STATE OF CONDITION REPORT

ON THE

STEEL WINDOWS

INSTALLED

AT

179 TOTTENHAM COURT ROAD

LONDON

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1.0. Introduction

This report has been prepared following receipt of instructions from Lazari Investments Limited.

The benefit of this report is solely for Lazari Investments Ltd and must not be disclosed to any other party without the express permission of Cladtech Associates Limited, which must be obtained in writing.

Note: Should Lazari Investments Limited wish to disclose this report to the Tenants at 179 Tottenham Court Road London, then I hereby extend our permission to disclose the report to the Tenants.

In the event of further permission being sought and agreed, and the report is copied, then it must be copied in its entirety.

Cladtech Associates Limited shall have no duty of care beyond that owing to Lazari Investments Ltd.

It is understood that this report is required to carry out a general assessment of the current condition of the steel windows at all floors, 1st – 5th, and the staircase windows and to advise on recommended options for works where required.

The scope of the inspection and report does not extend to undertake a 100% inspection or prepare a detailed schedule of repairs on a window-by-window basis.

Peter Plough of Cladtech Associates Limited attended the building at 179 Tottenham Court Road on two separate occasions, the first being on the 10th January 2023, where the windows to the following floors at 1st, 3rd, 4th and 5th levels were inspected. The windows at the 2nd floor could not be inspected until the following week, 18th January 2023.

All of the inspections were carried out from within the building at each of the floor levels. Where possible, some windows on a random basis, were opened to enable an inspection of the external sealants and external glazing compounds.

Please note that Cladtech Associates Limited are not fire engineers and cannot advise on whether a particular construction meets the fire performance requirements of the Building Regulations. We therefore cannot provide advice about compliance with the Regulations nor the "Fire Risk" of a particular construction or the material used.

2.0. General

2.1. Weather Conditions

The weather conditions at the time of the first inspection was heavy rain and moderate winds, the weather for the second inspection was dry with light winds.

2.2. Method of Inspection

This building is not equipped with a building maintenance unit (BMU), therefore, the windows we inspected internally from each floor plate.

External observations were limited to a few areas where windows were openable sufficiently far to enable an external inspection of the windows, sealants, finishes etc.

2.3. Areas/Elements Inspected

Our inspections of the windows, both internally and externally, were entirely visual. No elements of the windows, their fittings or finishes were disassembled as part of this review.

All components and/or elements that are concealed from view, such as structural fixings, cavity barriers, vapour barriers were not inspected, we are therefore unable to comment on the current condition of these elements.

Floor levels 2, 4 and 5 were occupied and floors 1 and 3 were unoccupied during the course of the inspection. It was apparent that the office at the 3rd floor had recently been extensively refurbished and the 1st floor office was in the process of being refurbished, although at the time of the inspection no works were being carried out.

2.4. Elements Inspected

During the surveys, the following elements were inspected:

1) Steel window constructions.
2) Side hung, top hung and central pivot opening windows.
3) Glass and glazing. Note: Glass thicknesses were measured using a Merlin Laser measuring device.
4) Finishes to the window frames, internal and external.
5) Where external access was possible, the peripheral sealant joints between window frames and adjacent brickwork and window cills.

3.0. General Description of the Building and Glazed Windows

3.1. Building

This building is located within a parade of buildings on Tottenham Court Road as such, only the front and rear elevations incorporate windows.

179 Tottenham Court Road is six storeys in height, including a ground floor shop front area (which is not part of this inspection) and a vehicle access road through the building to a rear courtyard area.

The front, (west) elevation consists of flat ribbon windows at the first-floor level and facetted window bays, three per floor, from the 2nd to 5th floor levels. Between the window bays there are brick clad columns. The spandrel areas below the windows are stone/precast panels with a fluted design.

The age of this building is unknown.

On the rear elevation there are flat window bays of varying configurations within rendered facades. Part of the rear elevation extends where toilets and kitchens are located.

The five upper floors comprise solely of office accommodation with a shop at the ground floor and a narrow access road to courtyard at the rear of the building.

3.2. Windows

The windows on the building are all constructed from rolled steel sections of varying types and ages, which will be more fully described in section 4.

3.3. The windows are generally of a steel frame construction in that they incorporate both fixed light windows and opening windows of varying types, with projecting transoms and mullion reinforcement sections that couple the windows together. The steel sections for the main frames and the opening casements are welded together, with the opening windows fitted onto projecting hinges which are pre-welded to the main outer frames. Modern steel windows are now galvanised prior to being polyester powder coated or left to be painted on-site post installation.

3.4. The windows to the front elevation from the 2nd to 5th floors are three separate window bays that each comprise of three facetted composite panels that are coupled together at their vertical junctions with full height circular steel tubes.

Please refer to photograph 1 at the end of this report that illustrates the typical facetted construction.

The windows to the rear elevations and to the front 1st floor elevation are conventional windows of varying configurations. Please refer to the photograph 2 and 3 in the photographs section at the end of this report.

4.0. Window Construction by Floor and Elevation

4.1. First Floor

4.1.1. West (Front) Elevation

The windows are a ribbon construction comprising of three steel windows jointed together with narrow metal faced panels and vertical fin coupling mullions.

Within each composite unit there are side hung open out windows, equipped with cock spur handles and a 'peg' stay at the cill level and adjacent fixed light panels. Above both the opening and fixed lights, there are horizontal pivot windows and fixed light panels, each of which are divided up into four small glass panes. The horizontal pivot opening casements are designed to be operated by a cord and pulley system and locked with a spring loaded fanlight catch at the head of each pivot window.

The fixed light and side hung opening windows have all been fitted with 3mm clear float glass that is putty glazed within the frame, with the external face chamfered to shed water. The use of 3mm glass is surprising given its poor sound insulation, thermal properties and fragility.

The window frames appear to be constructed from the W20 range of rolled steel sections.

The frame sections are all in a reasonable condition, probably because they have been overpainted on several occasions, which has led to a thick build-up of paint protecting the steel sections. It needs to be recognised however, that the thick layer of paint affects operation where the coating prevents some of the horizontal pivot casements from fully closing.

The upper spring fanlight catches the lock that these windows are closed by and are generally inoperable, as are the pulleys where they have been heavily overpainted and are now seized. Missing operating cords are also evident.

Please refer to the photographs 4 and 5.

The opening casements have no perimeter weatherstripping around the frames and as a result the build-up of paint prevents the outwardly opening vent closing against the outer frame. Consequently, the opening windows allow uncontrolled air and noise penetration to the interior and most probably allows wind driven rain to pass to the inside in wet weather conditions.

Internally, behind the outer steel windows there are horizontal sliding secondary glazed windows that provide sound insulation and some draught prevention.

They are constructed from extruded aluminium sections with a white factory applied paint finish. These windows are single glazed with a rubber gasket around the glass perimeters which forms a seal.

These windows are in a reasonable condition; but do require some maintenance in relation to the frame fixings, some of which are loose.

The sliding operation of the windows is poor and requires remedial action.

4.1.2. East and South Elevations (Rear Windows)

All the windows to these elevations are new steel windows that are apparently part of the refurbishment works being carried out to the 1st floor.

The windows are formed of steel sections, with fixed light panels and opening windows in a configuration that presumably matched the original W20 steel windows.

The more recent steel windows on site have all been finished in a black colour, factory applied, polyester powder surface treatment. These windows are double glazed with internal foam tape gaskets and external silicone seals that have a sloped chamfered face to shed water. Some of the internal foam gaskets are short in length at the rear of the glazing rebate. This issue is shown in the photograph 6.

These more recent opening windows comprise of side hung open out and top hung open out casements.

The outer frames of the opening windows have an adhesive foam weather seal bonded to the frame within the opening joints. In a number of locations these foam tapes have come unstuck, which has adversely affected their sealing performance and, in some examples, the displaced weather seal is preventing the window from closing fully. Photograph 7 refers.

4.2. 2nd Floor Windows

4.2.1. West Elevation (Front) Windows

The windows on the west elevation comprise of three separate bays of facetted windows configured with a central bay that incorporates a side hung open out window with fixed light panels above and two narrow fixed glazed panes.

The adjacent windows to the left and right of the central bay incorporate fixed glazing only.

All the opening windows to each bay have a notice on them stating “do not open” or “faulty window under repair”. Photograph 8 refers.

There is evidence of corrosion at the cill and upper window frame sections. Photographs 9 and 10 refer.

On one bay the corroding window cill section and probably the frame fixing brackets has resulted in the internal tiles to the cill cracking. Please refer to photograph 11 which shows this issue.

It is apparent that the window frames have been overpainted on several occasions in the past, which is the primary reason that the opening windows are currently inoperable.

Below all three window bays there is evidence of staining from water ingress and peeling, bubbling paint at the corners of the bays. Please refer to photographs 13 and 14 which show this issue.

As the windows could not be opened, I was unable to inspect the external seals between the window frames and the external stone/concrete cill, but given the extent of the water and damp penetration, failed external sealants and water passing under the corroded sections of frame are the most probable cause.

Sliding aluminium framed windows have been fitted internally to each bay, which were found to operate satisfactorily.

4.2.2. South and East Elevations (Rear Windows)

The steel windows to the rear elevation are generally in a (albeit slightly) better condition, but there is still evidence of corrosion. The windows located in the kitchen area has corrosion which is much more severe. Please refer to photographs 15 and 16 at the end of this report.

The large bay window on the east elevation is of a slightly different configuration to the other windows on the upper floors. In this location there are only three top-hung open out casements at the upper part of the windows, with no side hung opening windows below.

A window bay on the south elevation appears to be a recent replacement as it is double glazed, glazed internally with metal beads and externally with silicone seals.

The window comprises two side hung open out and one top hung open casements with adjacent fixed light panels.

The window frame sections have been painted on site rather than having a factory applied polyester powder coat paint.

There are new windows in each of the toilets that are also double glazed.

4.3. 3rd Floor

4.3.1. West Elevation (Front Windows)

As with the 2nd floor below, the fenestration to this floor on the west elevation is comprised of three bays of steel framed windows, with the exception that the opening windows are located on each side of a central fixed light panel which has a horizontal pivot casement above.

This floor has apparently been recently refurbished with part of these works having the original window frames repainted in a site applied black colour paint. Please refer to photograph 17.

I found no evidence of any corrosion to these windows, so presumably specialist remedial works have been undertaken to these windows to rectify any corrosion prior to the windows being repainted. The remedial works have included fitting new "cockspur" handles. Please refer to photograph 18.

I noted that the peg stays have not been provided at the cill, although their brackets remain in place, so the windows cannot be restrained when opened.

The horizontal pivot ventilators are stuck open, where the operating cord, required to open and close the window, is missing. The top fanlight spring catches have been overpainted to the extent that they have seized and cannot lock the window closed.

Below each of the two side hung open in windows there is evidence of water ingress on the internal cills, probably due to the window frames being extensively overpainted to the point that the windows cannot fully close. This situation seemingly allows wind driven rain to be blown over the small cill upstand and ingress onto the internal cill boards. Please refer to the photographs 19 and 20 at the end of this report.

4.3.2. South and East Elevations (Rear Windows)

All the windows to the rear elevations have also been recently painted black internally and externally. Photograph 21 refers.

The upper opening casements to the windows on the south elevation cannot now be fully opened as this is prevented by an internal dropped ceiling. Please refer to the photograph 22.

The internal and external glazing compounds have all been overpainted and the external sealants at cill level between the window frames and structure are in a good condition. Please refer to photograph 23.

I found no evidence of any corrosion to the window frames on the south and east elevations.

4.4. 4th Floor

4.4.1. West Elevation (Front Windows)

The windows are similarly facetted to the windows on the 3rd and 2nd floor below, except that each bay is smaller in height and configured with a pair of side hung open in windows adjacent to a central fixed light window.

On closely examining these windows it is evident that they were originally galvanised prior to being painted on site but nonetheless some corrosion is occurring, particularly at the base of the tubular steel mullions between the facetted windows and there is also evidence of corrosion to adjacent window frame sections.

Please refer to photographs 24 and 25 at the end of this report.

The window frame sections have been overpainted several times and corrosion is not widespread but, as on some of the other floors, the old paint has not been removed from the opening casements prior to being repainted. The opening joints between the fixed outer frame and inner moving frame are therefore not able to be fully closed tight, one section to another, with the result that wind driven rain has penetrated through the window joints and onto the internal cills. Please refer to the photographs 26 and 27 at the end of this report.

Photograph 26 also shows that the window cannot be opened as the sliding peg stay has been overpainted, effectively locking the window shut.

One window was openable, and this enabled the external seal between the brickwork and adjacent window frame to be inspected and I found it to be in a poor condition with evidence of local sealant failure.

Please refer to photograph 28.

Note: At this floor there are no secondary internal windows on the west elevation.

4.4.2. South, East and North Elevations (Rear Windows)

The large bay window facing east is a composite window configured with two side hung open out windows over fixed light panels with two adjacent large fixed light windows.

Internally, there is a timber cill with evidence of extensive water staining on the cill at locations below each of the opening windows. Please refer to photograph 29.

Only one window of the two windows on the south elevation could be inspected as the other window was located behind a large fridge.

I observed that two panes of glass had fractured in the adjacent side hung window that was part of the main window bay

The cause for the fracture is unknown as there was no evidence of any corrosion to the window frame sections.

In a couple of locations, the internal paint finish has been damaged exposing a galvanised finish to the window frames. Please refer to photograph 30 at the end of this report.

The window frames to the rear elevation windows are generally all in a reasonable condition, except for one of the windows on the north elevation, where the glass is fractured adjacent to the cockspur handle and where the cill frame section is corroding. Please refer to the photographs 31 and 32.

4.5. 5th Floor

4.5.1. West Elevation (Front Windows)

As with the 2nd - 4th floor below, the windows on this elevation are all facetted

The windows are configured slightly differently in that an opening window is in the centre of the bay and it appears to be an offset vertical pivot casement, with horizontal pivot casements located as the top panel of each of the adjacent fixed light panels below.

I found that all of the windows are in an extremely poor condition, with extensive corrosion occurring to virtually all the frame sections to a greater or lesser degree.

The extensive corrosion has resulted in several panes of glass to fracture in each of the three bays. Please refer to photographs 33 to 40.

None of the opening windows are operable as the opening window to the outer frame joints have been infilled with 'putty'. In addition, the window frames and operating handles have been extensively overpainted, examples of which can be seen in photographs 33-40. Photograph 41 shows the cill of the offset pivot ventilator has been infilled with what appears to be 'putty' which has then been overpainted.

4.5.2. South, East and North Elevations

The steel windows to these elevations are in a marginally better condition as they have not been exposed to the same prevailing adverse weather conditions as the windows on the west elevation.

There is however corrosion evident to the window frames on the east and south elevations. Please refer to photographs 42-44.

In particular, the exposed surfaces of the opening side hung open out windows indicate that past repainting has been poorly applied with no attempt to remove rust from the frame surfaces before painting.

The opening windows do not fully close, frame against frame, because of past overpainting, please refer to photograph 45.

As with the west elevation, the corroding frame sections is resulting in some glass fractures. Please refer to photographs 46 and 47 at the end of this report.

There is evidence of water stains to internal reveals and cills, which is an indication of local sealant failures at window to structure interfaces at the jamb and cill. Please refer to photographs 48 and 49.

4.6. Staircase Windows

The windows to the upper areas of the rear staircase are generally in a very poor condition with extensive corroded frame sections and multiple panes of glass that have fractured because of the corroding steel frames.

In some instances, the corrosion is so advanced that part of the window frame is disintegrating. In other locations glass panes have fractured. Please refer to photographs 50 to 55 for examples.

The opening windows on the staircase are offset vertical pivot casements operated either by a cockspur handle or by a linked ‘rod’ system (where connected).

5.0. Conclusions

5.1. The condition of the windows varies considerably from floor-to-floor and from elevation-to-elevation.

1st Floor

The windows to the west elevation have been over painted, such that top pivot windows and side hung open out windows are either not operable or else they do not provide an acceptable level of weathertightness, both for air and water ingress, when closed. Poor sealing of the opening windows will also result in higher levels of sound ingress.

The windows are glazed with single panes of 3mm clear float glass.

(Please note: On our second visit I inspected a broken glass pane to an opening window, our observations and comments on the breakage have been sent in a separate emailed report).

On the rear elevations all the windows are new steel frames finished in a ppc paint and glazed with insulating double glazed units. The only issue I found is that the adhesive weatherstripping to some of the internal glazing tape gaskets have shrunk and that some of the adhesive weather seal gaskets to a couple of the opening windows have de-bonded. Where the foam glazing tapes are short they should be replaced.

5.2. Second Floor

On the west elevation some of the windows are corroding and this is resulting in glass fractures. All of the opening windows are inoperable, primarily because of overpainting has sealed window frames together coupled with over painted handles and fanlight catches.

On the rear elevation there are further examples of corroding window frames, with the cill of the kitchen window being in a particularly poor condition.

The other opening window frames to the rear elevation have been overpainted such that they are not operable or else they are openable but cannot be fully closed to create an acceptable seal against weather ingress.

5.3. Third Floor

On the west elevation, the windows show no evidence of corrosion as they have been recently overpainted, presumably following the removal of any surface corrosion.

The repainting of the window frames has resulted in the high-level fanlight horizontal pivot ventilators not being operable, with several currently partially open. Pull cords are missing and fanlight catches are seized where they are extensively overpainted to the point that they cannot lock the windows. The side hung ventilators are leaking as the

windows cannot be fully closed as the sections have been overpainted and in addition the cill level peg stays are missing.

The windows to the rear windows have also all been overpainted and do not fully seal when closed. The upper opening windows on the south elevation cannot fully open as the windows now clash with an inner lower bulkhead.

5.4. Fourth Floor

On the west elevation there are isolated examples of corrosion. Not all the windows are openable because of the overpainting, which has bonded them shut.

On the rear elevation the windows are generally in a reasonable condition, apart from the toilet windows which are corroding.

There is evidence of water ingress below the two side hung opening windows to the large bay window on the east elevation.

There are a few fractured glass panes to a south facing window and to one of the toilet windows.

5.5. Fifth Floor

The windows on the west elevation are in a very poor state and generally show evidence of extensive corrosion to all the window frames. None of the windows are openable and a significant number of glass panels have fractured due to pressure from corroding steel window frames.

On the rear elevation there is also evidence of corroding window frames, but to a limited extent compared to the front elevation.

There are fractured glass panes and windows that cannot close tightly against the outer frame because of the hardened paint.

5.6 Staircase Windows. 5^{th} – 1^{st} Floors

The windows to the upper staircase floors are in a very poor condition with the cill part of a frame disintegrating.

Further down the building the condition of the windows improves with localised areas of corrosion.

A lot of glass panes have fractured from pressure of the corroding steel.

Only a limited number of opening windows are currently operable

6.0. Recommendations

6.1 1st Floor - West Elevation

In my opinion, there are two options for the windows to this elevation, as detailed below:

A. Refurbish the existing windows as follows:

The existing paint to the window frames and window furniture, handles etc, should be carefully removed back to the galvanising, the steel frames checked for any corrosion, which if found should be made good prior to repainting the window frames.

Adjust all the casement windows to ensure that the opening frames close tightly onto the outer frames to ensure a good weather seal and check that all the cill drain holes are clear.

Note: Adjusting steel windows insitu needs to be undertaken by an expert Company.

Check all the external glazing compounds and replace any defective compounds prior to repainting.

Cut out and replace the external peripheral sealants between the frames and structure.

Replace all the window furniture with new i.e. cockspur handles, peg stays, fanlight catches, pulleys and operating cords.

Note: Consideration could be given to replace the existing 3mm glass with 4mm thick glass to improve the sound insulation.

B. Replace the existing windows with new double glazed steel windows with a polyester powder coat paint finish. New casement opening windows would be equipped with wool pile weatherstripping.

1st Floor – East and South Elevations

The new windows to these elevations should be checked to ensure the internal glazing gaskets are full length and that all the adhesive weatherstripping to the opening windows are fully bonded in place.

6.2 2nd Floor

West Elevation

Given the extent of the corroded steel section, multiple glass fractures, windows that cannot be opened and the evident water/damp penetration to the inner walls, I am of the opinion that the most cost effective solution would be to replace these windows with new double glazed steel windows, polyester powder coat paint finished and opening casements complete with gasket air/water seals.

East and South Elevations

Generally, the windows to these elevations are in a reasonable condition, except for the kitchen window, which is badly corroded and should be replaced.

The large composite window on the east elevation only has opening casements at high level. I therefore presume that in this location the windows are cleaned externally using a reach and wash system.

The windows on the south elevation and to the toilets are recent replacements and so no action is required.

6.3 3rd Floor

West Elevation

Whilst the windows on this elevation have been recently refurbished and repainted, I did observe evidence of water staining of the timber cills below the side hung casements.

The opening windows need to be adjusted so that they close tightly, which may require removal of some of the recent over painting. In addition, new sliding 'peg' stays must be fitted to these windows to ensure the windows will be restrained when in their chosen open position during windy conditions.

The horizontal pivot windows at high level also require new fan light catches, pulleys operating cords, as currently the windows cannot be closed.

East and South Elevations

The windows to these elevations have also been recently refurbished and so require no further action.

6.4 4th Floor

West Elevation

Generally, the windows are in a reasonable condition probably because the steel frames were galvanised.

Nonetheless, there is evidence of some light corrosion at the cill level of the windows and to the circular mullion profiles. The opening windows do not close tightly because of past overpainting, so I recommend the old paint is stripped off, local corrosion removed and surfaces locally repainted with cold galvanising paint and the frames then repainted.

Opening windows require adjustment to ensure they are operational and fully close, and new window furniture, i.e. cockspur handles, and peg stays fitted. The external glazing compounds should be replaced prior to being painted and the external peripheral sealants also cut out and replaced.

East and South Elevations

There is evidence of water ingress below the two opening casements within the large composite window on the east elevation. The overpainted windows require the excess paint to be removed so that the windows can close tightly.

Two fractured panes of glass on a south facing window and one fractured pane to the toilet window requires replacement. There is some light surface corrosion to the toilet window that needs to be removed and the window repainted.

6.5 5th Floor

West Elevation

The windows on the west elevation are all in a very poor condition being heavily corroded to the extent that they are irreparable and there are numerous fractured panes of glass.

In my opinion, all these windows should be replaced with new steel windows that would be double glazed and finished in a polyester powder coat paint.

East and South Elevations

The windows on these elevations are also corroded and the windows do not fully close for the same reasons of past overpainting, as noted elsewhere on lower floors.

In my opinion, it would not be economic undertake refurbishment of these windows. Instead, they should also all be replaced with new windows as described above.

6.6 Staircase Windows

At the upper floors, the windows are in a similar, if not worse condition, than those at the 5th floor.

As the windows are a vertical ribbon, i.e. continuous from the 1st to 5th floors, it would be difficult to integrate the windows to the lower floors that are in a better condition to those above that require full replacement.

I, therefore, recommend that all the staircase windows are replaced with new steel windows that may not be required to be double glazed given their location, but they should be finished in a polyester powder coat paint finish.

General Comment.

I have recommended fully replacing windows to some of the floors as the advantages are as follows:

- The new works would have a guarantee for materials and installation.
- Galvanised and Polyester powder coat paint finishes would not require regular repainting.
- Double glazed units will not only be more thermally efficient they will also improve sound insulation, particularly on the west elevation.
- Opening casement windows would be provided with gaskets to improve the windows weather performance regarding reducing air and water ingress.
- It may be possible to introduce secondary water and vapour barriers at the junctions of the new windows with the adjacent structure.

End of Report
Peter Plough
Cladtech Associates Limited
February 2023

7.0 Photographs

Photograph 1: Typical Facetted window.

Photograph 2: Typical window bay to the rear elevation.

Photograph 3: First floor ribbon windows.

Photograph 4: Example of a horizontal pivot casement window and spring catch which are inoperable due to the thick layer of paint.

Photograph 5: The build-up of paint prevents the window from closing correctly against the outer frame.

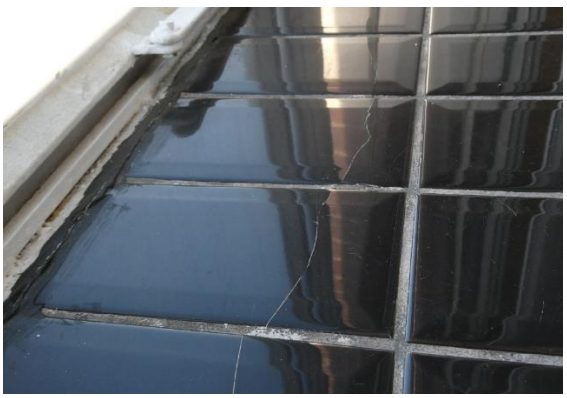
Photograph 6: Gapped internal foam seal.

Photograph 7: The foam gasket in this example has partly de-bonded and affecting its ability to seal and the operation of the window.

Photograph 8: Example of a window fitted with a “Do not open” sign.

Photograph 9: Corrosion and distortion evident at the cill of a window.

Photograph 10: Corrosion evident at a window cill. The pane of glass has recently been replaced where the distortion in the steel frame had cracked the original pane.



Photograph 11: Tiles adjacent to the corroding steel frame which have cracked.

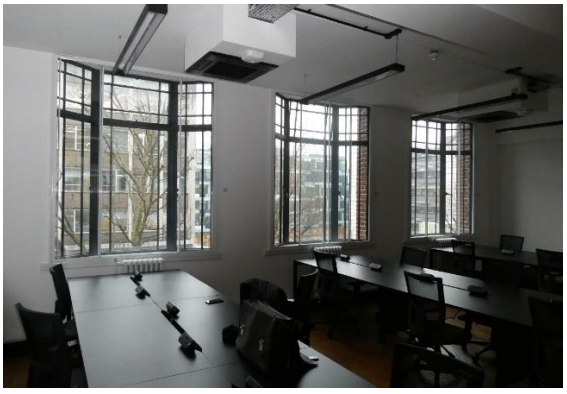
Photograph 12: Example of a window frame and cockspur handle which have been extensively overpainted.

Photograph 13: Peeling paint and water staining below a window.

Photograph 14: Further example of damp and water penetration below a window.

Photograph 15: Corrosion at a joint between profiles.

Photograph 16: Severe corrosion along a window cill.



Photograph 17: Window bays to the front (west) elevation.

Photograph 18: New Cockspur handle to a repainted window.

Photograph 19: Water stains on cill from the opening window.

Photograph 20: Peg stays missing but brackets in place.

Photograph 21: Rear (east elevation) window has been replaced.

Photograph 22: The upper casement windows cannot be fully opened.

Photograph 23: External sealants are in a good condition.

Photograph 24: Corroding steel evident at the base of a tubular mullion. Part of the remaining galvanised steel coating is arrowed.

Photograph 25: Corroding cill section.

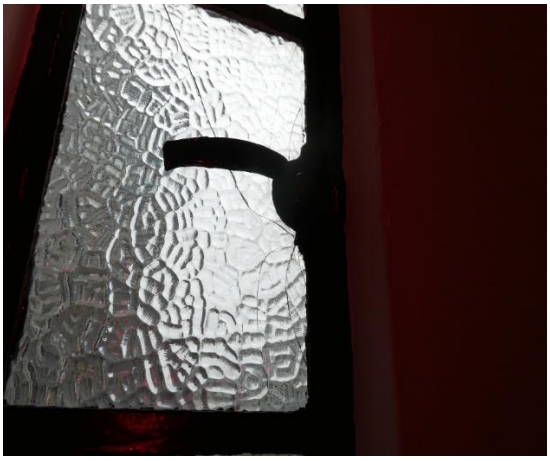
Photograph 26: Water stains below an inward opening window.

Photograph 27: Damage evident to window due to water ingress. Damaged paint on the internal cill evident.

Photograph 28: Localised failure of the sealant applied between frame and brickwork.

Photograph 29: Evidence of water penetration on an internal cill.

Photograph 30: The steel frame sections have been galvanised prior to being painted.



Photograph 31: Glass fractured in toilet window.

Photograph 32: Corroded window in toilet.

Photograph 33: Extensive damage along a coupling transom.

Photograph 34: Powdered rust originating from between the paint and frame setting on cill section.

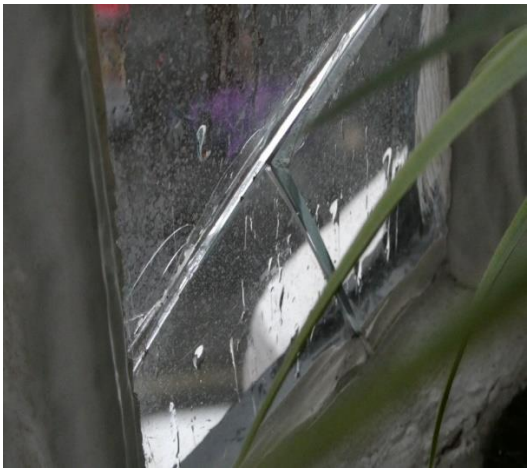
Photograph 35: The corroding steel frame sections are distorting and are splitting the paint.

Photograph 36: Extensive rusting at a sill section.

Photograph 37: Corroded transom and frae. The glass pane in this example has cracked.

Photograph 38: Corroded frames and cracked glass.

Photograph 39: Further example of extensive corrosion and glass which has cracked where the frame has distorted.



Photograph 40: Broken glass evident from the pressure exerted by the corroding and distorting steel framing.

Photograph 41: Cill of a bay window which has been filled with putty and then overpainted.

Photograph 42: The rust in this example had not been fully cleaned off prior to painting. This is also shown in photo 43.

Photograph 43: Rust below paint where the surfaces were not prepared properly.

Photograph 44: Corroding window on south elevation.

Photograph 45: Build-up of hardened paint affecting the closing operation of the window.

Photograph 46: Fractured glass pane due to distortion in the steel framing.

Photograph 47: Fractured glass pane.

Photograph 48: Water stains to a plaster reveal.

Photograph 49: Water stains below a fixed light panel.

Photograph 50: The cill section of this staircase window is disintegrating.

Photograph 51: Further example of extensive corrosion.

Photograph 52: Pressure fracture to a glass pane.

Photograph 53: Glass fracture from a corroded frame.

Photograph 54: Glass pane subject to pressure originating from a corroded section of frame which has spalled and fractured the glass.

Photograph 55: Rust stained water that has penetrated though the failing external glazing putty.