



Annex A

HMS VICTORY CONSERVATION – SCAFFOLDING

STATEMENT OF REQUIREMENTS

The drawings and document pack for the scaffolding required are based upon the requirements listed below. The scaffolding company appointed must be a full member of the National Access and Scaffolding Confederation (NASC):

1.1. The scaffolding is to fulfil the following high level aims:

1. To provide a multi-level (or variable level) tented access and work platform to support the removal and replacement of planking and a weather-tight enclosure for essential conservation work to be undertaken.
2. To be adaptable and flexible to encompass emergent work requiring additional large sections of side planking to be removed, with concurrent areas of work elsewhere within the tented area. The design drawings supplied are indicative of three levels. In reality, levels will require to be adjusted to match the level of required work, and this will require joint planning and management between the NMRN Shipwrights and Scaffolding Contractor.
3. The scaffolding must allow for slinging by Niko or similar track for a Plank up to 10m long and weighing around 500Kg. This plank must be manoeuvrable and held by the lift right to the point of fixing to the hull. The lift(s) will need to run longitudinally (fore and aft) and across (athwartships) with respect to the ship for maximum manoeuvrability.
4. At the point of working at any height immediately adjacent to the ships side for planking replacement, there will be up to 4-5 Shipwrights, palletiser/skidder and around 200Kgs of tools and equipment. At points during the replacement, the plank will be held on two points (i.e.) trestles on the scaffolding.
5. The scaffolding supplier is to verify the point loading for the required work, including up to the point of working at the ships side for planking replacement.
6. The scaffolding is to have a facility to allow public access as part of a revised and enhanced visitor experience package around the engineering/conservation work, including lift access for disabled people and/or those with limited mobility.
7. The scaffolding is to have an outer covering that will support a printed imagery on it to support re-interpretation and presentation of the ship.



8. There is an additional requirement for a separate dockside tented workshop and forward timber store (See Appendix 1) north of No 1 Dock¹.

9. The scaffolding may not be fixed to the dock structure nor should it allow any corrosion, etc. to leak/leech into the dock surface and cause staining. Provision is to be made to avoid this.

1.2. As part of the response to tender, Tenderers are to provide a costed evaluation of options to:

1. The costs to procure the scaffolding based on the supplied drawings and specification, as specified, having reviewed and verified the design for themselves and presented any costed options for changes and/or improvements.
2. The costs to install and commission the scaffolding, including full structural calculations, safety case etc, trials, training and emergency exercise cover and necessary adaptation for ongoing work and lift hire (including all safety and maintenance). For alterations, as a planning guide, it should be assumed that there are two planned changes per month with 5 working day' notice.
3. The costs of maintaining the scaffolding, including standard day rates for planned adaptations (lowering/raising lifts to suit the work, callout for adverse weather inspection, routine safety maintenance including the stairs and lift , and routine planning meetings with the NMRN project team, for a period of up to 4 years.
4. The costs of decommissioning/deconstructing the scaffolding at the end of the first Stage of Conservation.
5. The costs for installing and maintaining electricity, lighting, fire detection and suppression and a separate fire curtain system to isolate the ship from the scaffolding.

2. Essential Contract Requirements and Design drivers

- 2.1. Conservation work will take place both internally and externally in the ship, commencing with the Starboard Side. This will involve both removal of outer and inner planking, and some strength elements such as knees and frames. The design of the scaffolding needs to be from the dockside, up and over to the centreline of the ship on the starboard side between Frame Station 44 and 120. The work is expected to last two years. Internal work may require temporary additional internal bracing and support to be provided.
- 2.2. For Stage 1, the scaffolding is to be a fully tented enclosure with multi - level access, situated between stations 44 and 120 on the Starboard Side of the Ship. The precise plan of work for the planking is still to be determined, but is anticipated to start with

¹ This area lies within Portsmouth Naval Base Property Trust managed space.



removal of 1 or two lower Wale planks and then a layer of Upper Deck level Planking (see Appendix 2 as an example).

- 2.2.1. Boarded Metal or fire retardant) lifts
- 2.2.2. Progressively raised floor level
- 2.3. It is essential that the public are able to view the conservation work through controlled entry to the scaffolded area. (Multi-level access would be desirable).
- 2.4. The design is to include a structural/safety assessment of maximum numbers that can be accommodated on the scaffolding, (workforce and visitors) and in any lifts used.
- 2.5. The scaffolding contract is to provide for the safety training of all NMRN personnel by a suitably qualified person or person(s), including any lift training.
- 2.6. Lift access for public use is to be deadlocked for operation by NMRN trained guides only.
- 2.7. The scaffolding commissioning is to include full safety assurance and exercises with Naval Base and external emergency organisations as part of staff training and assurance in operation. Requirements, detailed below, are split into those for the work itself, and those for the visitor experience.

3. Statement of Requirements

Conservation Work

- 4.1. The scaffolding must provide:
 - 3.1.1. A tented, weather-proof environment for a period of up to 4 years.
 - 3.1.2. Circulation of air (at normal outside air temperature) to support conservation drying and dust extraction
 - 3.1.3. A physical barrier and separation space between the work areas and visitor access points
 - 3.1.4. Multi-level access for work, to be determined with NMRN shipwrights. The response to tender is to demonstrate that the working requirements of the Shipwrights can be met.
 - 3.1.5. Facilities for more than one area to be worked on at any one time. Once planking is removed, in sections, Heritage and Conservation personnel will undertake assessment and work packages in the area; it is envisaged that the Shipwrights will commence plank removal in other/adjacent areas until this is complete and re-planking can be undertaken. As a first stage plan, it is anticipated that the scaffolding must accommodate removal of one or two layers of planking (Wale Strakes) along the waterline and then the removal of Upper Gun Deck planking (situated towards the top of the ships side).



- 3.1.6. Multiple slinging points (and/or beam and hoist) to sling large planks from removal and replacement planking into place for final fixing, and to manoeuvre them on trolleys around for positioning.
- 3.1.7. An opening to allow removal and delivery of planking. Ideally, it is suggested, at the ends of the scaffolded structure as per the initial design. This will need to be closable to preserve the weather-proof environment.
- 3.1.8. Must be adaptable to incorporate movement of scaffolding sections to facilitate work. The likely order of planking removal is the two lower Wales and a layer of planking across the upper gun deck.
- 3.1.9. A minimum of 3m workspace width is required for conservation work from the side of the ship, and to be free of standards.
- 3.2. Any extension beyond the current licensed area for operation and use (in red as per Annex A and D) must be identified. Part of the dockside area is cobbled, and will require covering to protect and ensure safe placement of scaffolding.
- 3.3. The Dock is Grade 2* listed, therefore any scaffolding must be freestanding and not damage any stonework; nor must any stonework be drilled into or machined in any way to support the scaffolding. Scaffolding onto the deck of the ship must similarly have deck protection installed. The contractor is also to explain how corrosion staining of the historic fabric of the dock and dockside will be avoided and managed.
- 3.4. Design of the scaffolding is to include assessment of the loads placed upon any dock structure and dockside area, as well as the ship itself. These will need to be verified as being within safe limits as part of the design process. Service layout, where known, is shown at Annex C. A general craneage load of 10T/m² is used as a working figure.
- 3.5. Access on/off the scaffolding and the levels must include provision for the handling and slinging of machinery/tooling.
- 3.6. The scaffolding design must prevent objects and work arisings from falling into the dock or striking any of the hull support system props.
- 3.7. The design of the scaffolding must not interfere with, or require any removal of, the hull support system props.
- 3.8. The scaffolding contract is to make provision for weekly attendance at planning meetings (or Online Meeting) with the NMRN team to plan ahead for likely scaffolding changes and emergency exercises.
- 3.9. Power Sockets(110V) (type/phase/voltage/amperage tbc.) to be located on the scaffolding and not provided through wandering leads, and located approximately 2.5 m apart.
- 3.10. The design is to incorporate provision for air circulation and ventilation. The system is to be designed, supplied, and maintained by the scaffolding supplier.



3.11. Safety.

- a. The scaffolding is to have a separate audible evacuation alarm with remote operation points and remoted (and with initiation from) the ships Quartermasters position. They are to be tested at least weekly. Fire, smoke and CO monitoring systems are also to be installed and maintained by the scaffolding supply company.
- b. A temporary fire suppression system (manually activated remotely from onboard HMS Victory Quartermaster position) is to be included, supported and periodically (dry/functionally) tested.
- c. Drawable fire curtains are to be provided at each stage of the scaffolding to provide for physical fire isolation and protection for the ship.
- d. Boarding and walkways should be metal rather than wood. If wood has to be used (and only with prior approval of NMRN) then it must be treated with fire resistant/retardant coatings.
- e. Emergency lighting is to be provided alongside full work and visitor lighting in place.
- f. Emergency alarm, lighting power and lift power is to be supported by a separate auto start generator that is to be maintained and tested weekly by the Contractor.
- g. The Scaffolding Contractor will lead on producing, and the periodic reviewing of a safety case for the Scaffolding, including the Visitor Experience. This is tie into the contractors Training, Rescue and Evacuation plan.
- h. The Scaffolding is to be inspected at least weekly by a certified, competent person and the results recorded.
- i. The Scaffolding Contractor is to produce the final design work with the NMRN and external agencies and services to evaluate, and lead on the production and execution of the safety of the scaffolding, develop/design and conduct test and acceptance trials, including emergency evacuation exercises and jointly develop and execute ongoing safety exercises as part of the Training, Rescue and Evacuation Plan produced by the contractor.
- j. The scaffolding must have arrowed illuminated signage to show the exit route in an emergency
- k. It is desirable that the public have access to multiple levels to see the work being undertaken
- l. The design of the scaffolding is to include the facility to attach display boards (supplied by NMRN) that can be updated on the stage/progress of work, and areas, to be specified, to display objects of interest as part of interpretation
- m. The scaffolding is to be surrounded by an overall security barrier with lockable access routes (2 – padlock control for emergency access) to prevent out of hours intrusion and control visitor access as well as provide site CDM security.



- n. All workers are to book in/out of the scaffolding using the naval Base 'T' Card System, and space allocated for a suitable board.
- o. Lightning conduction system to be installed, maintained and inspected.
- p. Under crash-deck/netting to prevent items falling onto the Hull Support System.
- q. All aspects of maintenance and assurance, including reports of completion of safety and assurance checks, including supporting documentation, is also to be provided in an Excel workbook format as agreed with the NMRN suitable for upload into the CAFM maintenance management system.
- r. The 'lean-to' – working area is to be used as a working area for Shipwrights and is to be kept open and free of standards, and is also to be provided with power and lighting as well as a sliding (or rolling) closing door.

3.12. The separate mast lay apart/conservation area (approx. 40m x 6.5m, design to be finalised with NMRN) is to have a fully -bundled protection system to avoid the seepage of paint, etc, removed during conservation in order to avoid pollution and health hazard (existing Victorian era paint on lower mainmast is known to contain lead).

3.13. The scaffolding company must be a full member of the NASC and all employees must be fully trained and qualified in accordance with the NSC competencies and legislation requirements, including:

- a. Health and Safety at Work Act 1974
- b. the Management of Health and Safety at Work Regulations 1999 (as amended)
- c. the Working at Height regulations 2006 (as amended)
- d. the Construction (Design and Management) regulations 2015
- e. BS EN 12811 2003 Scaffolds performance requirements
- f. NASC TG20:13 – A comprehensive Guide to Good Practice for Tube and Fitting Scaffolding
- g. NSAC SG4:15 – preventing Falls in Scaffolding (Latest Edition)
- h. CISRS CAP 609 (latest Edition)

3.14. The scaffolding company is to incorporate all notes on drawings into their design.

3.15. All employees and subcontractors of the scaffolding company will be required to undertake Naval Base Security Checks (including Disclosure and Barring Service) checks in order to gain access to the site, and will be required to conform to site COVID-19 safety measures as required and as appropriate throughout the course of the contract.

4. Visitor Experience/Safety

- 4.1. The Scaffolding Designer is to work with the NMRN to establish a visitor experience/interpretation of the work, and include provision for the power of AV systems and physical location of display boards, to be developed in conjunction with the



NMRN team. The visitor experience equipment (i.e. boards, AV, webcam/time lapse cameras) are not part of the scaffolding contract, unless specified to meet specific health and safety requirements. The external cladding of the scaffolding should be capable of printing an image/theme upon it. External or internal cladding of scaffolding with 'shrink wrap' type covering is not to be used.

- 4.2. The following requirements should be reviewed, and adapted/expanded upon by the tenderer, with explanation, as part of their response to tender.
- 4.3. The Scaffolding Visitor Experience is to incorporate Accessibility into the design process from the outset. The Museums Accessibility Officer is the specialist adviser within the project team.
- 4.4. Any stairs are to have handrails either side.
- 4.5. The work and public areas of the scaffolding are to be designed to ensure that there is no overlapping activity either directly above or directly below.
- 4.6. The scaffolding is to be accessible by wheelchair users, including electric powered chairs. The tenderer is to state the maximum that can be accommodated at any one time.
- 4.7. People with additional needs are to be accompanied by their own carer or guide, which they are to arrange prior to the visit.
- 4.8. Child buggies will not be permitted on the scaffolding.
- 4.9. Walking children are to be under positive parental control.
- 4.10. Barriers are to incorporate Perspex viewing and are to be high enough to prevent 'over-leaning' by parents with papooses and similar carrying pouches/backpacks. (As an option, windowed access may be considered).
- 4.11. Any potential 'climb points' are to be closed off/masked/covered.
- 4.12. Children in 'babycarriers'/backpacks are not permitted.
- 4.13. Headroom Clearance is to be a minimum of 2m (to be reviewed by Tenderer). All scaffolding joints, bolts, fastenings and injury hazards are to be suitably padded and marked with yellow/black hazard tape.
- 4.14. Personnel access, and accompanying/supervision requirements and limits to be established (e.g. minimum height).
- 4.15. Weather operating limits are to be established by the Tenderer, with an onsite anemometer and display provided by the scaffolding contractor. Key safety information to be explained and included on a board in the Visitor Reception Area.
- 4.16. 'Adverse weather' and limit conditions for operation are to be specified by the scaffolding contractor. If such adverse weather limits are experienced, the scaffold



company is to conduct a full safety inspection and complete a re-opening proforma and hand this to the NMRN Duty Manager prior to re-opening as required.

- 4.17. The outer weather-proof environment is to be capable of supporting Projection Mapping.
- 4.18. The scaffolding is to be designed to be sympathetic to, and where possible, to enhance, the visitor experience as determined by the Visitor Experience Team of the NMRN, and is to have an outer surface that can have a printed design to be specified (by the NMRN) on it.
- 4.19. Normal Public Access and Egress to the scaffolding is to be through a single, controlled reception point.
- 4.20. The design of the scaffolding is to include facilities for provision of PPE (Hard Hat and Hi-Visibility – if deemed necessary in the safety case produced by the tenderer), controlled access, lockers for baggage, etc. and parking area for buggies, and space for Warning Notices and Briefing Boards. The scaffolding company is to specify the PPE requirement. PPE vests are to be numbered to monitor all numbers onsite at any one time. Facilities will need to be included for sanitising after use and prior to re-issue.
- 4.21. Hard Hat/PPE (if deemed necessary by the Tenderer) Colours are to be separate for:
 - a. Visitors
 - b. Workers (Red Overalls)
 - c. Guides fully Trained in Evacuation Procedures
 - d. Other workers
- 4.22. There will be daily opening/closing inspections by NMRN staff, and production of an event record. This is to be reviewed daily by the scaffolding company and advice/action undertaken as necessary, and recorded in a scaffolding project diary.
- 4.23. The NMRN Duty Manager is to conduct a repeat re-opening inspection in the event of an adverse weather closure.
- 4.24. Lifts are only for the use of less - mobile individuals with their guide/carer. Everyone else, including accompanying children with designated carers, must use any stairs.
- 4.25. Lifts are to have auto-backup generator.
- 4.26. Emergency evacuation 'chair' to be provided in the event of lift failure
- 4.27. Emergency exits with 'crash bar' operation are to be provided.

5. NMRN Internal/Operational Requirements



In addition to the requirements for the scaffolding, the design consultancy is to include the design of NMRNs operating and usage requirements, including a Rescue Plan including planning for exercises with Naval Base and Emergency Services, for which an indicative but not exhaustive set of requirements is outlined below:

- 5.1 All personnel working on, including guides and volunteers on the scaffolding are to be fully trained, certified, and a record of in-date continuation training held in evacuation, lift operation and safety management, including fire safety and work safety and are to have a record of continuation training.
- 5.2 Standard operating procedures for work and visitor experience are to be written, including the visitor safety brief. All NMRN personnel working, or guiding on scaffolding are to be trained to implement them and are sign to that effect, in a record that is also to include a record of continuation training.
- 5.3 Visitor Expectation and Warning Signs to be placed.
- 5.4 The scaffolding is to be permanently manned by:
 - a. One / two people at reception?
 - b. One person roving at each visitor level?
- 5.5 Site Operations Manager, Duty Ops Manager and Shipwright Foreman are to 'sweep' the scaffolding daily before opening to check for safety prior to opening, and on completion/closure each day to ensure any emergent issues are identified and complete the opening/closing proforma and defect/event identification record.
- 5.6 NMRN will operate 'Near Miss' reporting policy and regular 'toolbox talks' reporting.
- 5.7 NMRN Safety officer is to conduct weekly? - and surprise/ad-hoc inspections as part of safety assurance.
- 5.8 NMRN Safety Officer to develop a programme of repeat/continuation training exercises with the scaffolding operator and external agencies for scaffolding emergency procedures as per rescue plan. This is to include exercises with group participation as visitors (e.g. using museum volunteers).
- 5.9 Training of Staff to give Tour and Access Briefs, and personnel security and safety checks.
- 5.10 School party ratios of teacher/adult supervisor to student to be established
- 5.11 Adult/Child ratios to be established. E.g. Under 11 to be 1:1? 11-18 to be 1:2? Minimum age to escort under - 11 is to be 18+? (to be confirmed by scaffolding supplier).



- 5.12 Weekly plan or conservation work to be planned and briefed, daily update by Shipwright Foreman to Duty Ops Manager to inform staff briefing.
- 5.13. Daily Staff/Guide/Volunteer Briefing to be conducted by NMRN Duty Manager prior to opening.
- 5.14. Qualified first aider always part of the guide/tour team.

Appendix

- 1. Mast Lay Apart and Conservation Area 1 Jetty.