

MILNROW LIBRARY
SPECIALIST INVESTIGATIONS
January 2022



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TABLE OF CONTENTS:	PAGE
1.0 INTRODUCTION	3
2.0 STRUCTURAL SURVEY – SUMMARY OF OBSERVATIONS AND PROPOSALS	4
(Full report and photographs in Appendix C)	
2.1 General Structural Form	4
2.1 Structural Defects Observed	4
2.3 Recommendations	5
2.4 Next Steps	5
3.0 LEADED LIGHTS – SUMMARY OF OBSERVATIONS AND PROPOSALS	6
(Full report and photographs in Appendix D)	
3.1 Investigation	6
3.2 Style of Windows	6
3.3 Internal Windows	6
3.4 Conclusion	6
4.0 INSPECTION OF VISIBLE TIMBERS	7
5.0 ARCHITECT'S INSPECTION AT HIGH LEVEL	
5.1 Introduction	8
5.2 Roof Condition	8
5.3 General Condition of Roof Finishes	
5.3.1 Meeting Room Roof	9
5.3.2 Stair Roof	10
5.3.3 Oriel Window Roof	12
5.3.4 Library Roof	14
5.3.5 Flat Roof Area	15
5.3.6 Roof of Adjacent Building	16
5.4 Ventilation Turret	17
5.5 Chimney Stack	18
5.6 Stone walling to west elevation	19
5.7 Ashlar to the oriel window	23
5.8 Rainwater Goods	24
5.9 Leaded glass lights (urgent works)	25
5.10 Deterioration of stone mullions/transoms	26
5.11 Specific Defects to the brickwork/copings	27
5.12 Timber Windows (Refer also to previous condition survey)	28
5.13 Internal Defects (Refer also to previous condition survey)	29
6.0 CONCLUSIONS RISKS AND RECOMMENDATIONS	30
7.0 APPENDICES	35
Appendix A – Emergency Holding Works	
Appendix B – Correspondence from Conservation officer re urgent works	
Appendix C – Structural Engineer Survey	
Appendix D – Specialist Leaded Light Survey	
Appendix E - Specialist Timber Survey	
Appendix F – Sika Flat Roof Report	
Appendix G - Architect's Updated scope of works drawings	

1.0 INTRODUCTION & EXECUTIVE SUMMARY

(To be read as an addition to the observations of the original Condition Survey)

Bradshaw Gass and Hope LLP was commissioned in December 2020 to carry out a Condition Survey of Milnrow Library, with specific attention to the roof and window condition but with a general overview of the fabric.

The findings of this initial survey are indicated on the attached drawings, with reference to the photographs contained in this report. The survey was carried out on 4 and 15 December 2020. The initial survey was carried out from ground floor level and without accessing any roof voids or upper roof areas. The recommendations made on the drawings are from this limited perspective and recommendations are made for further investigation/enabling works to understand more fully the nature and implications of any defects or decay.

During this initial survey a number of issues become apparent that warranted further investigation and some that may require urgent reactive maintenance. These are indicated in the original report and formed the basis of the further investigations.

Specialist surveys were carried out as follows:

- Historic leaded Lights – Survey by Pendle Glass (Appendix D)
- Structural by Conservation Structural Engineers Blackett-Ord (Appendix C)
- Specialist inspection of visible timbers (Appendix E)
- Specialist inspection of the flat asphalt roof (Appendix F)
- In addition, high level access was provided for inspection by the Conservation Architect of the roofs, ventilation turret, copings, and high level flashings and windows. This was enabled by Bullen Conservation with the assistance of Bradford Roofing and Robinson Preservations Ltd, timber and rot specialists.

Investigations were carried out in January 2022 and it was discovered that, in addition to the issues raised in the original survey and further investigated on site, there were three issues that presented an imminent risk to the health and safety of those accessing the building and to the long term survival of the building and its fabric.

- The upper three meters of the entrance gable have become detached from the roof and adjacent structure and now rocks when pressed. This is directly above the main entrance to the library. In addition, the apex coping stone is completely un-bonded and remains in place through gravity alone. There appear to be no securing dowels or ties. The gable appeared to be relatively stable but could be at risk of collapse in high winds.
- Two piers that flank the main entrance are formed of stone blocks and appear to be stack bonded to the gable and lower masonry. The central stones to these piers are displaced from the face of the gable and wall by up to 20mm and appear to be either fully detached to the central area or displaced by corroding iron cramps or ties. The central blocks are displaced sufficiently to present a real risk of collapse if not addressed.
- Two of the original Art Nouveau leaded lights are heavily buckled and one in particular is at a high risk of becoming displaced and falling.

As these issues are considered as urgently in need of attention, it is proposed that they are addressed as outlined in the following notes as emergency holding works (**APPENDIX A**), to prevent injury to the public and to ensure the continued retention and repair of the original fabric of this important heritage asset.

A summary of the findings of the various inspections follows with associated reports included in the appendices.

The investigations were not a complete detailed condition survey of the roofs and building but were intended to provide a reasonable basis for assessing the scope of works required to secure the integrity of the building and to identify any issues requiring urgent attention.

A scope of works and associated risks is included in section 6 of this report on pages 30-34.

2.0 STRUCTURAL SURVEY – SUMMARY OF FINDINGS AND PROPOSED WORKS

(A full copy of the report is included in appendix C)

CARE registered Structural Engineers, Blackett-Ord Conservation Engineering, were commissioned to carry out an inspection of the building, with particular attention to the seemingly compromised stonework of the front elevation. Their full report, including photographs, is contained in Appendix B to this report but a summary extract is given below:

STRUCTURAL OBSERVATIONS

2.1 General Structural Form

The building consists of load bearing masonry constructed from brick with an ashlar stone external face. In some locations the outer skin of stone is coursed with a rusticated / rock face. The roof is timber, with trusses, purlins and jack rafters. The roof is finished in slate.

Windows, single glazed metal frame, have stone carved mullions, transoms and cills. In overall structural terms we would consider the building to be in a fair condition with evidence of periodic maintenance and historic interventions.

2.2 Structural Defects Observed

The following structural issues were observed from the access scaffolding to the front elevation:

- The roof stone gable above the main entrance doors could be rocked back and forth, suggesting that very little restraint was being provided by the pitched roof structure behind. Coping joints were also noted as being open and the apex coping loose. (Note: subsequently a temporary structural restraint detail was prepared as urgent works to make the gable more secure.). Design life expectancy 5 years. The potential cause of this defect is laminating embedded ironwork.
- The two vertical ashlar stone pillars to the sides of the entrance appear almost stack bonded, with evidence of movement in their joint with the main wall. This joint also exhibited signs of historic repointing. (Note: subsequently a structural urgent works detail was prepared to pin the upper levels of the pillars back to the main wall.).
- To the right hand side of the stair landing window, individual pillar stones have displaced laterally. We consider this to be of longstanding.
- The majority of the elevation exhibited signs of open mortar joints, historic repointing and areas of established vegetation.
- The sandstone we would consider to be relatively soft, with evidence of weathering and surface delamination. In places the surface lamination was loose and needed to be stabilised with a stiff brush whilst the scaffold was in place.
- The main oriel window projecting from first floor is clad in stone, with the window mullions and transoms of carved stone. Externally the entire window has deformed and is out of level and out of vertical, leaning generally towards the left hand corner of the building façade.
- The carved stone forming the window return reveals with the main wall have large vertical joints, suggesting that movement has been present for a long time. This is further evidenced by the presence of an internal structural steel frame, that has bolt fixings / anchors into the back of the stone mullions and head.

2.0 STRUCTURAL SURVEY – SUMMARY OF FINDINGS AND PROPOSED WORKS (Continued)

In addition to the oriel window movement and displacement of the stone at joints, there is stress cracking evident in the right hand cill stone, cracked glass and vertical cracks in the mullions. Some of the crack patterns in the mullions is indicative of embedded metal shim corrosion and expansion, but local investigations at the joint revealed no shims at all. There is however still a possibility of the presence of metal dowels across the joints. Even if these were non-ferrous, the distortion forces against and around the dowels could be sufficient to display the stress cracks visible in the stone. Also a remote possibility is that the fixings from the internal frame may be causing the crack patterns visible externally.

- The left hand corner returns and forms the side wall in red smooth faced brickwork. We understand this area has had a link corridor between the Library and the adjacent building removed in the past. There is visual evidence externally of an intervention and alteration to the brickwork in this area, including the insertion of a material similar to a cavity tray. This work appears incomplete with displaced bricks and open mortar joints.

2.3 Recommendations

We would propose the following structural remedial work interventions:

- Introduce temporary restraint to the roof gable within the roof void. This has a design life expectancy of 5 years.
- Plan the dismantling and rebuilding of the stone gable above the entrance.
- Pin back the upper courses of the two stone pillars.
- Dismantle and replace defective stone to the window onto the internal staircase.
- Remove loose stone surface laminations.
- Remove and replace inappropriate or missing mortar from the stone joints across the entire elevation.
- Dismantle and replace the defective stones forming the oriel window. Including at the time of the works further physical investigations to determine the construction and condition of the soffit of the oriel bay. The aim being to remove the internal metal frame.
- Point and complete works to the side wall return brickwork.

2.4 Next Steps

We would suggest the following:

- Consult with the Local Planning Authority to determine the scope of a Listed Building Consent Application.
- Prepare a budget estimate of the cost of remedial works to discuss with the Local Authority a suitable programme of works and budget.
- Prepare proposals for the dismantling and rebuilding of the gable above the entrance.

3.0 HISTORIC LEADED LIGHTS– SUMMARY OF FINDINGS AND PROPOSED WORKS

(A full copy of the report is included in appendix D)

Leaded glass specialists, Pendle Glass, were commissioned to carry out an inspection of the leaded lights of the building. Their full report, including photographs and with a light by light assessment, is contained in Appendix C to this report but a summary extract is given below:

3.1 INVESTIGATION

Site visited by Leon Conway and Danny Morton of Pendle Stained Glass Ltd. on 14th January 2022 on a cold sunny day. Access to the windows was mainly internal and external for the ground level windows. All windows were assessed individually and each window was touch surveyed from at least one side

3.2 STYLE OF WINDOWS

There is a mixture of leaded lights, clear glass with stick on lead and clear glass. This report does not include any information on the clear glass windows

3.3. INTERNAL WINDOWS

There are quite a few square-leaded internal windows in the main library rooms these are all in satisfactory condition. There is one damaged pane to one of the windows between the two rooms (this could be repaired in-situ although it is not in danger of falling out). The door to the staff room has had some previous in-situ repairs and the panel is slightly loose, this needs monitoring. The only panel that needs work is the door to the computer room mentioned earlier in this report

3.4. CONCLUSION

Some of the windows on the Library need immediate attention before they get any worse and become a danger, these are:

WF1 – This window needs re-leading but as it is high and requires a fixed scaffold externally the work could be carried out with other work (ie. stone repairs)

WF3 – The leaded lights to this window need re-leading but as it is high and requires a fixed scaffold externally the work could be carried out with other work (ie. stone repairs)

ED1 – The windows to front doors need re-leading

Door to computer room – This window needs re-leading as it is loose and as it is in a door being opened, closed and push it will deteriorate quickly

Other windows need work that is less urgent or only require work for aesthetic reasons, these are:

WF2, WF3 (bottom panels) & WF4 – All these windows are stick-on lead and would be better if they were put back to the original leaded lights especially if there is scaffold going up externally

WG1 – The glass to this window would benefit from the work recommended in the report but it would be for aesthetic purposes only

WG02 & WG3 – Work to these windows is not essential especially as they are mostly covered internally with blinds

4.0 INSPECTION OF VISIBLE TIMBERS

(A full copy of their report is included in Appendix E)

Robinson's Preservation Limited were commissioned to inspect the visible timbers and in the areas where're the roof was opened up for inspection or accessible via existing hatches..

Robinsons attended on site and viewed into the roof voids above the upper meeting room, the Oriel window, the single storey library and into that above the entrance stairway. They also viewed externally where exposed.

They noted repairs and staining from previous roof leaks but found the roof voids and timbers to be sound and dry where viewed.

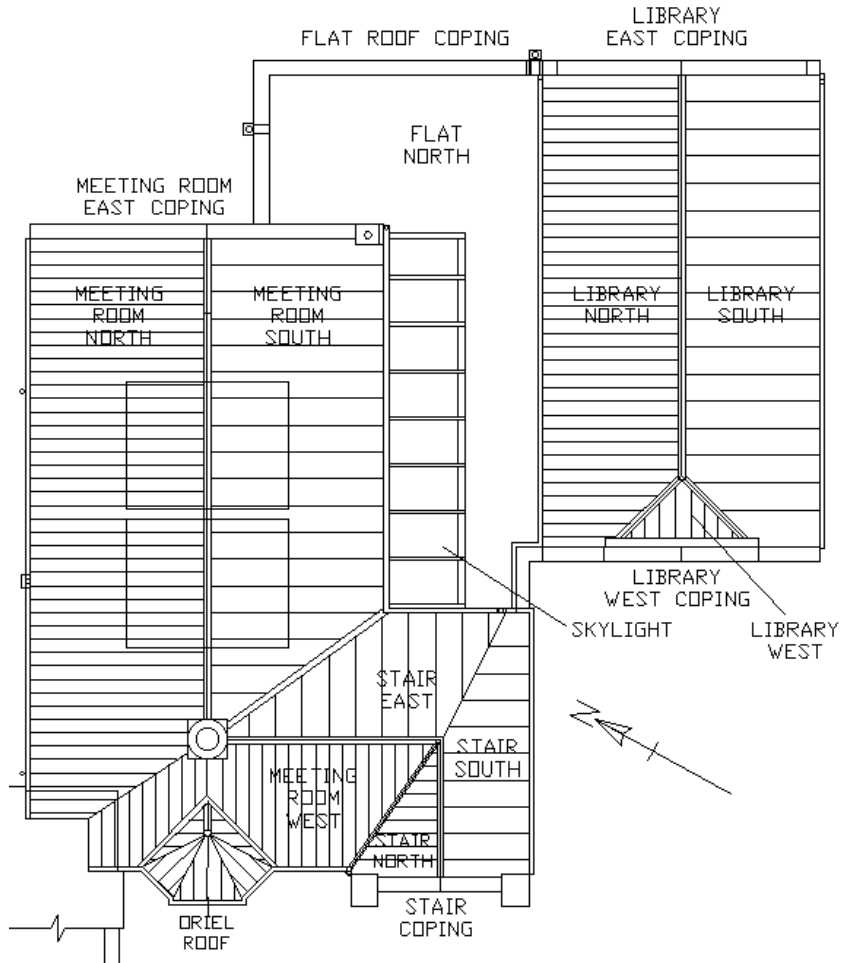
It was reported that no specialist remedial works were required to the accessible roof timbers (as viewed from the roof hatches) but that measures should be taken to stop water ingress around windows WF1 and WF5 and that the insulation, rolled up in the void above the stairs, should be rolled out between the ceiling joists to reduce the condensation risk below.

5.0 ARCHITECT'S INSPECTION AT HIGH LEVEL

5.1 INTRODUCTION

The installation of a scaffolding, to the front elevation, and MEWP access to the main roof and rear wall areas, allowed the Conservation Architect to inspect the condition of the roof, turret and upper walls, flashings, copings and windows in more detail. Visits were carried out on 21 and 26 January 2022, with support from Bradford Roofing Ltd to open up a section of the roof for inspection and to assess the integrity of the slate, battens, felt and nail fixings. The following observations were made, to inform the scope of proposed repair works and these, along with the key recommendations from the other specialist surveys, are indicated on the scope of works drawings.

For the purpose of this report and the proposed scope of works drawings, the roof areas will be referred to as indicated on the adjacent plan.



5.2 ROOF CONDITION

The roof had been fully re-furbished in 2000 and was noted to be in a good state of repair generally. Where exposed, the underlying felt, nails and battens were in very good condition, with no significant signs of fatigue, deterioration or damage. This was corroborated by the inspection of the roof interiors through access hatches in the ceilings below. The voids were generally observed to appear dry and free from significant water ingress. These could only be viewed from the hatch locations as the ceilings are not boarded for safe access.

Access was gained to view below the meeting room roof and that over the library. Both displayed evidence that condensation forms on the ceiling of the heated space below but this did not, in the areas observed, appear to have been an issue within the roof voids. These are vented by way of a breathable roofing felt and with additional air flow afforded by open vents formed at intervals in the felt..

5.3 GENERAL CONDITION OF THE ROOF FINISHES

5.3.1 MEETING ROOM ROOF

The roof slates to the meeting room roof appeared generally to be in reasonable condition.

Cumberland green slates in random widths and diminishing courses with only localised laminating and splitting. Patterning indicated that many had been re-laid with some area variations likely indicating where new slates were introduced during the previous refurbishment.

The pitch of the roof reduced the risk of wind breakages and laps appeared to be appropriate for the pitch and exposure.

The following defects were noted:

- Hip mitre flashings to junction with west slope partially displaced but still functional. A few of the cut slate slips at the head of the hip are displaced and require to be re-fixed. (below the ventilation turret)
- Concrete ridge tiles have been installed in place of the original terra cotta ridges. These show signs of lost bedding and pointing mortar and full re-bedding and pointing are recommended. If funds allow, red terra cotta ridge tiles would help to restore some of the character and significance of the original design.
- Allow for the replacement of spalling and split slates (10 to west slope, 25 to north slope and 30 to the south slope)
- There are noticeable dips in the roof to the east and west sides. These appear to be historic.
- Displaced slates noted to both north(10) and south (5)
- The valley flashings to the south appeared to be a little excessive in length and will need to be examined closely for splits or fatigue.
- There are a few slates that appear to display oxide staining and should be checked and replaced if compromised.



There are two distinct dips in the line of the ridge. It is not wholly clear if these were present during the 2000 refurbishment.



South several slipped slates and several with initial lamination or splits (south slope)



Damaged slates (South slope)

5.3 GENERAL CONDITION OF THE ROOF FINISHES

5.3.2 STAIR ROOF

The roof slates to the stairwall roof appeared generally to be in reasonable condition. Cumberland green slates in generally regular widths and diminishing courses with only localised laminating and splitting. Patterning indicated that several had been re-laid with some area variations likely indicating where new slates were introduced during the previous refurbishment. The slates adjacent to the entrance gable appeared to have been replaced at some time. The pitch of the roof reduced the risk of wind breakages and laps appeared to be appropriate for the pitch and exposure.

The following defects were noted:

(Read in conjunction with Appendix E – Gable defects and emergency holding works)

- Missing slate from the central area of the south slope (resting in the gutter)
- Hip mitre flashings partially displaced but still functional. Some re-dressing required. Re-fixing of a few loose cut slates where they line the valley.
- Allow for the replacement of spalling and split slates (2 to west slope, 8 to north slope and 10 to south slope)
- Initial loss of mortar and cracking of bedding to the terra cotta ridge tiles. Two different designs used where original losses have been patch replaced. Full re-bedding and re-pointing is recommended.
- Cover flashings & soakers have insufficient cover following the displacement of the roof/gable.
- There are two very narrow slates to the north slope that may not offer enough side cover the lap below.



Mitred lead hip detail has lifted leaving the edge slates vulnerable to wind damage. Some re-fixing and re-dressing is now required to ensure integrity.



Open joints and split bedding to ridge tiles. Past use of different section ridge tiles for repairs.



Slipped slate visible in gutter. Spalled/shaled slates and displaced ridge slate. Mis-match in clay ridge tiles.



Open joints and split bedding to ridge tiles. Past use of different section ridge tiles for repairs.

5.3 GENERAL CONDITION OF THE ROOF FINISHES

5.3.2 STAIR ROOF CONTINUED:

(Read in conjunction with Appendix E – Gable defects and emergency holding works)



Displaced gable evident in the mis-alignment of the flashings and in the open displaced joint of the coping..



Insufficient lap to soakers/cover flashings where displaced and narrow back gutter blocked with debris..



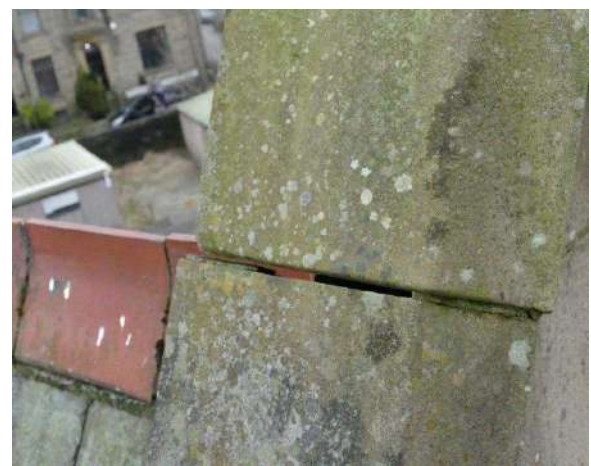
Missing slate from the east slope exposing the joint and nail fixings below. Repair is required..



Opened up area reveals breathable felt, battens, fixings and slate all to be in good condition.



There was no evidence of movement in the internal stretcher bond brickwork. It is possible that ferrous fixings for the stonework have corroded to release the outer panel.



The head coping above the entrance is completely de-bonded and can be lifted. This should be secured as a matter of urgency.

5.3 GENERAL CONDITION OF THE ROOF FINISHES

5.3.3 ORIEL ROOF

The roof slates to the meeting room roof appeared generally to be in reasonable condition.

Cumberland green slates in random widths and diminishing courses with only localised laminating and splitting. Patterning indicated that many had been re-laid with some area variations likely indicating where new slates were introduced during the previous refurbishment.

The pitch of the roof reduced the risk of wind breakages and laps appeared to be appropriate for the pitch and exposure.

The following defects were noted:

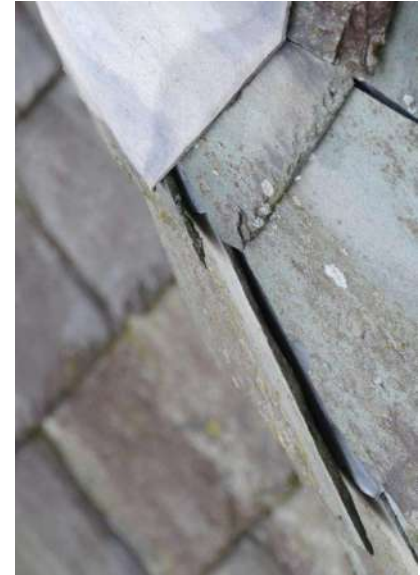
- Slipped slate to the lower end of the south valley
- Lower soaker to the north mitred hip flashing vulnerable to water ingress. Exposed section of dpc (temporary repair?) vulnerable to UV degeneration and blown rain ingress.
- Hip mitre flashings partially displaced but still functional
- Slate slipped from hip just below the turret plinth
- Some upper cut slates are displaced and vulnerable to winds
- Spalling of paint from the lead covered finial. Leadwork appears to be sound but a silicone seal to the hip head flashing at the base may indicate splitting of the lead in this position. This should be investigated and addressed.
- Open crack to ridge bedding.
- Lead gutter and apron excessive in length and welds are split. This is not in compliance with LSTA recommendations and is likely to be allowing moisture into the stone below.
- Due to the displacement of the Oriel window it is now holding water over much of its length
- The drip detail where the gable valley flashing drops into the gutter is insufficient.



Welded lead gutter lining/apron excessively long and vulnerable to thermal movement. The welded joints show hairline cracks.



Vulnerable soaker detail and exposed dpc repair vulnerable to UV degeneration.. Possibly also vulnerable to wind blown rain.



Slates to the head of the mitred hip have lifted and are vulnerable to wind damage. Clipping, lap and dressing of flashings is required.

5.3 GENERAL CONDITION OF THE ROOF FINISHES

5.3.3 ORIEL ROOF (CONTINUED)



Slipped slates to the foot of the oriel roof/west meeting room roof.



Split in weld to gutter liner from thermal movement of excessively long lead sections with no provision for movement.



Void below the oriel roof area



Roof void above Oriel window projection



Base of Oriel window north valley. Some water staining to the mitred hip adjacent..

5.3 GENERAL CONDITION OF THE ROOF FINISHES

5.3.4 LIBRARY ROOF

The roof slates to the library main room appeared generally to be in reasonable condition. Welsh blue and heather mix in regular widths and courses with only localised laminating and splitting.

Patterning indicated that many had been re-laid with some area variations likely indicating where new slates were introduced during the previous refurbishment (mainly to the hidden north face). The pitch of the roof is relatively low and some minor wind displacement of slates was evident

The following defects were noted:

- Initial minor cracks in the bedding/pointing to the ridge tiles
- Concrete ridge tiles have been used. It is likely that the original would have matched the clay tiles to the higher meeting room roof and entrance gable.
- The flashings to the east parapet wall are displaced and some of the cover flashings have lifted. These will be vulnerable to heavy rainfall and will allow water to penetrate behind the soakers. The bed joints in these areas are open and exposed. The cover flashings are excessively long which is probably why they have become ruffled, split and displaced.
- The soakers against the east parapet are stretched, possibly from the displacement of the bale, and may be directing water into the void below the slates. This should be rectified.
- There are open joints between some of the copings and some cracks in the bedding. Despite sections of lead inserted flashing, these joints are vulnerable once the mortar starts to weather and gaps open.
- Several of the slates to the north slope show signs of spalling and splitting and a tingle has been installed. These will need to be replaced with new or reclaimed to match. One slate appears to have been replaced with a lead sheet.



Library roof with concrete ridge tiles and welsh blue and heather slates



Copings have lead joint flashings but these will hold water as the pointing has in places failed..



Shallow lap of flashings and vulnerable abutment of wall/coping details



Loss of ridge pointing and bedding mortar.



Lead flashing and run off from coping impacting the brickwork.



Flashings have a minimal lap and are vulnerable to heavy rain..

5.3 GENERAL CONDITION OF THE ROOF FINISHES

5.3.5 FLAT ROOF AREA (SIKA survey included in appendix F)

The central area of the library has a flat, asphalt roof finish with a glazed lean-to lantern to the north. The asphalt is split, blistered and in places spalling and has been patch repaired on several occasions. The roof is currently believed to be water tight but the condition is relatively poor. The asphalt upstand was dressed up the face of the side walls but the cover flashings had been stolen in some areas and flashband had been used to replace some but not all sections.

The following defects were noted:

- Missing cover flashings (stolen)
- Flashings displaced around the only outlet.
- Blisters and splits in the surface of the asphalt
- Fractures from differential thermal movement.
- Worn sections of reflective paint
- Unprotected timber fascia to library roof.
- Open joints in copings



Opened weathered joints in the copings



Asphalt covered flat roof over the reception area. The outlet flashings are lifted following theft of adjacent flashings. Skylight no longer illuminating the reception.



Open joint where the asphalt cover flashing has been stolen and not replaced. Blisters and splits in the surface of the asphalt and unpainted fascia detail for mounting the gutter to the library roof.

5.3 GENERAL CONDITION OF THE ROOF FINISHES

5.3.6 ROOF OF ADJACENT BUILDING

A section of the roof to the adjacent town hall housing abuts the library with a back gutter detail. This is clearly holding water and allowing algae to grow on the slates at the abutment. This detail should be addressed to ensure that water does not lodge against the library brickwork.

Deterioration of the timber roof structure below could lead to rot and the potential for dry rot to take hold and possibly penetrate to the library. This should be raised with the owners.

Openings in the verge detailing of this building also increase the risk of the roof timbers deteriorating from rot or beetle infestation. The roof is also vulnerable to bird and insect access.

The following defects were noted:

- Slipped slate to the lower end of the south valley
- Lower soaker to the north mitred hip flashing vulnerable to water ingress. Exposed section of dpc (temporary repair?) vulnerable to UV degeneration and blown rain ingress.
- Hip mitre flashings partially displaced but still functional
- Corrosion to finial. General integrity appears to be sound
- Open crack to ridge bedding.
- Lead gutter and apron excessive in length and welds are split. This is not in compliance with LSTA recommendations and is likely to be allowing moisture into the stone below.
- Due to the displacement of the Oriel window it is now holding water over much of its length



Narrow back gutter flashings to adjacent roof and limited outfall. Lack of fall and debris leading to standing water and potential rot of timbers below.



Poorly finished detail to adjoining verge. Open gaps will allow bird and insect access. Poorly finished detail where the back flashing to the abutment meets the verge.



Deterioration of stone facings from saturation below the adjacent flashing detail. This must be addressed to slow the deterioration.

5.0 ARCHITECT'S INSPECTION AT HIGH LEVEL (Continued)

5.4 VENTILATION TURRET

The capping to the ventilation turret is heavily corroded. Painted to look like copper, this is in fact painted mild steel and is likely to have been replaced during the 2000 refurbishment.

The turret is screw fixed to a lead covered timber sub frame lead covered fixings to the head of the framing posts. The lead apron has been painted to match the capping but this has now weathered.

The turret is mounted on a lead faced plinth that straddles the ridge and hip.

The following defects were noted:

- Corrosion of the steel turret capping and drip base
- Displacement of fixings to the lead coverings and lifting of some flashing details
- Corrosion of the fixings and steel at the base of the turret. Possible corrosion increased by bi-metallic contact following the breakdown of the coating.
- Failure of the protective paint coating to the steel
- Failure of the coating to the timber base below the lead apron (exposed open grain and potential need for some repair). Uncovered fixings through the lead will allow water into the timber below.
- Oxidisation of the lead facings to the plinth box below the turret.
- The lead facings are also dressed tightly around the plinth box and there are some initial hairline cracks from thermal movement.



Spalling paint and bare timber to turret base. There is no drip throating in the timber base. Some timber repairs may be required.



The lead facing to the turret plinth boxing is oxidised and there are hairline cracks and ruffles from thermal movement and tightly dressed corners and fixings.



Steel turret cap heavily corroded. Appears to be mild steel replacement of original but not wholly clear. Removal required for repair and re-coating



The lower drip detail of the turret is also showing signs of corrosion and fixings may be compromised.

5.3 GENERAL CONDITION OF THE SLATES

5.5. CHIMNEY STACK

A brick chimney rises from the south east corner of the meeting room roof. The flue rises diagonally through the east wall of the meeting room from a flue in the central area of the gable at ground level and rising in turn from the basement.

The south face of the chimney has a stone raking facing and there is a stone capping with concrete flaunching and modern terminal pot.

The following defects were noted:

- Excessive staining of the wall and ceiling below the chimney in the meeting room (suggestive of water ingress through the chimney masonry or through inadequate flashing details).
- Displacement of the stone facings and brickwork to the south side of the chimney. This will require to be dismantled to allow a full repair and appropriate tying of the stonework.
- The mortar flaunching is split and exposes open cracks in the piecemeal stone capping below.
- The pointing to the chimney sides is weathered and there are some open joints. These will be contributing to moisture levels in the walls below.
- The integrity of the flashings appears reasonable in general but the back flashing and the abutment with the coping are minimal with no apron behind the chimney and minimal lap to the soakers/step flashings to the side. These flashings require to be better detailed.
- There is staining of the east wall at the junction and a significant open joint. Water cascading down the copings is not flashed away from this junction.



Split in the brickwork, capping and stone facing to the south of the chimney. Open joint from flaunching into the construction.



Shallow flashings and outfall detail leaving the chimney vulnerable to water ingress.



Displaced bricks and capping.

5.6 STONE WALLING TO THE WEST ELEVATION (ENTRANCE)

The west entrance elevation is faced in finely dressed ashlar stonework concealing a brick inner construction.

The sandstone facing appears to be largely face bedded, presumably for economy at the time of building, but this has left the facings vulnerable to spalling. The use of a cement mortar for past re-pointing works to much of the elevation has exacerbated this, resulting in widespread spalling of the stone facings to large areas of the elevation. It is proposed that these are carefully dressed back by a conservation mason and that the joints are raked out and re-pointed in a feebly or moderately hydraulic sacrificial mortar to minimise the rate of future deterioration of the facings.

Projecting relief to details such as the gable patterning, lettering and crest has an exposed top edge. This should be weathered with a mortar fillet or protected with a short drip flashing detail to preserve the detail. This should be considered on a detail by detail basis.

The following defects were noted:

- Extensive spalling of face bedded ashlar dressings
- Extensive cementitious mortar and associated deterioration of the stonework.
- There is extensive staining from algae and moss where stonework has remained damp, even on this west elevation. Over-shading by vegetation and trees will be exacerbating this and consideration should be given to reducing the shading or removing the vegetation.
- Water held in stonework around cement mortar joints has also allowed algae to form
- There is excessive staining of the stonework and spalling associated with an overflowing rainwater pipe to the north of the entrance doorway. This should be attended to and the drain cleaned and checked (as water backs up in the gulley at the foot of the rwp).
- Heavily weathered and open joints in the string courses, cills, window surrounds, copings and abutments. There is a need for extensive pointing. Ideally, all cement mortar will be carefully removed and all joints fully packed and pointed in a moderate to feebly hydraulic lime mortar.



Exposed ledges to the stone detailing relief are vulnerable to standing water and freeze thaw damage. The green algae shows where moisture ledges..



Deterioration of the stonework adjacent to the cement pointing shows where water has remained trapped in the stonework and has frozen. These require very careful raking out.

5.6 STONE WALLING TO THE WEST ELEVATION (ENTRANCE) CONTINUED:



Open vertical joint between copings and buttress finial extended pier.



Open joint to the foot of the loose gable panel & window head below.



Open joint and displaced masonry to the entrance gable piers..



Lead drip capping to oriel window too shallow to fully protect the upper stonework.



Staining where water has accessed split welds in the lead gutter lining above.



The south pier extension is displaced from the central wall panel and appears to be

5.6 STONE WALLING TO THE WEST ELEVATION (ENTRANCE) CONTINUED:



Open joints to the edges of the compromised gable panel.



Open joints have been inundated with vegetation which is now causing real damage to the stonework.



Addressing spalling facings will result in further loss of detail from carved details. New indents to be considered to retain definition.



Vegetation and exposed, open joints have led to the local displacement of stonework.



Spalling of stonework adjacent to cement pointing. Raking out strongly recommended.



Displaced pier stonework to side of entrance gable. Visible displacement from window head

5.6 STONE WALLING TO THE WEST ELEVATION (ENTRANCE) CONTINUED:



Open joints and displaced spandrel panel above main doorway.



Spalling facings to the pier, stooling, cill and window surround.



Spalled facing and split to voussoire and past transom repair. Investigation required to assess if full replacement is required.



Impact of long term saturation. Rainwater pipe, gully and vegetation all require to be addressed as part of the repair.

5.7 STONE TO THE ORIEL WINDOW:

TO BE READ WITH THE STRUCTURAL ENGINEER'S REPORT IN APPENDIX C AND EMERGENCY WORKS PROPOSALS IN APPENDIX A

The oriel window has deflected and this has led to stress cracks in the masonry and distortion in the interface with the main body of the wall. Works to rectify this will need to be co-ordinated with the Structural Engineer and mason's temporary works designer. The following issues were noted that require attention:

- Spalling of facings from the face bedded and cement pointed stonework
- Ledges to the top of displaced stonework that can hold moisture and may lead to increased deterioration of the facings.
- Heavily fractured cill sections requiring replacement and other fractures and splits that need to be investigated and repaired or replaced.
- Fractured stone lintol and corrosion of remedial steel framing installed in the past.



Spalling facings and past cementitious pointing..



Line of displacement of masonry by the oriel window..



Damage to the transoms may be from corroding dowels, stress fracturing or a result of adjacent cement pointing. Dressing back may not be sufficient to address this. The cill requires to be replaced.



Fractures to the cills and lintols require stitch repairs and new stone to be put in place. The displacement needs to be arrested before the stone is replaced.

5.8 RAINWATER GOODS (WEST ELEVATION)

Original rainwater goods are cast iron with circular downpipes with earbands and decorative hoppers. A number of issues were noted and consideration should be given to de-rusting, repairing, priming and painting them and installing new fixings.

The following defects were noted:

- Spalling paint and rusty rainwater pipers and hoppers
- Missing fixings and spacers from rainwater pipes to the north and west elevations.
- Blocked gulley to the central front downpipe and evidence of sustained overflowing at pipe junctions.
- Fracture to the front elevation head hopper and lower earbands
- Water penetration around the lead outlet from the oriel gutter.
- Both gulleys to the west of the building were blocked and backed up at the time of the survey.



Fractured ear band, corroding fixings and spalling finishes. Repeated saturation of the adjacent masonry has led to extensive spalling and algae growth. The gully was blocked when surveyed.



Weathered decoration and rusting of the original cast iron hopper heads. Narrow



Water ingress around oriel roof gutter outlet. The shallow laps & upstands are likely to be the cause of water leaking through the outlet & staining the stonework.

5.8 RAINWATER GOODS continued



The fall pipe from the east gable of the stair roof down to the south gutter is missing and water simply cascades down the wall. All fascias are in need of repair/replacement and re-decoration.



The fall pipe adjacent to the library staff room entrance, has a number of fixings and spacer blocks missing. Repair is urgently recommended.

5.9 LEADED GLASS LIGHTS AND FRAMES –SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS (READ WITH APPENDIX - LEADED GLASS SURVEY)

Some of the original Art Nouveau leaded lights remain and two are in a precarious condition. A full report and images are included in Appendix D

The following defects were noted:

- Buckled panels and one completely displaced from the line of the adjacent glazing to the oriel window.
- Loose leaded unit to the main entrance doors
- Spalling paintwork and corrosion to opening window hoppers/casements.



Spalling of galvanised steel hopper/frame. Redecoration and repair required but taking care not to damage the galvanizing.

5.10 DETERIORATION OF STONE MULLIONS/TRANSOMES

(See also 5.6, 5.7 & 5.8)

Neglected pointing works and past cement pointing have speeded the deterioration of the stone mullions and transoms.

The following defects were noted:

- Spalling facings and fractures in the stone mullions. Some indent repairs may be required
- Potential corrosion of ferrous dowels may be the cause of some splitting. Ideally, ferrous dowels should be removed before the stonework is irreparably damaged.
- Spalling to the mullion facings. Dress back to inspect integrity below.
- Multiple open joints requiring raking and lime pointing. Cement pointing is damaging the stonework.



Spalling of exposed transoms and mullions. Re-dressing possible but at loss of some definition of the detailing of the stonework.



Splitting and spalling of the mullions/cill/transom to the Diocletian window. Possible impact of corroding ferrous dowels or of stress fractures linked to movement above. Some careful cutting out required to determine the extent of an indent that is required.

5.11 DEFECTS TO THE BRICKWORK/ COPINGS

The external walls of the building red brick in stretcher bond with ventilated cavities and with a stone facing to the west elevation and dressings to windows and doors. Condition is generally good and the brickwork is generally well pointed.

The following defects were noted:

- Open joints above an inserted cavity tray. Possible settlement of the brickwork
- Open joints around window openings and below copings etc
- Fractured pointing to the south section of the chimney
- Packing and pointing missing from above some of the flashings..
- Localised areas of spalling mortar.
- Many open joints in copings, missing dog cramps and partly ineffective flashings.



Open joints on stepped cavity tray. Possible settlement of new wall/foundation but requires to be re-packed and pointed.



Open joints and partial flashings allow water to penetrate below the copings and damage the mortar.



Dog cramps that secured the copings have been removed and the line of the copings appeared to have become a little displaced.

5.12 TIMBER WINDOWS

Windows, other than those to the west elevation, are generally timber framed with sashes to the smaller windows and largely fixed lights to the larger windows. Repairs in 2000 re-created the original window designs internally using box section timber, framed to create the original mullion profile etc.

Many of the windows have rotted at cill level and to the lower rail of the sash casements etc. This will now require extensive cutting out of rotten timber and piecing in of new,

The following defects were noted:

- Past softwood repairs have failed and are rotten
- Cill and sash lower rail sections have rotted where moisture has remained in the un-protected timber
- Widespread failure of the protective coatings from delayed maintenance.
- Spalling to the mullion facings. Dress back to inspect integrity below.
- Timber sills seated on stone cills with no drip or fall.
- Open joints to window heads, dressings and around frames



Weathered cill of fixed light window and need for repair and full re-priming and decoration.



Open joints around casements, extract of warm air that appears to be routed through the chimney flue, cement pointed joints and a lack of drip detailing all appear to have contributed to moisture levels in the wall. The transoms appear to slope back to the frame in places.



Cill timbers and the lower side of the rails have suffered most from degradation.

5.13 INTERNAL DEFECTS

Internal walls are plastered and ceilings are original lath and plaster. The windows are generally timber frames with plastered reveals to all openings. The larger windows to the east elevation have been repaired in a softwood and the reveals repaired with boarding on dabs or timber grounds. These are now displaced and there are signs of both condensation staining and water ingress in various places. This is worst to the east elevation and to the chimney wall (south east corner of meeting room), to the head and sides of the west window in the stairwell and around the north west corner of the meeting room. There is also some staining within the staffroom around the line of the flue. The flat roof is a concrete and iron beam filler joist construction and in places, where exposed, was corroded and with spalled covering.

The following specific defects were noted:

- Spalling and distorted surrounds to window openings on the east side of the building.
- Some spalling and corrosion of the filler joist roof construction above the reception area. Some de-rusting, priming and repair is required.
- Deterioration of decoration in a number of areas as detailed in the original condition survey report.
- Spalling of the paintwork to the main entrance soffit (possible moisture issues but may just be incompatible paints).
- Spalling paint to the stonework and reveals of the west elevation. Non breathable paints used.



Displaced boarded surround to the east windows and moisture staining of the plaster above. Likely ingress from open joints and copings externally



Spalled facing and corroded filler joists. The original coving remains above a recent suspended ceiling. Repair is recommended.



Spalling stone and vinyl paint covering. Consider removing the paint & tidying the stone. Oriel window.



Spalling stone and vinyl paint covering. Consider removing the paint and tidying the stone. Stair window.

6.0 CONCLUSIONS, RISKS AND RECOMMENDATIONS

The building is generally in a reasonable state of repair, having undergone a significant and well detailed and specified refurbishment in 2000. The passage of time and a lack of maintenance, in recent years, has allowed some defects to develop that now require attention. This report identifies the general scope and type of defects and the accompanying scope of works drawings (appendix G) identify the works that are recommended to address these issues.

The final scope of works will be dependent upon the available funds and so the proposed works have been assessed for urgency and in relation to the risks that they pose. This is outlined in Appendix B to this report.

The general scope of works required to address the issues raised in this report are as follows:

6.1. General Repairs:

- Localised roof repairs to address damaged, displaced and missing slates
- Lifting, re-bedding and pointing of ridge tiles (consideration of replacing concrete ridge tiles with clay to match original).
- Repairs and tightening of flashings to hips and valleys and replacement of inadequate flashings as noted to copings, abutments, upstands, ventilation turret, finial, etc.
- Introducing lead dpc to stone copings and re-setting, clipping and pointing
- Replacement of the oriel window gutter flashings with one detailed to accommodate thermal movement.
- Carefully cut out and replace stone damaged beyond repair (as noted)
- Carefully re dress and re-point spalling stonework to match original dressing. Weather any ledges created.
- Agree areas and carry out localised re-pointing works to the brickwork.
- Carefully rake out all cement pointing, with hand tools, from the west elevation and fully re-point in an appropriate lime mortar.
- Repair, replace and re-decorate existing Cast iron rainwater goods. Replace all RWP fixings with colour coated stainless steel and with new spacer blocks where required.
- Carry out the leaded glass repairs as the recommendations of the report
- Carry out preparation and repairs to the flat roof. Defect as noted in section 5 and the Sika report and consider a traditional asphalt repair or client recommended Sika repair.
- Fully refurbish and re-decorate the steel ventilation turret
- Repair/replace and re-decorate timber fascias, plinth boxings, etc
- Repair and re-decorate all timber and steel windows
- Encourage the owner of the neighbouring property to carry out repair to their roof where it abuts the library.
- Clean and inspect all drainage and repair as required (2 gulleys currently blocked and backed up).
- Dismantle displaced sections of the chimney and re-build ensuring appropriate weathering, pointing and flashings. Ensure ventilation to the whole stack.
- Plan for the careful dismantling and re-building, tying in of the compromised entrance gable panel and piers. (Prior emergency structural holding works to be carried out as below)
- Carry out internal repair and redecoration where there has been damage to plasterwork and other finishes)
- Install the insulation between the ceiling joists of the ceiling above the stairwell.
- Inspect the filler joist slab above the suspended ceiling and repair damaged or corroding areas
- Conservatively remove paint from stone mullions etc

6.2 Structural Repairs:

- Carry out emergency restraining works to the entrance gable and piers as the Structural Engineer's recommendations
- Carry out further investigations of the Oriel Window with localised dismantling of damaged stone, by a Conservation Contractor

6.3.3 ASSESSMENT OF URGENCY AND ASSOCIATED RISK				
	ELEMENT OF WORKS	URGENCY	RISK IF NOT ATTENDED TO.	COMMENTS
1.	Localised roof repairs to address damaged, displaced and missing slates	A	Risk of falling slates, risk of wind lifting adjacent slates.	The felt will provide a level of protection but repair is always recommended as part of on-going regular maintenance.
2.	Lifting, re-bedding and pointing of ridge tiles (consideration of replacing concrete ridge tiles with clay to match original).	B	Risk of tiles become displaced or falling. Risk of water ingress if the roof felt is not fully lapped at the ridge.	This should be carried out as part of the current works to maximise the advantage from scaffolding.
3.	Repairs and tightening of flashings to hips and valleys and replacement of inadequate flashings as noted to copings, abutments, upstands, ventilation turret, finial, etc	A	Flashings are essential for the weathering of the building. These should be correctly detailed and tightly dressed. These works should be prioritised as part of the roof works to prevent moisture penetration and damage to the fabric.	Ideally, the details would be improved as below. If funds do not allow then the focus could be on repair & localised replacement to ensure a good current level of integrity. Coping flashings become most useful as the mortar jointing starts to weather and fail.
4.	Introducing lead doc to stone copings and re-setting, clipping and pointing	B	This would improve the long term effectiveness of the copings and ensure their integrity to prevent moisture ingress into the fabric of the building.	A good drip flashing below the coping would also help to avoid staining of the masonry below.
5.	Replacement of the oriel window gutter flashings with one detailed to accommodate thermal movement.	B	This is just starting to fail again and should be addressed to prevent moisture penetrating the stone and roof construction below.	
6.	Carefully cut out and replace stone damaged beyond repair (as noted)	A/B	Some of this is urgent to prevent failure of mullions and falling of stone, collapse	Testing for ferrous dowels would identify where problems are likely to occur. In the meantime the joints should be kept tightly pointed to minimise corrosion and deterioration of the stone.

			attention to slow deterioration but could be carried out later if funds are short.		
7.	Carefully re dress and re-point spalling stonework to match original dressing. Weather any ledges created.	A/B	The cement pointing is causing a premature lamination of the stone facings with some sections spalling.	This will continue to impact the facings. If funds don't allow for a full approach, then localised works could be carried out to target the worst affected areas.	
8.	Agree areas and carry out localised re-pointing works to the brickwork.	B	This will mostly be picked up with other works (copings etc) but some additional re-pointing is required to specific areas to prevent moisture ingress and deterioration of the brickwork.		
9.	Carefully rake out all cement pointing, with hand tools, from the west elevation and fully re-point in an appropriate lime mortar	A/C	This should be included with the current works to slow the deterioration of the now heavily spalled ashlar walling.	Sections that are at risk of imminent fall could be prioritised first.	
10.	Repair, replace and re-decorate existing Cast iron rainwater goods. Replace all RWP fixings with colour coated stainless steel and with new spacer blocks where required.	A	Some sections of these are at a current risk of falling and would undoubtedly do so if someone attempted to climb them. Urgent re-fixing is required as a minimum,	There is also a missing section and fixings need checking in all sections.	
11.	Carry out the leaded glass repairs as the recommendations of the report	A/C	Only a few items are immediately urgent to prevent failure and loss of original heritage fabric. Other areas would benefit from attention but it is not urgently required.		
12	Carry out preparation and repairs to the flat roof. Defect as noted in section 5 and the Sika report and consider a traditional asphalt repair or client recommended Sika repair.	B	The replacement of missing flashings is urgent to prevent water ingress. The other repairs are not as immediately urgent as it is understood that there are no current leaks.	Ideally this work would be carried out as one phase of works with the other areas.	

13	Fully refurbish and re-decorate the steel ventilation turret	A	This is now heavily corroded to the cap and plinth details and some repair is required, along with the replacement of the conical cap detail. This will be allowing moisture into the roof structure and internal ducting and will lead to issues if it has not already done so.	
14	Repair/replace and re-decorate timber fascias, plinth boxings, etc	B	Full preparation and redecoration are now urgently required to prevent further loss of timber to rot and decay.	
15	Repair and re-decorate all timber and steel windows	A/B	This is urgently required to prevent further rotting/rusting and to prevent water ingress.	Window galvanising appears to be of a good gauge and should be retained wherever possible.
16	Encourage the owner of the neighbouring property to carry out repair to their roof where it abuts the library.	B	This is not immediately urgent but the overflow of water is impacting the stonework of the library.	
17	Clean and inspect all drainage and repair as required (2 gulleys currently blocked and backed up).	A	Drains appeared to be blocked and will impact upon the adjacent ground and building fabric.	This should be cleared and checked regularly as part of routine maintenance.
18	Dismantle displaced sections of the chimney and re-build ensuring appropriate weathering, pointing and flashings. Ensure ventilation to the whole stack.	A	This is urgent as the south facing and stonework are visibly displaced and may fall onto those below.	
19	Plan for the careful dismantling and re-building, tying in of the compromised entrance gable panel and piers. (Prior emergency structural holding works to be carried out as below)	B	Emergency holding and restraint works are planned to secure the blockwork. The risk to those below is significant.	The holding works are intended to secure the gable while permission is sought for the dismantling and repair.

20	Carry out internal repair and redecoration where there has been damage to plasterwork and other finishes)	C	This is primarily an aesthetic issue, although areas where there has been excessive moisture ingress should be inspected for signs of damp or insect attack and for signs of lining panels being at risk of falling.	
21	Install the insulation between the ceiling joists of the ceiling above the stairwell.	C	This is not urgent but may reduce the formation of condensation staining on the roof.	
22	Inspect the filler joist slab above the suspended ceiling and repair damaged or corroding areas	C	Corrosion appears to be relatively light in the areas inspected but full inspection is required as failure of a joist could result in a partial collapse of the roof.	
23	Conservatively remove paint from stone mullions etc	C	This is primarily aesthetic but will also allow moisture to wick from the stone and not to be trapped against its face.	It the stone remains saturated in winter it can spall or shale and any iron dowels will corrode more quickly.
24	Carry out emergency restraining works to the entrance gable and piers as the Structural Engineer's recommendations	A	This is essential to ensure the integrity of the gable spandrel and the side piers.	
25	Carry out further investigations of the Oriel Window with localised dismantling of damaged stone, by a Conservation Contractor	A	This is essential to slow further displacement and spalling of stonework. This needs to be carefully co-ordinated with the other works.	

KEY TO URGENCY/RISK RATING

- A** Urgent action required to address an immediate Health and Safety Risk or risk to the fabric of the building
- B** Moderately urgent Health and Safety Risk or risk to the fabric of the building. Action recommended within 18 months.
- C** Developing risk to Health and Safety Risk or risk to the fabric of the building. Action recommended within 5 years.

APPENDICES:

Appendix A – Emergency Holding Works

Appendix B – Feedback from the Conservation Officer re. urgent works

Appendix C – Structural Engineer Survey

Appendix D – Specialist Leaded Light Survey

Appendix E - Specialist Timber Survey

Appendix F – Sika Flat Roof Report

Appendix G - Architect's scope of survey drawings

Appendix A – Emergency Holding Works

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EMERGENCY WORKS
January 2022



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EMERGENCY WORKS
January 2022



TABLE OF CONTENTS:

	PAGE
1.0 INTRODUCTION	3
2.0 DISPLACED GABLE	4
3.0 DISPLACED PIER & STONWORK	6
4.0 DISPLACED LEADED GLASS LIGHTS	7
5.0 SUMMARY OF PROPOSALS	8
6.0 REGULATORY FRAMEWORK – PROPOSED URGENT WORKS	8
7.0 APPENDICES	8

Appendix A. DRAWING 2215.29.403- EMERGENCY WORKS ELEVATION AND NOTES

Appendix B. DRAWINGS X49 SK10 Rev A – STRUCTURAL PROPOSALS – RESTRAINT OF PILLARS

Appendix C. DRAWINGS X49 SK11 Rev A – STRUCTURAL PROPOSALS – RESTRAINT OF GABLE

Appendix D PENDLE GLASS – LEADED LIGHT REPORT

Appendix E STRUCTURAL REPORT



1.0 INTRODUCTION

Bradshaw Gass and Hope LLP was commissioned in December 2020 to carry out a Condition Survey of Milnrow Library, with specific attention to the roof and window condition but with a general overview of the fabric.

The findings of this initial survey are indicated on the attached drawings, with reference to the photographs contained in this report. The survey was carried out on 4 and 15 December 2020.

The initial survey was carried out from ground floor level and without accessing any roof voids or upper roof areas. The recommendations made on the drawings are from this limited perspective and recommendations are made for further investigation/enabling works to understand more fully the nature and implications of any defects or decay.

During this initial survey a number of issues become apparent that warranted further investigation and some that may require urgent reactive maintenance. These are indicated in the original report and formed the basis of the further investigations.

Specialist surveys were carried out as follows:

- Historic leaded Lights – Survey by Pendle Glass (Appendix A)
- Structural by Conservation Structural Engineers Blackett-Ord (Appendix B)
- In addition, high level access was provided for inspection by the Conservation Architect of the roofs, ventilation turret, copings, and high level flashings and windows. This was enabled by Bullen Conservation with the assistance of Bradford Roofing and Robinson Preservations Ltd, timber and rot specialists.

Investigations were carried out in January 2022 and it was discovered that, in addition to the issues raised in the original survey and further investigated on site, there were two issues that presented an imminent risk to the health and safety of those accessing the building and to the long term survival of the building and its fabric.

- The upper three meters of the entrance gable have become detached from the roof and adjacent structure and now rocks when pressed. This is directly above the main entrance to the library. In addition, the apex coping stone is completely un-bonded and remains in place through gravity alone. There appear to be no securing dowels or ties. The gable appeared to be relatively stable but could be at risk of collapse in high winds.
- Two piers that flank the main entrance are formed of stone blocks and appear to be stack bonded to the gable and lower masonry. The central stones to these piers are displaced from the face of the gable and wall by up to 20mm and appear to be either fully detached to the central area or displaced by corroding iron cramps or ties. The central blocks are displaced sufficiently to present a real risk of collapse if not addressed.
- Two of the original Art Nouveau leaded lights are heavily buckled and one in particular is at a high risk of becoming further displaced and falling.

As these issues are considered as urgently in need of attention, it is proposed that they are addressed as outlined in the following notes, to prevent injury to the public and to ensure the continued retention and repair of the original fabric of this important heritage asset.

2.0 DISPLACED GABLE

The upper section of the entrance gable, above the level of the stair window, is currently unrestrained and rocks freely when pressed. It is not clear what restraint was originally in place or what has caused the integrity of the panel to be compromised. Original iron cramps, ties or dowels may have corroded to release the panel or open joints and the impact of freezing trapped water may have fractured the lower bedding plane where there is an open joint and relatively flat head detail.

The panel is at a real risk of future collapse and as the level of integrity between the panel and the wall cannot be assessed without dismantling, it is proposed that an intervention is made to provide temporary support for the panel while a full proposal for its future careful dismantling and re-instatement is devised and submitted for listed building approval.

Inspection within the roof void revealed a brick internal skin to the gable and relatively meagre roof spars and purlins that appeared not to offer significant restraint to the panel. There was a visible crack to the internal face of the brickwork at the level of the brickwork and this appeared to co-ordinate with the external crack.

Internally, there were also extensive signs of water ingress and sustained dampness at the foot of the loose panel where it is bedded on to the stair window lintol.



The top panel of the entrance gable can be rocked on its bed joint, three metres below at the head of the stair window.



The apex capping stone is de-bonded and remains in position by gravity. It can easily be lifted off the gable. An open joint is visible above.



Displacement of the gable appears to have stretched the soakers, reducing their lap with the cover flashings to 30mm in places. This is a likely source of water ingress.



The upper section of the gable is loose and is flanked by two piers with raised heads. The central panel appears to be un-bonded and the right hand pier has displaced to the south. The stonework of the pier is also displaced below.

2.0 DISPLACED GABLE (continued)

The rear of the loose panel, where it is bedded on to the head of the stair window, shows open cracks internally as well as externally and is likely to be from past water ingress and failure of the bed joint.

PROPOSAL:

It is proposed that a temporary restraint and bracing frame is installed within the roof void with the front angle resin bolted into the compromised gable from behind to provide temporary support.

The steel frame is to be braced and tied back to the existing roof structure behind. The final detail for this is to be agreed on site to suit the timber alignment and section sizes. Full details of the scheme, proposed by the Care registered Structural Engineer, are given in the appendix C.

A crach deck or suitable safety line will be required for the accessing of this roof space and templates will need to be taken on site for the steelwork to then be fabricated and installed.



External open joint to the stair window head at the base of the loose section of gable panel,. There are also open joints in stonework below where there is extensive water staining internally.



Within the roof void behind the compromised gable there is visible cracking at the base of the compromised panel that appears to coincide with the plane of the fracture externally.



Roof spars offer little real support to the gable and appear not to be strapped or tied to the gable in any way..



The brickwork to the side of the gable, which coincides with the south east pier and capping, is displaced and lifted. This may have been displaced by the movement in the external pier. This should be assessed during the future dismantling.

3.0 DISPLACED CORNER PIER AND DISPLACED STONEWORK

The entrance gable is flanked by two piers that extend beyond the height of the gable and are capped with raised stone pinnacles.

The south pinnacle has a very noticeable rotation to the south. The North pinnacle has a slight rotation to the south east and this is visible in the displaced mortar joint in the photograph below.

There appears to be little or no tying in of the gable panel with the piers and there is an open joint to both sides that is open to water ingress and may too have contributed to the failure of the gable panel.

Both open joints show a lateral displacement, suggesting that the piers have already rotated away from the gable panel.

The crack also extends below the level of the displaced gable panel and is very evident in the displaced stonework of the piers at the level below.



Open joint where the gable panel meets the corner finial. Water can freely run into the joint and into the core of the stone wall.



The south pier and finial has a distinct lean to the south which has further opened the joint to the gable panel



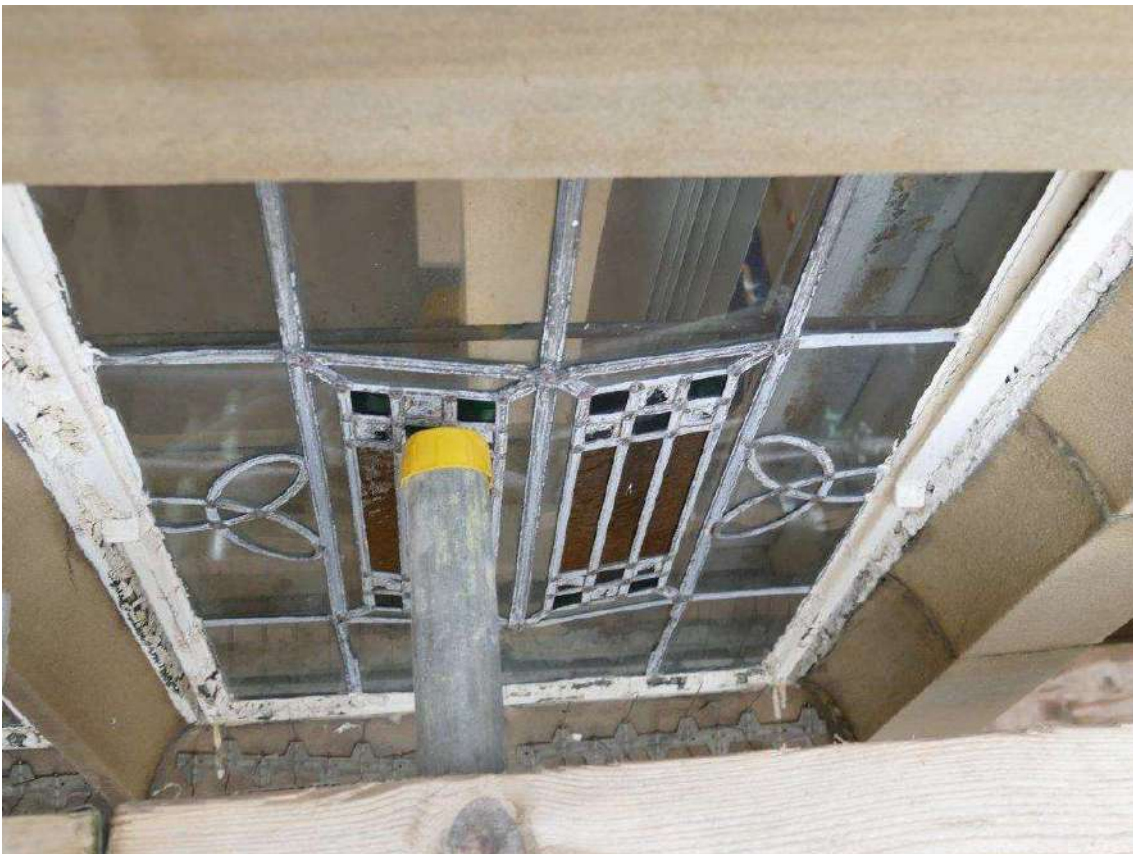
A crack has developed along the junction of the left hand pier and the wall and a significant open joint and displacement to the right hand side.



4.0. DISPLACED LEADED GLASS LIGHTS

Two central panels to WF3, the two panels of the central section of the Oriel window, are buckled within the surrounding leaded lights and are at risk of falling. The panels appear to be original art nouveau panels and require to be completely re-lead, along with the whole light, to ensure their longevity and survival.

It is proposed that, while the scaffolding is in place, the opportunity is taken to secure these two lights to prevent them from failing and the glass being damaged. It is proposed that the glass is secured in its current location until a full scale of repair works can be submitted for Listed Building Approval. If, on closer inspection, it is found the at the lights cannot be satisfactorily be secured on site, it is proposed that they are removed by a conservation leaded glass specialist and are re-lead in readiness for when the window and its adjacent stonework are repaired.



The central 2 panels of the original light have buckled outwards and are only supported by the lead comes. These are vulnerable to wind damage, to further distortion during hot weather or to any impact from the interior of the building.

5.0 SUMMARY OF PROPOSALS

In view of the issues raised above, the temporary scaffolding that was installed for the surveys, has been left in place to allow the urgent carrying out of temporary restraint works to the gable and piers and the potential securing or removal of the compromised leaded glass panels. Permission is requested to carry out the following works:

- The installation of temporary support works to the entrance gable and its side piers. These are detailed in the Care Structural Engineer's drawings included in appendix B to this report.
- The lifting and re-setting of the capping stone at the apex of the entrance gable cornice. (This is to be re-bedded into a lime mortar as a temporary measure with a proposal for it to be restrained with stainless steel dowels under a later Listed Building Application).
- The carrying out of pointing to the currently open joints between the copings of the gable and between the lower coping and the projecting finial of the side piers.
- The carrying out of pointing works to the fractured bedding joint at the base of the panel, that is currently loose, and of the open joints in the window head below (that have been allowing water to enter the fabric and compromise the internal plaster above the window)
- the carrying out of pointing to the vertical open joints between the central wall panel and the side piers.
- The fabrication and installation of a steel support framework, as detailed on the Structural Engineer's drawings, to provide lateral support to the compromised gable and to restrain and brace it back to the roof structure behind.

Note: An outline specification for the temporary pointing works is given on the attached drawing 2215.29.403, along with notes to identify the areas of proposed emergency works.

6.0 LEGISLATIVE POSITION

Permission is requested, under the provisions of Section 9.3 of the Planning (Listed Buildings and Conservation Areas) Act 1990 for the works outlined in this report to be carried out for the following reasons:

- The works are urgently necessary in the interests of Health and Safety and for the preservation of the building.
- The proposed works to the entrance gable high level masonry will be subject to a later Listed Building Application for their permanent repair and the current works are to afford temporary support to prevent the gable and pier stonework from collapsing.
- The proposed works are considered the minimum measures immediately necessary.

7.0 APPENDICES

Appendix A. DRAWING 2215.29.403- EMERGENCY WORKS ELEVATION AND SPECIFICATION NOTES

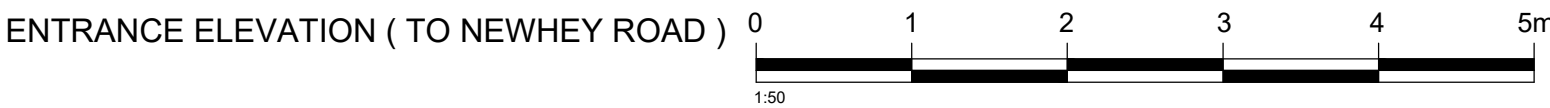
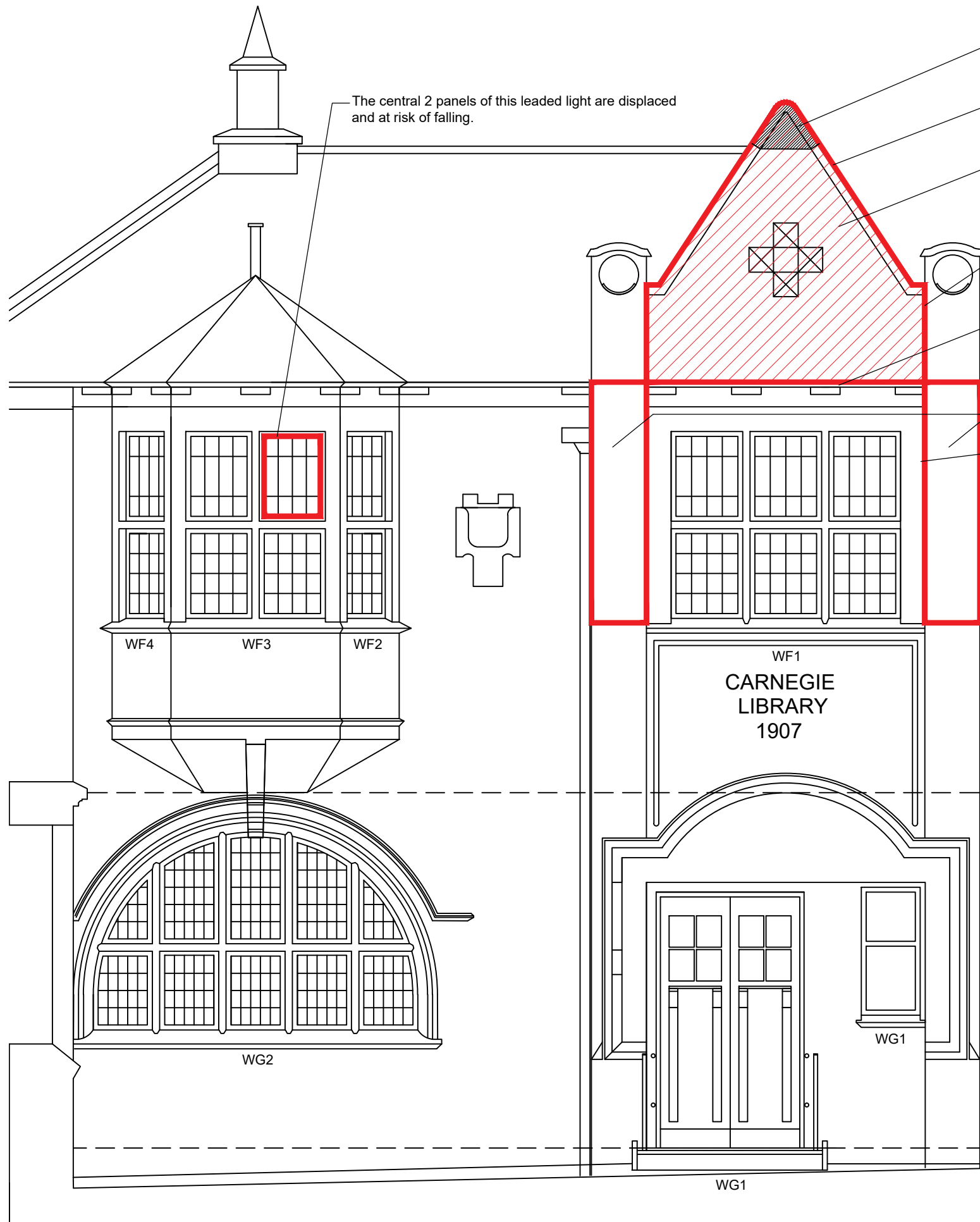
Appendix B. DRAWINGS X49 SK10 Rev A – STRUCTURAL PROPOSALS – RESTRAINT OF THE PILLARS

Appendix C. DRAWINGS X49 SK11 Rev A – STRUCTURAL PROPOSALS – RESTRAINT OF THE GABLE

Appendix D PENDLE GLASS – LEADED LIGHT REPORT

Appendix E STRUCTURAL REPORT

16 MAY 2022



GENERAL NOTES/SPECIFICATION.

Works only to be carried out following the preparation of an appropriate methodology and RAMS by the Contractor, to be submitted to the Principal Designer.

Works to be carried out by a Specialist Conservation Contractor with proven experience of lime pointing and working on the conservation and repair of Listed Buildings

Appropriate measures to be taken to protect adjacent parts of the fabric to prevent damage during the works.

Lime pointing works to be carried out by an experienced lime pointer and ensuring appropriate preparation, pointing and nurturing of the mortar to achieve a good fill, set, compaction, surface texture and integrity of finish. It is proposed that an NHL 2 hydraulic lime is used in conjunction with a Leighton Buzzard fine sand and a Nosterfield graded and washed river sand to provide a good sacrificial mix for these temporary repairs. Samples are to be prepared for approval by the Conservation Architect with an initial mix of one part lime to one part leightin Buzzard to two parts of Nosterfield washed river sand. The Nosterfield is to be graded as required to ensure that no aggregate exceeds on third of the joint width.

Joints that are to be pointed are to be carefully raked out with hand tools to a minimum depth of twice the joint width or 20mm, whichever is the greater. The joints are to be raked to a clean square profile and brushed to remove all loose material and debris.

Great care is to be taken to minimise any damage to the arrises of the ashlar facings. Joints are to be cut back with hand tools, working into the joint , away from the arris. The use of a feine cutter will be considered only with approval and following demonstration on site to ensure that the fragile face bedded facing stones are not damaged. Other mechanical hand tools are not permitted.

Joints are to be thoroughly wetted prior to re-pointing, to control shrinkage. Mortar is to be a dry mix, to just form a ball in the hand and is to be pressed into the joints to sit just proud of the arrises. Care is to be taken to avoid getting mortar on the stone facings. After the initial set this is to be compacted back into the joint with a churn brush to address any immediate shrinkage cracks. Once sufficiently set the joints are to be brushed with a churn brush to remove any laitance and expose the aggregate. Finished joints to sit very slightly back from the edges of the joint.

Pointing work is only to be carried out when temperatures are to remain above 5 degrees for a minimum of 72 hours and all pointing is to be nurtured by protecting it with Hessian, dampended repeatedly if required, to ensure that the mortar remains damp long enough to fully carbonate (A minimum of 72 hours) and to protect from excessive heat or wind exposure.

status

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The originator shall have no responsibility for any liability, loss, cost, damage or expense arising from or relating to any use of this document other than for its intended purpose on this project.

This drawing shall be read in conjunction with all other relevant drawings, specifications and associated documentation. Any discrepancies, errors or omissions are to be reported to the originator before proceeding with work.

All dimensions are to be checked on site by the contractor prior to proceeding with any work.

Hazard Identification

ref

hazard

date

This drawing is to be read in conjunction with the Sturctural Engineer's drawings reference X49:SK10A & SK11A

ref

revision

by

date

B | G & H

Architects Consulting Engineers Quantity Surveyors

21 Silverwell Street Bolton BL1 1PR t: 01204 525321 email@bghbolton.co.uk www.bghbolton.co.uk

client

ROCHDALE BOROUGH COUNCIL

project

MILNROW LIBRARY REPAIRS TO THE ROOF AND WINDOWS

drawing

FRONT ELEVATION EMERGENCY REPAIRS

drawn by

AGR

date

MAY 2022

checked by

date

scale

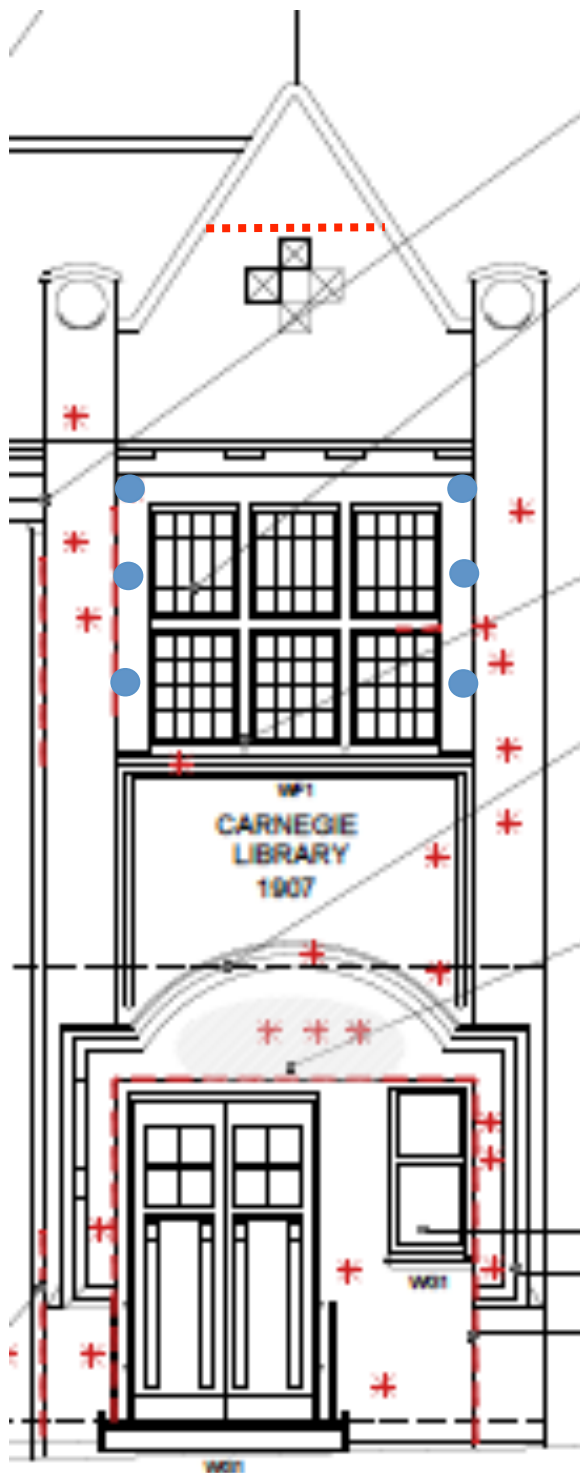
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2215.29.403

rev



New restraint to pillars

The existing stone pillars are not bonded to the stone face. There is a vertical mortar joint that has broken down and is allowing water to enter.

Behind the stone face is brick.

New restraint anchors to be drilled into the stone bed joint horizontally, but at an angle of about 60 degrees and to penetrate the brick core behind.

Each pillar to have 3 No restraint anchors. Consisting of 6mm dia stainless steel threaded bars, in a 10mm dia hole, anchored full depth with a Hilti resin applied under hand pressure from an application gun.

Care to be taken to avoid resin overspill onto stone face.

Rev A 28.03.2022 – First Issue



**Blackett-Ord Conservation
Engineering**

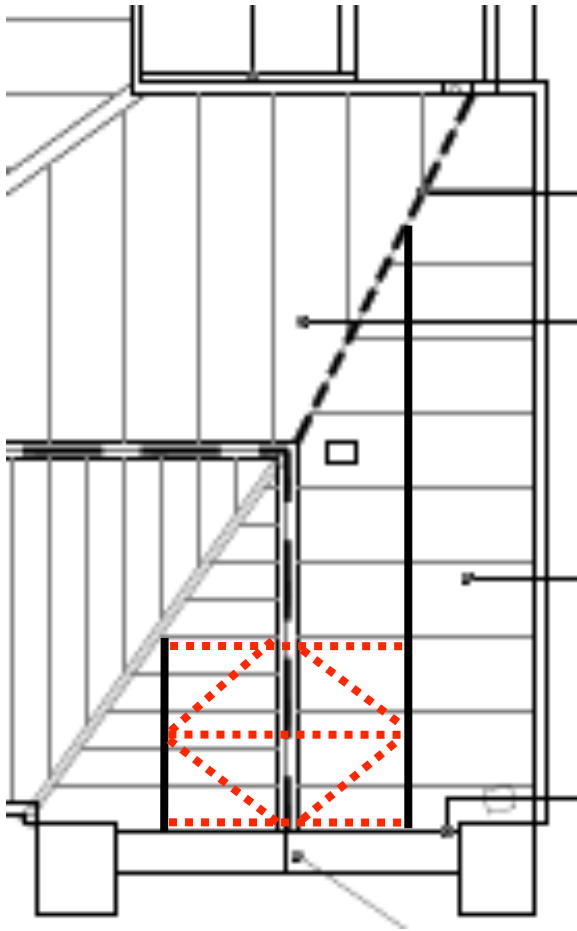
Studio 546, 5th Floor, Horton House, Exchange Flags, Liverpool, L2 3PF
Tel: 0151 353 7130 - email: ian@blackett-ordconservation.co.uk

Milnrow Library

Stone Gable - Elevation

Remedial Restraint Work

Job No: X49 Date: Mar 2022 Drg No SK10 Rev A



New restraint to gable

The stone face, brick backed existing gable can be rocked and is unstable. There is insufficient lateral restraint from the roof structure and this now needs to be enhanced.

Either on top, or below the existing timber purlins, insert a steel angle frame, coach screwed to the timber and resin anchored to the brickwork of the gable.

Consisting of 70x70x6 RSA, primed with a zinc rich primer. Each end fixed to timber with 1No 10mm dia x 50mm long hexagon DIN571 BZP coach screw.

Angle at the face of the brick to be fixed with 6No M10 x 150mm long Hilti HAS-U A4 stainless steel anchor rods, each with a Hilti HVU-TZ capsule resin.

Angle to angle connections to be achieved using M10 grade 4.6 black bolts, 1No per member end.



Rev A 28.03.2022 – First Issue



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Engineering**

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Milnrow Library

Stone Gable – Roof Plan

Remedial Restraint Work

Job No: X49 Date: Mar 2022 Drg No SK11 Rev A

Appendix B – Correspondence from Conservation officer re urgent works



Tue 17/05/2022 14:36

Catherine Fenghour <Catherine.Fenghour@Rochdale.Gov.UK>

RE: Milnrow Library - Condition Investigations

To Andrew Ruaux

 You replied to this message on 17/05/2022 14:53.

Dear Andrew

Thank you for your email and the attached structural survey and appendices.

From our discussions on site last week and the attached document, it is understood that the following urgent works are proposed:

- The installation of temporary support works to the entrance gable and its side piers as detailed in appendix B
- The lifting and temporary re-setting of the capping stone in a lime mortar
- Pointing in a lime mortar of the open joints between the copings of the gable and between the lower coping and the projecting finial of the side piers.
- The carrying out of pointing works to the fractured bedding joint at the base of the panel, that is currently loose, and of the open joints in the window head below
- The carrying out of pointing to the vertical open joints between the central wall panel and the side piers.
- The fabrication and installation of a steel support framework to provide lateral support to the compromised gable and to restrain and brace it back to the roof structure behind.

It is understood that all pointing is temporary and would be carried out using a lime mortar (NHL 2 mix).

From the information provided, it is my opinion that the works are urgently necessary to prevent the gable and stone work from collapsing and would meet the requirements as set out within Section 9.3 of the Planning (Listed Buildings and Conservation Areas) Act 1990.

An application for listed building consent should be made to regularise any urgent works at the earliest opportunity.

On site, we discussed the leaded windows, which have become displaced. I note that their removal is not included within the list of urgent works in the report. Instead it is suggested that these be retained and protected in-situ. This would be the preferred approach. However, if this proves not to be possible, please let me know, as this may also fall within the scope of urgent works. I would need to see a method statement for their dismantling and reinstatement as well as details of how and where they would be stored.

Please let me know if you have any queries.

Kind regards

Catherine

Catherine Fenghour
Conservation Officer
Planning



ROCHDALE
BOROUGH COUNCIL

 01706 924376

 catherine.fenghour@rochdale.gov.uk

Rochdale Borough Council
Floor 3, Number One Riverside
Smith Street, Rochdale, OL16 1XU

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Appendix C – Structural Engineer Survey

**Carnegie Library
Newhey Road
Milnrow
Rochdale
OL16 3PS**

**Structural Inspection
of
Front Elevation**

**April 2022
X49**



**Blackett-Ord Conservation Engineering
Studio 546, 5th Floor
Horton House, Exchange Flags
Liverpool
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**Tel: 0151 353 7130
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Contents

CONTENTS	2
INTRODUCTION	3
HISTORICAL BACKGROUND	3
STRUCTURAL OBSERVATIONS	4
GENERAL STRUCTURAL FORM	4
STRUCTURAL DEFECTS OBSERVED	4
RECOMMENDATIONS	5
NEXT STEPS	5
APPENDIX 1	6

Introduction

This report has been prepared in response to instructions received from Bradshaw Gass and Hope on behalf of Rochdale Borough Council. The brief was to undertake a visual non-intrusive structural inspection and report upon the concerns raised by the Council about the structural condition, stability and integrity of some areas of the external stonework, including:

- a. Visit the library with you and utilize the benefit of an hydraulic platform to inspect areas of concern to the elevations of stonework.
- b. Inspect visually corresponding internal areas to determine if there is any difference to the degree of deformation inside to outside.
- c. As deemed appropriate check verticality of parts of the wall using a spirit level and measure.
- d. Record locations and types of defect in the wall that are of structural significance.
- e. Take a photographic record of each part of the wall elevation and use available elevation drawings to record the position of the defects.
- f. Prepare a structural condition report with recommendations for repair and their priority. Include an indication of broad order of repair costs. Include atypical photographs for reference purposes.

Access to undertake our visual inspection was provided to us on 21st January 2022. Our inspection was visual, non-intrusive and undertaken on foot, utilising the scaffold access to the front elevation.

This report has been prepared for the sole use of the Council, their agents, appointed professionals and statutory authorities. It is not to be relied upon by any third party and shall not be distributed to other parties, other than statutory authorities, funders or insurers, without the consent of Blackett-Ord Conservation Ltd.

Historical Background

The Library building is Listed Grade II.

The Library was first entered on the List on 21st November 2012. Entry No 141073.

The listing description is quite comprehensive and abstracted as follows:

"Public library and forecourt wall. 1907 by architects' practice S Butterworth and WH Duncan of Rochdale. Sandstone ashlar, red brick to secondary elevations, slate roofs."

Reasons for Designation

The Milnrow Carnegie Library and forecourt wall are listed at Grade II for the following principal reasons:

** Architectural Interest: local architects' practice of Butterworth and Duncan successfully combined an eclectic mix of Arts and Crafts and Art Nouveau with a touch of Mannerism in the attenuated entrance gable to produce a wellbalanced and pleasing composition, enhanced by the use of high-quality materials and craftsmanship in the relief lettering and intricate ornamentation, and the leaded and stained Art Nouveau glass.*

** Layout: the library retains its original distinctive plan form with a central, top-lit borrowers' hall and lending library from where the librarian could supervise the large interconnecting reading room and the open-fronted boys' room, as well as the more enclosed ladies' room, with a lecture hall on the first floor, originally shared with the adjacent town hall offices.*

** Interior: the entrance hall and library rooms retain their highly-glazed, coloured dado tiles, with the staircase balustrade and the majority of original library and lecture hall fixtures and fittings remaining, including doors, framing with leaded glazed overlights to wider openings, and fixed oak bookcases in the parquet-floored, barrel-vaulted reading room, all of which combine to give a period character to the building."*

Figure 1 - Abstract from Historic England listing entry.



Structural Observations

General Structural Form

The building consists of load bearing masonry constructed from brick with an ashlar stone external face. In some locations the outer skin of stone is coursed with a rusticated / rock face. The roof is timber, with trusses, purlins and jack rafters. The roof is finished in slate.

Windows, single glazed metal frame, have stone carved mullions, transoms and cills.

In overall structural terms we would consider the building to be in a fair condition with evidence of periodic maintenance and historic interventions.

Structural Defects Observed

The following structural issues were observed from the access scaffolding to the front elevation:

- The roof stone gable above the main entrance doors could be rocked back and forth, suggesting that very little restraint was being provided by the pitched roof structure behind. Coping joints were also noted as being open and the apex coping loose. (**Note:** subsequently a temporary structural restraint detail was prepared as urgent works to make the gable more secure.). Design life expectancy 5 years. The potential cause of this defect is laminating embedded ironwork.
- The two vertical ashlar stone pillars to the sides of the entrance appear almost stack bonded, with evidence of movement in their joint with the main wall. This joint also exhibited signs of historic repointing. (**Note:** subsequently a structural urgent works detail was prepared to pin the upper levels of the pillars back to the main wall.).
- To the right hand side of the stair landing window, individual pillar stones have displaced laterally. We consider this to be of longstanding.
- The majority of the elevation exhibited signs of open mortar joints, historic repointing and areas of established vegetation.
- The sandstone we would consider to be relatively soft, with evidence of weathering and surface delamination. In places the surface lamination was loose and needed to be stabilised with a stiff brush whilst the scaffold was in place.
- The main oriel window projecting from first floor is clad in stone, with the window mullions and transoms of carved stone. Externally the entire window has deformed and is out of level and out of vertical, leaning generally towards the left hand corner of the building façade.
- The carved stone forming the window return reveals with the main wall have large vertical joints, suggesting that movement has been present for a long time. This is further evidenced by the presence of an internal structural steel frame, that has bolt fixings / anchors into the back of the stone mullions and head.
- In addition to the oriel window movement and displacement of the stone at joints, there is stress cracking evident in the right hand cill stone, cracked glass and vertical cracks in the mullions. Some of the crack patterns in the mullions is indicative of embedded metal shim corrosion and expansion, but local investigations at the joint revealed no shims at all. There is however still a possibility of the presence of metal dowels across the joints. Even if these were non-ferrous, the distortion forces against and around the dowels could be

sufficient to display the stress cracks visible in the stone. Also a remote possibility is that the fixings from the internal frame may be causing the crack patterns visible externally.

- The left hand corner returns and forms the side wall in red smooth faced brickwork. We understand this area has had a link corridor between the Library and the adjacent building removed in the past. There is visual evidence externally of an intervention and alteration to the brickwork in this area, including the insertion of a material similar to a cavity tray. This work appears incomplete with displaced bricks and open mortar joints.

Recommendations

We would propose the following structural remedial work interventions:

- Introduce temporary restraint to the roof gable within the roof void. This has a design life expectancy of 5 years.
- Plan the dismantling and rebuilding of the stone gable above the entrance.
- Pin back the upper courses of the two stone pillars.
- Dismantle and replace defective stone to the window onto the internal staircase.
- Remove loose stone surface laminations.
- Remove and replace inappropriate or missing mortar from the stone joints across the entire elevation.
- Dismantle and replace the defective stones forming the oriel window. Including at the time of the works further physical investigations to determine the construction and condition of the soffit of the oriel bay. The aim being to remove the internal metal frame.
- Point and complete works to the side wall return brickwork.

Next Steps

We would suggest the following:

- Consult with the Local Planning Authority to determine the scope of a Listed Building Consent Application.
- Prepare a budget estimate of the cost of remedial works to discuss with the Local Authority a suitable programme of works and budget.
- Prepare proposals for the dismantling and rebuilding of the gable above the entrance.



Blackett-Ord Conservation Engineering

Ian Weir CEng, MSc, MICE, AMIStructE Care Registered Engineer

13th April 2022

Version 1 – draft issue – 13th April 2022.

Version 2 – final issue with small amendments – 20th April 2022.

Appendix 1

Atypical photographs taken during our inspection of 21st January 2022.













Appendix D – Specialist Leaded Light Survey

MILNROW LIBRARY

SURVEY OF LEADED LIGHTS



PENDLE STAINED GLASS LTD.
JANUARY 2022

INDEX

1. INTRODUCTION
2. PLANS OF BUILDING
3. ENTRANCE
4. COMPUTER ROOM
5. FIRST FLOOR
6. INTERNAL WINDOWS
7. CONCLUSION

1. INTRODUCTION

SCOPE OF REPORT

To assess the condition of all the leaded light windows in the library

ADDRESS

57 Newhey Road, Milnrow, Rochdale, OL16 3PS

The library is a Grade II listed building. It was built in 1907 with a donation from the Scottish-American steel magnate and philanthropist Andrew Carnegie. The architects were Butterworth and Duncan

INVESTIGATION

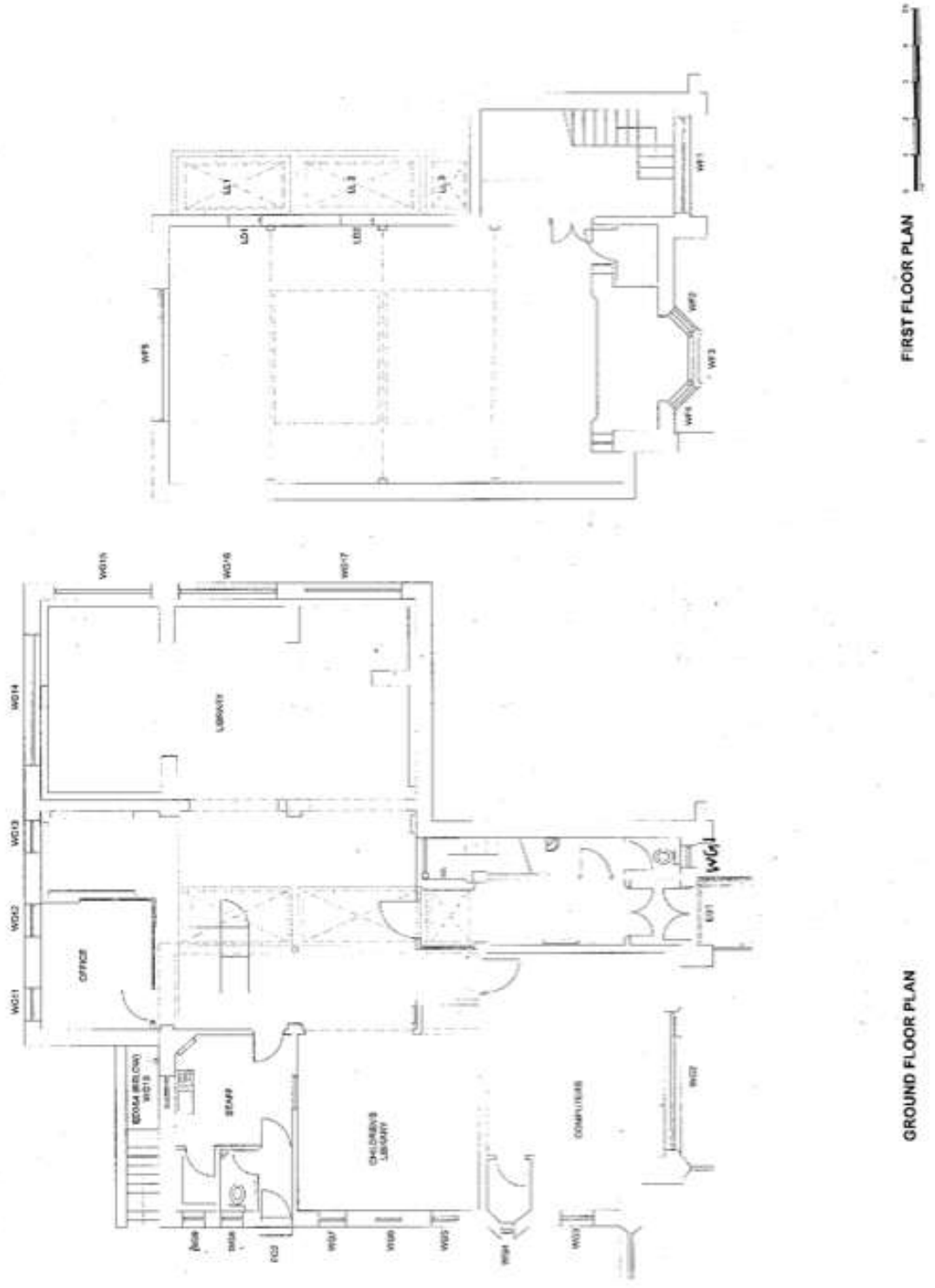
Site visited by Leon Conway and Danny Morton of Pendle Stained Glass Ltd. on 14th January 2022 on a cold sunny day. Access to the windows was mainly internal and external for the ground level windows. All windows were assessed individually and each window was touch surveyed from at least one side

STYLE OF WINDOWS

There is a mixture of leaded lights, clear glass with stick on lead and clear glass. This report does not include any information on the clear glass windows

2. PLANS OF BUILDING

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3. ENTRANCE

ED1

Window configuration – 4-lights in each left and right door

Sizes – 8@ 9" x 11"

Saddle bars – None

Lead sizes – 3/8" flat

Glass – Clear horticultural / clear cathedral

Technique – leaded lights

Opening frames – None

Pointing / Sealant - Beading

Protection – None

Condition – Glass / lead is quite poor

All panels have broken solders

2 panels are weak and move when touched

1 cracked pane to inside right door

Recommendation – Remove all panels, re-lead and re-fit



Right door



Example of broken solder

Internal porch door (just inside from main door)

Window configuration – 6-lights in left and right door

Sizes – 2@ 20" x 40" (size of full window split into 6)

Saddle bars –None

Lead sizes – ¼", 3/8", ¾" flat

Glass – Clear horticultural / clear cathedral

Technique – leaded lights

Opening frames – None

Pointing / Sealant - Beading

Protection – None

Condition – Glass / lead is in satisfactory condition

Some panels are slightly bowing

Recommendation – No work required



Left internal porch door

WG01 (toilet window)

Window configuration – Single light

Sizes – Top 21" x 16", Bottom 21" x 28"

Saddle bars – 1 on bottom panel 3/8" round ferrous

Lead sizes – 1/2" flat, 3/8" round

Glass – Top, clear textured / bottom, clear cathedral & green amber streaky cathedral

Technique – Top, clear textured glass / bottom leaded light

Opening frames – Hooper to top panel

Pointing / Sealant – Top, putty pointing into frame / bottom, sand/cement mortar

Protection – None

Condition – Glass / lead is in satisfactory condition

Lead is oxidising

Saddle bar is rusting slightly

Glass is dirty

Hopper is rusting and not working

Recommendation – Remove leaded panel, re-lead and re-fit

Refurbish hopper or manufacture new stainless steel

Make new top leaded light in keeping with bottom (as would have been originally)



Toilet window internal



Toilet window external

4. COMPUTER ROOM

WG2

Window configuration – 10-lights

Sizes – 5@ 24" x 38", 3@ 24" x 44", 2@ 19" x 27"

Saddle bars – Lights 1,2,4,5,8,10 none, lights 7,9 2@3/8" round ferrous, light 6 1@3/8" round ferrous, light 6 3@3/8" round ferrous

Lead sizes – 3/8" & 1/2" flat

Glass – Clear horticultural / coloured cathedral / coloured muffle

Technique – 5 leaded lights / 5 stick-on lead

Opening frames – Hopper light 3, side hung lights 7&9

Pointing / Sealant – Cement mortar into stone, putty into frames

Protection – Polycarbonate on brackets

Condition – Leaded panels have been recently re-leaded and are in good condition

Fitting of windows is poor with bars missing, meaning leaded windows don't have support required

Openers don't work but they are closed and with external protection they are not required to open

Panel 5 has 2 broken panes

Recommendation – Monitor leaded lights for bowing

Repair damaged panes in-situ

Long term, replace stick-on lead panels with leaded lights (as they would have been originally), re-fit leaded lights with new saddle bars



WG2 external



WG2 internal

WG3

Window configuration – 4-lights

Sizes – 2@ 24" x 36", 3@ 24" x 38"

Saddle bars – None

Lead sizes – 3/8" flat

Glass – Clear horticultural

Technique – 2 leaded lights & 2 stick-on lead

Opening frames – None

Pointing / Sealant – Cement mortar into stone

Protection – Polycarbonate on brackets

Condition – Panel 1 has 1 broken pane, panel 2 has 3 broken panes

Recommendation – Repair damaged panes in-situ

Long term, replace stick-on lead panels with leaded lights (as they would have been originally)



WG3 in-situ

Internal door to computer room

Window configuration – Single light

Sizes – 26" x 38"

Saddle bars – 2@ 3/8" round ferrous (not tied to window)

Lead sizes – 1/2" flat

Glass – Clear horticultural

Technique – Leaded light

Opening frames – None

Pointing / Sealant – Beading

Protection – None

Condition – 1 piece of lead is loose

Panel has had a lot of previous in-situ repairs

Panel moves / rattles when touched

Recommendation – Remove, re-lead and re-fit



Computer room door



Loose lead in door panel

5. FIRST FLOOR

WF1

Window configuration – 6-lights

Sizes – 3@ 24" x 32", 3@ 24" x 36"

Saddle bars – Top lights 2@3/8" round ferrous, bottom lights 1@3/8" round ferrous

Lead sizes – 3/8" & 1/2" flat

Glass – Clear horticultural / coloured machine made

Technique – leaded lights

Opening frames – Light 2 centre pivoted

Pointing / Sealant - Cement mortar into stone, putty into frame

Protection – None

Condition – Glass / lead is very poor

All panels have broken solders

Panel 3 is badly damaged and covered externally with perspex

Lead is oxidising externally

Recommendation – Remove all panels, re-lead and re-fit

Refurbish hopper or manufacture new stainless steel



WF2 internal



WF2 external

WF2 & WF4

Window configuration – 2-lights per window

Sizes – 1@ 24" x 36", 1@ 24" x 33"

Saddle bars – None

Lead sizes – 3/8" stick-on

Glass – Clear float

Technique – Stick-on lead

Opening frames – None

Pointing / Sealant – Cement mortar into stone

Protection – None

Condition – Bottom panel to WF2 has a small crack

Recommendation – Remove and replace with leaded lights (as they would have been originally)



WF2



WF4

WF3

Window configuration – 4-lights

Sizes – 2@ 24" x 36", 2@ 24" x 33"

Saddle bars – 2@3/8" round ferrous per light

Lead sizes – ¼", 3/8" & ½" flat

Glass – Clear horticultural / coloured machine made

Technique – Top leaded lights / bottom stick-on lead

Opening frames – All lights are openers, top lights centre pivoted / bottom lights side hung

Pointing / Sealant – Cement mortar into stone, putty into frames

Protection – None

Condition – Leaded lights are in very poor condition

Top openers don't work

Bottom openers working, light 4 is missing stay

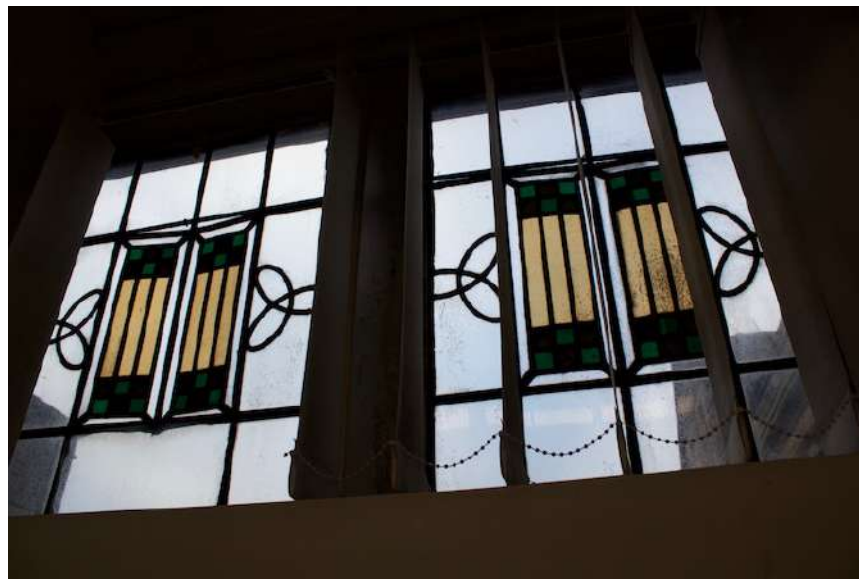
Recommendation - Replace stick-on lead panels with leaded lights (as they would have been originally)

Remove leaded panels, re-lead and re-fit

Refurbish openers or manufacture new stainless steel



WF2, WF3, WF4



WF3 top lights

6. INTERNAL WINDOWS

There are quite a few square-leaded internal windows in the main library rooms these are all in satisfactory condition. There is one damaged pane to one of the windows between the two rooms (this could be repaired in-situ although it is not in danger of falling out). The door to the staff room has had some previous in-situ repairs and the panel is slightly loose, this needs monitoring. The only panel that needs work is the door to the computer room mentioned earlier in this report



Internal windows



Damaged pane to internal window



Door to staff room

7. CONCLUSION

Some of the windows on the Library need immediate attention before they get any worse and become a danger, these are:

WF1 – This window needs re-leading but as it is high and requires a fixed scaffold externally the work could be carried out with other work (ie. stone repairs)

WF3 – The leaded lights to this window need re-leading but as it is high and requires a fixed scaffold externally the work could be carried out with other work (ie. stone repairs)

ED1 – The windows to front doors need re-leading

Door to computer room – This window needs re-leading as it is loose and as it is in a door being opened, closed and push it will deteriorate quickly

Other windows need work that is less urgent or only require work for aesthetic reasons, these are:

WF2, WF3 (bottom panels) & WF4 – All these windows are stick-on lead and would be better if they were put back to the original leaded lights especially if there is scaffold going up externally

WG1 – The glass to this window would benefit from the work recommended in the report but it would be for aesthetic purposes only

WG02 & WG3 – Work to these windows is not essential especially as they are mostly covered internally with blinds

January 2022

Appendix E - Specialist Timber Survey



Robinsons Preservation Ltd.

Our Ref: NF/TA/22461/22

24th May 2022

Mr A Ruaux
Bradshaw Gass and Hope
21 Silverwell Street
Bolton
BL1 1PR

38 Kansas Avenue
Salford
Manchester
M50 2GL

Telephone: 0161-872-3133
Fax: 0161-872-6167
Web Site: www.robinsonspreservation.co.uk
Registered No. 924074 England
VAT Reg. No.638 9547 83

Dear Andrew

Re: - Milnrow Library, Newhey Road Milnrow OL16 3PS

As requested we visited the above building January 2022 to inspect the accessible timber to the roof voids to the library. We have pleasure in submitting the following report and observations:-

Note: - All directions taken facing the front elevation and looking through the property towards the rear. The front elevation is taken as that nearest the road and facing Newhey Road

Observations

1.0 Library

Ladder access allowed inspection of the roof timbers to the rear left-hand corner. Physical access was restricted with the size of the trap and the limited height with the location of the base of the curved vaulted ceiling.

The head and shoulder inspection allowed examination of the ceiling joists entering the rear wall above WF5 and the roof rafters entering the left-hand wall. Visual inspection was made of the purlins and the ridge entering the rear wall.

The softwood timbers appeared of adequate size, free from blemishes indicative of decay.

Damaged wall plaster was noted to the curved head of window WF5. The accessible timbers appear unaffected by the dampness with dry conditions above.

2.0 Stairs

Small hatch allowed inspection of the roof void above the stairs. The roof construction consisted of purlins supporting rafters and a valley beam to the front left hand corner. Previous repairs have been carried with renewal of the ceiling joists to the front half of ceiling. A scarf repairs was noted to the base of the valley

beam. The timbers appeared dry and free from signs of wood decay and beetle infestation at the time of inspection.

The repairs appear to have been carried out for previous water ingress to the front wall with signs of damaged wall plaster to WF1 to the front elevation.

During our inspection the ceiling was lacking any insulation, new fibreglass rolls are present and require laying on the ceiling joists.

3.0 First floor Classroom

A small trap door allowed inspection of the front third of the main first floor roof void. The rafters were supported by a combination of purlins, hips and large members of steel.

The conditions were dry with no signs of water ingress and timbers in a satisfactory condition.

4.0 Summary

Robinson feel no specialist remedial works are required to the accessible roof timbers. Measures should be taken external; to stop the water ingress around WF1 and WF5. The insulation should be installed to the ceiling joists above the stairs.

We hope this meets with your approval and should you require any further information please contact our office.

Yours Sincerely

Robinson's Preservation Ltd

W shepherd

**Warren Shepherd CSRT
Surveyor**

Site Photographs
Photo 1



Ceiling joists and purlin above curved ground floor library ceiling
Photo 2



Photo 3



Repaired hip and new ceiling joist above stairs with un-insulated ceiling

Photo 4



Photo 5

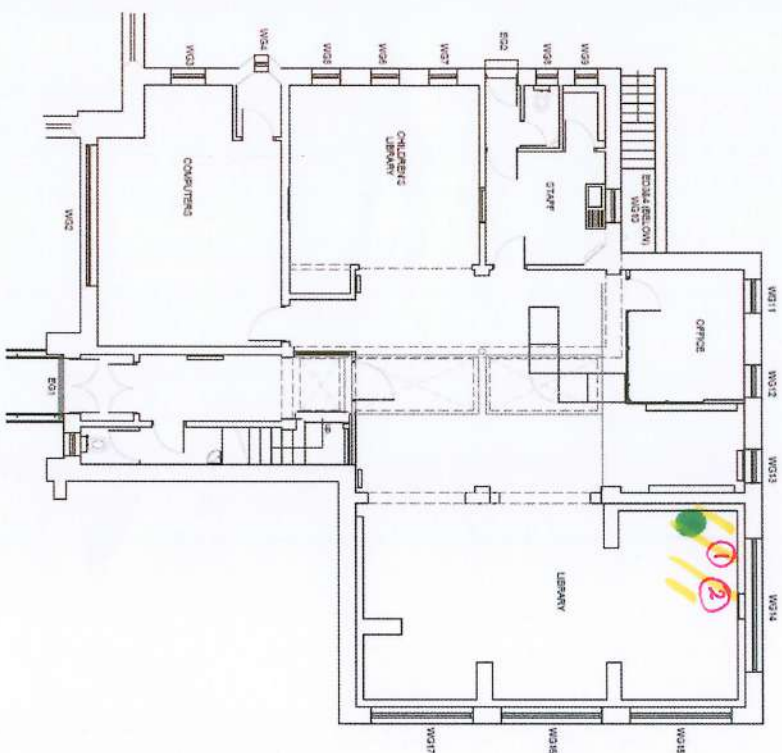


Dry timbers to bay and large member of steel supporting hip to main first floor roof void

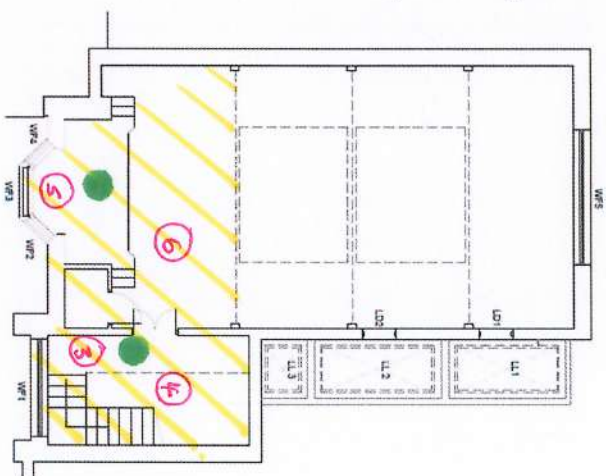
Photo 6



Milnrow library Newhey Road Milnrow



GROUND FLOOR PLAN



FIRST FLOOR PLAN

FOR COMMENT	
1	Location of Hatches
2	Roof timbers inspected
3	Photo Ref Locations
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Scarf repair to hip and 4no new ceiling joists

Appendix F – Sika Flat Roof Report

SIKA ROOFING SITE SURVEY REPORT



**WE
ANSWER**



Bullen Consevation Ltd - Oldham

PROJECT: Milnrow Library
PROJECT REF: RR-PR-0302353
DATE: 17 February 2022

BUILDING TRUST



Bullen Conservation Ltd
Lowerhouse St
OL1 3NN Oldham

CONTACT
Phil Reid
Area Technical Manager - Sika Limited
+44 07970814865
reid.phil@uk.sika.com

17 February 2022
Reference: RR-PR-0302353

Dear Steve Eccleshare

Further to the site visit on the 2022-02-11, this document has been compiled for your attention by Phil Reid of Sika Limited, it is based on the information gathered during recent discussions and is intended to provide details relating to the treatment of the area(s) in question.

Quality and innovation are just two of the characteristics replicated throughout Sika Liquid Plastics – visible in our products, manufacturing processes, and technical support.

For over 50 years we have produced an extensive range of high performance, technologically advanced coatings and membranes for the protection and waterproofing of roofs, walls and balconies, and for hygiene control. These products are leaders in their fields because of their unique properties and ability to outlast and outperform traditional counterparts. Also available is a complete range of cold applied built-up roofing systems including warm roofs, inverted roofs, and green roof finishes.

As a member of the Sika worldwide group of companies, the demand for Sika Liquid Plastics' products stretches across the globe and many successful projects have been completed in the Middle East, USA, and Europe.

We are leading the way with innovative products for the future, as the construction industry evolves towards safer applications and protection systems with design lives as long as the building itself.

For more information about our products and the wide range of approvals and accreditations we have achieved, please visit our website at www.liquidplastics.co.uk.

This specification should be read in conjunction with the relevant product data sheets and all named appendices.

This specification is valid for a period of 12 months, after which a further site survey should be carried out to ensure that the suggested solutions are still fit for purpose.

Any variations to this specification must be confirmed by Sika Limited to ensure the suitability of the proposed change and any impact this may have on any guarantees offered or implied. As part of Sika Limited's continuous product development, we retain the right to alter our product specifications in accordance with relevant national and international standards without notice.

The specified system is designed utilising cold applied Sika Liquid Plastics products and intended to avoid the use of hot works.

However, should the installing contractor require use of any heat or hot works during installation for

preparation or drying, care should be taken and all hot works must be carried out with the clients permission and in strict accordance with Health & Safety Guidelines with particular reference to Safe2Torch. A comprehensive guidance document can be found on the NFRC website: <https://www.nfrc.co.uk/safe2torch>.

We trust this is of assistance to you. If we can be of further help on this, or any other project, please contact me on +44 07970814865.

Kind regards

Phil Reid
Area Technical Manager

John Moore
Technical Services Advisor

CONTACT SHEET

Prepared for: Bullen Consevation Ltd
Lowerhouse St
Oldham
OL1 3NN

Telephone: 0161 633 6528

For the attention of: Steve Eccleshare
Email:

Site: Milnrow Library
Newhey Road

OL163NP

Prepared by: Phil Reid - Area Technical Manager

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Telephone: +44 (0) 1772 259781

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Date: 17 February 2022

CONTENTS

1 SITE SURVEY MILNROW LIBRARY	6
1.1 CDM REGULATIONS	6
1.2 CONDITION REPORT	7
1.2.1 PROJECT OVERVIEW	7
1.2.2 CORE SAMPLING & INTERNAL INSPECTION	7
1.2.3 SUBSTRATE CONDITION	8
1.2.4 UPSTANDS	8
1.2.5 PARAPETS	9
1.2.6 DRAINAGE	10
1.3 DISCLAIMER	10

1 SITE SURVEY MILNROW LIBRARY

1.1 CDM REGULATIONS

CDM Regulations (Refurbishment Works) – The Construction (Design and Management) Regulations (CDM) are about the management of health and safety and apply to everyone associated with construction projects including the client. Regulations 4 and 5 state that it is the client's duty to make suitable arrangements for managing a project and maintaining and reviewing them for its duration so that it is carried out in a way that manages the health and safety risks involved. For projects involving more than one contractor, these regulations require the client to appoint a Principal Designer and Principal Contractor and to make sure that they carry out their duties. It is also the client's responsibility to engage a competent team that can include Contractors, Designers and Sub-Contractors and to provide all duty holders the appropriate information at the appropriate time.

For further information on the requirements of the CDM Regulations visit <http://www.hse.gov.uk/pubns/books/l153.htm> for free guidance.

All construction projects will have to comply with the CDM Regulations, however Regulation 6 states that the HSE or other relevant enforcing authority, do not need to be notified about all of them. Notifiable projects are projects that:

- Last longer than 30 working days and have more than 20 workers working simultaneously at any point in the project; or;
- Exceed 500 person days.

The easiest way to notify any project to the HSE or other relevant enforcing authority is to use the online notification form F10 on the HSE's website. Further information on how to notify construction work can be found at:

www.hse.gov.uk/construction/cdm/faq/notification.htm.

Clients, Designers and Contractors still have responsibilities for those projects that the HSE does not require notification on.

Sika Limited does not fulfil the role of the Principal Designer and therefore preparation for the proposed specification and subsequent works should only commence when all parties involved with the design and execution of the works are satisfied the appropriate CDM regulations have been fulfilled.

1.2 CONDITION REPORT

1.2.1 PROJECT OVERVIEW

General Overview: Asphalt roof with solar paint that has been patch repaired and now needs a new system overlay.



Roof Surfaces & Internal Gutter Runs: The proposed Sika system is to be installed utilizing the existing falls.

Note: Should the existing falls not be corrected, standing water will remain following installation of the proposed system.

1.2.2 CORE SAMPLING & INTERNAL INSPECTION

Core : taken to assess the build-up and condition of the roof, this was found to be as follows;

Concrete Deck
Asphalt Waterproofing
Solar Paint

Core samples which are taken as a method of confirming the existing deck and waterproofing system construction. These samples give a clear indication of the general condition of the roof build-up in that specific location.

Please note: Findings are representative only of the particular location sampled and this is used to give general guidance as to the likely overall condition and deck and construction. Due to the limited number of core samples that can be practically taken on a roof, Sika Limited cannot be held responsible for any changes in roof build-up in areas where core samples have not been taken.



1.2.3 SUBSTRATE CONDITION

Sikalastic metal primer is required prior to waterproofing.



1.2.4 UPSTANDS

Upstand Heights:- Upstands should conform to the recommendations of BS 6229:2018: Flat roofs with continuously supported coverings – Code of practice: Section 7.1 concerning the minimum height of upstands.

“The design of drainage falls should ensure that the continuity of the waterproof covering is maintained for a vertical height of 150mm above the finished roof level at all abutments, door openings and parapets. For inverted roofs, those overlaid with paving, or garden roofs, the finished roof surface is the upper surface of the ballast, paving slabs or growing medium.”

Note: Where any upstand detail does not satisfy the above recommendations, Sika Liquid Plastics must be informed, advice/recommendations may then be provided by Sika Liquid Plastics. If this advice is not followed, the identified detail may be excluded from the guarantee.

There is a brick wall upstand with a usable flashing detail, a glazing detail to terminate tight up to and a tile overhang to finish under.



1.2.5 PARAPETS

Existing Coping Stones: There is a potential for water ingress to the cavity as a result of open joints, poor installation or porosity of the coping stones.

It is good roofing practice that the underlying cavity is closed. If this is not possible then we suggest that the coping stones, the cavity and associated parapet walls are assessed by a competent person(s). Sika Ltd will take no responsibility, for any water ingress that should occur as a consequence of the cavity not being closed.



1.2.6 DRAINAGE

Internal Outlets: The outlets appear to be in a reasonable condition and are suitable for coating.

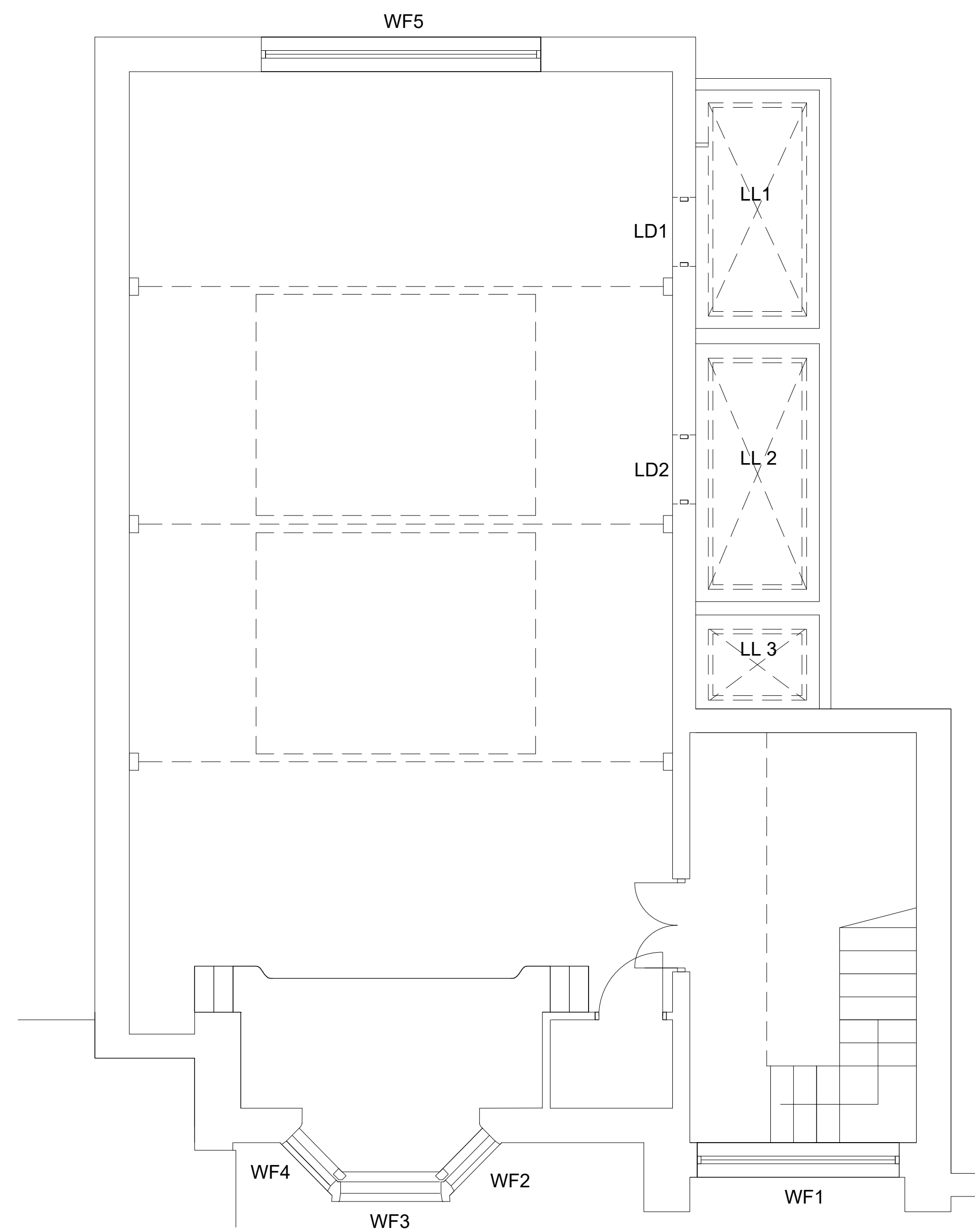
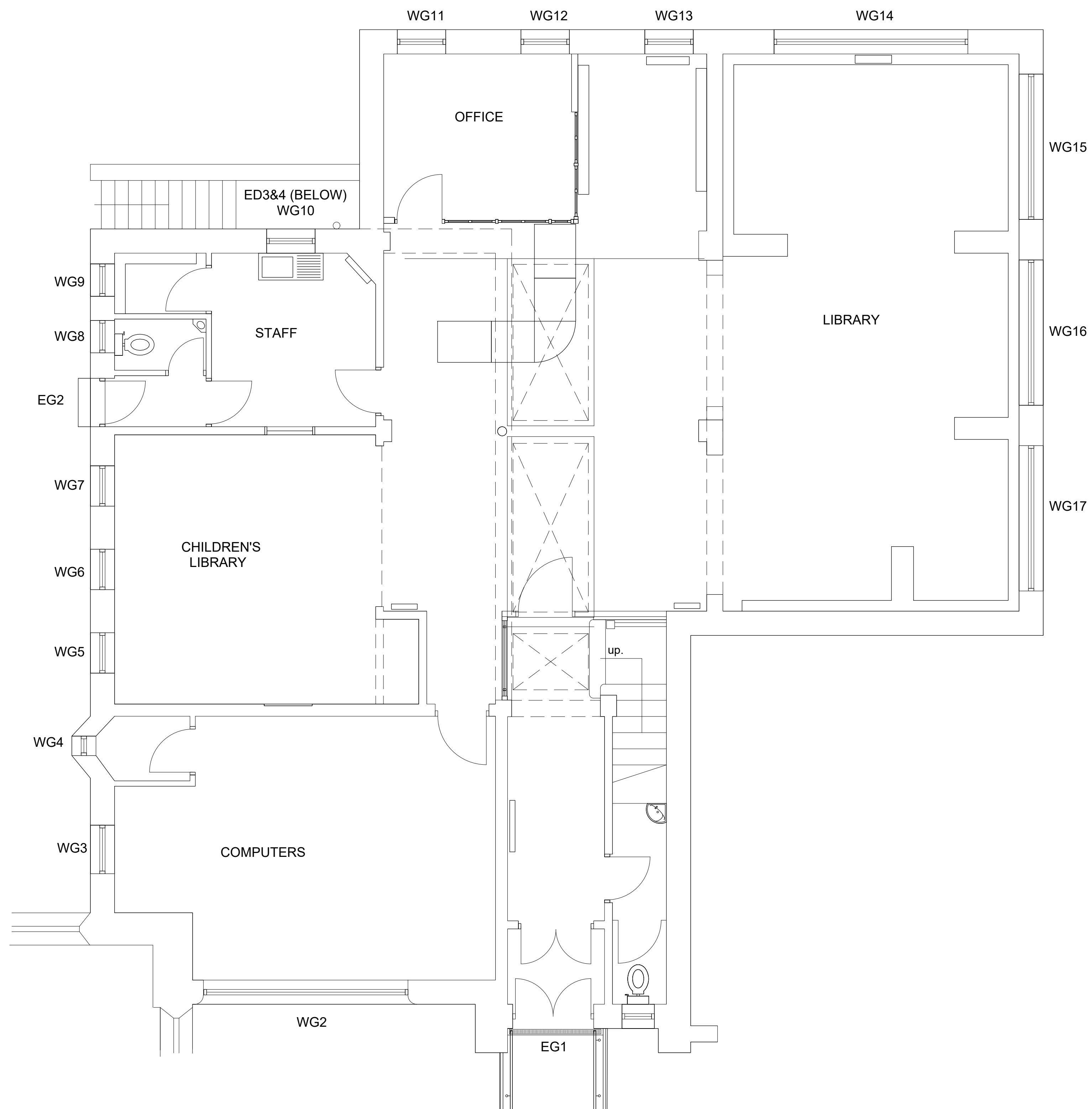
Note: The required flow capacity of each outlet should be determined and if necessary, surplus materials cut back to reinstate the original flow capacity.



1.3 DISCLAIMER

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika Limited's current knowledge and experience of the products when properly stored, handled and applied under normal conditions. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, unless from any written recommendations, or from any other advice offered by Sika Limited. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request.

Appendix G - Architect's Updated scope of works drawings



status **FOR COMMENT**

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All dimensions are to be checked on site by the contractor prior to proceeding with any work.

Hazard Identification

ref	hazard	date

BUILDING LAYOUT & ELEVATIONS
PROVIDED BY ROCHDALE BOROUGH
COUNCIL

ref	revision	by	date



Architects
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www.bghbolton.co.uk

Bradshaw Gass & Hope LLP

client

ROCHDALE BOROUGH COUNCIL

project

MILNROW LIBRARY
REPAIRS TO THE ROOF AND
WINDOWS

drawing

EXISTING LAYOUT

drawn by	AGR	date	JANUARY 2021
checked by		date	

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Uneven and blistered plaster/decoration. Appears to be a repair where something has been removed but blistering may be dampness from the back of the flue behind. (D6) **ENABLING**
WRKS: Investigate integrity and ventilation of the chimney and its capping.

The floor plan shows a rectangular office space. At the top, there are two workstations labeled 'WG11' and 'WG12'. Below them is a horizontal line representing a desk or partition. At the bottom, there is a label 'OFFICE' with a line pointing to the entrance area. The entrance is marked by a small black dot on the bottom wall.

WG14

Condensation staining to the entire ceiling of this room revealing the timber structure above. Without increasing the thickness of insulation above the ceiling this will remain an ongoing issue as warm air condenses on the cold ceiling. Re-decoration is recommended. If the roof is stripped for repair consideration could be given to improving levels of insulation and ventilation of the void above. Re-decoration is now due. (DEC 4)



High level staining to the ceiling in this corner may be from the backgutter and flashings to the chimney or from water accessing through the raking flue of the chimney. **ENABLING WORK:** Open up a section of roof around the chimney to allow inspection of the underlying timbers, detailing and the integrity of the flashings etc. Also inspect the integrity of the chimney capping, flue, pointing and flaunching. Review ventilation of the flue.

The timber support for the internal lantern glazing appears robust but there are some shakes in the dried timber. One to the rear of the structure should be reinforced when access is available and others should be checked.

— There is staining around this laylight. Inspect flashings and roof above. (D15)

Crack in the slab of the upper landing(STR6)
ENABLING WORK:
Structural Engineer to inspect and record.

- Extensive spalling of paintwork where stone

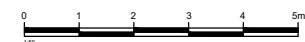
Crack in the slab of the upper landing..
ENABLING WORK:
Structural Engineer to inspect and record

BUILDING LAYOUT & ELEVATIONS
PROVIDED BY ROCHDALE BOROUGH
COUNCIL

References in brackets within this drawing relate to the photographs as follows:

(D)- DECORATION
(L)- LANTERN
(R)- ROOF
(ST)- STONEWORK
(STR)- STRUCTURAL
(W)- WINDOWS
(RWP)- RAINWATER PIPES

FIRST FLOOR PLAN

client
ROCHDALE BOROUGH COUNCIL

project
MILNROW LIBRARY
REPAIRS TO THE ROOF AND
WINDOWS

drawing
LAYOUT PLAN AND NOTED
DEFECTS

drawn by	AGR	date	JANUARY 202
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The flaunching to the chimney is cracked and will be allowing water into the flue. There are also cracks to the jointing around stone facings to this slope of the stack. Water has penetrated the joints and has started to spall the surface (R9, R10 & R12).

ENABLING WORKS: Access to inspect to establish the extent of damage and the robustness of the pot. Open up roof/flashings around the chimney to inspect the underlying timbers.

The copings have been bedded on lead sheet to protect from water ingress but there are open recesses in the stonework for cramps, that restrain the copings. It is not clear if cramps are still in place or if the recesses may be holding water and may lead to frost damage. These should ideally be filled flush to shed water. (R11)

ENABLING WORKS: Access to inspect to establish if there are cramps and what condition they are in and to look for signs of frost damage.

The copings have been bedded on lead sheet to protect from water ingress but there are open recesses in the stonework for cramps, that restrain the copings. It is not clear if cramps are still in place or if the recesses may be holding water and may lead to frost damage. These should ideally be filled flush to shed water. (R11)

ENABLING WORKS: Access to inspect to establish if there are cramps and what condition they are in and to look for signs of frost damage.

The cover flashing to this parapet is dislodged at high level and lifted at low and requires to be re-wedged, dressed and clipped.)

ENABLING WORKS: Investigate the integrity of the bedding and jointing of copings.

This roof exhibits the most damaged and weathered slates and some are a little uneven. There is no evidence of tangles, suggesting that the slates remain well fixed generally. There is a build up of moss and algae and a number of cracked and damaged slates. Approx 25% weathered or damaged

ENABLING WORKS: Examine more closely for damage, slipped slates and evidence of underlying defects.

The base of the turret is clad in lead sheet. This is heavily oxidised and there may be initial cracking along the welded seam.(R5)

ENABLING WORKS: Access to inspect the integrity of the leadwork to assess if it can be repaired or requires replacement.

Mild steel ventilation cowl coated to appear as copper. This is heavily corroded and split. This will be letting water into the duct below and may be at risk of falling in stormy conditions. The cowl and its plinth require repair and redecoration.(R2, R4 & R18)

ENABLING WORKS: Access to inspect the integrity of the cowl to assess if it can be repaired or requires replacement.

Two missing slates to be replaced.

Slates along the mitred hip show signs of lifting and some have been replaced with thinner slates. This may render them more vulnerable to wind uplift. (R1)

ENABLING WORKS: Access to inspect the integrity of the hip detailing and view from the roof void for signs of leakage.

Painted metal finial to the apex of teh bay roof. This is spalling and showing initial signs of rust. This should be repaired and re-decorated.

ENABLING WORKS: Access to inspect the integrity of the finial and any need for repair or replacement before re-decoration.

The verge of the adjacent building is open and vulnerable to insect access and water penetration. The detail where this abuts the library appears to have a very minimal upstand. (R6)

ENABLING WORKS: Access to inspect the detailing and flashings around this junction.

Lead lined stone gutter to the perimeter of the bay roof. Lead is dressed over the stone but appears to have lifted in places leading to drip staining on the external face. (R3). **ENABLING WORKS:** Access to inspect the integrity, detailing and condition of the lead and to re-dress locally where appropriate..

Red clay ridge tiles require to be re-bedded and re-pointed as the existing has weathered and there are now gaps and open bedding joints. (R5&R20)

ENABLING WORKS: Access to assess condition and for signs of cracking to determine numbers requiring replacement.

Slate to this slope and to the roof pver the oriel window appears to be a Cumberland green and patterning and parital breakages suggests that at least half of the slates are ageing and beginning to soften.

ENABLING WORKS: Access to assess condition and to determine the percentage that require replacement (an initial assessment suggests 20% to ensure a ten year life.

Slates along the mitred hips show signs of lifting. This may render them more vulnerable to wind uplift. (R1)

ENABLING WORKS: Access to inspect the integrity of the hip detailing and view from the roof void for signs of leakage.

--- Clay tiled ridge/hip
Recommendation - Re-bed and re-point

----- Lead lined mitred hip
Recommendation - Check flashings and inspect from below for evidence of leak. Replace narrow slates with 1.5 wide slates

ENABLING WORKS: Access the flat roof to allow a detailed inspection of these roofs, flashings, skylight etc.

This roof is only partially visible from ground level. The ridge could be seen to have lost mortar and some uneven slating but generally appeared reasonable where visible.

Roof condition appears reasonable other than the bedding and pointing to the ridge. Allow for 20 slates to be replaced (where split or the surface is spalling) (R19)

Roof condition appears reasonable other than the bedding and pointing to the ridge and the two courses of slate below. Allow for 25 slates to be replaced (where split or the surface is spalling) and one slate have become partly displaced. The line of the roof is uneven and this has caused a lot of the slates to be unevenly seated. This is despite the whole roof being re-laid in 2005

ENABLING WORKS: Examine more closely for damage, slipped slates and evidence of underlying defects.

Ridge capping stone displaced and open jointed

ENABLING WORKS: Examine more closely to determine scope of repair required.

The head flashing and side cover flashings and some of the soakers appear to have been stolen from the lantern abutment with the wall. (SK4)

ENABLING WORKS: Access the flat roof to assess the condition of the roof, lantern, flashings and surrounding slate roof areas.

Slates to the mitred hip are too short. Ideally replace with 1.5 width slates.

Roof condition appears reasonable other than the bedding and pointing to the ridge and slates to the mitred hip that appear to be degrading. Allow for 600 slates to be replaced (where split or the surface is spalling and mainly to the mitred hip and adjacent to the ridge). 1.5 width slates required to the hip

Roof condition appears reasonable other than the bedding and pointing to the ridge and slates to the mitred hip that appear to be degrading. Allow for 600 slates to be replaced (where split or the surface is spalling and mainly to the mitred hip and adjacent to the ridge). 1.5 width slates required to the hip

The back/abutment gutter, where the roof drops against the pier, may have too small an upstand to cater fro the flow from the roof and this may be contributing to water ingress displayed on the stairwell. (R17)

ENABLING WORKS: Access the hatch below this area to inspect and check for signs of water ingress and rot.

The back/abutment gutter, where the roof drops against the pier, may have too small an upstand to cater fro the flow from the roof and this may be contributing to water ingress displayed on the stairwell. (R17)

ENABLING WORKS: Access the hatch below this area to inspect and check for signs of water ingress and rot.



status

FOR COMMENT

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All dimensions are to be checked on site by the contractor prior to proceeding with any work.

Hazard Identification		
ref	hazard	date

BUILDING LAYOUT & ELEVATIONS
PROVIDED BY ROCHDALE BOROUGH COUNCIL

CONDITION SURVEY PHOTOGRAPHS

This drawing is to be read in conjunction with the Survey Photographs Report dated (January 2021).

References in brackets within this drawing relate to the photographs as follows:

(D)- DECORATION
(L)- LANTERN
(R)- ROOF
(ST)- STONEWORK
(STR)- STRUCTURAL
(W)- WINDOWS
(WP)- RAINWATER PIPES

ref	revision	by	date
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Bradshaw Gass & Hope LLP

client
ROCHDALE BOROUGH COUNCIL

project
MILNROW LIBRARY
REPAIRS TO THE ROOF AND
WINDOWS

drawing
CONDITION SURVEY AND SCOPE
OF FURTHER INVESTIGATIONS

drawn by	AGR	date	JANUARY 2021
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The ridge tiles are open jointed at the corner of the roof and the slates below a little uneven. (R13)
ENABLING WORKS:Open up to inspect the underlying timbers and then fully reinstate.

Ridge uneven and in need of re-bedding and pointing (R8)

Parapet capping stone displaced and joints open. To be reinstated, bedded dowelled and re-pointed (ST9)
ENABLING WORKS: Examine closely to assess detail for repair and integrity of bedding .

Missing slate. This has slipped down to the gutter. (R7)
ENABLING WORKS: Re-install the slate with a copper tingle.

One nail fixing has failed to this slate. Re-fix with copper tingle.

The cover flashing to this coping appears to be dislodged and water can access behind the soakers. . (R14)
ENABLING WORKS: Inspect the bedding and joints of the copings and re-wedge the flashing.

The ridge has open joints and missing sections of bedding. The detail at the hip is open and re-bedding and pointing is required to the whole ridge. (R15&R21)

The copings have been bedded on lead sheet to protect from water ingress but there are open recesses in the stonework for cramps, that restrain the copings. It is not clear if cramps are still in place or if the recesses may be holding water and may lead to frost damage. These should ideally be filled flush to shed water. (R11)
ENABLING WORKS: Access to inspect to establish if there are cramps and what condition they are in and to look for signs of frost damage.

The flaunching to the chimney is cracked and will be allowing water into the flue. There are also cracks to the jointing around stone facings to this slope of the stack. Water has penetrated the joints and has started to spall the surface (R9, R10 & R12).
ENABLING WORKS: Access to inspect to establish the extent of damage and the robustness of the pot. Open up roof/flashings around the chimney to inspect the underlying timbers.

This section of gutter has no hopper or downpipe and discharges below the chimney adjacent to the corner of the skylight. A new outlet, hopper, and downpipe should be installed and the fascia board requires redecoration.

There are hairline cracks where the copings meet and the lead odc trays turn up. The kneeler is spalling and the lead cover flashings at the foot of the slope are lifted and need to be re-dressed and clipped. (R16) There is also a gap between the gutter outfall and the hopper that will be a problem when it is windy. This should be detailed with an outlet and spigot. Joints to this coping are open and require re-pointing (ST10)
ENABLING WORKS: Access to check the integrity of the bedding and jointing to the copings.

SIDE ELEVATION (SOUTH EAST)

The back/abutment gutter, where the roof drops against the pier, may have too small an upstand to cater fro the flow from the roof and this may be contributing to water ingress displayed on the stairwell. (R17)
ENABLING WORKS: Access the hatch below this area to inspect and check for signs of water ingress and rot.

Slates to the mitred hip are too short and are fixed through the flashings. There is also a downpipe missing from this section. The slates should be replaced with 15 width slates and the rwp replaced to drop into the hopper below. The fascia board to this return has become displaced and requires to be replaced and the whole length re-decorated. (RWP3)

Open joints in the coping and recessed in line with cramps. . (ST10)
ENABLING WORKS: Inspect the bedding and joints of the copings and re-wedge the flashing.

Spalling mpainted plastic downpipe. Consider replacing with cast aluminium of cast iron to match original. As a minimum this should be primed and painted, along with the metal hopper and upper section.

The flaunching to the chimney is cracked and will be allowing water into the flue. There are also cracks to the jointing around stone facings to this slope of the stack. Water has penetrated the joints and has started to spall the surface (R9, R10 & R12).
ENABLING WORKS: Access to inspect to establish the extent of damage and the robustness of the pot. Open up roof/flashings around the chimney to inspect the underlying timbers.

Excessive surface build up of salts. Indicative of saturation. Salts to be removed and all pointing and perimeter seals to the windows, to be fully re-instated. Hairline cracks to be raked out and filled and surface spalling to be removed from the stone and re-dressed where necessary to shed water. (ST12). Salts may be from poor pointing sand-consider raking out locally and fully re-pointing.
ENABLING WORKS: Access to inspect the cills of the timber window where not visible from ground level.

Staining to the wall below the copings suggest that water is penetrating the joints. These should be raked out and re-pointed and the brickwork conservatively cleaned. (ST11). The rainwater hopper is in need of re-decoration and the timber sole to the gutter outlet is visible and the flashings should be re-aligned or replaced to protect it from driven rain. (RWP4)
ENABLING WORKS: Inspect more closely and re-dress the flashing to form a drip into the hopper.

This flue sets back into the building at cellar level but is not fully weathered to prevent water tracking along it and into the cellar. There is also an unweathered gap to the top of the louvre. Consideration should be given to addressing this to reduce the amount of moisture entering the heating chamber.

REAR ELEVATION

status

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Hazard Identification

!

ref	hazard	date

BUILDING LAYOUT & ELEVATIONS
PROVIDED BY ROCHDALE BOROUGH COUNCIL

CONDITION SURVEY PHOTOGRAPHS

This drawing is to be read in conjunction with the Survey Photographs Report dated (January 2021).

References in brackets within this drawing relate to the photographs as follows:

(D)-

DECORATION

(L)-

LANTERN

(R)-

ROOF

(ST)-

STONEWORK

(STR)-

STRUCTURAL

(W)-

WINDOWS

(RWP)-

RAINWATER PIPES

ref

revision

by

date

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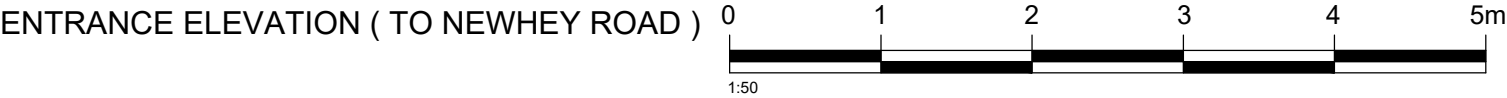
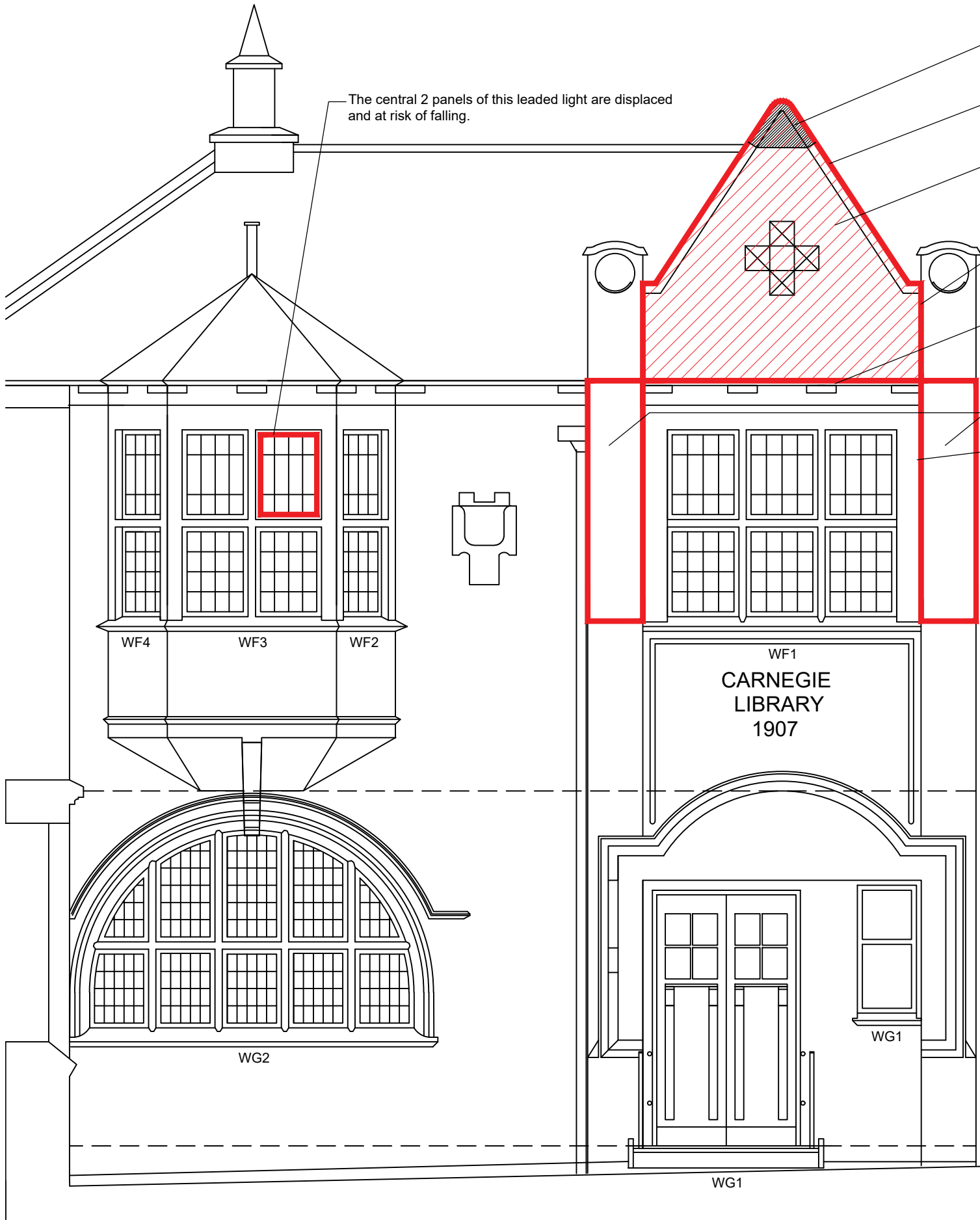
BGH

Architects
Consulting Engineers
Quantity Surveyors

Bradshaw Gass & Hope LLP

client ROCHDALE BOROUGH COUNCIL			
project MILNROW LIBRARY REPAIRS TO THE ROOF AND WINDOWS			
drawing ELEVATION SHEET 2 CONDITION & FURTHER INVESTIGATION WORKS			
drawn by AGR		date JANUARY 2021	
checked by		date	
scale 1:50		A1	
dwg no 2215.29.402		rev	





- Apex coping of entrance gable to be lifted and re-set in a new lime mortar bedding.
- Open joints in the coping to be re-pointed in lime mortar to shed water.
- Panel edged and hatched in red to be temporarily secured as this is no longer restrained by the adjoining masonry or roof and can be easily rocked.
- Open joint between central panel and pier to be re-pointed in a lime mortar to control water ingress into the fabric and around any potential iron fixings securing the masonry of the pier..
- Open Joint at the foot of the gable spandrel, where it meets the window head, to be carefully raked out and re-pointed to minimise water ingress..
- Sections of the vertical pier that have become displaced and require temporary support are edged in red.
- Open joint between the wall and piers to be re-pointed in a lime mortar to control water ingress into the fabric and around any suspected iron fixings securing the masonry of the pier.

GENERAL NOTES/SPECIFICATION.

Works only to be carried out following the preparation of an appropriate methodology and RAMS by the Contractor, to be submitted to the Principal Designer.

Works to be carried out by a Specialist Conservation Contractor with proven experience of lime pointing and working on the conservation and repair of Listed Buildings

Appropriate measures to be taken to protect adjacent parts of the fabric to prevent damage during the works.

Lime pointing works to be carried out by an experienced lime pointer and ensuring appropriate preparation, pointing and nurturing of the mortar to achieve a good fill, set, compaction, surface texture and integrity of finish. It is proposed that an NHL 2 hydraulic lime is used in conjunction with a Leighton Buzzard fine sand and a Nosterfield graded and washed river sand to provide a good sacrificial mix for these temporary repairs. Samples are to be prepared for approval by the Conservation Architect with an initial mix of one part lime to one part leightin Buzzard to two parts of Nosterfield washed river sand. The Nosterfield is to be graded as required to ensure that no aggregate exceeds on third of the joint width.

Joints that are to be pointed are to be carefully raked out with hand tools to a minimum depth of twice the joint width or 20mm, whichever is the greater. The joints are to be raked to a clean square profile and brushed to remove all loose material and debris.

Great care is to be taken to minimise any damage to the arrises of the ashlar facings. Joints are to be cut back with hand tools, working into the joint , away from the arris. The use of a feine cutter will be considered only with approval and following demonstration on site to ensure that the fragile face bedded facing stones are not damaged. Other mechanical hand tools are not permitted.

Joints are to be thoroughly wetted prior to re-pointing, to control shrinkage. Mortar is to be a dry mix, to just form a ball in the hand and is to be pressed into the joints to sit just proud of the arrises. Care is to be taken to avoid getting mortar on the stone facings. After the initial set this is to be compacted back into the joint with a churn brush to address any immediate shrinkage cracks. Once sufficiently set the joints are to be brushed with a churn brush to remove any laitance and expose the aggregate. Finished joints to sit very slightly back from the edges of the joint.

Pointing work is only to be carried out when temperatures are to remain above 5 degrees for a minimum of 72 hours and all pointing is to be nurtured by protecting it with Hessian, dampended repeatedly if required, to ensure that the mortar remains damp long enough to fully carbonate (A minimum of 72 hours) and to protect from excessive heat or wind exposure.

status

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Hazard Identification



ref	hazard	date	

This drawing is to be read in conjunction with the Sturctural Engineer's drawings reference X49:SK10A & SK11A

ref	revision	by	date
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&
G
H

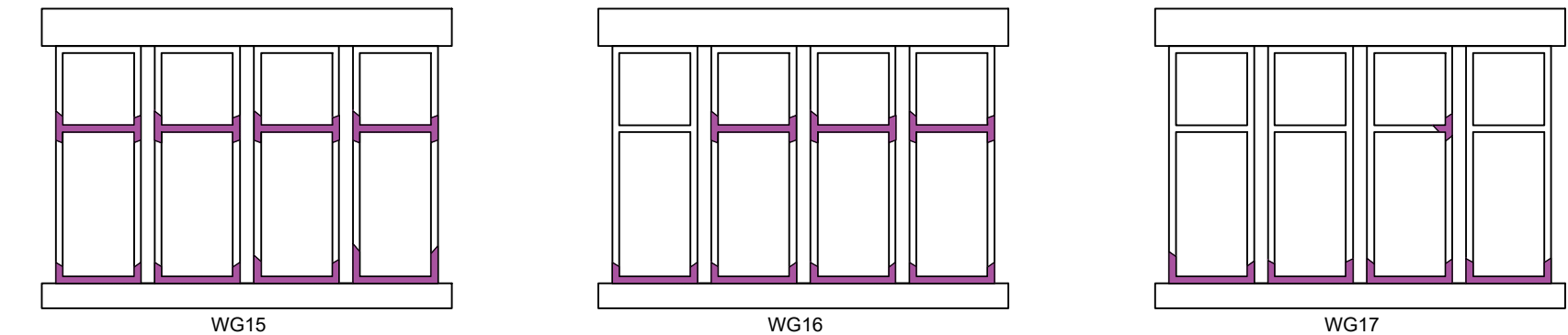
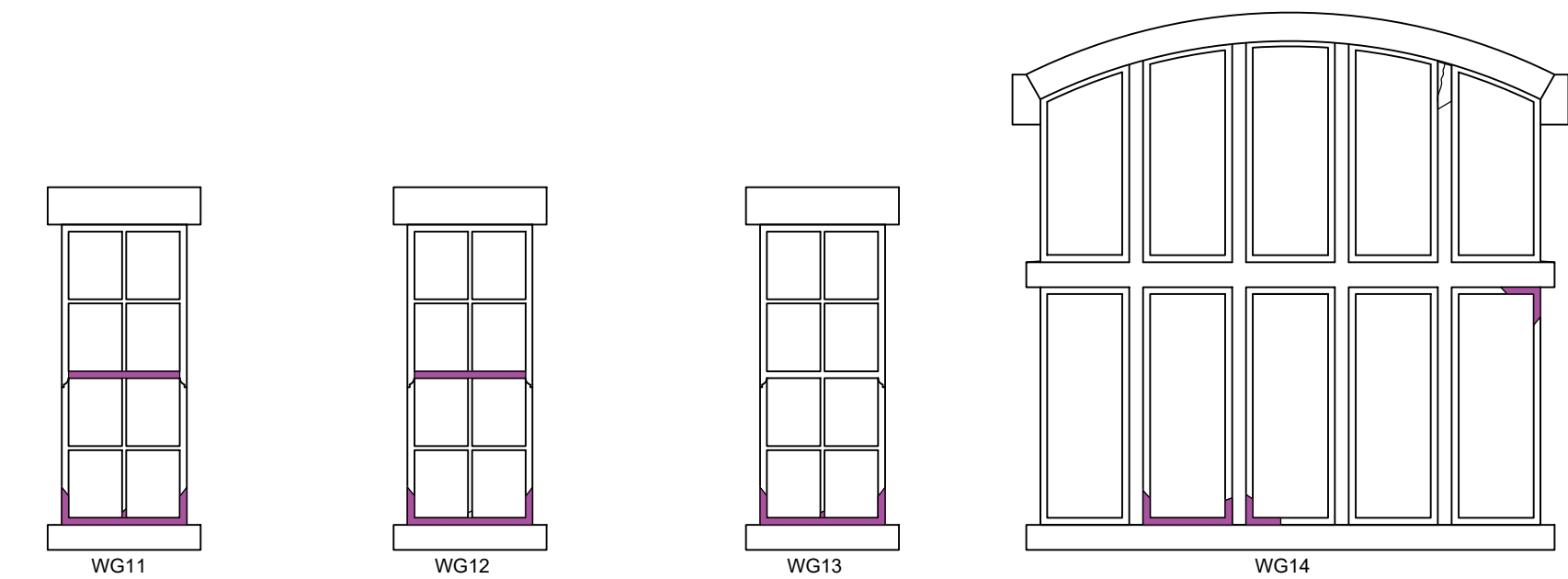
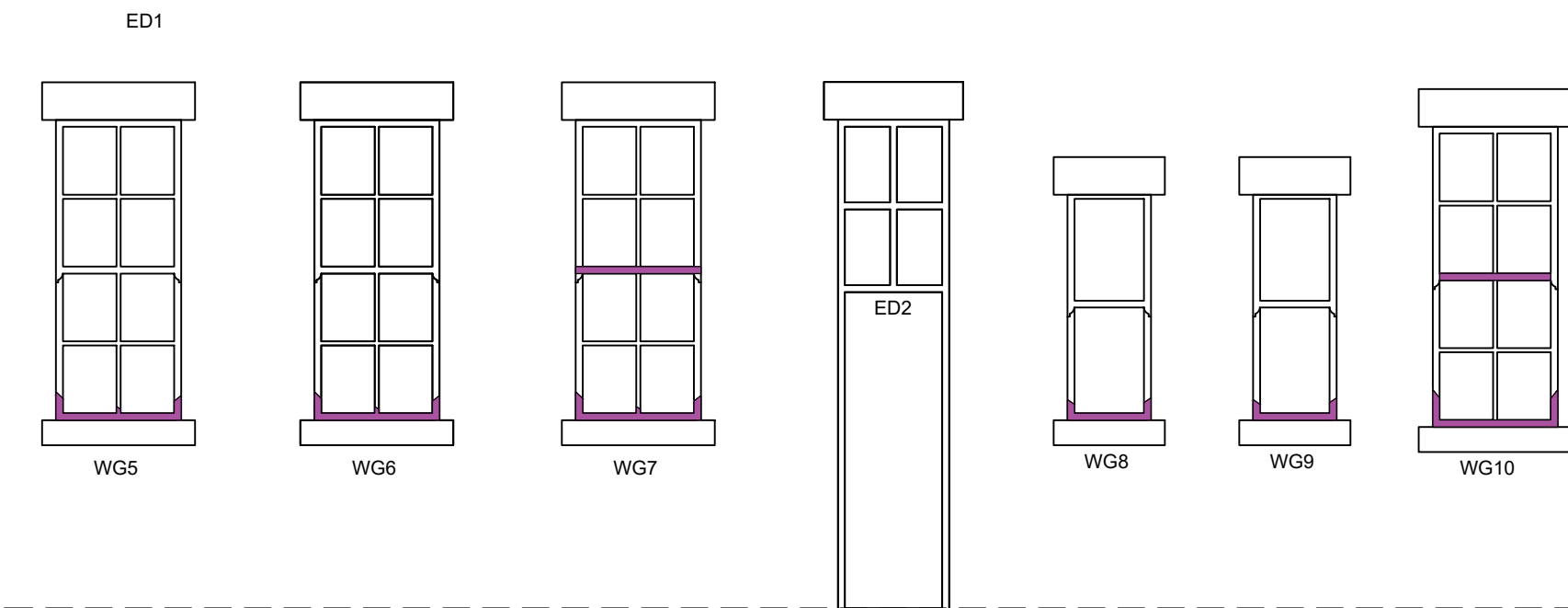
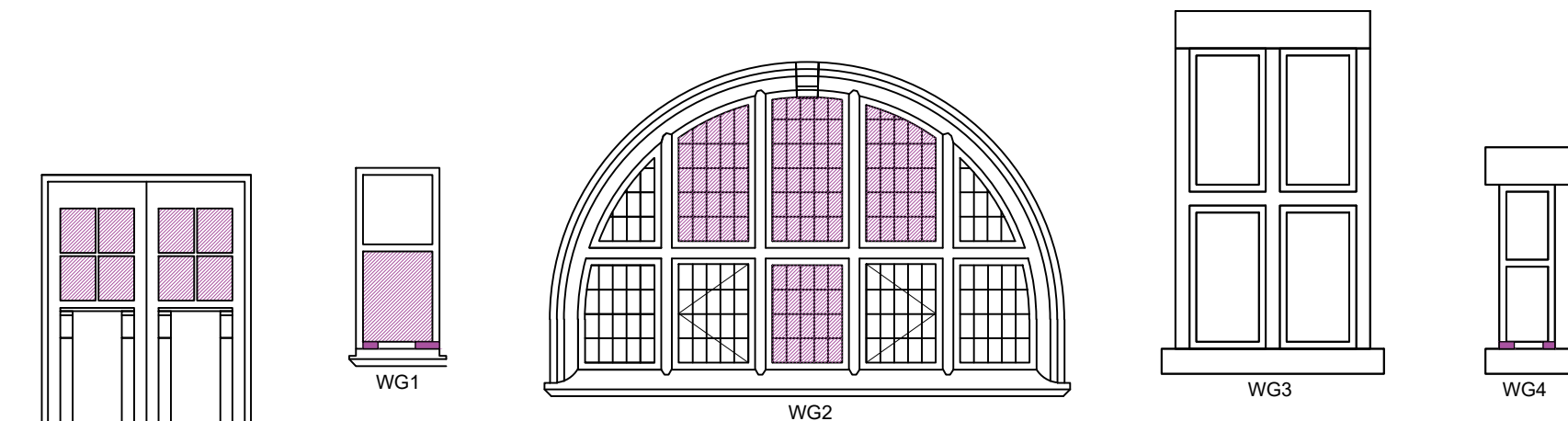
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client ROCHDALE BOROUGH COUNCIL			
project MILNROW LIBRARY REPAIRS TO THE ROOF AND WINDOWS			
drawing FRONT ELEVATION EMERGENCY REPAIRS			
drawn by	AGR	date	MAY 2022
checked by		date	
scale	1:50 Approx		A3
dwg no	2215.29.403		rev

WINDOW & DOOR SCHEDULE			
WINDOW REF.	STYLE /DESCRIPTION.	CONDITION.	RECOMMENDED REPAIRS (FROM INITIAL GENERAL SURVEY)
WG1	Leaded light with hopper removed and modern glass infill. Geometric arts and crafts patterning and textured glass. Original leaded lower light.	Perimeter putty pointed and heavily painted. Hopper frame corroded and build up of paint prevents closing.	Fully re-decorate and replace spalled putty. Consider installing new hopper vent within the existing frame. Leaded light showing signs of oxidation and cracking. Consider in situ repairs to minimise loss of historic glass.
WG2	10 light stone framed fixed light with transom & five mullions. Renewed leaded glass panels with what appears to be fake leading, polycarbonate protection with ferrous fixings and a ventilated perimeter.	Relatively recently refurbished. Some spalling of surrounding stonework. The leaded glass has been renewed as part of past repair works.	Painted stone perimeter to give impression of frame. Generally in good condition but check if fixings are ferrous and if so consider replacement before they rust and spall the stonework. Replace missing fixing. Localised pointing required to the stonework.
WG3	Single glazed fourlight with stone mulion and transome what appears to be fake leaded plate glass & protection	Reasonable condition. Fake leading is spalling internally	Re-secure fake leading
WG4	Single glazed timber light with upper horizontal swivel opening	Reasonable condition but heavily painted	Strip back decoration to allow casement to open and re-decorate. Localised repair required to cill
WG5	4:4 Single glazed painted timber sash window	Spalling paintwork and some rot to the bottom rails and cill.	Window to be stripped to both faces and damaged timber replaced as indicated (Cill and sash bottom) Allow for repair to cill/side rails and allow for easing, opening case and installing new sash cords and parting bead. Strip, prime and re-decorate. (W6)
WG6	4:4 Single glazed painted timber sash window	Spalling paintwork and some rot to the bottom rails and cill.	Window to be stripped to both faces and damaged timber replaced as indicated (Cill and sash bottom) Allow for repair to cill/side rails and allow for easing, opening case and installing new sash cords and parting bead. Strip, prime and re-decorate. (W7)
WG7	4:4 Single glazed painted timber sash window	Spalling paintwork and some rot to the bottom rails and cill.	Window to be stripped to both faces and damaged timber replaced as indicated (Cill and sash bottoms) Allow for repair to cill/side rails and allow for easing, opening case and installing new sash cords and parting bead. Strip, prime and re-decorate.
WG8	1:1 Single glazed painted timber sash window	Spalling paintwork and some rot to the bottom rails and cill.	Window to be stripped to both faces and damaged timber replaced as indicated (Cill and sash bottoms) Allow for repair to cill/side rails and allow for easing, opening case and installing new sash cords and parting bead. Strip, prime and re-decorate.
WG9	1:1 Single glazed painted timber sash window	Spalling paintwork and some rot to the bottom rails and cill.	Window to be stripped to both faces and damaged timber replaced as indicated (Cill and sash bottoms) Allow for repair to cill/side rails and allow for easing, opening case and installing new sash cords and parting bead. Strip, prime and re-decorate.
WG10	4:4 Single glazed painted timber sash window	Spalling paintwork and some rot to the bottom rails and cill. Open joint where it is sealed to the brick reveal	Window to be stripped to both faces and damaged timber replaced as indicated (Cill and sash bottoms) Allow for repair to cill/side rails and allow for easing, opening case and installing new sash cords and parting bead. Strip, prime and re-decorate.
WG11	4:4 Single glazed painted timber sash window	Spalling paintwork and some rot to the bottom rails and cill. Open joint where it is sealed to the brick reveal	Window to be stripped to both faces and damaged timber replaced as indicated (Cill and sash bottoms) Allow for repair to cill/side rails and allow for easing, opening case and installing new sash cords and parting bead. Strip, prime and re-decorate.
WG12	4:4 Single glazed painted timber sash window	Spalling paintwork and some rot to the bottom rails. Open joint where it is sealed to the brick reveal	Window to be stripped to both faces and damaged timber replaced as indicated (cill and sash bottoms). Allow for repair to cill/side rails and allow for easing, opening case and installing new sash cords and parting bead. Strip, prime and re-decorate.
WG13	4:4 Single glazed painted timber sash window	Spalling paintwork and some rot to the bottom rails. Open joint where it is sealed to the brick reveal	Window to be stripped to both faces and damaged timber replaced as indicated (cill and sash bottoms). Allow for repair to cill/side rails and allow for easing, opening case and installing new sash cords and parting bead.
WG14	12 light stone framed fixed light with transom & five mullions. Single glazed	Spalling paintwork and some rot to the bottom rails. Open joint and split in one of the stone mullions	Window to be stripped to both faces and damaged timber replaced as indicated. Replace all seals to the mullions & re-decorate. Re-point open joints in mullion etc and inspect/repair split to right hand mullion.
WG15	Four light timber framed fixed light with transom to divide into eight panes. Single glazed	Spalling paintwork and some rot to the bottom rails of the windows, particularly to that to the south	Carefully cut out the rotten timber and piece in new cill and part of the side rails. Allow for 15% timber replacement and all associated works. Fully strip back to sound surface, prime and re-decorate.
WG16	Four light timber framed fixed light with transom to divide into eight panes. Single glazed	Spalling paintwork and some rot to the bottom rails of the windows, particularly to that to the south	Carefully cut out the rotten timber and piece in new cill and part of the side rails. Allow for 15% timber replacement and all associated works. Fully strip back to sound surface, prime and re-decorate.
WG17	Four light timber framed fixed light with transom to divide into eight panes. Single glazed	Spalling paintwork and some rot to the bottom rails of the windows, particularly to that to the south	Carefully cut out the rotten timber and piece in new cill and part of the side rails. Allow for 20% timber replacement and all associated works. Fully strip back to sound, prime and re-decorate.
WF1	6 light stone framed fixed light with transom & five mullions. Original leaded lights, polycarbonate protection with ferrous fixings to one light.	One light has 5 broken quarries and requires repair. Polycarbonate installed to protect but sealed to the stonework.	Consider specialist in-situ repair to minimise loss of original glass. Remove protection and install new 8mm polycarbonate protection with vented perimeter and non-ferrous fixings.Localised pointing required to the stonework.
WF2	2 light stone framed fixed light bay. New fake leaded plate glass.	Reasonable condition but distorted where the bay has moved.	Removal of the glass may be required to repair the damaged cill and jamb. Localised pointing required to the stonework.
WF3	4 light stone framed fixed light with transom & mullion. Original leaded lights, polycarbonate protection with ferrous fixings to the two upper central lights, the two lower appear to be fake leaded plate glass..	Generally in reasonable condition but the upper leaded lights have buckled and comes and welds have split. (W2&W4)	Consider in-situ repair by specialist to minimise loss of original glass if feasible. Protect the repaired lights with polycarbonate with perimeter ventilation and non-ferrous fixings. Localised pointing required to the stonework.
WF4	2 light stone framed fixed light bay. New fake leaded plate glass.	Reasonable condition but some open joints to the mullions/transom.	Localised pointing to the stonework.
WF5	Timber framed with 10 lights at two levels and with central transom. Arch heads to upper lights	Signs of leaking and staining with spalling of paint and some evidence of initial rot, particularly to beadings. Not an original window and now in need of repair.	Window to be stripped to both faces and allow for local filling and for replacing 20% of the internal beads. Allow for cleaning salts off the external face of the arch and brickwork and for localised re-pointing. Hairline gap to the transom' to be packed and re-pointed. Re prime and decorate seal all edges. De-scale stonework and re dress to shed water.
LL1	Timber framed laylight set in timber frame with 16 lights and fine section glazing bars. - Textured non-safety glass to geometric pattern (W5)	Timbers have dried and show some shakes. Glazing pinned and putty sealed with some spalling of putty. Glazing is in need of cleaning.	The glazing does not appear to be safety glass. Consideration to be given to removing putty, installing a safety film and re-sealing. Glass to be cleaned. Check and tighten/stiffen frame as required. (W5)
LL2	As above	As above	As above
LL3	As above but with 9 lights and smaller.	As above	As above
EXT. DOOR REF.	STYLE /DESCRIPTION.	CONDITION.	RECOMMENDED REPAIRS
ED1	Timber door with original leaded glass panels	In need of re-decoration and some rot to the foot where is abuts the ground. Oxidisation and cracking of comes/ welds.	Localised repair and re-decoration of the door and in situ repair of the leaded lights to retain as much original glass as possible.
ED2	Modern solid door	Reasonable condition - Cyclic re-decoration.	Re-decoration will be required in next five years
ED3	sOLID cellar door - Painted Timber.	In need of re-decoration and some rot to the foot where is abuts the ground. Debris to be removed and gulley cleaned.	Repair foot of door, prepare, prime and re-decorate.
ED4	Close boarded cellar door - Painted Timber.	As above	As above
LOUVRE	Ventilation Louvre to heating chamber	In need of re-decoration within next 5 years.	Address water run off from flue above and re-decorate.
LD1	Painted hollowcore door	Reasonable condition	Consider upgrade to half hour fire door with smoke seals
LD2	Painted hollowcore door	Reasonable condition	Consider upgrade to half hour fire door with smoke seals
GENERAL NOTES			
All timber and metal casements/frames require full preparation and re-decoration. Some require casements/hoppers to be eased/repaired.			
Further specialist close up assessment of timber frames required to provide a more accurate assessment of the repairs required and the extent of rot.			
References in brackets refer to photographs that accompany this Condition Report. W 5 shows a typical example of the deterioration of cill and lower sash rails following failure of decoration.			



Leaded glass with original or refurbished designs and containing coloured crown glass

Initial assessment of compromised timber that will need to be cut out and replaced.



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Hazard Identification



ref	hazard	date

CONDITION SURVEY PHOTOGRAPHS

This drawing is to be read in conjunction with the Survey Photographs Report dated (January 2021).

References in brackets within this drawing relate to the photographs as follows:

(D)- DECORATION
(L)- LANTERN
(R)- ROOF
(ST)- STONWORK
(STR)- STRUCTURAL
(W)- WINDOWS
(RWP)- RAINWATER PIPES