



By Appointment to  
Her Majesty The Queen  
Building Facade Restoration  
and Conservation



**PAYE**

## St Giles Circus- Masonry Repairs

### TECHNICAL INFORMATION SHEET # 001

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**Project:** St Giles Circus

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#### Project Information

This document covers the proposed methods of cleaning to the masonry works of the facades of the St. Giles Circus project. The objectives of the chosen methodologies are;

- General Paint Removal:  
Removing paint or tar based products from historic structures may be required either to:
  - Remove inappropriate treatments damaging the substrate
  - Return the structure to its original appearance
  - Provide a sound surface for repainting

In typical cases masonry originally unpainted or treated with lime wash has subsequently been over-painted with an acrylic or cementitious paint. This prevents the historic stone or brickwork from breathing, resulting in lamination due to frost and salt damage and peeling of the paint layer.

- Removal of dirt and other deposits:  
Deposits to be removed usually consist of airborne dirt bound together and to the masonry surface with calcium sulphate (gypsum, typically on limestone) or silica (typically on sandstone or clay bricks). Other deposits may be:
  - cement splashes
  - calcium carbonate deposits
  - efflorescent salts
  - bird fouling
  - heavy and light oils
  - organic growth
  - metallic stains, e.g. copper sulphate

The methodologies of cleaning intended for use on this project are:

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- Paint stripping using Peel Away
- DOFF Cleaning
- TORC Cleaning
- Nebulous Spray
- Cleaning using chemical detergents

## **Methodology**

### Temporary Guttering

Before any cleaning takes place, a temporary gutter is to be installed to collect any water and discharge produced in the cleaning activities.

All Plywood and other materials required are to be lifted onto the required scaffolding lift using the hoist provided.

Operatives to lay out base of gutter in required position, then screwing the sides into place using a battery operated drill. Any cuts to plywood will be done in an agreed location with a handsaw. Any excess material to be bagged up where possible and left in the correct waste disposal location. Location to be agreed during the site induction.

Once the guttering is complete for the required area, the operative is to line with heavy-duty polythene ensuring that all joints are water-tight.

Additional polythene is to be installed where required on the scaffolding to ensure that all water is captured and runs into the installed gutter.

The gutter will discharge the water into an agreed outlet /collection point prior to any water being used. All hoses are to be tied above head height where possible to decrease the risk of slips/trips/falls.

Operatives to check the gutter at intervals to ensure water is not building up and at risk of overflowing.

### Jos Torc Cleaning

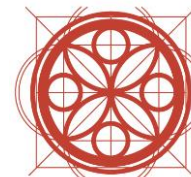
Operatives to site the machine and cables ready for cleaning works to be carried out. Operatives to ensure that the machine and other equipment is enclosed out of reach of other building users and that the cabling is routed out of walkways to prevent tripping hazards.

Whilst personnel working in the vicinity need not be inducted into the working of the system they should be made aware of the potential hazards – heat, ventilation, the temperature of metal/rubber components etc. Someone adjacent, other than the Operator, should be aware of how to safely shut down the system in circumstances.

All correct PPE (Air fed mask, eye protection, gloves, ear protection and safety footwear and Hi-vis jacket) to be worn before entering the working area

Establish and Set out 1 – 2 m<sup>2</sup> sample areas.

Ensure ambient temperature is at least 5°C before using Torc Machine and maximum working pressure does not exceed 5 bar.



Before commencing any other methods of cleaning, remove loosely adhered deposits and heavy deposits of biological matter using suitable corrosion resistant brushes and scrapers/spatulas that do not abrade or gouge the surface. Do not use brushes with steel bristles.

For each surface, specialised cleaning operative to establish the optimum settings (pressure and abrasive volume), nozzle type and distance of nozzle from the surface. Keep a written record of these variables.

With this established gently work nozzle from right to left over the intended area set out to clean. Remove and collect dust and debris from each completed surface as work proceeds and finish by rinsing off thoroughly with clean water using suitable low pressure spray equipment.

On completion of sample areas photographs to be obtained at report issued to client

### Nebulous Cleaning

The system of nebulous sprays is based on the principle of passing water through a very fine mesh or filter to create a mist that is then passed through fine nozzles.

The mist spray system will be set up with nozzles at intervals along the building, concentrating on areas of greater need and reducing the level where less dirt is present.

The level of water to be controlled electronically or by timers, allowing pulse or intermittent spraying, to avoid ever having water running down the face of the building.

As the system produces such a fine mist it is important to place the nozzles close to the building's surface in order to ensure the water is directed correctly. Depending on the location and exposure of the elevation it is frequently necessary to erect a screen to reduce the risk of wind disturbance however this shouldn't be necessary as the scaffold is wrapped.

Nebulous spray systems can be designed to be incredibly flexible, directing the spray only where needed. Straight or flexible hoses may be employed depending on the requirements of the surface being treated and the nozzles from the hose may be grouped or spaced according to the severity of the dirt or encrustation being treated. Flat surfaces often require less water than a carved heavily soiled detail. Such as the carved faced on ground floor windows, this may require a cluster of nozzles positioned on an articulated hose to the profile of the carving as per the cleaners discretion.



***Example of Nebulous spray on Previous PAYE project.***



## Doff cleaning

Operatives on site to assess the working area to ensure that it is safe for work.

Once all operatives are fully aware of their surroundings and are confident that work can be carried out safely they can begin work.

The doff machine can then be set up within the appropriate area. Once the doff has been set up, the pipes can be routed to the area of work. It is important that the pipes and cables are routed out of the walkway to ensure that there are no tripping hazards for other operatives on site.

Operatives are then to run the doff machine for 2-3 minutes to achieve the optimum cleaning pressure and temperature before works begins.

Whilst running the doff machine prior to cleaning PAYE are to use temporary gutters and are to ensure all local drainage and gutters are covered with hessian.

The cleaning work to the highlighted areas of brickwork and masonry can then begin.

Whilst cleaning the brickwork it is important that the areas are not oversaturated which may cause discolouration to the brick face and also affect the structural integrity of the bricks.

It is also important for the operator to keep the cleaning lance at a fair distance away from the wall to prevent gun shading marks occurring on the façade.

## Paint Stripping

### Sampling:

- Carry out and remove a sample of the paint and have it tested for lead content at an approved laboratory.
- Always carry out Test Patch sampling to ensure best results.
- Test patches must be done on at least three to four different areas of the building.
- Test patches are very important as there is always a mixture of different paint coatings related to the age of the building.
- Cold weather conditions below 8 degrees C will slow P /A 1 and over night.
- Acrylic paint over enamel paint will also slow the stripping process.
- Chalking and weathered exterior paint will still need time.
- Careful assessment must be made to ensure the products' performance.

### Preparation:

- All care needs to be taken on site.
- In each area where work is to be done, thick plastic (protection board) needs to be used on floor and other surrounding surfaces for protection. Secure using duct tape and weight to keep in place: eg sand bags.
- Secure any loose items attached to the building and around work site area.

### Application:

- Application of the PEEL AWAY material must be per manufacturer's instructions.
- Apply product for exterior by trowel at a minimum of 3 to 4 mm thick.
- Product is then covered with the special PEEL AWAY cover paper sheet and sealed with masking tape.
- Only use PEEL AWAY paper.
- The time needed for the Product to be left on will vary according to test sample results.
- Product dwell time can vary for different substrates, number of layers and surfaces.



#### Removal:

- Prior to complete removal cut an A4 section and remove.
- By sliding applicator tool behind laminated sheet lift old paint coatings.
- Carefully remove all loose coatings and fully contain.
- Contain all solid waste in thick black tie up bags and store safely ready for disposal.
- Thoroughly wash down surface. Normally only a light pressure cleaner is needed to remove residue as the PEEL AWAY product would do most of the stripping work.
- All surfaces to be left to completely dry and checked for complete removal.

#### Chemical Detergent

##### When Using Neolith HDL;

###### •Preparation:

Any large organic deposits should be removed either by scraper.

###### •Application:

-The surface should be pre-wetted and left to drain down.

-Using a nylon brush, work the product over the pre-wetted surface and leave a visible coating covering the masonry. Normal contact time is one hour up to a maximum of 3 hours for any one application.

###### •Removal;

-Application may be repeated after washing off preferably with hot water, but cold will suffice. 'Using a Doff (pressurised Hot-Wash) thoroughly wash down the area – cleaning from top left hand side, across to the bottom right hand side.' A final treatment with an acid based cleaner if necessary, or a neutralising agent (NEOLITH 907) should then follow.

##### When using Tensid PROSOCO Heavy Duty Detergent;

1. Pre wet the surface with clean water.
2. Apply prepared Heavy Duty Detergent with a soft bristled brush.
3. Allow to stand on the surface for up to 30 minutes. Do not allow the material to dry on the surface. If drying begins to occur, mist the surface lightly with clean water.
4. Before rinsing, gently scrub the surface until soiling is removed.
5. Rinse with clean water. If using a sponge or string mop, change rinse water frequently.