RS Specialist Services Ltd

Independent Building Consultants

ROOF CONDITION ASSESSMENT

AT

GREAT NORTHERN & DEANSGATE TERRACES

MANCHESTER M3







Prepared For:

GNW Developments Limited (UK)
c/o Trilogy Property Advisers Ltd
19 South Molton Lane
London W1k 5LE

Date: 16th May 2022

Report Ref. 22029/1

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1. Introduction

RS Specialist Services were instructed to undertake inspections in order to confirm the condition of the roofs to the following:

- The Great Northern Warehouse
- Deansgate Terrace
- North Deansgate terrace

The investigations & inspections included:

- Visual Assessment
- Drone Inspections

A visit was made to the property on 20th April 2022.

The weather at that time was dry and bright.

The inspection was carried out by Richard Sharp BSc (Hons) CEng MINDT of RS and Drone Site Surveys Ltd.

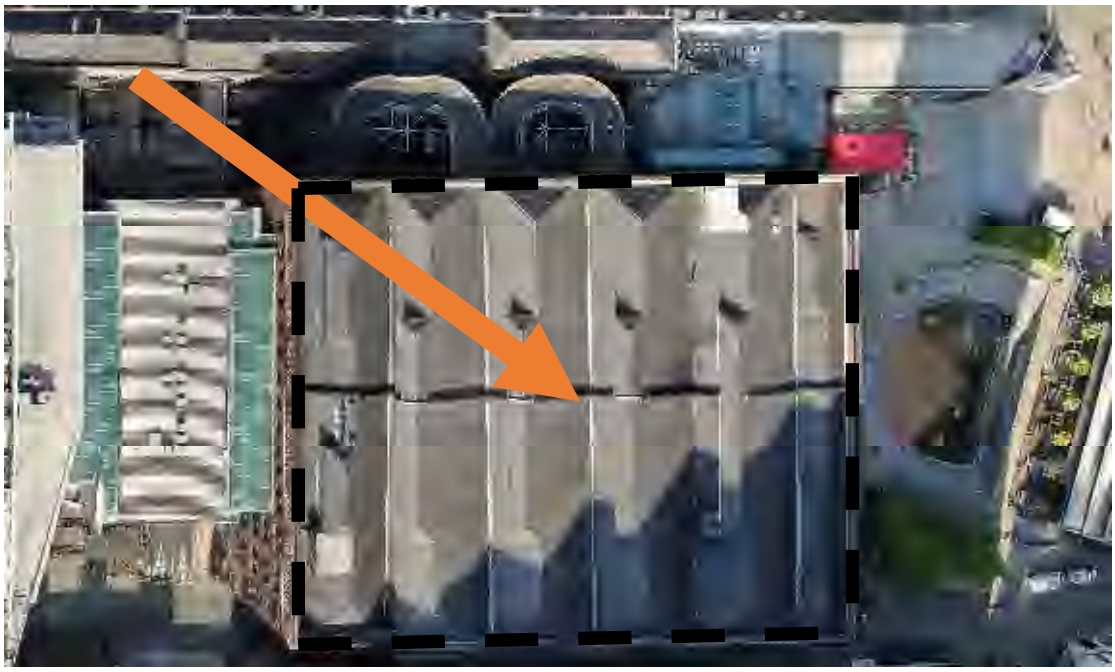
Richard Sharp is a chartered engineer who has been involved in the investigation and remediation of building defects for in excess of 30 years.

2. Property Description

Great Northern Warehouse

This comprises an extremely large former industrial building constructed at the end of the 19th century.

The roof to the warehouse includes 6 hipped duo pitches finished with man-made slate. The roof is enclosed within a high parapet.



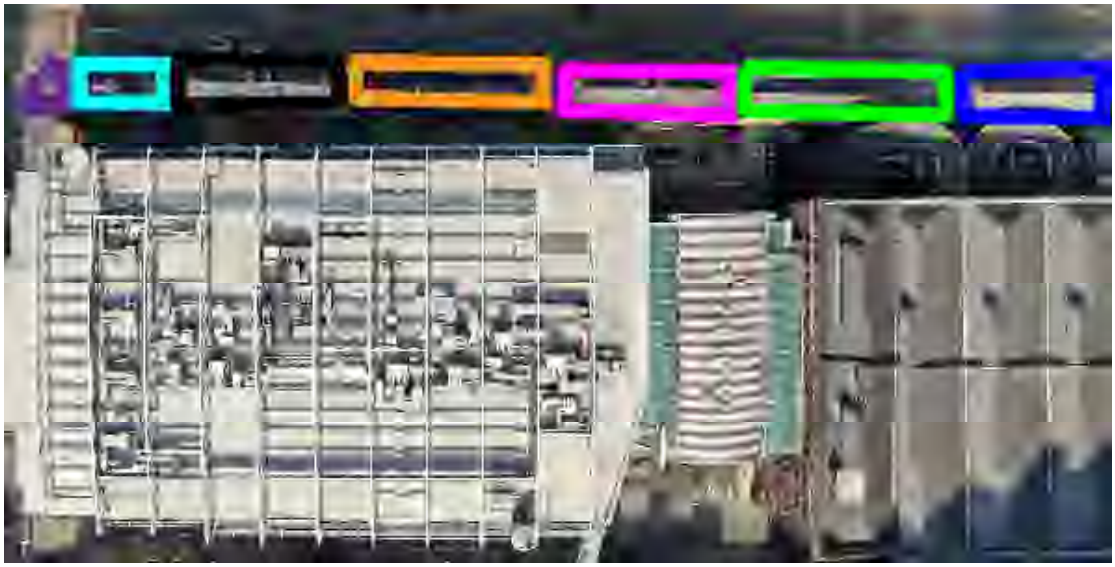
Deansgate Terrace

This property, reportedly constructed at a similar time to the warehouse, lies directly to the west of the warehouse building.

The roof is divided into various sections that comprise duo-pitched roofs finished with natural slate.

There are gutters within the brick parapets at the front and rear of the roofs.

The various sections of the roofs are highlighted below.

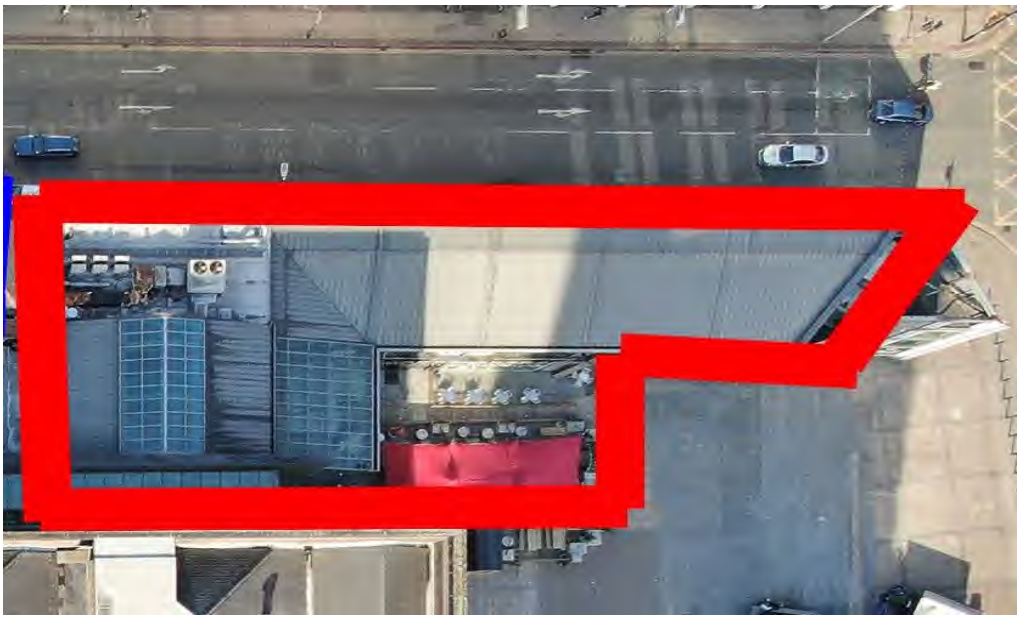


North Deansgate Terrace

This lies to the north of Deansgate Terrace.

It is a modern building.

The roofs are a combination of flat roofs finished with PVC single ply membrane, glazing and also standing seam metal.



3. Method of Investigation

3.1 Visual Inspection – Great Northern Warehouse

The accessible external parts of the roof were visually inspected by foot.

Digital photographs were taken of relevant observations.

A selection of photos is included in Section 4.

No intrusive investigations were carried out.

A structural assessment was not carried out.

3.2 Drone Inspection – Deansgate Terrace & North Deansgate Terrace

The visually accessible external parts of the roofs were visually inspected using a drone carried out by Drone Site Surveys under the direction of RS.

The roof areas surveyed were divided into areas for reference

North Deansgate Terrace

Section 1 Red

Deansgate Terrace

Section 2 BLUE
Section 3 GREEN
Section 4 PINK
Section 5 ORANGE
Section 6 BLACK
Section 7 SKYBLUE
Section 8 PURPLE

Digital photographs were taken of relevant observations.

A selection of photos is included in Appendix A.

No intrusive investigations were carried out.

A structural assessment was not carried out.

4. Observations & Test Results

4.1 Great Northern Warehouse

4.1.1 General Form

- The roof to the warehouse comprised 6 hipped duo-pitches that ran east-west.
- These are referenced 1 (north) to 6 (south)
- They were finished with man made slate.
- The valley gutters between the pitches and at the ends of the pitches were finished with a PVC single ply membrane.
- In places this had been treated with a coating (probably anti slip purposes).
- The roof was enclosed within a high parapet that was rendered on its inner face at low level and stone masonry at high level.
- There was an internal parapet wall that ran central across the roof pitches from north to south.
- The walls to the access enclosures were rendered.
- The walls to the projecting ‘dormers’ within the pitches were finished a foil faced bitumen sheet.
- The support structure to the roofs appeared robust and comprised timber with cast iron gutters.





- It was assumed that the build up of the pitches roof comprised:
    - Man made slates
    - Timber battens
    - Sarking (probably reinforced polyethylene)
    - Insulation (assumed)
    - VCL (assumed)
    - Inner steel liner sheet
    - Support structure

- The roof drained into outlets at either end of each valley gutter.

4.1.2 Observations

Pitch 1 (north)

1. There were numerous cracked, loose or missing slates.







2. Numerous slates had been replaced and remedial slate clips had been installed.



3. A number of ridge capping fixings were loose.



4. A ridge capping section had failed.



5. Vegetation growth was present.

6. The render to the central parapet wall had failed.



7. There was debris within the valley gutter.



8. The lead to the central parapet wall was loose and the render had cracked.



9. At least one joint in the PVC single ply membrane (SPM) was open.



Pitch 2

1. There were numerous cracked, loose or missing slates. There were holes in the roof, exposing the sarking and battens in places.







2. The SPM to the valley gutter was not weathered adequately into the central parapet wall.



3. Numerous slates had been replaced and remedial slate clips had been installed.

4. There was debris within the gutters.

5. Hip cappings were damaged in at least one area.



6. The render to the central parapet wall had failed.

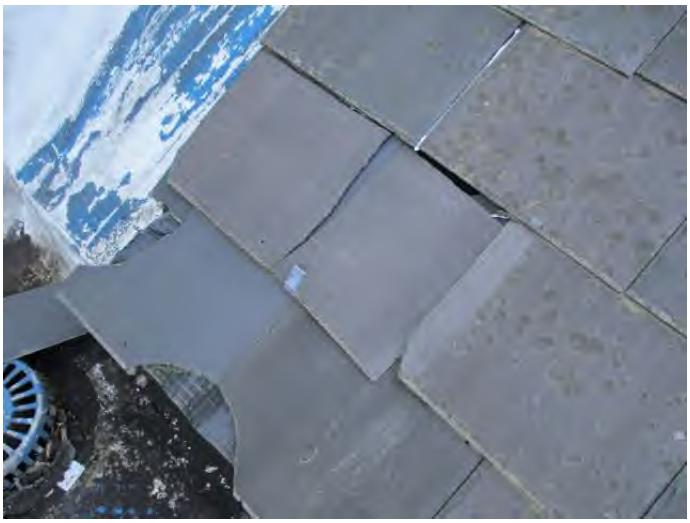


7. The roof access door and frame were in a poor condition.



Pitch 3

1. There were numerous cracked, loose or missing slates. There were holes in the roof.









2. Where exposed the nails were not visibly corroded.



3. Numerous slates had been replaced and remedial slate clips had been installed.

4. There was debris within the gutters.

5. The SPM to the valley gutter was not weathered adequately into the central parapet wall.



6. The render had also failed.



Pitch 4

1. There were numerous cracked, loose or missing slates. There were holes in the roof.







2. Numerous slates had been replaced and remedial slate clips had been installed.



3. There was debris within the gutters.

4. The SPM to the valley gutter was not weathered adequately into the central parapet wall. The render was also cracked.



Pitch 5

1. There were numerous cracked, loose or missing slates. There were holes in the roof.









2. Numerous slates had been replaced and remedial slate clips had been installed.



3. There was debris within the gutters.

4. The render to the central parapet wall had cracked.



Pitch 6

1. There were numerous cracked, loose or missing slates. There were holes in the roof.







2. Numerous slates had been replaced and remedial slate clips had been installed.

3. There was debris within the gutters.



4. Some of this debris was sharp.



5. Vegetation growth was noted to the parapet.



6. Pointing to the parapets had failed in places.





7. The render to the central parapet had cracked.





8. The render to the access door enclosure had cracked.



9. The roof access door and frame were in a poor condition.





10. The single ply membrane was not weathered into the parapets in places.



11. A joint in the gutter to the ‘dormer’ roof was open.



4.2 Deansgate Terrace

4.2.1 General Form

The roofs comprise duo pitches that are finished with what appears to be the original roof slates.

There are parapet gutters to each roof area.

The parapets are masonry.

4.2.2 Observations

The following defects were noted:

- Cracked roof slates
- Missing roof slates
- Slipped roof slates
- Flashband repairs to gutters
- Displaced flashings to gutters
- Loose/missing flashings
- Failing ridge mortar
- Damaged hip and ridge tiles
- Gutter debris
- Vegetation
- Damaged copings to parapets
- Debris on roofs
- Poor pointing to chimneys
- Poor haunching/flaunching to chimneys
- Loose cables and lightning conductors

Detailed observations are included in Appendix A.

4.3 North Deansgate Terrace

4.3.1 General Form

The roofs are a combination of flat roofs finished with PVC single ply membrane, glazing and also standing seam metal.

4.3.2 Observations

The following defects were noted:

- Vegetation growth
- Moss growth
- Bird deposits
- General debris
- Slipped, deformed and cracked flashings to the glazed roofs

- Corrosion to the standing seam roof areas
- Corrosion of flashings
- Missing fixings to glazed roof areas
- Debris on the PVC flat roof areas
- Rotten access door cill
- Remedial efforts to seal glazing bars

Detailed observations are included in Appendix A

5. Conclusions & Recommendations

5.1 The Great Northern Warehouse

The original roof coverings have clearly been replaced with man made slates

They are largely intact but have suffered damage (much of it foot traffic) and also many slates have broken or slipped.

In places there were holes in the roof that had exposed the sarking.

Numerous attempted repairs have been caried out.

The slate fixing nails were intact where inspected.

Damage to ridge and hip cappings was noted.

There was a build up of debris within the gutters. This included sharp items that might damage the membrane under foot traffic.

Vegetation growth was present.

Rainwater outlets were partially blocked with debris.

There was a general deterioration of render to parapets and the roof access enclosures.

The gutters were lined with a single ply membrane that appeared to be intact but was aging.

The membrane was not fully weathered into the parapets in places.

Lead flashings were loose or missing in places.

There are locations where water ingress may occur.

Access doors and frames to the roof were aged and deteriorated.

Pointing to parapets and flashings had failed in places.

Short term remedial works are required to minimise the rate of deterioration.

Ongoing maintenance will be required until the roof coverings are changed.

Prior to any works being carried out that might disturb the slates they should be tested to establish whether they contain asbestos. If found to contain asbestos they must be handled in accordance with HSE guidance.

Any roof replacement works to be carried out in accordance with Building Control regulations.

The following remedial works and anticipated maintenance are recommended with corresponding timescales indicated:

Ref	Item	Remedial Works Required	Timescale
Short Term			
GNW 1.	Gutter debris	Remove	0-12 Months
GNW 2.	Outlet debris	Remove & flush outlets through	0-12 Months
GNW 3.	Gutter Weathering/Flashings	Ensure all single ply gutter upstands are fully weathered/flashing into external parapets and internal wall	0-12 Months
GNW 4.	Vegetation	Remove	0-12 Months
GNW 5.	Missing slates	Replace	0-12 Months
GNW 6.	Damaged slates	Replace	0-12 Months
GNW 7.	Displaced/slipped slates	Replace	0-12 Months
GNW 8.	Damaged hip/ridge cappings	Replace	0-12 Months
GNW 9.	Loose/missing hip/ridge capping fixings	Tighten/Replace	0-12 Months
GNW 10.	Failed render to parapets/internal wall	Replace/Repair	0-12 Months
GNW 11.	Cracked render to roof access enclosures	Replace/Repair	0-12 Months
GNW 12.	Rotten roof access doors and frames	Replace/Repair	0-12 Months
GNW 13.	Failed parapet/internal wall pointing	Replace/Repair	0-12 Months
GNW 14.	Open gutter membrane joints	Seal	0-12 Months
GNW 15.	Open joints to gutters to dormer roofs/roof access enclosures	Seal	0-12 Months
Medium Term			
GNW 16.	Aged gutter liner membrane	Replace/overlay	**2 – 5 Years**
GNW 17.	Roof slates/cappings	Maintain/Repair	**2 – 5 Years**
GNW 18.	Gutter debris	Remove Regularly	**2 – 5 Years**
GNW 19.	Parapet/Internal walls-pointing/render	Maintain/Repair	**2 – 5 Years**
GNW 20.	Flashings	Maintain/Repair	**2 – 5 Years**
GNW 21.	Vegetation	Remove	**2 – 5 Years**
Long Term			
GNW 22.	Roof slates & associated details	Replace	**6 – 10 Years**
GNW 23.	Aged Foil Faced Cladding To 'Dormer' Roofs	Replace	**6 – 10 Years**

GNW 24.	Gutter debris, vegetation	Remove Regularly	**6 – 10 Years**
GNW 25.	Outlet debris	Remove & flush outlets through	**6 – 10 Years**
GNW 26.	Slipped/broken slates.	Repair	**6 – 10 Years**

5.2 Deansgate Terrace

The slated roofs are effectively at the end of their serviceable lives.

There are holes in the roof in places that may well allow water ingress.

Numerous tiles have slipped, cracked or are missing.

Temporary patch repairs to gutters were present.

There was debris within the gutters.

Lead flashings were loose or missing in places.

Mortar bedding to ridge and hip cappings had failed.

Ridge and hip capping tiles were damaged.

Vegetation growth was present.

Parapet copings were damaged.

Pointing to chimneys had deteriorated.

There was poor condition haunching/flaunching to chimneys

Loose cables and lightning conductors were noted.

Short term repairs may be possible but care would need to be taken not to cause more damage to the slate roofs during any such works.

These works would only be delaying the inevitable replacement of the roofs.

However, if some items were carried out in the short term it would not be necessary to repeat these works medium term.

Any roof replacement works to be carried out in accordance with Building Control regulations.

The following remedial works and anticipated maintenance are recommended with corresponding timescales indicated:

Ref	Item	Remedial Works Required	Timescale
Short Term/Temporary			
DT 1.	Gutter debris	Remove	0-12 Months
DT 2.	Outlet debris	Remove & flush outlets through	0-12 Months
DT 3.	Lead Flashings	Repair/replace	0-12 Months
DT 4.	Vegetation	Remove	0-12 Months
DT 5.	Missing slates	Replace	0-12 Months
DT 6.	Damaged slates	Replace	0-12 Months
DT 7.	Displaced/slipped slates	Replace	0-12 Months
DT 8.	Damaged hip/ridge cappings	Replace	0-12 Months
DT 9.	Loose/missing hip/ridge bedding mortar/tiles	Replace	0-12 Months
DT10.	Failed chimney pointing	Replace	0-12 Months
DT 11.	Failed haunching/flaunching to chimneys	Replace	0-12 Months
DT 12.	Loose cables/lightning conductors	Secure	0-12 Months
DT 13.	Failed parapet pointing	Replace/Repair	0-12 Months
Medium Term			
DT 14.	Gutters	Replace/overlay	**2 – 5 Years**
DT 15.	Roof slates & associated details	Replace	**2 – 5 Years**
DT 16.	Gutter debris	Remove Regularly	**2 – 5 Years**
DT 17.	Outlet debris	Remove & flush outlets through	**2 – 5 Years**
DT 18.	Parapet/Chimneys Pointing	Replace	**2 – 5 Years**
DT 19.	Failed haunching/flaunching to chimneys	Replace	**2 – 5 Years**
DT 20.	Lead flashings	Replace	**2 – 5 Years**
DT 21.	Vegetation	Remove	**2 – 5 Years**
DT 22.	Copings	Repair as required	**2 – 5 Years**
Long Term			
DT 23.	Gutter debris, vegetation	Remove Regularly	**6 – 10 Years**
	Outlet debris	Remove & flush outlets through	**6 – 10 Years**
DT 24.	Slipped/broken slates.	Repair	**6 – 10 Years**

5.3 North Deansgate Terrace

The roofs require both remedial works and also general maintenance.

Vegetation/moss growth plus bird deposits need to be cleared.

The single ply roof has been patch repaired and required a thorough clean.

All patches should be checked and replaced as required.

PVC single ply roofs are susceptible to damage and should be tested/checked for damage after cleaning and repaired as required.

All debris on the roofs should be removed.

Slipped or deformed/displaced flashings to glazed roofs should be addressed.

Corrosion to the standing seam roof sheets and flashings should be addressed.

Any missing fixings to the glazed roofs should be replaced.

Glazing seals and gaskets should be checked and addressed as required (existing remedial seals were noted in places).

Any roof replacement works to be carried out in accordance with Building Control regulations.

The following remedial works and anticipated maintenance are recommended with corresponding timescales indicated:

Ref	Item	Remedial Works Required	Timescale
Short Term			
NDT 1.	Roof debris	Remove	0-12 Months
NDT 2.	Outlet debris	Remove & flush outlets through	0-12 Months
NDT 3.	Flashings	Repair/replace	0-12 Months
NDT 4.	Missing fixings	Replace as required	0-12 Months
NDT 5.	Corroded roof sheets	Address	0-12 Months
NDT 6.	Corroded flashings	Address	0-12 Months
NDT 7.	Flat roof	Clean, inspect/test and repair as required	0-12 Months
NDT 8.	Roof access door cill	Replace	0-12 Months
NDT 9.	Glazing seals/gaskets	Check and replace/seal as required	0-12 Months
Medium Term			
NDT 10.	Roof debris	Remove Regularly	**2 – 5 Years**
NDT 11.	Outlet debris	Remove & flush outlets through	**2 – 5 Years**
NDT 12.	Flat roof debris	Clean regularly	**2 – 5 Years**

NDT 13.	Flat roof	Inspect/test and patch as required	**2 – 5 Years**
NDT 14.	Vegetation	Remove	**2 – 5 Years**
NDT 15.	Corroded roof sheets & flashings	Address as required	**2 – 5 Years**
Long Term			
NDT 16.	Roof debris	Remove Regularly	**6 – 10 Years**
NDT 17.	Outlet debris	Remove & flush outlets through	**6 – 10 Years**
NDT 18.	Flat roof debris	Clean regularly	**6 – 10 Years**
NDT 19.	Flat roof	Inspect/test and patch as required	**6 – 10 Years**
NDT 20.	Vegetation	Remove	**6 – 10 Years**
NDT 21.	Corroded roof sheets & flashings	Address as required	**6 – 10 Years**



RICHARD SHARP CEng BSc MINDT
Director

APPENDIX A

DRONE SURVEY REPORT

DRONE SITE SURVEYS

WORK SMARTER

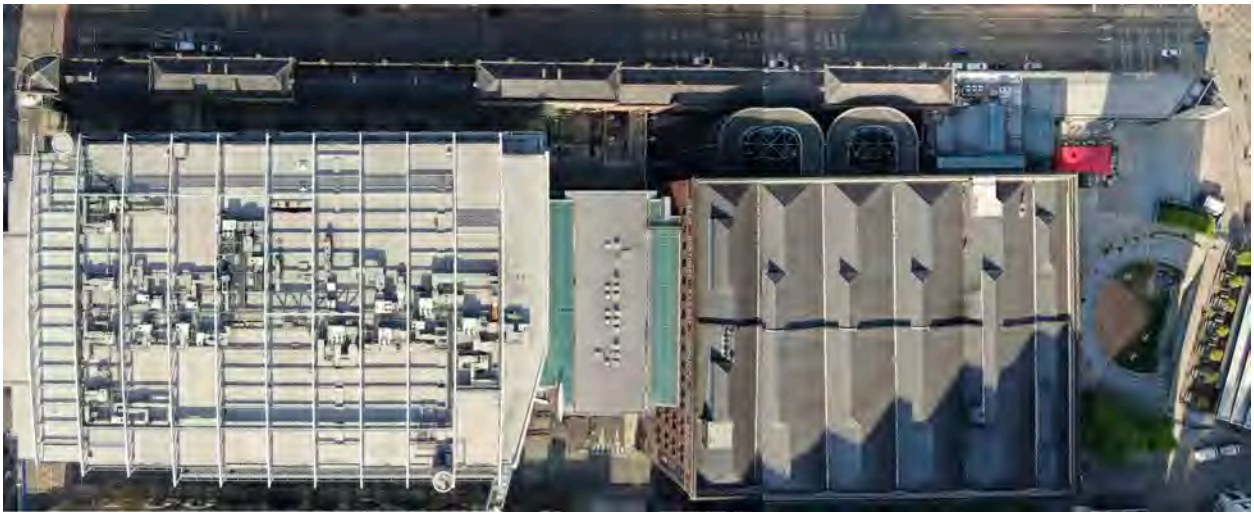


Commercial Roof Survey

Condition Report

Report compiled by
Drone Pilot (PfCO 11363): Tony Carter
Surveyor: Nigel Ward

Drone Site Surveys Ltd
UK Head Office
Liverpool Science Park,
131 Mount Pleasant
Liverpool, L3 5TF



Roof condition report - Deansgate Terraces, M3 4EN

Flight date: 20/04/2022
Report Delivered Date: 02/05/2022

19th Century industrial terrace of offices and comercial properties.

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Report Fundamentals

Report Prepared for	Richard Sharp | RS Specialists
Site Address	Deansgate Terraces Manchester M3 4EN
Our Reference	DSS/Deansgate
Scope of Works	Roof Condition Images with Report
Date of Site Survey	20-Apr-2022
Report Produced by	Nigel Ward
Contact Details	nigel.ward@dronesitesurveys.co.uk
Aerial Data Collection by	Anthony Carter
Contact Details	tony@dronesitesurveys.co.uk

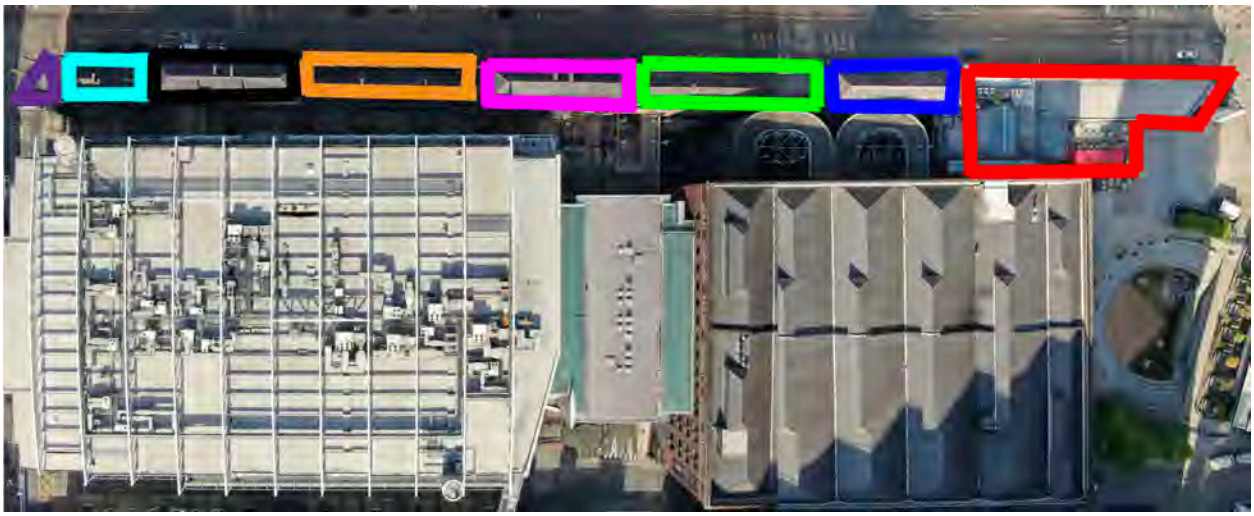
Brief

Drone Site Surveys were instructed by RS Specialists to carry out an external roof condition survey at Deansgate Terraces Manchester M3 4EN.

We understand that the purpose of the inspection is to provide images and a report advising on the general state of repair of the roof and guttering. Our report can identify any major visual defects and/or any significant items of repair that may require immediate and/or longer term attention.

Our survey is non-invasive and we have also taken cognisance of all site specific issues relating to premises use, security and access, as minimal disruption is critical.

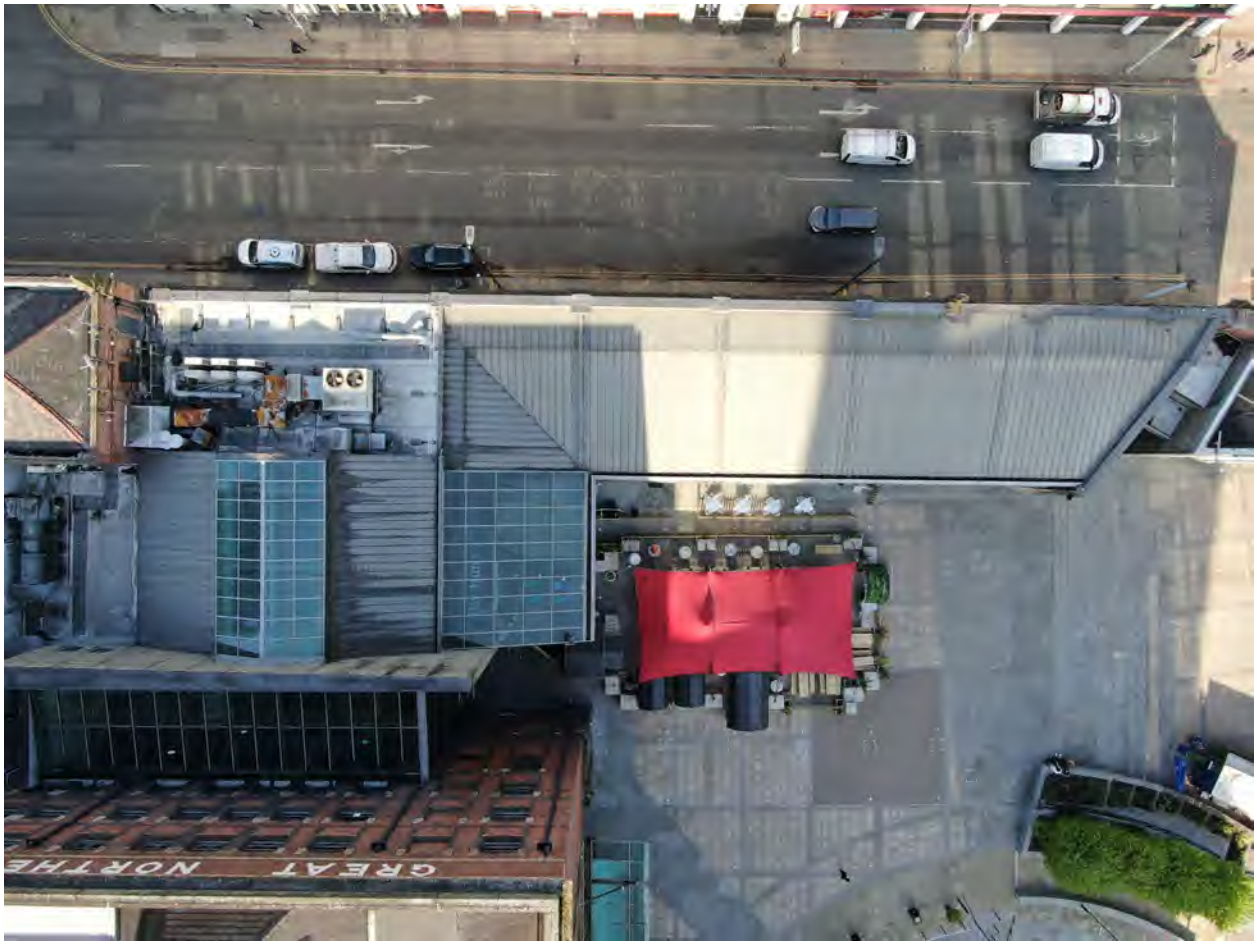
Sectioned Overview



This image shows the colour for each section, Section 1 RED, Section 2 BLUE, Section 3 GREEN, Section 4 PINK, Section 5 ORANGE, Section 6 BLACK, Section 7 SKYBLUE, Section 8 PURPLE.

Images with observations

Section 1 Red - Overview



Overview of Section 1

Vegetation growth to parapet wall along with a large coverage of moss and bird faeces. Some localised oxidation has occurred to zinc sheet panel. Appears to be a build up of detritus material in the gutter which if left could prevent flow of rainwater.

A number of rivets are missing from the metal roof light frame. Flashing to roof light frame appears to be in poor condition and needs more detailed inspection for signs of any water ingress. Sections of flashing have slipped underneath the glazed section of roof. The panels to the roof edge are damaged. Evidence of a brick on roof which suggests some brick faces have blown out . Timber cill to the door is rotten and needs replacing.

Images with observations

Section 1 Red - Photo 1



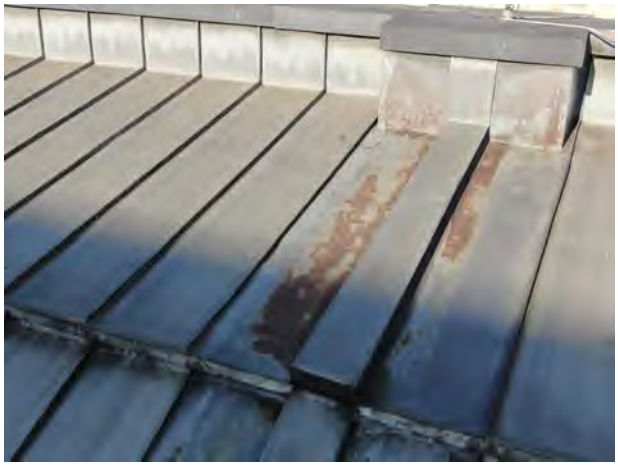
The gutter has a buildup of detritus material building up which requires cleaning out to ensure free flowing of rainwater.



The coping has a build up of lichen and moss which needs removing together with vegetation growth.



Zinc roof panels have signs of oxidization which requires treatment.



More evidence of corrosion to zinc roof panels which requires treatment.

Images with observations

Section 1 Red - Photo 1



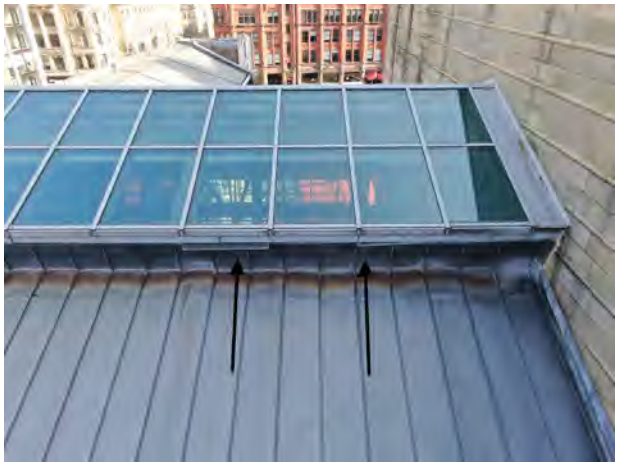
The flashing to the parapet is showing signs of corrosion which requires further, more detailed inspection. This is required to check the integrity of the flashing.



The aluminium roof light frame has missing rivets as highlighted. Some debris is noted in the gutter which should be removed.



The lead flashing to the aluminium window frame appears to be cracking allowing potential for water ingress. This should be checked and repaired or replaced as necessary.



The zinc roof has signs of oxidization, and flashing below the roof light has displaced requiring re-fixing.

Images with observations

Section 1 Red - Photo 1



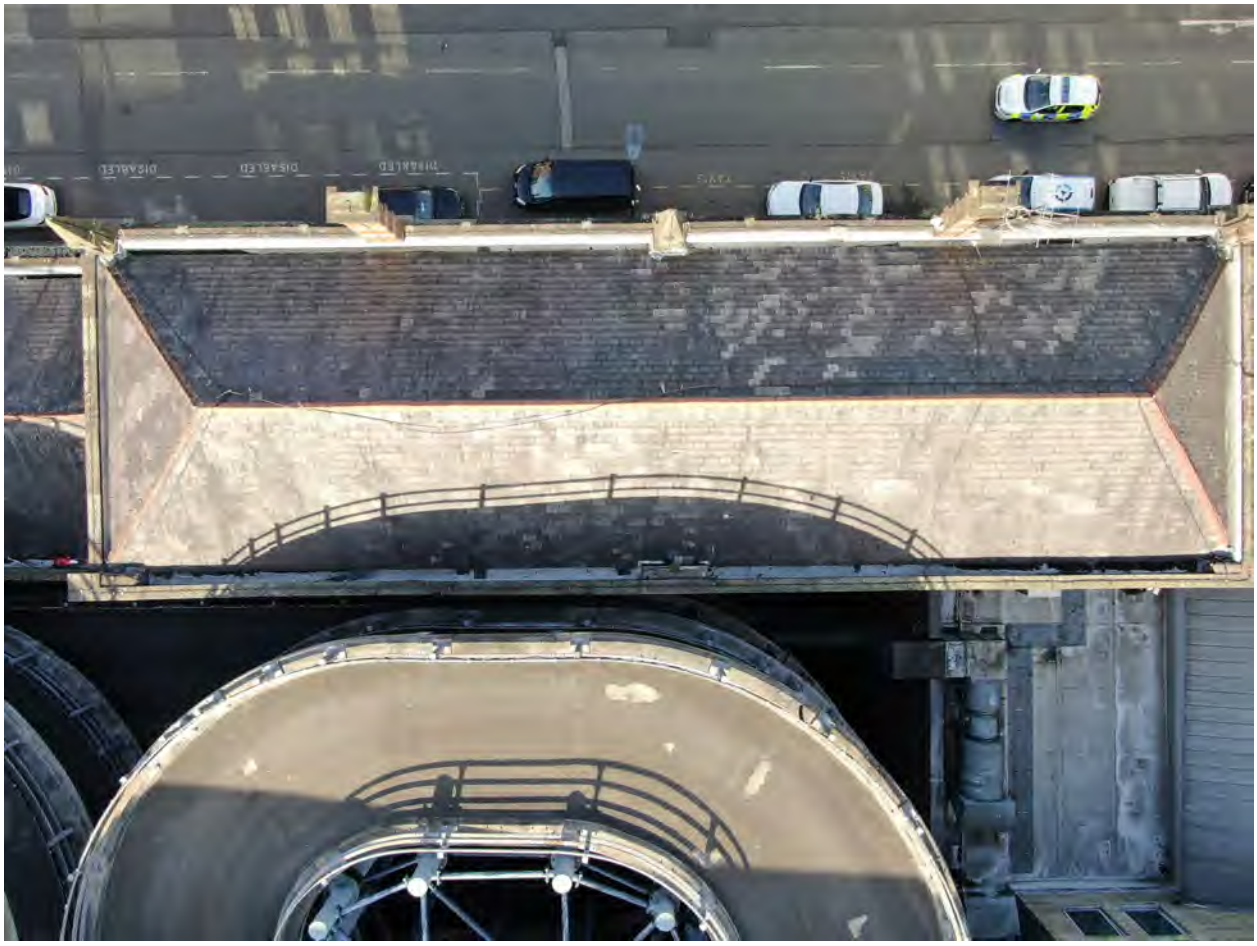
The zinc cover panels to the verge is deformed with gaps between joints. This requires repairing or replacement panels.



The gas meter box needs checking to ensure lock is functioning. A small amount of debris is noted and this should be removed particularly around drain.



The timber sill to the door, is rotten and requires replacing.

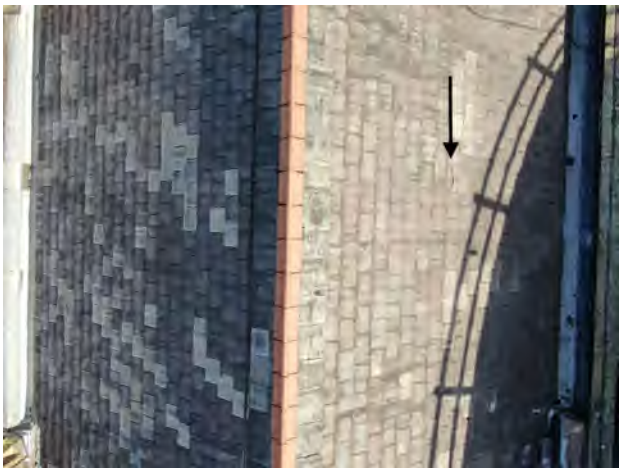


Observations

Approximately 28 slates are either cracked or dislodged. A loose slate has been highlighted and the lead flashing is in need of repair. A patch to the flashing on the up stand is loose fitting with the metal cover strip over broken. The gutter has had temporary repairs with flashband, this needs a more permanent solution. The gutter has a build up of detritus material which should be cleaned out. Mortar to ridge tiles is in poor condition and require re bedding and pointing. Concrete capping has broken off with brick below appearing to have dislodged. Debris and detritus material in gutter needs cleaning out. The lead guttering has peeled away and needs an urgent repair. The lead gutter/ flashing is damaged and in need of repair.

Images with observations

Section 2 Blue



A slate has slipped and three slates are cracked.



A slate has slipped and another is cracked below the hip tiles. Some debris and a build of detritus material is noted in the gutter which should be cleaned out.



Three slates are missing and need replacing, A broken slate is noted in the gutter and should be removed.



A loose slate is noted which requires refixing or replacing. The lead flashing is displaced around the corner of the parapet and needs urgent attention.

Images with observations

Section 2 Blue



A buildup of detritus material is building up in the gutter and requires cleaning out.



A slate is noted with significant chip damage. Loose cables are in the gutter and should be secured. A flashband repair has been undertaken to the gutter which is peeling. This should be repaired with a more permanent solution.



Detritus material should be removed from the gutter. Flashband has been used around the corner of the parapet gutter. This should be replaced with a more durable lead flashing.



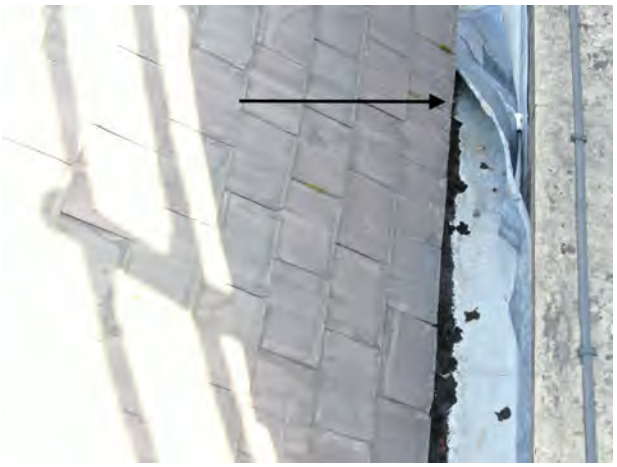
Mortar to the hip tiles is missing or deteriorated. Hip tiles should be rebedded and pointed. Concrete cover to brick pier of parapet is cracked and brick below is displaced.

Images with observations

Section 2 Blue



A slate has slipped and immediately above one is missing. A further slate has broken and slipped. These all require replacing.



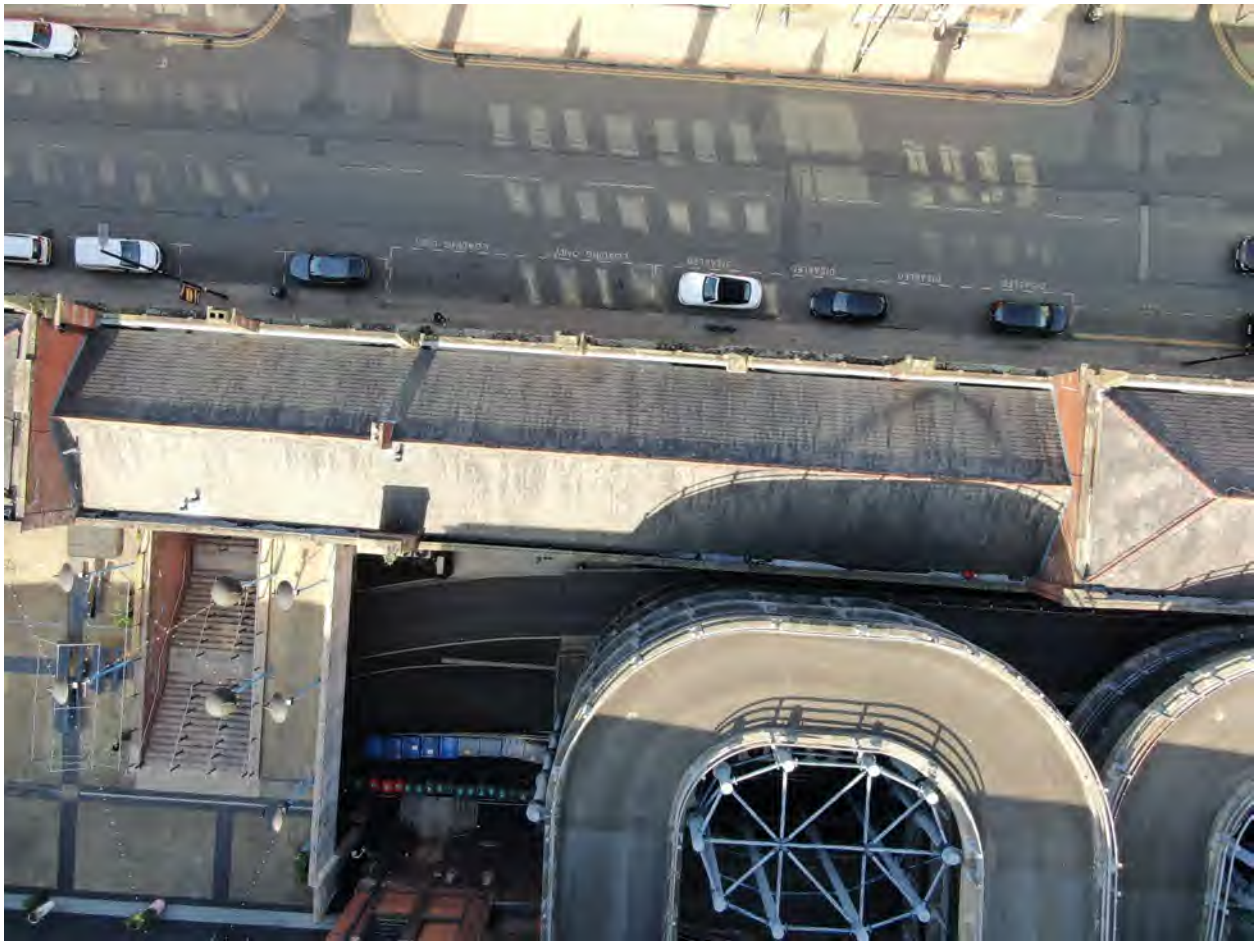
The lead flashing has peeled away from the parapet wall and requires refixing. Detritus material should be cleaned from the gutter.



Three slates have broken and slipped into the gutter. These need to be replaced.



Two slates have slipped and need replacing. The lead flashing to the corner of the parapet has peeled away and needs repairing. Vegetation to the parapet should be removed.

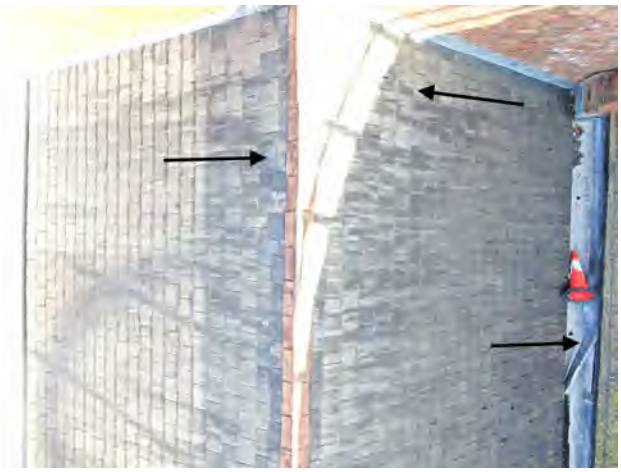


Observations

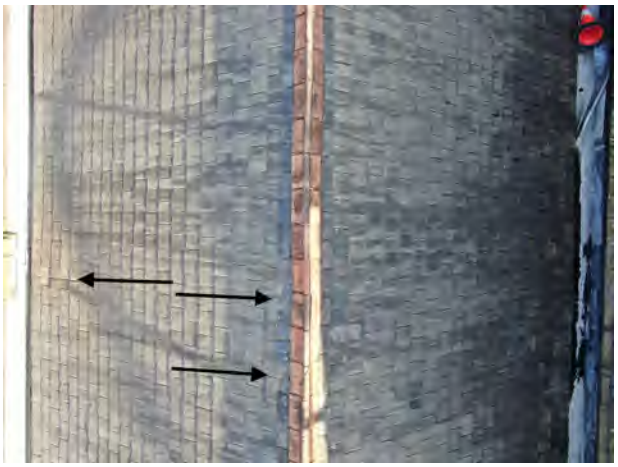
The slate roof is generally in good condition however it has been observed that approximately 20 tiles are either cracked, missing or dislodged. Various issues have been noted to the ridge tiles with deteriorating or missing mortar. Ridge tiles should be re-bedded and need re-pointing. Gutters have a build-up of detritus material which require cleaning out to ensure free flowing of rainwater to the downpipes. Some vegetation has been noted to a parapet which requires removal. Timber debris has been observed behind a chimney stack and a soil pipe has an open top which requires a bird cage. The chimney stacks need repointing where mortar is missing. Flashings have been dislodged and require repair.

Images with observations

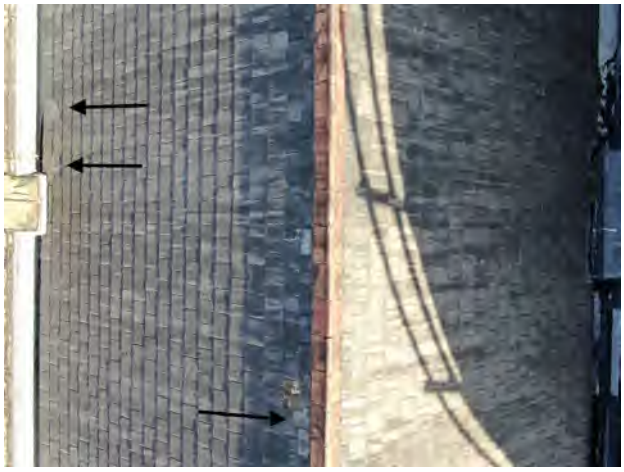
Section 3 Green



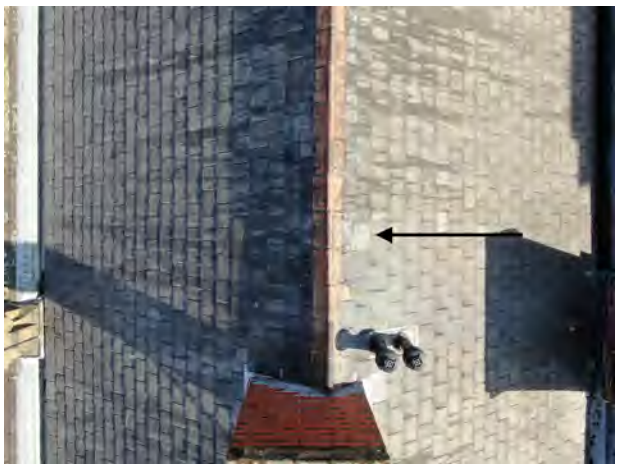
A slate is missing at ridge level. A slate has slipped on the opposing slope. Lead flashing has peeled in the gutter and a traffic cone needs to be removed.



Four slates are missing and a number are dislodged at ridge level. Mortar to the ridge tiles is in poor condition and requires repointing and rebedding as required.



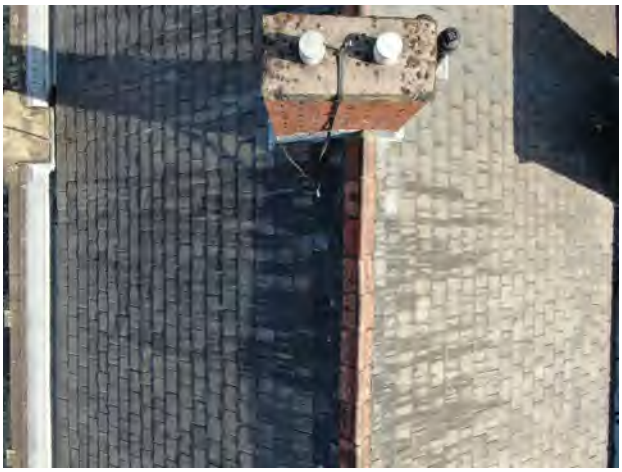
A slate is broken at ridge level, another is broken above gutter level and a further slate is missing. These all require replacing. Some vegetation is noted in the gutter and should be removed.



Approximately 4 slates are missing at ridge level. Mortar to ridge tiles is in poor condition and should be repointed where necessary.

Images with observations

Section 3 Green



The concrete capping to the chimney stack is cracking. Buildup of moss and lichens should be removed. Ridge tiles to be repointed where mortar has deteriorated.



A slate is missing where highlighted which has slipped into the gutter.



Bedding to the ridge tiles is in poor condition. Ridge tiles should be rebedded and pointed. The highlighted slate has a large crack and is close to failing.



Two slates are missing and have slipped into the gutter. The lead flashing to the rear of the chimney stack has detached and needs to be refixed.

Images with observations

Section 3 Green



Mortar is missing to the ridge tiles. These should be rebedded and pointed.



A buildup of detritus material in the gutter should be cleaned out. A large buildup of lichen and moss to the parapet should be removed.



A slate at ridge level is cracked and one is missing lower down.



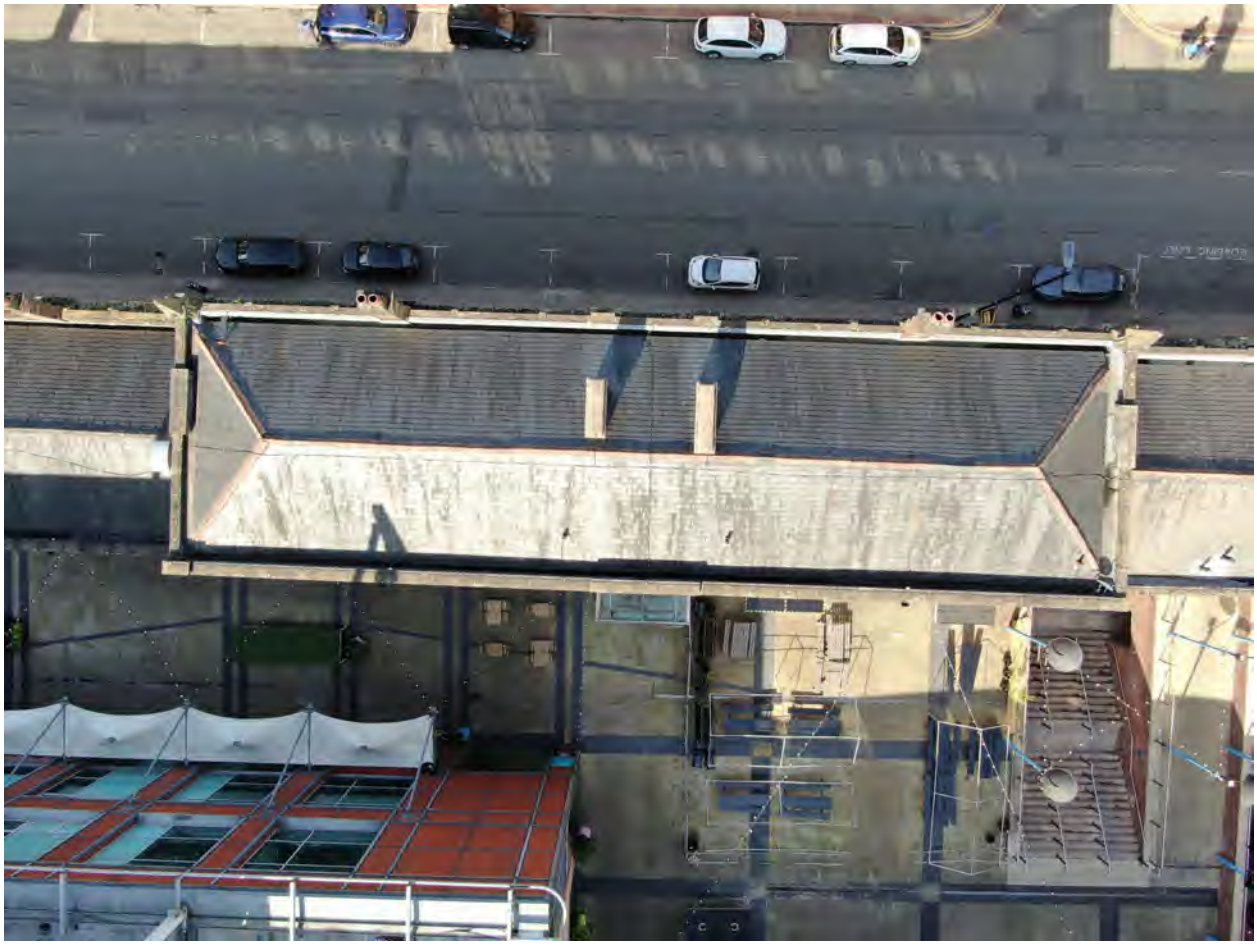
A slate is missing and a piece of wood should be removed from behind the chimney stack. The lead flashing around the chimney stack needs redressing around the slates. An open pipe requires a flue terminal.

Images with observations

Section 3 Green



Vegetation around the chimney stack capping to be removed. Pointing to the stack is in a poor condition and needs repointing.



Observations

The roof has a approximately 20 slates either cracked, missing or dislodged. A number of ridge and hip tiles have defective mortar and require rebedding and repointing. Chimneys require flue terminals to open pots and repointing where there is loose or missing mortar. Cracked chimney capping requires repair. Some vent pipes are open and require bird cages. Parapet walls have a build-up of lichen which should be removed. Vegetation has also been noted to the parapet which should be removed. Cable ties are dislodged and require refixing.

Images with observations

Section 4 Hot Pink



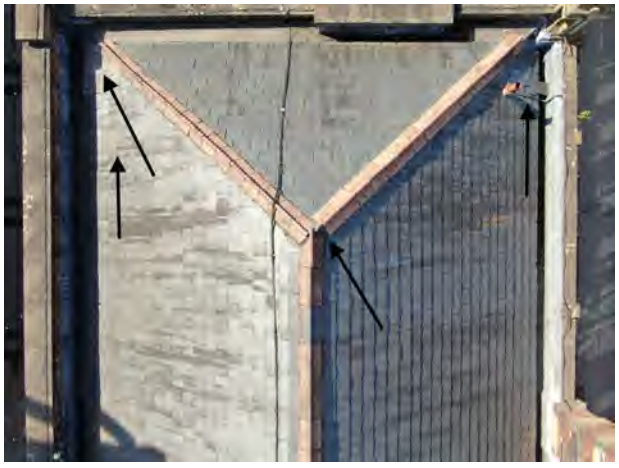
Open chimney pots require bird cages fitting.



Vegetation to chimney stack to be removed. Haunching is breaking up or missing to capping and needs replacing.



Mortar joints and bedding to hip tiles is missing. Hip tiles need rebedding and pointing.



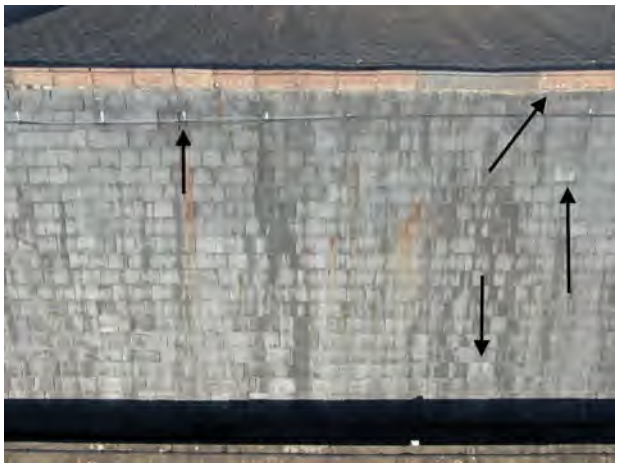
Approximately five slates are missing or slipped. Where the ridge meets the hip the top hip tile is damaged and a large mortar joint is open and requires repointing. A vent pipe is open and requires a bird cage or flue terminal.

Images with observations

Section 4 Hot Pink



Two slates are broken and have slipped. Mortar to the ridge tiles is in poor condition and the tiles require re-bedding and pointing.



A slate is missing and another has slipped. Mortar is missing from the ridge tile bedding. Clips holding the lightening conductor have slipped and require refixing.



Bedding to the hip tiles is missing and mortar joints are in a poor condition. These need rebedding and pointing. There is a build up of lichen to the ridge/ hip area which should be removed.



A slate is missing that has previously been resin bonded, A slate is broken near the bottom of the flue pipe.

Images with observations

Section 4 Hot Pink



A slate is loose at gutter level. It appears this has been dislodged by the fixing for the lightening conductor.



Two slates have slipped. Bedding to the hip tiles is in poor condition and needs replacing.



A vent pipe is open and requires a flue terminal. Two slates have slipped, one leaving the roof open. Vegetation to the parapet needs to be removed along with the large build up of lichen and moss.



A slate has dislodged and one at ridge level has a significant crack that could result in failure of the slate.

Images with observations

Section 4 Hot Pink



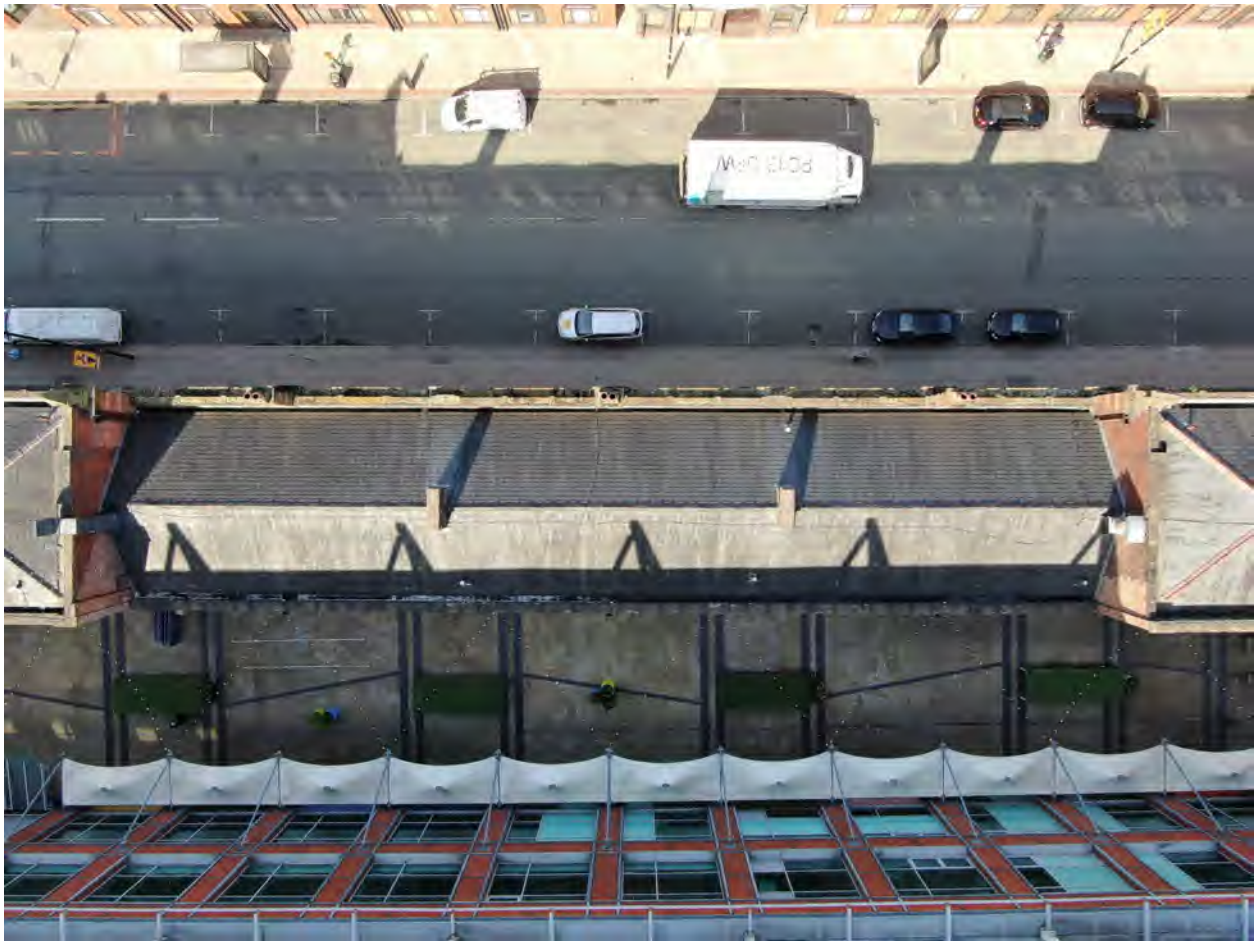
Mortar to the ridge tiles is in poor condition. These require rebedding and pointing.



Capping and haunching to the chimney stack is cracked and needs repairing or replacing.



Vegetation to the parapet needs to be removed along with the large build up of lichen and moss.



Observations

The slate roof is generally in very good condition with approximately 2 slates missing and one slate slipped / dislodged. Detritus material has been noted in the gutter which needs cleaning out. A cast iron rainwater downpipe from a hopper is showing signs of rust and may need replacing. It discharges onto the roof appears damp and the lead flashing may require attention to help drain the corner more efficiently. Sections of the parapet walls are showing signs of moss and lichen which should be cleaned off. Cable ties are dislodged and need refixing. A cracked chimney capping needs repairing.

Images with observations

Section 5 Orange



The lightening conductor is loose and requires securing.



A slate is missing below the ridge.



The clips holding the lightening conductor have slipped and need securing. Bedding to the ridge tiles is in poor condition and missing.



Capping and haunching to the chimney stack is cracked and needs repairing or replacing.

Images with observations

Section 5 Orange



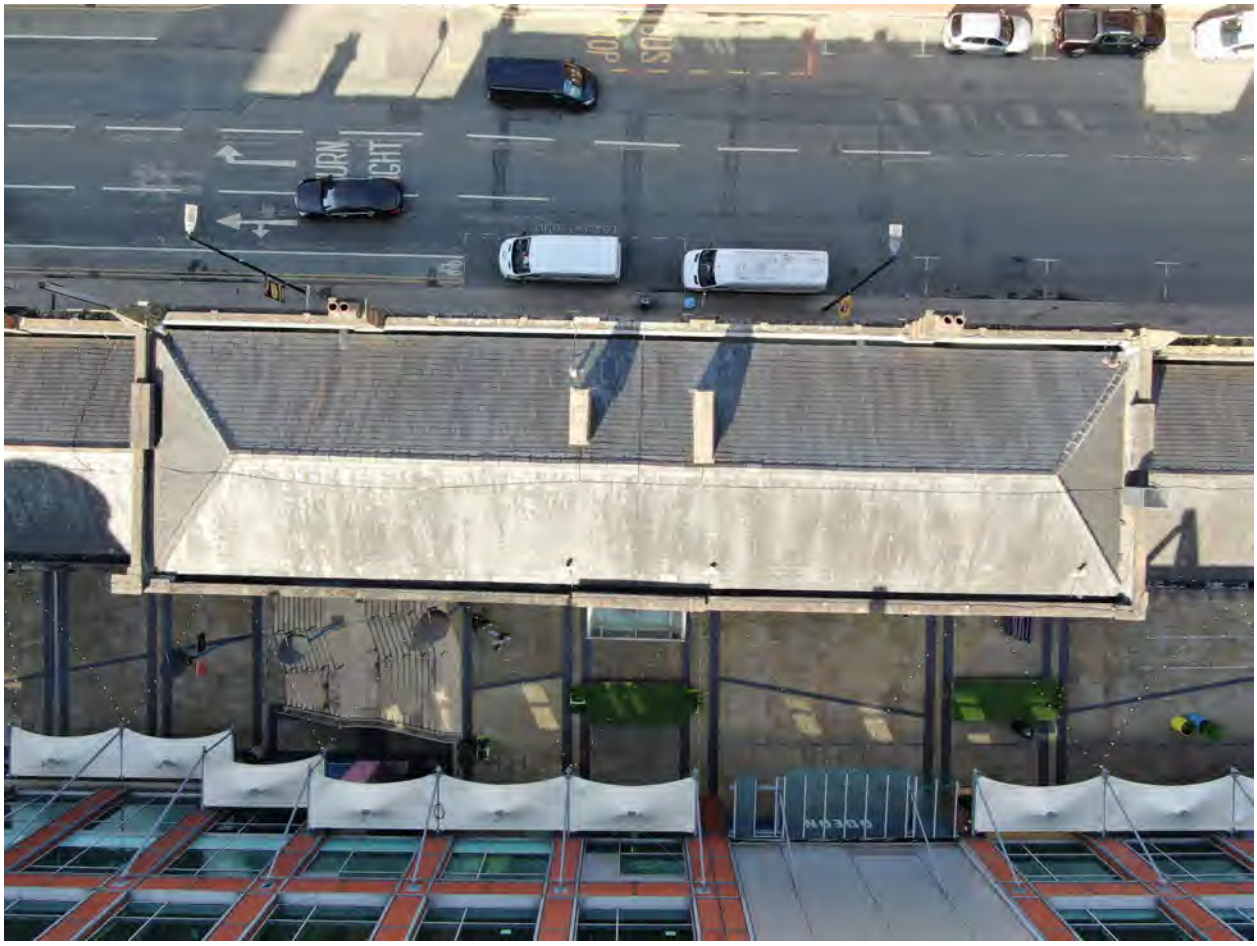
Capping to the chimney stack is cracked and needs repairing or replacing. Approximately two slates have slipped at ridge level.



Capping to the chimney stack is cracked and needs repairing or replacing. Approximately two slates have slipped at ridge level.



A slate has slipped into the gutter and needs refixing. The large build up of lichen to the parapet wall should be cleaned off.



Observations

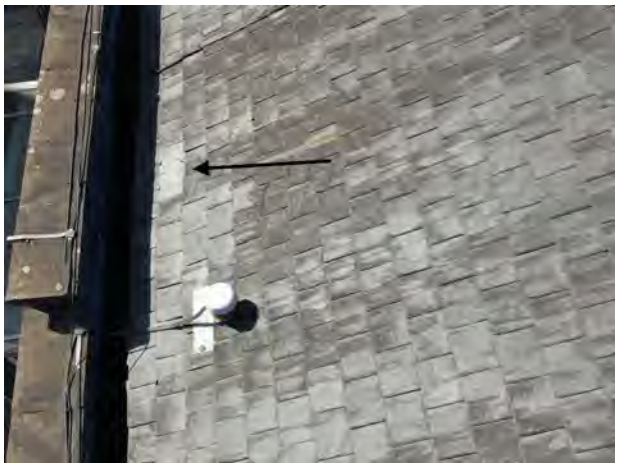
The roof has approximately 19 slates cracked, missing or dislodged. Mortar to ridge tiles is in poor condition and needs repointing and ridge tiles rebedding where required. Debris and detritus material in gutters requires clearing out. A number of ridge and hip tiles have defective mortar and require rebedding and repointing. Chimneys require flue terminals to open pots. Some vent pipes are open and require bird cages. Parapet walls have a build-up of lichen and moss which should be removed.

Images with observations

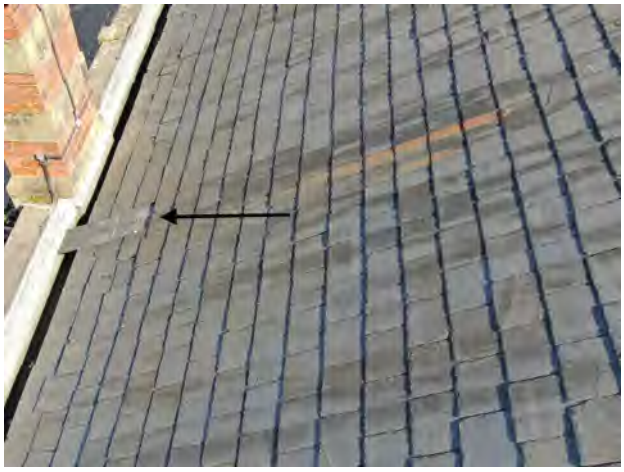
Section 6 Black



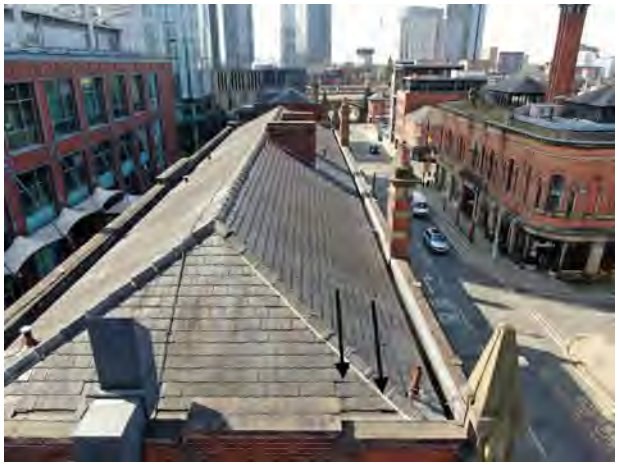
Bedding to the ridge is in poor condition with sections of mortar missing, On the hip a slate has slipped into the gutter, a slate has slipped adjacent to the lightening conductor and a further slate has cracked and part fallen into the gutter. A slate has slipped on the right slope and the vent pipe requires a flue terminal fitting.



Approximately two slates are missing.



A slate has slipped and requires refixing.



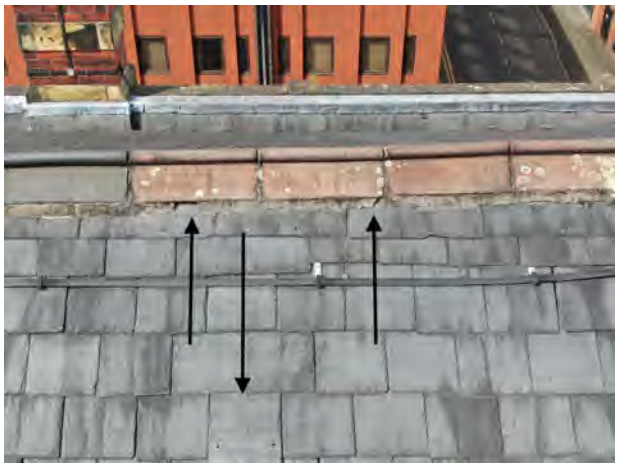
Approximately three slates are loose and one is broken. The open vent pipe requires a terminal fitting.

Images with observations

Section 6 Black



Mortar joints to the ridge tiles are in a poor condition and require repointing.



Bedding is missing to the ridge tiles. A slate has slipped.



Observations

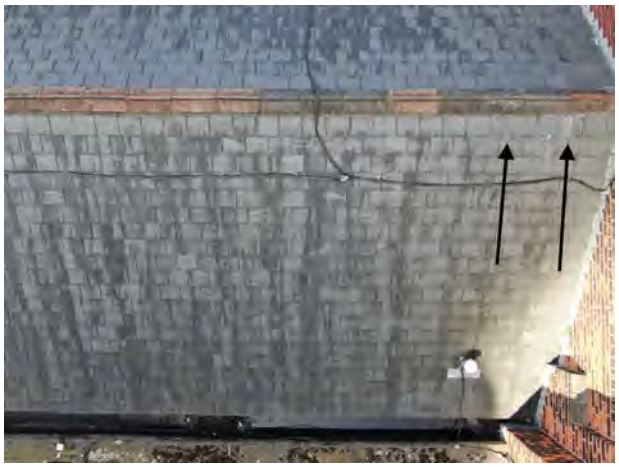
Approximately 4 slates are missing with 2 dislodged/slipped slates and a cracked slate. Mortar to ridge tiles is in poor condition and needs repointing and ridge tiles re-bedding where required. Debris and detritus material in gutters requires clearing out. Parapet walls have a build-up of lichen and moss which should be removed. Chimney stack requires localised repointing where mortar is missing and vegetation removed. Vegetation also requires removal from the gable wall above stepped flashing.

Images with observations

Section 7 Sky Blue



The gutter contains debris and detritus material which requires removal. Mos and lichen build up to the parapet wall should be cleaned off.



A slate has slipped and another broken at ridge level.



Bedding to ridge tiles is breaking up. Slates have become dislodged at ridge level and approximately two slates are cracked/broken.



A slate is broken and another slate is cracked. Both require replacing. The gutter has a build up of detritus material which should be cleaned out.

Images with observations

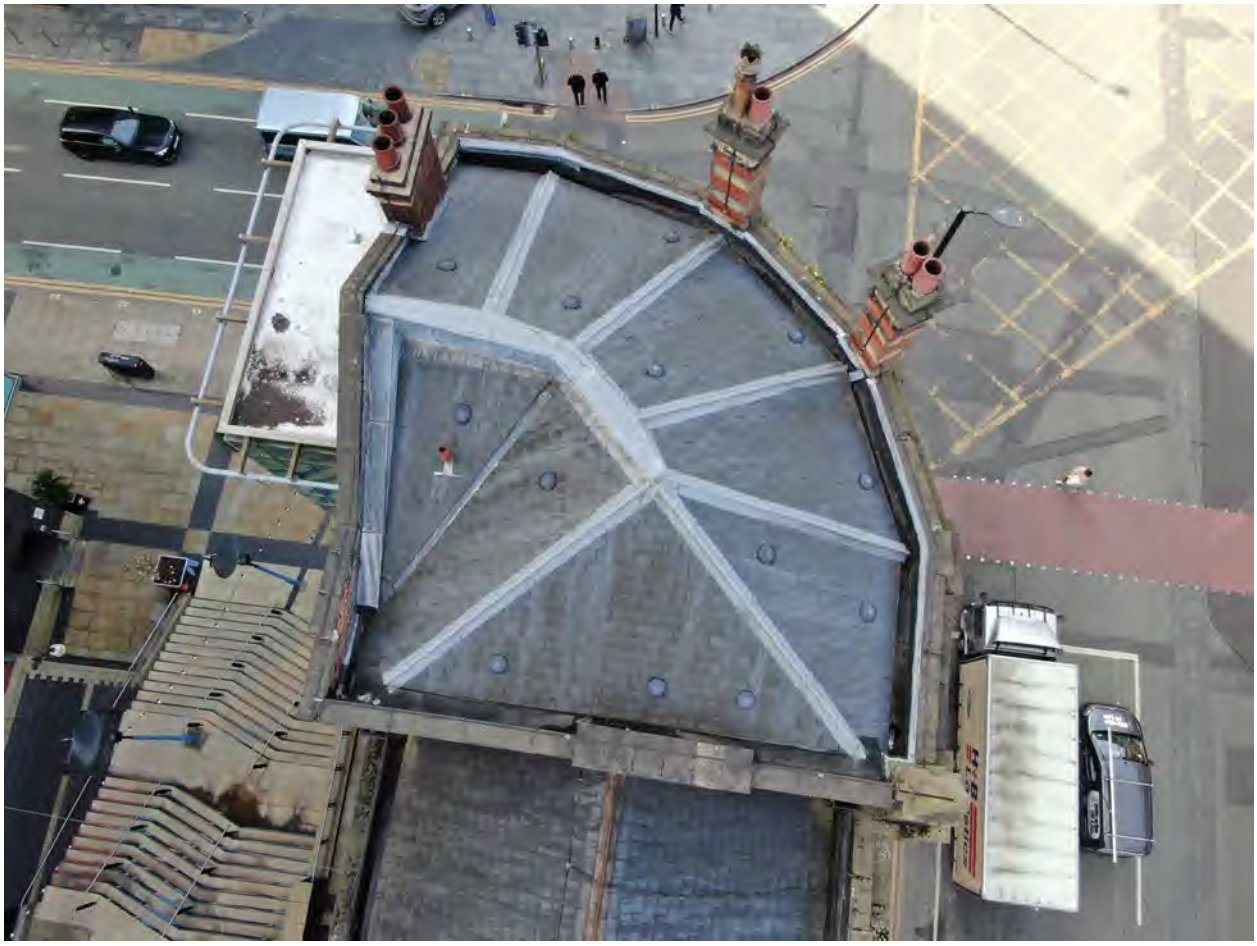
Section 7 Sky Blue



Approximately five slates are broken or missing below the ridge. These need replacing.



Haunching to the chimney pots is deteriorating and in need of replacement. Build up of lichen and moss to the parapet needs removing.



Observations

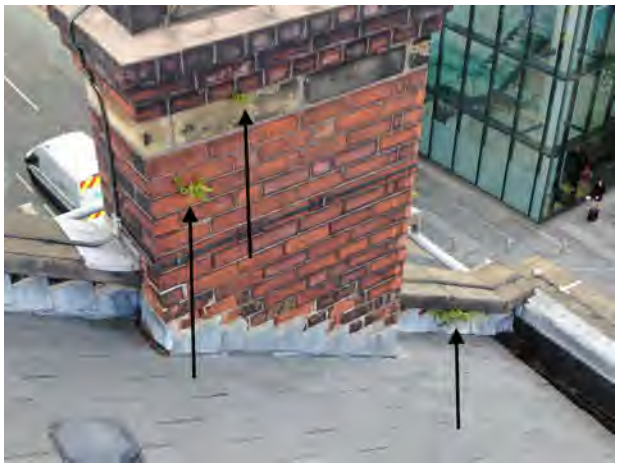
Dislodged flashing to parapet wall requires refixing. All slates appear visually in a good condition. Vegetation noted to chimney stack and below copings to parapet walls, this needs removing at the earliest opportunity. Open SVP requires bird cage terminal. Three areas of the parapet need attention to the mortar to prevent vegetation growth.

Images with observations

Section 8 Purple



Vegetation beneath parapet wall to be removed. Lead flashing to coping to be redressed where it has peeled back.



Vegetation to be removed from chimney stack and below parapet wall.



A broken slate needs removing from the valley. An open vent pipe requires a flue terminal fitting.



Lead flashing between the chimney stack and the parapet wall has failed and needs redressing.

DRONE SITE SURVEYS

WORK SMARTER

About Drone Site Surveys

Drone Site Surveys Ltd offers photography, 3D scanning, photogrammetry and thermal services to the construction industry.
We use technology to collect visual data and present it in a digestible and userfriendly format. At Drone Site Surveys we have always held a strong commitment to Health & Safety and our accreditations include Constructionline Gold, BINDT (British Institute of NonDestructive Testing), and SSIP (Safety Schemes in Procurement) amongst others. We ensure our policies and procedures are regularly updated as we have a dedication in creating a safe workplace for our staff, customers and suppliers.

Drones

All Drone Site Surveys drone pilots are fully accredited by the Civil Aviation Authority. We are insured up to £10Million and offer pre flight paperwork and RAMs with each project undertaken.Our variety of drones can cover every eventuality and we offer UHD 4K images and video, thermal inspections, up to 32x zoom and even live streaming to your office.

Thermography

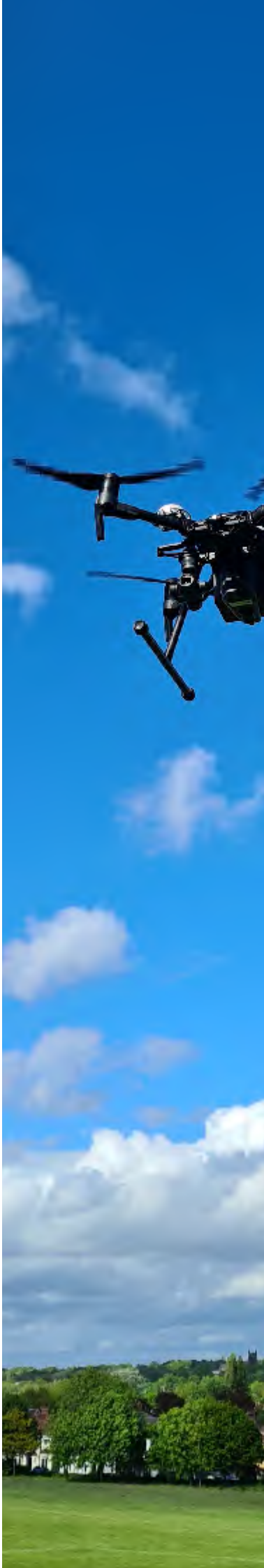
Drone Site Surveys drone pilots all have BINDT Level 2 Thermography qualifications which allows us to create, write and sign off accredited thermal reports.
Thermal technology has improved massively over recent years and is now becoming more affordable than ever. We believe that this non invasive testing will become more commonplace in the building industry than ever before. Here at Drone Site Surveys we have the equipment, software and training to interpret the thermally tuned images. We have the thermal capabilities required and regularly carry out external and internal thermal building surveys. This type of building thermography can highlight heat loss, water ingress, missing or degraded insulation and thermal bridging.

Photogrammetry

Photogrammetry is the science of extracting measurements and data from 2D photographs by creating 3D models. Using our equipment (RTK Drones with Ground Control Points) and a variety of state-of-the-art software allows us to collect highly accurate distance, volumetric and depth measurements.

3D Scanning

We use a variety of 3D scanning equipment and softwares including GeoCV, Matterport and 3D Vista. This technology when combined with our aerial capabilities allows us to give the perfect overview for every project.



Additional Services

Cheaper, faster and safer inspections for a wide range of industries.



Drone Inspections
We have a variety of drones capable of any inspection type, with UHD 4K, 30x zoom, thermal and multispectral lens attachments.



Electrical Surveys
Internal and External thermal imaging surveys for fixed-wire testing, fault-finding and facilities management.



Solar Panel Surveys
Find faulty cells and maximise energy production by using thermal cameras to inspect photovoltaic panels.



Mapping & 3D Modeling
Map, model and measure structures and land for environmental monitoring, volumetric measurement and managing site stock.



Disability Access Surveys
Showcase how accessible your building is to your clients, with our Visual Disability Access Survey.



CPD
We offer CPD events to the construction industry in how technology can help you to work smarter.

DRONE SITE SURVEYS

WORK SMARTER



Have Any Questions?

Don't be afraid to ask

If you have any questions or queries about this report then our expert team are on hand to help you. Please us the following details to contact us.

Tel: 0345 017 5592
Email: info@dronesitesurveys.co.uk

Disclaimer

The information contained in this report is believed to be accurate at the time and date of issue, but no representation or warranty is given - express or implied - as to its accuracy, completeness or correctness.

APPENDIX B

CONDITIONS & LIMITATIONS

Conditions and Limitations

1. Access

If we observe evidence to suggest that concealed parts of the structure and fabric might be defective or contain hazardous materials, we will advise you accordingly and make recommendations for further investigations.

However, unless otherwise instructed by you, we will not open-up for inspection any permanently enclosed or concealed parts of the structure and fabric.

Access to some areas may be restricted or denied. If we find that our inspection has been excessively limited we will advise you accordingly and seek your further instructions.

Our report will list any significant internal and external areas that we are unable to inspect.

2. Deleterious Materials & Concrete Testing

Deleterious materials surveys are carried out by suitably experienced and qualified staff.

The sampling regime and inspection will be designed to be representative of the materials within the property. The samples taken and observations made would represent a fraction of the materials present within a property however.

In addition, the sampling and inspection locations will dictated by accessibility, practicality and the requirement to minimise occupant disturbance.

The results provided therefore will relate to those materials/elements tested, inspected and reported on only.

Therefore there cannot be a guarantee that all potentially deleterious materials or defects have been identified.

3. Cladding Surveys

Unless specifically instructed intrusive investigations or materials testing will not be carried out.

The sampling regime and inspection will be designed to be representative of the materials within the property. The samples taken and areas inspected would represent a fraction of the materials present within a property however.

In addition, the sampling and inspection locations will dictated by accessibility, practicality and the requirement to minimise occupant disturbance.

The results provided will relate to those materials/elements/locations tested and reported on only.

Therefore there cannot be a guarantee that all potentially deleterious/defective materials (including composite panels, ACM panels, HPL or other combustible materials) have been identified.

No compliance with or deviation from relevant fire safety/building legislation or regulations is indicated or suggested. Our PI includes a combustibility exclusion. Hence any combustibility information provided can only be factual information based on UKAS laboratory test results.

If required, a Fire Safety Engineer should be appointed to review all existing information related to the cladding.

4. Asbestos Surveys

Asbestos surveys are carried out by experienced P402 qualified staff in general accordance with HSE document “Asbestos: The survey guide”.

The survey types available are as follows:

1. Management Survey – Sampling Survey, samples of representative suspect materials taken for laboratory analysis.

2. Refurbishment & Demolition Survey – Pre demolition/major refurbishment survey.

In addition we can undertake a pre acquisition/overview – A walk around non intrusive survey.

All reasonable efforts will be made to detect asbestos. It must be recognised however, that areas of asbestos may be in inaccessible locations or obscured.

In addition the inspection locations will be at selected or random spot positions (although designed to be representative of the property) only.

As such **no guarantee, regardless of the type of survey,** can be given that all asbestos materials will be located.

Except where specifically requested, land contamination would not be included.

RS will accept no responsibility for claims arising as a consequence of exposure of others to asbestos containing materials and accept no liability in the situation that asbestos is not identified during a survey.

5. Investigations and Testing

RS will employ techniques and equipment considered appropriate for particular investigations. Should it subsequently become clear that additional works are required this will be communicated to the client.

RS are therefore unable to guarantee that the results of each and every investigation will be completely conclusive but will recommend additional works where appropriate.

Any non-destructive testing may be limited by the capabilities of the technique/method.

The results of water ingress investigations can result in remedial works being proposed in order to eliminate certain details or identified defects.

Water can appear within a building at one location although there is more than one source. It must therefore be recognised that additional testing or remedial works may therefore be required.

6. Payment Terms

Invoices are issued either at completion of the appointment or, in the case of ongoing projects, approximately monthly.

Payment is strictly due within 28 days of the invoice date.

RS retain the right to charge an interest of 8% above standard base rate on overdue accounts.

7. Obligations

RS will exercise all reasonable skill, care and diligence in the provision of the service and act in good faith, but accept neither responsibility nor liability for any loss or damage arising from the service.

8. Retention of Title, Copyright and Samples

The Title for all reports, advice, design or material of any kind provided in writing or orally is retained until payment for all work has been made in full.

Our report shall be relied upon only by the party to whom the report is addressed and only when payment for the report has been made in full.

Copyright on all of the above mentioned is retained permanently unless expressly assigned by RS in writing.

Samples or materials may be disposed of after three months unless express instructions to the contrary have been given.

9. Costings

The costings for remedial works are estimates only based on observations made during the inspection.

They are approximate figures that indicate the general scale of likely costs only and are not corroborated by tenders from the market.

Except where stated, the costings would not include for VAT, professional fees or access provision.