



MURGATROYD'S BRINE PUMP RESTORATION

TENDER DOCUMENT

CONTRACT SPECIFICATION

Client: Middlewich Heritage Trust, which leases the site from Cheshire East Council, owners of the land and Brine Pump Building.

Address where work is to be carried out: Murgatroyd's Brine Pumps, Brooks Lane Industrial Estate, Middlewich, Cheshire. CW10 0JG

1. MANAGEMENT OF THE WORKS

1.1. SUPERVISION GENERAL

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

1.2. INSURANCE

The Contractor will provide documentary evidence before starting work on site submit details, and/ or policies and receipts for the insurances required by the Conditions of Contract

1.3. OWNERSHIP ALTERATION/ CLEARANCE WORK

Materials arising become the property of the Contractor except where otherwise stated. Remove from site as work proceeds

1.4. MASTER PROGRAMME

Immediately when requested by MHT and before starting work on site the Contractor will submit in an approved form a master programme for the Works. This will generally follow the MHT programme and must include details of:

- Planning and mobilisation by the Contractor
- Subcontractor's work
- Running in, adjustment, commissioning and testing of all engineering services and installations
- Work resulting from instructions issued in regard to the expenditure of provisional sums
- Work by others concurrent with the Contract

1.5. SITE MEETINGS GENERAL:

Site meetings will be held to review progress and other matters arising from administration of the Contract. The Contractor will attend meetings and will inform subcontractors and suppliers when their presence is required.

The Chairperson (who will also take and distribute minutes): Kerry Kirwan

1.6. FIRE PREVENTION

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

1.7. SMOKING ON SITE

Not permitted

1.8. PROTECTION

Protect all existing services, water courses, roads & pathways to the satisfaction of appropriate authorities.

Client's Responsibilities:

- Welfare facilities will be made available on site
- A water supply will be made available by the client FOC
- A single phase 240V 13A power supply will be made available by the client FOC for the welfare unit.
- The Crane lift / Hi-Ab / Transport will be sourced via the client
- **Please note:** There is access for a works vehicle through the neighbouring land but limited parking available on site. Permission has been given to park vehicles on the nearby Middlewich Community Church Car Park.

1.9. STATUS AND ACCESS

a) Scheduled Monument Status: The site is a scheduled monument and this places a constraint on physical development, alterations and repairs as these will require Scheduled Monument Consent. (Consent has been given for the current work proposed as above)

b) Access and ownership: The physical boundary of the Scheduled Monument has been re-drawn and includes two of our neighbouring sites. Access to our site is currently across third party land and by arrangement only.

c) Obstructions: There is a live transformer pole on site, which has to be considered when erecting scaffolding or working within 3 metres.

d) Use of Volunteers: The majority of the work is grant funded and it is a condition of the grants that volunteers should be involved wherever practical. The contractor will be expected to work with the Heritage Officer and Middlewich Heritage Trustees to agree volunteer roles and tasks where appropriate. The Project Manager will ensure necessary health and safety training is provided, to establish mentoring and reporting mechanisms, to ensure tasks are carried out in accordance with the relevant brief and volunteer policies, and to ensure compliance with H&S and risk assessments.

2.0. CONTRACTOR'S GENERAL RESPONSIBILITIES

This Specification outlines the client, Middlewich Heritage Trust (MHT) technical requirements for the design and construction works associated with the removal & reinstatement of the gantry at Murgatroyd's Brine Pump in Middlewich.

The Contractor is entirely responsible for all aspects of the civil design and construction process. This is a generic technical specification written in a manner that it may be used without alteration for all such works. It is not designed to cover every eventuality or site-specific situation; however, prior agreement must be obtained in writing from MHT to any proposed variation to the guidelines provided in this Specification. Development of proposals for site-specific variation that are acceptable to MHT shall be the Constructor's responsibility.

Where it can be demonstrated, to MHT's satisfaction, that a deviation from this Specification offers an equivalent or better technical and/or lower risk solution this will be considered on a site specific basis. All such deviations shall be fully discussed and agreed with the MHT Project Manager within timescales that do not adversely affect project objectives, costs and programme. The development of such proposals, that incorporate deviations from this Specification, shall be the Contractor's responsibility.

3.0. BACKGROUND

The Murgatroyd's Brine pump and shaft is the last of its kind in this country and possibly in Europe. The site is a Scheduled Ancient Monument, No. 34588 and is currently on the Buildings at Risk Register.

The overall project involves conservation and repair of the site, comprising of a pump house, timber lifting gantry, late nineteenth and early twentieth Century machinery, shaft, brine header tank and related outside industrial elements.

The gantry is built from four legs, each made from 9" x 9" (230mm x 230mm approx.) pitch pine, joined together to form a square tower approximately 10 m tall (See sketch No MHT001 attached), extending through the roof of the pump house.

The timbers are reinforced by 3" x 3" angle iron strips, running up the corners of each leg, and held in place with clamping strips.

The gantry is supported on two 10" x 10" pitch pine beams laid across the top of the well shaft. These two beams are buried in the floor above the timber shaft lining, but it is not clear, from the information available, whether they are supported by the lining. Such parts of these beams as are visible are in very poor condition.

The pump house roof was repaired, and the outdoor section of the timber gantry was stabilised in 2015, as part of a previous project, but the indoor sections of timber are in such poor condition that the gantry is in danger of collapsing. To prevent its collapse, the gantry is currently supported by four temporary brick columns and two temporary girders.

The temporary supports obstruct access around the gantry and the pump machinery, and prevent any remedial works being carried out with the gantry in position.

4.0. CURRENT PROPOSED WORK

The current project – known as Phase 2a – is part of the overall development scheme outlined above.

Main work items include:

- Gantry removal, repair offsite and reinstatement.
- Work to the roof for gantry removal and reinstatement
- Removal of redundant temporary gantry supports
- Replacement of decayed gantry foundation timbers
- Removal and disposal of asbestos sheeting from the control room.
- Removal of submersible pump from well for conservation by OTHERS.
- Dismantling of pump headgear to give access to components in the shaft
- Recovery of selected pump components from the shaft, for conservation by OTHERS.
- Procurement and installation of dummy bob-weight for Pump No 3, rebalancing to enable it to rotate without its pump rods.
- Re-installation of No3 pump headgear and motor.
- Re-installation of No1 pump headgear, fixing it with bob weight at its highest position.
- New doors and windows

4.1. Planning for and managing the construction work

- The Principal Contractor, shall ensure that all requirements under Regulation 22 of the construction (Design and Management) Regulations 2007 are adhered to.
- It is the duty of all contractors to carry out their obligations as required by the Construction (Design and Management) Regulations 2007. Particular attention is drawn to Regulation 13 – Duties of Contractors
- The site is not manned. Access shall be by arrangement with the site manager
- Site access is on an industrial estate, normal working hours are between 9 am to 6 pm, Monday to Friday. No work shall take place outside these hours without the prior permission of the Site Manager.
- Contractors duties include:
 - i. Drafting and sharing risk assessments and method statements, in good time, with all relevant parties including the Site Manager and Safety Advisor.
 - ii. Ensuring that all personnel have an induction to the work premises
 - iii. Providing an adequate level of qualified supervision for the work concerned
 - iv. Carrying out regular safety audits
 - v. Provision of all necessary materials, unless specified otherwise.
 - vi. Removal of all redundant materials and rubbish from the site and disposal to a licensed facility.
 - vii. Provision, off-loading, erection, inspection, maintenance and removal of all necessary scaffolding and access equipment.
 - viii. Site Security: The contractor shall be responsible for the security of his own equipment, and for ensuring that the building is secured before leaving site.
 - ix. Professional and Public Liability Insurance

5.0. GANTRY REMOVAL

5.1. This Specification covers only items related to the lifting gantry.

It is incumbent upon the Contractor to comply with all relevant legislation, including future updates and publications in keeping with industry best practice.

The Contractor shall be responsible for the design and construction of all temporary works deemed necessary to facilitate the gantry removal. The client will undertake the F10 notification following the agreement with the Principle Designer and the Principal Contractor. All temporary works should be removed from site following completion.

The Contractor shall ensure that all necessary notices and permissions are in place and that any associated applicable conditions are discharged prior to commencement of construction.

Prior to the start of the construction works, the Contractor shall clear the surrounds of the gantry of all rubbish and debris and dispose of this off site. Debris shall not be burnt or buried on site.

The Contractor shall be responsible for ensuring that any necessary approvals are obtained from applicable authorities. Where applicable, any necessary fire certification shall be included within the CDM Health & Safety File handover to MHT.

In addition a site-specific risk assessment shall be carried out that shall consider the likelihood of members of the public being in the vicinity/close proximity during building work and the removal and reinstallation of the gantry and access/egress arrangements for members of staff/contractors.

The proposed sequence of work is as follows:

- The pump house roof shall be opened, and closed by the CONTRACTOR, as detailed below, to permit removal of the gantry.
- The gantry shall be removed, transported to and from the conservator's premises, and reinstalled by the Client's NOMINATED SUB-CONTRACTOR.
- The gantry shall be conserved off-site by OTHERS.
- The gantry foundation timbers shall be replaced with sound timber, and prepared by the CONTRACTOR for re-installation of the gantry.
- Other work by the CONTRACTOR within and around the pump house is covered in a separate Specification.

5.2. Unless stated otherwise, it is assumed that all works in this section of the Specification will be carried out by the CONSERVATION CONTRACTOR.

The gantry will be conserved/restored off site by the CONSERVATION CONTRACTOR, at agreed premises.

- Some of the timber on the upper portion of the gantry was conserved during a previous project.
- A recent timber survey (see below) has identified areas where the timber in the lower part of the gantry has rotted. These areas shall be replaced, as necessary. Any of the existing timber, which is in suitable condition, shall be retained. When assessing suitability for re-use, due consideration shall be given to the structural integrity of the finished gantry.
- A quantity of reclaimed pitch pine has been obtained for use in restoration of the gantry and foundation beams. This will be free-issued to the CONSERVATION CONTRACTOR.
- The timber is nominally 10"x10", in 10' lengths. This shall be reduced to 9" x 9" to match the existing gantry timbers.
- Any joints in the gantry legs shall be butt joints at 90° to the length of the leg.
- Because the gantry is slightly tapered, the base of each leg shall be finished at a suitable angle to allow it to stand flat on the foundation beams.
- Construction drawings of the original gantry are referenced below. However, ad hoc repairs and modifications have been made to the angle iron reinforcement, during its life. Any repairs found to be necessary shall be made using comparable materials, and shall be

to the spirit of the original drawings. Any proposed modifications shall be subject to the approval of the Project Manager.

5.3. Specification for other works associated with the gantry

Unless otherwise stated below, all works in this section shall be carried out by the CONTRACTOR

- Before any dismantling, a detailed dimensional survey of the lower end of gantry and its foundations shall be made, by the CONTRACTOR, to ensure that it can be accurately re-installed in its current position, after refurbishment.
- Any items – including, but not limited to, handrails – which are currently attached to the gantry, shall be dismantled by the CONTRACTOR, and securely stored for later reinstatement.
- Any items – including, but not limited to, pipework – which may interfere with the lift, shall be dismantled by the CONTRACTOR, and securely stored for later reinstatement.
- Suitable temporary bracing – as agreed with the lifting contractor – shall be fixed, by the CONTRACTOR, to the legs of the gantry to prevent distortion and damage during lifting and transit.
- The existing roof covering around the gantry shall be removed by the CONTRACTOR. **Note:** the roof panels and purlins have been designed to facilitate this operation.
- The gantry shall be removed by OTHERS, using a suitable crane. **Warning:** see “Restrictions” below.
- The gantry shall be conserved / restored, offsite, by OTHERS as detailed below.
- The roof purlins and panels shall be temporarily replaced, by the CONTRACTOR, so that the building remains weather tight.
- The existing temporary gantry support beams and associated brickwork columns shall be dismantled by the CONTRACTOR, and the redundant materials disposed of to an appropriate waste facility.
- The existing foundation beams shall be removed, by the CONTRACTOR, and the associated channels in the concrete floor cleaned out. Two reclaimed pitch pine timbers, nominally 10” x 10” x 12’ long, shall be free-issued for use as replacement foundation beams. The CONTRACTOR shall construct and reinstate any necessary temporary works to facilitate this operation.
Note: These beams pass underneath the fixed cast iron pump bedplates, which cannot be removed. It will, therefore, be necessary to insert each beam, as a single piece, from one end. This may necessitate creating temporary opening(s) in the pump house wall, and/or trench (es) in the ground outside the pump house.
- The CONTRACTOR shall fit attachments to the foundation beams, to the dimensions determined by the earlier survey, ready for fixing the refurbished gantry.
- The CONTRACTOR shall reopen the roof.
- The gantry shall be lifted into place by OTHERS and secured to the foundation beams by the CONTRACTOR.
- Once the gantry is secured, the CONTRACTOR shall fix the foundation beams in place, using a suitable grouting material.

- The CONTRACTOR shall reinstate the roof purlins and panels and fix flashing around the gantry legs to make a permanent weather-tight connection.
- The CONTRACTOR shall reinstate any items removed to facilitate removal of the gantry

6.0. MECHANICAL & ELECTRICAL WORK INCLUDING SERVICES

6.1. Pumps & other mechanical items

- The CONTRACTOR shall remove the submersible pump, and its rising main, from the shaft. The pump and pipework shall be securely stored for later conservation by OTHERS. **Note:** The current rising main is made up of flange-jointed sections of 4" NB cast iron pipe, to a total length of about 28 metres. The pipe sections are believed to be between 3m and 5m long. The pump and rising main are suspended from a fabricated head piece
- The CONTRACTOR shall re-install the headpiece, and sufficient rising main to reach approximately 3m below shaft water level, in the well.
- The CONTRACTOR shall remove the motor of Pump No 3 for overhaul and rewind off-site by OTHERS.
- The CONTRACTOR shall carefully dismantle the beams and headgear of both beam pumps, to permit access to items enclosed within the rising mains. **Note:** The condition of the rising mains is not known, but at least one of them is suspected to be broken. Care shall be taken during dismantling to secure the pump rods, before they are separated from their respective connecting rods because, if the rising main is broken, there will be nothing to retain the pump rods, leading to a high risk that they will be lost.
- The CONTRACTOR shall securely store all dismantled items for later re-instatement.
- The CONTRACTOR shall recover as great a length of the pump rods as possible from the shaft. **Note:** The total length of each rod is about 60 metres. Each rod is made of sections of 1⁷/₈" steel rod, which are believed to be between 3 & 6 metres long. Rod sections are joined by screw couplings, with a 9¹/₂" dia centring guide incorporated in each coupling. The pump bucket, approximately 700 mm long, is suspended from the bottom end of the rod. As each rod is lifted, it shall be cut mid-way between the joints.
- The CONTRACTOR shall securely store recovered materials for conservation by OTHERS.
- The CONTRACTOR shall remove the counterweight from pump No3 beam and securely store it. The CONTRACTOR shall supply and fit a light-weight replica, which will balance the beam without its pump rods, and allow the pump to be rotated, at low speed, by its modified motor.
- The CONTRACTOR shall re-install the motor and headgear of pump No3.
- The CONTRACTOR shall re-install the headgear of Pump No1, and mechanically secure the motion with the counterweight in its highest position.
- The CONTRACTOR shall supply and fit new doors and windows to the pump house as detailed on Buttress Drawings

7.0. OTHER WORKS

The CONTRACTOR shall supply and fit new doors and windows, as described on Buttress Architect drawings, listed below.

7.1. Asbestos Removal

Asbestos Roof Sheeting is still present in the control room, these need to be removed by a LICENCED CONTRACTOR. The rest of the asbestos sheeting was removed in 2015 as part of the emergency repairs programme, however until the Brine Tank was removed from the control room roof, it was not possible to get to the remaining sheets.

In addition the Contractor will give notice immediately of any suspected asbestos based materials discovered during the works and will ensure safe removal under the control of asbestos regulations (CAR) 2006.

8.0. UNFORESEEN HAZARDS / RESTRICTIONS /CAUTIONS

- Unrecorded voids, tanks, chemicals, etc. discovered during works: Give notice.
- There is a live 11kv pole mounted transformer on site. No plant or equipment shall be brought within 3m of this pole. Note: no overhead cables are currently attached to this pole, but there are, at least, two buried cables associated with it.
- The NE boundary of the site borders on to the railway. Any work which is likely to affect railway property shall be subject to approval by the local network rail asset protection manager

9.0. DOCUMENT LIST

9.1. REPORTS

- i. Floydconsult Timber report
- ii. Conservation Management Plan – (Buildings, Structural, mechanical & electrical surveys 2011, before the emergency repairs project of 2015)
- iii. Shaft Survey Results
- iv. Asbestos Survey (2010) – 95% of asbestos already removed in accordance with this survey
- v. Site Plan
- vi. Utilities Map – A topographical survey will be carried out before the project starts
- vii. Scheduling and site location.
- viii. Topographical survey to follow (will be available before work commences)

9.2. DRAWINGS

Buttress Architects drawings:

- 8402 (05) 101 Proposed South Elevation - Phase 1 rev
- 8402 (05) 102 Proposed North Elevation - Phase 1 rev
- 8402 (05) 103 Proposed West Elevation - Phase 1 rev
- 8402 (05) 104 Proposed East Elevation - Phase 1 rev
- 8402 (04) 105 Proposed Floor Plan - Phase 1
- 8402 (06) 001A- Proposed Sections AA & BB

Archive drawings:

- DSCF0570 - original gantry drawing
- DSCF0572 -original gantry drawing
- DSCF0573 - original gantry drawing
- DSCF0574 - original gantry drawing

- DSCF0576 - original gantry drawing
- DSCF0577 - original gantry drawing

- Gantry Sketch MHT/001
- MU 19 - 0001
- Shaft sketch MHT /002

10.0. APPOINTMENTS

Contact Details:

Client, Coordinator and Designer:

Middlewich Heritage Trust

Room 1, Victoria Building, Lewin Street, Middlewich, Cheshire. CW10 9AT

Client, Middlewich Heritage Trust represented by
Kerry Kirwan, Heritage Development Officer 01606 833434 option 3

Coordinator: Kerry Kirwan

Designer: Steve Broadfoot

Site Manager: Steve Broadfoot

Safety Advisor: Steve Fulwell

10.1. Outside appointments

Architects: Buttress Ltd, Manchester

11.0. CLIENTS CONSIDERATION & MANAGEMENT REQUIREMENTS

Health and safety Goals

- The goal for this project is no accidents, incidents or near misses. Any high-risk activities identified by the contractor shall be risk assessed and the risk eliminated or reduced to an acceptable level.
- In the event that an accident or incident does occur it shall be fully investigated by the Contractor alongside the Site Manager and Safety Advisor. A report shall be written and any actions arising implemented. Reports shall be filed and kept alongside the Health and Safety File.
- The Principal contractor or a representative of Buttress Architects will audit the site activities. The frequency of these audits will depend on the nature of the works being undertaken at the time.

11.1. COMMUNICATION AND LIAISON BETWEEN CLIENT AND OTHERS

The Site Manager or nominated Deputy will contact any persons carrying out work on a daily basis and discuss the work for that day, planning for subsequent work and any issues that have arisen or are likely to arise.

There are no more than 6 meetings to be held on site with project partners to discuss project progress, any planned changes or issues etc. These will be timetabled in alongside the various tasks.

11.2. SECURITY AND ACCESS TO THE SITE

- Access to the site is by prior arrangement only
- Generally work will be carried out on site between the hours of 9am to 6pm Monday to Friday as per agreed timetable.
- No work shall take place outside these hours without the prior consent of the Client's Site Manager

To arrange access please contact:

Kerry Kirwan, co-ordinator – 01606 833434 option 3

And, only in the absence of the Site Manager

Mike Walton – 01606 259286

- There is no parking on site, except for one works vehicle. Parking is on the Middlewich Community Church Car Park which is located on the junction of Brooks Lane, a short walk away.
- It is stressed that responsibility for all tools and materials left on the site lies with the contractor. Middlewich Heritage Trust cannot be held responsible for any loss or damage incurred.

12.0. COMMENCEMENT OF WORK

Documents to be supplied before Commencement of work:

- Method statements and Risk Assessments for the main work items as outlined in section 4 of this document.
- Details of the scaffolding license
- Copies of professional and Public Liability Insurance certificates

12.1. Welfare Provision

There will be a welfare unit on site, which will have running water, toilets and an area for meal times and breaks. It is intended to keep this available for the duration of the works.

12.2. Requirements relating to the Health and Safety of the Client's Volunteers and Contractors

Emergency procedures are advised during inductions but in particular the contractor shall note the following.

- Fire / Police / Ambulance – dial 999 or 112 from a mobile telephone. The premises have no land line facilities.
- The site address is: Brooks Lane Industrial Estate, (Next to No 32) Brooks Lane, Middlewich, CW10 0JG
- The site assembly point is at Middlewich Community Church Car Park

Emergency Contacts:

In the event of an emergency contact:

The Site Manager – Steve Broadfoot

Or

The Coordinator – Kerry Kirwan 01606 833434

Only if the above are unavailable contact: Mike Walton - 01606 259286

Smoking

No smoking is permitted on the site

12.3. SECURITY AT COMPLETION

The Contractor will leave the Works secure with, where appropriate, all accesses closed and locked and will account for and adequately label all keys and hand over to MHT with itemized schedule.

12.4. SITE CONDITION AT COMPLETION

The Contractor will clear away and leave the site in a tidy condition.

13.0. ENVIRONMENTAL RESTRICTIONS AND EXISTING ON-SITE RISKS

- The contractor shall ensure that emergency exits and emergency equipment are not restricted at any time.
- It is the responsibility of the contractor to dispose of all waste generated via a licensed disposal route.
- The contractor shall ensure that any structures utilised for the supporting of scaffolding and lifting equipment etc. are in sound condition and capable of carrying the imposed load.
- There is asbestos in the roof of the control building. This will be disposed of utilising a licensed contractor. The asbestos containing materials are not to be disturbed except during disposal. A copy of the report is attached to this information pack.
- If the contractor sees any suspect material, immediately stop work in the area concerned and contact the Site Manager.

14.0. SIGNIFICANT DESIGN AND CONSTRUCTION HAZARDS

Please note that works will be taking place around an open shaft as identified in our architect's drawings.

15.0. HEALTH & SAFETY FILE

The contractor shall ensure that information likely to be significant for health and safety in future operation and/or maintenance work on the plant is submitted to the CDM Coordinator during or at the end of the project.