



No 1 Morlais Buildings

Pontmorlais

Merthyr Tydfil

Repair and Cleaning of Brickwork Methodology Document

Date 18/12/2024

Planning Ref – P/19/0314

Condition 3 in line with policies BW6 & BW7

Written by Nathan Goss Conservation

Issued by Atrium Planning Consultants

This document is to read in line with:

Existing Elevations & Plan – PL002

Proposed Elevations & Plans - PL003

Proposed Shopfront Elevation – PL004

Planning Application – P/19/0314

Design and Access Statement – October 2019 – Ferguson Mann Architects

Description

No1 Morlais Building lies within the Pontmorlais area at the northern end of the Merthyr Tydfil Town Centre Conservation Area. The character area of Pontmorlais described in the Merthyr Tydfil Town Centre Conservation Appraisal (June 2009) is concentrated around the Pontmorlais High Street which is a continuation of what is now the more commercial end of the High Street to the south.

The building is 3 storey with a very distinctive frontage, baroque style gable forming a very strong presence at this end of the High Street. Historic photographs and surviving physical features evidence the fact that buildings 1 to 6 were built as a terrace with identical architectural features including:

- Distinctive brick ‘dutch’ style brick gables with limestone dressings
- Pedimented double sash decorative window with limestone dressings at second floor
- Full height arched headed tripartite timber window/ glazed screen at first floor with fixed central light and opening casements each side with egg & dart moulded stone cornice above.
- Decorative horizontal stone banding at each storey with full height stone pilasters with carved head detail with carved stone ball finial and capping
- Stone surround to shopfront with fluted pilasters and very ornate carved pro

Proposed Work

- Repair brick plinth blocks.
- Reinstate 2 no. chimney stacks and pots.
- Cleaning Brickwork

Method and quality statement

- Brickwork

General information

- It is essential to establish the cause of deterioration first and then keep any remedial work to a minimum. This will help prevent recurrence of the problem and, by restricting the loss of historic fabric, retain the authenticity of the building.
- Sometimes, it may be best to do nothing, i.e. leave the brickwork alone. Where this is not an option, some form of conservative repair can frequently be undertaken. Only in exceptional circumstances will brickwork need to be taking down and rebuilding

Brickwork (new)

- The first step in selecting appropriate restoration materials is identifying the bricks used. Bricks in most areas have unique properties and appearance, so it's essential to match the new bricks with the originals as closely as possible. This may involve sourcing reclaimed or custom-made bricks from specialized suppliers.
- New bricks should match existing ones as closely as possible in size, colour, texture and durability. They should be laid in the same way, i.e. with the same bond. It is better to leave replacement bricks to blend in naturally over time than to try and tone them down.
- Mortar selection is vital in maintaining structural integrity and preventing water infiltration. Consider using lime-based mortars instead of modern cement-based options when choosing mortar for restoration purposes.

Brickwork (Repair)

- The bricks themselves can often be carefully removed and then reversed and reused to hide the decay.
- Coloured mortar ('plastic' repairs) may be used and to build up decayed brick faces, but skill is required to achieve a good long-term colour match.
- Thin brick slips have been used as an alternative but possess an inherent structural weakness.
- Only bricks that are severely damaged should be cut out and replaced. Exact replication is very difficult, but there are a number of good suppliers producing new handmade bricks at reasonable prices.
- Replacement bricks should match the existing ones as closely as possible in size, colour, texture and durability. They should be laid in the same way, ie with the same bond. It is better to leave replacement bricks to blend in naturally over time than to try and tone them down.
- Only use hand tools to remove any damaged bricks, clean out the old mortar using a plugging chisel and slowly remove the brick, assess the damage and either reject or re-use.

Brickwork (Cleaning)

General

- Preparation and trials should be carried out well before the main cleaning operation. Trials should be carried out on a limited and less conspicuous area of brickwork.
- Abrasive cleaning systems are usually inappropriate on historic brickwork due to the nature and characteristics of the brickwork, even when undertaken extremely carefully. This is because these methods are unable to deal with the multitude of variations that can be present in a brick wall. Abrasive cleaning is particularly inappropriate for the removal of paint or graffiti on brickwork
- Beware of lime-based mortars which are more highly absorbent and softer than the surrounding brick units: the strengths of chemicals, the length of dwell times, pre-wet and rinse water pressures must be kept low to avoid damage to the mortar
- Periods of saturation associated with water washing, chemical cleaning can lead to the emergence of efflorescence. Inherent salts within the brick surface are dissolved and brought to the surface during the drying-out process. The efflorescence should be dry-brushed or vacuumed from the wall surface, taking care to ensure the salts are collected and not allowed to redeposit elsewhere on the brickwork.

- All health, safety and environmental guidelines from the cleaning solution manufacturer should be strictly followed

Dirt, Grime and Soot Dirt cleaning

- Grime, soot and smoke on brickwork can build up over time. Such deposits are generally the result of long-term airborne deposition.

Treatment

- The first step is to scrub the brick with a stiff nylon brush and detergent solution. Due to the texture of handmade and thrown bricks, extra care is advised during treatments.
- For heavy cleaning you involve an alkali-based degreasant followed by an agent containing hydrofluoric acid or, if soiling is lighter, by the acidic agent alone. The brick surfaces must be thoroughly pre-wetted to limit the activity of cleaning agents to the surface. Thorough rinsing of the surface with is also critical.
- *Depending on the hardness of the brick* - 'Jos' cleaning system - The 'jos' system is a low pressure vortex process which uses a mixture of air, fine inert powder and relatively small quantities of water and is particularly effective for the safe removal of carbon, dirt, scale, micro-organisms and all types of atmospheric pollution on brick and stone.

Paint Cleaning

- Removing modern paints which are generally acrylic. However, polyurethane and epoxy paints are also in use.

Treatment

- Correctly identifying the paint to be removed is essential as it will determine the cleaning product to be used.
- The nature of the brick surface will also affect the cleaning complexity. Handmade and thrown bricks, with a heavily textured surface, allow the paint to penetrate further into the brick body.

- Chemical cleaning is generally the most suitable approach as it is able to accommodate variations in texture, condition and hardness, and it is undoubtedly the best method for the removal of paint.
- Cleaning chemicals borne in a thixotropic gel or a poultice are preferred to liquid cleaners as their thicker consistency limits absorption. Clay-based alkaline poultices are particularly effective in this regard especially where a longer dwell time is necessary.
- *Depending on the hardness of the brick* - Doff' cleaning system - The 'doff' system is the natural answer to the removal of surface coatings such as oil, grease, biological matter, graffiti and vermin staining which have become bonded to masonry and other substrates. A unique combination of heat and pressure is used to cut through and remove unwanted matter without causing substantial erosion to the surface of the material, by using adaptable equipment. It is chemical free and is a uniquely efficient and gentle cleaning system as the substrate is left undamaged.
- *Depending on the hardness of the brick* - 'Torc' cleaning system - The 'torc' cleaning system is aimed at removing the most difficult staining, such as cement based paints, bitumen and lime scale. The 'torc' system creates a gentle swirling vortex using a mixture of low air pressure, little water and a safe inert fine granulate.