

Boohoo: 49-51 Dale St



External Fabric Repairs
Design & Access Statement
August 2020

Version history

Project name: Boohoo Windows
Project number: 8965
Client: Boohoo

Rev:	Date:	Status	Name	Description
1	07/08/2020	PLANNING	Grant Prescott I Associate	Planning/LBC

This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Buttress being obtained. Buttress accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person using or relying on the document for such other purpose agrees and will by such use or reliance be taken to confirm his agreement to indemnify Buttress for all loss or damage resulting therefore. Buttress accepts no responsibility or liability for this document to any party other than the person by whom it was commissioned.

Buttress

Buttress Architects Ltd.
41 Bengal St.
Manchester
M4 6AF

T: 0161 236 3303
W: www.buttress.net



1.0

Introduction

1.1 Introduction

This statement comprises a description and discussion of proposals for works to the external fabric of the headquarters of Boohoo Group PLC (herein referred to as Boohoo) that incorporates 49-51 Dale Street and 30-32 Hilton Street, Manchester (herein referred to as Boohoo HQ). The proposals have come about as part of a wider programme of works to address longstanding defects and decay to specific elements of the external fabric.

1.1 Description and Context

Boohoo HQ is housed within 49-51 Dale Street and 30-32 Hilton Street, both Grade II listed buildings. The buildings all sit within the Stevenson Square Conservation Area in the Northern Quarter of Manchester.

As summarised in the Historic England listing descriptions.

30-32 Hilton Street is an iron frame structure with red brick cladding and matching terracotta. It has some sandstone dressings, a slate roof to the front and flat asphalted roof over the rest. It is an irregular U-plan form, formed from a long rectangular range between Dale Street at the front and Hilton Street at the rear. One range is parallel to Hilton Street, bridging Lizard Street, and one range is returned along Tariff Street. Basement and 5 storeys, though the range along China Lane is 4 storeys.

The shallow front office block at 49-51 Dale Street is symmetrical with 3 bays between chamfered corners. It has pilasters to the narrower centre bay, finished as chimneys on the parapet, string courses above and below the 2nd floor, and a cornice and parapet over the top floor. There are mullioned windows of 2 lights in the centre and 3 lights in the outer bays, all sashed. Those of the top 3 floors are shorter. Round-headed doorways in the corners (that to the right altered as a window), with keystones and cornices on brackets, and sashed windows on each floor above (those at 1st and 2nd floor in narrow rectangular oriels). The short return walls have chimneys corbelled from the 1st floor.

The 4-storey rear range has coupled sashed windows in the front half, and an iron-framed rear section with 2 loading slots and 6-light casement windows. The rear range (to Tariff Street) is 4 storeys plus attic, 10 bays, and has, inter alia, 3 pairs of elliptical-arched bays (those in the centre bridging the entry to Lizard Street), a prominent cornice on corbelled shafts, and large attic windows under a cornice with shaped parapet. The return side to Tariff Street is 8 bays in matching style.

Interior: cast-iron columns, wrought-iron girders, wooden beams.

1.2 Summary Historical Development

30-32 Hilton Street was constructed in 1902 as warehouses and offices, and 49-51 also dates from the turn of the century. In 1905, 49 was occupied by William O’Hanlon & Co who specialised in cretonnes and furnishing fabrics, and 51 was occupied by William Holt & Sons, cotton manufacturers.

The long, narrow form of the block around a central space is reflective of the later warehouses that were built on Dale Street. They were ‘formed either by gating off former residential side streets or by creating new service roads such as Lizard Street, which now links Dale Street with Hilton Street.’2 Lizard Street was originally a timber yard, which gradually become more enclosed by flanking warehouses, and the final U-shaped range of Hilton Street which controlled access through the central gated archway.

1. 49-51 Dale Street Elevation



2.0

Site & Context

2.1 Local Context

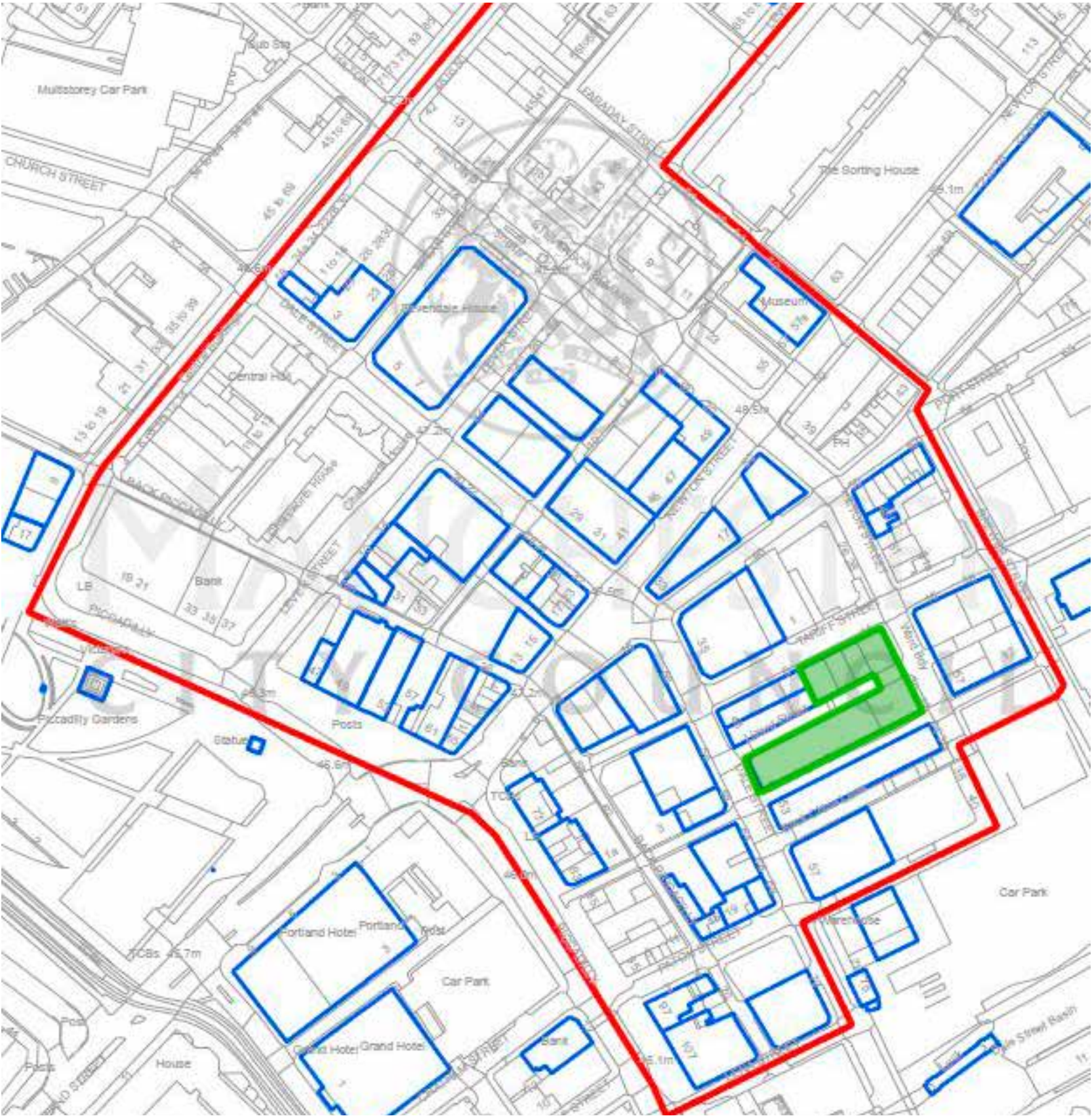
Boohoo HQ is located on Dale Street in Manchester's Northern Quarter. It sits within the Stevenson Square Conservation Area. The area predominantly comprises buildings of the nineteenth and early twentieth centuries that are connected with the city's textile industry, with a variety of multi-storey warehouses (of which Boohoo HQ is an example), workshops and showrooms.

The area is broadly set out in a grid pattern, with Dale Street being one of the principal thoroughfares, and itself having a variety of historic buildings as described above, most of which are relatively intact. Given the prominence of the location and the textile industry of the time, many of the buildings incorporate decorative detailing/dressings to illustrate their grandeur and importance.

Given the decline of the textile industry, the buildings within the area have largely been repurposed, and now house a thriving mix of leisure (bars/restaurants) use, retail, a mix of office/workshop/studio space, and residential conversions. Much of this adaptation has been essential to the ongoing use of the historic buildings and ensuring their long-term viability.

Key

-  Listed Buildings in the Local Area
-  Stevenson Square Conservation Area
-  Boohoo HQ



3.0

Summary of Significance

Summary of Significance

2.1 Introduction

The following summary of significance looks at identifying the significance of 49-51 Dale Street and 30-32 Hilton Street's heritage interests, outlined by Historic England's Statements of Heritage Significance (2019)

The levels of significance are outlined below:

Exceptional: Having national or international importance, usually found where assets are designated at grade II*, grade I, scheduled monuments and UNESCO World Heritage sites.

High: Having national importance, usually found where assets are designated at grade II*.

Medium: Having regional importance, usually found where assets are designated grade II. Also, generally applies to Conservation Areas.

Low: Making a positive contribution to their area, group or setting. Usually non-designated heritage assets and historic townscapes.

Neutral: Historically unimportant. These ratings are intended to address the heritage values outlined below, and do not relate to the significance of specific buildings, spaces, or areas of fabric.

2.2 Archaeological Interest

There will be archaeological interest in a heritage asset if it holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.

Knowledge on the growth and the development of the Northern Quarter is continually being expanded. There have been a number of studies around the area over the years, including Arrowsmith's Archaeological Desk Based Assessment of Stevenson Square for UMASS, and Motteshead's report on a Tariff Street site 100m from the site. We know that the configuration of this site was massively different before these buildings were constructed. Additionally,

as they are relatively late in the timeline of Manchester's 19th century industrial boom, there is potential for greater understanding of this area around Dale Street throughout the 19th century.

The archaeological interest of the site is: medium.

2.3 Architectural and Artistic Interest

These are interests in the design and general aesthetics of a place. They can arise from conscious design or fortuitously from the way the heritage asset has evolved. More specifically, architectural interest is an interest in the art or science of the design, construction, craftsmanship and decoration of buildings and structures of all types. Artistic interest is an interest in other human creative skills, like sculpture.

49-51 Dale Street and 30-32 Hilton Street are well-designed and decorative buildings, especially in contrast to the relative simplicity of the former warehouses nearby. Their status is announced by their enhanced materials, decorative elements, and large windows. Though at the time of writing it has not been possible to identify the designs of the building as belonging to a specific architect, or the crafts contractors involved, which limits its interest.

The architectural and artistic interest of the site is: medium.

2.4 Historic Interest

An interest in past lives and events (including pre-historic). Heritage assets can illustrate or be associated with them. Heritage assets with historic interest not only provide a material record of our nation's history, but can also provide meaning for communities derived from their collective experience of a place and can symbolise wider values such as faith and cultural identity.

49-51 Dale Street and 30-32 Hilton Street are illustrative of the development of Manchester's industrial history. The buildings are relatively late in comparison to the 19th century

buildings in the vicinity, demonstrating the continued growth and investment in the industry. Where the properties are occupied by Boohoo, there is a similarity in the buildings' original purposes and their current use, highlighting the area's connection with textile manufacture. They also represent the later Dale Street warehouses. The juxtaposition of these buildings with the 18th century town houses on Hilton Street and Port Street demonstrates the vast change in the area in the intervening century.

The historic interest of the site is: medium.

2.5 Conclusions

In conclusion, the grade II designations for these buildings accurately represent the significance of their heritage interests. The buildings are well-detailed, decorative and imposing, and have good spatial relationships with buildings around it, including 45-47 Dale Street, that provide good context to the building's uses and the development of the area. Their contribution to the Conservation Area is significant due to their prominent locations and extensive facades. There is potential for these buildings to enhance their significance and their setting through further appropriate management and maintenance.

The above is also detailed further in the separate Heritage Statement which accompanies this application.

4.0

Proposals

3.1 Repair/Replacement of Corroded Metal Windows

A sizeable proportion of the existing windows at Boohoo are constructed in non-galvanised mild steel frames, with a mix of side and top-hung casements and some pivot openings, with large format glazing. The existing single glazing comprises glass of approximately 3mm thick, set within rebates and concealed by either beading or putty. The steel frames would have likely been painted in-situ following their installation and after the glazing installed. The steel windows are generally built into the masonry construction with sandstone cills and cornice/string course sections beneath.

It is evident upon visual inspection of the windows in-situ, that there are some significant condition issues arising from corrosion occurring to the steel joinery sections. This is resulting in a distortion and warping of some sections, in addition to this exacerbating longstanding water ingress issues. Of more significant concern, is the effect this is having on the glazing, with the thin profile glass prone to breakage and displacement. Given the height of the windows and the city centre location, there is a real risk of serious injury or fatality due to falling glass, and it is therefore imperative that action is taken to address the ongoing corrosion.

The corrosion is likely to have stemmed from long-term inadequate maintenance, with exposure to air and water over this time allowing what is described by Clement Windows (see report appended to this document) as a ‘terminal corrosion’ setting in approximately 30 years ago.

1. Varying degrees of corrosion to metal frames, with mullions/bottom rails distorted
2. Significant corrosion has occurred to numerous windows
3. The corrosion/distortion carries a risk of glazing becoming unsecured/damaged.

It is also noted that the decoration of the existing windows (known to contain lead paint) is in some places quite thick and obscures the detail of the sections. This also serves to obscure the underlying condition of the frames and any further corrosion.

This is presented to varying degrees of severity across the building, with some sections significantly distorted and detached, and with glazing removed on safety grounds. Other windows show less severe defects, but it is clear that corrosion has still occurred. In either case, it is suggested that some form of intervention is necessary to all of the metal windows to a) prevent the issue becoming worse and presenting a future health and safety concern, and b) to address instances where significant decay has already occurred.

It is understood and acknowledged that corrosion of metal can often appear worse than it is, with the potential for corroded material to expand to seven times the volume of unoxidised metal (with the underlying material being relatively sound). However, as noted within the Clement Windows report and a separate inspection by Quadriga in 2017, there are varying degrees of corrosion – particularly to the bottom rails – where the extent of deterioration makes their repair particularly challenging.



Options for Potential Intervention

Minimum Intervention

The first consideration for the metal windows at Boohoo is a minimum intervention approach to explore whether they can be retained, or whether any intervention can be minimised to avoid impacting on the heritage asset.

It is evident that a minimum intervention approach, comprising decoration or holding measures, will be inadequate to address the defects noted. Corrosion is ongoing to the vast majority of windows, and even where this is less severe, the non-galvanised sections are not adequately protected against ongoing oxidation. Simply redecorating and retaining the windows in their current condition will only defer the need for intervention to the near future. This will not address the ongoing corrosion and the public safety concerns where any expansion/distortion will result in failure of the glazing. Indeed, temporary boarding measures have had to be adopted in some instances to avoid glazing falling out of the frames.

In addition, many of the windows have corroded to such an extent that sections have effectively failed, and they are barely functional. The condition of these is such that it has a detrimental impact on the aesthetic values of the heritage asset, and more substantial intervention is necessary.

Repair or Replace?

The next consideration is regarding whether the windows can be repaired rather than replaced. On first inspection, some of the windows appear to be less severely affected than others, and the preferred starting approach would always be one of minimum

intervention. However, in reality there is still a level of corrosion to deal with on each of the steel windows, and therefore intervention is required.

While the preference would be to repair and retain as many of the steel windows as possible, it is evident that in many cases it will not be possible to salvage the corroded sections. In these instances the corrosion has either completely undermined the integrity of the section, or the 'terminal corrosion' is such that further damage would occur in any attempts to repair. Therefore, a like for like replacement approach is advocated.

In-Situ Repair

It is likely that this will create significant difficulty, due to access challenges on site (particularly to the upper floors) and the impact of noise on the ongoing function of the building. More importantly however, in-situ repair carries the risk of further damage, particularly to the historic glazing, which is fragile and susceptible to breakages due to the vibrations of repair interventions. In addition to this, the interstitial nature of the corrosion due to the long-term ingress on the non-galvanised sections, will mean that in-situ repairs carry the risk of not addressing the issues fully, and these recurring at a later date.

It has also been noted, following testing by Quadriga and BLC (Northampton) in 2017, that the existing decoration to the metal windows contains lead. Therefore, it is potentially hazardous to remove this in situ, particularly when using an abrasive method such as brushing. While it may be acceptable to encapsulate such a covering by repainting, this relies on the substrate being in a sound condition. In this case, where overpainting has obscured the historic profiles, and the corrosion is interstitial in nature, the approach



1. Hilton Street elevation, with windows boarded over, due to damage from corroded frames
2. Sample section cleaned off-site, illustrating extent of corrosion to profiles
3. Windows boarded over to Lizard Street Elevations

of further decoration without addressing the underlying issues is not recommended. This is likely to serve as a short-term measure that may conceal ongoing corrosion and further obscure the legibility of historic profiles.

It is therefore concluded that any repair works would need to be carried out following the careful removal of the windows from site and done in controlled conditions in a workshop environment.

Off-Site Repair

It is possible to explore the repair of the steel windows off-site, and indeed initial tests have been done on 2no sample windows taken from the Boohoo building. Approaches include:

- Brush down and redecorate using a suitable primer and protective finish – this would normally be carried out to the milder, more superficial surface corrosion. However, sample tests carried out by Clement Windows have found that the corrosion is more severe than this, and therefore this is unlikely to address the issues in the long-term.
- More abrasive methods could be used in a workshop/factory environment, such as grit/shot blasting or grinding, to remove more significant build-up of corrosion and to reveal the unoxidised metal. It has been noted on the sample sections worked on to date that the steel is actually quite fragile due to metal fatigue, and that when these methods were applied, that the sections started to deteriorate further.
- Part replacement of sections – it appears to be the case on some windows that certain sections are worse-affected than others, with the lower ends of mullions and bottom rails/horizontal sections appearing to be in the worst condition. The approach of cutting out the failed sections and piecing in a like for like replacement has also been considered as an approach. There are two challenges arising from this:

(i) Welding to corroded sections is difficult and leaves the frame prone to future failure weakness. It is

possible to treat the retained sections as described above, but the level of metal fatigue is such that further damage may be done by this.

(ii) The existing frames comprise an unusual profile, resembling a timber joinery section rather than a standard ‘off the shelf’ steel profile. It is therefore a non-standard profile and any replacement sections would need to be fabricated bespoke. Given the issues noted above with the risk of losing further steelwork, this approach is potentially economically unfeasible.

Full Window Replacement

While technically more of an intervention than those described above, it is possible to replicate the existing profiles using salvaged sections and create new windows as a matching replacement in galvanised steel. This provides the opportunities to provide new beading profiles to protect against future water ingress. There is also an opportunity to increase the rebate within the section profile to enable double glazing to be installed and provide a thermal/sustainability benefit to the proposals. This increase in the rebate would not have an impact on the overall section size and would not be discernible on the external (visible) profiles.

The proposal is therefore to replace the corroded window frames on a like for like basis, and in doing so to incorporate slimline double glazing with toughened hand drawn outer panes.

It is recognised that the removal of historic windows and their replacement could be deemed harmful to the historic character of the heritage impact. There is however a necessity to this intervention, given that repair is problematic and does not address the issues in the long term. In addition, there are also substantial benefits which address the perceived harm. Indeed, to summarise the issues noted above and support the proposal, the justification for replacement is set out as follows:

- The current corrosion issues represent an ongoing ‘live’ defect, which will deteriorate without intervention. Alongside this is a real risk to public safety if

corroding/expanding metal frames result in broken glass and blown stonework, particularly at high level.

- In-situ repair will not fully address the ongoing ‘terminal corrosion’, as there will be sections embedded within the wall construction that will have already oxidized previously. In addition, using any abrasive methods to remove corrosion, overpainting or failed sections creates vibrations that increases the risk of damage to historic glazing.
- Overpainting has led to a loss of legibility of the metal frames and their profiles and is potentially concealing ongoing issues beneath. The flaking of the paintwork increases the risk of oxidization to the non-galvanised steel below. This is exacerbated by the presence of lead within the existing paint, which further complicates the approach of in-situ repair, as any brushing/abrasion methods will create a health and safety hazard.
- Off-site repair in a controlled environment will enable the removal of overpainting and corroded material. However, based on previous sample repairs, the corrosion appears to be ‘interstitial’ in nature with ‘metal fatigue’ and ‘terminal corrosion’ present. Therefore, the replacement of any failed sections and piecing in of the same is not possible, as hot welding will create expansion/distortion of the already weakened material. This is similar with a cold stitching approach, as drilling the fragile corroded steel will likely result in further damage. This essentially reduces the level of retained material and potentially results in a ‘tipping point’ whereby the quantity of replaced material outweighs that which is retained.

- A sample window has been taken off site by a specialist metal window company to explore the feasibility of repair, and their investigations have illustrated the fragility of the existing windows.

- In exploring the approach of replacement of window frames, research has been conducted into the historic profiles, with sample sections being taken off site and paintwork removed. This has revealed that the frames

are of a non-standard profile often seen in timber joinery. The replacement of these will match this profile, and therefore have a neutral impact on the aesthetic value of the heritage asset. Indeed, given the improved legibility of the profiles (without any overpainting), it could be argued that the aesthetic value would in fact be enhanced.

- Replacement of window frames to match existing will negate concerns over ongoing corrosion, and the associated challenges in respect of conservation maintenance as well as public safety.
- The replacement of the frames provides the opportunity to incorporate sympathetic double glazing, by increasing internal rebates, and thus having no impact on the overall profile size. As well as a neutral/positive impact on the aesthetic values, such an intervention benefits the building by improving thermal comfort, reducing energy consumption and therefore improving the overall viability of the building. In doing so, this improves the potential occupancy of the internal spaces and therefore ensures the wider long-term maintenance of the heritage asset.

Summary

It is therefore proposed that where terminal corrosion and metal fatigue has occurred, that a full replacement of the window is carried out.

The full replacement will be on a like for like basis, and will address the ongoing interstitial corrosion issues, removing the risk to the health and safety of the general public and building users. This will also reduce the future maintenance liability for the affected windows. This is as opposed to partial replacements with bespoke sections, and where it is anticipated that any retained material will likely fail in time due to terminal corrosion.

Where replacement is discussed, it is also proposed to install double glazing within the new profiles. By slightly adjusting the internal rebates, the external appearance of the frame sections will be retained. In addition this will enable the improved thermal performance of the window

and contribute to the wider viability of the building, by managing the internal environment better and reducing services running costs. In doing so, the potential for the ongoing occupancy of the building is increased and therefore the opportunity for ongoing maintenance maximised.

Where further sampling and testing is carried out on existing windows and these are found to be sound and salvageable, then surface corrosion will be removed off-site, filled (if necessary) and redecorated to a suitable protective specification, with historic glazing reinstated.

Justification and Heritage Impact

It is clearly evident that there are ongoing condition issues that will continue to deteriorate if left unchecked. There is already a real risk of historic glazing failing/breaking due to ongoing corrosion/distortion and the serious injury/fatality that could potentially stem from this. A level of intervention is required to address the issue, otherwise the windows will either need to be boarded/sheeted over as a safety measure or areas of the building will become unviable. Either of these options will represent increased risk to the building's heritage values and would arguably represent more substantial harm than any proposed interventions.

The proposed interventions will offset any physical harm or impact on evidential values, by maintaining and improving the building's aesthetic values. The distinctive existing profiles would be reinstated to match existing and the ongoing maintenance of the building (and therefore its ongoing viability) will be aided by the proposals.

- 1. Tariff Street Elevation There are numerous issues noted to the dressed sandstone elements, particularly on the Tariff Street and Hilton Street elevations. These have arisen from ongoing water ingress and inadequate drainage of rainwater, and are presently contributing to the



4.1 External Fabric Repairs

There are numerous issues noted to the dressed sandstone elements, particularly on the Tariff Street and Hilton Street elevations. These have arisen from ongoing water ingress and inadequate drainage of rainwater, and are presently contributing to the aforementioned corrosion of the steel window frames.

It is evident that on the horizontal stone elements such as cornices, string courses and cills, that water is not being adequately dispersed. This has resulted in damage through freeze-thaw action and the establishment of vegetation, which are in turn adding to the holding of water in a cyclical manner. In other locations a ‘slurry’ finish has been applied to the horizontal surfaces, which has also contributed to the issues by holding water and preventing full drying out.

Without repair intervention it is believed that these defects will continue to develop to the extent where fabric may be lost, or knock-on issues arise internally as a result of continued water ingress.

Proposed Repairs

While minimum intervention is the preferred approach, further action is required to address the ongoing defects. Where erosion has created flat or dished surfaces without adequate dispersal, water will continue to gather. Therefore the following is proposed:

Indent Repairs

Where sections have eroded to such an extent that it is not possible to disperse water, it is proposed to carefully cut out these sections back to sound material and carry out an appropriate indent repair. Replacement stone will match the existing in terms of colour,

texture and detailing, and will be bedded with stainless steel dowels, with jointing pointed in a suitable lime mortar to match existing. New sections will be cut to original profiles without artificial wearing or ageing to ensure legibility against historic fabric.

Lead Dressing

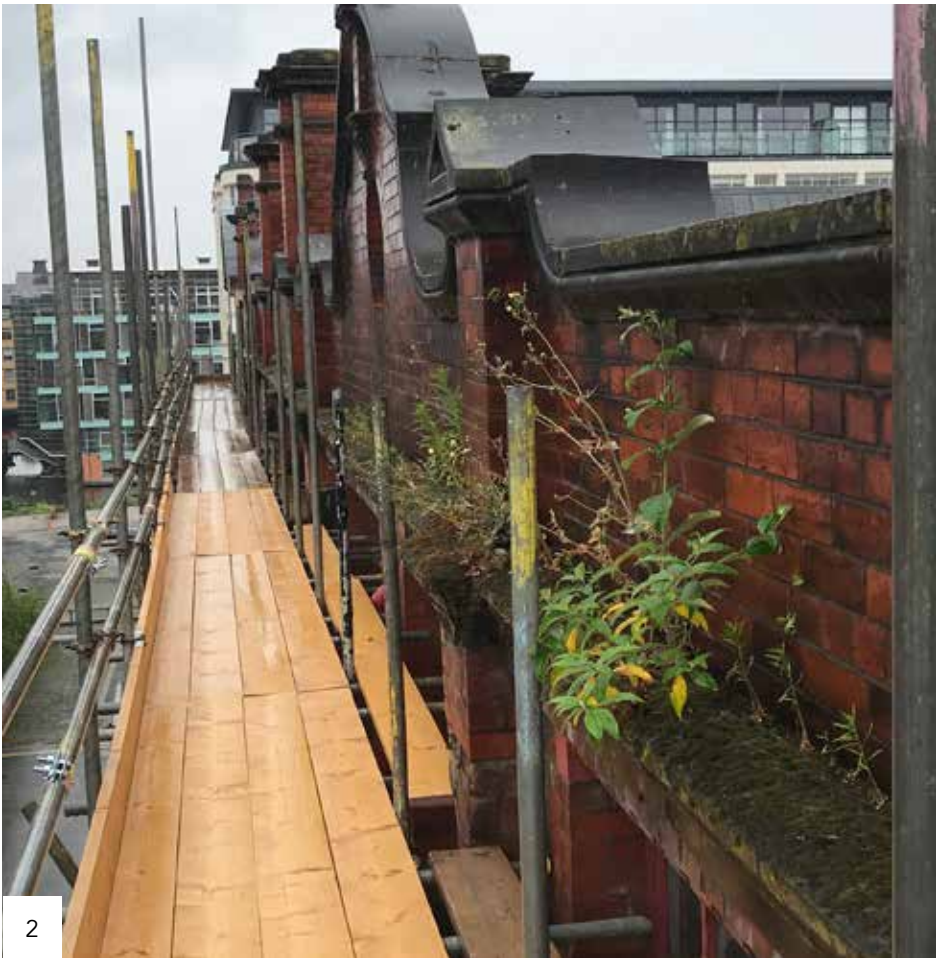
Other areas of stone, such as string courses and parapets have held water to the extent where moss and weed growth has become established, although erosion has not yet occurred. Given the ongoing risk of holding water and the difficulty in accessing these areas of masonry for regular maintenance it is proposed to sympathetically dress these in lead, to prevent water ingress and aid dispersal of water in future. The lead will be formed tightly to the profile of the stone detailing and flashed into adjacent masonry joints. This will largely be concealed from view from ground level and will have minimal impact on the aesthetic value of the heritage asset.

Justification and Heritage Impact

Given the age of the Boohoo building, the wearing of age is to be expected, and superficial erosion can be managed without intervention. However, the nature of the current defects mean that there is an ongoing threat of further decay and corrosion without intervention.

The proposed repairs will have a minimal impact on the heritage significance of the building, and indeed will serve to aid its ongoing conservation. The proposals will incorporate like for like elements, while other additions such as lead dressings comprise sympathetic and durable traditional materials that will protect the heritage asset.

- 1. High level vegetation growth, open joints and run-off staining (Hilton Street)
- 2. Projecting stonework is evidently not shedding water adequately
- 3. Similar issues are noted where drainage channels are holding water and contributing to corrosion of windows



5.0

Heritage Impact

5.1 Heritage Impact

The heritage impact of the proposals contained within this application have been considered in respect of current National Planning Policy Framework (NPPF) guidelines, in addition to reviewing Historic England documents such as Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (2008) and their associated guidance on caring for Traditional Windows, published in 2014.

Summary

It is recognised that the removal or damage of fabric to a designated heritage asset can be considered substantially harmful, and measures have been taken in developing these proposals to avoid this where possible. It is clear, however, that the current condition and ongoing deterioration of certain elements of fabric necessitates intervention, which given the nature of some of the defects means removal of failed materials.

In replacing failed materials on a like for like basis to the windows, further difficulties arise in respect of fitting new material to old, due to the extent of corrosion that has generally taken place. In this respect repair is neither technically or economically feasible, and will likely result in further intervention of a similar nature being required due to the ongoing nature of the defects.

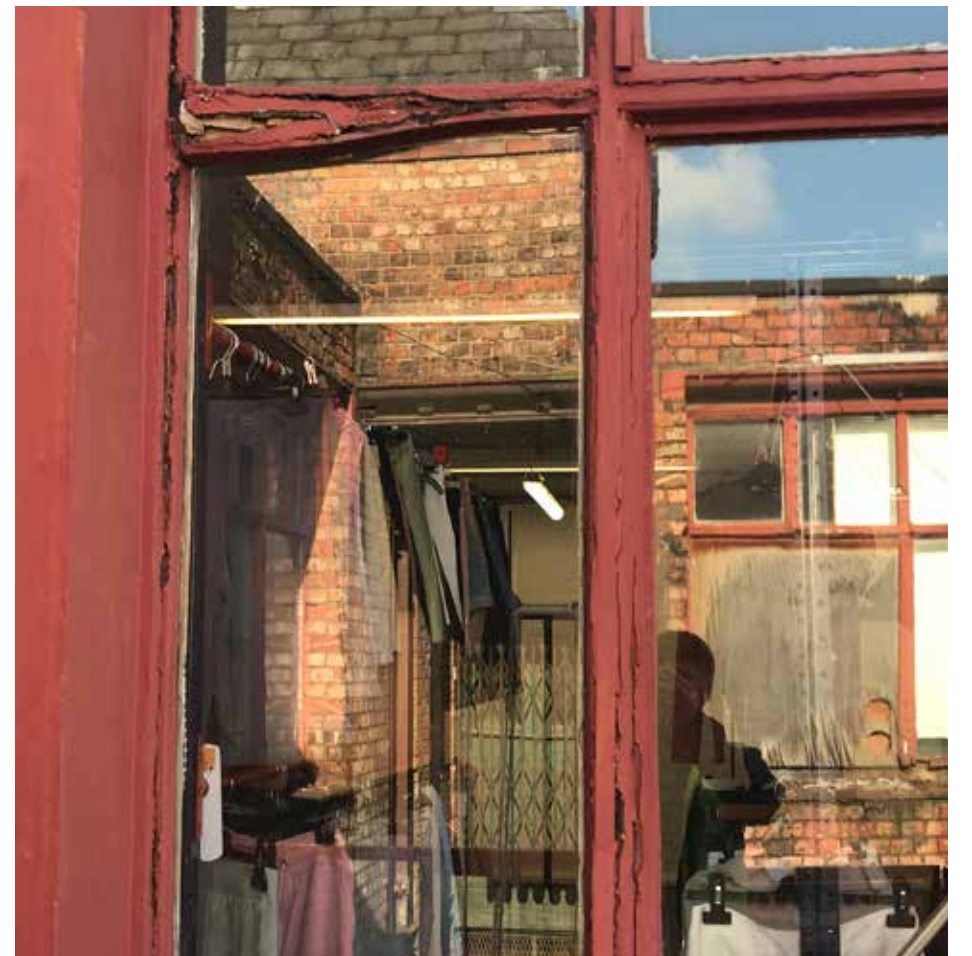
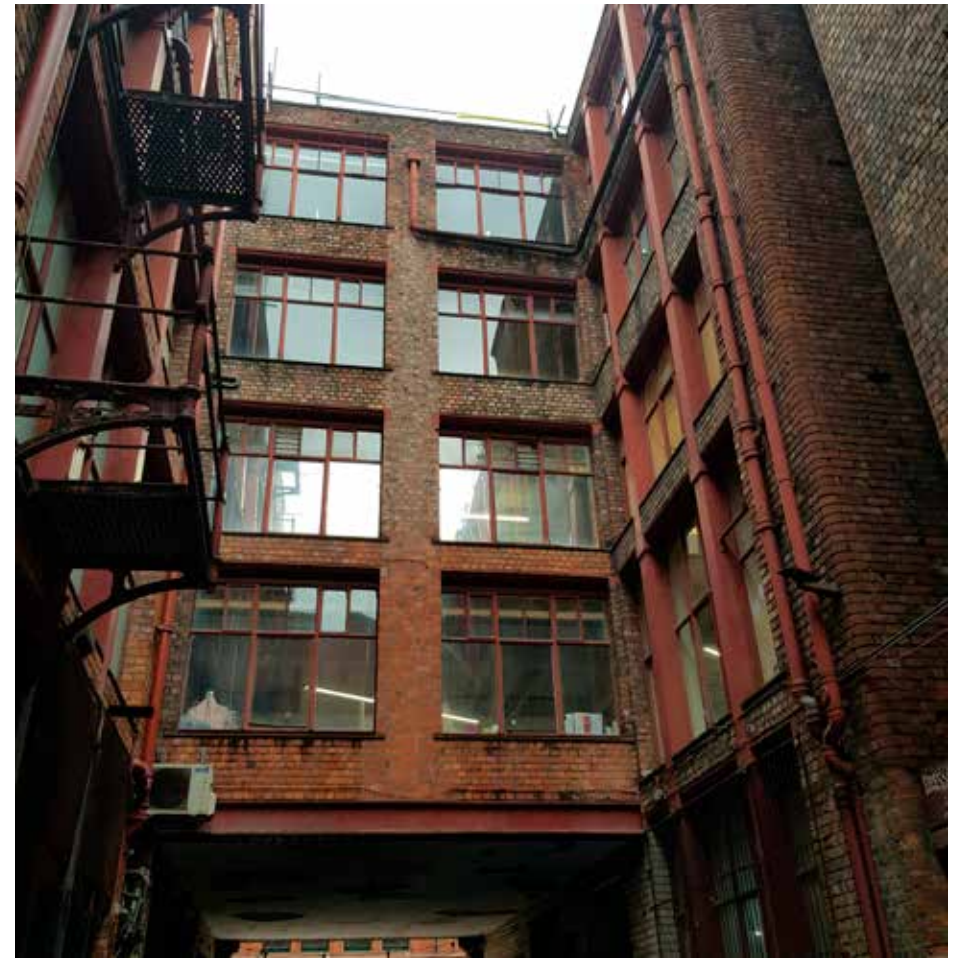
Replacement of fabric will be carried out on a like for like basis (rather than with 'off-the-shelf' materials) and will therefore have a neutral impact on the aesthetic values of the asset. Where new double glazing is proposed, it is possible to incorporate float glass to replicate the existing 'rippled' appearance which will also mitigate any intervention. In addition to rectifying ongoing defects, the proposals will reduce the maintenance burden of the asset, remove a public safety hazard and improve the overall viability of the building by optimising occupancy where spaces are currently vacant. Addressing vacancy will enable ongoing maintenance of the heritage asset to be carried out and the wider building to remain a viable and sustainable element of the Northern Quarter's historic grain, with an owner committed to ensuring its conservation.



6.0

Appendices

6.1 Site Photographs



6.2 Report by Clement Windows

REPORT ON THE EXISTING STEEL WINDOWS AT 49-51 DALE STREET. MANCHESTER. M1 2HF.

HISTORY OF 49-51 DALE STREET.

Dale Street is a late Victorian building of some quality constructed in 1900. Built over 5 floors the burgundy coloured brick work is in places of intricate pattern and design. The elevations are topped by a parapet. This Grade 2 listed building is thought to have offered a mix of mostly warehousing and some office space since its inception.

The building's appearance is one that came to be very typical of this type of commercial property in the north west of England at the turn of the century, the steel windows with their large areas of glass display a configuration which was becoming reasonably common place at the time.

During this period the mild steel window was in the early stages of development but was fast becoming ubiquitous and increasingly specified for use in a huge variety of buildings from small to large private dwellings right up to prestige landmark public buildings. Steel windows went on to dominate the fenestration industry both at home and abroad for some 70/80 years.

THE ORIGINAL STEEL WINDOWS.

Manufactured of non-galvanised mild steel, probably with a brush applied coat of rust inhibitor prior to installation. The steel windows and doors would have been traditionally painted in situ following installation and site glazing.

A single external and internal glass glazing system includes 2/3mm thick glass secured into rebates with either concealed glazing clips, beads or front putties.

Side and top hung casements with some pivots generally open in/out and these provide the means of ventilation, at this time there was no weather stripping or security devices. External hinges are mainly welded or screwed on connecting the opening vent to the fixed perimeter frame.

Window furniture is based on single point locking with what appear to be bronze cockspur handles and similar material sliding/peg stays. Over the years much of the original furniture has been lost and replaced.

On the front elevation there are brick window surrounds with some openings having brick mullions dividing the individual windows. All of the windows inspected it is assumed are fitted directly to the masonry structural openings.

PRESENT DAY CONDITION OF THE STEEL WINDOWS.

During and after the First and Second World Wars and at times of economic hardship it was accepted that building maintenance programmes may lapse or be ignored completely due to shortage of funds and rationing.

It appears that the steel windows at 49-51 Dale Street have not in some considerable time been well maintained and the writer would estimate some 25/30 years ago terminal corrosion of the steel set in and is now extremely advanced and breaking out through the paintwork both internally and

externally being visible on the surface. The entire frame in some cases is near collapse, see pages 3, 5, 6 and 8 of the photographs.

This has resulted in the steel frames becoming distorted and many do not open or shut correctly indeed some on inspection were not able to be closed at all due to severe movement in the steel. In extreme cases the steel has broken away from other parts of the frame.

As the frames rust and the metal twists this is adding pressure to the glazing system rebates which has resulted in many of the glass panes becoming cracked and requiring replacement. Whilst the existing fenestration is in place this will continue.

Please refer to attached photographs.

SOLUTIONS.

A. SERVICING OF THE ORIGINAL STEEL WINDOWS.

This is not an option and any resources invested wouldn't provide a window with any sort of future useful life. After close to 120 years the fenestration has deteriorated to such a degree that it would be impossible to repair these items in situ/off site and achieve a standard that would be suitable for a warehouse, retail space, office or for any other purpose. It is clear that years of neglect have resulted in the windows becoming so poor that they are not repairable mainly due to metal fatigue caused through advanced corrosion attacking the entire frame but particularly the opening ventilators.

B. REPLICA REPLACEMENT IN STEEL.

Over time a very small number of the windows have been replaced at 49-51 Dale Street with more modern alternative framing systems but these look out of place.

Following a site inspection and giving consideration to the above the writer's recommendation is to consider replacing what remain of the existing and any replacement windows with new mild steel windows but these to be manufactured using bespoke profiles made in a pattern to match the originals. The engineering expertise is available today to roll similar profiles to the originals and these would be most appropriate for listed buildings where it is vital that any replacement fenestration is similar to that being renewed. These elegant but robust hot dipped galvanised sections would be offered and appear to match those produced towards the end of the nineteenth, early twentieth century.

Before this process could begin drawings would be produced, considered and approved before 3D modelling would provide corner section prototypes of how the steel sections replicas might look. These would be considered by the client and their team before being presented to the planning department for their comment.

Peter Clement.
Clement House, Haslemere, Surrey, GU27 1HR.
7th July, 2020.

About the writer.....

- Over 40 years' experience in the replacement of historic steel windows.
- Past President of Steel Window Association (SWA).
- Past Council member of the GGF.
- Member of the founding Board of FENSA.
- Written articles/papers concerning the conservation/replacement of steel windows.
- Named contributor. English Heritage. Practical Building Conservation. 2012.
- Presented on behalf of the steel window industry during English Heritage's "Framing Opinion's" national campaign in the 1990's.

EXISTING STEEL WINDOWS 49-51 DALE STREET



3



EXISTING STEEL WINDOWS 49-51 DALE STREET



4



EXISTING STEEL WINDOWS 49-51 DALE STREET



EXISTING STEEL WINDOWS 49-51 DALE STREET



EXISTING STEEL WINDOWS 49-51 DALE STREET



6.3 Listing Description

Heritage Category:

Listed Building

Grade:

II

List Entry Number:

1292485

Date first listed:

17-Sep-1992

Statutory Address:

30 AND 32, HILTON STREET

Statutory Address:

49 AND 51, DALE STREET

SJ8498SE DALE STREET 698-1/29/86 (East side) 17/09/92 Nos.49 AND 51

GV II

Includes: Nos.30 AND 32 HILTON STREET. Home trade warehouses, various. c.1900. Iron frame with cladding of red brick and matching terracotta, and some sandstone dressings, with slate roof to the front and flat asphalted roof over the rest. Irregular U-plan formed by a long rectangular range between Dale Street at the front and Hilton Street at the rear, a range parallel to Hilton Street bridging Lizard Street, and a wing to this returned along Tariff Street. Basement and 5 storeys (except range along China Lane, which is 4 storeys). The shallow front office block, symmetrical, 3 bays between chamfered corners, has pilasters to the narrower centre bay finished as chimneys on the parapet, string courses above and below the 2nd floor, a cornice and parapet over the top floor; mullioned windows of 2 lights in the centre and 3 lights

in the outer bays, all sashed and those of the top 3 floors shorter; round-headed doorways in the corners (that to the right altered as a window), with keystones and cornices on brackets, and sashed windows on each floor above (those at 1st and 2nd floor in narrow rectangular oriels). The short return walls have chimneys corbelled from the 1st floor. The 4-storey rear range has coupled sashed windows in the front half, and an iron-framed rear section with 2 loading slots and 6-light casement windows. The rear range (to Tariff Street) is 4 storeys plus attic, 10 bays, and has, inter alia, 3 pairs of elliptical-arched bays (those in the centre bridging the entry to Lizard Street), a prominent cornice on corbelled shafts, and large attic windows under a cornice with shaped parapet. The return side to Tariff Street is 8 bays in matching style. Interior: cast-iron columns, wrought-iron girders, wooden beams. History: in 1905 No.49 occupied by Wm.O'Hanlon & Co, merchants, No.51 by

Wm Holt & Sons, manufacturers; all now occupied by O'Hanlon.

Listing NGR: SJ8470098279