a concrete slab. Cover hardcore with further geotextile and top-up with 250mm topsoil. Lift turf to allow creation of soakaway and reinstate on completion and seed any bare soil.
- 2.4 Dig/break out all existing drains, gulleys etc. within drainage trenches/routes as required to facilitate new drainage and remove from site.
- 2.5 Sift and spread any spare soil from excavations in agreed locations in the churchyard and spread and water-in grass seed.
- 2.6 Make good any tarmac, concrete or other pathways/surfaces to match existing except where otherwise described.
- 2.7 Allow for archaeological supervision of all excavations at the provisional rate of £350 per day for each day of hand digging.

## **3.0 French Drains**

*All excavation to be by hand and to be supervised by an archaeologist under a Watching Brief.*

- 3.1 To the north side of the Nave and Chancel, as shown on plans, form new French drain containing land drain. Against the base of walls carefully excavate a trench of provisional depth 500mm (ensuring foundations are not undermined) with the base of the trench to a fall of not less than 1 in 80 to provide fall for new land drains, taking care not to disturb pipes and fittings associated with rainwater drainage. The width of the trench is to typically be 450mm from the main wall face and the base of the trench should also have a fall of approximately 15° away from the wall face towards the land drain position. In the base of the trench lay 100mm diameter corrugated polypropylene flexible land drainage pipe wrapped in Terram or similar approved geotextile. Also line trench with Terram and backfill with clean hardcore/broken

stone. Provide a 25 x 150mm tanalised timber edging to the drain, pegged into position. Provide further geotextile over the top of the hardcore fill and fill between the edging and wall base with nominal 100mm depth of washed pea shingle to the entire new French drain area as a topping. Ensure that land drains have a continuous downward wall of not less than 1 in 80 towards outlets. For the final connection into inspection chambers use a section of plain Polypipe minimum length 1 metre with 1 in 20 downward fall.

- 3.3 Re-grade surrounding grassed areas suit French drains and to ensure as far as practicable that gradients and profiles are reasonably maintainable with mowers. Seed bare earth, water-in and subsequently water regularly until established.
- 3.4 Allow for archaeological supervision of French drain excavations deeper than 300mm at the rate of £350 per day for each day of hand digging.

## **4.0 Rainwater Goods**

*All works provisional and subject to site inspection and agreement.*

- 4.1 To the north elevation of the Nave remove and dispose of existing uPVC rainwater goods and associated fixings. Provide new 150mm diameter diecast iron beaded half-round gutter to falls and allow for 2no. 100mm diameter downpipes RWPI & RWP4 with offsets to gutters and with shoes discharging immediately ground level gullies,. Install new downpipes with plastic bobbins using stainless steel fixings into stonework. Install gutters on suitable brackets designed and recommended by the manufacturer for the situation, provisionally rise-and-fall brackets.
- 4.4 To the north and south elevations elevation of the Chancel and to the Organ Chamber/Vestry remove and dispose of existing cast iron rainwater goods and associated fixings. Provide new 125mm diameter diecast iron beaded half-round gutter to falls and allow for 2no. 100mm diameter downpipes RWP5,6 & 7 with offsets to gutters and with shoes discharging immediately ground level gullies,. Install new downpipes with plastic bobbins using stainless steel fixings into stonework. Install gutters on suitable brackets designed and recommended by the manufacturer for the situation, provisionally rise-and-fall brackets.
- 4.7 To the south elevation of the South Aisle remove and dispose of existing cast iron rainwater goods and associated fixings. Provide new 150mm diameter diecast iron beaded half-round gutter to falls and allow for 2no. 100mm diameter downpipes RW8 & RWPI I with offsets to gutters and with shoes discharging immediately ground level gullies,. Install new downpipes with plastic bobbins using stainless steel fixings into stonework. Install gutters on suitable brackets designed and recommended by the manufacturer for the situation, provisionally rise-and-fall brackets.
- 4.8 To each side of the South Porch and North WC. extension allow for adjusting existing cast iron rainwater goods as required to suit new ground level gullies.
- 4.9 Test all rainwater goods completion including stopping outlets and flooding gutters to check for leaks from joints.
- 4.10 Generally remove any old plugs from walls where old rainwater goods removed. Fill all holes with NHL2.0 lime mortar coloured with stone dust.

## **5.0 Decoration Works**

- 5.1 To all new cast iron rainwater goods allow for priming with red-oxide primer, applying 2 coats of micaceous iron oxide paint undercoat and one full coat of topcoat (Dulux trade exterior gloss) before rainwater goods are installed. Apply a second full coat of topcoat once rainwater goods are installed. Colour to be off-black.
- 5.2 To all retained cast iron rainwater goods, clean down, rub-back any areas of rust to bare metal and prime with red-oxide primer, and 2 coats of micaceous iron oxide paint undercoat. Then to all parts including brackets, apply two coats of gloss topcoat. Colour to be off-black.
- 5.2 Provisionally allow for applying 2 coats of woodstain all exposed rafter ends and soffit boarding.



