

Method Statement Form

Project name/number:	Sunlight House
Date:	##/##/####

Description of works:	<i>Fixings to Masonry: Prior to installing any fixings in stone or brickwork, a thorough assessment of the masonry's structural integrity is required. Inadequate masonry may result in dislodgement of stone or brick, compromising scaffold stability and potentially causing damage to the historic fabric of the structure. All fixings applied to the walls of heritage buildings must use stainless steel or plastic sleeve anchors. Wherever feasible, fixing holes should be positioned within mortar joints to minimise damage to the masonry.</i>
Location:	External Elevations

Methodology:

1.	Mortar Analysis
	Different types of mortar (e.g., lime-based, earth-based) were traditionally used in various regions and periods. Analysis allows for the identification of the specific type of mortar and aggregate, ensuring that the new mortar matches the appearance, texture, colour, and composition of the original. Using inappropriate mortar can lead to aesthetic mismatches and physical damage over time. Modern cement-based mortars are often too hard and impermeable for historic masonry, leading to issues such as trapped moisture, spalling, or cracking. Mortar analysis helps to avoid the use of such incompatible materials by specifying a mix that is sympathetic to the building's original materials and allows for proper breathability and flexibility. Visual Inspection Purpose: To assess the mortar's colour, texture, particle size, and overall appearance. Method: Mortar samples are visually examined using magnifying tools to identify aggregate types, binder characteristics, and overall homogeneity. Petrographic Analysis Purpose: To identify the mineral composition and the texture of the mortar. Method: Thin sections of the mortar are prepared and examined under a polarized light microscope. This technique reveals the types of minerals, the microstructure, and any signs of deterioration or degradation in the mortar.

2.	Samples
	Using the results of the mortar analysis, Quadriga would prepare a trial mix that matches the original mortar in colour, texture, and strength. This may involve experimenting with different ratios of binder to aggregate and selecting the right types and sizes of aggregates. The materials used in the new mix (e.g., lime, sand, pozzolans) are compatible with the historic fabric of the building. For example, lime-based mortars are typically preferred for historic buildings due to their breathability and flexibility. Mock-up on Site: A small physical sample of the matched mortar will be undertaken by qualified conservator for submission to the planning authorities. This can be in the form of a small mortar cube or a mock-up panel demonstrating the mortar in situ with brick or stone. The sample should allow the planners to assess the color, texture, and finish.
3.	Obtain Approval from Conservation Authorities
	Submit to Planning Authority: Submit the physical sample and all supporting documentation to the local planning authority or conservation officer responsible for overseeing work on listed buildings. Ensure that all required information is complete to avoid delays in the approval process. National and Local Standards: The mortar must comply with any national heritage guidelines (such as those from Historic England, the National Trust, or local heritage authorities). The mortar mix should also respect the historical context of the building, ensuring no harmful materials (like strong Portland cement) are introduced that could cause future damage.
4.	Repairing fixing points prior to scaffold removal
	Scaffolding to building interfaces: However well-constructed, scaffolding is always likely to move slightly and a tube end rubbing on a wall face can easily cause permanent scarring. All points of contact or near contact between scaffolding and historic buildings should be protected in some way. All tube ends that either touch a wall or are within 25mm of it should have plastic end caps. All standards should sit on timber sole plates to spread the load and floors beneath should be protected with polythene sheet or similar materials to prevent damage. Repair fixing holes to masonry: When scaffold is ready to be dismantled, a qualified restorer to be on hand while the scaffold strip progresses. The restorer will follow these steps: Step 1: Prepare the Area Remove Loose or Damaged Mortar: Use a chisel and hammer (or mortar rake) to carefully remove loose or deteriorated mortar around the hole. Clean out the area to a depth of at least 15-20mm to provide a solid base for the new mortar. Brush Away Debris: After removing the damaged mortar, use a soft brush to sweep away any remaining dust, dirt, or debris from the joint. A clean surface is essential for good adhesion.

Step 2: Dampen the Joint

Pre-wet the Joint: Lightly dampen the cleaned joint with water using a spray bottle. This prevents the masonry from absorbing too much moisture from the new NHL mortar, ensuring proper curing. Avoid over-saturating; the joint should be damp but not dripping wet.

Step 3: Mix the NHL Mortar

Prepare the Mortar: Mix the NHL sand-lime mortar according to the manufacturer's instructions. A typical mix for NHL 3.5 could consist of:

- 1 part NHL (Natural Hydraulic Lime)
- 3 parts clean, well-graded sand

Adjust the proportions based on the specific requirements and conditions of the building.

Add Water Gradually: Slowly add water to the dry mix until you achieve a workable consistency. The mortar should be pliable and hold its shape without being too wet or runny.

Let It Rest: Allow the mixed mortar to rest for about 5-10 minutes before using it. This improves workability and performance.

Step 4: Apply the New Mortar

Fill the Joint: Using a pointing trowel, pack the new NHL mortar into the prepared joint. Start from one end of the joint and work inward, ensuring that the mortar is well-compacted to avoid air pockets.

Layer Application: If the joint is deep, apply the mortar in layers, allowing each layer to stiffen slightly before adding more. This approach prevents cracking as the mortar dries.

Tool the Joint: Once the joint is filled, use the edge of the pointing trowel to smooth and shape the mortar surface. Aim for a slightly recessed or flush finish to match the surrounding mortar joints.

Step 5: Finishing the Joint

Shape the Joint: Use a jointing tool or the trowel's edge to shape the mortar to match the profile of the existing joints. This step is crucial for ensuring that the repair blends seamlessly with the surrounding masonry.

Remove Excess Mortar: As the mortar begins to set, use a stiff bristle brush to lightly brush the surface of the joint, removing any excess mortar and helping achieve a consistent texture.

Step 6: Curing the Mortar

Keep Moist: Natural hydraulic lime mortars require adequate curing to develop strength and durability. Mist the joints lightly with water for several days (depending on weather conditions) to ensure slow, even curing. This prevents the mortar from drying too quickly and cracking.

Protect from Weather: If rain or extreme heat is forecasted, protect the newly filled joints with hessian or a breathable cover to allow proper curing while preventing washing out or cracking.

5.	Tools and Materials Required:
	• Pointing trowel • Chisel and hammer (or a mortar rake for wider joints) • Soft brush • NHL sand-lime mortar (NHL 3.5 or NHL 5, depending on requirements) • Clean, well-graded sand (e.g., sharp or washed sand) • Water spray bottle • Mixing bucket • Stiff bristle brush • Gloves and safety goggles