

Former Zanzibar nightclub**Proposed Methodology of works****Original – 11.09.2024****Revision 1 – 25.03.2025****Revision 2 – 16.09.2025****Revision 3 – 23.09.2025****Cleaning**

The face retained stone façades at 40 Stow Hill is constructed from dimensioned Pennant sandstone with a bush hammered feature face combined with dressed Bath stone features to openings, pilaster features and pediment. The façade is heavily painted and the true make up of the underlying stone work cannot be fully confirmed at this point.



The dimensioned Pennant sandstone has suffered badly from frost damage due to the painted coatings and the feature finish of the stonework where exposed has been lost to lamination. Whilst the obvious method of removing these coatings would be the DOFF and / or TORC systems, the initial removal could be carried out by hand to identify sound and defective areas. It is clear at this point that the original surface finish has been lost in the majority of areas.

The Bath stone element of the building fabric will also have suffered from frost damage from retained moisture but again the full extent of this cannot be established until the paint is removed. It is the norm for painters to fill defective areas when in preparation before redecorating. Once paint is removed a full schedule of repairs can be produced for discussion.

Revision 1 – 25.03.2025

Doff Method

The DOFF cleaning technique is a high temperature low pressure steam-based system. With its capability of controlled temperatures reaching 150 degrees, it is the perfect stone cleaning system. It can remove various different types of biological matter, algae, moss and general dirt build up without the use of chemicals. The doff systems can also remove many different types of paint from most facades leaving no damage to the exterior finish of buildings.

Its gentle approach to cleaning buildings comes from the combination of a very high heat however keeping the pressure of the water in contact with the facade low produces brilliant results and is ideal for bringing out the natural colouring of the stonework beneath the dirt or paint whilst retaining any patina built up in the stone. It is an approved technique by CADW and English Heritage allowing it to be commonly used on listed buildings.

Dawson Stone Masonry Ltd are an approved Contractor for the use of the DOFF Systems by Stone Health Ltd.

Samples of this systems have been carried out successfully and inspected on this façade. The following is a photo of the sample on both the Pennant and Bath stone features.



Torc Cleaning

The second method is introduced for stronger unwanted matter. Atmospheric pollutants such as carbon have always been an issue and this becomes more and more apparent as congestion increases in our towns and cities. Lead based paints are also a problem to remove from the façade without damaging the face of the stonework.

The TORC system is an air fed machine that has small quantities of water mixed with granules these granules are made up from Semi-angular crystallised form of calcium carbonate so are safe to use. With its vortex technology it avoids the harsh impact to the face of the stonework such as a grit blast. There are mainly three types of granules that can be used depending on what material is being cleaned such as delicate sand stone or a stronger pennant material.

Dawson Stone Masonry Ltd are an approved Contractor for the use of the TORC Systems by Stone Health Ltd.

Samples of this systems have been carried out successfully and inspected on this façade. The following is a photo of the sample cleaning on both the Pennant and Bath stone features. Only the lower section of Bath has been TORC cleaned to remove carbon



Repairs

The main pediment has been covered with a felt or similar membrane which has broken down and will need to be removed or replaced dependant on the stone condition beneath. Various sections of the front moulding have failed or been replaced in a mortar repair and will need new stone indents or replacements.



The buddleia root to the Right-hand side of the Tympanum has cause considerable damage both lifting the coping and forcing the area below out of line. To reset and or replace these sections will require suitable craneage.



Repair options

Option A – Descale & Make Safe Repair Works

Option A is the minimum amount of work required to make the building safe. Dawson Stone Masonry (DSM) will remove the old fixings from the stonework and make good the holes with a sand/lime mortar. DSM will remove all loose and friable stonework from the areas of walling and also the surrounds to the windows and doors. The removal of this loose masonry, specifically to the front elevation will result in the loss of the stone features, leaving an aged and worn looking finish, however it will result in a safe façade.

Option B – Descale, Make Safe & Carry Out Mortar Repairs

Option B allows for a more aesthetically pleasing finish to the building repairs. Rather than making safe and leaving a weathered finish as Option A this option allows for the original stone features to be built out in a specialist restoration mortar mix. DSM will propose a suitable mortar mix to match the colour of the original stonework and carry out a sample area. Once agreed the identified areas of repair will be descaled and taken back to the solid core of the stone, these areas will then be screwed and reinforced with a combination of non-ferrous metal screws and wire (typically brass) to provide a solid bond between the existing building and the mortar repair when applied. The repair is built out in layers to the required contours of the replacement moulding before being sponge finished for a clean, neat finish.

Option C Repair – Descale and Replace Defective Masonry with New Stone

Option C repairs allow for the replacement of defective stonework or sand and cement with new stone. The existing stonework will be surveyed prior to descaling and removal of defective elements so that details can be taken from site enabling moulds and templates to be produced. Block will be ordered from the quarry and cut and worked at our workshop facility into the exact details required. The typical lead period for new stone masonry is 4-6 weeks for Bath stone and 10 weeks for Forest of Dean stone.

Proposal

We would propose the following course of action to establish and progress the restoration of the facade.

1. Agree area and location for the following samples.
 - Tap testing and removal of painted surface to Pennant stone.
 - DOFF cleaning sample of both Bath and Pennant stone work.
 - Insitu stone repair sample.
 - New stone samples for indents or repairs.
2. Based on the results of the samples establish a cost and timescale for removing the paintwork.
3. Carry out an initial survey of visible repairs for costing.

Revision 2 – 16.09.2025

Method 1 – Remove loose open or defective joints & Repoint

Dawson Stone Masonry (DSM) will **only** remove loose and defective sand/cement joints to the whole façade in question. Joints are to be carefully raked out to a depth of twice the width of the joint, but in no case less than 15mm, without damaging the arises of the adjoining masonry. Use suitable jointing, plugging and toothed masonry chisels. Hacksaw, blades and bent spikes may also be used. Hacking hammers, cold chisels are not to be used. Remove dust and any remaining loose debris with a stiff bristle brush and thoroughly flush out with clean water. Avoid unnecessary saturation.



Dampen down the surface of the joints and adjoining stones to adjust suction immediately before mortar is placed. Mortar is to be pressed home hard into prepared joint ensuring cavity is completely filled and to prevent rapid drying out we would use sacking that has been dampened or tarpaulins in extreme conditions hot or cold.

Replacement mortar is to be built up in a ratio 3:1:1 sand lime (N.H.L 3.5) and stone dust from a matching stone material. By

changing the cement pointing to lime pointing it will be less detrimental to the soft stone and become more vapour permeable allowing the stone and building to breath.

Method 2 – Carry Out Mortar Repairs

Where stone work has weathered to a point where detail and arises are lost a mortar repair allows for a more aesthetically pleasing finish to the building. Rather than making safe and leaving a weathered finish this option allows for the original stone features to be built out in a specialist restoration mortar mix. Once agreed the identified areas of repair to be removed will be scribed with straight horizontal and vertical lines parallel to joints. Cut back carefully to a minimum depth of 20mm to a sound background. Where the depth of removal exceeds 50mm, further inspection will be required to determine whether it needs to move onto Method 3. These areas will then be screwed and reinforced with a combination of non-ferrous metal screws and wire (typically brass) to provide a solid bond between the existing building and the mortar repair when applied. The repair is built out in layers to the required contours of the replacement moulding before being sponge finished for a clean, neat finish. A previous example of during and completed repair is set out below.

Typical Examples of a Repair Type – Carried out in Bath Stone mix



Repair during Reconstruction



Repair Finished with Mortar Mix

Method 3 – Replace Defective Masonry with New Stone

Method 3 allows for the replacement of defective stonework or sand and cement with new stone. The existing or missing stonework will be surveyed prior & if necessary templates will be produced. Block will be ordered from the quarry and can be cut and worked on site into the detail to match existing. The defective stonework will be cut out as scheduled, ensuring that the arises of the aperture are clean and undamaged. Full stones would normally be bedded in a 6:1:1 sand, lime stone dust mortar and shall incorporate suitable stainless-steel fixings as and where required. Small indents to be placed in polyester resin or stone glue. On completion of the fixing, the beds 'joint shall be carefully re-pointed to match as near as possible surrounding stonework, and where applicable rubbed in.

Typical Method 3. Where Face Has Cracked



Typical Method 3. Replacement Face Cut to Suit

