Pre-Construction Information

Project: Repairs to Van Dyke Road Cemetery, Lychgate

Prepared for: Leighton-Linslade Town Council

25th February 2026 – 2nd Edition

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1	25/02/2026	Updates to Appendix D

INTRODUCTION

Unless otherwise stated, the **Regulations** referred to hereunder are the **Construction (Design and Management) Regulations 2015**, which came into effect on 6th April 2015.

Regulation 4 (4) requires that:

*"A **client** must provide pre-construction information as soon as is practicable to every designer and contractor appointed, or being considered for appointment, to the project."*

Regulation 11 (6) requires that:

*(6) The **principal designer** must—*

> *(a) assist the client in the provision of the pre-construction information required by regulation 4(4); and*
> *(b) so far as it is within the principal designer's control, provide pre-construction information, promptly and in a convenient form, to every designer and contractor appointed, or being considered for appointment, to the project.*

Regulation 4 (5) requires that:

"*A **client** must ensure that—*

> *(a) before the construction phase begins, a construction phase plan is drawn up by the contractor if there is only one contractor, or by the principal contractor …"*

Goddard Consulting LLP have prepared this 'Pre-Construction Information' to enable the Principal Contractor to prepare a Construction Phase Plan.

It should be noted that, in accordance with the Guidance on The Construction (Design and Management) Regulations 2015, this 'Pre-Construction Information' does not contain generic information regarding hazards that a competent and experienced Principal Contractor would be expected to foresee. This is a site-specific document that contains only information relating to the hazards and issues integral to this project.

We have taken care to ensure that the content of this document is accurate, complete and suitable for its stated purpose. It does not replace the responsibility of the designer and contractor for ensuring safe systems of work.

Further information regarding the Construction (Design and Management) Regulations 2015, including downloadable guides for all duty holders (Client, Principal Designer, Designers, Principal Contractors, Contractors and Workers) can be found by clicking on the below link:

http://www.goddardconsulting.co.uk/cdm-regulations/

SECTION 1

DESCRIPTION OF THE PROJECT

1.1. Scope of this document

The production and release of this document will allow the Principal Contractor to commence the preparation of their Construction Phase Plan.

Further editions of this Pre-Construction Information will be issued as more information becomes available.

The Principal Contractor is to ensure that works do not proceed on site until they are in possession of all relevant health and safety information and a suitable Construction Phase Plan has been prepared.

A schedule of the status of information is contained in Section 7.

1.2. Description of the project

Repairs to the Lychgate at the entrance of Vandyke Road Cemetery. The scope of works includes a new below ground drainage system and new ACO drain to the front of the building. Stonework and Roof Repair, including structural repairs, New Rainwater Goods and Drainage.

1.3. Location

Vandyke Road Cemetery
211 Vandyke Rd
Leighton Buzzard
LU7 3HS

1.4. Timescale for commencement of the construction work

TBC

1.5. Timescale for completion of the construction work

5-6 months

1.6. Notifications

The project will be notified to the Health and Safety Executive. A Copy of Form F10 – "Notification of Construction Project" will be included in **Appendix A** – "Form F10".

1.7. Early or enabling works carried out

No enabling works are required for this project.

1.8. Client

Leighton – Linslade Town Council
The White House
Hockcliffe Street
Leighton Buzzard
LU 1HD

Contact: Mark Saccoccio
Richard Davis

Email: mark.saccoccio@leightonlinslade-tc.gov.uk
richard.davis@leightonlinslade-tc.gov.uk

1.9. CDM Principal Designer & Architect

Rena Pitsilli-Graham Architect
6 St Martin's Almshouses
Bayham Street
London
NW1 0BD

Contact: Rena Pitsilli-Graham

Tel: 020 7485 8994
Email: rena@pitsilligraham.co.uk

1.10. CDM Principal Designer Adviser & CDM Client Adviser

Goddard Consulting LLP
Cargo Works
Enterprise House
Unit 5.02, 1-2 Hatfields
London
SE1 9PG

Contact: Ghazal Bozorg
Marcus Goddard

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marcus@goddardconsulting.co.uk

1.11. Designer – Structural Engineer

Alan Baxter Associates
75 Cowcross Street
London
EC1M 6EL

Contact: Tom Brewser

Tel: 020 7250 1555
Email: tbrewser@alanbaxter.co.uk

1.12. Quantity Surveyor

D R Nolans & Co Ltd
83 Victoria Street
London
SW1H 0HW

Contact: Brad Roberts

Tel: 0330 134 4738
Email: broberts@drnolans.co.uk

1.13. Principal Contractor

TBC

1.14. Health and Safety Executive

The preferred method for reporting accidents or incidents as required under RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013) is online via the HSE website at www.hse.gov.uk/riddor/report.htm.

All incidents can be reported online but a telephone service is also provided for reporting fatal/specified, and major incidents **only** - call the Incident Contact Centre on 0345 300 9923 (opening hours Monday to Friday 8.30 am to 5 pm).

1.15. Serving of notices by the Health and Safety Executive

The Principal Contractor must issue written notification to the Client, CDM Principal Designer and CDM Consultant within 24 hours of receipt of any of the following from the Health and Safety Executive:

- Improvement Notice
- Prohibition Notice
- Summons

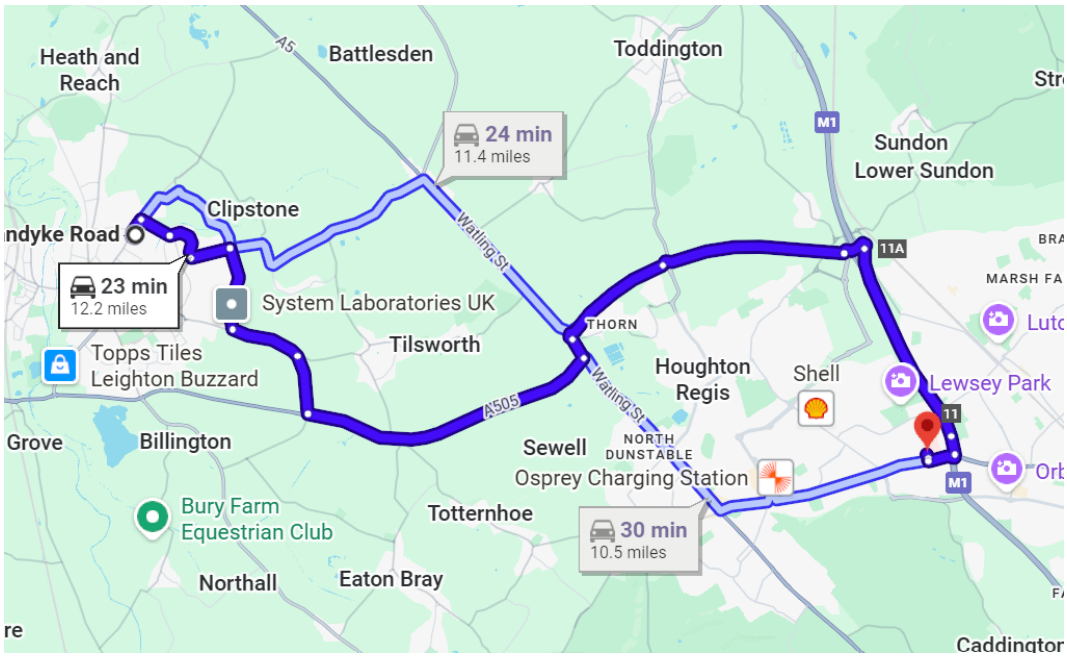
1.16. Emergency Services

Nearest A&E Hospital

Luton and Dunstable Hospital
Lewsey Road
Luton
Bedfordshire
LU4 0DZ

Tel: 01582 491166 Alternatively dial NHS 111
In an emergency dial 999

Distance approximately 12.2 miles



Nearest AED

Gilbert Inglefield Academy
Vandyke Road
Leighton Buzzard
LU7 3FU

Available times: Monday to Friday 08:00 – 18:00

Nearest Police Station

Milton Keynes Police
302 North Row
Witan Gate East
Milton Keynes
MK9 2DS

Tel: Switchboard 101 In an emergency dial 999

Distance approximately 13.8 miles

Nearest Fire Station

Leighton Buzzard Community Fire Station
Lake Street
Leighton Buzzard
LU7 1RT

Tel: 01234 845000 In the event of a fire on site always dial 999

Distance approximately 0.9 miles

1.17. Existing Health and Safety File

A Health & Safety File and Operations & Maintenance Manuals **does not** exist for this building.

SECTION 2

CLIENT'S CONSIDERATIONS AND MANAGEMENT REQUIREMENTS

2.1. Planning for and managing the construction work, including any health and safety goals for the project

The Client is seeking to maintain a high level of health and safety on site at all times. This goal should be reflected by the avoidance of notifiable accidents, incidents and dangerous occurrences, and by no enforcement notices (prohibition or improvement) being issued by the Health and Safety Executive.

2.2. Welfare provision

The Principal Contractor is required to provide their own welfare facilities.

In accordance with Schedule 2 of the Construction (Design & Management) Regulations 2015, welfare facilities must include as a minimum:

- Toilet facilities
- Washing facilities – with hot and cold running water
- Drinking water
- Changing room, drying room and lockers
- A rest area with heating, tables, seating, a means for boiling water and arrangements for preparing food.

2.3. First Aid

Provisions for first aid must include an adequate number of first aiders/ appointed persons, a first aid kit, as well as other facilities appropriate to the risks faced by those on site. First aid boxes should be strategically sited in relation to the work area and be conspicuously marked. The person in charge of the box should ensure that it is kept properly stocked and in a clean, serviceable condition. Details of first aid provisions are to be included in the Principal Contractor's Construction Phase Plan.

2.4. Permits to work

The Principal Contractor is to operate a permit to work system for the following operations:

- Hot works
- Services Works
- To dig

(This list is not exhaustive, and the Principal Contractor is to operate a permit to work system for all hazardous operations where their risk assessment shows that the operation a permit to work system is a necessary control measure.)

2.5. Hot Works – Design

In accordance with the requirements of HSG168 "Fire Safety in Construction" 3rd Edition, the specification of hot works must be justified using a Design Stage Risk Assessment. In the

event that hot works are proposed, the designer must submit a Design Stage Risk Assessment to the CDM Principal Designer justifying the use of hot works at the earliest opportunity. Pipe work connections are to be joined using crimped fittings (or other cold method) rather than soldered fittings.

2.6. Fire prevention and Fire Safety Plan

The Principal Contractor to regularly update a **Site Fire Safety Plan**. The Site Fire Safety Plan must show fire escape routes, fire extinguishers, fire detectors, muster points and state the Principal Contractor's proposed arrangements to prevent fire arising and spreading during the construction works.

The Principal Contractor must appoint a Site Fire Warden who is responsible for the following in the event of a fire:

1) Ensuring that all those on site leave by designated escape routes.
2) Searching all areas to ensure the site is clear (assuming it is safe to do so).
3) Conducting a roll call at the muster point
4) Meeting and liaising with the fire brigade, informing them of relevant details.

Operatives and visitors to the site should be made aware of the Accident and Emergency procedures and the location of escape routes, muster points and facilities during the Site Induction and this information should be displayed on the Safety Notice Board.

All personnel, including visitors, should be required to sign in upon arrival at the site. All personnel shall receive training to raise the alarm upon discovery of a fire. On hearing an "Evacuation Alarm" all operatives must stop what they are doing, isolate any equipment or machinery they are operating and move as quickly as possible to the muster point. If any visitors are on site, it is the responsibility of those they are visiting to ensure that they are evacuated from the site. At the assembly point the fire warden will take a roll call to ensure that all persons are accounted for.

The Principal Contractor is to adhere to guidance given in HSG168 "Fire Safety in Construction" and the requirements of the Construction Confederation Fire Protection Association's "Fire Prevention on Construction Sites - The Joint Code of Practice on the Protection from Fire on Construction Sites and Buildings Undergoing Renovation".

2.7. Monitoring Health and Safety on Site

The Principal Contractor is required to have access to competent health and safety advice throughout the project and have arrangements in place for regular inspections of the construction site.

2.8. SMSTS and CSCS Cards

Goddard Consulting LLP advise the Principal Contractor to ensure that the Site Manager for the project has completed the Site Management Safety Training Scheme (SMSTS) and that operatives hold valid CSCS Cards or equivalent.

2.9. Any areas the Client has designated as confined spaces

The Client has not currently designated any areas as a confined space. However, should the Principal Contractor need to access what they consider to be a confined space as part of the works, they must raise a confined space permit to work and ensure a rescue plan is in place before works commence.

2.10. Access for Client and representatives

The Client will require reasonable access arrangements for their representatives.

2.11. Services isolation

The Principal Contractor is required to obtain permission from the Client before shutting off any service.

2.12. Site hoarding requirements

Hoarding/fencing of 2.4m height is required around the working area.

2.13. Security of the premises

The Principal Contractor is to ensure that all security devices remain in working order throughout the duration of the contract.

Should this not be possible, a temporary system must be installed.

2.14. Arrangements for security and exclusion of unauthorised persons

Site security measures should be implemented in accordance with the HSE Guidance Note HSG151 – "Protecting the Public – Your Next Move"

The Principal Contractor's arrangement should include:

- The entrance to the site is to be locked at all times when Construction Personnel are not present.
- Upon leaving the site any alarms are to be reactivated.
- All operatives and contractors are to sign in and out on a personnel register.
- The site fencing is to carry the necessary warning signs as required by the Health and Safety (Safety Signs and Signals) Regulations 1996.
- All plant is to have keys removed and equipment is to be stored and locked away when left overnight.

SECTION 3

ENVIRONMENTAL RESTRICTIONS AND EXISTING ON-SITE RISKS and ARRANGEMENTS FOR CONTROLLING SIGNIFICANT SITE RISKS

3.1. Site conditions

The 19th Century Lychgate is situated along Vandyke Road. Vandyke Road Cemetery was opened in 1884. The Chapel sits to the south of the Lychgate and there a small Mortuary to the east of the Lychgate. Although not listed all buildings on site are contemporary and with a notable consistent design. Around the cemetery there are residential buildings and a school to the east.

Lychgate – **Access to C emetery Car Park –**

Access into Cemetery to Lychgate -

3.2. Site access

Access to the site is directly from Vandyke Road, turning down the small lane between the cemetery and playing fields which leads to the cemetery car park. If required contractors can drive through the cemetery and park next to the lychgate or adjacent to the old mausoleum. For site plan and approach please refer to appendix C.

3.3. Adjacent property

- The Principal Contractor should be aware that the project is located adjacent to residential and farm use.
- There are schools and academies close to the east side.

3.4. Nearby Schools

The Principal Contractor is to note that the following schools are within 0.4 miles of the site:

- The Rushmere Park School, East Street, Leighton Buzzard, LU7 1EW
- Gilbert Inglefield School, Vandyke Road, Leighton Buzzard, LU7 3FU

The Principal Contractor is to ensure arrangements are in place to minimise risk to school children. In particular, the Principal Contractor is to ensure that deliveries take place outside of drop off and pick up times.

3.5. Location of existing services particularly those that are concealed – water, electricity, gas, etc.

The Principal Contractor is to note that the following is known regarding the location of existing services:

Both water and electrical supplies can be accessed by the chapel or from the cemetery depot (old mausoleum

The Principal Contractor is to note that the location of all services may not be correctly shown on drawings. They are to ensure that the ground and structure is appropriately scanned and surveyed prior to the commencement of any intrusive works.

3.6. Deliveries and Waste

Delivery of materials such as scaffold requires managing traffic on Vandyke Road; the local highways authority needs to be informed.

Principal Contractor to avoid deliveries during school morning and afternoon rush hours.

3.7. Existing traffic systems and restrictions

Principal Contractor to note Vandyke Road is a busy main road out of Leighton Buzzard and delivery of materials must be managed. For project specification, please refer to Appendix D.

3.8. Storage areas

The Principal Contractor should note that the site area is limited, and special considerations should be made regarding the delivery and storage of plant and materials.

3.9. Ground conditions

The Principal Contractor may consider commissioning the following surveys as part of the works:

- Ground Investigation
- CCTV Drainage Survey

3.10. Use of the Land/Site

Principal Contactor to note that the site is a burial ground and as such consecrated ground. Do not use the site for any purpose other than carrying out the Works.

3.11. Histoplasmosis

The Principal Contractor is to note that the condition of the site is such that there is a likelihood of the presence of pigeons.

HSE guidance states that full PPE - (disposable overalls, gloves, glasses, boots and disposable FFP 3 grade respirators) should be worn when removing dried pigeon guano.

The Principal Contractor should outline their proposals for preventing exposure to the risk of contracting Histoplasmosis in their Construction Phase Plan.

3.12. Leptospirosis (Weil's Disease)

The Principal Contractor is to note that the condition of the site is such that there is a likelihood of the presence of rats.

The Principal Contractor should outline their proposals for preventing exposure to the risk of contracting this disease in their Construction Phase Plan.

3.13. Protected Species - Bats

The Client has advised that no evidence of bats was identified.
Bats and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. It is a criminal offence to disturb or damage a bat roost.

The Principal Contractor must ensure operatives remain vigilant during the works. If bats, or evidence of bats, are discovered, works in the affected area must cease immediately and advice must be sought from a licensed ecologist before works recommence.

3.14. Asbestos

Goddard Consulting LLP has been advised by the Architect that no evidence of asbestos-containing materials (ACMs) has been identified within the proposed working areas. However, no Refurbishment and Demolition Asbestos Survey has been commissioned for this building.
Goddard Consulting LLP has formally advised the Client that a Refurbishment and Demolition Asbestos Survey should be undertaken for the areas affected by the works prior to commencement on site.

The Principal Contractor is to ensure that no works take place until a Refurbishment or Demolition Asbestos Survey report has been prepared. Any Asbestos identified within the report should be removed or encapsulated in accordance with the Control of Asbestos Regulations 2012.

Operatives working in this building must have completed Asbestos Awareness Training.
The locations of ACMs must be clearly marked before strip out works commence, and the locations of ACMs should be identified in the site inductions.

3.15. Hazardous materials

The Principal Contractor is expected to make adequate enquiries as to the existing structure's hazardous materials.

3.16. Lead paints

The Principal Contractor is to note that the project may involve use of lead paints. The Principal Contractor is required to comply with the requirements of the Control of Lead at Work Regulations 2002 and the Approved Code of Practice "Control of Lead at Work" and either:

a) Commission a suitable and sufficient lead survey, and follow the recommendations

or

b) Treat all works to existing paints as if the works would lead to significant exposure to lead and take appropriate remedial action that complies with the requirements of the Control of Lead at Work Regulations 2002 and the Approved Code of Practice "Control of Lead at Work".

The Principal Contractor is to provide details of their proposed method of working in the Construction Phase Plan.

SECTION 4

SIGNIFICANT DESIGN AND CONSTRUCTION HAZARDS

4.1. Site transport arrangements

The Principal Contractor should consider the following measures to reduce the risk of collisions with pedestrians and/or other vehicles:

- Pedestrian barriers / designated crossing points
- Mirrors
- Banksmen

4.2. Requirements relating to the health and safety of the Client's employees or customers or those involved in the project

The Principal Contractor is to note that Leighton Buzzard Vandyke Road Cemetery will remain open throughout construction. The Principal Contractor is to make the following arrangements to ensure the segregation of occupants/ employees from the works:

1. Erection of physical barriers – these must be sufficient to ensure the protection of occupants, employees and visitors from the works, and where appropriate should mitigate their exposure to dust or fumes.

2. Installation of Appropriate Signage: Strategically placed to ensure that all occupants, employees and visitors are aware of potential site hazards.

3. Plan and maintain safe pedestrian routes for occupants, employees and visitors.

4.3. Hazard Registers

The Principal Contractor should refer to Appendix B – "Hazard Register," which comprises a collated register of all risks identified by the design team.

4.4. Contractor designed elements

The Principal Contractor is to ensure that all Designers that they appoint have the necessary skills, knowledge, and experience to carry out their works. The Principal Contractor is to provide the contact details of all Designers that they propose to use to Goddard Consulting prior to their appointment. The Principal Contractor is to ensure that all Designers that they appoint provide copies of their designs to Goddard Consulting.

Detailed risk assessments and method statements outlining safe systems of work must be prepared explaining how the designs will be executed.

4.5. Temporary works

The Principal Contractor is to ensure that all temporary works (including temporary supports, temporary structures, any buttress and site hoarding) are designed, installed, and checked in accordance with both BS 5975-1:2024 (Management procedures for the control of temporary works) and BS 5975-2:2024 (Falsework: Design and implementation).

The Principal Contractor is to ensure that a competent person designs all temporary works, (including temporary supports, temporary structures, any buttress and site hoarding.)

Detailed method statements outlining safe systems of work must be prepared explaining how the temporary works design will be executed.

4.6. Deconstruction

The Principal Contractor is to describe in a method statement their proposed method of demolition. The method statement is to be approved by the Structural Engineer prior to the commencement of works.

4.7. Excavation

The Principal Contractor is to describe in a method statement their proposed method of excavation. The method statement is to be approved by the Structural Engineer prior to the commencement of works.

They are to ensure that the ground is appropriately scanned and surveyed prior to the commencement of excavation.

4.8. Mechanised Lifting

The Principal Contractor is to ensure that all mechanised lifting works are carried out in accordance with the requirements of the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).

The Principal Contractor is to ensure that a Lifting Plan has been prepared by a competent person prior to all lifting operations.

4.9. Manual Handling Operations

The Principal Contractor is to ensure that full and proper assessment is considered regarding Manual Handling Operations for supply and installation of construction elements which require manual handling to ensure correct placement. Appropriate risk assessment and method statements (RAMS) will be required in accordance with the Manual Handling Operations Regulations (1992).

4.10. Preventing Falls

The Principal Contractor is to undertake a risk assessment to identify if working at height is required and is to ensure that work is not carried out at height, where it can be done safely from another position. When working at heights is required, suitable access equipment is to be provided by the Principal Contractor, in accordance with the Work at Height Regulations 2005.

Where work is carried out at height the Principal Contractor is to take suitable and sufficient measures to prevent any person falling a distance liable to cause personal injury.

Where the measures do not eliminate the risk of a fall occurring the Principal Contractor is to provide suitable work equipment to minimise the distance and consequences of a fall or take other measures to prevent any person falling a distance liable to cause personal injury.

The Principal Contractor is to provide appropriate training and instruction.

Where works are to be undertaken which could result in materials, tools etc. falling on persons below, these areas are to be barriered off to minimise risks.

The Principal Contractor is to ensure that all appropriate certification, sign-off / acceptance and periodic checks are in place and maintained, on the project site, to the equipment noted below as required.

4.11. Scaffolding

All scaffolding must be erected, altered, maintained and dismantled by competent persons in accordance with The Work at Height Regulations 2005 and the National Access & Scaffolding Confederation document TG20:21 (tube and fitting scaffolding), or TG30:24 (system scaffolding) together with any pertinent design drawings. The Principal Contractor must ensure risk assessments, method statements and compliance sheets are developed by the scaffolding contractor.

Where necessary, lighting, painting of tubes, and protection is to be installed and maintained throughout the works and sufficient measures must be taken to ensure that the public walkway to the front of the premises is protected from the works above, such as brickguards, fireproof sheeting and double boarding to prevent material or waste falling from the scaffolding.

4.12. MEWPs

The Principal Contractor is to ensure that where a Mobile Elevating Work Platform is required, only an IPAF or equivalent trained person operates the platform. MEWPs must be inspected daily prior to first use by a competent person and the results recorded. Harnesses and lanyards must be in good condition and worn when the platform is raised. The Principal Contractor must ensure a suitable work at height rescue plan is developed avoiding reliance on the emergency services.

4.13. Mobile Access Towers

The Principal Contractor is to ensure that where a mobile platform is required, a PASMA or equivalent trained person erects the platform. Platforms must be inspected by a competent person in accordance with the requirements of The Work at Height Regulations 2005 and the results recorded. Access to mobile towers must be internally via access traps only. Towers must not be used unless brakes are applied and the outriggers, if required, and toe-boards are in position.

4.14. Podiums

The Principal Contractor is to ensure that podiums are not used unless assembled by a competent person in accordance with the manufacturer's instructions. When in use all wheels must be locked with barriers/gates in place and operable. Operatives must dismount

any podium before moving it to a new position. Hop ups are for low level access only as determined by risk assessment.

4.15. Ladders

Ladder work should only be permitted following the completion of a risk assessment. Only aluminium, Class 1, heavy duty stepladders may be used, with the exception of when electrical works are being carried out, in which case fiberglass, (minimum EN131) industrial stepladders should be used.

4.16. Surrounding Premises

The Principal Contractor should note that the surrounding buildings will be occupied during the works. The Principal Contractor should take all reasonable steps to ensure the health, safety and welfare of the surrounding buildings, occupants and members of the public.

4.17. Electrical Services

The Principal Contractor must treat all existing wiring as live and ensure electrical services are isolated to the working area before work begins. “Lock Out/Tag Out” procedures should be implemented to prevent accidental re-energising of supplies.

110V supplies must be provided for use on site, and in general only 110V or battery powered equipment should be permitted for use on site. Where voltages over 110V are required, a task- specific risk assessment and permit system must be in place. All electrical supplies over 110V will be protected by RCDs.

SECTION 5

THE HEALTH AND SAFETY FILE

The Health and Safety File is a document containing the information needed to allow future construction work, including cleaning, maintenance, alterations, refurbishment and demolition, to be carried out safely.

The file should be useful to:

- Clients, who have a duty to provide information about their premises to those who carry out work there
- Principal Designers preparing for construction work
- Designers during the development of further designs or alterations
- Principal Contractors, sub-contractors and contractors preparing to carry out or manage such work.

The Principal Contractor is to provide the required number of hard and electronic copies of all information provided for the Health and Safety File as stipulated within the contract documents. Information should be as concise and precise as possible and relate to specific products / equipment / materials forming part(s) of the project works.

The Checklist below outlines the items required for inclusion in the Health and Safety File and will be circulated to the Principal Contractor during the project:

Section		Comments / Req. from
1	**Introduction**	
	Guidance Notes to those using and updating the Health and Safety File	GC
2	**Project Details**	
	Site Address	GC
	Project Description	GC
	Project Directory	GC
	Subcontractors, Suppliers and Manufacturers Directory	PC
3	**Project Consents, Notifications and Approvals**	
	Planning Permission	A / PC
	Building Regulations Approval / Completion Certificates	A / PC
	Notification of Construction Project	GC
4	**Investigation / Survey Information**	
	Ground Investigation	PC / M&E
	Asbestos Survey	PC / Client
	Hazardous Waste Disposal Certificates (e.g., asbestos)	PC
	Any other surveys	PC

5	**Residual Hazards and Future Risk**	
	Residual Risk Register	All
	Hazardous Materials	PC / Designers
	Service Isolation Points	M&E
	Ground Hazards	PC
	Buried Structures and Services	PC / SE / M&E
6	**Key Structural Principals**	
	Structural Design	SE
	Structural Drawings and Calculations	SE
7	**Fire and Evacuation**	
	Fire Prevention Methods	A
8	**As-Built Drawings and Specifications**	
	Architectural	A / PC
	Structural	SE / PC
	Services (MEP)	M&E / PC
9	**Operating and Maintenance Information**	
	General	PC
	Cleaning Requirements	PC / Designers
	Maintenance Requirements	PC / Designers
	Cleaning and Maintenance Access Strategy	PC / Designers
	Products Used / Manufacturers Literature	PC
10	**Testing and Commissioning**	

GC = Goddard Consulting | PC = Principal Contractor | A = Architect

SE = Structural Engineer | M&E = M&E Engineer | Designers = All Designers

SECTION 6

THE CONSTRUCTION PHASE PLAN

The production of a Construction Phase Plan is legally required for this project. An initial Construction Phase Plan must be in place prior to the commencement of works and it must be updated regularly as the project progresses.

The plan sets out how health and safety is to be managed during the construction phase. It should be a focused document, tailored to the project. It is useful to include photographs and sketches to clarify points.

It is not acceptable to bulk the document out with generic information (e.g., generic risk assessments). The level of detail should be proportionate to the risks involved in the project.

Information on the following subjects should be included in the plan:

Description of project

- project description and programme details including any key dates
- details of dutyholder and other consultants

Management of the work

- health and safety aims for the project
- arrangements for:
    - ensuring cooperation between project team members and coordination of their work e.g., regular site meetings
    - involving workers
    - site induction
    - welfare facilities
- site rules
- fire and emergency procedures.

Arrangements for controlling significant site risks

Specific risks, including:

- work which puts workers at risk of falling from a height, where the risk is particularly aggravated by the nature of the work or processes used or by the environment at the place of work or site
- work which puts workers at risk from chemical or biological substances constituting a particular danger to the safety or health of workers or involving a legal requirement for health monitoring
- work involving the assembly or dismantling of heavy prefabricated components.

Implementing and Monitoring the Health and Safety Plan.

The Construction Phase Plan should be an active document that acts as a practical aid to the management of health and safety on site. It should not be produced and hidden away to gather dust.

The Principal Contractor and other contractors must both implement and monitor the plan to ensure that it works in practice. Monitoring arrangements will need to be discussed and agreed with the Client as they form part of the management arrangements.

The purpose of monitoring is to ensure that the precautions described in the Construction Phase Plan are appropriate and followed in practice. The plan needs to be routinely reviewed, revised and refined by the Principal Contractor as the project develops. Where the plan is not being followed those involved must take appropriate action to deal with the risk. Monitoring may show the plan has shortcomings and needs to be modified.

Any significant changes in the plan should be brought to the attention of all those affected.

SECTION 7

INFORMATION PROVIDED / AVAILABLE OR ABSENT

Information Required	Requested From	Response From	Comments
Architects' drawings	A	A	See Tender Pack
Structural Engineers Drawings	SE	SE	See Tender Pack
Mechanical and Electrical Engineers Drawings	M&E	M&E	See Tender Pack
Specifications	A	A	Refer to Appendix D.
Designer's Risk Assessments	PD	PD	Refer to Appendix B.
Residual Risk Information	PD	PD	Refer to Appendix B.
Existing Drawings	A/SE/M&E	A/SE/M&E	See Tender Pack
Asbestos Register	C	N/A	Requested
Asbestos Survey Report	C	N/A	Requested

C: Client | PD: Principal Designer | A: Architect | SE: Structural Engineer

M&E: Mechanical & Electrical Engineer | PM: Project Manager | PC: Principal Contractor

APPENDIX A

Form F10 – Notification of Construction Project will be included here once becomes available.

APPENDIX B

Hazard Register

APPENDIX C

Site Plan and Approach

APPENDIX D

Project Specification Rev C.

RENA PITSILLI-GRAHAM ARCHITECT

6 St Martin's Almshouses, Bayham Street, London NW1 0BD
T:0207 485 8994 M:07747047058 Email:rena@pitsilligraham.co.uk

LEIGHTON BUZZARD VANDYKE ROAD CEMETERY LYCHGATE REPAIR

SPECIFICATION AND SCHEDULE OF WORK
FOR STONEWORK AND RAINWATER GOODS REPAIR

Date:	Rev	Issue:
13.01.26	---	Draft to Client and Design Team
09.02.06	A	Minor amendments
14.02.26	B	Amendment to Pavement Drainage and other minor amendments
18.04.26	C	Minor amendments to cross reference SE's information

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APPENDIX 3	*Keim paint stripper and Zinsser paint specification and technical details.*	
APPENDIX 4	*Photos of 2025 trial pits around the structure piers*	

Preliminaries

A10 PROJECT PARTICULARS

110 THE PROJECT

- Name: Leighton Buzzard, Van Dyke Road Cemetery Repair
- Nature: Stonework and Roof Repair, including structural repairs, New Rainwater Goods and Drainage.
- Location: Cemetery, 211 Vandyke Rd, Leighton Buzzard, Bedfordshire LU7 3HS.
- Approx. Length of Contract: 5-6 months approx. – Contractor to confirm with tender.

120 EMPLOYER (CLIENT)

- Name: Leighton-Linslade Town Council
- Address: Leighton-Linslade Town Council, The White House, Hockliffe Street, Leighton Buzzard, Bedfordshire, LU7 1HD
- Contact: Mr Mark Saccoccio, Town Clerk
- Telephone: 01525 631913
- Email: Mark.Saccoccio@leightonlinslade-tc.gov.uk

130 PRINCIPAL CONTRACTOR (CDM)

- Name: To be appointed.
- Address: n/a.
- Contact: n/a.
- Telephone: n/a.
- E-mail: n/a.

140 ARCHITECT/ CONTRACT ADMINISTRATOR (PRINCIPAL DESIGNER)

- Name: Rena Pitsilli-Graham Architect.
- Address: 6 St Martin's Almshouses, Bayham Street, London, NW1 0BD.
- Contact: Rena Pitsilli-Graham.
- Telephone: 0207 485 8994.
- E-mail: rena@pitsilligraham.co.uk

150 STRUCTURAL ENGINEER

- Name: Alan Baxter LTD.
- Address:75 Cowcross Street London EC1M 6EL
- Contact: Tom Brewser
- Telephone: 020 7250 1555
- E-mail: tbrewser@alanbaxter.co.uk

150 PRINCIPAL DESIGNER CDM:

- Name: Goddard Consulting Ltd
- Address: Cargo Works, Unit 5.02, 1-2 Hatfields, London, SE1 9PG
- Contact: Ghazal Bozorg.
- Telephone: T: 020 7042 9801
- E-mail: gb@goddardconsulting.co.uk

160 QUANTITY SURVEYOR

- Name: DR Nolans
- Address: Unit 2 Abbeygate Court, Stockett Lane, Maidstone, Kent, ME15 0PP
- Contact: Mr Kevin Newland or Brad Roberts.
- Telephone: 01622 752511.
- E-mail: knewland@drnolans.co.uk or broberts@drnolans.co.uk

A11 TENDER AND CONTRACT DOCUMENTS

110 TENDER DRAWINGS

- The tender drawings are:
  - Architect's drgs nos 123-01B, 123-02B, 123-03B, 123-04C, 123-05B, 123-06C, 123-07C, 123-08B, 123-09B, 123-10C, 123-11C, 123-12a as Drawing/Document Issue sheet issued with the tender.
  - Structural Engineer's drawings 1993-001-111B, 1993-001-112B, 1993-001-121B, 1993-001-122A.

120 CONTRACT DRAWINGS

- The Contract Drawings: The same as the tender drawings.

160A PRECONSTRUCTION INFORMATION

- Format: Pre construction Information is as contained in this document and Pre – Construction plan prepared by principal designer and emailed to tenderers.

180 OTHER DOCUMENTS

- Other documents pertaining to the Contract comprise the following:
  - Appendices to the Specification
    - Appendix 1 – Guidance on Repair and pointing of Greensand walls.
    - Appendix 2 – Installation of Cellular Soakaways.
    - Appendix 3 – Zinsser Paint Specification
    - Appendix 4 – 2025 photos of trial pits around piers
  - Structural Engineer's Specification Sections
    - SP01 - Preliminary Clauses Specification
    - SP02 - Steelwork Specification
    - SP03 - Corrosion Protection Specification
    - SP04 - Timber Specification

A12 THE SITE/ EXISTING BUILDINGS

110 THE SITE

- Description: The Lychgate is on the north boundary of the cemetery and forms the main entrance to it. Vandyke Road runs close to the Lychgate. Refer to drg 24-01.

120 EXISTING BUILDINGS ON/ ADJACENT TO THE SITE

- Description: Vandyke Road Cemetery was opened in 1884. A public design competition was held for the design of the Chapel and the Lychgate. The Chapel sits to the south of the Lychgate and there a small Mortuary to the east of the Lychgate. Although not listed all buildings on site are contemporary and with a notable consistent design.
- Around the cemetery there are residential buildings and a school to the east.

140A EXISTING UTILITIES AND SERVICES

- Drawings: There are no available drawings.
- Other information: Refer to Clause A34/510 and Schedule of Work for requisite surveys.

180 HEALTH AND SAFETY FILE

- Availability: There are no known records of previous work to the building.

200 ACCESS TO THE SITE

- Description: Vehicular access for delivery of materials is from Vandyke Road. An alternative vehicular access exists to the south-west of the cemetery and across the cemetery main paths, as noted on drg 123-1.
  - Limitations: Vandyke Road is a busy main road out of Leighton Buzzard and delivery of materials must be managed as 215 below.

210 PARKING

- Restrictions on parking of the Contractor's and employees' vehicles:
  - Limited parking is possible for up to 3 contractor's vehicles at the SW of the site.

215 PARKING FOR DELIVERIES

- Delivery of materials such as scaffold requires managing traffic on Vandyke Road; the local highways authority needs to be informed.
- Avoid deliveries during school morning and afternoon rush hours.

220 USE OF THE SITE

- General: Do not use the site for any purpose other than carrying out the Works.
- Limitations: As shown on drg 123-01 and as described above. The contractor's attention is drawn to the fact that the site is a burial ground and as such consecrated ground.

230 SURROUNDING LAND/ BUILDING USES

- General: Adjacent or nearby uses or activities are as follows:
  - Residential and farm use.
  - There are schools and academies close to the east side.

40 HEALTH AND SAFETY HAZARDS

- General: The nature and condition of the site/building cannot be fully and certainly ascertained before it is opened up. However, the following hazards are or may be present:
  - Unstable masonry.
- Information: The accuracy and sufficiency of this information is not guaranteed by the Employer or the Employer's representative. Ascertain if any additional information is required to ensure the safety of all persons and the Works.
- Site staff: Draw to the attention of all personnel working on the site the nature of any possible contamination and the need to take appropriate precautionary measures.

250 SITE VISIT

- Assessment: Ascertain the nature of the site, access thereto and all local conditions and restrictions likely to affect the execution of the Works.
- Arrangements for visit: Inform Mr Mark Saccoccio, contact details as A10/120, of your intention to visit site.

A13 DESCRIPTION OF THE WORK

110 PREPARATORY WORK BY OTHERS

- Works: Carried out under a separate contract and completed before the start of work on site for this Contract.
- Description:
  - Emergency pointing of cracks in 2024.
  - Some repair in the 1990s but with limited information available.

120 THE WORKS

- Description: Repairs to masonry, new roof covering including structural strengthening to limit roof spread and introduction new above and below ground rainwater system.

130 WORK BY OTHERS CONCURRENT WITH THE CONTRACT

- Description: N/A

A20 JCT MINOR WORK BUILDING CONTRACT (MW)

JCT MINOR WORKS BUILDING CONTRACT

- The Contract: JCT Minor Works Building Contract 2016 Edition.
- Requirement: Allow for the obligations, liabilities and services described.

THE RECITALS

First - THE WORKS AND THE CONTRACT ADMINISTRATOR

- The work comprises: Repairs to masonry, new roof covering including structural strengthening and new above and below ground rainwater system.
- Architect/ Contract Administrator: See clause A10/140

Second - CONTRACT DOCUMENTS

- Contract drawings: As listed in clause A11/120.
- Contract documents: The following have been prepared which show and describe the work to be done: A specification with Schedule of Work.

Third - PRICED DOCUMENTS

- Documents to be priced or provided by the Contractor: Contract specification.

THE ARTICLES

3 - ARCHITECT/ CONTRACT ADMINISTRATOR

- Architect/ Contract Administrator: See clause A10/140.

4 and 5 - CDM CONSULTANT/ PRINCIPAL CONTRACTOR

- Principal Designer: See clause A10/150.
  Principal Contractor: See clause A10/130

CONTRACT PARTICULARS

Fourth Recital and Schedule 2 - BASE DATE

- Base date: Ten days before the return of tender.

Fourth Recital and clause 4.2 - CONSTRUCTION INDUSTRY SCHEME (CIS)

- Employer at the Base Date is not a 'contractor' for the purposes of the CIS.

Fifth Recital - CDM REGULATIONS

- The project is notifiable.

Sixth Recital - FRAMEWORK AGREEMENT

- Framework agreement: Does not apply.
- Details:
  - Date: N/A.
  - Title: N/A.
  - Parties: N/a.

Seventh Recital and Schedule 3 - SUPPLEMENTAL PROVISIONS

- Collaborative working: Paragraph 1 applies.
- Health and safety: Paragraph 2 applies.
- Cost savings and value improvements: Paragraph 3 applies.
- Sustainable development and environmental considerations: Paragraph 4 applies.
- Performance indicators and monitoring: Paragraph 5 applies.
- Notification and negotiation of disputes: Paragraph 6 applies. Where paragraph 6 applies, the respective nominees of the parties are:
  - Employer's nominee: To be advised.
  - Contractor's nominee: _____.

  Or such replacement as each party may notify to the other from time to time.

Article 7 - ARBITRATION
- Article 7 and Schedule 1 apply.

Clause 1.1 - CDM PLANNING PERIOD- NOT APPLICABLE

Clause 2.3 - COMMENCEMENT AND COMPLETION
- Date for Commencement of the Works: TBA.
- Date for Completion: TBA.

Clause 2.8 - LIQUIDATED DAMAGES
- At the rate of £500 per calendar week or pro-rata thereto.

Clause 2.10 - RECTIFICATION PERIOD
- Period: 12 months from the date of practical completion.

Clause 4.3 - INTERIM PAYMENTS:
- Interim Valuation Dates:
  - The first Interim Valuation Date is: Not more than a month after the commencement of the works.
  - Thereafter at intervals of: not more than one month.
- Payments due prior to practical completion:
  - Percentage of total value of the work etc.: 95%
- Payments becoming due on or after practical completion:
  - Percentage of the total amount to be paid: 97.5%

Clause 4.3 and 4.8 - FLUCTUATIONS PROVISION:
- The following fluctuations provision applies: No fluctuations provision applies Where Schedule 2 applies, the percentage addition (paragraph 13) is None.

Clause 4.8.1 - SUPPLY OF DOCUMENTATION FOR COMPUTATION OF AMOUNT TO BE FINALLY CERTIFIED
- Period: Three months from the date of practical completion.

Clause 5.3. - CONTRACTOR'S PUBLIC LIABILITY INSURANCE - INJURY TO PERSONS OR PROPERTY
- Insurance cover (for any one occurrence or series of occurrences arising out of one event): Not less than £10,000,000.

Clauses 5.4A, 5.4B and 5.4C - INSURANCE OF THE WORKS ETC - ALTERNATIVE PROVISIONS
- Clause 5.4B (Works and existing structures insurance by Employer in Joint Names) applies.

Clauses 5.4A.1 and 5.4B.1.2 - PERCENTAGE TO COVER PROFESSIONAL FEES
- Addition: 19 per cent.

Clause 7.2 - ADJUDICATION
- The Adjudicator is: To be appointed.
- Nominating body: Royal Institute of British Architects.

Schedule 1 paragraph 2.1 - ARBITRATION
- Appointor of Arbitrator (and of any replacement): President or a Vice president of the: Royal Institute of British Architects.

THE CONDITIONS

SECTION 1: DEFINITIONS AND INTERPRETATION

1.4 - RECKONING PERIODS OF DAYS
- Amendments: None.

1.7 - APPLICABLE LAW
- Amendments: None.

SECTION 2: CARRYING OUT THE WORKS
SECTION 3: CONTROL OF THE WORKS
SECTION 4: PAYMENT

4.3 INTERIM PAYMENTS
Amendments: Final date for payment for certified sum shall be 28 days from the due date.
SECTION 5: INJURY, DAMAGE AND INSURANCE
SECTION 6: TERMINATION
SECTION 7: SETTLEMENT OF DISPUTES
EXECUTION

- The Contract: Will be executed under hand.

CONTRACT GUARANTEE BOND

- The Contractor will be required to enter into a contract guarantee bond with an approved bank or insurance company, by which he and the bank or insurance company will be jointly and severally bound to the Employer in the sum equivalent to 10% of the contract price conditioned for the due fulfilment of the terms and conditions of the contract. The bond will be required for the duration of the contract until the issue of the Certificate of Making Good Defects

- The contractor to state here the cost of the bond

  .....

- The Contractor to state here the name of the bank or insurance company he proposes to use

  .....

A30 TENDERING/ SUBLETTING/ SUPPLY

MAIN CONTRACT TENDERING

110 SCOPE
- General: These conditions are supplementary to those stated in the Invitation to Tender and on the form of tender.

145 TENDERING PROCEDURE
- General: In accordance with NBS Guide to Tendering for Construction Projects.
- Errors: Alternative 2 is to apply.

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

170 ACCEPTANCE OF TENDER
- Acceptance: No guarantee is offered that any tender will be recommended for acceptance or be accepted, or that reasons for non-acceptance will be given.
- Costs: No liability is accepted for any cost incurred in the preparation of any tender.

190 PERIOD OF VALIDITY
- Period: After submission or lodgement, keep tender open for consideration (unless previously withdrawn) for not less than 6 months.
- Date for possession/ commencement: See section A20.

PRICING/ SUBMISSION OF DOCUMENTS

210 PRELIMINARIES IN THE SPECIFICATION
- The Preliminaries/ General conditions sections (A10-A56 inclusive) do not comply with SMM7.

250 PRICED DOCUMENTS
- Alterations: Do not alter or qualify the priced documents without written consent.
- Tenders containing unauthorised alterations or qualifications may be rejected.
- Measurements: Where not stated, ascertain from the drawings.
- Deemed included: Costs relating to items, which are not priced, will be deemed to have been included elsewhere in the tender.
- Submit: With tender.

310 TENDER
- General: Tenders must include for all work shown or described in the tender documents as a whole or clearly apparent as being necessary for the complete and proper execution of the Works.

440 SCHEDULE OF RATES
- Content: Provide rates for all significant items of work including at least the following:
  - None.
- Fully priced copy: Submit with the tender. Price all Schedule of Work items individually. Provide breakdown of any lump sum prices on request prior to acceptance of tender indicating rates used in the calculation of the pricing.

500 TENDER STAGE METHOD STATEMENTS

- Method statements: Prepare, describing how and when the following is to be carried out:
  - Access, Site set up, Provision of messing and storage facilities
  - Temporary support and protections of the building to enable structural repairs.
  - Temporary protections for the recovering of the roof.
  - Access and protections for Scaffold.
  - Protection of the work.
  - Protection of the users of the building and the public using the cemetery.
  - Protection of cemetery monuments.
  - Grout injection methods for open joints and voids in the masonry.
- At the same time, and at the contractor's discretion, method statements may be submitted for other parts of the works.
- Statements: Submit within one week of request.

510 ALTERNATIVE METHOD TENDERS

- General: In addition to and at the same time as tendering for the Works as defined in the tender documents, alternative methods of construction/ installation may be submitted for consideration. Alternatives, which would involve significant changes to other work, may not be considered.
- Alternative tenders: Such alternatives will be deemed to be alternative tenders and each must include a complete and precise statement of the effects on cost and programme.
- Safety method statement: Carry out a health and safety risk assessment for each alternative and where appropriate provide a safety method statement suitable for incorporation in the Health and Safety Plan.
- Full technical data: Submit for each alternative together with details of any consequential amendments to the design and/ or construction of other parts of the Works.
- Submit: With tender.

515 ALTERNATIVE TIME TENDERS

- General: In addition to and at the same time as tendering based upon the date or period specified in section A20, an alternative tender based upon a different date for completion or period may be submitted.
- Date for completion: If any such tender is accepted the date for completion inserted in the Contract will be the date stated in the alternative tender or determined from the period stated in the alternative tender.

530 SUBSTITUTE PRODUCTS

- Details: If products of different manufacture to those specified are proposed, submit details with the tender giving reasons for each proposed substitution. Substitutions, which have not been notified at tender stage, may not be considered.
- Compliance: Substitutions accepted will be subject to the verification requirements of clause A31/200.

550 HEALTH AND SAFETY INFORMATION

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

570 OUTLINE CONSTRUCTION PHASE HEALTH AND SAFETY PLAN

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

599 FREEDOM OF INFORMATION

- Records: Retain, make available for inspection and supply on request information reasonably required to allow response to requests made under the provisions of the Freedom of Information Act.
- Determination: Submit requests received. Do not supply information outside the project participants without express written permission.
- Confidentiality: Maintain at all times.

A31 PROVISION, CONTENT AND USE OF DOCUMENTS

DEFINITIONS AND INTERPRETATIONS

110 DEFINITIONS

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

120 COMMUNICATION

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

130 PRODUCTS

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

135 SITE EQUIPMENT

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

145 CONTRACTOR'S CHOICE

- Meaning: Selection delegated to the Contractor, but liability to remain with the specifier.

155 SUBMIT PROPOSALS

- Meaning: Submit information in response to specified requirements.

160 TERMS USED IN SPECIFICATION

- Remove: Disconnect, dismantle as necessary and take out the designated products or work and associated accessories, fixings, supports, linings and bedding materials. Dispose of unwanted materials. Excludes taking out and disposing of associated pipework, wiring, ductwork or other services.
- Fix: Receive, unload, handle, store, protect, place and fasten in position and disposal of waste and surplus packaging including all labour, materials and site equipment for that purpose.
- Supply and fix: As above but including supply of products to be fixed. All products to be supplied and fixed unless stated otherwise.
- Keep for reuse: Do not damage designated products or work. Clean off bedding and jointing materials. Stack neatly, adequately protect and store until required by the Employer/ Purchaser or for use in the Works as instructed.
- Make good: Execute local remedial work to designated work. Make secure, sound and neat. Excludes redecoration and/ or replacement.
- Replace: Supply and fix new products matching those removed. Execute work to match original new state of that removed.
- Repair: Execute remedial work to designated products. Make secure, sound and neat. Excludes redecoration and/ or replacement.
- Refix: Fix removed products.
- Ease: Adjust moving parts of designated products or work to achieve free movement and good fit in open and closed positions.
- Match existing: Provide products and work of the same appearance and features as the original, excluding ageing and weathering. Make joints between existing and new work as inconspicuous as possible.
- System: Equipment, accessories, controls, supports and ancillary items, including installation, necessary for that section of the work to function.

170 MANUFACTURER AND PRODUCT REFERENCE

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

200 SUBSTITUTION OF PRODUCTS

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

210 CROSS REFERENCES

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

220 REFERENCED DOCUMENTS

- Conflicts: Specification prevails over referenced documents.

230 EQUIVALENT PRODUCTS

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

240 SUBSTITUTION OF STANDARDS

- Specification to British Standard or European Standard: Substitution may be proposed complying with a grade or category within a national standard of another Member State of the European Community or an international standard recognised in the UK.
- Before ordering: Submit notification of all such substitutions.
- Documentary evidence: Submit for verification when requested as detailed in clause A31/200. Any submitted foreign language documents must be accompanied by certified translations into English.

250 CURRENCY OF DOCUMENTS

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

260 SIZES
- General dimensions: Products are specified by their co-ordinating sizes.
- Timber: Cross section dimensions shown on drawings are:
  - Target sizes as defined in BS EN 336 for structural softwood and hardwood sections.
  - Finished sizes for non-structural softwood or hardwood sawn and further processed sections.

DOCUMENTS PROVIDED ON BEHALF OF THE EMPLOYER

410 ADDITIONAL COPIES OF DRAWINGS/ DOCUMENTS
- Additional copies: Issued on request and charged to the Contractor.

440 DIMENSIONS
- Scaled dimensions: Do not rely on.

460A THE SPECIFICATION
- Coordination: All sections must be read in conjunction with Main Contract Preliminaries/ General conditions, Materials and Works Section, Schedule of Work, Drawings and Appendices.

DOCUMENTS PROVIDED BY CONTRACTOR/ SUBCONTRACTORS/ SUPPLIERS

630A TECHNICAL LITERATURE
- Information: Keep on site for reference by all supervisory personnel:
  - Manufacturers' current literature relating to all products to be used in the Works.
  - Relevant British, EN or ISO Standards.
  - Current Lead Sheet Association Guides to lead Roofing.

640 MAINTENANCE INSTRUCTIONS AND GUARANTEES:
- Components and equipment: Obtain or retain copies, register with manufacturer and hand over on or before completion of the Works.
- Information location: In Building Manual.
- Emergency call out services: Provide telephone numbers for use after completion. Extent of cover: twenty four hours seven days a week.

A32 MANAGEMENT OF THE WORKS

GENERALLY

110 SUPERVISION

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

115 CONSIDERATE CONSTRUCTORS SCHEME

- Registration: Before starting work, register the site and pay the appropriate fee:
  - Contact: Address: Considerate Constructors Scheme Office, PO Box 75, Great Amwell, Ware, Hertfordshire, SG12 0YX. Tel. 01920 485959. Fax. 01920 485958. Free phone 0800 7831423, Web. www.ccscheme.org.uk, Email. enquiries@ccscheme.org.uk
- Standard: Comply with the Scheme's Code of Considerate Practice.
  - Minimum compliance level: basic compliance.

120 INSURANCE

- Documentary evidence: Before starting work on site submit details, and/ or policies and receipts for the insurances required by the Conditions of Contract.

130 INSURANCE CLAIMS

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

140 CLIMATIC CONDITIONS

- Information: Record accurately and retain:
  - Daily maximum and minimum air temperatures (including overnight).
  - Delays due to adverse weather, including description of the weather, types of work affected and number of hours lost.

150 OWNERSHIP

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

PROGRAMME/ PROGRESS

210A PROGRAMME

- Master programme: Immediately when requested and before starting work on site submit in an approved form a master programme for the Works, which must include details of:
  - Planning and mobilisation by the Contractor.
  - Initial investigations, confirmation of scope of work from the scaffold, trials in relation to stone repairs, samples for mortars etc as described in the Specification and Schedule of Work.
  - Subcontractor's work.
  - Allowance for moderation of work activities during market days, stoppages for church related activities all as clause A35/130 and other activities as SoW.
  - Work resulting from instructions given for the expenditure of provisional sums and work items.
- Submit three copies.
- Programme Revision: Revisions to the programme are to be made to reflect possible variations arising on site and in accordance with clause 260 below. The contractor is to submit programme revisions one week before progress meetings.

245 START OF WORK ON SITE
- Notice: Before the proposed date for start of work on site give min notice of 4 weeks.

250A MONITORING
- Progress: Record on a copy of the programme kept on site.
- Avoiding delays: If any circumstances arise which may affect the progress of the Works submit proposals or take other action as appropriate to minimize any delay and to recover any lost time.

260 SITE MEETINGS
- General: Site meetings will be held to review progress and other matters arising from administration of the Contract.
- Frequency: Every month.
- Location: Suitable area within the church with the client's agreement.
- Accommodation: Ensure availability at the time of such meetings.
- Attendees: Attend meetings and inform subcontractors when their presence is required.
- Chairperson (who will also take and distribute minutes): Architect.

280 PHOTOGRAPHS
- Number of locations: Each area of work, sufficient to show progress of the work.
- Frequency of intervals: Daily.
- Image format: Digital medium resolution.
- Number of images from each location: 2-3.
- Other requirements:
  - Defects or unusual features in existing construction: Take and submit photographs as soon they are discovered.
  - Submit progress photographs and of specific items requested by the architect, on disc at each progress meeting.
  - Submit all photographs taken as part of the O&M Manual and H&S file on completion.
  - Refer to Schedule of work for Record of Condition photographs before Commencing.

290 NOTICE OF COMPLETION
- Requirement: Give notice of the anticipated dates of completion of the whole or parts of the Works.
- Associated works: Ensure necessary access, services and facilities are complete.
- Period of notice (minimum): Two weeks.

310 EXTENSIONS OF TIME
- Notice: When a notice of the cause of any delay or likely delay in the progress of the works is given under the contract, written notice must also be given of all other causes which apply concurrently.
- Details: As soon as possible submit:
  - Relevant particulars of the expected effects, if appropriate, related to the concurrent clauses.
  - An estimate of the extent, if any, of the expected delay in the completion of the Works beyond the date for completion.
  - All other relevant information required.

CONTROL OF COST

420 REMOVAL/ REPLACEMENT OF EXISTING WORK
- Extent and location: Agree before commencement.
- Execution: Carry out in ways that minimize the extent of work.

421 CASH FLOW FORECAST
- Content: A forecast to show cash flow relevant to the agreed contract sum for the contract duration.
- Submission: Submit upon appointment or when requested to do so by the architect.

430 PROPOSED INSTRUCTIONS

- Estimates: If a proposed instruction requests an estimate of cost, submit without delay and in any case within seven days.

440 MEASUREMENT

- Covered work: Give notice before covering work required to be measured.

470 PRODUCTS NOT INCORPORATED INTO THE WORKS

- Ownership: At the time of each valuation, supply details of those products not incorporated into the Works which are subject to any reservation of title inconsistent with passing of property as required by the Conditions of Contract, together with their respective values.
- Evidence: When requested, provide evidence of freedom of reservation of title.

A33 QUALITY STANDARDS/ CONTROL

STANDARDS OF PRODUCTS AND EXECUTIONS

110 INCOMPLETE DOCUMENTATION

- General: Where and to the extent that products or work are not fully documented, they are to be:
  - Of a kind and standard appropriate to the nature and character of that part of the Works where they will be used.
  - Suitable for the purposes stated or reasonably to be inferred from the project documents.
- Contract documents: Omissions or errors in description and/ or quantity shall not vitiate the Contract nor release the Contractor from any obligations or liabilities under the Contract.

120 WORKMANSHIP SKILLS

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

130 QUALITY OF PRODUCTS

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

135 QUALITY OF EXECUTION

- Generally: Fix, apply, install or lay products securely, accurately, plumb, neatly and in alignment.
- Colour batching: Do not use different colour batches where they can be seen together.
- Dimensions: Check on-site dimensions.
- Finished work: Without defects, e.g. not damaged, disfigured, dirty, faulty, or out of tolerance.
- Location and fixing of products: Adjust joints open to view so they are even and regular.

140 COMPLIANCE

- Compliance with proprietary specifications: Retain on site evidence that the proprietary product specified has been supplied.
- Compliance with performance specifications: Submit evidence of compliance, including test reports indicating:
  - Properties tested.
  - Pass/ fail criteria.
  - Test methods and procedures.
  - Test results.
  - Identity of testing agency.
  - Test dates and times.
  - Identities of witnesses.
  - Analysis of results.

150 INSPECTIONS

- Products and executions: Inspection or any other action must not be taken as approval unless confirmed in writing referring to:
  - Date of inspection.
  - Part of the work inspected.
  - Respects or characteristics which are approved.
  - Extent and purpose of the approval.
  - Any associated conditions.

160 RELATED WORK

- Details: Provide all trades with necessary details of related types of work. Before starting each new type or section of work ensure previous related work is:
  - Appropriately complete.
  - In accordance with the project documents.
  - To a suitable standard.
  - In a suitable condition to receive the new work.
- Preparatory work: Ensure all necessary preparatory work has been carried out.

170 MANUFACTURER'S RECOMMENDATIONS/ INSTRUCTIONS

- General: Comply with manufacturer's printed recommendations and instructions current on the date of the Invitation to tender.
- Changes to recommendations or instructions: Submit details.
- Ancillary products and accessories: Use those supplied or recommended by main product manufacturer.
- Agrément certified products: Comply with limitations, recommendations and requirements of relevant valid certificates.

180 WATER FOR THE WORKS

- Mains supply: Clean and uncontaminated.
- Other: Do not use until:
  - Evidence of suitability is provided.
  - Tested to BS EN 1008 if instructed.

SAMPLES/ APPROVALS

210 SAMPLES

- Products or executions: Comply with all other specification requirements and in respect of the stated or implied characteristics either:
  - To an express approval.
  - To match a sample expressly approved as a standard for the purpose.

230 APPROVAL OF EXECUTION

- Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
- Approval: Relates to the stated characteristics of the sample. (If approval of the finished work as a whole is required this is specified separately). Do not conceal or proceed with affected work until compliance with requirements is confirmed.
- Complying sample: Retain in good, clean condition on site. Remove when no longer required.

ACCURACY/ SETTING OUT GENERALLY

320 SETTING OUT

- General: Submit details of methods and equipment to be used in setting out the Works.
- Levels and dimensions: Check and record the results on a copy of drawings. Notify discrepancies and obtain instructions before proceeding.
- Inform: When complete and before commencing construction.

330 APPEARANCE AND FIT

- Tolerances and dimensions: If likely to be critical to execution or difficult to achieve, as early as possible either:
  - Submit proposals; or
  - Arrange for inspection of appearance of relevant aspects of partially finished work.
- General tolerances (maximum): To BS 5606, tables 1 and 2.

340A CRITICAL DIMENSIONS

- Critical dimensions: Set out and construct the Works to ensure compliance with the tolerances stated.
- Location: Detailed on contract drawings and/or Schedule of work.

360A RECORD DRAWINGS
- Record changes from tender drawings as work proceeds. Submit record drgs as A37/160.

SERVICES GENERALLY:

410 SERVICES REGULATIONS:
- New or existing services: Comply with the Byelaws or Regulations of the relevant Statutory Authority.

420 WATER REGULATIONS/ BYELAWS NOTIFICATION:
- Requirements: Notify Water Undertaker of any work carried out to or which affects new or existing services and submit any required plans, diagrams and details.
- Consent: Allow adequate time to receive Undertaker's consent before starting work. Inform immediately if consent is withheld or is granted subject to significant conditions.

430 WATER REGULATIONS/ BYELAWS CONTRACTOR'S CERTIFICATE:
- On completion of the work: Submit (copy where also required to the Water Undertaker) a certificate including:
  - The address of the premises.
  - A brief description of the new installation and/ or work carried out to an existing installation.
  - The Contractor's name and address.
  - A statement that the installation complies with the relevant Water Regulations or Byelaws.
  - The name and signature of the individual responsible for checking compliance.
  - The date on which the installation was checked.

445 SERVICE RUNS:
- General: Provide adequate space and support for services, including unobstructed routes and fixings.
- Ducts, chases and holes: Form during construction rather than cut.
- Coordination with other works: Submit details of locations, types/ methods of fixing of services to fabric and identification of runs and fittings.

450 MECHANICAL AND ELECTRICAL SERVICES:
- Final tests and commissioning: Carry out so that services are in full working order at completion of the Works.
- Building Regulations notice: Copy to be lodged in the Building Manual.

SUPERVISION/ INSPECTION/ DEFECTIVE WORK

525 ACCESS
- Extent: Provide at all reasonable times access to the Works and to other places of the Contractor or subcontractors where work is being prepared for the Contract.
- Designate: Architect.

530 OVERTIME WORKING
- Notice: Prior to overtime being worked, submit details of times, types and locations of work to be done.
  - Minimum period of notice: One week.
- Concealed work: If executed during overtime for which notice has not been given, it may be required to be opened up for inspection and reinstated at the Contractor's expense.

540 DEFECTS IN EXISTING WORK
- Undocumented defects: When discovered, immediately give notice. Do not proceed with affected related work until response has been received.
- Documented remedial work: Do not execute work which may:
  - Hinder access to defective products or work; or
  - Be rendered abortive by remedial work.

560 TESTS AND INSPECTIONS

- Timing: Agree and record dates and times of tests and inspections to enable all affected parties to be represented.
- Confirmation: One working day prior to each such test or inspection. If sample or test is not ready, agree a new date and time.
- Records: Submit a copy of test certificates and retain copies on site.

610 DEFECTIVE PRODUCTS/ EXECUTIONS

- Proposals: Immediately any work or product is known, or appears, to be not in accordance with the Contract, submit proposals for opening up, inspection, testing, making good, adjustment of the Contract Sum, or removal and re-execution.
- Acceptability: Such proposals may be unacceptable and contrary instructions may be issued.

WORK AT OR AFTER COMPLETION

710 WORK BEFORE COMPLETION

- General: Make good all damage consequent upon the Works.
- Temporary markings, coverings and protective wrappings: Remove unless otherwise instructed.
- Cleaning: Clean the Works thoroughly inside and out, including all accessible ducts and voids. Remove all splashes, deposits, efflorescence, rubbish and surplus materials.
- Cleaning materials and methods: As recommended by manufacturers of products being cleaned and must not damage or disfigure other materials or construction.
- COSHH dated data sheets: Obtain for all materials used for cleaning and ensure they are used only as recommended by their manufacturers.
- Minor faults: Touch up in newly painted work, carefully matching colour and brushing out edges. Repaint badly marked areas back to suitable breaks or junctions.
- Moving parts of new work: Adjust, ease and lubricate as necessary to ensure easy and efficient operation, including doors, windows, drawers, ironmongery, appliances, valves and controls.

720 SECURITY AT COMPLETION

- General: Leave the Works secure with, where appropriate, all accesses closed and locked.
- Keys: Account for and adequately label all keys and hand over to Employer with itemized schedule, retaining duplicate schedule signed by Employer as a receipt.

730 MAKING GOOD DEFECTS

- Remedial work: Arrange access with Employer.
- Rectification: Give reasonable notice for access to the various parts of the Works.
- Completion: Notify when remedial works have been completed.

A34 SECURITY/ SAFETY/ PROTECTION

SECURITY, HEALTH AND SAFETY

120A EXECUTION HAZARDS

- Common hazards: Not listed. Control by good management and site practice.
- Significant hazards: The design of the project includes the following:
  - Hazard: Masonry Collapse – Stonework repairs to walls.
  - Precautions assumed: Method statement to be submitted for comment prior to the works. Works to be carried out in sequence with temporary support as required.
  - Specification reference: C41 and Schedule of Work.
  - Drawing reference: 123/03 to 123/12 inclusive.

130A PRODUCT HAZARDS

- Hazardous substances: Site personnel levels must not exceed occupational exposure standards and maximum exposure limits stated in the current version of HSE document EH40: Workplace Exposure Limits.
- Common hazards: Not listed. Control by good management and site practice.
- Significant hazards: Specified construction materials include the following:
  - Hazard: Chemical corrosive effects.
  - Material: Lime based products
  - Specification reference: C41 and Z21 and schedule of work.
  - Hazard: Inhalation of fumes and dust.
  - Material: Lead Sheet.
  - Specification reference: H71.
  - Hazard: [Lead poisoning].
  - Material: [Lead Sheet].

140A CONSTRUCTION PHASE HEALTH AND SAFETY PLAN

- Submission: Present to the Principal Designer no later than three weeks before the commencement of the work on site.
- Confirmation: Do not start construction work until the Employer has confirmed in writing that the Construction Phase Health and Safety Plan includes the procedures and arrangements required by the CDM Regulations.
- Content: Develop the plan from and draw on the Outline Construction Phase Health and Safety Plan, clause A30/570, and the information as contained in this document.

150 SECURITY

- Protection: Safeguard the site, the Works, products, materials, and any existing buildings affected by the Works from damage and theft.
- Access: Take all reasonable precautions to prevent unauthorized access to the site, the Works.
- Special Requirements: None

160 STABILITY

- Responsibility: Maintain the stability and structural integrity of the Works and adjacent structures during the Contract.
- Design loads: Obtain details, support as necessary and prevent overloading.

170A USE OF SITE BY THE PUBLIC

- Extent: Members of the public visit the cemetery.
- Works: Carry out without undue inconvenience and nuisance and without danger to cemetery users.

200 MOBILE TELEPHONES AND PORTABLE ELECTRONIC EQUIPMENT

- Restrictions on use:
  - None except those described in Section A35.

210A EMPLOYER'S REPRESENTATIVES SITE VISITS
- Safety: Submit details in advance, to the Employer or the person identified in clause A10/140, of safety provisions and procedures (including those relating to materials, which may be deleterious), which will require their compliance when visiting the site.
- Protective clothing and/ or equipment: Provide and maintain on site for the Employer and the person stated in clause A10/140 and at least 2 other visitors to the site.

220 WORKING PRECAUTIONS/ RESTRICTIONS
- Hazardous areas: Operatives must take precautions as follows:
  - Work area: Working at height.
  - Precautions: Protective clothing and equipment, safe and secure access platforms.
  - Work area: Handling heavy objects such as stone or cast iron gutters.
  - Precautions: Protective clothing and equipment, and procedures for handling heavy items.

PROTECT AGAINST THE FOLLOWING

330A NOISE CONTROL
- Standard: Comply with the recommendations of BS 5228-1, in particular clause 7.3, to minimize noise levels during the execution of the Works.
- Equipment: Fit compressors, percussion tools and vehicles with effective silencers of a type recommended by manufacturers of the compressors, tools or vehicles.
- Restrictions: Do not use:
  - Pneumatic drills or hammer and chisel and other noisy appliances associated with other building operations without consent during the times given in A34/170.
  - Radios or other audio equipment or permit employees to use in ways or at times that may cause nuisance.

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

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

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

371 DANGEROUS OR HAZARDOUS SUBSTANCES
- Duty: Report immediately suspected materials discovered during execution of the Works.
  - Do not disturb.
- Agree methods for safe removal or remediation.

375A ANTIQUITIES
- Duty: Report immediately any fossils, antiquities and other objects of interest or value discovered during execution of the Works.
- Preservation: Keep objects in the exact position and condition in which they were found.
- Special requirements: Notify architect and follow instructions for protection or storage.

377 BATS

- Duty: Under the Wildlife and Countryside Act 1996, bats are protected against intentional killing, injuring or taking. Their roosts are protected against damage, destruction or obstruction and it is also an offence to disturb bats, which are occupying a roost.
- Discovery of bats or their roosts during execution of the works: Stop work and seek instruction before proceeding.

380 FIRE PREVENTION

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

390 SMOKING ON SITE

- Smoking on site: Not permitted.

400 BURNING ON SITE

- Burning on site: Not permitted.

410 MOISTURE

- Wetness or dampness: Prevent, where this may cause damage to the Works.
- Drying out: Control humidity and the application of heat to prevent:
  - Blistering and failure of adhesion.
  - Damage due to trapped moisture.
  - Excessive movement.

420 INFECTED TIMBER/ CONTAMINATED MATERIALS

- Removal: Where instructed to remove material affected by fungal/ insect attack from the building, minimize the risk of infecting other parts of the building.
- Testing: carry out and keep records of appropriate tests to demonstrate that hazards presented by concentrations of airborne particles, toxins and other micro-organisms are within acceptable levels.

430 WASTE

- Includes: Rubbish, debris, spoil, surplus material, containers and packaging.
- General: Minimize production. Prevent accumulations. Keep the site and Works clean and tidy.
- Handling: Collect and store in suitable containers. Remove frequently and dispose off site in a safe and competent manner:
  - Non-hazardous material: In a manner approved by the Waste Regulation Authority.
- Hazardous material: As directed by the Waste Regulation Authority and in accordance with relevant regulations.
- Recyclable material: Sort and dispose at a Materials Recycling Facility approved by the Waste Regulation Authority.
- Voids and cavities in the construction: Remove rubbish, dirt and residues before closing in.
- Waste transfer documentation: Retain on site.

PROTECT THE FOLLOWING

510 EXISTING SERVICES

- Confirmation: Notify all service authorities, statutory undertakers and/ or adjacent owners of proposed works not less than one week before commencing site operations.
- Identification: Before starting work, check and mark positions of utilities/ services.
- Where positions are not shown on drawings obtain relevant details from service authorities, statutory undertakers or other owners.
- Work adjacent to services:
  - Comply with service authority's/ statutory undertaker's recommendations.
  - Adequately protect and prevent damage to services: Do not interfere with their operation without consent of service authorities/ statutory undertakers or other owners.
- Identifying services:
  - Below ground: Use signboards, giving type and depth;
  - Overhead: Use headroom markers.
- Damage to services: If any results from execution of the Works:
  - Immediately give notice and notify appropriate service authority/ statutory undertaker.
  - Make arrangements for the work to be made good without delay to the satisfaction of service authority/ statutory undertaker or other owner as appropriate.
  - Any measures taken to deal with an emergency will not affect the extent of the Contractor's liability.
- Marker tapes or protective covers: Replace, if disturbed during site operations, to service authority's/ statutory undertakers recommendations.

520 ROADS AND FOOTPATHS

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

530 EXISTING TOPSOIL/ SUBSOIL

- Duty: Prevent over compaction of existing topsoil and subsoil in those areas which may be damaged by construction traffic, parking of vehicles, temporary site accommodation or storage of materials and which will require reinstatement prior to completion of the Works.
- Protection: Before starting work submit proposals for protective measures.

540A RETAINED TREES/ SHRUBS

- Protection: Preserve and prevent damage, except those not required.
- Replacement: Mature trees and shrubs if uprooted, destroyed, or damaged beyond reasonable chance of survival in their original shape, as a consequence of the Contractor's negligence, must be replaced with those of a similar type and age at the Contractor's expense.

551 RETAINED GRASSED AREAS

- Protection: Preserve and prevent damage as far as practicable.
- Reinstatement: Remove deleterious material. Supply top soil, which may be reused from site, cultivate and reseed.

555 WILDLIFE SPECIES AND HABITATS

- General: Safeguard the following: Bats; see clause A34/377
- Protected habitats and species: Upon discovery immediately advise. Do not proceed until instruction is received.
- Education: Ensure employees and visitors to the site receive suitable instruction and awareness training.

560 EXISTING FEATURES

- Protection: Prevent damage to existing buildings, fences, gates, walls, roads, paved areas, headstones, and memorial tablets and other site features, which are to remain in position during execution of the Works.
- Special requirements:
  - Carefully remove 2no War memorial plaques from the north and south walls and store securely until reinstatement.
  - Protect headstones, gates and other features in the vicinity of the work with hard plywood protection.
  - Refer also to drg 123-02 and Schedule of Work.

570 EXISTING WORK

- Protection: Prevent damage to existing work, structures or other property during the course of the work.
- Removal: Minimum amount necessary.
- Replacement work: To match existing.

625 ADJOINING PROPERTY RESTRICTIONS

- Precautions:
  - Prevent trespass of workpeople and take precautions to prevent damage to adjoining property.
  - Pay all charges.
  - Remove and make good on completion or when directed.
- Damage: Bear cost of repairing damage arising from execution of the Works.

630 EXISTING STRUCTURES

- Duty: Check proposed methods of work for effects on adjacent structures inside and outside the site boundary.
- Supports: During execution of the Works:
  - Provide and maintain all incidental shoring, strutting, needling and other supports as may be necessary to preserve stability of existing structures on the site or adjoining that may be endangered or affected by the Works.
  - Do not remove until new work is strong enough to support existing structure.
  - Prevent overstressing of completed work when removing supports.
- Adjacent structures: Monitor and immediately report excessive movement.
- Standard: Comply with BS 5975 and BS EN 12962.

640 MATERIALS FOR RECYCLING/ REUSE

- Duty: Sort and prevent damage to stated products or materials, clean off bedding and jointing materials and other contaminants.
- Storage: Stack neatly and protect until required by the Employer or for use in the Works as instructed.

A35 SPECIFIC LIMITATIONS ON METHOD/ SEQUENCE/ TIMING

130 METHOD/ SEQUENCE OF WORK

- Specific Limitations: Include the following in the programme:
  - Funerals: Cease work during funeral services. At least 2 days' notice will be given by the employer in advance of the service. Include for a total of 5 stoppages of 2 hours duration each.
  - Bats: Refer to A36 for specific limitations.
  - Trials and samples to agree mixes for mortar for all types of repair specified are to commence as soon as the contractor takes possession of the site.
  - Check delivery times for materials and ensure orders for delivery are placed upon receiving the client's instruction to proceed with the contract.
  - Inspection from the scaffold and confirmation of the work to proceed as soon as scaffold access is available.

160 USE OR DISPOSAL OF MATERIALS

- Specific limitations: Waste material to be disposed regularly.

170 WORKING HOURS

- Specific limitations: Cease work during services as given in A35/130.

171 DRESS AND BEHAVIOUR IN CONSECRATED GROUND

- Requirement: The cemetery is visited regularly by those who have relatives laid to rest within it. Ensure operatives maintain appropriate dress and behaviour respectful of the nature of the site.
- Shirts to be worn at all times.

A36 FACILITIES/ TEMPORARY WORK/ SERVICES

GENERALLY

110 SPOIL HEAPS, TEMPORARY WORKS AND SERVICES

- Location: Give notice and details of intended siting.
- Maintenance: Alter, adapt and move as necessary. Remove when no longer required and make good.

TEMPORARY WORKS/PROTECTIONS

141 SCAFFOLD AND ACCESS PLATFORMS

- Include for erecting and stripping suitable access staging for carrying out the works and working platforms for the repairs as described in the specification and the Schedule of Work.
- Support of any element of the scaffold or temporary support off the existing structure will not be allowed. The temporary works must be self-supporting.
- Ties to existing structure: Fixings into the fabric are not permitted unless no alternative exists and is agreed with the architect in advance. If proven to be justified, arrange ties into existing joints with prior written approval of the architect. No
- Scaffold to be protected with Monarflex sheeting as detailed in http://www.monarflex.co.uk/~/media/IcopalUK/Download/Datasheets/Scaffold_Sheeting/monarflex-airflow-fr-product-overview.pdf

143 RESPONSIBILITY FOR SCAFFOLD AND TEMPORARY WORKS

- The design of scaffold and temporary supports etc. access to site, protections, will remain the responsibility of the main contractor.
- Assess the condition of the building and external ground conditions before temporary works design.
- The design of the temporary works (scaffold) is to be undertaken by a competent designer, independently checked by a scaffold engineer both employed by the contractor.
- Submit design drawings for scaffold and other temporary works for the design team's comments at least 4 weeks before the commencement date.
- Submit method statement for erection and installation of all temporary works and protections at the same time.
- Include for making amendments to drawings after comments by the architect.
- Security of scaffold: As A36/147.

144 PROTECTION OF THE BUILDING

- Inform the temporary works team (scaffolders and labourers) of the historical and architectural importance of the building and that any damage whatsoever is unacceptable. Any damage is to be made good free of charge to the employer.
- Provide other protection to the building as the work progresses, as detailed in the Schedule of Work.
- Keep putlogs 50mm from the building and fit with plastic caps.
- Protective coating for carbon steel tubes and fittings: Protect steelwork and prevent rust staining of façade, pavings and other permanent or retained works.

145 PROTECTION OF THE PUBLIC

- Protect all users of the cemetery. Provide hoarding and taping off protections necessary to maintain safe and unimpeded access for the general public across footpaths to the cemetery entrances during the erection and dismantling of temporary works throughout the contract period.

146 TEMPORARY WORKS SUPERVISION

- Contractor's representative: To be in attendance at all times during erection and dismantling of all temporary works.

147 SECURITY AND SAFETY

- Provide adequate protection against the theft of lead or other materials or malicious damage:
  - Remove ladders or padlock in a horizontal position every evening.
  - Install Heras fencing, securely fixed to the scaffold throughout its perimeter to discourage unauthorized access.
  - Install light and audio alarm activated by PIR Liaise with the client for call out contacts.

150 TEMPORARY WORKS

- Employer's specific requirements: Provide Protection to the gates and perimeter walls during delivery of materials and equipment.
- Provide protection to monuments or other structures within the path of deliveries or scaffold work.
- Refer also to relevant clauses elsewhere.

ACCOMMODATION

210A ROOM FOR MEETINGS

- Facilities: An area for progress meetings is available within the Chapel on site or that Town Councils offices.
- Furniture and Equipment: Move furniture as necessary withing the Chapel and reinstate in original positions after the meeting.

231 CONTRACTOR'S TEMPORARY ACCOMMODATION

- Proposals for temporary accommodation (rest room) Toilet and storage for the Works: Submit two weeks prior to starting on site.
- Details to be included: Type of accommodation and storage, its siting and the programme for site installation and removal if different from that shown on drg 123-01.

310 ROADS

- Permanent roads, hard standings and footpaths on the site: The following may be used, subject to clause A34/520:
- Details: All footpaths within the cemetery.
- Restrictions on use: Beware of public walking through cemetery and Vandyke road pavement and give priority.
- Protective or remedial measures: Reinstate any damage to path surfaces and grassed areas of cemetery and public pavement on completion.

340A NAME BOARDS/ ADVERTISEMENTS

- General: Other than contractors statutory boards required under H&S Regulations, obtain approval, including statutory consents, and provide a temporary name board displaying:
  - Title of project: Leighton Buzzard Van Dyke Road Cemetery Lychgate Church Repairs
  - Name of Employer: The PCC of St Giles Church Leighton Buzzard, Kent.
  - Grant Aiding Authorities: TBC
  - Names of Contractor and Subcontractors: TBA.
  - Client to submit wording for client's board to be provided by the contractor.

SERVICES AND FACILITIES

410A LIGHTING

- Finishing work and inspection: Provide temporary lighting, for work inside the roof.

420 LIGHTING AND POWER:

- Supply: Electricity from the Employer's mains may be used for the Works as follows:
  - Metering: Free of charge.
  - Point of supply: By the Mortuary or the Chapel as shown on drg 123-01.
  - Available capacity: 13 Amp.
  - Frequency: 50 Hz.
  - Phase: 3 phase.
  - Current: Alternating.
  - Continuity: The Employer will not be responsible for the consequences of failure or restriction in supply.

430 WATER

- Supply: The Employer's mains may be used for the Works as follows:
  - Metering: Free of charge.
  - Source: Mains
  - Location of supply point: By the Mortuary or the Chapel as shown on drg 123-01.
  - Conditions/ Restrictions: Do not use in any way as to cause nuisance to those visiting the cemetery.
- Continuity: The Employer will not be responsible for the consequences of failure or restriction in supply.

440 TELEPHONES

- Direct communication: As soon as practicable after the Date of Possession provide the Contractor's person in charge with a mobile telephone.

550 THERMOMETERS

- General: Provide on site and maintain in accurate condition a maximum and minimum thermometer for measuring atmospheric shade temperature, in an approved location.

570 PERSONAL PROTECTIVE EQUIPMENT

- General: Provide for the sole use of those acting on behalf of the Employer, in sizes to be specified:
  - Safety helmets to BS EN 397, neither damaged nor time expired. Number required: 4.
  - High visibility waistcoats to BS EN 471 Class 2. Number required: 4.
  - Safety boots with steel insole and toecap to BS EN ISO 20345. Pairs required: none.
  - Disposable respirators to BS EN 149.FFP1S.
  - protection to BS EN 166.
  - Ear protection - muffs to BS EN 352-1, plugs to BS EN 352-2
  - Hand protection - to BS EN 388, 407, 420 or 511 as appropriate.

A37 OPERATION/ MAINTENANCE OF THE FINISHED WORKS

GENERALLY

110 THE BUILDING MANUAL

- Responsibility: The Contractor
- Content: Obtain and provide comprehensive information for owners and users of the completed Works. Include an overview of the main design principles and describe key components and systems within the finished Works, so affording a complete understanding of the Works, including all buildings and their systems to enable efficient and safe operation and maintenance.
- Specific requirements: As built drawings for stonework repairs and any other repairs varying from the contract drawings.
- Format: Electronic copy to architect and CDM-C for comment prior to issue and final electronic and hard copy to client.
- Number of copies: 1.
- Delivery to client: 2 weeks prior to the issue of the Practical Completion Certificate.

115 THE HEALTH AND SAFETY FILE

- Responsibility: The contractor.
- Content: Obtain and provide the following information: Description of work carried out.
- . Any residual hazards, features which are concealed, hazardous materials used.
- Format: Electronic and one hard copy upon acceptance.
- Delivery to: Principal Designer By (date): 2 weeks prior to the issue of the Practical Completion Certificate.

155A CONTENT OF THE BUILDING MANUAL TO BE PROVIDED BY THE CONTRACTOR

- General: Details of the property, the parties, operational requirements and constraints of a general nature.
- As-built drawings: Ensure that changes to the work as tendered are recorded on site drawings to reflect variations as instructed by the architect, in a clear manner and legible manner. The original set is to form an annex to the Manual.
- Photographs: Record photographs taken during the work as clause A32/280.
- Submit copy of record drawings and photos 1 week before Practical Completion. This is a pre-requisite for issue of the Practical Completion Certificate. Allow for comments from the architect, updating/revising and/or additions to the record and re-submission incorporating comments.
- Building fabric: Design criteria, maintenance details, product details, including details of all mortar mixes and environmental and trafficking conditions.
- Building services: Description and operation of systems, diagrammatic drawings, record drawings, identification of services, product details, equipment settings, maintenance schedules, consumable items, spares and emergency procedures.
- Documentation: Guarantees, warranties, maintenance agreements, test certificates and reports.

160A PRESENTATION OF BUILDING MANUAL

- Format: Hard copy, A4 size, loose leaf, ring binder with hard cover, indexed, divided and appropriately cover titled for submission to the client.
- Electronic copy for submission to the client and architect.

A40 CONTRACTOR'S GENERAL COST ITEMS: MANAGEMENT & STAFF

110 MANAGEMENT AND STAFF

- Cost significant items: Site Foreman.

A41 CONTRACTOR'S GENERAL COST ITEMS: SITE ACCOMMODATION

110 SITE ACCOMMODATION

- Details: Site accommodation required or made/ not made available by the Employer: See clause A36/210.
- Cost significant items: Rest Room, Toilet and storage container as A36/231.

A42 CONTRACTOR'S GENERAL COST ITEMS: SERVICES & FACILITIES

110 SERVICES AND FACILITIES

- Details: Services or facilities required or made/ not made available by the Employer.
- Cost significant items: Hot water and washing facilities in Rest Room.

A43 CONTRACTOR'S GENERAL COST ITEMS: MECHANICAL PLANT

110 MECHANICAL PLANT

- Cost significant items: Hoist

A44 CONTRACTOR'S GENERAL COST ITEMS: TEMPORARY WORKS

110 TEMPORARY WORKS

- Details: Temporary works required or made/ not made available by the Employer: See section A36.
- Cost significant items: Scaffold and Temporary Works as described in Section A36.

A54 PROVISIONAL WORK/ ITEMS

100 PROVISIONAL SUMS FOR DEFINED WORK

- Item: Timber repair.
- Description of work: Additional replacement of roof boarding and to timber framed side panels.
- Provisional Sums: Include £2,000.
- Allow for general attendance, profit and overheads.

590 CONTINGENCIES

- Provisional sum: Include: £12,000.

A55 DAYWORKS

150 DAYWORK CHARGES

- General: Where an instruction is issued requiring a variation which is not of a similar character or executed under similar conditions to work included in the Contract and where work cannot properly be measured and valued, the Contractor shall be allowed payment on a daywork basis at the following rates:
- RICS/ Building Employers' Confederation:
- The Main Contractor is to allow for providing the following provisional amounts of labour to be used in daywork throughout the period of the Contract and of the Defects Liability Period. The rates inserted for each class of labour are to include for all supervision, overheads and profit and for all costs and charges in connection with Employer's Liability, Third Party and Fire Insurances, Working Rule Agreement, Holidays with Pay, Bonus Schemes, Guaranteed Time, Lodging Allowances and the like, National Insurance Acts and all other Acts of Parliament of a like nature or any Amendment thereto. The rates are therefore to be interpreted as the total cost of employing one man for one hour's work on site.

- Prime cost of Masons. (20 hours @ £ _____). The sum of £ _____
  - Percentage adjustment to cover incidental costs, overheads and profit:_____ %.

- Prime cost of labourer (Mason's mate): (20 hours at £_____). The sum of £ _____
  - Percentage adjustment to cover incidental costs, overheads and profit:_____ %.

- Prime cost of roofer (10 hours at £_____). The sum of £ _____
  - Percentage adjustment to cover incidental costs, overheads and profit:_____ %.

- Prime cost of Carpenter/ Joiner (15 hours at £_____). The sum of £ _____
  - Percentage adjustment to cover incidental costs, overheads and profit:_____ %.

- Prime cost of labourer (Ground work): (10 hours at £_____). The sum of £ _____
  - Percentage adjustment to cover incidental costs, overheads and profit:_____ %.

- Prime cost of materials The sum of £ 2,000
  - Percentage adjustment to cover incidental costs, overheads and profit:_____ %.

- Prime cost of plant The Sum of £200.
  - Percentage adjustment to cover incidental costs, overheads and profit:_____ %.

MATERIALS AND WORKMANSHIP SPECIFICATION

6 St Martin's Almshouses Bayham Street London NW1 0BD T:0207 485 8994 M:07747047058 E:rena@pitsilligraham.co.uk

C40 CLEANING MASONRY/ CONCRETE

To be read with Preliminaries/ General conditions.

100 INFORMATION TO BE SUBMITTED WITH THE TENDER

- Submit: The names and work experience of operatives to be engaged the cleaning operations described in this document. Expertise required as set out in clause 190 below.

110 SCOPE OF WORK

- Cleaning is to be carried out to Bathstone elements including the underside of stone mouldings, carvings etc in limited areas.
- Atmospheric dirt and dust: Gentle water spray and brush.
- Calcium sulphate deposits: Reduce initially by using mechanical means such as scalpels, (for heavy encrustations) hand held water sprays and brushes. Follow by steam cleaning and poulticing. Abrasive cleaning not permitted. A combination of methods may be used following trials as clause 230 below.

121 RELATED REPAIR/ REMEDIAL WORKS

- Work to be carried out before cleaning work:
  - Dry brush all areas.
  - Seek architect's agreement for defrassing friable stone. Work by Conservator as clause190.
- Work to be carried out after cleaning work:
  - Repair work as shown on contract drgs.

160 PROTECTION

- Surfaces not designated for cleaning: Prevent damage, including marking and staining.
- Openings: Prevent ingress of water, cleaning agents, and detritus.
  - Window and door openings: Seal edges with appropriate non marking tape.
  - Vents and grilles: Seek instructions before sealing up.
- Additional Protection:
  - Leaded lights: Seal edges with removable non staining sealant. Protect with polythene and rigid boarding cut to the foliated shape of the tracery and other special details.
  - Areas not specified for cleaning: Protect from run off.

175 CONTROL AND DISPOSAL OF WASH WATER AND DETRITUS

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

180 COLD WEATHER

- Cleaning procedures using water: Do not use when air temperature is at or below 5°C. Protect damp surfaces from frost.
- Chemical cleaning agents: Do not use when surface temperatures are below those recommended by manufacturer.

190 CLEANING GENERALLY

- Operatives: Work to be carried out by ICON accredited conservator. Appropriately trained and experienced for each type of cleaning work.
  - Evidence of training: Submit on request.
- Control of cleaning: Confine cleaning processes and materials to designated areas. Prevent wind drift.
- Removal of detritus: Regularly. Dispose of safely.
- Monitoring: Frequently check results of cleaning compared to approved trial samples. If results established by trials are not achieved, seek instructions.
- Modifications to cleaning methods and materials: Seek instructions.

215 RECORD OF CLEANING WORKS

- Written report: Maintain record for cleaning methods and procedures used for each type of surface and deposit.
  - Purpose: For building maintenance and to inform future cleaning operations.
- Report content: Relevant attributes of cleaning methods used to include:
  - Equipment and settings.
  - Dwell times.
  - Number of applications.
  - Ambient temperatures.
- Other documentation: Written description of the surfaces concerned including condition. Photographs before, during and after conservation.
- Submission: At completion of cleaning works.

230 TRIAL SAMPLES

- Trial sample reference: Deep recess of profiled work hood mould
  - Location/ Size: North kneeler on west elevation/ width of kneeler
  - Type of soiling/ surface: Calcium sulphate and dirt.
  - Cleaning methods: Mechanical using scalpels remove encrustations, hand held water sprays and brushes, steam cleaning as clause 322A followed poultices as clauses 370 370 to remove engrained soiling. Use singly or in combination on three locations of equal soiling levels and assess results.
- Trial sample reference: Top of hood mould and coping stone coving on South elevation
  - Location/ Size: As agreed with the architect
  - Type of soiling/ surface: Dirt
  - Cleaning methods: Hand held water sprays and brushes, Therma Tech steam cleaning as clause 322A followed poultices as clause 370 to remove engrained soiling. Use singly or in combination on three locations of equal soiling levels and assess results.
- Trial sample face reference: Bathstone ashlar face.
  - Location/ Size: East kneeler at base of gable on North elevation/extent of current stain.
  - Type of soiling/ surface: Atmospheric dirt with streaks where water runs down.
  - Cleaning methods: Therma Tech steam cleaning as clause 322A followed poultices as clause 370 to remove engrained soiling. Use singly or in combination on three locations of equal soiling levels and assess results.
- Records: Maintain written records for each trial area, including cleaning methods and conditions, to enable repetition of results elsewhere.

231c APPROVALS / LEVEL OF CLEANLINESS

- Following the trials the Architect will mark on site the sample area of finished work to show the required level of cleaning. The contractor will be required to match that in subsequent work. As a starting point the contractor is to aim for a degree of cleanliness between 70% - 80%.
- The contractor must seek the Architect's instructions if work by any of the agreed methods is in any way damaging the building. The architect will vary the level of cleaning required to suit the varying conditions presented by the different stones or other substrate material and weathering patterns of the building.

PRODUCTS/ EQUIPMENT

312 SURFACE BIOCIDES

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

322A STEAM CLEANING EQUIPMENT – THERMA TECH

- Manufacturer/Supplier: Restorative Techniques, 67a Gloucester Road, Rudgeway, Bristol, BS35 3SG Tel: +44 (0)1454 417831 info@restorativetechniques.co.uk https://www.restorative-roducts.com/products/thermatech
- Product reference: Super-heated water cleaning.
- Nozzle types: As recommended by the manufacturer.

370 AMMONIUM CARBONATE POULTICE

- Poulticing manufacturer: Restorative Techniques, 67a Gloucester Road, Rudgeway, Bristol, BS35 3SG Tel: +44 (0)1454 417831 info@restorativetechniques.co.uk https://www.restorative-products.com/chemical-products
  - Product reference: Ammonium carbonate poultice strength 2%, 5% or 10% to suit application.
  - Start with low strength poultice and build up if necessary.

APPLICATION

412 REMOVAL OF LOOSELY ADHERED DEPOSITS

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

422 BIOCIDE APPLICATION

- Preparation: Remove loose growths.
- Surfaces: Prevent damage, including abrasion.
- Biocide treatment: Appropriate solutions to kill growths and inhibit further growths.
  - Dead growths: Remove.

432 TOOLING

- Tooling of surfaces: only to remove thick encrustations by using scalpels subject to trials. Redressing of stone is not permitted. No damage to stone surfaces will be permitted.

463 WATER SPRAY CLEANING (HAND HELD SPRAYS)

- Surfaces: Minimize water run-off. Prevent damage, including abrasion, from brushes.

515 POULTICING

- Surfaces: Prevent damage, including abrasion.
- Application: To wetted surfaces. Maintain contact with surfaces as poultice dries out. Reinforce poultice as necessary.
- Poultice reinforcement: Hessian.
- Drying: Prevent excessively rapid or localized drying out by regular wetting or covering with cling film or other impervious material.
- Spent poultice material: Do not reuse.

C41 REPAIRING/ RENOVATING/CONSERVING MASONRY

GENERALLY/ PREPARATION

100 INFORMATION TO BE SUBMITTED WITH THE TENDER

- Submit: The names and evidence of qualifications and work experience of operatives to be engaged the repair of the masonry as described in clause 110 and other repair methods as described in this document, with the tender. Experience required as clause 180A.

110 SCOPE OF WORK

- Schedule:
  - Raking out and pointing of open joints in Greensand stone and dressed Bathstone.
  - Repair and replacement of defective dressed stone and rubble and profiled dressed stones in Greensand stone Ragstone and Bathstone.
  - Conservation of eroded stones with lime mortar (plastic) repair in a variety of coloured mortar to match natural stone variation and application of shelter coating.
  - Deep packing of cracks and pointing.
  - Rebuilding areas of fallen facework in Greensand stone
- Records of masonry to be repaired: Before starting work, use measurements to record bonding patterns stone distribution, joint widths, special features on drawings provided.
- Identification of the masonry units to be removed, replaced or repaired: Mark clearly, but not indelibly, on the face of masonry units or parts of units to be cut out and replaced. Transcribe markings to drawings/ photographs. Refer also to clauses 120 and 140A below.

120 SITE INSPECTION

- Purpose: To confirm type and extent of repair/ renovation/ conservation work shown on drawings and described in survey reports and schedules of work.
- Parties involved: Architect and Foreman mason/ conservator.
- Timing: At least 10 working days before starting each section of work and as soon as scaffold access is available.
- Instructions issued during inspection: Confirm in writing, with drawings and schedules as required, before commencing work.

125A REMOVAL OF FITTINGS/ FIXTURES

- Items to be removed and reinstated on completion of repair work: As noted on drgs.
  - Identification: Attach labels or otherwise mark items using durable, non-permanent means, to identify location and describe refixing instructions, where applicable.
  - Treatment following removal: As noted on drgs.
  - Storage: Protect against damage, and store until required.
  - Storage location: On site.
- Reinstatement: Refit in original locations using original installation methods.
- Masonry fabric and surfaces: Do not damage during removal and replacement of fittings/fixtures.

130A MOSS AND LICHEN

- Moss: Carefully remove moss from retained stone surfaces.
- Lichen: Do not scrape or remove. Carry out work carefully to protect lichen and retain the weathered appearance of the building.

140A RECORD OF WORK

- General: Record work carried out to masonry clearly and accurately using written descriptions, sketches, drawings and photographs, as necessary.
- Specific records: Photographic record before and after carrying out the work. Mark location of photographs on drawings and annotate as appropriate.
- Documentation: Submit copy of record drawings and photos at least 1 week before Practical Completion. This is a pre-requisite for issue of the Practical Completion Certificate. Allow for comments from the architect and update/revise/augment information, as necessary. Re-submit incorporating comments.
- Final record set to be submitted in electronic format and hard copies as A37/160.

WORKMANSHIP GENERALLY

150A POWER TOOLS

- Usage for removal of mortar in stone joints: Not permitted unless agreed by the architect or specified in particular situations such as hard cement removal.
- Use a drill to insert pins and armatures in repairs. Select appropriate tools for the material to be drilled, such as SDS or battery rotary drills.
- Seek the express permission of the architect for all power tools.

155 PUTLOG SCAFFOLDING

- Usage: Not permitted.

160 PROTECTION OF MASONRY UNITS AND MASONRY

- Masonry units: Prevent overstressing during transit, storage, handling and fixing. Store on level bearers clear of the ground, separated with resilient spacers. Protect from adverse weather and keep dry. Prevent soiling, chipping and contamination. Lift units at designed lifting points, where provided.
- Masonry: Prevent damage, particularly to arrises, projecting features and delicate, friable surfaces. Prevent mortar/ grout splashes and other staining and marking on facework.
- Protect using suitable nonstaining slats, boards, tarpaulins, etc. Remove protection on completion of the work.

165 STRUCTURAL STABILITY

- General: Maintain stability of masonry. Report defects, including signs of movement that are exposed or become apparent during the removal of masonry units.

170 DISTURBANCE TO RETAINED MASONRY

- Retained masonry in the vicinity of repair works: Disturb as little as possible.
- Existing retained masonry: Do not cut or adjust to accommodate new or reused units.
- Retained loose masonry units and those vulnerable to movement during repair works: Prop or wedge so as to be firmly and correctly positioned.

180A WORKMANSHIP

- Skill and experience of site operatives: Appropriate for types of work on which they are employed. All operatives are to be registered with the Construction Skills Certification Scheme, Gold Standard or accredited under the PACR scheme.
- Documentary evidence: Submit CV's and personnel skills/qualifications with the tender.

185A ADVERSE WEATHER

- General: Do not use frozen materials or lay masonry units on frozen surfaces.
- Air temperature: Do not bed masonry units or repoint when the temperatures are liable to consistently fall below 5°C (41°F) for several weeks/months after the product has been used, unless appropriate protection and other measures are in place and approval is given.
- Temperature of the work: Maintain above freezing until mortar has fully set.
- Rain, snow, dew and wind: Protect masonry by covering during precipitation, and at all times when work is not proceeding with double layer of hessian, mortar fleece, hessian backed carpet with additional tarpaulin protection. Keep protective layers away from the wall surface to avoid restricting air movement and carbonation.
- Include sheet protection to scaffold to protect work from wind and rain and cover to wall heads.
- Hot conditions and drying winds: Prevent masonry from drying out rapidly by covering with double layer of starch-free hessian and keeping damp by regular spraying.
- New mortar damaged by frost: Rake out and replace.

186 PROTECTION AND CURING OF LIME MORTARS

- Protection: Submit method statement for the protection of all mortars.
- Tending: Tend mortars by keeping damp and protected to ensure slow curing. Protect and tend for the period necessary for the mortar to cure and gain sufficient strength to act in the way for which it is designed taking into account weather conditions and mix composition.
- Timing: Ensure sufficient period within the programme to cure lime mortars after completion of particular areas of work. Do not programme work with lime mortar at the end of the contract period to ensure sufficient time for curing and protection, including mortar pointing to roof ridges, verges, abutments etc.
- Retain scaffold in place to facilitate the protection and curing of the mortar.

190 CONTROL SAMPLES

- General: Complete an area of each of the types of work listed below and seek the architect's agreement before proceeding with the remainder.
- Maintain a written Schedule of Samples on site, recording details of mortar mixes used, dates of presentation of samples, Architect's comments and proposed further action. Protect samples from weather and damage.
- Agreement: For each sample of work, allow for adjustments to be made following the architect's comments. The contractor is to allow for a maximum of 3 trials for each sample listed until satisfactory result and agreement is reached.
- Control samples:
  1. Raking out and preparation of joints as clauses 810 – 812, - 2no areas of 300x3000mm each for pointing types as clauses 820.
  2. Raking out and preparation of ashlar joints to be repointed as follows:
     a. 1 no joint as C41/820A – coping stone, location as directed by the architect.
     b. 1no joint as C41/822- fine ashlar joints in quoins, location as directed by the architect.
  3. Preparation of mortar biscuits for pointing mortar as clauses, 813 and 814 for initial assessment and approval as follows:
     a. Mortar for Greensand stone rubble joints as clause 820.
     b. Mortar for Bathstone ashlar joints as clause 820A (sky facing joints).
     c. Mortar for Bathstone ashlar joints as clause 821 and 822 (narrow and fine joints).
  4. Repointing coursed Greensand stone joints 1no area - 300x300mm as clause 820.
  5. Pointing ashlar joints:
     a. 1 no joint as C41/820A – coping stone, location as directed by the architect.
     b. 1 no joint as C41/822- stone ashlar joint, location as directed by the architect.
  6. Preparation of mortar biscuits for mortar (plastic) repair as clauses 516 and 517 for initial assessment and approval. Note that for each type of stone 3 different shades of mortar are required to match the natural colour variation and to avoid the new work appearing lifeless. Mortars required are as follows:
     a. Bathstone blocks – 3no colour variations.
     b. Greensand blocks -3no colour variations.
  7. Workmanship sample for mortar repair using the mortars agreed and sheltercoating (note point 11) over large or entire area of stones as follows:
     c. 1no Bathstone block as clause 520A, location as agreed by the architect
  8. Consolidation (CS) repair consisting of mortar capping as clause 523 using the mortars agreed in clause 190/6 above and sheltercoating (note point 11) as follows:
     a. 1no Bathstone block.
  9. Shelter coat to different colour stones and to mortar repairs as clause 900- number of colour shades required as follows:
     a. Bathstone blocks – 3no colour variations.
  10. Finish sample for new Greensand stone rubble as described in clause 240. Sample block at least 200x150mm on face.

MATERIAL/ PRODUCTION/ ACCESSORIES

215 MATERIAL SAMPLES

- Representative samples of designated materials: Submit before placing orders.
- Designated materials:
  - Representative stone samples as listed in 240-241.
  - Sands and stone dusts for bedding and pointing mortar for all applications as Z21/12.
  - Sands and stone dusts for all mortar repairs as Z21/13 and as described in 517.
  - Red tiles for SPAB tile stitch repair only if directed by the architect.
  - Bricks as clause 260.
- Retention of samples: Unless instructed otherwise, retain samples on site for reference. Protect from damage and contamination.

220A RECORDING EXISTING PROFILES TO BE REPRODUCED

- Profiles: Take measurements and profiles from existing masonry units, in protected areas, as agreed by the architect, for accurate matching of replacements in an un-weathered state. Take profiles for all moulded stones to be refaced/ replaced as shown on drawings.
- Method: Take profiles by inserting thin metal sheets in raked out joints to scribe on.
- Cross sectional area: Allow for fuller than existing profiles, up to 5mm or greater depending on site conditions, to account for loss of original material over time.
- Recording in situ: If there are no suitable joints to use inserts, seek instructions.
- Drawings and templates: Prepare as necessary. Templates must be clearly and indelibly marked to identify use and location.
- Submit full size profiles for architect's approval as clause 230. Make adjustments as required by the architect.

230 INSPECTION OF DRAWINGS, TEMPLATES, CASTS, ETC

- Timing: Before starting production of masonry units.
- Period of notice (minimum): One week.

240 STONE - GREENSAND STONE

- Supplier: LB Silica Sand, Bryants Ln, Heath and Reach, Leighton Buzzard LU7 0AL (part of the O'Brien group. Tel. 01525372000.
- Note: The quarry is only a short distance to the north of the cemetery and a personal visit to the quarry may be necessary to seek permission to collect blocks put aside in the process of extracting sand.
- Type: Greensand band sandstone.
- Quality: Free from vents, cracks, fissures, discolouration, or other defects that may adversely affect strength, durability or appearance. Thoroughly seasoned, dressed and worked in accordance with shop drawings prepared by the supplier.
- Finish:
  - New rubble facings: To match existing work.
- Additional Requirements: Allow time to select stone at the quarry to dress to required block sizes and present samples.

241 STONE - BATHSTONE FOR NEW STONES

- Supplier: The Bath Stone Group, Stoke Hill Mine, Midford Lane, Limpley Stoke, Bath, Avon.
- BA3 6JL (Tel: 01225 723792.
- Type: Bath stone -Base bed for new copings and weather exposed elements, and as stipulated in SoW.
- Type: Bath stone - Top bed for other work.
- Quality: Free from vents, cracks, fissures, discolouration, or other defects that may adversely affect strength, durability or appearance. Thoroughly seasoned, dressed and worked in accordance with shop drawings prepared by the supplier.
- Finish: Rubbed.
- Other requirements: Submit full size profiles and other details prior to production for agreement by the architect as 220A and 230.

245 REPLACEMENT STONE UNITS
- Sizes and profiles: To match existing masonry. Maintain existing joint widths.
- Sinkings for fixings, joggles and lifting devices: Accurately aligned and positioned in relation to existing masonry.
- Marking: Mark each block/ dressing clearly and indelibly on a concealed face to indicate the natural bed and position in the finished work.

250 STONE ORIENTATION
- Orientation of natural bed:
  - In plain walling: Horizontal.
  - In projecting stones and copings: Vertical and perpendicular to wall face.
  - In arches: Perpendicular to line of thrust.

255A ASHLAR BLOCKS/ DRESSINGS
- Cutting and dressing stone: To true and regular surfaces, free from hollow or rough areas, unless otherwise specified.

260 BRICKS FOR REPAIR OF NORTH PIER FACINGS
- Types: Hand made bricks to match existing brick facing on north elevation in size and texture.
- Source: Contractor's choice.
- Agree quality/ colour of material to be used with the architect.
- All dimensions are to be checked from original bricks on site before ordering.
- Submit samples for architect's comments.

261 BRICKS FOR EDGING TO NEW ACO DRAIN
- Types: Machine made paving bricks 200x100x62mm, laid in NHL3.5 St Astier hydraulic lime ! part lime : 2 parts sharp well graded sand..
- Source: Wienerberger Blue Dragfaced as technical details in Appendix 4 or equivalent agreed with the architect.
- Submit samples for architect's comments.

281 FIXINGS FOR STONE
- Type: Cramps and threaded dowels.
- Material: Grade 18/8 Austenitic stainless steel.
- Size, strength and number: As necessary to resist loads likely to occur during the life of the building, and to prevent lateral displacement or pulling apart of the construction.

282 FIXINGS/ REINFORCMENT FOR MORTAR REPAIRS
- Type: Ceramic "T" fixings (Nim-Ts); Note ties can be made in buff and dark colour.
- Manufacturer: Potstop, 42 The Grove, Bristol, BS1 4RB, Lou Gilbert-Scott. T 0117 925 3403 Email: potstop@hotmail.com. Or Lisa Scantlebury BA Hons Ceramics 07818856638
- Fixing: Drill background to receive tie to a slightly bigger hole than the diameter of the tie. Fix with small amount of Prompt natural cement. Do not use resin.

283 PINS FOR SECURING CRACKED STONE
- Type: stainless steel threaded dowel cut to size to suit application, inserted on the diagonal for greater support.
- Material: Grade 18/8 Austenitic stainless steel.
- Size 5-10mm diam to suit application, length between 100-200mm depending on depth of support needed.
- Predrilled using a battery rotary drill. Pin at approximately 250mm centres.

285 BED JOINT REINFORCEMENT TO MASONRY AREAS OF REBUILT MASONRY
- Manufacturer: Submit proposals.
- Product reference: Expanded mesh strips.
- Material: Austenitic stainless steel.

287 CRACK STITCHING

- Manufacturer: Helifix www.helifix.co.uk. +44 (0)20 8735 5200.
- Product Reference: High tensile strength Helibar (normally 6 or 8mm, depending on width of joint, length to suit location) helical 316 stainless steel bars.

REPLACEMENTS AND INSERTIONS

310 DISMANTLING MASONRY FOR REUSE

- Masonry units to be reused: Photograph in position and remove carefully and in one piece.
  - Treatment: Clean off old mortar, organic growths and dirt, and leave units in a suitable condition for rebuilding.
  - Identification: Mark each unit clearly and indelibly on a concealed face, indicating its original position in the construction. Transcribe makings to drawings/ photographs.

321 REBUILDING AREAS OF MISSING OR UNSTABLE MASONRY

- Replacement materials: Clean and re-used dismantled stone, and additional stone as 240.
- Mortar:
  - Mix: As C21/820.
  - Sand source/ type: Contractor's choice to approved samples as clause C41/215.
- Fixings: Cramps and dowels as 281.
- Preparation: Draw a square grid onto the face of the stones to be rebuilt with chalk, number stones and take photographs before dismantling. Other preparation as 330.
- Stone Removal: Remove masonry units from the top one at time. Provide temporary support as necessary as the work progresses. Clean old mortar from masonry units and loosely lay out each panel/area to be rebuilt on a level board in correct sequence for reconstruction.
- Work to Background: Inspect background for soundness and report defects to the Architect and SE. Flush out voids. Push mortar as mix specified into voids within the core of the wall tamping and pressing well. Fill larger voids with small rubble stones, to consolidate the background before reconstruction. Seek instructions and grout voids in background as 710-740, if necessary.
- Rebuilding: To match previous face and joint lines, joint widths and bonding. Adequately bonded to retained work/ backing masonry, as appropriate. Rebed salvaged stones in original position leaving joints recessed for pointing. Where new stone replacements are needed, include for a range of stone depths, 100,150 and 200mm to achieve bond.
- Joint surfaces: Dampen, as necessary, to control suction.
- Laying masonry units: On a full bed of mortar; perpend joints filled.
- Exposed faces: For greensand stone. allow mortar to go off before attempting to clean off splashes as guidance in Appendix 1.
- Joints: Pointed in one operation with remaining work. Leave recessed to a minimum of 25mm or twice the width of the joint to receive pointing as clause 820.
- Other requirements: Bed joint reinforcement as 285.

321 REBUILDING AREAS OF MISSING OR UNSTABLE RUBBLE FACINGS

- Replacement materials: Clean and re-used dismantled stone or new to match as 240, to make up any shortfall.
- Mortar:
  - Mix: As pointing mortar as clause 820.
- Preparation: Number each course to be dismantled with French chalk and take photographs. Dismantle as clause 310 setting aside numbered stones for each course.
- Removal: Remove masonry units from the top one at time. Provide temporary support as necessary as the work progresses. Clean old mortar from masonry units and loosely lay out each panel/area to be rebuilt on a level board in correct sequence for reconstruction as noted above.
- Work to Background: Inspect background for soundness and report defects to the Architect and SE. Flush out cavity to receive rebuilt facings.
- Rebuilding: To match previous face and joint lines, joint widths and bonding. Rebed salvaged stones in original courses where possible leaving joints recessed for pointing.
- Joint surfaces: Dampen sufficiently to control suction.
- Laying masonry units: On a full bed of mortar; perpend joints filled.

- Exposed faces: Remove mortar and grout splashes immediately.
- Joints: Pointed in one operation with remaining work as clause 820.
- Other requirements:
  - Bed joint reinforcement to connect new to retained work as clauses 285 and 675

330 PREPARATION FOR REPLACEMENT MASONRY

- Defective material: Carefully remove to the extent agreed. Do not disturb, damage or mark adjacent retained masonry.
- Existing metal fixings, frame members, etc: Report when exposed
- Redundant metal fixings: Remove.
- Recesses: Remove projections and loose material; leave joint surfaces in a suitable condition to receive replacement units. Ensure background is damp before placing units. Protect recesses from adverse weather if units are not to be placed immediately.

332 CUTTING OUT STONE FOR NEW FACINGS TO INDIVIDUAL BLOCKS

- Cut out defective sections of stone for facing repairs as marked on site by the architect.
- Work to existing joints unless otherwise directed by the architect. Cut out perimeter joint with a masonry saw. Prevent damage to adjoining stone arrises. No power tools will be allowed for cutting external perimeter.
- Break down the stone with vertical saw cuts using a small blades and break up with hammer and small sharp chisel. Form a pocket with a neat square profile to the depth stipulated in the schedule of work but no less than 100mm on the bed joint, unless otherwise specified.
- Allow for temporary support of stones above as necessary.

340 REPLACEMENT OF STONE FOR RUBBLE WALLING (NEW FACINGS)

- Stone: To match existing according to stone type and as given in clauses 240-241.
- Bedding depths: Not less 75 mm in individual stones, extending to 100mm for half of the stones to be refaced where there are more than 3-4 adjacent stones to be refaced.
- Mortar: As section Z21.
  - Mix: As given in clause 820
- Fixings: Dowels and cramps as clause 280.
- Joints: Pointed with remaining work, as clause 820, recessed as shown on p.C10 of Appendix 1 and to agreed control sample.

350 STONE FACINGS TO MOULDED DRESSED STONES (Bath stone)

- Stone: To match existing according to stone type and as given in clauses 241.
- Finish: Rubbed or as directed by the architect.
- Preparation and insertion: Cut back to sound stone min depth 75mm. Leave cut face of existing stone level and smooth to receive new facing.
- Bedding Depth: To extend not less 75 mm back from the face of the wall. The projecting depth of stones such as cornices and hoodmoulds to be in addition.
- Mortar: As section Z21.
  - Mix: Bedding mortar mix: 1 part lime putty: 2.75 parts sand, 10% by volume of coarse stuff of Trass as Z21/28.
  - Sand source/ type: As clause Z21/12 and C41/215 (150µm-2mm).
- Fixings: bonded dowels as clause 405.
- Joints: 2mm or less.
- Other requirements: Submit profiles as clause 220 and 230 for architect's approval.

351 ASHLAR STONE INSERTS (ENTIRELY NEW STONE BLOCKS OR INDENTS) - (not profiled)

- Stone to match existing according to stone type and as given in clauses 241.
- Finish: To match existing or as directed by the architect.
- Bedding Depth: Not less 75 mm in individual stones, extending to 100mm for half of the stones to be refaced where there are more than 3-4 adjacent stones to be refaced or as given in the SoW or as shown on drawings.
- Preparation and insertion: As clauses 330 and 395.
- Mortar: As section Z21.
  - Bedding mortar mix: 1 part lime putty: 2.75 parts sand, 10% by volume of coarse stuff of Trass as Z21/28.
  - Sand source/ type: As clause Z21/12 and C41/215 (150µm-2mm)
  - Fixings: bonded dowels as clause 405.
- Joints: 2mm or less.

360 TILE REPLACEMENT OF DAMAGED MASONRY (SPAB TILE STITCH REPAIR)

- Tiles: Red clay roofing tiles to approved samples as 215.
  - Installation: Tiles cut neatly, laid to break joints, set into backing on a full bed of mortar.
- Mortar: As section Z21.
  - Mix: As given in clause 820
- Joints:
  - Where the tiling repair is to be exposed: Recessed weathered, with brushed or stippled finish as clause 860 and pointed in with remaining work
- Other requirements: Repair type to be used only as directed by the architect.

385 LAYING REPLACEMENT MASONRY UNITS

- Exposed faces of new material: Keep to agreed face lines.
- Faces, angles and features: Align accurately. Set out carefully to ensure satisfactory junctions with existing masonry and maintain existing joint widths.
- Joint surfaces: Dampen to control suction as necessary.
- Laying units: On a full bed of mortar, all joints filled.
- Exposed faces: Keep clear of mortar and grout.

390 GROUTING JOINTS, CRACKS AND VOIDS IN STONE

- Grout mix: Telling Unilit B-Fluid X-B, Unilit–B Fluid 2 or 3 Natural hydraulic lime grout according to fineness of crack or void to be filled and to manufacturer's recommendations.
- Manufacturer: http://tellinglime.com/unilit-grouts/ or equal and equivalent
- Joints that cannot be fully filled with bedding mortar: Grout thoroughly around replacement masonry units.
- Grouting: Keep grout back from exposed face to allow for the depth of pointing, using an approved temporary sealing material. Prevent grout staining exposed face.

395 STONE INSERTS (INDENTS)

- Pockets to receive inserts:
  - Cut out accurately. Undercut sides of pocket where necessary to provide space for bonding material.
  - Adjust depth so that insert stands proud of existing stone for finishing in situ.
  - Clean out thoroughly.
- Inserts: Cut to the smallest rectangular shape necessary to replace the defective area and provide a firm seating. Install accurately and securely.
- Exposed faces: Keep clear of bonding material.
- Existing joint widths: Maintain. Do not bridge joints.

405 BONDED DOWELS FOR STONE INSERTS

- Dowels: 8-10 mm threaded Austenitic stainless steel.
- Adhesive: Prompt natural cement (preferred to epoxy resin). Holes for dowels: Suitably sized and accurately aligned in masonry background and in rear of replacement/ insert stone; clean and dry.
- Other requirements: Do not use adhesive to bond stones at joints unless instructed.

410 CORRODED FIXINGS
- Removal: Cut out carefully, causing the least possible disturbance to surrounding masonry.
- Remove associated rust debris.
- Replacement: Compatible fixings as clause 281.

415 STONE PINNINGS FOR RUBBLE STONEWORK
- Material for pinnings: slate or tile recessed from the face of the joint.
- Placing: Tamp pinnings firmly into fresh mortar. Ensure mortar is thoroughly compacted into voids and that levelling and load distribution functions of pinnings are retained.
- Refer also to clause C41/815 for deep packing of joints.

420 TEMPORARY DISTANCE PIECES FOR JOINTS IN ASHLAR STONEWORK
- Material: Lead or stainless steel.
- Removal: When mortar/ grout is sufficiently strong to take loading without compression.

TOOLING/ DRESSING STONE IN SITU

455A DESCALING (DEFRASSING) STONE
- Requirement: Gently remove loose scaling and powdering from stones to the extent agreed.
- Method: Suitable bristle brushes. Do not use wire brushes. Hand pick loose fragments from Greensand stone blocks that come away easily.
- Other requirements: Consult with the Architect before proceeding with the work.

MORTAR REPAIRS

501 EXISTING MORTAR REPAIRS/RENDER
- Check all areas of cement render for soundness. Inform the architect where hollow sounding areas or loose areas are found and seek instructions. Refer to SoW.

502 REMOVAL OF EXISTING DEFECTIVE CEMENTITIOUS REPAIRS OR RENDER
- Method:
  - Make a number of drill holes into the body of the repair to facilitate its break up. Avoid the perimeter where the edges are feather edged.
  - Carefully remove existing cement repair or rendered area by chiselling around defective edges.

510A PREPARATION FOR MORTAR REPAIRS
- Repair area:
  - In dressed stone scribe area of masonry to be removed using straight horizontal and vertical lines parallel to joints. Where repair area abuts joints, maintain existing joint widths and do not bridge joints.
  - In areas of eroded seams cut back to sound stone to an irregular profile if necessary to a maximum depth of 25mm.
- All decayed masonry: Cut back carefully to a minimum depth of 25 mm to a sound background. Where the depth of removal exceeds 40 mm seek instructions.
- Precautions: Do not weaken masonry by removing excessive material. Do not damage adjacent masonry.
- Top and vertical reveals of repair area: Undercut.
- Remove all loose and friable material.
- Wash and sterilise the exposed original surface with water and formalin.

515A REINFORCEMENT FOR MORTAR REPAIRS TO ERODED STONES – INSERTING T TIES
- Application: Where depth of decay exceeds 25mm.
- Material: Ceramic T- fixings as 281A secured with dabs of neat prompt natural cement.
  - Align top section of T tie in various directions to provide maximum key for mortar repair.
- Spacing: At 250mm centres approx.
- Mortar placing: Prepare surface of stone and carry out slurry and undercoats before drilling in the fixings. Slurry coat T tie fixing also and apply top coat and finishing coats of mortar repair finished as specified elsewhere.
- Cover to reinforcement: Not less than 20 mm.

516 MORTAR SAMPLES FOR MORTAR REPAIRS

- Samples required:
  - Mortar samples to match different coloured stones –3no different coloured mixes to suit colour variation for Greensand stone and 3no different coloured mixes for Bathstone.
- Method: Prepare mortar "biscuits" on a board to show colour range and texture required. Present biscuits when they are completely dry.
- Adjustments: Make adjustments following comments by the Architect until agreement is reached. Include for a total of 3 no presentations for each colour of mortar required. Note that 3 final coloured repair mortars are required for each type of stone to maintain the natural colour variation.
- Records: Record mix proportions, aggregates used and comments at each presentation and when agreement is reached and include in O&M Manual.

517 AGGREGATES FOR MORTAR REPAIRS AND POINTING MORTARS

- Select aggregates for colour, grain size and sharpness for a good workable mix with evenly distributed grain sizes and when mixed with the binder, applied to the building and totally dried out the repair resembles the weathered surface of the stone.
- Refer to Z21/11 – Z21/13 for grading sands and stone dusts.
- Use strongly coloured sands and stone dusts to achieve the required result for the different colours of mortar repair mixes required.
- Where stone dusts are used, sieve to achieve the correct granulometry and remove fines.
- Present samples of proposed aggregates to the Architect for comment as clause 215.
- Do not use pigments (artificial or natural) without the express permission of the architect.

520A MORTAR REPAIRS TO INDIVIDUAL STONES – LARGE AREA OR FULL STONE SURFACE COVER

- Preparation: As clause 510A.
- Samples required before proceeding: As clause 516.
- Mortar: As section Z21 for binder and aggregates noted below.
- Slurry coat:
  - Mix: 1 part lime putty: 2.5 parts sand, 10% by volume of coarse stuff of Trass as Z21/28.
  - Sand source/type: Clean, well graded, sharp sand (150µm-2) as Z21/11 and C41/517.
  - Slurry the mix with water and use to paint over the entire surface of the retained stone. Allow the slurry to partially dry out into the stone. Apply the first "render" mortar repair coat before the final set of the slurry coat is reached.
- Undercoats (Render and Float Coat): To match approved samples
  - Mix: 1 part lime putty: 1.5 parts sand: 0.5 part fine strong coloured stone dust: 0.5 part well graded porous stone dust or buff coloured brick dust. Add 10% by volume of coarse stuff of Trass as Z21/28.
  - Aggregate source/ type: Clean, well graded, sand and stone dust aggregate (150µm-3) as clause Z21/11, Z21/13 and C41/517.
  - Building up: In layers where necessary, each layer not exceeding 12 mm. Scratch each layer to provide key to the next.
- Finishing coat: To match approved samples.
  - Mix: 1 part lime putty: 1-1.5 part sand: 0.5 part fine strong coloured stone dust: 0.5 part well graded porous stone dust or buff coloured brick dust. Add 10% by volume of coarse stuff of Trass as Z21/28. Adjust binder proportion to suit.
  - Aggregate source/ type: Clean, well graded, sharp sand and stone dust aggregate (150µm-2) as clause Z21/11, Z21/13 and C41/517.
  - Sieve sand and stone dusts chosen for undercoats if necessary to achieve fine finish and maintain through colour between undercoats and finishing coat. Note different colour stone dusts will be necessary for repairs to different types of stone,
  - Finished thickness: 6-8 mm.
- Finish:
  - To rubble stones: Scrape back to finished line as clause 550A and compact the surface by pressing with small felt covered pads pushing back to create the pitched finish of existing stones. Where several adjacent stones are to be repaired vary colour of the mortar to imitate the natural stone variation as clause 516.
  - To limestone dressed stones: Scrape back to finished line, as clause 550A further compact and finish as clause 555A.

- Reinforcement:
  - Where repair is exceeds 25mm use reinforcement as clause 515A
  - For deep pockets of decay in rubble stones build up cavities as clause 515B.
- Application of Repair: As clause 540.
- Other requirements: Sheltercoat all mortar repairs as C41/900.

520B MORTAR REPAIRS TO INDIVIDUAL STONES- ASHLAR-SMALL PART OF STONE

- Preparation and Samples required: As clause 520A.
- Mortar and Mix for Slurry coat, Undercoats and Finishing coats as clause 520A.
- Finish:
  - To limestone dressed stones: Scrape back to finished line, as clause 550A further compact and finish as clause 555A.
- Reinforcement: As Clause 515A, where depth of repair exceeds 25mm.
- Application of Repair: As clause 540.
- Other requirements:
  - Where repairs to adjacent ashlars are taking place cut a joint in the mortar repair and point separately as clauses 820 or 821.
  - Sheltercoat all mortar repairs and original stone as clause 900.
  - Cure and protect repair as clause 186.
  - Work by specialist stone conservator.

520C MORTAR REPAIRS TO MOULDED OR PROFILED STONES

- Preparation and Samples required: As clause 520A.
- Mortar and Mix for Slurry coat, Undercoats and Finishing coats as clause 520A.
- Finish:
  - Form repair to original profile where this can be identified or submit proposed profile drawing as clauses 220 and 230 for architect's approval.
  - Scrape back to finished line, as clause 550A further compact and finish as clause 555A. Smooth profile but brushed finish.
- Reinforcement: As Clause 515A, where depth of repair exceeds 25mm.
- Application of Repair: As clause 540.
- Other requirements:
  - Where repairs to adjacent stones are taking place cut a joint in the mortar repair and point separately as clause 822.
  - Sheltercoat all mortar repairs and original stone as clause 900.
  - Cure and protect repair as clause 186.
  - Work by specialist stone conservator.

521 MORTAR CAPPING TO FRIABLE STONE TO INDIVIDUAL STONES – ASHLAR STONES

- Area of Repair: Where small pieces of friable stone are exfoliating but still attached.
- Preparation:
  - Carefully remove dust using air puffers and brushes.
  - Dampen surfaces by hand held sprays.
- Mortar: Binder and aggregates as section Z21 and as noted below.
- Method: Consolidate by injecting behind detaching stone with 2mm hypodermic syringe and fine grout fix. Cap around exposed area with fine mortar:
  - Grout mix: 2 parts lime putty: 2 parts PFA as Z21/28: 1 part Bentonite, mixed with sufficient water to create a pouring consistency.
  - Mortar capping Mix: 1 part lime putty: 1.5 parts sand: 0.5 part fine strong coloured stone dust: 0.5 part well graded porous stone dust or buff coloured brick dust. Add 10% by volume of coarse stuff of Trass or 5% Metakaolin as Z21/28.
  - Aggregate source/ type: Clean, well graded, sharp sand and stone dust aggregate (<150µm-2) as clause Z21/11, Z21/13 and C41/517.
- Other requirements:
  - Colour of mortars to match those as described in clause 516.
  - Present mortar and workmanship samples as clause 190.
  - Cure and protect repair as clause 186.
  - Shelter coat entire stone including mortar caps as clause 900.
  - Work by specialist stone conservator.

540 APPLYING MORTAR – LIME BASED MIXES

- Surfaces to receive mortar: Clean and free from dust and debris. Dampen to control suction.
- Applying coats: Build up in layers to specified thickness. Apply mortar firmly, ensuring good adhesion with no voids. Form a mechanical key to undercoats by combing or scratching to produce evenly spaced lines.
- Allow each layer to achieve an initial set before applying subsequent coats. Prevent each layer from drying out rapidly by covering immediately with plastics sheeting and/ or dampening intermittently with clean water.
- Finishing mortar coat: Form accurately to required planes/ profiles, and finish flush with adjacent masonry.
- Protection: Cure and protect completed repairs as clauses 185A 186, until mortar has set.

550A SCRAPED FINISH TO MORTAR REPAIRS

- Procedure: Finish final coat of repair mortar proud of existing masonry face. When mortar is set but not hard, scrape back to required face line using fine saw blade or other suitable means, to achieve required finish and finish individual stones as specified elsewhere.

555A FLOAT FINISH TO MORTAR REPAIRS TO STONE DRESSINGS

- Finish: Use a wood float and/ or a felt faced float to give an even overall texture. Do not use steel floats.

CRACK REPAIRS/ TIES/ REINFORCEMENT

610 MORTAR REPAIR OF CRACKS IN STONE

- Mortar: As section Z21.
  - Mix: As given in clause 521, coloured to suit stone.
  - Aggregate source/ type: As given in clause 521.
- Preparation: Carefully remove any weeds and plants. Clean out cracks to remove debris, dust and dirt, flush out. Dampen recesses, as necessary, to control suction.
- Applying mortar: Press well into cracks so that they are fully filled. Ensure that mortar does not encroach upon exposed faces. Finish mortar flush with masonry face.
- Other requirements:
  - Deep pack voids with small pieces of rubble or tile. Grout deep voids as clause 620A.
  - Pin as clause 640 if so specified.

620A HAND GROUTING FOR CRACKS AND OTHER SMALL CREVICES

- Preparation:
  - Pin cracked stone using pins as clause 283 and 640 before grouting.
  - Rake out cracks and open joints and flush out voids.
- Grout mix: As 390 fineness of grout to suit width of crack.
- Maintain modelling clay on site for plugging and collecting runs.
- Application:
  - Direct grout into open joints using clay cups formed against masonry surface. Pour grout to refusal
  - Use syringes where specified.
  - Allow to set, break off excess mortar and brush down masonry face. Swab off runs with damp cloth before set.
- Finishing: As clause 690.

640 PINNING CRACKS WITHIN STONES

- Dowels/ Pins: As clause 283. Provisional allowance of 2no pins per stone to be repaired to penetrate at least 100mm into the background.
- Resin: Low viscosity resin to approval or Prompt natural cement.
- Holes: Drill carefully, sloping downwards into background. Remove drilling dust and debris and keep dry.
- Filling holes:
  - Check that dowel lengths are correct before filling with resin
  - Use sufficient adhesive so that when the dowel is inserted it is dispersed to achieve an effective repair.

- Exposed faces: Keep clean and free from adhesive stains. Use temporary plugging material and/ or isolating membranes as necessary.
- Clearances: Keep ends of ties and resin 25mm back from face of masonry.
- Making good after adhesive has cured: Repair mortar as clauses 610 and 690.
- Joints: Repoint as clauses 820 or 821.

690 MAKING GOOD TO INJECTION AND INSERTION HOLES

- Preparation: Clean out holes thoroughly.
- Repair mortar: To match existing masonry units/ joints in colour and texture. Fill holes and finish mortar neatly and flush with surrounding masonry.
- Finished appearance: Obtain approval for first two holes before completing the remainder.

GROUTING RUBBLE FILLED CORES

710 PREPARATION FOR GROUTING

- Grouting holes: Drill in joints at horizontal and vertical centres to suit coursing and to achieve an effective distribution of grout so that, on completion, all voids in masonry are filled.
- Maximum height of each grout pour: Regulate to prevent disruption to masonry.
- Open joints in masonry: Seal with an approved temporary material to prevent leaking of grout. Leave weep holes every two or three courses to assist in flushing out dust and debris, and to prove effectiveness of grouting. Locate temporary seal back from facework to allow for specified repointing. Seek instructions if repointing precedes grouting.

712 FLUSHING OUT

- Timing: Before grouting.
- Requirement: Flush out core of masonry walls using clean water delivered under moderate pressure through grouting holes.

720 HAND GROUTING

- Grout mix: Proprietary or site mixed grout.
- Method: Direct grout into open joints using clay cups formed against masonry surface.
- Pour grout to refusal; allow to set; break off excess mortar and brush down masonry face.

730 GRAVITY INJECTION GROUTING FOR HOLLOW RUBBLE CORE WALLS – SITE MIXED GROUT

- Grout mix: 1 part NHL 3.5 St Astier hydraulic lime: 1 part P.F.A. (pulverized fuel ash): 10-15% Bentonite (Wyoming clay) mixed in proportions of 3 or 4 parts water: one part water.
- Delivery pressure: 70-80 kPa (10-15 psi).
- Other requirements: Adjust mix composition to suit site conditions.

731 GRAVITY INJECTION GROUTING FOR HOLLOW RUBBLE CORE WALLS –PROPRIETARY MIX

- Grout mix: Limelite St Paul's Grout mix as marketed by Lime Pozzamet: http://www.pozament.co.uk/products/limelite-st-pauls-grout-mix/.
- Delivery pressure: 70-80 kPa (10-15 psi).

740 APPLICATION OF GROUTING

- Grouting: Continuous operation during each lift. Allow grout to set before commencing subsequent lifts.
- Monitoring: Monitor grouting carefully and continuously at each delivery point (flow and delivery pressure), and at adjacent/ opposite wall faces, to ensure that there is an effective distribution of grout with no leaking, staining, or disruption to the masonry.
- Temporary seals: Remove on completion of grouting and leave joints in a suitable condition for repointing.

POINTING/ REPOINTING

810 PREPARATION FOR REPOINTING

- Existing mortar: Working from top of wall downwards, remove mortar carefully, without damaging adjacent masonry or widening joints, to a minimum depth of 25 mm or twice the width of the joint, whichever is the greatest.
- Use tools appropriate for the width of joint to be prepared and as given in particular clauses below.
- Loose or friable mortar: Seek instructions when mortar beyond specified recess depth is loose or friable and/ or if cavities are found.
- Raked joints: Remove dust and debris using air puffers, soft brushes or by thorough rinsing ensuring no loose material is left.

811 REMOVAL OF STRONG CEMENTITIOUS POINTING:

- Stitch drill in the centre of the joint or use a diamond disc cutter to form a slot in the centre of the joint to start removal. Using a tungsten carbide-tipped or claw chisels cut back joint carefully to a depth of not less than 25mm or twice the width of the joint and to a sound background.

- Where the depth of existing cement mortar exceeds 50 mm seek instructions. Cease work if damage is being caused to the original stonework behind.
- The contractor is to allow in his tender for additional time taken to remove cementitious mortar as opposed to soft lime mortars. The contractor must allow for removing hard mortar to the specified depth as clause 810 or to its full depth, whichever is the greatest.
- Remove loose material after required depth is reached as clause 810.
- Other requirements:
  - Use power tools only with approval as clause 150A,
  - Carry out workmanship sample and seek approval before proceeding.

812 APPROVAL OF PREPARED JOINTS

- Seek the Architect's approval of all cutting out and cleaning of all joints before repointing.

813 SAMPLES FOR POINTING MORTARS

- Samples required: As clauses 190/3.
- Method: Prepare mortar "biscuits" on a board to show colour and texture for each type of pointing required. Present biscuits when they are completely dry.
- Adjustments: Make adjustments following comments by the Architect until agreement is reached. Include for a total of 3 no presentations for each type of mortar required.
- Records: Record mix proportions, aggregates used and comments at each presentation and when agreement is reached and include in O&M Manual.

814 AGGREGATES FOR POINTING MORTARS

- Select aggregates for colour, grain size and sharpness for a good workable mix with evenly distributed grain sizes and when mixed with the binder, applied to the building and totally dried out the mortar matches the original bedding mortar colour or adjacent pointing to be retained. Use coloured sands and stone dusts to achieve the colour required. Present samples of proposed aggregates to Architect for comment as clause 215.

820 POINTING JOINTS IN GREENSAND STONE RUBBLE or WIDE OPEN JOINTS IN ASHLAR WORK.

- Joint width: Typically 5-25mm.
- Preparation of joints:
  - Carefully cut out the joints using a fine-toothed saw blade or hooked knife to a minimum depth of 25mm for a 10-12mm as clause 810. Note requirement to remove existing cementitious pointing as clause 811 and approval of raked out joints as clause 812.
  - Brush away loose mortar. Dampen joints prior to application of mortar to control suction.
- Deep packing or tamping of deeply recessed joints if noted on drgs or SoW:
  - Where joints are deep or have voids behind after raking out friable mortar, include for pointing in more than one application (to avoid slumping or excessive shrinkage), pushing a 'dry' mortar hard back into the joint with a tamping iron or other suitable tool.

  - Include pinnings of slate or tile to break up the mass of the mortar and secure stones in place, as clause 415.
  - Build–up deep tamping in layers, allowing each application to dry (dewater) before applying more mortar. Spray background again before application of new layer to avoid sucking our of moisture and shrinking.
- Mix:
  - 1: Calbux Gran 15 (Kibbled quicklime) http://tarmacbuxtonlime.com/products/lime/quicklime/calbux-quicklime/
  - 2.5: Well graded sharp sand as clause 814, ranging 150µm-4mm) as clauses Z21/11, Z21/13 and C41/517.
- Aggregate source/ type: Well graded sharp sand, as clause 814, granulometry 3mm down to fines. Material sources as given in above or equal and equivalent.
- Application as clause 840A. Note the requirement to premix the coarse stuff prior to application to allow it to slake fully. Premix lime and sand by the hot mix method and keep coarse stuff in sealed plastic containers. Refer to clause Z21/71 for guidance on preparation of hot mixed mortars.
- Joints profile/ finish: Flush with the edges of flints or rubble. Stipple finish to expose the aggregate. Refer to clause 862 for finish to Greensand stone rubble joints

820A POINTING DRESSED STONE JOINTS (SKY FACING SURFACES E.G. COPINGS)

- Joint width: Typically 10-20mm.
- Preparation of joints:
  - Cut out decayed lime mortar joints using hooked tools and or plugging and other sharp masonry chisels. Refer to clause 811 for cutting out hard cement mortar if applicable.
  - Preparation of joints and depth of old mortar removal as clause 810 and approval of joints prior to repointing as clause 812.
  - Prior to repointing dampen joints to control suction, using a pump-action sprayer.
- Mortar: As section Z21.
  - Mix: 1:3 NHL2 St Astier hydraulic lime: sand.
  - Aggregate source/type: Well graded sharp sand and stone dust if necessary to approved colour as clause 814, ranging 150µm-4mm) as clauses Z21/11, Z21/13 and C41/517.
- Application as clause 840A.
- Joints profile/ finish: Bristle brush finish as clause 862 and flush with the adjoining stones.
- Other requirements:
  - Insert tiles or slate pinnings to break up the mass of the mortar in deep or wide joints.

821 POINTING NARROW JOINTS IN STONE DRESSINGS, NEW & EXISTING BRICKWORK FACINGS

- Joint width: Typically 4-10mm.
- Preparation of joints:
  - Cut out decayed lime mortar joints using hooked tools and or plugging and other sharp masonry chisels. Refer to clause 811 for cutting out hard cement mortar.
  - Preparation of joints and depth of old mortar removal as clause 810 and approval of joints prior to repointing as clause 812.
  - Prior to repointing dampen joints to control suction, using a pump-action sprayer.
- Mortar: As section Z21
  - Mix: Hot mixed lime mortar as Clause 820.
- Application as clause 840A.
- Joints profile/ finish: Slightly recessed so that the exposed edge of the stone or brick is approx 1-2mm all round. Brush finish as clause 861.

822 POINTING FINE JOINTS IN STONE DRESSINGS

- Joint width: Typically 2-4mm.
- Preparation of joints:
  - Carefully cut out the joints using a fine-toothed saw blade
  - Minimum depth of removal 20mm.
  - Flush away loose mortar and clean until the water runs clear. Dampen joints prior to application of mortar to control suction.
  - Insert a neoprene backing rod into the joint to seal, using a hack saw blade set in a block handle with projection of 20mm to enable the rod to be set back at a regular distance.
- Mortar: As section Z21.
  - Mix: 1 part lime putty: 2 parts sand: 0.5 part well graded porous stone dust or buff coloured brick dust. Add 10% by volume of coarse stuff of Trass as Z21/28.
  - Aggregate source/ type: Clean, well graded, sharp sand and stone dust aggregate (<150µm-2) as clause Z21/11, Z21/13 and C41/517.
- Application:
  - On dry stone surfaces apply a wide gaffer tape over the joint to prevent smearing when pointing. Incise the middle of the tape through the raked out joint and press the cut tape edges back into the arrises to ensure a tight fit.
  - Press mortar well into the joint to fill it fully with a suitable pointing iron. Press the mortar in with a fine pointing key width to suit the joint
  - Holding the fine pointing key against the point carefully peel away the tape as soon as possible after placing the mortar.
- Joints profile/ finish: Flush with original or repaired stone surfaces. Bristle brush finish.

825 NATURAL CEMENT MORTAR - HYDRAULIC LIME 75%: 25% CEMENT

- Application: For bedding and pointing engineering brick to new retaining wall within pavement area.
- Cement type: Prompt natural cement as described in clause C41/271.
- Lime: NHL 3.5 St Astier as section Z21.
- Aggregate: Well graded, sharp sand as clauses C41/215.
- Mortar Mix coat
  - Mix: 3 parts Prompt: 1 part NHL 3.5 hydraulic lime: 10 parts sand (150µm -5mm) mixed with 3 parts water.

840A POINTING GENERALLY CURING AND PROTECTION

- General: Press mortar well into joints using pointing tools/ irons that fit into the joints, so that they are fully filled.
- Build up deep areas of pointing in layers approx 25mm deep.
- Proceed from the upper part of the wall working downwards
- Face of masonry: Keep clear of mortar. Use suitable temporary adhesive tape on each side.
- Finish joints neatly as given in various types of pointing.
- Cure and protect all lime mortars as clause 186.

860 FINISH TO JOINTS GENERALLY – SOFT OR FAT LIME MORTARS

- Timing: After initial mortar set has taken place, usually the next day.
  - Remove laitance and excess mortar by scraping with the edge of small pointing tool to and reveal a coarse texture and profile the joint as specified.
  - Use a rough cloth or hessian, or stipple with a stiff bristle brush to further compact the mortar and expose the aggregate. Ensure the mortar is stiff enough for the brush not to leave pin pricks.

861 FINISH TO NARROW JOINTS – LIME PUTTY MORTAR

- Timing: After initial mortar set has taken place usually the next day.
  - Use a short length of wooden batten, pressed and dragged across the joint to close up any shrinkage cracks and profile the joint as specified.
  - Use a rough cloth or hessian, or stipple with a stiff bristle brush to further compact the mortar and expose the aggregate. Ensure the mortar is stiff enough for the brush not to leave pin pricks.

862 FINISH TO GREENSAND STONE RUBBLE – HOT MIXED MORTAR

- Timing:
  - After initial mortar set has taken place. Ensure the mortar has gone off before attempting to finish.
  - Do not attempt to finish fresh mortar as laitance spread on the face of the stones
- Finish mortar joint:
  - Tidy up and compact any loose or friable edges using a spatula or other fine tool, 'contouring' the mortar to ensure the avoidance of any vulnerable feathered edges.
  - Stipple with a stiff bristle (churn) brush so as to break (open) the surface of the joint, and finish flush or 1-2mm back from the rounded or weathered arises of the masonry.
  - Do not use a sponge to finish the joint.

890 NANOLIME TREATMENT – WORK BY EXPERIENCED ICON ACCREDITED CONSERVATOR:

- Work in accordance "Nanolime- A Practical Guide to its Use for Consolidating Weathered Limestone" published by Historic England May 2017 available on line at https://historicengland.org.uk/advice/technical-advice/buildings/building-materials-for-historic-buildings/nanolime/
- Material: CaLoSil manufactured by IBZ Salzchemie GmbH, Germany (http://www.ibz-freiberg.de/en/) available in the UK through Hirst Conservation (www.hirst-conservation.com/) currently available as E5, E25 and E50; IP5, IP15 and IP25; NP5, NP15 and NP50 or purchased directly from German manufacturer.
- Substrates to be treated: Crumbling, flaking, stone or suffering granular disintegration due to dissolution of the calcite binder.
- Preparation:
  - Discuss possibility of defrassing with the architect. Do not proceed until agreed.
  - Consolidate spalls wherever possible by the application of Lime Injection Mortar as clause 890
  - Carefully remove any algae growth by steam cleaning or application of biocide.
  - Pre wet dry stones by spraying with clean water.
- Application: By spray, brush, pipette or syringe to suit particular situations and conservator's preference. Use a sponge or cloth to soak up excess of nanoline.
- Number of applications:
  - Nanolime is initially readily absorbed. Continue to apply until the surface glistens and no more nanolime can be absorbed. This normally takes only a few minutes and constitutes a single application. Make subsequent applications only after the nanolime has been completely absorbed, but before the surface has dried.
  - Most stones should receive no more than 3 applications. All applications should be preferably made in one day and not more than two consecutive days.
  - Choose weaker concentrations of consolidant or weak followed by stronger concentration to achieve greater deeper penetration; refer to par 3.6 in HE guide.
  - Record the application periods and the quantity and type of consolidant used.
- Precautions:
  - Do not apply in warm dry windy conditions and take all other measures to avoid white blooming; Refer to EH guide par 3.5
  - H&S precautions as given in par.3.3 of the EH guide
- Other requirements:
  - Carry out a simple water droplet test to assess the porosity of the stone as described under "Assessing Surface Absorption" on p.15 of the EH guide.

900 SACRIFICIAL LIME COATING (SHELTER COAT)

- Sheltercoat: Ready mixed hydraulic lime based shelter coat as manufactured by Rose of Jericho or equal and approved colours to match two colour variations for Wealden Sandstone as given in clause 516.
- Present samples and seek the Contract Administrator's approval before proceeding as clause 190.
- Areas to be shelter coated: Stones as marked on drgs and as given in the Schedule of Work and all new mortar repairs.
- Application:
  - Clean, repair and repoint the entire elevation before shelter coating. Ensure mortar repair to be shelter coated are fully cured.
  - Thin sheltercoat by the addition of water if instructed to do so by the Architect.
  - Damp down the face of the stones or mortar repairs to be protected and apply shelter coat with brush working into the surface. Allow to go off and bag surface with sacking to physically compress the material into the stone or mortar repair.
  - Include for up to three applications of sheltercoat to achieve the correct density/cover.
  - Ensure all mortar repairs and fragile areas of stone are well covered with shelter coat as described above but rub surfaces lightly to reveal high parts of the stones in places to achieve a natural stone appearance without blanket uniformity.
- Other requirements: Work to be carried out by Conservator or highly skilled mason.

C51 REPAIRING/ RENOVATING/ CONSERVING TIMBER

To be read with Preliminaries/ General conditions

GENERAL

100 REPAIR METHODOLOGY - GENERAL PRINCIPLES OF REPAIR

- The repair of the retained components will be guided by the following principles:
  - There will be minimal intervention, retaining as much as possible of the original historic
  - fabric where repairs are deemed necessary.
  - Carpentry and joinery will be considered on a case-by-case basis treating each element on its merits, bearing in mind authenticity, cost effectiveness, aesthetic appeal, structural requirements and the maximum retention of the historic fabric.
  - All new timber members are to replicate the existing in form, size and jointing unless otherwise indicated on the drawings. Advise the Architect immediately if this is not possible.
  - Refer also to clause C51/110 below.

101 REPAIR METHODOLOGY - GENERAL DETAIL OF REPAIR

- Unless otherwise specified the following shall apply:
  - Where smaller face patches and slip tenons are required to repair joints in secondary members, use fully seasoned timber, screwed and/ or fixed with adhesive as specified.
  - Always undercut the face repair so that the joint drains outwards
  - Remove loose frass from decayed areas carefully as directed by the architect. Do not remove evidence of the surface finish of the timbers as found.
  - Remove the minimum amount of historic timber, only sufficient to remove decayed timber and to effect the repair.
  - Use traditional carpentry and joinery methods as far as possible.
  - Counterbore, the nuts or bolt heads flush to the face of the timber and leave exposed unless otherwise specified.
  - Countersink screw heads and pellet unless otherwise specified.
  - Use stainless steel fixings throughout.

102 RECORD OF REPAIR

- Make accurate records of all repairs and intervention, using drawings and photographs and register with the architect.

105 SCOPE OF REPAIR

- Repair to wall plates and mullions.
- Piece in repairs to moulded mullion sections
- Piece in repairs or replacement of vertical boarding.

110 INSPECTION

- Purpose: To confirm nature and extent of repair/ renovation/ conservation work shown on drawings and described in survey reports and schedules of work.
- Parties involved: Architect, competent carpenter/joiner.
- Timing: As soon as scaffold access is available and following removal of lead coverings and loose paint as described in the SoW.
- Notice: At least 5 working days to be given to the architect for attending site.
- Instructions issued during inspection: Confirmed in writing by Architects Instruction.

111 MOULDING PROFILES

- Where moulded sections of timber are scheduled for replacement take accurate profiles from sound sections of existing timber, stripped of paint. .
- Transcribe onto paper or stencils and submit to the architect for comment and agreement.
- Present profiles on site so that they can be compared to existing.
- Do no proceed with manufacture of replacement sections until agreement is reached.

150 TIMBER PROCUREMENT

- Timber (including timber for wood-based products): Obtained from well-managed forests and/ or plantations in accordance with:
  - The laws governing forest management in the producer country or countries.
  - International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
- Documentation: Provide either:
  - Documentary evidence (that has been or can be independently verified) regarding the provenance of all timber supplied.
  - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.
- Certification scheme: UK Timber Procurement Policy Category A evidence certification scheme and FSC.
  - Other evidence: None.

160A TIMBER SUPPLIER

- Suppliers stocking slow grown Canadian Douglas fir below.
  - https://www.lathamtimber.co.uk/products/softwoods/north-american-canadian/clear-douglas-fir.
  - https://www.sykestimber.co.uk/
- Others: Equal and equivalent as Contractor's choice.

PRODUCTS

310 STRUCTURAL SOFTWOOD (GRADED DIRECT TO STRENGTH CLASS)

- Grading standard: To BS 4978, BS EN 14081-1, or other national equivalent and so marked.
- Strength class to BS EN 338: C24.
- Treatment:
  - Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8.
- Design service life: 40 years.
  - Fire retardant treatment: None required.
- Moisture content (maximum) at time of installation: 16%.
- Other requirements: Wane not permitted.

REPAIRS/ALTERATIONS TO JOINERY

372 SOFTWOOD FOR REPLACEMENT REPAIRS TO TIMBER FRAMED SIDE WALLS AND ROOF BOARDING

- Species: Slow grown Canadian Douglas fir with a tight grain.
- Quality: Generally to BS EN 942; free from decay and insect attack (except pinhole borers).
- Appearance class: Class J2.
- Treatment: Water-based microemulsion as section Z12, service life of 60 years.
- Moisture content on delivery: 13%.
- Jointing techniques as shown on drawings or described in the SoW, unless otherwise instructed by the architect.

470 NAILS FOR GENERAL USE

- Standard: As section Z20.
- Type: Annular ringed shank.
- Material: Steel.
  - Strength (minimum): To BS1202-1, 600N/mm2.
- Finish as delivered: Galvanized.

471 PINS FOR JOINERY

- Standard: As section Z20.
- Type: Flat or circular flat head.
- Material: Stainless Steel.
- Size: to suit application.

480 SCREWS FOR GENERAL USE
- Standard: As section Z20.
- Material: Stainless steel grade 304.
- Tensile strength (minimum): 700N/mm2.
- Finish as delivered: None.

490 COACH SCREWS FOR FACE REPAIRS
- Standard: Hexagonal heads.
- Material: Stainless steel grade 304.
- Tensile strength (minimum): 550 N/mm².
- Finish as delivered: None.

541 ADHESIVE
- For use in piece-in repairs to small members and thin face repairs: Phenolic and aminoplastic synthetic resin adhesive to BS EN 301, Type II.
- For piece-in repairs to main structural elements: Type MR phenolic and aminoplastic synthetic resin adhesive to BS 1204.

EXECUTION

600 WORKMANSHIP
- Skill and experience of site operatives: Appropriate for types of work on which they are employed.
  - Documentary evidence: Submit on request.

610 TEMPORARY SUPPORTS/ PROPPING
- General: Provide adequate temporary support at each stage of repair work to prevent damage, overstressing or uncontrolled collapse of any part of the structure.
- Bearings for temporary supports/ propping: Suitable to carry loads throughout repair operations.

620 PROTECTION OF TIMBER AND WOOD COMPONENTS BEFORE AND DURING INSTALLATION
- Storage: Keep dry, under cover, clear of the ground and with good ventilation. Support sections/ components on regularly spaced, level bearers on a dry, firm base.
- Handling: Do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.

630 MATERIAL SAMPLES
- Representative samples of designated materials: Submit before placing orders.
  - Designated materials: Samples of softwood and hardwood timber for external joinery repairs as clause 372 and samples of fixings to be used as clauses 471-490.

650A DIMENSIONS GENERALLY
- Site dimensions: Take as necessary before starting fabrication. Match dimensions of new members to existing members within tolerances given in clause 660 below.
  - Discrepancies with drawings or Schedule of Work: Report without delay and obtain instructions before proceeding.

660 CROSS SECTION DIMENSIONS OF STRUCTURAL SOFTWOOD
- Dimensions: Dimensions in this specification and shown on drawings are target sizes as defined in BS EN 336.
- Tolerances: The tolerance indicators (T1) and (T2) specify the maximum permitted deviations from target sizes as stated in BS EN 336, clause 4.3:
  - Tolerance class 1 (T1) for sawn surfaces.
  - Tolerance class 2 (T2) for further processed surfaces.

665 CROSS SECTION DIMENSIONS OF NON-STRUCTURAL SOFTWOOD
- Dimensions: Dimensions in this specification and shown on drawings are finished sizes.
- Maximum permitted deviations from finished sizes: As stated in BS EN 1313-1, clause 6 for sawn sections.

680 WARPING OF TIMBER
- Bow, spring, twist and cup: Not greater than the limits set down in BS 4978, BS EN 14081-1 and BS EN 844-3.

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

730 REMOVAL OF EXISTING DECORATIVE/ PROTECTIVE FINISH TO TIMBER ELEMENTS
- Extent: Remove to expose previous damaged or decayed wood. Feather the edge of remaining coating around repair site.
- Method: Paint removal system as M60/10.

760A REPAIR OF MEMBERS - CUTTING OUT MEMBERS
- Extent of timber removal: Cut out full cross section of member where wood is defective or decayed, plus 25 mm of sound wood unless otherwise directed by the architect.
- Distance from face of support to cut end of existing timber: Obtain instructions if dimension exceeds 100mm.
- Joint profile: Under cut or half lap cut to defective timber prior to new section being added.

770 REPAIR OF COMPRESSION MEMBERS WITH NEW TIMBER (LAP OR HALF SCARF JOINT)
- Defective timber: Main frame post or mullion
- Extent of repair and dimensions of new member: As drawings and Schedule of Work.
- Lap length: As a rule, 3 times the depth of timber to be repaired.
- Cut out decayed wood to the extent specified in the schedule of work and agree with the architect and structural engineer. Form a stepped joint (half scarf). Ensure that the cut is made normal to the grain and that the lie of the grain of the inserted timber corresponds to the original. Ensure an accurate fit of the new piece to the original. Pre-drill timbers for locating fixings and grout up the joint with adhesive as specified. Fix in place using the counter sunk and pelleted ss screws.

771 FACE REPAIRS TO TIMBERS CILLS
- Species: Softwood as 372.
- Defective timber: Remove only decayed or defective wood.
- Cut out decayed wood to the extent specified and agreed by the architect on site. Ensure a neat pocket with clean edges.
- Select new timber as specified above, grain and other characteristics to match existing. Accurately cut to shape with full contact of both surfaces over whole area. Pre-drill to locate fixings, grout up with adhesive specified and fix in place with screws as specified.
- Profile to match existing.

772 PIECE-IN REPAIRS TO MEDIUM SIZED ELEMENTS
- Elements to be repaired: Arch spandrel panels.
- Species:
  - Slow grown softwood as 372.
- Method:
  - Cut decayed timber and remove.
  - Form the new piece with a tenon to slip into the main post.
  - Dowel new piece to old and screw to main mullion with counter sunk and pelleted ss screws.
- Other requirements:
  - Ensure the new joint draining downwards and the chamfered profile matched the existing.

773 REPAIR OF WALL PLATES
- Defective timber: External face of wall plate
- Extent of repair and dimensions of new member: As drawings and Schedule of Work.
- Cut out decayed wood to the extent specified in the schedule of work or shown on drg and agree with the architect and structural engineer. Form a splayed vertical joint and undercut base joint to drain outward. Ensure that the cut is made normal to the grain and that the lie of the grain of the inserted timber corresponds to the original. Ensure an accurate fit of the new piece to the original. Pre-drill timbers for locating fixings and grout up the joint with adhesive as specified. Fix in place using the counter sunk and pelleted ss screws.

774 PIECE-IN REPAIRS TO SMALL JOINERY ELEMENTS
- Elements to be repaired: Vertical t&g boarding to side panels.
- Species:
  - Slow grown softwood as 372.
- Other requirements: Undercut intersection between new and retained sections.

810A BOLTED JOINTS GENERALLY
- Connectors: As given in the SoW.
  - Bolt hole: Where appropriate, size to suit bolt diameter, spacing as described in the SoW predrilled before site delivery, where possible.
  - Type and finish – Brushed stainless steel.
- Bolts and washers: To BS EN 1995-1-1.- Use M8 of M10 stainless steel bolts and washers as given in SoW.
- Connector location: Where not otherwise shown, spacings, end and edge distances are to be not less than Standard values to BS EN 1995-1-1.
- Centres of bolt holes: As given in SoW.
- Assembly: Do not crush timber, deform washers or overstress bolts.

840 FIXING FRAMING ANCHORS AND CLEATS
- Before installation: Submit details if joint geometry prevents installation to manufacturer's recommendations.
- Installation: Secure using not less than number of fasteners recommended by manufacturer.

850A GLUED JOINTS
- Adhesive: BS EN 301, type I.
  - Compatibility: Where relevant, obtain manufacturer's confirmation that adhesive is compatible with preservative/ fire retardant treatment.
- Glued structural components: Fabricated to BS 6446 in clean, controlled workshop conditions.
- Anticipated equilibrium moisture content of timber in service: Within 5% of equilibrium moisture content for conditions of service and differing from each other by not more than 3%.
- Surfaces to be bonded: Close fitting, structurally sound, dry, and free from contamination by dirt, dust, grease or other deleterious substances.

860 MOISTURE CONTENT CHECKING
- Procedure: When instructed, check moisture content of timber sections with an approved electrical moisture meter.
- Test results: Keep records of all tests. If moisture content falls outside specified range, obtain instructions.

COMPLETION

910 MECHANICALLY FASTENED JOINTS
- General: Inspect accessible bolted, coach screwed and timber pegged joints and tighten fasteners if necessary.
- Timing: On Completion and at end of Defects Liability Period or Rectification Period.

G20 CARPENTRY/ TIMBER FRAMING/ FIRST FIXING

To be read with Preliminaries/ General Conditions and Schedule of Work.

02 TIMBER PROCUREMENT

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

05 STRUCTURAL SOFTWOOD FOR STRUCTURAL USE GENERALLY

- Grading standard: To BS 4978 or BS EN 14081-1 or other national equivalent and so marked.
- Timber of a target thickness less than 100 mm and not specified for wet exposure: Graded at an average moisture content not exceeding 20% with no reading being in excess of 24% and clearly marked as 'DRY' or 'KU' (kiln dried).
- Timber graded undried (green) and specified for installation at higher moisture contents: Clearly marked as 'WET' or 'GRN'.
- Strength class to BS EN 338: C16.
- Treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8, Service life: 40 years.

06 STRUCTURAL HARDWOOD (GRADED DIRECT TO STRENGTH CLASS)

- Grading standard: To BS 5756 and so marked.
- Species: English oak.
- Strength class to BS EN 338: D30.
- Surface finish: Regularized.
- Treatment None required.
- Moisture content (maximum) at time of installation: 18%.
- Other requirements: Heart to be boxed.

10 UNGRADED SOFTWOOD FOR BATTENS, NOGGINS GUTTER BEARERS, ETC.

- Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.
- Moisture Content at time of erection:16% or less
- Surface finish: Regularised.
- Thickness and other dimensions: To match existing or as Schedule of Work or shown on drgs.
- Preservative Treatment: As Section Z12 and BWPDA Commodity Specification C8. Design service: 40 years.
- Fire retardant treatment: N/A.

11 WOOD FOR ROOF BOARDING, OTHER ROOF TRIMS AND JOINERY

- Species: Slow grown Canadian Douglas fir with a tight grain.
- Quality: Generally to BS EN 942; free from decay and insect attack (except pinhole borers).
- Appearance class: Class J2.
- Treatment: Water-based microemulsion as section Z12, service life of 60 years.
- Moisture content on delivery: 13%.
- Jointing techniques as shown on drawings or described in the SoW, unless otherwise instructed by the architect.

12 WOOD TRIM: FOR EAVES TILTING FILLET AND FASCIA BOARDS

- Species: European oak.
- Standard: To BS 1186-3.
  - Class: [1].
- Treatment: None required.
- Fixing: Two 50 mm lost head nails to each support for eaves timbers and counter sunk ss steel screws for tilting fillet.

30 SELECTION AND USE OF TIMBER

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

35 PROCESSING TREATED TIMBER

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

40 MOISTURE CONTENT

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

50 ADDITIONAL SUPPORTS

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

70 TRIMMING OPENINGS

- Trimmers and trimming joists: Not less than 25 mm wider than general joists.

H62 NATURAL SLATING

To be read with section H71 for lead flashings etc.

102 SLATING TO LYCHGATE ROOF

- Substrate: Existing roof boarding on common rafters at 400mm spacing approximately.
- Pitch: 51° approx.
- Underlay: Polyester non-woven fabric with TPU coating as clause 240A
  - Recycled content: N/A.
  - Direction: Parallel to eaves.
  - Head-lap (minimum): 150 mm.
- Battens and Counterbattens: As 245
  - Size: 50x25mm.
  - Fixing: 65 x 3.35 mm galvanized annular ring shank nails.
- Slates: To BS EN 1304.
  - Supplier: Delabole Slate.
  - Product reference: Sized slates.
  - Type: Blue grey.
  - Size: approx. 18x10 inches. Note 16 courses of slate can be seen on the extg slope including the half slate below the ridge.
    - Measure extg and place order as soon as access is available. Allow for larger slate for tender purposes and credit saving to contract if smaller slate is used.
  - Head-lap (minimum): 100mm.
  - Fixing: Centre nailed, two copper nails per slate
- Other requirements: Submit samples.

106 ROOF COVERING REMOVAL

- Extent: All slates and ridge tiles to be stripped
- Disposal or reuse:
  - Ridge tiles: Lift carefully and set aside for reuse
  - Roofing units: All slates to be stripped and disposed of.
  - Flashings: Flashings to be set aside for possible reuse. Inspect for possible splits
  - Battens and counter battens: Disposed of.
  - Roofing underlay: Dispose of
- Other requirements: Ensure the ridge tiles are stored safely and securely on site.

SLATING GENERALLY

210 BASIC WORKMANSHIP

- General: Fix tiling and accessories to make the whole sound and weathertight at earliest
- opportunity.
- Setting out: To true lines and regular appearance, with neat fit at edges, junctions and
- features.
- Fixings for tiling accessories: As recommended by tile or accessory manufacturer.
- Gutters and pipes: Keep free of debris. Clean out at completion.

240A UNDERLAY

- Product Reference: Pavatex UDB.
- Supplier: Unity Lime Products, The Barn, Access via Wornal Park, Menmarsh Road, Worminghall, Aylesbury, HP18 9JY, https://unitylime.co.uk/shop/brand/pavatex/pavatex-udb/ info@unitylime.co.uk tel:01904 405797
- Handling: Do not tear or puncture.
- Laying: Maintain consistent tautness.
- Vertical laps (minimum): 100 mm wide, coinciding with supports and securely fixed.
- Fixing: Galvanized steel, copper or aluminium 20 x 3 mm extra-large clout head nails, sufficient to hold membrane on the rafters until roofing battens are fixed.
- Eaves: Supply and fix UV durable eaves strip such as Monarflex EG300 Tel 0161 865 4444 www.icopal.co.uk or equal and approved.
- Apex: Solvent weld underlay laps as manufacturer's instructions and clause 740A.

245 BATTENS/ COUNTERBATTENS/TREATED

- Timber: Sawn softwood.
  - Species: To BS 5534, clause 4.12.1.
  - Permissible characteristics and defects: Not to exceed limits in BS 5534, Annex C.
  - Grading: Fully factory pre-graded.
  - Moisture content at time of fixing and covering (maximum): 22%.
- Preservative treatment: As section Z12 and Wood Protection Association Commodity Specification C8.
  - Type: Copper-organic.

265 BATTEN FIXING

- Setting out: Align parallel to straight edge in straight horizontal lines to gauge of tiles. Align on adjacent areas.
- Batten length (minimum): Sufficient to span over three supports.
- Joints in length: Square cut. Butt centrally on supports. Joints must not occur more than once in any group of four battens on one support.
- Additional battens: Provide where unsupported laps in underlay occur between battens.
- Fixing: Each batten to each support. Splay fix at joints in length.

270 BATTENS FIXED TO MASONRY

- Setting out: In straight horizontal lines. Align on adjacent areas.
- Batten length (minimum): 3 m.
- Fixing centres (maximum): 400 mm.

275 SLATE FIXING

- General: Fix slating and accessories to make the whole sound and weathertight at earliest opportunity.
- Setting out: To true lines and regular appearance. Lay slates with slightly open (maximum 5 mm) butt joints. Align tails.
- Slate thickness: Consistent in any one course. Lay with thicker end as tail.
- Ends of courses: Use extra wide slates to maintain bond and to ensure that cut slates are as large as possible. Do not use slates less than 150 mm wide.
- Top course: Head-nail short course to maintain gauge.
- Fixing: Centre nail each slate twice through countersunk holes 20-25 mm from side edges.
  - Nails: Copper clout to BS 1202-2 or aluminium clout to BS 1202-3.
  - Nail dimensions: Determine in accordance with BS 5534 to suit site exposure, withdrawal resistance and slate supplier's recommendations.

280A SLATES - PERFORMANCE SPECIFICATION

- Standards:
  - Product specification: To BS EN 12326-1.
  - Methods of test: To BS EN 12326-2.
- Slate type: Normal.
- Dimensional tolerances:
  - Deviations from declared length, width, edge straightness, rectangularity, and flatness are not to exceed values specified in BS EN 12326-1, clause 5.12.
- Thickness: 7mm (5.5mm)
  - Nominal thickness and individual thickness variation: To BS EN 12326-1, clause 5.2.
- Strength:
  - Characteristic modulus of rupture:
    Transverse: 70.6 N/mm². (68.4 N/mm²)
    Longitudinal: 35.4 N/mm².(34.7 N/mm²)
- Water absorption: W1 (≤ 0.6%)
- Freeze-thaw resistance: No significant reduction in bending strength when tested.
- Thermal cycle test: Code: T1.
- Carbonate content: Equal to or more than 20%.
- Sulphur dioxide exposure test: Depth of softening less than 0.7 mm.
- Non-carbonate carbon content: Less than or equal to 2%.

290A MORTAR BEDDING/ POINTING

- Mortar: As section Z21, 1 part St Astier NHL 3.5 hydraulic lime: 2.5: well graded sand (1-4mm). Choose coloured aggregate to offset colour of lime and to blend with the dark ridge tile and slate. Submit sample for architect's approval.
- Preparation of salvaged ridge tiles: Carefully clean off old mortar. Wet and drain surface water before fixing.
- Appearance: Finish neatly as work proceeds and remove residue.
- Other requirements: Work to be carried out by a mason familiar with the use of lime mortars and the need to tend and protect the mortar until cured. Do not work in wet or frosty conditions or when imminent. Programme work ahead of completion to allow time for tending mortar until cured.

ROOF SLATING EDGES/ JUNCTIONS/ FEATURES

305 GENERALLY

- Fittings and accessories: As recommended by tile manufacturer, do not improvise.
  - Exposed fittings and accessories: To match tile colour and finish.
- Cut slates: Cut only where necessary, to give straight, clean edges.
- Flashings: Fix with or immediately after tiling. Form neatly.

365 UNVENTILATED EAVES

- Underlay support: New oak fillet as G20/12.
  - Continuous to prevent water retaining troughs.
- Gutter: Dress underlay or underlay support tray to form drip into gutter.
- Undercourse and first course slates: Fix with tails projecting 50 mm over gutter or to centre of gutter, whichever dimension is the lesser.

660A SIDE ABUTMENTS TO GABLE WALLS

- Underlay: Turn up not less than 100 mm at abutments.
- Abutment lead:
  - Existing lead cover flashing carefully turned up. Refer to SoW for provisional replacement.
- Soakers: Code 5 lead. Interleave with abutment tiles. Fix by turning down over head of abutment tiles.
- Other requirements:
  - Re dress and reclip existing lead cover flashing.

740A MORTAR BEDDED RIDGES

- Underlay: Lay courses over ridge.
- Overlap (minimum): 150 mm or separate apex strip with 150mm lap to main sheets on both sides.
- Solvent weld ridge lap(s) as manufacturer's instructions.
- Ridge tiles: Existing ridge tiles taken off cleaned of mortar and rebedded.
- Bedding: On mortar as clause 290A continuous to edges and solid to joints.
- Other requirements: Lime mortar work to be done by mason experienced in the use and curing requirements of hydraulic lime mortars

H71 LEAD

To be read with Preliminaries/ General Conditions and Schedule of Work

35 STRAIGHT COVER FLASHINGS TO ABUTMENTS AT ROOF EDGE AND GABLE WALLS

- Type of Lead: Rolled, to BS EN 12588 certified all details as clause 53.
  - Thickness: Code 5.
- Dimensions:
  - Lengths: Not more than 1500 mm.
  - End to end joints: Laps of not less than 100 mm.
  - Cover: Overlap to upstand not less than 75 mm.
- Fixing:
  - Top edge: Lead wedges into bed joint pointed as clause 84.
  - Bottom edge: Lead clips as clause 72.
  - Spacing: at not less than 450mm centres.
- Other requirements: Security mark as clause 97.

37 SOAKERS TO ALL SIDE ABUTMENTS WITH COVER FLASHINGS

- Type of Lead: Rolled to BS EN 12588.
  - Thickness: 2.00 - 2.24 mm (Code 5).
- Dimensions:
  - Lengths: Slate/ tile gauge + lap + 25 mm.
  - Upstand: Not less than 150mm.
  - Underlap: Not less than 100mm.
- Fixing: None other than between tiles.

38 SADDLE AT ABUTMENT OF RIDGE WITH WALLS

- Type of Lead: Rolled to BS EN 12588.
  - Thickness: 2.00 - 2.24 mm (Code 5).
- Dimensions:
  - Length: Top tile courses less 25mm
  - Width: Minimum upstand 100mm up wall, plus across two tiles.
- Fixing: None other than between tiles.

51 WORKMANSHIP GENERALLY

- Standard: To BS 6915 and latest edition of 'Rolled lead sheet. The complete manual' published by the Lead Sheet Association.
- Fabrication and fixing: To provide a secure, free draining and completely weathertight installation.
- Operatives: Trained in the application of lead coverings/ flashings_ Submit records of experience on request.
- Preforming: Measure, mark, cut and form lead prior to assembly wherever possible.
- Marking out: With pencil, chalk or crayon. Do not use scribers or other sharp instruments without approval.
- Bossing and forming: Straight and regular bends, leaving sheets free from ripples, kinks buckling and cracks.
- Solder: Use only where specified.
- Sharp metal edges: Fold under or remove as work proceeds.
- Finished work: Fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.
- Protection: Prevent staining, discolouration and damage by subsequent works.

52A LEADWELDING

- In situ welding: Is not permitted, unless there is no alternative and subject to completion of a 'hot work permit' form and compliance with its requirements.

53 LEAD SHEET

- Production method:
  - Rolled, to BS EN 12588, or
  - Machine cast and BBA certified, or Sand cast from lead free from bitumen, solder, other impurities, inclusions, laminations, cracks to code thicknesses but with a tolerance (by weight) of ±10%.
- Identification: Labelled to show thickness/ code, weight and type.

61 SUITABILITY OF SUBSTRATES
- Condition: Dry and free of dust, debris, grease and other deleterious matter.

72 CLIPS
- Manufacturer: Contractor's choice.
- Material:
  - Lead clips: Cut from sheets of same thickness/ code as sheet being secured.
  - Copper clips:
    - Thickness: 0.70 mm.
    - Temper: BS EN 1172, designation R220 in welts, seams and rolls, R240 elsewhere dipped in solder if exposed to view.
  - Stainless steel clips:
    - Thickness: 0.46 mm.
    - Grade: BS EN 10088, 1.4301 (304) terne coated or covered with code 3 lead if exposed to view.
- Dimensions:
  - Width: 50 mm where not continuous.
  - Length: To suit detail.
- Fixing clips: Secure each to substrate with either two screw or three nail fixings not more than 50 mm from edge of lead sheet. Use additional fixings where lead downstands exceed 75 mm.
- Fixing lead sheet: Welt clips around edges and turn over 25 mm.

84 WEDGE FIXING INTO JOINTS/ CHASES: MORTAR POINTING
- Joint/ chase: Rake out to a depth of not less than 25 mm.
- Lead: Dress into joint/ chase.
- Cover the horizontal part of the cover flashing turned into the joint, with masking tape to isolate mortar from lead and enable it to move more freely, before wedging.
  - Fixing: Lead wedges at not more than 450 mm centres, at every change of direction and with at least two for each piece of lead.
- Pointing: Mortar as clause C41/820A. Work to be carried out by mason experienced in the use of the mortars.

97 SECURITY MARKING OF LEAD
- Product provided by the Employer:
  - Smart Water Security System by Smart Water Technology Ltd., tel. 0870 242 8899.
- Handling: As clause A50/120.
- Application by the Contractor: To lead, linings and flashings in accordance with manufacturer's instructions.

M60 PAINTING/ CLEAR FINISHING

To be read with Preliminaries/ General Conditions.

COATING SYSTEMS

10 PAINT REMOVAL SYSTEM – LOCAL APPLICATION ONLY WHERE FOUND NECESSARY

- Manufacturer: Keim Mineral Paints Ltd KEIM MINERAL PAINTS LTD Santok Building, Deer Park Way, Donnington Wood, Telford TF2 7NA Telephone: 01952 231250 , sales@keimpaints.co.uk
- Product reference: STM7M
- Surfaces: Previously decorated timber, render, lead copper and wrought iron.
- Preparation: Remove all loose material by brushing and scraping. Clean surfaces down with water.
- Application and method: In accordance with manufacturer's recommendations as contained in appendix 2.

12 EXTERNAL and INTERNAP PAINT FOR TIMBER

- Manufacturer: ZINSSER, Tor Coatings Limited Unit 21, White Rose Way, Follingsby Park, Gateshead, Tyne & Wear, NE10 8YX United Kingdom Telephone no.: +44 (0) 191 4106611 Fax no.: +44 (0) 191 4920125 enquiries@tor-coatings.com
- Product reference: All Coat Exterior Satin
- Surfaces: Previously decorated timber, render or metal, paint stripped to bare material.
- Preparation: As manufacturer's recommendation as contained in Appendix 2.
  - Remove all loose or peeling paint and chalky paint residue. Sand edges of any remaining paint film until smooth. Fill all nail holes and gouges. Where necessary, spot prime knots and sap streaks with Zinsser B-I-N® Primer-Sealer.
  - For new or unpainted cedar, redwood, or other resinous timbers prime with Zinsser Cover Stain®. Prime any bare ferrous metal with an anti-corrosive metal primer as clause 19 below.
  - Allow new render to cure for 30 days before application of paint,
- Initial coats for new items: All Coat Exterior Satin
  - Number of coats: 1.
  - Finishing coats: All Coat Exterior Satin
  - Number of coats: 1.
- Colour:
  - All surfaces to be painted in the same colour.
  - Provide colour chart and agree colour with client following paint analysis.
- Other requirements:
  - Application and method: In accordance with manufacturer's recommendations as contained in appendix 2.
  - Algae: Remove prior to redecoration using Torkill fungicidal solution in accordance with manufacturer's recommendations as contained in appendix 2.

13 ALKYD RESIN OPAQUED FINISH - EXTERNAL METALWORK (EXISTING AND NEW)

- Manufacturer: Akzo Nobel Uk
- Product reference: Dulux Metalshield Satin
- Surfaces: Previously decorated or new cast iron gutters, downpipe and other rainwater goods, external ferramenta, ironmongery etc.
- Preparation: Cut away blisters, loose and defective work and wire brush back to bare metal. Apply rust remover to rusted areas well brushed into pits and crevices. Treat all remaining rusting areas in particular those that are inaccessible and cannot be reached by a wire brush and Fertan as clause M60/19 below. Prime bare areas with Sikkens Redox AK Primer before applying primer/undercoat.
- Initial coats for new items: Primer as Dulux Trade Metal Shield Zinc Phosphate Primer.
  - Number of coats: 1.
- Undercoats for all items: Dulux Trade Metal Shield Zinc Phosphate Primer
  - Number of coats: 1.
- Finishing coats: Dulux Trade Metal Shield Satin colours as given below.
  - Number of coats: 2.
- Colour: 20YY39/130 – Satin finish rainwater goods. Black – Satin finish window ferramenta.
- Other requirements: Consult with architect and submit samples before ordering.

19 FERTAN RUST CONVERTER
- Manufacturer: Fertan UK
- Product reference: Fertan
- Surfaces: Rusted cast iron
- Preparation: In accordance with Manufacturer's Instructions
- Application: Refer to clause M60/13 above.

GENERALLY

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

PREPARATION

30 PREPARATION GENERALLY
- Standard: In accordance with BS 6150.
- Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
- Substrates: Sufficiently dry in depth to suit coating.
- Efflorescence salts, dirt, grease and oil: Remove.
- Surface irregularities: Provide smooth finish.
- Organic growths and infected coatings:
  - Remove with assistance of biocidal solution.
  - Apply residual effect biocidal solution to inhibit regrowth.
- Joints, cracks, holes and other depressions: Fill with stoppers/ fillers. Provide smooth finish.
- Dust, particles and residues from preparation: Remove and dispose of safely.
- Doors, opening windows and other moving parts:
  - Ease, if necessary, before coating.
- Prime resulting bare areas.

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

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

39A METAL PREPARATION
- Corrosion and loose scale: Take back to bare metal.
- Residual rust: Treat with a proprietary removal solution as clause M60/19.
- Bare metal: Apply primer as soon as possible.

APPLICATION

61 COATING GENERALLY

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

66 CONCEALED METAL SURFACES

- General: Apply additional coatings to surfaces that will be concealed when component is fixed in place.
  - Components: Rear of downpipes.
  - Additional coatings: additional paint coat.

R10 RAINWATER DRAINAGE SYSTEMS

To be read with Preliminaries/ General Conditions.

12 CAST IRON DOWNPIPES: NEW TO REPLACE DAMAGED SECTIONS

- Standard: To BS 416-1.
- Manufacturer: Longbottom or equivalent.
  - Product reference: Round section single or double socket to suit.
- Type: Without ears.
  - Nominal size: min 3.5" diameter.
  - Finish as supplied: Primed, ready for decoration as section M60.
  - Fixings: iron rings as https://www.flocon.co.uk/products/black-malleable-iron-single-pipe-rings-bsp?variant=39883591352476. Set into stone joints
- Accessories:
  - Shoe with ears as Longbottom A.588.
  - Swan neck offset as Longbottom A.594

15 NEW CAST IRON GUTTERS

- Gutters, fittings and accessories: As SoW
  - Standard: To BS 460.
  - Manufacturer: Longbottom or equivalent.
  - Product reference: Longbottom Railway Pattern
  - Profile: Section as shown on drg 123-08.
  - Nominal sizes: 125mm wide by 100mm deep approx.
  - Finish as supplied: Primed, ready for decoration as section M60.
- Brackets: Fascia brackets to fit gutter profile.
- Accessories: End pieces and nozzle pieces as SoW.
- Jointing: Lapped, flush on the underside.
- Sealant for joints: Beaded gaskets with stainless steel nuts, bolts and washers.
- Fixing: Assume fixed through the vertical side onto timber fascia boards.

50A INSTALLATION GENERALLY

- Discharge of rainwater: Complete, and without leakage or noise nuisance.
- Components: Obtain from same manufacturer for each type of pipework and guttering.
- Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
- Fixings and fasteners: Stainless steel screws into oak blocks set into the wall.

60A GUTTERS LAID TO FLAT

- Setting out: To true line and level to prevent ponding or backfall.
- Joints: Watertight.
- Roofing underlay: Dressed over and into gutter over UV stable eaves protector as specified elsewhere.
- Testing: Test on completion to ensure no ponding.

70 PIPEWORK

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

R12 DRAINAGE BELOW GROUND

To be read with Preliminaries/General conditions. – Refer also to Appendix 2 for Manufacturer's technical information.

01 EXCAVATION WITHIN BURIAL GROUND
- All excavation to proceed with care.
- Do not excavate more than 700mm below finished ground level.
- All method statements in relation to excavations and temporary support must also be submitted to the Design team for comment. comment.
- Refer also to the report in Appendix 2.

GENERALLY

02 EXISTING DRAINS:
- Some clay drains were identified during trial pits in 2015.
- Test extg gullies and drains and identify on a plan.
- Only reuse existing drains if found to be sound.

04 IN SITU CONCRETE FOR USE IN DRAINAGE BELOW GROUND
- Standard: To BS 8500-2.
- Mix: C10 (Gen 1)

TYPE(S) OF PIPELINE

10 PLAIN WALL PLASTICS PIPELINES FOR, SURFACE WATER
- Pipes, bends and junctions: PVC-U to BS EN 1401-1, class SN4, with flexible joints, Kitemark certified.
- Manufacturer and reference: Contractors choice
- Size(s): 100mm diam.
- Assumed type of subsoil: previously excavated ground/clay and unexcavated burial ground.
- Bedding class B
- Warning marker tape: not required.

11 RW GULLIES
- Standards:
- Clay: To BS EN 295-1 and Kitemark certified, or Agrément certified.
- Plastics: To BS 4660 and Kitemark certified, or Agrément certified.
- Material: clay.
- Manufacturer: Wavin Hepworth.
- Product reference: SG2/1.
- Sizes: 188X188mm.
- Outlet sizes: 100mm.
- Covers: loose grating.
- Product reference: Hepworth grating 1G2C .
- Material: Ductile cast iron.
- Sizes: 150x150mm.
- Loading grade to BS EN 124: A15.
- Silt buckets: not required.
- Assumed type of subsoil: previously excavated ground/clay and unexcavated burial ground.
- Bedding class B
- Warning marker tape: not required.

12 RW ACCESS CHAMBERS AT DRAIN PIPES
- Manufacturer and reference: Hepworth Mini Access chamber (SDAC1/1) or equal and equivalent.
- Size(s): depth 600mm or less to suit site conditions,
- Min Cover: 0.3m of soil.
- Raising piece if necessary to suit site conditions: Hepworth cover and frame (SDC3) or equal and equivalent.
- Assumed type of subsoil: previously excavated ground/clay and unexcavated burial ground.
- Bedding class B
- Warning marker tape: not required.

13 CELLULAR CRATE SOAKAWAYS
- Manufacturer and reference: Wavin Aquacell Eco (6LB025) 190 litres or equal and equivalent.
- Size(s): depth 1m x 0.5m x 0.4m.
- Cover: Minimum 0.3m
- Installation: According to manufacturer's instructions.

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

19B EXCAVATING for ACO DRAIN AND PIPE TRENCHES IN PAVEMENT AREA
- Trench from bottom up to top of pavement as shown on Section E detail on drg 123-3. Avoid damage to existing pier footings.
- Type of subsoil: Where the type of subsoil at the level of the crown of the pipe differs from that stated for the type of pipeline, give notice.
- Timing: Excavate to formation immediately before laying beds or pipes.
- Mud, rock projections, boulders and hard spots: Remove. Replace with bedding material, well consolidated.

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

25 CLASS F GRANULAR BEDDING
- Granular material: To Water Industry Specification WIS 4-08-02 (as amended by WIS 4-08-02A, 2008).
- Bedding: Compacted granular material.
  - Thickness: 50mm or to pumped drainage system designers specification.
- Laying pipes: Scoop out locally at couplings and sockets and lay pipes digging slightly into bed and resting uniformly on their barrels. Adjust to line and gradient.
- Backfilling: After initial testing, backfill to 75 mm above crown of pipe with a protective cushion of selected fill, free from vegetable matter, rubbish and frozen soil and material retained on a 40 mm sieve. Thoroughly hand compact in 100 mm layers.

51 ACO CHANNEL DRAIN and ACCESSORIES
- Material: **Vienite®**, high-strength, sustainable polymer concrete reinforced with recycled materials.
- Manufacturer: ACO.
  - Product reference: ACO Multidrain, suitable for vehicle traffic up to Load Class 400. https://www.aco.co.uk/products/Multidrain
- Sizes: 1000mm long by 118mm wide by 150mm deep
- Outlet sizes: 100mm.
- Covers:
  - Product reference: 132720 Heelguard™ composite black grate class B 125.
  - Material:
- Sump with Silt bucket: ACO Multidrain M100D/DS universal sump with cast iron Heelguard™ ATec grating
- Closing end caps: to suit channel at one end.

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

84 TESTING AND INSPECTION GENERALLY

- Obstructions and debris: Remove. Check that the installation is clear before testing.

91 BACKFILLING TO PIPELINES GENERALLY

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

94 BACKFILLING UNDER ROADS AND PAVINGS

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

97 CLEANING

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

Z12 PRESERVATIVE/ FIRE RETARDANT TREATMENT

To be read with Preliminaries/ General Conditions.

110 TREATMENT APPLICATION

- Timing: After cutting and machining timber, and before assembling components.
- Processor: Licensed by manufacturer of specified treatment solution.
  - Operatives: Must have completed the WPA training scheme.
- Certification: For each batch of timber provide a certificate of assurance that treatment has been carried out as specified.

120 COMMODITY SPECIFICATIONS

- Standard: Current edition of the Wood Protection Association (WPA) publication 'Industrial wood preservation specification and practice'.

130 PRESERVATIVE TREATMENT SOLUTION STRENGTHS/ TREATMENT CYCLES

- General: Select to achieve specified service life and to suit treatability of specified wood species.

160 ORGANIC SOLVENT PRESERVATIVE TREATMENT (NEW SOFT WOOD)

- Solution:
  - Manufacturer: Lonza Wood Protection.
  - Product reference:
    - Use Classes 1, 2 and 3 (coated); Vacsol.
    - Use Class 3 (uncoated) and 4: Tanalith.
  - Application: Double Vacuum in accordance with the manufacturer's recommendations for the Use Class. Site cutting: Brush apply preservative to cut ends.
- Moisture content of wood:
  - At time of treatment: As specified for the timber/ component at time of fixing.
  - After treatment: Timber to be surface dry before use.
- Usage: As set out in Section G20

161 PRESERVATIVE TREATMENT (EXISTING WOOD IN SITU))

- Preservative Cream:
  - Manufacturer: Sovereign Chemicals Ltd.
  - Product reference: Sovereign Deep Kill Cream Emulsion.
    - Use Classes 1, 2 and 3 (coated).
  - Application: Brush, spray or pallet knife in accordance with the manufacturer's recommendations.
- Moisture content of wood:
  - At time of treatment: 20% or less.
  - After treatment: Timber to be surface dry before any coating application.
- Usage: As instructed by the Architect.

610 MAKING GOOD TO PRESERVATIVE TREATMENT ON SITE

- Preservative solution: Compatible with off-site treatment.
- Application: In accordance with preservative manufacturer's recommendations.

Z21 MORTARS

To be read with Preliminaries/ General Conditions and Schedule of Work

10 MORTAR MIXES

- Specification: Mix Proportions and additional requirements for mortar materials are specified in Sections C41 and M20.

12 SAND FOR LIME: SAND MASONRY POINTING MORTARS

- Type: Sharp, well graded.
  - Quality, sampling and testing: To BS EN 13139 2002.
  - Grading/ Source: As BS 1199:1976 (1996) Table 1 and as set out on the table below and modified by English Heritage Recommendation

AGGREGATE GRADING FOR MORTARS	
BS Sieve Sizes	% by mass passing BS sieves
	English Heritage recommendation
6.30mm	
5.00mm	100%
2.36mm	90-100%
1.18mm	70-100%
600µm	40-100%
300µm	5-70%
150µm	1-15%
75µm	0%

- Sand for lime mortars: To be well graded, clean sharp sand, accurately batched, entirely free from organic matter.
- Sand for facework mortar to be from one source, different loads to be mixed if necessary to ensure consistency of colour and texture.
- Where used for pointing of stones or mortar repairs of an approved colour to match adjacent work.

13 SAND/STONE DUSTS FOR MORTAR REPAIR AND MORTAR CAPPING

- Type: Sharp, well graded.
  - Quality, sampling and testing: To BS EN 13139 2002.
  - Grading/ Source: As BS 1199:1976 (1996) Table 1 and as set out on the table below and modified by English Heritage Recommendation

AGGREGATE GRADING FOR MORTARS	
BS Sieve Sizes	% RETAINED
	English Heritage recommendation
2.36mm	10%
1.18mm	15%
600µm	20%
300µm	20%
150µm	20%
<150 µm	15%

- Sand for lime mortars: To be well graded, clean sharp sand, accurately batched, entirely free from organic matter.
- Sand for facework mortar to be from one source, different loads to be mixed if necessary to ensure consistency of colour and texture.
- Where used for pointing of stones or mortar repairs of an approved colour to match adjacent work.
- Stone Dust aggregate as clause 14.

14 STONE DUSTS USED AS PART OF THE MORTAR AGGREGATE

- Type: Select appropriate stone with the right colour for achieving the final colour of mortar required- Note requirements for samples in C41.
- Sieve stone dust to remove fines and grade in accordance with the tables given in clauses 12 and 13.

25 HYDRAULIC LIME: FOR STONEWORK REPAIR
- Type: NHL2 or NHL3.5 as specified in SoW.
- Supplier: St Astier http://www.stastier.co.uk/

26 LIME PUTTY:
- Age and density: Stiff preferably 5 year old mature lime putty with a bulk density of at least 1.4Kg/litre
- Supplier: Contractor's choice
- Other requirements: The architect will request a slump test.
- Do not use soft putty.

27 BURNT LIME FOR HOT MIXED LIME MORTAR:
- High Calcium Quicklime pebble as available from Cornish Lime Co. Ltd, Brims Park, Old Callywith Road, Bodmin, Cornwall PL31 2DZ Tel: 01208 79779 Fax: 01208 73744, or supplier of contractor's choice.

28 POZZOLANS
- The following may be used with the approval or direction of the architect:
  - Trass –fine buff coloured powder, coarser grained and less reactive than metakaolin and GGBS available from Cornish Lime https://cornishlime.co.uk/products/associated-products/trass/
  - Metakaolin – fine white powder the most reactive of all pozzolans
  - Pulverised Fly Ash (PFA) – mid to dark grey powder, less reactive than metakaolin. Imparts a grey colour to mortar available from Cornish Lime https://cornishlime.co.uk/products/associated-products/pulverised-fuel-ash-pfa/
    - Two particle size categories (N and S) with the latter being finer and more reactive.
    - Use low sulphate PFA for conservation work.
  - Ground Granulated Blast Furnace Slag (GGBS)- Pale creamy white powder, reasonably reactive.
  - Crushed Clay Brick – red of buff colour, less reactive than Metakaolin and GGBS
    - Use powder of less than 75microns to achieve pozzolanic effect.
    - Larger particles can improve mortar porosity which is reduced by pozzolan use.

29 "PROMPT" NATURAL CEMENT
- "Prompt" natural cement available from: Cornish Lime Co. Ltd, Brims Park, Old Callywith Road, Bodmin, Cornwall PL31 2DZ Tel: 01208 79779 Fax: 01208 73744 or contractor's choice
- This material belongs to the family of Roman cements and is produced by Vicat of France.

40 WATER:
- Clean and totally free from acids and vegetable matter and obtained from a mains supply.

59 SITE STORAGE
- Store different sands and aggregates in different stockpiles on hard clean bases, which allow free drainage. Keep covered and protected from rain
- Avoid intermixing and contamination between stored materials and other building materials, debris or other deleterious matter.
- Store bags of natural cement and hydraulic lime and in dry conditions raised off the ground and not touching damp surfaces.
- Keep lime putty sealed in plastic containers with well-fitting lids. Include layers of polythene and hessian on top of the putty.

55 HOT LIME MORTARS

- There is no NBS specification clause or specified data for the requirement for non-hydraulic lime mortars, used in the form of Hot-lime Mortars.
- British Standard CP121: 1951 Code of Practice for Masonry gave guidance on the use of Quicklime for the preparation of putty lime and the slaking of hydraulic lime for use in masonry mortar; however it offers no physical values against which the mortar properties can be measured.
- How to make mortars is illustrated in Chapter 3 of Nigel's Copsey's book. "Hot Mixed Lime and Traditional Mortars: A Practical Guide to Their Use in Conservation and Repair"
- Guidance can also be obtained from:
  - the English Heritage publication Series Practical Building Conservation Mortars Renders and Plaster, Properties of Replacement Mortars
  - https://www.hotmixedmortars.com
  - https://www.hotmixedmortars.com/pdf/documents/Hot_Mix_Lime_Mortar_Guide.pdf
- Hot mixed mortars are increasingly advocated by Historic England and other national conservation bodies such as Historic Scotland.
- Submit evidence of masons experienced in making and applying hot mixed mortars and case studies where the material they have employed has been in place for at least a year and over one winter period.
- Submit a method statement for precautions to be taken in making hot mixed lime mortars.

60 MAKING MORTARS GENERALLY

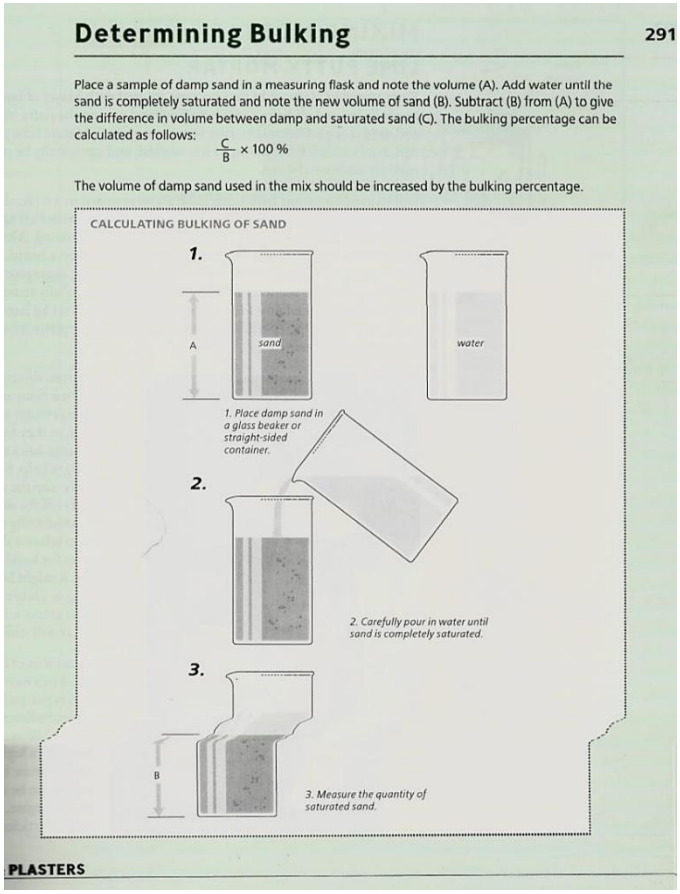
- Batching: By volume. Measure materials accurately by volume using the same gauge containers.
- Use clean and accurate gauge boxes or buckets. Compact dry materials to the same extent and smooth off to the top of the box or bucket to ensure that each volume of material contains the same weight of material.
- Mix proportions: Based on dry sand and other aggregates; allow for bulking if sand is damp.
- Damp material: Make allowance for damp material by increasing the amount of sand by the % of its reduction in volume from the damp to the saturated state; refer to diagram at the end of this section extracted from EHPBC Series, "Mortars Renders and Plasters" p291.
- Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
- Contamination: Prevent intermixing with other materials.
- Keep plant and banker boards clean at all times
- Use mortar within about two hours of mixing at normal temperatures. Mortar may be retempered to restore workability, but only within these time limits.
- Addition of pozzolan:
  - Mix pozzolan with water to form a slurry and mix into the coarse stuff using a plaster mix drill or other mechanical means as clause 71. Do not add dry pozzolan.
  - Use mortar to which pozzolan has been added within two hours.

71 COARSE STUFF (LIME PUTTY: AGGREGATE MIX)

- Measure ingredients for coarse stuff in approved gauge boxes and mix at least seven days before use, and if possible, at the commencement of the works
- Mix small quantities of coarse stuff lime
  - by hand on a boarded platform using a shovel to ensure even distribution of lime paste through the aggregate, by chopping, pounding and spreading with the edge and flat of the spade to expel excess water and to compress the mix, until the lime is uniformly distributed throughout the mass. Do not use additional water.
  - Alternatively use a plaster mixer drill mixing the mortar in a plastic tub.
- Mechanical batch mixers may be used with prior approval.
- For rotary mixes place two heavy round stones in the drum to help beat the mortar and make it pliable. For large quantities of mortar use a mortar mill.
- Cover coarse stuff and keep damp until required, preferably in polythene sacks with tied heads or sealed plastic beans.
- On receiving architect's approval, prepare coarse stuff for all repointing and store in polythene sacks not less than 3 weeks or longer.

72 MAKING HYDRAULIC LIME: SAND MORTARS

- Mix the lime thoroughly with the selected aggregates and with the minimum amount of water to make coarse stuff workable, the mixed material being able to take a polish from the back of a shovel.
- (A small amount of lime putty, not exceeding 10 per cent of the total coarse stuff volume may be added to assist workability without prejudicing the performance of the mortar). Mix on a dry clean platform before any water is added and then again after watering. The coarse stuff must be used within four hours and must not be knocked up after stiffening has taken place. Follow the lime manufacturer's recommendations in all other respects.



Extracted from EHPBC Series, "Mortars Renders and Plasters" p291.

Schedule of Work

SCHEDULE OF WORK (SoW)

Tender

General Notes

I. Include for all work described in the specification in its entirety, including the documents listed in all clauses under A11 of the Preliminaries and as shown on the drgs as listed in A11/110 as a whole and/or clearly apparent as being necessary for the proper execution and completion of the works.

II. Fully priced copy: Submit with the tender. Price all items individually. Provide breakdown of any lump sum prices on request prior to acceptance of tender indicating rates used in the calculation of the pricing.

1 General Items and Site Set Up

Refer to drgs 123-01 and 123-02. Relevant clauses are described in the Preliminaries section of the specification and work sections below.

Construction Stage Health & Safety Plan, Method Statements

1.1 Submit the Construction Stage Health and Safety Plan, as clause A30/570 to the Architect and CDM consultant, at least 3 weeks prior to the date of commencement and make all necessary amendments as required after comments.

1.2 Submit method statements as clause A30/500, in accordance with the requirements of sections A34, A36, Schedule of Work, or as described elsewhere.

Programme for the Work

1.3 Submit programme of the Work as clause A32/210A to include the following operations:

- Submission of scaffold drawings, periods for comment and possible amendment as described under Scaffold p. SoW | 3 and section A36.
- Site Set up and Protections.
- Time to confirm scope of work from scaffold as C41/110 and C51/110.
- Time frames for:
  - ❖ the preparation plus drying times for mortar samples
  - ❖ presentation of stone and timber samples, trials and workmanship samples including adjustment following architect's comments as described in section C41 and other Mats&Works sections.
  - ❖ Opening up the roof and time frame for inspection of timbers and issuing of instructions as described in the SoW.
- Check delivery times for materials, replacement stone, slate, new rw goods and other time critical items upon receiving the client's order and make allowance within programme.
- Time required for the expenditure of all provisional sums and contingencies as specified in A54 and A55 and all provisional repairs as scheduled in the SoW below.
- The contractor is to make his own assessment of the work as detailed below and submit the programme accordingly.

Work to the Pavement ACO Drain

1.4 Discuss the arrangements for setting up the site hoarding along the pavement with the client and confirm there is sufficient working space for the installation of the ACO drainage channel and associated soakaway or otherwise. Refer to drgs 123-01, 02 and 03. Give a period of four weeks' notice of the planned date for commencing these works.

Total Taken Forward

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Schedule of Condition

1.5 Before the work commences, take record photographs of all areas, which will be affected by the works:

- The approach to the building to include perimeter walls, fences, gates etc
- The cemetery, paths, monuments, plants and all fixtures in the ground.
- The pavement and road finishes adjacent to the Lychgate.

1.6 Photographs to be sufficiently detailed to show the condition of the various elements prior to the work commencing. Provide the architect with a copy of the photographs electronically.

Protection to Elements around the Lychgate

1.7 Protect trees, planting beds and paths, prior to the erection of the scaffold.

1.8 Protect the metal gates, stone walls, in the vicinity of the Lychgate, from accidental damage during site set up and deliveries.

Protection of the Cemetery and wider Environs

1.9 Ensure all public paths are kept free and there is no hindrance to access through the cemetery paths, the pavement and Vandyke Road.

1.10 Arrange for hoardings along the site boundary line to enable excavation and work at the base of the north elevation as described in Section 4. Do not obstruct the pavement outside the boundary line.

Site Set up

1.11 Erect site compound in the area allocated as shown on drg 123-01 and protect with Heras fencing. Include for temporary hard standing to site compound. Provide site hut for welfare facilities with water and power connection and container for storage of materials etc. Portaloo is to be located in the same area. Refer to A36/230 for space for meetings.

Samples

1.12 As soon as practicable after receiving instructions and setting up site and scaffold prepare and present samples of all materials and all workmanship samples specified and identified in all Mats & Works specification sections. Prepare a log and keep a records as detailed in C41/190. Ensure that mortars are fully dry and have achieved their true colour before presentation and that all samples presented are fit for the purpose for which they are intended. Allow for adjustments to samples following comments as specified elsewhere.

1.13 Material Samples - Submit representative samples of new stone as clauses C41/240 and 241, brick samples as C41/260 and samples of sands, and stone dusts as clause C41/215. Submit new roofing slate sample as section H62 and timber for repair as sections C51 and G20.

1.14 Submit the workmanship samples as scheduled in C41/190.

1.15 Carry out cleaning trials as C40/230.

Initial investigations

1.16 As soon as taking possession of the site carry out the following surveys and inform the design team.

A. Gully, drain and soakaway on the existing drainage to the east side of the building; see drg 123-02 -CCTV camera investigation.
B. Cat scan for buried services that may be running across the pavement to the north of the building. Survey to extend 1m on either side of the new drainage trench.
C. Soil percolation tests in the cemetery and in the grassed areas outside the boundary wall.

Total Taken to Summary

2 Scaffold

Scaffold Design and Responsibility

2. 1 The design of the scaffold, access platforms and supports, arrangements for access to site and delivery of materials, protections, and all temporary works remain the responsibility of the main contractor. Refer to Section A36.

- The design of the scaffold is to be undertaken by a competent designer, independently checked by a scaffold engineer both employed by the contractor.
- The contractor is to assess the ground conditions before scaffold design. Note that no support may be taken off any part of the existing building structure without the prior agreement of the architect.
- Submit the design and method statements for the erection of the scaffold to the Design Team for comments at least 4 weeks before the commencement date. Include for making amendments to take into account architect's and Structural Engineer's comments, all as A36/143.

Protections and Care during Scaffold Operations

2. 2
- Inform scaffold operatives of the historical and architectural importance of the building. Any damage is to be made good free of charge to the employer.
- Keep putlogs 50mm min. from the building walls and fit with plastic caps.
- Provide all protections necessary to maintain safe unimpeded access for the general public and visitors across public footpaths to the church entrances and to individual graves during scaffold operations.
- Ensure a competent charge hand supervises the scaffold team and a representative of the contractor is present at all times during the erection and dismantling of the scaffold and manages the work when the public are using the pavement or traversing the cemetery grounds as section A36.
- No scaffold operations during school time morning and afternoon rush hour.

Building Safety and Security

2. 3 Submit method statements for temporary support of masonry elements and roof members during repairs, to the architect and structural engineer. Refer also to SE specification SP01 - Preliminary Clauses Specification and drawings 1993-001-121 and 122.

2. 4 Protect the base of the scaffold against unauthorised access as A36/147.

2. 5 Provide movement activated PIR light and audible alarm linked to 3no emergency phones and arrange with the client for emergency local contact.

Scaffold Provision

2. 6 Provide scaffold and suitably located working platforms all as specified in section A36 and as described above, for the repair and redecoration of the gutters, roof and masonry repairs as described/shown in the tender documents. Enter the cost of scaffold erection and dismantling here.

Total Taken to Summary

3 New Roof Covering, Structural Repair and Rainwater Goods.

This section to be read with Mats and Works section H62 and R10.

General Notes to Tenderers

A The roof covering appears to date from the 1880s original construction and has been repaired in the past. Most slates are thin and friable. Ensure an order for Cornish Delabole slate as H62/102 is placed upon receiving the instruction to proceed.

B The dimensions given for the new slate are approximate. Order new slates to be as closely matched to the original slate width and length. Discuss with the architect if available slate differs significantly.

C Note that the repointing of lead flashings is to be done by an experienced mason and the mortar cured and protected as the relevant clauses in Section C41. Do not leave this task till just before striking scaffold. Allow sufficient time for the curing of the mortar. Note also the introduction of a masking tape to the top surface of the flashing where it turns into the wall to act as an isolating slip layer to allow the lead to move without disturbance to the mortar.

Stripping and Recovering of Lychgate Roof

3.1 Temporary Protections: To limit costs to the employer it is proposed that the recovering of the roof is carried out by programming the work during fine weather and ensuring temporary protections are in place. Enter here the cost of heavy duty tarpaulins to protect the roof boarding and roof structure until timber repairs are carried out and the sarking felt is installed.

3.2 Carefully take up the ridge tiles and set aside for reuse. Clean old mortar off.

3.3 As a prov. item include for 4 no new ridge tiles reproduced to match. Dreadnought tiles will make new tiles to match but note the delivery periods can be long. Ensure replacements are identified as soon as possible at the start of the contract. Contact Dreadnought Tiles at Hinton Perry & Davenhill Ltd, Dreadnought Works, Dreadnought Road, Pensnett, Brierley Hill, West Midlands, DY5 4TH. Tel: 01384 77405, Email: sales@dreadnought-tiles.co.uk.

3.4 Inspect all existing lead cover flashings at the gables for splits and other defects and inform the architect. If sound, carefully remove and set aside for reuse.

3.5 Carefully strip existing slates from both slopes of the roof and dispose of. Strip battens, counter battens and felt and dispose of.

3.6 Inspect the exposed roof boarding and inform the architect of its condition. If sound discuss the possibility of carefully removing boards to allow structural repair and include for storing these in a dry and secure location until they can be reinstated.

3.7 Allow a period of two weeks within the programme for inspection of roof boarding and roof timbers by the architect and SE timbers and for the issue instructions. The programme for overall repair should be based on the specification including the expenditure of prov. sums as given in the prelims and in the SoW.

3.8 Carry out structural repairs and reinforcement of the roof structure as SE's drawings and enter the cost of steel plates, cleats and the like and fixing the same here.

3.9 If sound, replace roofing boards in their original positions or with provisional allowance described in the item below.

3.10 As a prov. item include for replacing 8 no boards of varying lengths to an overall length of 12 linear metres, assume 25mm thick t&g boards in slow grown timber as C51/372.

3.11 Extra over roof board replacement for the entire roof boarding approx. 23M^2 overall width and thickness of boards to match existing in slow grown sw timber as clause C51/372. t&g boards laid on the diagonal. For tender purposes assume 25mm thick.

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Note: Roof Boarding and Roof Timber redecoration covered in Section 6

3.12 Supply and fix new oak tilting fillets at eaves as G20/12, (item 8 on drg 123-12).

3.13 Supply and fix new fascia to support eaves gutters, in European oak as G20/12, item 9 drg 123-12.

3.14 Supply and fix new uv resistant eaves strip as H62/240A (item 6 on drg 123-12).

3.15 Supply and lay new counter battens, underlay and counter attens as clauses H62/110, 240A 245, and 265.

3.16 Supply and fix new roofing slates as clause H62/102 throughout, including, lead soakers to abutments as H71/37.

3.17 Dress down retained existing lead cover flashings, adjust width to sit neatly above the new slates and re clip. Rake out joints and repoint as clause H71/84. Note requirement to cure and protect the mortar.

3.18 As a prov. item include for replacing 2m length overall of straight flashings as Clause H71/35, width of flashing to suit height of gable wall above new roof finish.

3.19 Include for 2no new lead saddles at either side of the ridge the ridge as H71/38.

3.20 Relay retained ridge tiles in lime mortar as clause H62/290A. Prov. replacements specified in 3.3. Note requirement to cure and protect hydraulic lime mortar to ridge tiles.

New Gutters and RWP pipes

3.21 Take down existing rw pipes and gutters. Set aside cast iron off set downpipe and shoe at the base of the east downpipe. Inspect and confirm whether they can be reused and whether the diameter concurs with those specified in section R10 before ordering new sections. Note delivery periods for cast iron rainwater goods and order new sections as soon as the instruction to proceed is received.

3.22 Supply 2no. new gutters as R10/15, including gutter brackets, stop ends and nozzle pieces to suit specified gutter profile.

3.23 Supply new rainwater pipes as R10/12 with new sections as follows:

a. 2 no new single socket (without ears) downpipe sections to be placed above the plinth offset section. Include for new iron ring fixings to the downpipes to be fixed into stone joints as shown on detail 2, drg 123-12.

b. 2 no new single socket (without ears) downpipe sections to be placed below the plinth offset section. Include for new iron ring fixings to the downpipes to be fixed into stone joints as shown on detail 2, drg 123-12.

c. 2no new plinth offset sections without ears to overcome the projecting stone cills and the offset stone plinth as shown on drg 123-08. Ensure the offset projection clears the cill and stone plinth projection as shown on drgs 123-08 and detail 2 on drg 123-12.

d. 2 no new shoes with ears as R10/12 to discharge into new gullies as shown on drg 123-12.

3.24 Prepare and redecorate new gutter and downpipe sections, ensuring gutters are thoroughly painted inside and out as section M60, colour RAL 7016.

3.25 Caulk and seal the gutter joints ensuring a thorough seal. Set the gutters on the brackets to fall. Carry out a water test to ensure gutters fall correctly.

3.26 Refer to SoW Section 7 for new below ground drainage.

Total Taken To Summary

Masonry Repairs – General notes to Tenderers

The notes below provide additional information on the work shown on the drawings and described in the Schedule of Work.

Related work: M&W Sections C41, Z21 and others as noted in particular items.

A. Rubble Stone type and Replacement:
   1) The rubble is Greensand stone and dressed stone is Bathstone .
   2) Stone renewals are specified to match the existing as closely as possible.
   3) Difficulties in sourcing are to be discussed with the architect and alternative stone types agreed before the commencement of the work. Include programme allowance for this work, as Section 1.
   4) The stone supplies are to be secured and agreed before commencement of the work on site.

B. Dressed stone configuration: The contractor is to take accurate measurements on site and produce templates and cutting schedules. Present profiles and seek Architect's agreement as section C41.

C. The areas of work were surveyed in 2025. All repairs scheduled and shown on the drawings are to be confirmed by the architect after the site inspection as C41/120. Note programme requirements as described Section 1.

D. Confirmation of As Built Work: Variations arising whilst work proceeds are to be brought to the architect's attention, agreed in terms of extent and cost and marked on drawings as the work proceeds. The drgs are to be kept on site and submitted upon completion of the project for inclusion in the O&M manual as Record drawings as section A37.

E. Dimensions and Contractor's responsibility:
   1) Sizes of new stones given in the SoW are for parity of tendering. Where not specified otherwise, the first two figures are plan dimensions with the third dimension denoting new stone height.
   2) It is the contractor's responsibility to assess the sizes of stones and extent of work as shown on the drawings or as given in the SoW.
   3) Note requirement to make new sections of stone 2mm bigger that existing stones to allow for natural erosion of the stone in 150 years.

F. Work to Rubble stones: The rubble facing is fairly shallow in depth. Repair work involves renewing the entire stone unit.

G. Mortar Repair to Dressed stones:
   I. Extent: Mortar repairs are shown hatched. Where only part of the stone is shown, the hatched area is approximate and will vary slightly from stone to stone. The overall extent of repair will be considered as remaining the same.
   II. The depth of repair is as given in Section C41 or particular SoW items.
   III. The mortar repair colour is to match original colour and finish to imitate worn stone. A variety of mortar shades is required to match the natural stone colour variations. Details for mortar repair are given in Section C41 items.

H. Cleaning Operations – General Note to Tenderers
   I. The repair drawings show stones requiring repair and consolidation. These need to carefully cleaned before treatments (nanolime, mortar capping, mortar repair and shelter coating) can be applied. It is not intended to clean the entire elevation only the stones that need to be repaired.
   II. Section C40 describes the methods to be used and trials to be carried out.
   III. The contractor is to visit site and to make his own assessment based on his expertise of the work involved in cleaning.
   IV. The cost for cleaning is to be entered against the relevant items in the SoW Section 4. The cost of the cleaning trials is included in section 1.

Masonry Repairs – General notes to Tenderers cont'd

Key to Symbol and References on drgs and SoW – Relevant Spec Clauses

Types of Repair and Drawing Symbols: The Repairs as shown on the drawings with specific symbols and referred to in the SoW are as given in the table below with relevant specification clauses. The contractor must ensure that the drgs are read in conjunction with the repair notes and specification clauses.

The specification clauses given against particular repair types are not exhaustive or exclusive of other relevant or cross referenced clauses and the specification applies as a whole.

Key to Symbol or References on drgs & SoW	Repair Type - Description *Note the notations and Symbols are used in the SoW and the drgs*	Relevant Spec Clauses
N	New stone block, extent as shown on drgs and or as referred to in the SoW. For particular situations and stone types see below.	
	New Bathstone- Copings and quoins close to the ground in Base Bed. All other units in Top Bed	C41/100-215, 220A, 230, 250, 241, 245, 250, 255A, 281, 330, 332, 385, 410, 420.
	New Greensand stone. "N" shorthand notation for drgs and SoW items	C41/100-215, 240, 245, 250, 330, 340, 385, 405, 410, 420.
	Indent Repair – Plain Ashlar Bathstone -Extent as shown on drgs or indicated in the SoW.	C41/100-215, 241, 245-255A, 281, 330-340, 351, 385, 395-410, 420.
	Indent Repair – Profiled Bathstone -Extent as shown on drgs or indicated ion the SoW.	C41/100-215, 241 (Top Bed), 245-255A, 281, 330, 332, 385, 395-410, 420.
	Mortar repair to eroded dressed or rubble stones to a large part or over entire surface, including profiled stones. Mortar repair to match colour of original stone and variations within it. Shelter coat repair including the surrounding original stone. "MR" shorthand notation for drgs and SoW items	C41/100-215, 501-520A, 520C, 540- 555A, 900.
	Mortar Repair to a part of a stone, dressed rubble stones, and profiled stones. Mortar repair to match colour of original stone and variations within it. Shelter coat repair including the surrounding original stone. "MR" shorthand notation for drgs and SoW items.	C41 /100-215, 501-517, 520B, 520C, 540- 555A, 900.
	Carefully dismantle loose rubble and rebuild using existing and new stone blocks as indicated on drgs	C41/310, 321, 330, 340, 385, 390, 410, 415, 455A, 620A-740.
NCS	Defrass, Consolidate by Nanolime, mortar capping in many areas as necessary on the surface of the stone. Shelter coat entire stone surface, and mortar capped areas. "NCS" shorthand notation for drgs and SoW items.	C41 /100-215, 510A-517, 520B, 520C, 521, 540- 555A, 890, 900.

NS	Apply Nanolime and Sheltercoat the surface of individual ashlar or rubble blocks, which present friable surfaces but have not eroded back sufficiently for mortar repair or refacing. For tender purposes include for Shelter coating the entire stone block and in the case of quoins both sides even when not shown on the drgs. "NS" shorthand notation for drgs and SoW items.	C41/890, 900.
Grout & Pin	Grout and Pin cracks in stonework with stainless pins across cracks, diameter and length suitable for application. Include for grout injecting, pointing or mortar repair to make good crack. "GP" shorthand notation for drgs and SoW items.	C41/283, 610, 620A, 640, 690
RCR	Remove Cementitious Render repair and Reform in lime mortar. "RCR" shorthand notation for drgs and SoW items	C41/100-215, 501-520A, 540-555A
RCR/N	Remove cement render and allow for new indent or full depth indent. "RCR-N" shorthand notation for drgs and SoW items	Particular clauses as described under related repair techniques
= = = = =	Remove Cementitious Pointing and reform in lime mortar. "RCP" shorthand notation for drgs and SoW items.	C41/810- 820, 821, 840A, 861, 862.
OJ	Rake out and Point open (wide) joint in dressed stone work "OJ"- shorthand notation for drgs and SoW items.	C41/810-814, 820, 840A-861.
Pf	Point fine joints in ashlar work "Pf"- shorthand notation for drgs and SoW items.	C41/810-814, 821 822, 840A, 861.
Repoint In coursed Greensand stone	Rake out and repoint areas of walling (rubble) to match extg. Note areas where deep packing of joints is shown on drawings and allow for preparatory work of deep packing or tamping of joints as clause C41/820.	C41/810-820, 840A, 860. 862.
1 3 ↙ ↙	Numbers are used to cross relate positions on the drawings to specific SoW items. The relevant numbers appear at the start of each SoW item as Note 1 or Note 1A etc.	

4. Schedule of Masonry and Timber Frame Repair – External Elevations

Refer to Notes and key above for repair notation shorthand used below.

South Elevation - drg 123-04

Preparation and Cleaning

4.1 Carefully remove the war memorial plaque from the RH side of the elevation and hand to the employer for safe keeping. Reinstate on completion using ss screws.

4.2 Enter here the cost of cleaning the underside of the hood mould, intrados moulding recesses on both sides and the soffit of the archway. Work to proceed as section C40 before undertaking masonry repairs shown on drg 124-04 and as listed below:

Structural Repair

Rebuilding LH pier facing

4.3 Carefully dismantle the rubble facing to the left hand pier. Submit method statement before commencing.

4.4 Number and mark the position of the existing stones on the drg and mark the at the back as they are removed from the face of the building.

4.5 Insert Helibar ties at each quoin stage to tie across current diagonal cracks embedded into the backing masonry as C41/287 and rebuild rubble facing.

4.6 As a provisional item include for grouting 4 no diagonal cracks within the body of the wall before refacing, as C41/710-740.

4.7 Include for 5no new stone rubble blocks to replace damaged rubble as shown on the drg. Rebuild facing in a sequential manner using retained and new stone blocks.

4.8 As a prov. item include for the introduction of 3no. additional new stones.

Rebuilding facings elsewhere

4.9 Carefully dismantle the rubble facing below the middle kneeler to the east gable. Include stones that have masonry bee damage. Set aside any sound blocks for reuse. Include 2no Helibar ties across crack in the diagonal in the backing masonry.

4.10 Rebuild area allowing for 5no new stone blocks as shown on drg, all as described for the LH pier.

4.11 Carefully remove 3no stone blocks to the south side of the elevation and rebuild in conjunction with deep packing and pointing adjacent open joints.

Packing Arch Voussoir Stones

4.12 Prop the arch as SE's drg 1993/001/112.

4.13 Rake out open joints as shown on drgs including joints to arch underside. Grout and deep pack with mortar. Leave mortar and slates recessed for final pointing. Insert slate in packing to break up mass of mortar in joints other than those facing downward where there is a risk of slate falling out in future.

Cintec Anchors

4.14 Insert Cintec anchors to W face of the LH pier as SE's drg 1993/001/112. Leave recessed and point with fine mortar as C41/821.

Stone Repair

4.15 Supply and fix new indent to middle kneeler on the east slope of the gable min. 100mm deep. Pin coping to the existing and new sections of stone 8mm diam. ss pins. Replacement in Bathstone base bed.

4.16 As a prov. item include for an additional 5no. rubble stone facings.

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4.17 RCR –N Remove and Reform Cement Render to 2no quoin stones on the west pier; note repair extends on west side and is shown on drg 124-07. Include for 2 no new quoin approx. dimensions as follows:

a. 250x150x200mm

b. 150x200x250mm

4.18 MR – Mortar repair to Bathstone dressings:

a. Voussoir stone face

b. Kneeler to base of east gable

c. To base of offset plinth to LH side of the arch. Include for inserting slate in the base joint to project over the masonry below and form the repair above.

d. 2no repairs to the roll bead moulding at the base of the hoodmould.

4.19 Carefully remove replacement ashlar to the LH side of the arch which is not correctly bedded. Cut a false horizontal joint in the face of the stone and rebed to align with stones on either side.

Repointing

4.20 OJ – Rake out and repoint open joints in Bathstone ashlar stones. - Deep pack wide open joints and insert slates to break up the mass of mortar. Voussoir open joints covered under structural repair.

a. 3 no joints in coping stones full girth,

b. 2 no joints in hood mould to arch

c. wide joints beside quoins and in ashlar band as shown by dotted lines on drg.

As a prov. item include 4.no more joints full girth.

4.21 GP – Grout 4 no cracks and open joints in rubble and or ashlar stones as shown on drg. Where crack is across Bathstone units include for pinning with ss recessed pins as C41/283.

4.22 Remove and Reform Cement Pointing to various rubble and ashlar joints as shown by double dotted lines on the drg.

4.23 Rake out and repoint all areas of rubble including rebuilt areas in one operation as C41/820.

North Elevation - drg 123-05

Preparation and Cleaning

4.24 Carefully remove the war memorial plaque from the RH side of the elevation and hand to the employer for safe keeping. Reinstate on completion using ss screws.

4.25 Release the front gates from the gate posts and set aside in a protected area until reinstatement.

4.26 Enter here the cost of cleaning the underside of the hood mould, intrados moulding recesses both sides and the soffit of the archway. Work to proceed as section C40 before undertaking masonry repairs shown on drg 124-05 and as listed below:

Repair to Piers below Pavement level

Note: The road and pavement level has risen historically, in effect submerging the lowest 250mm section of the piers. Both the road and the pavement fall towards the Lychgate. Limited investigations 2025 showed that corner quoins and brick wall facing have disintegrated due to moisture being held against them.

The project aims to reinstate the damaged masonry below pavement level and to introduce a drainage channel to capture water running towards the pier and divert back to the road drain. This will involve closing the pavement for a period of time to allow the work to take place.

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Refer to section 1 for protections along the pavement line whilst carrying the work described below and to Section 7 for the Below Ground drainage and reinstatement of finishes to pavement.

4.27 Excavate previously dug area around both piers on 3 sides between and carefully excavate a similar area on 3 sides of the west pier. Take excavation to approx. the base of the Lychgate footings and sufficiently wide to allow the refacing of the damaged section of the pier walls.

4.28 Repair the base of the piers on three sides with new-hand made bricks as clause C41/260 bedded in hot mixed mortar as C41/821.

4.29 Reinstate excavated pavement material and existing finish to the pavement. Create a fall to the finished levels of the reinstated pavement surface away from the piers on three sides and ensure as smooth joint to the line to the main pavement.

4.30 Work to be carried out with introduction of new ACO drain described in Section 7.

Repointing

4.31 OJ – Rake out and repoint open joints in Bathstone ashlar stones. -Deep pack wide open joints and insert slates to break up the mass of mortar. Voussoir open joints covered under structural repair.

a. 2 no joints in coping stones full girth,
b. 1 no joint in hood mould to arch
c. Wide joints beside quoins and in ashlar bands as shown by dotted lines on drg.
d. As a prov. item include 4.no more joints full girth.

4.32 Pf – Point fine joint in ashlar to the RH side of arch.

4.33 GP – Grout 1 no cracks following joints in rubble within the brickwork face of the west pier.

4.34 RCP - Remove and Reform Cement Pointing to various rubble and ashlar joints as shown by dotted lines on the drg.

4.35 Rake out and repoint all areas of rubble including rebuilt areas in one operation as C41/820 in area above arch.

4.36 Rake out and repoint brick facing to piers above and below the offset plinth as C41/821.

Stone Repair

4.37 Supply and fix new indent to coping of lowest kneeler on the east slope approx. the full width of coping and approx. 150mm long. Pin new section to parent stone with 2no 8mm diam. ss pins. Replacement in Bathstone base bed.

4.38 Supply and fix 2no. new indents to hoodmould on RH side of the arch each approx. 150mm on face. Depth of stone to be sufficient to work the projecting moulding and extend a min of 60mm beyond the face of the arch voussoir to ensure a firm bed into the body of the wall. Pin the new sections of stone to the rear of the indent with secret 5mm ss dowels secured with Prompt natural cement. Replacement in Bathstone base bed.

4.39 RCR – Remove and Reform Cement Render to 1no quoin stone and 1no offset plinth stone at the base of the pier to the west side; note repair extends on west side and is shown on drg 123-07.

4.40 As a prov. item include for 1no new quoin dimensions to match existing in Bathstone base bed, approx dim. 250x150x150mm.

4.41 As a prov item include for 1no new corner offset plinth stone dimensions to match existing in Bathstone base bed.

4.42 RCR – Remove and Reform Cement repair to the face of the topmost weathering stone to the buttress on the west side. Form repair and distinguish vertical joint with adjacent ashlar stone

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4.43 MR – Mortar repair to Bathstone dressings:

a. Voussoir stone face in 2no locations on the east side of the arch

b. Archway reveals - 2no in total.

c. 1no repair to the roll bead moulding at the base of the hoodmould.

4.44 NCS – Apply nanolime, mortar cap and sheltercoat friable stone surfaces in 3no locations on the face of the arch voussoirs.

4.45 NS – Apply nanolime and sheltercoat to friable stone surfaces:

a. in 1 no location on arch hood mould, east side.

b. 1no location on arch voussoir face on west side.

c. 2no locations on archway reveal stones.

d. s on the face of the arch voussoirs.

4.46 S – Apply sheltercoat to friable stone surfaces:

a. in 1 no location on arch hood mould, east side.

b. 1no location on arch voussoir face on west side.

c. 3no locations on archway reveal stones.

East Elevation - drg 123-06

Preparation and Cleaning

4.47 Release the side gates from the gate post and set aside in a protected area until reinstatement.

4.48 Enter here the cost of cleaning the moulded faces of the bottom kneelers on both sides of the elevation. Work to proceed as section C40 before undertaking masonry repairs shown on drg 123-06 and as listed below:

4.49 Excavation and repair to side of north pier is covered under North Elevation.

Stone Repair

4.50 Supply and fix new indent to coping on south gable slope as shown. Allow for stone of approx. dim 200mm wide x 90mm deep x 200mm high. Pin new section to parent stone with 2no 6mm diam. ss pins. Replacement in Bathstone base bed.

Note the full width coping indent on the north side is specified under the north elevation.

4.51 Supply and fix new indent to coping on N gable slope as shown. Allow for stone approx 450mmx200mm on face x 90mm thick. Submit profile section to the architect and seek agreement before proceeding. Pin new section to parent stone with 2no 8mm diam. ss pins. Replacement in Bathstone base bed.

4.52 New indent to quoin at base of SE corner approx 200x150x250mm in Bathstone base bed.

4.53 Remove cement render- Supply and fit 2no new quoins in Bathstone base bed approx. dimensions:

a. 300x250x250mm

b. 150x300x250mm

4.54 New indent to cill at south end of elevation, depth of stone to be taken behind the face of the timber cill by approx.25mm.

4.55 Take out misaligned adjacent stone sill and rebed correctly and securely.

4.56 Supply and fix 5 no. new Greensand rubble blocks, face dimensions as marked on the drg min. 100mm deep.

4.57 As a prov. item include for an additional 3no. rubble stone facings.

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4.58 Note 1 - Remove cement render on Greensand stone rubble on buttress plinth. Allow for approx. 3 courses of new rubble facings as they are likely to be damaged by cement mortar - approx. 9 blocks.

4.59 Note 1A- Remove cement render from face of rubble stone from the top of the buttress. As prov. item include for 2no new Green sand stone facing blocks.

4.60 Note 2 – Remove Cement render. Supply and fix 3no Greensand rubble stones to infill area between quoins.

4.61 Note 3- Take perimeter wall down to below stone cill height. Flaunch the top of the wall with NHL2 hydraulic lime mortar and tile creasing to overhang wall on either side by 25mm; mix 1 part lime; 2 parts well graded sharp sand.

4.62 Note 3A- Check and remove redundant conduit.

4.63 NS – Apply nanoline and sheltercoat to friable stone on moulded face of kneeler.

Repointing

4.64 Rake out and repoint wide joints around quoins to north buttress as shown by dotted lines on drg.

As a prov. item include 0.5 linear metres of same repair.

4.65 Note 4 - Point isolated joints in area below plinth on the south side of the perimeter wall - approx. 20%. Note this area is pointed with what appears to be cement mortar.

4.66 Extra over for raking out cement mortar and repointing 100% area below offset plinth stone.

4.67 Rake out and repoint rubble walling in entire elevation elsewhere, noting areas which need to be deep packed (shown hatched at plinth level)

Repair to Timber Wall Panels

General Note -All new timber to be slow grown Canadian Douglas fir as C51/372. Extent of repairs described below are approximately as shown on drg or as described in SoW items below. Redecoration of timber frame covered in Section 6.

4.68 Inspect all timbers for decay and inform the architect.

4.69 Note 5 - Remove decayed timber at cill base, insert dpc and piece in new hardwood strip approx. 20mm full length between perimeter wall and south buttress.

4.70 Note 6 - Piece in full cross section repair to cill as C51/771, on either side of the central post approx.100-150mm long to project behind the vertical panelling.

4.71 Note 7 - Remove paint and investigate connection of previous repair at base of post. As prov. item allow for new half lapped repair to post new cross section to match existing including mouldings on either side; approx height of new timber 0.8m; half lap joint as C51/770.

4.72 Note 8 - Clean out shake in post and investigate for decay. Include prov. sum of £300 for repair.

4.73 Note 9 – 2 no piece in repairs to T&G boards as C51/774. As an alternative repair, replace boards full height. Extent of repair as shown on drawing.

4.74 Note 10 –Piece in repair to arch spandrel, full depth as C51/772. Include for new tenon to mullion.

4.75 Note 11 – Piece in repair to face of wall plate as C51/773, approx. 100x50 in cross section, length as shown. Refer also to SE drg 1993-001-122 Detail 08.

West Elevation - drg 123-07

Preparation and Cleaning

4.76 Enter here the cost of cleaning the moulded faces of the bottom kneelers on both sides of the elevation. Work to proceed as section C40 before undertaking masonry repairs shown on drg 124-07 and as listed below:

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4.77 Excavation and repair to face of south pier is covered under North Elevation.

Stone Repair

4.78 Supply and fix 5 no. new Greensand rubble blocks, face dimensions as marked on the drg min. 100mm deep.

4.79 As a prov. item include for an additional 3no. rubble stone facings.

4.80 Supply and fix new quoin to base of south pier approx. 250x150x250mm in Bathstone base bed.

4.81 Piece in repair to cill in 2no locations as shown on elevation each approx. 250mm long, full depth, cross section to match existing. on either side of the central post approx. 100-150mm long.

4.82 RCR – Remove and Reform Cement Render to 1no quoin stone at the base of the south pier to the NW corner; note repair to the two quoins on the south side is covered under South Elevation and is shown on drg 123-04.

4.83 As a prov. item allow for new quoin approx. dims 200x200x200mm.

4.84 MR – Mortar repair to Bathstone dressings:

a. Coping stones to north gable.

b. Quoin stones to south pier below the kneeler.

4.85 NCS – Apply nanolime, mortar cap and sheltercoat friable stone to moulded kneeler on south side.

4.86 S – Apply sheltercoat to friable stone surfaces to kneeler on south side.

4.87 Pf – Point fine joint in buttress weatherings on the south pier.

4.88 Note 1- Remove cement render on Greensand stone rubble on buttress plinth. Allow for approx. 3 courses of new rubble facings as they are likely to be damaged by cement mortar - approx. 9 blocks.

4.89 Note 2 -GP – Grout crack and open joint in offset plinth to the north side. As a prov. item pin crack in offset plinth with 1no, 5mm diam. threaded ss steel pin recessed and pointed.

4.90 Note 3 - Insert slate piece in open joint to weather stone below and make good area of damaged stone above and below in MR

4.91 Note 4 -Take perimeter wall down to below stone cill height. Flaunch the top of the wall with NHL2 hydraulic lime mortar and tile creasing to overhang wall on either side by 25mm; mix 1 part lime; 2 parts well graded sharp sand.

4.92 Note 5 - Carefully extract 2no rusted threaded bars set in lead. Include for 2no new sandstone blocks to make up damaged facing

Repointing

4.93 Note 6- Repoint approx. 50% of area between stringcourse and off set plinth.

Extra over for full repointing

4.94 Note 7 - Area below line to be deep packed and repointed within overall rubble repointing of elevation.

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4.95 Note 8 - Repoint approx. 50% of area between stringcourse and off set plinth.

Extra over for full repointing.

4.96 Note 9 - Infill wide vertical gap with short cut, red tiles and point over.

Repair to Timber Frame and Wall Panelling

General Note -All new timber to be slow grown Canadian Douglas fir as C51/372. Extent of repairs described below are approximately as shown on drg or as described in SoW items below. Redecoration of timber frame covered in Section 6.

4.97 Note 10 - Investigate previous repair to side of mullion and allow prov. sum of £300.00 for new repair.

4.98 Note 11 - Piece in full cross section repair to cill on either side of the central post approx. 100-150mm long.- 2no.

4.99 Once exposed inspect wall plate and inform architect of any areas of decay.

4.100 Note 12 - New half lap repair to wall plate end. Remove previous repair and ensure 200mm bearing on wall. Allow for a cross section of timber 230 x 125mm approx. 900mm long overall. Half lap connection as SE''s specification and drg 1993-001-122 Detail 07.

Form a pocket in the masonry to give at least 25mm gap/clearance all round the beam and rest of slate packing pieces to isolate from moisture, or alternatively wrap the end of the new beam section in waterproof material securely fixed to the timber.

4.101 Note 13 – Piece in repair to face of wall plate as C51/773, approx. 50x50mm in cross section, length as shown. Refer also to SE's drg 1993-001-122 Detail 08.

Total Taken to Summary

5. Schedule of Masonry and Timber Frame Repair – Internal Elevations

Refer to Notes and key above for repair notation shorthand used below.

Section A-A Facing South - drg 123-08

Stone Repair

Note Replacement of pier quoins covered under East and West Elevation

5.1 Supply and fix 5no new Greensand stone rubble on internal pier faces and main south wall as shown on drawing.

5.2 As a provisional item included for 2no. additional rubble stones.

5.3 Carefully dismantle loose rubble facing on the internal face of the west pier and rebuild. Include for 3no new stone rubble blocks to replace damaged rubble as shown on the drg.

5.4 MR – Mortar repair to 2 no quoin stones on south pier, with repair continuing on return as shown on drg 123-11. Include for slate within the joint between the two stone to support the top repair. Keep slate recessed and cut false joint in mortar repair.

Repointing

5.5 OJ – Rake out and repoint open joints in arch voussoirs as shown on drg.

5.6 Rake out open joints beside ashlar dressings as shown on drgs, deep pack with mortar and slate. Leave mortar and slates recessed for final pointing.

5.7 Rake out and repoint all areas of rubble on the return faces of both piers. Include for deep packing joints before repointing.

5.8 As a prov. item allow for approx 4 linear meters of repointing to Greensand arch voussoirs and rubble above arch.

Section B-B Facing North - drg 123-09

Stone Repair

Note: Rebuilding internal face of piers covered under Section 3.

5.9 Carefully dismantle loose rubble facing on the internal face of the north wall at the springing of the arch, Include for 5 no new stone rubble blocks to infill existing hole above the wall plate. Work in conjunction with timber repair to wall plate described under West Elevation.

5.10 Supply and fix 3no new Greensand stone rubble on internal face of north wall as shown on drawing.

5.11 Carefully dismantle loose rubble facing on the internal face of the east pier and rebuild. Include for 2no new stone rubble blocks to replace damaged rubble as shown on the drg.

5.12 MR – Mortar repair to dressed Bathstone as follows:

a. Quoin stone to east pier – small repair above off set plinth.

b. Full face repair to 2no quoins above including repair on the return face as shown on drg on drg 123-11. Include for slate within the joint between the two stone to support the top repair. Keep slate recessed and cut false joint in mortar repair.

c. Small repair across two arch stones on the east side.

5.13 NCS - Apply nanolime, mortar cap and sheltercoat friable stone surfaces to 1no quoin on the west pier.

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5.14 NS – Apply nanolime and sheltercoat to friable stone surfaces:

a. in 2 no locations either side of the opening on arch hood mould, east side.

b. 1no location on the internal face of the east pier .

c. the face of the east kneeler.

Repointing

5.15 OJ – Rake out and repoint open joints in arch voussoirs as shown on drg.

5.16 Rake out open joints beside ashlar dressings as shown on drgs, deep pack with mortar and slate. Leave mortar and slates recessed for final pointing.

5.17 Rake out and repoint all areas of rubble on the return faces of both piers. Include for deep packing joints before repointing.

5.18 Rake out and repoint approx. 33% of the arch Greensand stone voussoirs,

Section C-C Facing East - drg 123-10

Stone Repair

5.19 Supply and fix 12no new Greensand stone rubble at plinth level throughout the internal wall faces, including area to be deep packed before repointing.

5.20 As a provisional item included for 2no. additional rubble stones.

5.21 NS – Apply nanolime and sheltercoat to friable stone surfaces: 3no quoins on the internal face of the north pier.

5.22 S – Apply sheltercoat to friable stone surfaces to 4no quoins and arch springing stone on the internal face of the north pier .

Repointing

5.23 OJ – Rake out and repoint open vertical and horizontal open joint to side of quoins on south pier.

5.24 Pf – Point fine joints on internal face of piers as shown on pier

5.25 Rake out and repoint all rubble at plinth level and on the internal face of piers.

5.26 Extra over for deep packing heavily eroded joints to north half of the rubble plinth to area shown shaded on the drg.

Timber repair

5.27 Piece in repair to eroded top of the wall plate in the centre. Include for new section approx. 25mmx230mm wide by approx.1.1m long.

Note: Redecoration of timber frame covered in Section 6.

Section D-D Facing West - drg 123-11

Stone Repair

Note: Rebuilding internal face of piers covered under Section 3.

5.28 As a provisional item include for 10no. new Greensand rubble stones, within the plinth.

5.29 MR – Mortar repair to 2no small repairs to adjacent Bathstone quoins on the south pier. Include for slate within the joint between the two stones to support the top repair. Keep slate recessed and cut false joint in mortar repair. Note repair to the corner covered under drg 123-08.

5.30 NCS - Apply nanolime, mortar cap and sheltercoat friable stone surface to 1no quoin on the internal face of west pier.

5.31 NS – Apply nanolime and sheltercoat to friable stone surfaces: 5no quoins on the internal face of the north pier.

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5.32 S – Apply sheltercoat to friable stone surfaces to 2 no locations: on the off set plinth corner on the south pier and internal quoin on the south pier.

Repointing

5.33 OJ – Rake out and repoint open joint to bottom quoins on south pier.

5.34 Pf – Point fine joint to base of arch on south pier.

5.35 GP – Grout 4 no cracks/open joints; 2no locations beside quoins on north and south piers.

5.36 Rake out and repoint all rubble at plinth level and on the internal face of piers.

5.37 Extra over for deep packing heavily eroded joints to 2no areas shown shaded on the drg.

Timber repair

Note:
- Wall plate repairs covered under West External Elevation.
- Redecoration of timber frame covered in Section 6.

Total Taken To Summary

6. Redecoration

To be read with spec section M60 and Appendix 3 for Manufacturer's technical information.

6.1 Prepare and redecorate all new and existing timber in the repaired ceiling as M60/12 with reference to Manufacturer's guidance in Appendix 3.

6.2 Prepare and redecorate all new and existing timber in the repaired timber wall frames and panelling on both sides of the building as M60/12 with reference to Manufacturer's guidance in Appendix 3.

6.3 Prepare and redecorate existing main central gates and side gate as M60/13 and M12/19.

Note: Redecoration of new Rainwater goods covered in Section 3.

Total Taken To Summary

7. Below Ground Drainage

Refer to Drgs 123-01, 123-02 and 123-03, Specification Sections R10 and R12 and Appendix 2 for Manufacturer's technical information on specified items.

A Below Ground Surface Water Drainage within Cemetery

For the disposal of rainwater from the Lychgate roof

Initial investigation into existing drainage

7.1 Investigate the extant rw gully to the east side of the Lychgate drain and location of soakaway and report to the architect and SE. The work involves a CCTV survey.

The intention is to reuse the existing gully, drain and soakaway if found to be sound.

Cat scan survey of possible buried services in the pavement is covered in Section 1.

7.2 Carry out soil percolation tests in the areas where new rw soakaways are being shown both inside and outside the cemetery boundary, and use it to calculate size of soakaway required.

Provisional - New Below Ground Drainage on East side of the Lychgate

7.3 Excavate existing gully on east side of the Lychgate and replace with new clay gully as R10/11. See drg 123-02

7.4 Excavate trench for new pipe to new soakaway as R12/19A. Lay new pipe as R12/10 and new cellular soakaway as R12/13.

7.5 Extra over for additional soakaway.

New Below Ground Drainage on West side of the Lychgate.

7.6 Excavate gully area on west side of the Lychgate and install new clay gully as R10/11. See drg 123-02

7.7 Excavate trench for new pipes to new soakaway as R12/19A. Lay new pipes as R12/10 and new cellular soakaway as R12/13.

7.8 Introduce inspection chambers as R12/12 at pipe change of direction as shown on drg 123-02.

7.9 Extra over for additional soakaway.

B Below Ground Surface Water Drainage from North Side Pavement

For the disposal of surface water flowing back towards the Lychgate.

Note
- Work in conjunction with repair to the Lychgate piers as described in Section 4.
- Refer to section 1 for cat scan survey prior to excavation in the pavement.

7.10 Cut a shallow trench on the north side of the Lychgate as R12/19B for new ACO drain and new pipe to soakaway in the grassed area as shown on drgs 123-02 and 123-03.

7.11 Lay new concrete base for ACO drain as shown on drg 123-03 - Detail section E. Ensure no damage is caused to the pier footings.

7.12 Lay the ACO drain sections into the concrete base including a sump with a pipe connection to connect to the soakaway in the grassed area to the east, closing end to west side etc as R12/51.

7.13 Fill the gap between the new concrete base and the brick footings and the repaired pier face with St Astier NHL 3.5 lime and sharp aggregate well compacted as shown on Detail Section E on drg 123-03. Lay mix dry, allowing ground moisture to set it.

7.14 Supply and lay new brick paving bricks as C41/261 along the building side edge of the ACO drain bedded in hydraulic lime mortar using St Astier NHL 3.5 lime and well graded sharp sand.

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7.15 Reinstate excavated pavement material and existing finish to the pavement along the north side and in front of the building and on both north and south sides to the east and west side of the building. Create a slight fall to the finished levels of the reinstated pavement surface and brick edging towards the drainage channel and ensure as smooth joint to the retained main pavement finish.

8. Completion

8.1 Clear gutters and gullies of debris. Test gutters and downpipes and ensure that they are flowing freely.

8.2 Dismantle and remove the scaffold. Note requirement to reinstall protection to building features during this process. Clean down window glass finally.

8.3 Remove all protections to tombstones and from other features within the cemetery.

8.4 Clean down pavement surfaces.

8.5 Prepare the H&S file and Building Manual as section A37 and submit to the architect for comment at least 2 weeks before the due date of completion. Note variations carried out during the works, on the contract drgs and submit to the architect. The architect will prepare the record drgs for inclusion within the Building Manual. Within the As Built information include all the architect's instructions.

8.6 Note that the architect will be unable to issue Practical Completion until the above documents are submitted and agreed.

8.7 Remove Site Compound. Reinstate grass to areas above new drains and soakaways and all other areas within the cemetery affected by the works with new turf, such as site huts etc.

Leighton Buzzard Vandyke Road Cemetery Lychgate Repair
Preliminaries/ General Condition Summary

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A36	Facilities/ Temporary Works/ Services	Prelims/27	
		Prelims/28	
		Prelims/29	
A37	Operation/ Maintenance of the Finished Works	Prelims/30	
A40	Contractor's General Cost Items: Management & Staff	Prelims/31	
A41	Contractor's General Cost Items: Site Accommodation	Prelims/31	
A42	Contractor's General Cost Items: Services and Facilities	Prelims/31	
A43	Contractor's General Cost Items: mechanical Plant	Prelims/31	
A44	Contractor's General Cost Items: Temporary Works	Prelims/31	
A54	Provisional Work Items	Prelims/31	
A55	Dayworks	Prelims/32	
		Total Prelims	

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Leighton Buzzard Vandyke Road Cemetery Lychgate Repair
Workmanship & Materials Summary

Section	Workmanship and Materials	
C40	Cleaning Masonry /oncrete	W&M/1
		W&M/2
		W&M/3
C41	Repairing/ Renovating/ Conserving Masonry	W&M/4
		W&M/5
		W&M/6
		W&M/7
		W&M/8
		W&M/9
		W&M/10
		W&M/11
		W&M/12
		W&M/13
		W&M/14
C51	Repairing/ Renovating/ Conserving Timber	W&M/15
		W&M/16
G20	Carpentry/ Timber Framing/ First Fixing	W&M/17
		W&M/18
H62	Natural Slating	W&M/19
		W&M/20
		W&M/21
		W&M/22
		W&M/23
		W&M/24
		W&M/25
		W&M/26
		W&M/27
		W&M/28
		W&M/29
		W&M/30
		W&M/31
H71	Lead	W&M/32
		W&M/33
M60	Painting/Clear Finishing	W&M/34
		W&M/35
		W&M/36
R10	Rainwater Drainage Systems	W&M/37
		W&M/38
R12	Below Ground Drainage	W&M/39
		W&M/40
Z12	Preservative/ Fire Retardant Treatment	W&M/41
Z21	Mortars	W&M/42
		W&M/43
		W&M/44
		W&M/54
	Total Mats&Works	

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Leighton Buzzard Vandyke Road Cemetery Lychgate Repair
Workmanship & Materials Summary

Section	Schedule of Works	
1	General Items and Site Set up	SoW/1
		SoW/2
2	Scaffold	SoW/3
3	New Roof Covering, Structural Repair and Rainwater Goods	SoW/4
		SoW/5
	Masonry Repairs- General Note to Tenderers	SoW/6
	Key To Drawing Symbols	SoW/7
		SoW/8
4	Schedule of Masonry & Timber Repair– External Elevations	SoW/9
		SoW/10
		SoW/11
		SoW/12
		SoW/13
		SoW/14
		SoW/15
5	Schedule of Masonry & Timber Repair– External Elevations	SoW/16
		SoW/17
		SoW/18
6	Redecoration	SoW/19
7	Below Ground Drainage	SoW/20
		SoW/21
8	Completion	SoW/22
	Total Schedule of Work	

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TENDER SUMMARY

Total Preliminaries	
Total Mats&Works	
Total Schedule of Work	
TOTAL COST TO BE ENTERED ON TENDER FORM:	

APPENDIX E

Any surveys carried out will be incorporated here once the information becomes available.