



Response to Request for Information

Reference FOI 0615152
Date 29 June 2015

Heath Town Baths and Library

Request:

I would like to put in a Freedom of Information request for the latest structural survey/report on Heath Town Baths and Library.

Response:

In response to your request, please find below our latest report however, we are currently undertaking a Strategic Market Assessment of the building to inform our decision on next steps.

FRANK HAYWOOD ASSOCIATES

Consulting Structural Engineers



HEATH TOWN BATHS & LIBRARY Structural Condition Survey

November 2011

HEATH TOWN BATHS & LIBRARY

This report forms part of a Feasibility Study for the adaptive re-use of Heath Town Baths & Library to a Sports Academy on behalf of the Tessa Sanderson Foundation Academy.

It should be read in conjunction with the following supporting documentation:-

Feasibility Study – DIA Conservation Architects
Conservation Statement – DIA Conservation Architects
Cost Estimate Report – JPP Quantity Surveyor

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1.0. INTRODUCTION

The Consultants were appointed by Donald Insall Associates, Chartered Architects, 5 Swan Hill Court, Shrewsbury, Shropshire, SY1 1NP, on behalf of The Tessa Sanderson Foundation and Academy, Room Y012, Newnam College of Further Education, Stratford Campus, Welford Road, London, to carry out a condition survey and prepare a report on Heath Town Baths, Wolverhampton, a property of which they are considering restoring and converting to a sports facility. This report will form part of a Feasibility Study and Options Appraisal for the usage and is to make reference to the general condition of the building and identify areas of significant structural defect. This information will then be used by the team quantity surveyor in providing costings for the options.

We have not inspected any area which is covered, unexposed or inaccessible and we are therefore, unable to report that any such part is free from defect.

2.0. SURVEY

2.1. General Description of Building

This is to be covered within the Architectural section of the Appraisal Report.

2.2. External Survey

2.2.1. Front Elevation – Eastern

Starting at the northern end is the single storey section which was the original entrance to the Children's Bath, as shown on photograph No. 1.



Photograph No. 1

The surround is in a poor condition with significant cracking and spalling to the lintel, as shown on photograph No. 2, and there is also spalling to the bottom left hand side of the reveal where the cracking extends up to the doorhead.



Photograph No. 2

Moving to the main front elevation, this is shown on photograph No. 3, and the northern side is shown in detail on photograph No. 4.



Photograph No. 3



Photograph No. 4

The upper parapet requires repointing. The first floor window (WF10), is suffering from noticeable areas of spalling, especially to the right hand reveal where the reinforcement bar is now showing, as shown on photograph No. 5.



Photograph No. 5

The first floor masonry shows no sign of any significant cracking. The ground floor window is covered with mesh, but from what could be seen there were no signs of major structural failure. To the side of the window there is one minor open joint which will require repointing. Underneath the window there were no signs of any significant structural movement but graffiti was present.

There is a damp proof course and air bricks approximately 13 courses up from ground level. Below the damp proof course there are minor areas of repointing required, but this is all considered to be maintenance work rather than due to structural movement.

To the North Tower Library entrance, this is shown on photograph No. 6.



Photograph No. 6

The parapet corbel detail is noticeably open jointed, as shown on photograph No. 7, and will likely need to be re-set. This will be further inspected from the roof.



Photograph No. 7

The brickwork is in a reasonable condition, although it will need to be ensured that the soldier course just below the parapet is well pointed so that it does not retain water.

To the first floor window (WF9), this shows no sign of major spalling to the upper section, although the junction of the window and the cill is slightly poor, as shown on photograph No. 8.



Photograph No. 8

The brickwork to the tower has approximately 25% which requires repointing, where the joints are quite recessed.

The feature door surround has a failure to the architrave section to the left hand southern side, as shown on photograph No. 9.



Photograph No. 9

Across the central plaque there is a horizontal crack which is likely to be due to corroding reinforcement, and this is shown on photograph No. 10.



Photograph No. 10

On the inside of the reveals, there is an open joint between the individual blocks and to the bottom corner of the northern reveal, there is one vertical crack which requires repair, as shown on photograph No. 11.



Photograph No. 11

On the southern side, again there are open joints which need repointing.

The steps have become quite displaced, as shown on photograph No. 12, and it would be recommended that an allowance is made for these to be carefully taken up and re-set.



Photograph No. 12

On the small southern return to the entrance tower, as shown on photograph No. 13, the upper parapet joints are slightly open.



Photograph No. 13

To the remainder the brickwork has an occasional horizontal bed joint which requires repointing, but no sign of any major cracking.

The northern half of the main frontage is shown on photograph No. 14.



Photograph No. 14

The parapet shows no sign of any major displacement, only slightly open joints which require repointing.

At first floor level, the cill to window WF8 has exposed reinforcing bar and the concrete is spalled, as shown on photograph No. 15, and this cill will need to be replaced.



Photograph No. 15

The lintel and mullion sections show no sign of any significant spalling.

The brickwork leading to the main arch below requires a minor amount of repointing but generally shows no structural failure. At the junction between the reconstituted stone arch and the brickwork, the joints have opened slightly and this requires repointing.

Between the two arches there is a central downpipe and some of the fixings to this are broken. It can also be seen that there is now a small tree growing out of the top of the hopper and it would therefore, be recommended that this downpipe is taken off, repaired and re-fixed. A view of the small tree is shown on photograph No. 16.



Photograph No. 16

Lower down to the downpipe, there are signs of vegetation which need to be removed and this section of brickwork behind the downpipe needs repointing where mortar has been washed away.

The window WF7 is in a reasonable condition with regard to its surround, but the metal frames are in need of attention.

The central entrance door, this is shown on photograph No. 17.



Photograph No. 17

The window above here (WF6), appears to have a slight disturbance to the cill, but viewing was restricted by the mesh covering.

The parapet above this area requires repointing. The main central plaque is in a reasonable condition and this has a small lead flashing over the top. There is just an occasional open joint to the brickwork which requires repointing.

To the ground floor door surround, there is a slight separation of the side panels on the southern elevation and to the underside of the lintol, there has been water penetration which is indicated by the staining present, as shown on photograph No. 18.



Photograph No. 18

To the steps it can be seen that there is a void under the lower step, as shown on photograph No 19, and this needs to be re-set.



Photograph No. 19

The southern section of the central area is shown on photograph No. 20.



Photograph No. 20

The first floor window (WF5) has exposed reinforcement bars showing to the southern reveal, as shown on photograph No. 21.



Photograph No. 21

Underneath the window there are areas of brickwork which require minor repointing, although there were no signs of any major structural movement.

To the central downpipe between the arches, this has a large amount of vegetation behind, which would indicate that the water is not discharging properly, as shown on photograph No. 22. This requires the downpipe to be removed, the brickwork repointed, the downpipe overhauling and re-fixing.



Photograph No. 22

Window WF4 is in a poor state of repair and it can be seen that the lintol section has exposed reinforcing bars and spalling stone, and also the cill shows a large amount of spalling stone, as shown on photographs numbered 23 and 24.



Photograph No. 23



Photograph No. 24

There are open joints to the parapet which require repointing, but the brickwork between the head of the arch and the first floor windows is in a more reasonable condition.

The southern library entrance tower is shown on photograph No. 25.



Photograph No. 25

The tree which is growing adjacent to this entrance needs to be cut back as it is starting to overgrow the building.

From what could be seen of the parapet, this appeared in a reasonable condition with only minor open joints to be repointed.

The window surround to WF3 is in a poor condition, especially the cill and right hand reveal, which is shown on photographs numbered 26 and 27.



Photograph No. 26



Photograph No.

To the lintol over the ground floor door, the concrete has spalled and there are exposed reinforcing bars showing and this crack extends all the way across to the southern end where this section of reconstituted stone is also coming away, and this is shown on photographs numbered 28 and 29.



Photograph No. 28



Photograph No. 29

To the remainder of the door surround there is no significant spalling, but to the bottom step there is one cracked tread which will need repair.

The brickwork to this elevation is in a reasonable condition.

The southern end of the building is shown on photograph No. 30 and here the parapet requires repointing and it can also be seen that to the top corner, there is vegetation growing, and this is shown on photograph No. 31.



Photograph No. 30



Photograph No. 31

To the first floor window, WF02, the southern reveal has spalled, as shown on photograph No. 32.



Photograph No. 32

The brickwork appears to be in a reasonable condition, but the ground floor window could not be viewed due to the security covering which can be depicted on photograph No. 30 above.

To the southern extreme of the elevation, at the entrance to the original public wash house, the lintol is in a poor condition and there is vegetation growing out of the corner of this junction. It can also be seen that the face of the stone below has also been lost, and this is all shown on photograph No. 33.



Photograph No. 33

2.2.2. Discussions and Recommendations for the Front Elevation

The main front elevation to the baths, including the entrances up to the library, showed no sign of major structural movements. The main area of defect noted is the poor condition of the reconstituted stone window surrounds, including both the cills and lintols. These sections are likely to require replacement as although a process of repair could be carried out, there would be a very distinct change in both texture and aesthetic appearance of the windows. Therefore, at this stage, it would be recommended that an allowance is made for the complete sections to be replaced where there is significant damage.

The parapet requires repointing and localised areas re-setting and this will be inspected further during the roof survey.

The brickwork is generally in a reasonable condition with just natural erosion of the joints and therefore, an allowance should be made for approximately 25% of the elevation to be repointed.

To the entrance steps, the northern and central set show noticeable displacement and although the individual treads can be re-used, an allowance should be made that these are re-set.

The other area of damage is behind the rainwater downpipes which are clearly leaking, indicated by the amount of vegetative growth that is present. Therefore, an allowance should be made for the downpipes to be carefully removed, fully refurbished, the area of brickwork behind repointed and then re-fitted.

Overall to the elevation, although there are no signs of major structural movement, there is considerable work required in up-grading individual elements, most especially the windows and their surrounds.

2.2.3. Left Hand Side Elevation – Southern

A general view is shown on photograph No. 34.



Photograph No. 34

Starting with the front staircase tower, this appears to be in a reasonable condition. There is slight cracking to the front edge of the parapet and this is shown on photograph No. 35, but the remainder of the brickwork is in a reasonable condition.



Photograph No. 35

To the next section, window WF01 is in a poor condition with the cill and the western reveal, showing exposed reinforcement. A general view of this section is shown on photograph No. 36 and the areas of damage on photographs numbered 37 and 38.



Photograph No. 36



Photograph No. 37



Photograph No. 38

The parapet above here is slightly open jointed and would benefit from being repointed. The brickwork is in a reasonable condition and the ground floor window is completely boarded over and therefore, its condition could not be seen, as can be appreciated on photograph No. 36 above.

To the lower brickwork it is apparent that at some stage, an opening has been taken out and then infilled, most probably with the same bricks as they are a good match. Generally, this lower section requires approximately 20% to be repointed.

At the junction with the entrance into the public wash house, the vegetation needs to be removed, which has already been noted above.

To the western elevation of the public wash house entrance, as shown on photograph No. 39, there is a central crack indicating a failure of the lintol, where the flat arch has dropped, as shown on photograph No. 40. The coping above here is slightly open jointed which requires pointing and the lintols re-setting.



Photograph No. 39



Photograph No. 40

The remainder of this section of the wall is in a reasonable condition with just an occasional chipped or spalled brick, but no major structural damage.

The drainage gully at the base of the wall is in need of being cleared and it would be recommended that it is actually replaced and re-formed, as shown on photograph No. 41.



Photograph No. 41

To the bottom left hand corner of window WG03, there are slightly open joints which require repointing.

On the small return section the downpipe is missing and therefore, the water from, not only the southern guttering but also the public washroom entrance hopper, is discharging down the wall, and this is shown on photograph No. 42.



Photograph No. 42

The next area of the building is shown on photograph No. 43.



Photograph No. 43

The roof to this area will be covered in a later section of this report, but what is noticeable is that the guttering is completely filled with vegetation and is decoratively in a poor condition, as can be seen on photograph No. 44.



Photograph No. 44

Between the upper glazed lantern frame and the brickwork there is a gap and it is assumed that these windows will be replaced and this can be re-sealed.

To window WG02, this is completely covered in security shutters and therefore, comment cannot be made, however the lintol is in a reasonable condition.

To the lower service room door, this requires drainage at the base as at present, water collects, as shown on photograph No. 45.



Photograph No. 45

There are then two openings which have been infilled with a non-matching brick but air bricks have been inserted, as shown on photograph No. 46.



Photograph No. 46

What is noticeable is that an attempt to provide tanking has been introduced in the form of a render with slate to the outside, as shown on photograph No. 47. However, this is likely to be ineffective and it is evident that the slates are now coming away.



Photograph No. 47

At the southern end of this section of the building, there is a set of steel steps leading up to DG01. However, these are noticeably corroded and it would be recommended that an allowance is made for their replacement and they are shown on photograph No. 48.



Photograph No. 48

The lintol over the doorway is in a reasonable condition.

On the end of this section of the building, the downpipe is missing completely and therefore, the water is discharging directly onto the ground. The gutter is in a poor condition and this area is generally saturated, as shown on photograph No. 49.



Photograph No. 49

The next section of the building is shown on photograph No. 50 and this shows that the upper windows have been completely boarded over and at the position of a large opening at the lower level where there was a sliding door, this has now been infilled with blockwork.



Photograph No. 50

To the first lintol, this is noticeably open jointed at the top and this needs repointing. The remnants of the sliding door mechanism and track is all in a poor condition and it would be recommended that this is all removed.

At the downpipe at the edge of the sliding door, it is assumed that from the amount of vegetative growth present, this is leaking, as shown on photograph No. 51. The downpipe should be removed, the rainwater outlets made good and the brickwork repointed prior to re-fixing the downpipe.



Photograph No. 51

At the base there is also a lot of standing water, indicating that the drainage is not working correctly and although a drainage survey has not been carried out, it would be recommended that an allowance is made for it to be replaced, as shown on photograph No. 52.



Photograph No. 52

At the western end the openings are all boarded up, as shown on photograph No. 53.



Photograph No. 53

The lintols are in a poor condition with the eastern most one adjacent to the previous downpipe having exposed aggregate, the reinforcement showing to the central one and the concrete spalling off and to the western most, the reinforcement is clearly visible behind the boarding at the western end, and this can all be seen on photographs numbered 54 to 56 inclusive.



Photograph No. 54



Photograph No. 55



Photograph No. 56

Below these windows there is another sliding door which has been boarded over. It has a large concrete beam over the top. The brackets previously holding the rail are corroded and need to be removed, and the concrete beam needs repair as there is cracking at the western end, as shown on photograph No. 57.



Photograph No. 57

Between the two windows above here, there are slightly open joints which require repointing, as shown on photograph No. 58.



Photograph No. 58

Also in the western corner, there is a minor diagonal crack but most noticeable is the amount of damage from the water discharging from the roof above, which is on the southern corner and this is shown on photograph No. 59.



Photograph No. 59

Looking along the length of this elevation, there are no signs of major movement or bulging to give rise for major structural concern.

2.2.4. Discussions and Recommendations for the Left Hand Side Elevation

As with the front elevation, the main areas of defect are related to the reinforced concrete and reinforced reconstituted stone lintols which show noticeable amounts of spalling with the reinforcement bar now exposed.

At the front of the elevation, the main window WF01, will require a complete new cill and the assumption is that the window will need to be dismantled, the new cill installed and then rebuilt.

The guttering to the central section of the building is clearly not functioning and this needs to be completely removed, cleaned down, redecorated, re-jointed and re-fixed, including new downpipes. It would also be recommended that an allowance is made for the underground drainage system as there seems to be water collecting at the gully positions and not fully draining away.

At the rear the three lintols are in a poor structural condition and an allowance should be made for these to be replaced. The condition of the windows could not be determined as they are all boarded over.

The main beams over the previous opening for sliding doors need attention, including repair of the western end of the western most opening. Also on this corner, the brickwork needs repointing where it has been damaged from the leakage on the southern elevation.

2.2.5. Rear Elevation – Western

A general view of the southern flat roofed section of the building can be seen on photograph No. 60.



Photograph No. 60

The damage previously mentioned to this south-western corner is clearly evident and the fact that the hopper is discharging directly over the brickwork is now causing a degree of vegetative growth, as well as washing away the mortar and causing staining and this can be identified on photograph No. 61.



Photograph No. 61

Starting from the southern end, the lintol over the first window is in a poor condition with exposed reinforcing steel at the bottom, as shown on photograph No. 62.



Photograph No. 62

The bottom section of the central window is on the verge of spalling away and the northern most is in a similar condition with the disturbance at the top left hand corner, adjacent to where the brickwork has been removed from the parapet, all as shown on photographs numbered 63 and 64.



Photograph No. 63



Photograph No. 64

The remainder of the brickwork requires approximately 20% to be repointed, but it generally shows no major form of defect.

The rear elevation to the main swimming pool is shown on photograph No. 65.



Photograph No. 65

The apex stone is quite open and needs to be re-set, as shown on photograph No. 66 and the kneeler at the northern side also requires re-setting.



Photograph No. 66

To the centre of this upstand, there is a bulls-eye window which has had a grill quite crudely installed through the brickwork, as shown on photograph No. 67.



Photograph No. 67

Over the main window opening, the lintol is a three course deep row of headers and this requires repointing, although shows no sign of structural failure. There are some slightly open joints to the window cill and minor damage to the bottom of the mullion, as shown on photograph No. 68, but there are no signs of any major spalling.



Photograph No. 68

The brickwork above this area requires a small amount of repointing, but was generally in a reasonable condition.

The northern panel of brickwork with door DB01 and also windows WB05 and WU08, the surrounds etc., are in a reasonable condition with no sign of any significant defect, apart from minor paint spillage to the wall. To the ceiling to the underside of the door, this requires replacement as the plaster has come away from the laths, as shown on photograph No. 69.



Photograph No. 69

In front of the middle section of the elevation, there is a single storey building and it can be seen that the gutter outlet has failed, causing noticeable staining to the brickwork and also the window is not present. This is all shown on photograph No. 70.



Photograph No. 70

The western elevation of this single storey building is shown on photograph No. 71 and apart from minor areas of repointing, there were no signs of major failure.



Photograph No. 71

The southern elevation has the windows infilled, but there was no major defect noted.

To the southern side of the ground floor area of the main elevation, the lintol is displaced to window WB12 and this needs re-setting and the minor crack to the top left hand corner repointed, as shown on photograph No. 72.



Photograph No. 72

Generally there are only minor areas of repointing required and the open joints do not give rise for structural concern.

To the southern doorway DB2, there is cracking to the underside of the lintol, as shown on photograph No. 73 and the concern here is that there is corroded reinforcement behind here and this will need replacement.



Photograph No. 73

As with the opposite doorway DB01, the ceiling is in a poor condition and needs replacement.

On the short northern return, as shown on photograph No. 74, the water is not discharging properly from the window and this is causing noticeable staining and also to the upper section there is an area of repointing required.



Photograph No. 74

The lintol over the window is showing signs of failure, as shown on photograph No. 75.



Photograph No. 75

Moving across to the northern side and the western elevation of the single storey building, this is shown on photograph No. 76.



Photograph No. 76

At the southern junction, there is only a hopper and no downpipe and this is causing damage to the brickwork and vegetative growth, and this is shown on photograph No. 77.



Photograph No. 77

The remainder of the brickwork to the elevation has an occasional open joint and also minor areas of paint spillage. There is a vertical crack, but this is only hairline in nature and is likely to be due to thermal movement and does not give rise for structural concern.

At the lower level there are three openings which have been bricked in and starting at the southern end, the lintol has failed, as shown on photograph No. 78.



Photograph No. 78

The lintol to the central opening is on the verge of failure and the northern one has a similar crack which has been pointed, but this is an indication that it has previously failed, as shown on photographs numbered 79 and 80 respectively.



Photograph No. 79



Photograph No. 80

At ground level there is an asphalt tanking system which is now coming away, as shown on photograph No. 81.



Photograph No. 81

To the remainder there are minor amounts of repointing required, but the line of the wall appears quite reasonable and there are no signs of significant failure.

2.2.6. Discussions and Recommendations to Rear Elevation

At both the northern and southern ends, the lintols are showing signs of failure with either areas of cracking due to corroding reinforcement or in fact the reinforcement is already showing and due to the nature of the reconstituted stone, it is probably more appropriate that these are cut out and replaced.

The main end elevation of the swimming pool is in a more reasonable condition. There is minor making good required to the copings, in re-setting the northern kneeler and the apex stone and an allowance made for repointing the remainder.

The main window has minor open joints which need to be made good, but the remainder is in satisfactory structural condition.

To the door openings at the northern and southern sides, the lath and plaster ceilings need to be replaced and there is one window where localised making good is required in re-setting the brick lintol. The single storey extension has fallen into a slight state of disrepair and as with the remainder of the building, requires the rainwater goods to be made good.

To the southern section of the building, the displaced brickwork at the top left hand corner, where the northern outlet has been damaged, need to be made good and the rainwater pipe needs to be re-introduced to the southern brickwork, the vegetation removed, the brickwork allowed to dry out and then repointed.

Due to the ground level rising from south to north, there is an asphalt tanking introduced on the northern section of the building. However, the effectiveness of this is not known as it can be seen that at ground level it is quite noticeably damaged, as shown on photograph No. 81 above. It would therefore, be recommended that an allowance is made for this tanking to be repaired or replaced.

The remainder of the work required includes minor areas of repointing and cleaning down the brickwork where required.

2.2.7. Right Hand Side Elevation – Northern

The western section of the building is shown on photograph No. 82.



Photograph No. 82

At the bottom of the eaves level glazing, the guttering is missing and this generally has led to vegetative growth and the upper brickwork being damaged, as shown on photograph No. 83.



Photograph No. 83

In the eastern corner, where the downpipe is missing, the vegetative growth and repointing requirements have already been noted and are shown on photograph No. 77 above.

The brickwork itself shows no significant cracking.

The two windows on this side have grills over which does restrict viewing. However, it can be seen that the brick cills are suffering from noticeable damp. The lintol has no cracking, but with the amount of water penetration, there are longer term concerns.

The brickwork is generally in need of repointing and there are no signs of any major structural failure.

At ground level there is evidence of an asphalt tanking system but where this is pointed against the brickwork, it is in a poor condition and water is likely to track back behind, as shown on photograph No. 84.



Photograph No. 84

To the central single storey flat roofed area, as shown on photograph No. 85, there is no downpipe at the western end and therefore, water is discharging down the brickwork and there is a large amount of staining and collection of water at this corner, as shown on photograph No. 86.



Photograph No. 85



Photograph No. 86

The upper section of brickwork has been altered in the past, as there is now a three brick corbel and then 6 courses of brickwork, as shown on photograph No. 87.



Photograph No. 87

This upper section however, displays no sign of any significant cracking and is in a reasonable condition.

To the lower brickwork there are three openings which have been bricked in, the lintol to the western most of which has failed, as shown on photograph No. 88.



Photograph No. 88

The lintol to the central opening is in a reasonable condition and the eastern one has damp staining where again the gutter is failing, causing a staining of the lower brickwork, and this is all shown on photograph No. 89.



Photograph No. 89

At the eastern end there is a set of steps which are in a reasonable condition. To the front section of the building, being the children's bath entrance, the hopper outlet discharges directly onto the brickwork with no downpipe and there is noticeable staining and damp which is causing vegetative growth, as shown on photograph No. 90.



Photograph No. 90

Moving to the east and viewing the northern elevation of this section, there is one large window which is completely covered in security sheeting. It can be seen that above the brick soldier arch lintol, this needs to be repointed. The western corner does show a degree of damage from the previous gutter leak and this should be repointed. It is also noted that the coping needs to be made good.

Moving to the eastern side, the end elevation of the library is shown on photograph No. 91.



Photograph No. 91

To the eastern corner of the parapet there is slight displacement, as shown on photograph No. 92, and this will need to be re-set.



Photograph No. 92

To the main window WF11, the lintel has fractured at the eastern corner with corroding reinforcement and also to the western reveal. The cill is also in a poor condition, and this is all shown on photographs numbered 93 and 94.



Photograph No. 93



Photograph No. 94

On the eastern corner of the downpipe, the lower section is now missing, as shown on photograph No. 95, which will result in water discharging directly onto the brickwork.



Photograph No. 95

Viewing of the ground floor window (WG13) was restricted because of the security mesh and below here, the brickwork has minor areas which require repointing.

To the front entrance tower, the northern elevation is shown on photograph No. 96.



Photograph No. 96

There is displacement to the front corner of the parapet, as shown on photograph No. 97.



Photograph No. 97

The remainder of the brickwork is in a reasonable condition, showing no sign of any major structural failure.

2.2.8. Discussions and Recommendations to the Right Hand Side Elevation

The lack of guttering to the western part of the building is causing damage to the brickwork, with noticeable staining and an allowance should be made for this area to be repointed and the for the concrete eaves detail at the junction with the windows to be repaired.

At the asphalt junction at ground level, this is showing signs of damage and has quite open joints, and as with the western elevation, an allowance should be made for repair or up-grading this tanking.

To the main single storey elevation, again there are failures to the guttering which needs to be replaced, the downpipes re-installed and making good of the brickwork.

There is damage noted to the lintols and these should be replaced.

The front section of the library building has similar structural defects, as noted on the front elevation, in that the main first floor window is in a poor state of repair with significant spalling of the reconstituted stone lintols and surrounds, which is likely to result in the dismantling of the window and new sections inserted.

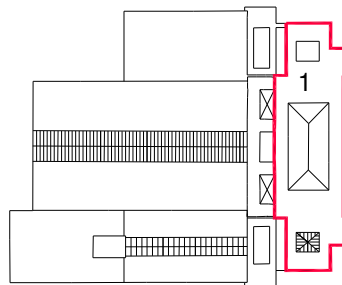
The rainwater goods need to be up-graded so that they discharge adequately and there are also localised areas of the parapet which need to be re-set.

2.2.9. External Roof Survey

Access to the varying roofs to the building was gained and these have been separated into six sections for ease of reference. This also gave access to inspect the upper sections of wall and so comment will also be made on the condition of the same.

Area 1

This is the roof over the front library building. This section also includes the parapet wall and central raised section which has a hipped slated roof.



Parapet – Starting on the northern return of the parapet wall, as shown on photograph No. 98, this is six courses of brickwork with a coping on the top.



Photograph No. 98

There is no sign of major structural movement to this section of wall, but it is quite open jointed to the side of the inset stone feature panels and also the coping, as typically shown on photograph No. 99.



Photograph No. 99

The flashing from the roof is only turned up the wall 75mm and the pointing is coming away. It is also noted that in the north-eastern corner, there is vegetation growing out of this junction, and this is all shown on photographs numbered 100 and 101.



Photograph No. 100



Photograph No. 101

The north-eastern section of the parapet is shown on photograph No. 102, and this is in a similar condition to that noted above with no major movement, but pointing required, especially at the junction with the flashing.



Photograph No. 102

The parapet then steps up in height around the library entrance tower, as shown on photograph No. 103.



Photograph No. 103

The sections of parapet stone are quite slender and it is noticeable that on the northern face there is a large section of exposed aggregate now showing, as shown on photograph No. 104.



Photograph No. 104

This area is quite open jointed and to the large central block, there is now a vertical crack, as shown on photograph No. 105.



Photograph No. 105

On the north-eastern corner there is localised displacement, as shown on photograph No. 106.



Photograph No. 106

On the eastern section there is again a series of vertical cracks, a small section of spalling stone and also displacement of the top course and this is all shown on photographs numbered 107 and 108.



Photograph No. 107



Photograph No. 108

To the southern elevation of this section there is vertical cracking, and although the brickwork below does require repointing, it showed no sign of any movement.

The most noticeable item is that the asphalt flashing junction has now failed in numerous places, as shown on photographs numbered 109 to 111 inclusive.



Photograph No. 109



Photograph No. 110



Photograph No. 111

When viewing this section from the south, the displacement to the front corners can also be seen on this side. The brickwork however, is in a reasonable condition and displays no sign of any major movement, as shown on photograph No. 112.



Photograph No. 112

The flashing at the base of the wall is again coming away and this is shown on photograph No. 113.



Photograph No. 113

The main eastern run of the parapet wall is shown on photograph No. 114.



Photograph No. 114

This generally shows no sign of major structural cracking, although the coping is slightly open jointed and needs repointing and at the gutter outlet, this seems to be quite blocked and now has a small self-seeded tree growing out of the outlet, as shown on photograph No. 115.



Photograph No. 115

As noted previously, there are areas where the flashing is now coming away from the brickwork.

At the southern end of the parapet wall, there was no significant cracking, just occasional opening of the coping joints and the flashing junction is poor.

At the raised section to the southern library tower, the north-eastern corner shows displacement, as shown on photograph No. 116. The brickwork panel below however, is in a reasonable condition.



Photograph No. 116

On the inner section, as shown on photograph No. 117, there is slight displacement to the centre on the northern side and the displacement to the north-eastern corner can also be seen, as shown on photograph No. 118.



Photograph No. 117



Photograph No. 118

The brickwork is in quite a reasonable condition and there is one vertical crack which has been repointed and has not re-opened.

On the last section of parapet wall along the front, the masonry is in a reasonable condition but the flashing is quite poor, as shown on photograph No. 119.



Photograph No. 119

The southern wall has a large amount of vegetation in the corner and the coping joints are quite open, especially the end stone which needs to be re-set, and this is all shown on photographs numbered 120 and 121.



Photograph No. 120



Photograph No. 121

Roof – The roof is covered in asphalt and starting at the southern flat roof, the water does pond to the centre on the southern side, as shown on photograph No. 122.



Photograph No. 122

To the western edge the gutter is full and does not drain properly, and it can also be seen that the asphalt is damaged and the tin strip used to join the guttering to the roof is also missing in section and this is shown on photographs numbered 123 and 124.



Photograph No. 123



Photograph No. 124

The original central lantern has now been covered with felt and the original structure is now not present, as shown on photograph No. 125.



Photograph No. 125

Moving to the north, again the roof ponds quite noticeably, as shown on photograph No. 126.



Photograph No. 126

Along the eastern edge, between the raised section of building and the parapet, there is a build-up of moss, but generally the roof finish is in a reasonable condition,

At the northern end of the roof, this mirrors the southern side in that the roof light has been removed and has felt over it and it ponds quite noticeably, all as can be seen on photograph No. 127.



Photograph No. 127

On the western edge the asphalt is starting to break up and is damaged and the tin strip is now missing, along with the guttering, as shown on photograph No. 128.



Photograph No. 128

On the raised section over the library building, the southern elevation is shown on photograph No. 129.



Photograph No. 129

The eastern hip is reasonable with hip irons and the slates are in a reasonable condition with just an occasional one which is chipped. The western hip however, needs to be re-set, as shown on photograph No. 130.



Photograph No. 130

The windows are boarded over but the section of brickwork which can be seen is in a reasonable condition.

To the centre of the window there is a slight opening joint, but this could not be fully viewed.

The western roof appears to be in a reasonable condition, as shown on photograph No. 131.



Photograph No. 131

At the northern end the bottom hip tiles are coming away and need to be re-set, as shown on photograph No. 132.



Photograph No. 132

The slates themselves however, appear to be in quite a reasonable condition.

As noted on the southern elevation, the western most hip is displaced, and this is shown on photograph No. 133.



Photograph No. 133

The three main windows to the upstand brickwork are boarded over and therefore, the condition is not known. The reconstituted stone eaves has an occasional vertical split which needs repointing, but the brickwork shows no significant cracking.

The northern elevation of this section is shown on photograph No. 134.



Photograph No. 134

The hipped roof is in a reasonable condition with only minor displacement of the slates and the hips at the lower western corner. The slates however, all appear to be present and are working quite adequately.

To the wall itself, the windows are boarded over but there was no sign of major structural movement.

On the eastern elevation of the roof, this is shown on photograph No. 135.



Photograph No. 135

The roof lines are quite reasonable and the majority of the slates are present. In the longer term it is likely that the ridge will need to be re-set. However, generally this all appeared to be in a reasonable condition.

To the wall, the first windows are visible as they are boarded from the inside and these are metal frames without any glazing present. The reconstituted stone surrounds have an occasional hairline crack. The two windows to the northern side are boarded and therefore, could not be viewed.

The eaves course needs an occasional joint repointing and the brickwork is in a reasonable condition.

Discussions and Recommendations on Area 1

Starting with the parapet, an allowance should be made for repointing or re-setting the coping stones for the majority of the length. The brickwork showed little displacement which is indicative that there have been no major movements.

The reconstituted stonework around the towers to the library entrance, does show displacement on the corner and it is felt that this is likely to be due to thermal movements, due to a lack of cramping of the stones and the fact that they are generally quite slender in nature and therefore, more prone to movement. It would therefore, be recommended that these are taken off and re-set and clamped together to ensure that they are stable in the future. When this work has been carried out, the vertical fractures which are present can be dowelled and these cracks are considered to be due to thermal movements.

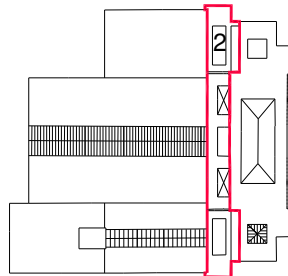
It is noticeable that there is no major cracking to the brickwork and the movements are very localised to the parapet stones.

With the asphalt roof, it is felt that this will need to be taken up and a new covering laid in place. Although sections are still sound, the flashings are poor all the way around and therefore, by the time a suitable strip is cut out to form a new flashing, there will be very little left and practically, it is more sensible to re-lay the whole roof. At this time the levels can be adjusted so that the roof falls adequately. All the gutter outlets should be re-formed so that they discharge adequately as on the front elevation, these clearly do not work properly which has resulted in trees growing out of the hopper heads. On the southern face, the guttering is either missing or the tin flashing strip is missing and therefore, the water is discharging down the building and not being taken away into the drainage system.

The raised slated roof section is actually in quite a reasonable condition. It would be recommended that the hips are re-set and a check is made on the ridge tiles. At present the windows cannot be seen, but what is noted is that the brickwork is in a reasonable condition and there are no major works required to this section.

Area 2

This section is at a lower area than the library roof and is a series of roofs and lightwells between the library building to the east and the swimming pool and the buildings to the west.



Starting at the northern side, this originally had a large glazed lantern and also patent glazing to the eastern side, both of which have now been infilled and covered over with felt, as shown on photograph No. 136.



Photograph No. 136

To the northern side there is a small parapet wall and to the eastern return, the coping is now missing or has become displaced, as shown on photograph No. 137, and this needs to be re-set.



Photograph No. 137

On the western side of the parapet, a small section of coping to the drainage outlet is missing and generally this area requires re-forming, as shown on photograph No. 138.



Photograph No. 138

To the remainder of the roof there is a lot of debris present and the felt utilised over the previous roof light is considered to be past its serviceable life.

From this lower wall, the western wall of the library building can be seen, as shown on photograph No. 139 and the brick changes at the northern end where it has been toothed-in, as shown on photograph No. 140.



Photograph No. 139



Photograph No. 140

The upper section of brickwork needs to be repointed and the eaves band also requires repair at the end, all as shown on photograph No. 141.



Photograph No. 141

The remainder of the brickwork is in a reasonable condition with just a minor amount of repointing required at the southern end.

On the southern return, the parapet wall is leaning to the south and this has fractured at its base, and it would be recommended that the top eight courses are re-set. This area and the failure lines are shown on photographs numbered 142 and 143.



Photograph No. 142



Photograph No. 143

The window itself is in a poor condition and will need replacement.

Moving to the west there is a lower level section, as shown on photograph No. 144.



Photograph No. 144

The edge beam is in a poor condition over the window and this requires repair and the window replaced, as shown on photograph No. 145.



Photograph No. 145

To the remainder there is a small amount of water staining where the edge detail to the roof is not working adequately with the asphalt having come away from the end cover strip, as shown on photograph No. 146.



Photograph No. 146

To the western side of this first area, there is an upstand wall, as shown on photograph No. 147, and it can be seen that to the right hand end, this has previously been rebuilt, as shown on photograph No. 148.



Photograph No. 147



Photograph No. 148

Generally, the wall is in a reasonable condition with only an occasional amount of repointing being required. However, at the flashing junction at the base, this is quite poor with the pointing coming away and also sections of vegetative growth, as shown on photograph No. 149.



Photograph No. 149

In the central area, behind the main swimming pool hall, this area of roof is shown on photograph No. 150.



Photograph No. 150

Starting at the northern end, the first area is covered by a piece of plant, the brackets of which are corroding. The northern edge of the asphalt is coming away, as noted in the section above.

To the first lightwell area, the handrail has been adjusted to suit the plant, but this does leave a large hole and will need to be adjusted as currently it is considered to be un-satisfactory with regard to Health and Safety, as shown on photograph No. 151.



Photograph No. 151

As with the remainder of the roof, the asphalt on the edge is coming away, as shown on photograph No. 152.



Photograph No. 152

To the lightwell, this is faced with a glazed white brick and it can be seen that the condition of the windows is quite poor. There is a lower flat roof and the front edge again is damaged, and there is also a large amount of vegetative growth, especially around the soil and vent pipe, and this is all shown as a general view on photograph No. 153 and the vegetative growth on photograph No. 154.



Photograph No. 53



Photograph No. 54

From what could be seen, there are no signs of major structural movements, but the area did require quite extensive work in removing the vegetation, making good the roofs and repairing the windows.

To the eastern edge of the roof area, there is spalling to the concrete slab, as shown on photograph No. 155.



Photograph No. 155

To the central area, there was previously a lantern which is now boarded over with felt and the felt is now past its serviceable life.

To the eastern wall with the library, the reconstituted stone mullions and cills to the window have localised damage, but no sign of major spalling. The edge of the upper roof is quite poor with the asphalt coming away and localised damage to the edge.

The brickwork in the area past the southern lightwell to the library building shows localised areas of staining, but no major cracking and this is shown on photograph No. 156.



Photograph No. 156

The central area of the flat roof has a lot of debris present, but no sign of any major leakage and a general view is shown on photograph No. 157.



Photograph No. 157

To the southern lightwell, the handrail is quite basic and the edge of the slab has been vandalised with the asphalt now coming away. Within the lightwell itself, there is a lot of vegetative growth and the windows are in a poor condition, and a general view is shown on photograph No. 158.



Photograph No. 158

It is noted that there is a lot of debris at the bottom of the lightwell and also the roof half way down has damage at the edge, and this is all shown on photograph No. 159.



Photograph No. 159

The edge of the concrete slab to the western side is in a poor condition with sections of exposed reinforcement.

From this roof, it can be seen that the original covering has been over-laid with a second layer of asphalt, part of which is coming away and this can be depicted on photographs numbered 160 and 161.



Photograph No. 160



Photograph No. 161

It would appear that originally the handrails around this upper area were fixed on top of the original asphalt and have now been enclosed with the later covering.

Moving to the southern area, this mirrors the northern side in that the lightwell and glazed patent glazing area have been covered in with felt, and a general view is shown on photograph No. 162.



Photograph No. 162

There is a large amount of debris and also vegetative growth, as typically shown on photograph No. 163, and this will all need to be removed.



Photograph No. 163

To the parapet wall running round the southern side, there is slight displacement to the south-east corner and also a large amount of vegetative growth. The brickwork appears to be in a reasonable condition, but does require repointing, including the joints to the coping.

The roof does pond and the flashing details are also quite poor.

From this area, the remaining walls to the central area can be seen and photograph No. 164 shows a view looking to the north.



Photograph No. 164

To the eastern section of the library building, the upper parapet with the small coping on top is in a similar condition to that noted at the southern end, in that it does have a lean and will likely need to be rebuilt. To the main window, which is noted to be in a poor condition, there is one vertical crack from the bottom left hand corner which requires repointing.

To the middle area the lintol here is in a reasonable condition, especially when compared with the northern end, although the top edge does require some repair.

The gable to the southern most building is shown on photograph No. 165.



Photograph No. 165

It is noted that at the junction with the flat roof, the flashing junction needs to be repointed and apart from a large metal grill put through the bullseye window, there is also another crude opening which has been put through for an extract duct, as shown on photograph No. 166.



Photograph No. 166

The remainder appears to be in a reasonable condition, although there is localised making good required to the apex stone, as shown on photograph No. 167.



Photograph No. 167

To the western wall of the library at this southern end, a general view of this part of the wall is shown on photograph No. 168.



Photograph No. 168

Where the wall returns there is a minor diagonal crack which requires repointing. It can be seen that the gutter is now not present and the edge of the eaves strip requires repair, and this is all shown on photograph No. 169.



Photograph No. 169

Moving along where the brickwork changes, this joint has been crudely filled with mastic sealant and the upper section is open and this will require repointing. It can also be seen that at the junction with the upper parapet, there is slight displacement and damage to the eaves band, and all the above is shown on photograph No. 170.



Photograph No.170

Discussions and Recommendations for Area 2

This area of the roof is in a poor condition due to a lack of maintenance. It has also been altered from the original construction, in that the glazed roof lights have now all been covered over with timber boarding with a felt, which is coming to the end of its serviceable life.

The edge details of the asphalt, which can be seen to be made up with two layers, have either been disturbed by acts of vandalism and theft by the tin strip being removed and therefore, the water does not discharge adequately. It is therefore, considered that the asphalt should all be removed back to the original substrate, the levels corrected and then re-covered.

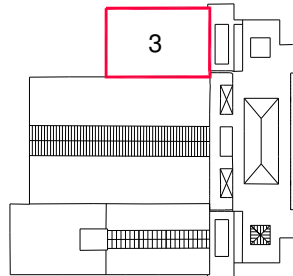
To the central area the lightwells are suffering from significant damp ingress. The actual glazed brickwork shows no sign of major movement, however the joints need to be carefully raked out where they have been saturated, the vegetative growth removed and then repointed. Recommendations would also include replacement of the windows which are in a poor condition and ensuring that these areas are adequately drained.

The handrail around the top is insufficient and will require replacement, providing a more appropriate barrier to these open areas.

At the northern end there is one section of exposed reinforcement to the lintol which will all require cutting out and re-casting and generally, where there is the edge of either the eaves detail to the library building or there is a reconstituted stone or concrete edge, an allowance should be made for areas of repair and also a new facing coat.

Area 3

This is now a flat roofed area to the north-west side of the building.



This would originally have had a pitched roof with a lantern on top, similar to the southern side, but this has been removed and a new timber boarded roof with mineral felt and chippings installed, and a general view is shown on photograph No. 171.



Photograph No. 171

The roof itself is considered to be nearing the end of its serviceable life, where it is accepted that flat felt roofs have a lifespan of between 10 and 15 years.

Starting on the eastern side, where there is an upstand with a coping, the felt was taken up to the underside of the coping and then a lead cover flashing dressed over the top. However, this has now been crudely cut off and removed, as shown on photograph No. 172.



Photograph No. 172

The coping itself has small amounts of repointing required, but generally appeared to be in a reasonable condition.

At the northern edge the guttering is in uPVC and is in a poor condition.

To the western side, there is again a coping and upstand and the lead has been removed, as noted on photograph No. 172 above.

On the southern side, with the detail against the main swimming pool building, the felt is lapped up to the underside of the asphalt and this general detail is in a poor condition with large amounts of vegetation growing between the asphalt and the mineral felt, examples of which are typically shown on photographs numbered 173 and 174.



Photograph No. 173



Photograph No. 174

The asphalt all the way along the edge of the swimming pool building is in a poor condition and a view looking to the west is shown on photograph No. 175.



Photograph No. 175

To the remainder of the roof, there is moss covering to the chippings and there are extract ducts which are corroding on top, but generally there are no signs of major structural failure, only those associated with the age and damage to the roof finishes.

Discussions and recommendations for Area 3

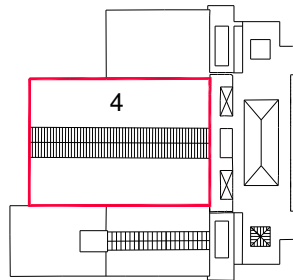
It is considered that the mineral felt is past its serviceable life and it would be recommended that the roof is completely stripped and if, within any of the option schemes, it is to be retained then it will require re-covering.

The junction with the swimming pool building to the southern side requires the asphalt detail to be removed and a suitable flashing designed and installed. The small parapet wall is generally in a reasonable condition and will just require new flashings and in small areas, the coping repointed.

Overall, there were no areas of significant structural defect within this section of the building.

Area 4

This is the main roof to the Swimming Pool building.



It can be classified as a monitor roof which is a pitched roof with a glazed lantern on the top, and a general view is shown on photograph No. 176.



Photograph No. 176

The construction is softwood windows and a pitched roof with a patent glazing and Georgian wired glass forming the lantern section, then asbestos profiled sheeting over the top of a reinforced concrete deck and then a lower area of glazing prior to the roof of Area 3.

The roof is split into a series of panels, delineated by the internal concrete frames to the Swimming Pool. Starting at the eastern end, there is a 225mm brickwork parapet and the glazing and framework are showing distinct signs of age and disrepair, and this is all shown on photograph No. 177.



Photograph No. 177

At the underside of the lantern, there is an exposed concrete ring beam and the lead which formerly lapped underneath the upper frame and then over the sheeting, has been crudely cut off and removed exposing the concrete, as shown on photograph No. 178.



Photograph No. 178

At the first frame position, the concrete is in a poor condition with the reinforcement showing, as shown on photograph No. 179.



Photograph No. 179

There is then a similar situation with the second and third frames, as shown on photographs numbered 180 and 181.



Photograph No. 180



Photograph No. 181

The 4th, 5th and 6th frames do appear to be in a slightly better condition, but there is still evidence of spalling concrete at the lower areas, as shown on photographs numbered 182 and 183.



Photograph No. 182



Photograph No. 183

At the western end the sheeting is missing and there is vegetation growing out of the end flashing detail, as shown on photograph No. 184.



Photograph No. 184

The remainder of the roof sheets appear to be present, but it is noted that there is now no guttering to the lower areas.

To the lower level upstand and again starting at the eastern side, the first frame has exposed and spalling concrete, as shown on photograph No. 185 and there is a similar situation to the remainder of the frames and a photograph of each is shown on photographs numbered 186 to 190 inclusive.



Photograph No. 185



Photograph No. 186



Photograph No. 187



Photograph No. 188



Photograph No. 189



Photograph No. 190

The majority of the windows are boarded over, but from the one window which can be seen, this appears to be in a very poor condition, as shown on photograph No. 191.



Photograph No. 191

The main eastern end elevation of the Swimming Pool section is brickwork with a window set just above Area 2, and a general view is shown on photograph No. 192. It is noticeable that there is a change in the style of the brickwork to the outer edges, as can be depicted on photograph No. 193.



Photograph No. 192



Photograph No. 193

The main window surround is in a reasonable structural condition with no sign of major spalling and just a slight opening where the separate sections of cill were jointed, and this is all shown on photographs numbered 194 and 195.



Photograph No. 194



Photograph No. 195

To the northern reveal there is a series of horizontal cracks which will require repair, as shown on photograph No. 196.



Photograph No. 196

To the reconstituted stone copings, the apex stone is quite open jointed, as shown on photograph No. 197, and it can be seen that the kneeler has slipped slightly, probably due to its inadequate size, as shown on photograph No. 198. An allowance should be made for re-setting this coping.



Photograph No. 197



Photograph No. 198

The remainder of the wall actually appeared to be in a reasonable condition with no sign of any significant cracking and it is considered that the edge flashing detail with the pitched section of the sheeting will be made good when the building is re-roofed.

The southern elevation of the main Swimming Pool roof is shown on photograph No. 199.



Photograph No. 199

From what could be seen, the upper lantern is in a similar condition to that noted on the northern side, in that the timber framework to the glazing is in a poor condition. To the main concrete frames, there is again noticeable damage with exposed sections of reinforcement and starting at the eastern side, the first frame has exposed reinforcement bar at both the top and the bottom, as shown on photograph No. 200. The remaining five are in a similar condition, as typically shown on photographs numbered 201, 202 and 203.



Photograph No. 200



Photograph No. 201



Photograph No. 202



Photograph No. 203

The asbestos cement roof sheets all appear to be present, but the guttering is missing at the eastern end and the remainder is in need of refurbishment.

Viewing of the lower area was restricted due to the amount of boarding and also the amount of ventilation ducting present, as shown on photograph No. 204. However, it should be accepted that this is in a similar condition to that noted on the northern side.



Photograph No. 204

Discussions and Recommendations for Area 4

It is considered that the main Swimming Pool roof is in need of significant repair. The exposed surfaces of the main concrete frame supporting the roof show noticeable spalling to both the northern and southern sides. It is therefore, considered that the glazing and upper lantern frame will all have to be removed, not only due to the condition of the timber, but also to allow access to the frames so that these can be repaired, and this will require access to all four sides of the columns.

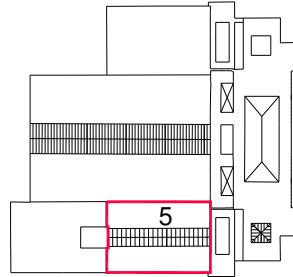
The damaged concrete will all need to be cut out and a suitable concrete repair material introduced to re-establish their structural integrity.

It is felt that the asbestos cement sheeting to the lower pitches is past its serviceable life and will need to be carefully removed from site. This will then need to be replaced, as will all the guttering.

To the lower area of glazing, this is in a similar condition to the lantern, in that although completely boarded over at present, the small areas that can be seen show that the timber work is in a poor condition and therefore, this will need to be removed and replaced and at this time, localised concrete repairs will need to be carried out at each of the frame positions.

Area 5

This is a smaller monitor style roof with a pitched roof with a glazed lantern on top.



The northern face has been re-covered in profiled metal sheeting and a general view is shown on photograph No. 205.



Photograph No. 205

The flashing with the service tower at the western face is in a poor condition, as shown on photograph No. 206.



Photograph No. 206

The roof sheeting is in a reasonable condition, but the flashing details around pipe entries and also at the eastern end were poorly executed with the use of Flashband which is a temporary material, and this is typically shown on photographs numbered 207 and 208.



Photograph No. 207



Photograph No. 208

The lantern appears to have been re-glazed with Georgian wired glass, but the timber frames are in need of redecoration.

The valley between Areas 4 and 5 is full of vegetation and is likely to be in a poor condition, as shown on photograph No. 209.



Photograph No. 209

On the southern elevation, the roof sheeting is asbestos cement, matching that on the Swimming Pool building, and a general view is shown on photograph No. 210.



Photograph No. 210

The roof sheets are showing distinct signs of age and do have occasional holes within them, as typically shown on photograph No. 211.



Photograph No. 211

As noted previously, the gutter is completely full of debris and vegetation, as shown be seen on photograph No. 212.



Photograph No. 212

The lead flashings have all been removed and the temporary material utilised is all in a poor condition.

To the lantern itself, the timber work is in need of decorative attention and a general view of all the above is shown on photograph No. 213.



Photograph No. 213

Discussions and Recommendations for Area 5

The northern slope to this roof has already been replaced in a profiled metal sheeting, although it should be noted that the flashing details are poor around service entry positions, and these need to be up-graded to provide a watertight junction.

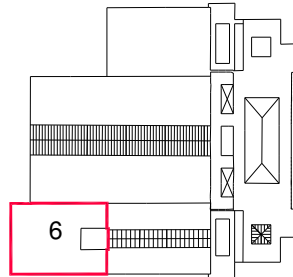
The valley between roof Area 4 and 5 is considered to be in need of replacement, and this will involve the removal of all the extract ducting.

The lantern area is of a slightly different form to that over the Swimming Pool, in that this roof is supported by steel angle trusses with the timber frame sat on top rather than the use of reinforced concrete. However, the timber work does require repair and redecoration.

The southern roof slope is asbestos cement sheets which should be removed and replaced, and this should include for clearing out all the guttering which should be either overhauled or replaced and reinstated. There are however, no sign of any major structural defect with this area of the building.

Area 6

This is a flat roofed area in the south-west corner of the building, behind Area 5.



Starting with the parapet on the southern side, this has a brick on edge acting as a coping and then a tile creasing underneath, and then the asphalt roof flashed underneath. There is a lot of vegetative growth at the outlet position and the asphalt is in a poor condition, as shown on photograph No. 214.



Photograph No. 214

The tile creasing course is often broken and also the mortar fillet on top coming away, and there is often an occasional minor crack in the brickwork and this is all generally shown on photograph No. 215.



Photograph No. 215

In the north-western corner the brickwork is now damaged and missing, as shown on photograph No. 216.



Photograph No. 216

At the junction with the Swimming Pool building, there is now a small tree growing, as shown on photograph No. 217.



Photograph No. 217

To the asphalt roof itself, this is often cracked which is inducing vegetative growth, as shown on photograph No. 218.



Photograph No. 218

On the southern side it is assumed that the roof ponds as there is now a lot of moss and vegetative growth at the junction with the parapet wall, as shown on photograph No. 219.



Photograph No. 219

Set within this area there is a large service tower and also a chimney. The chimney has metal banding around the edge and also a large tree growing at the junction with the swimming pool building, all as shown on photographs numbered 220 and 221, and this will require all these top courses to be removed, the tree taken out and then the chimney rebuilt.



Photograph No. 220



Photograph No. 221

The service tower is shown on photograph No. 222 and the brickwork here is in a reasonable condition with just repointing works being required.



Photograph No. 222

To the main lintol there is one central crack which requires repair, and this is shown on photograph No. 223.



Photograph No. 223

The roof generally has a large amount of plant, a lot of which is corroding and it would be recommended that this is removed when the roof is re-covered. A general view of this area is shown on photograph No. 224.



Photograph No. 224

Discussions and Recommendations for Area 6

The asphalt roof is considered to be past its serviceable life with a large amount of cracks present. It is recommended that the plant and ducting is all removed and the roof stripped and re-formed. At this time, a new flashing will need to be let into the parapet wall and repairs can also be carried out to this, including making good the tile creasing course, repointing fractures in the brickwork and making good localised areas of damage.

The chimney shaft adjacent to the Swimming Pool building needs the tree growth removed and the top courses rebuilt. The service duct however, is in a better condition. The condition of the roof is not known, but the brickwork does not show any sign of major movement, and there are only general areas of repointing required.

2.3. Internal Survey

2.3.1. First Floor

This is the Library building.

Room F1 – This is the staircase area with the southern lobby with the cantilevered stair. The stair appears to be working quite adequately and the main issues are with penetrative damp through the walls which is causing a disturbance to the plaster, as shown on photograph No. 225.



Photograph No. 225

Room F2 – By window WF04, there are large areas of blown plaster where water is getting in and the ceiling has mould staining.

Room F3 – This is the main eastern corridor and the eastern wall is in a poor state of repair with both the northern and southern ends having large areas of plaster delaminated, finishes coming away and damp penetration. This is all shown on photographs numbered 226 and 227 respectively.



Photograph No. 226



Photograph No. 227

These positions correspond with the external rainwater pipes which have already been noted as leaking. The walls show no sign of major structural cracking, the main issues being the damp penetration. What is noticeable is that in the large areas of damp, there is a significant amount of spores from the rot, which will need to be further investigated to ascertain whether this is dry or wet rot, and typical examples are shown on photographs numbered 228 to 230.



Photograph No. 228



Photograph No. 229



Photograph No. 230

Room F4 – At the southern end boundary doors at the junction with F3, the damp staining can be seen to also be coming through the pier on this side, as shown on photograph No. 231.



Photograph No. 231

To the ceiling there are areas of damp penetration and a small amount of reinforcing bar present at the end of the corridor, as shown on photograph No. 232.



Photograph No. 232

There are no signs of major cracking to the remainder, the main damage noted is caused by the damp penetration.

Room F5 – This is the northern stairway. To the ceiling the paint is coming away and there is a similar situation to the walls. The decorations are generally in a poor state of repair, although there is no major cracking to the structure. The upper flights of the stairs appear to be working quite adequately.

Room F6 – This is the northern end of the Library building and at the position of the original lantern, this is now supported with softwood joists with chipboard over. The original lantern was trimmed with downstand beams and these generally have hairline cracking to them and historically, there has been water ingress through the lantern. A general view of all the above is shown on photograph No. 233.



Photograph No. 233

To the northern section of the ceiling, this has a large amount of damp in the north-eastern corner and the reinforcing bars are now showing, and this area is shown on photograph No. 234.



Photograph No. 234

To the walls, the northern window is in a reasonable condition and generally the plaster has some minor hairline cracking, but generally there were no signs of any major structural defect.

The floor is wood block laid in a Herringbone style and a large percentage of these blocks are now coming away, as typically shown on photograph No. 235.



Photograph No. 235

Through the exposed concrete floor slab, it can be seen that there is an occasional hairline crack, but it is not considered that these are indicative of major structural failure.

Room F7 – This is a small office in the north-western corner where generally the paint is flaking from the walls, but this apart there were no signs of structural failure.

Room F8 – This is a small toilet which borders onto the lightwell to the western side and the damage to the windows seen externally, can also be seen internally. The ceiling has hairline cracking and there is plaster coming off the walls, but there are no signs of any major structural problems, the main damage again being caused through damp penetration and also where items have been poorly removed.

Room F9 – This is the main central area of the Library which has the raised section with the slated hipped roof. A general view of the central section is shown on photograph No. 236 and either side, there is a lower ceiling area which is to the underside of the flat roof above.



Photograph No. 236

Starting in the northern section, the finishes are coming off the walls, but generally it appeared to be in a reasonable structural condition.

To the central area the plaster is coming away from the ceiling, which is noted to be lath and plaster, as shown on photograph No. 237.



Photograph No. 237

To the western side, the area has the lower section of ceiling and the beam supporting the raised section is supported by columns, and a general view is shown on photograph No. 238.



Photograph No. 238

There were no signs of any major structural failure but the main problems are due to damp ingress and poor decorative condition.

Moving back out into the main area and the southern flat roofed section, this is shown on photograph No. 239. This also shows the timber panelling which is present, but the majority which was originally glazed is now missing and has generally been vandalised, the remnants of which are on the floor.



Photograph No. 239

The ceiling has a lot of flaking paintwork, but there were no signs of any major structural distress.

Room F10 – This is a small librarian’s office in the south-western corner and it can be seen that there is significant damp coming through the roof, indicated by the amount of staining to the cracks in the ceiling, as shown on photograph No. 240.



Photograph No. 240

On the southern wall the plaster appears more recent, however there is damp present but no major cracking. The western wall is also suffering from damp ingress.

Room F11 – This is the southern room which has a flat ceiling with a lantern to the centre which has been removed and infilled with timber joists and chipboard, as shown on photograph No. 241.



Photograph No. 241

On the eastern side there is a large amount of flaking paint which is indicative of damp ingress around the window, as shown on photograph No. 242.



Photograph No. 242

The remainder has a large amount of crazed cracking through the plaster finishes, although no specific areas of spalling concrete.

The downstand trimming beams to the original lantern show no sign of any major failure.

To the northern wall, there is hairline cracks through the plaster and to the windows on the eastern wall, there is a fracture to the southern most mullion which is likely to need repair.

To the top right hand corner of the window there is a diagonal crack and to the bottom left hand corner there is a large amount of plaster cracking.

On the southern wall, the main window is heavily painted over and where the cill joins it can be seen where daylight is visible, as shown on photograph No. 243.



Photograph No. 243

The upper section does not appear to have any areas of major spalling, just gaps between the individual sections of the window unit. The plaster work has a lot of damp penetration and is generally de-bonded from the wall and the plaster appears to be approximately 25mm thick.

On the western wall there is a lot of crazed cracking to the plaster work and around the edge of the downstand beam which supports the lantern, the plaster is saturated, as can be depicted on photograph No. 244.



Photograph No. 244

The floor is similar to the northern end and there are areas which have lifted and minor hairline cracks through the floor finishes, as shown on photograph No. 245.



Photograph No. 245

2.3.2. Discussions and Recommendations for the First Floor

The Library is in a state of disrepair which is generally as a result of vandalism and water penetration, especially against the rooms on the western side and also at the front eastern corridor. This is due to the poor condition of the rainwater goods which has been indicated on the roof and external surveys above. On the eastern wall, this is now causing a large amount of plaster damage and therefore, it is imperative that the rainwater goods are made good, all blown areas of plaster removed, the building allowed to dry out prior to it being reinstated. At this time, it would also be necessary to have the rot spores analysed so that they can be appropriately treated.

There are localised areas of spalling concrete to the flat roofed areas to the northern and southern sides, which will all need localised repairs. At present however, they still considered capable of repair.

Overall, there were no signs of any major structural movements or failures and the damage noted is all caused through a lack of maintenance, failing rainwater goods and vandalism.

2.3.3. **Upper Ground Floor**

Room UG1 – This is the toilet in the south-eastern corner. This is mainly tiled but the areas of plaster which are present are generally subjected to a series of crazed cracking.

In the lobby area there is a crack which then extends down through the tiles, as shown on photograph No. 246. This is not considered to be major structural movement and can be cut out and repaired.



Photograph No. 46

Room UG2 – This has a sprayed concrete finish to the ceiling which is in a reasonable condition. On the eastern wall there is an occasional crack to the plasterwork and to the window below cill level, there are cracked tiles. However, none of this is indicative of significant structural cracking.

Next to the staircase, there is damp ingress coming through the plasterwork, as can be seen on photograph No. 247, but no major cracking. However, an allowance should be made for making good the plaster work and decorations.



Photograph No. 247

Room UG3 – This is the northern end of the previous corridor and this is in a similar condition in that there are no signs of any major cracking, although there is an indication of damp ingress to the northern side of the staircase. The majority of the works required is making good plaster work and decorations.

Room UG4 – This is the male toilet at the northern end and there has been a lot of water ingress into this room and on the western wall there is a near vertical crack which extends through the tiles, as shown on photograph No. 248.



Photograph No. 248

On the northern wall, there is a series of crazed cracking and the window is boarded up.

In the w.c. on the eastern wall, again there is crazed cracking to the plaster work, but no sign of any significant structural defect.

Room UG 5 – This is the upper deck which housed the men's changing boxes and a general view is shown on photograph No. 249.



Photograph No. 249

Starting at the eastern end, there is the sprayed concrete finish to the main support frame and downstand beams and the stalls are all tiled. Generally in the first boxes, there is occasional hairline cracking, but in the 4th stall, to the underside of the downstand beam, the concrete finish is coming away and there is water ingress, as shown on photograph No. 250.



Photograph No. 250

Generally the windows are boarded up, as noted externally, although it is noticeable that there is a large amount of water penetrating through the concrete and staining the downstand beams, as can be seen on photograph No. 251.



Photograph No. 251

Between the second and third cross frames, the downstand beam has exposed reinforcement showing, as shown on photograph No. 252, and this is generally in a poor state of repair.



Photograph No. 252

Between the main 4th and 5th frames, the amount of water penetration is now starting to form mould on the underside of the sprayed concrete finish, which is also coming away in places, as shown on photograph No. 253.



Photograph No. 253

In the end section there is a similar situation with the finishes coming away. It can also be seen that around the window, the frame has moved away from the eaves beam slightly and there is also previous repairs to the finishes where there is now a smooth render, all as can be depicted on photograph No. 254.



Photograph No. 254

Room UG6 – This is a staircase leading down towards the basement and on the northern wall there is a noticeable vertical crack, as shown on photograph No. 255.



Photograph No. 255

Moving down the stairs there is also a fracture to the bottom right hand corner of window WG08 at the quarter landing position, as shown on photograph No. 256, and this cracking is also present on the wall above the quarter landing position.



Photograph No. 256

Room UG 7 – On the western wall there is a vertical crack, as shown on photograph No. 257.



Photograph No. 257

The whole area is constructed with glazed bricks and apart from incidental damage, there was no major structural movement.

Room UG8 – This is a toilet area and in the main section, it can be seen that to window WU10, the tile is coming away on the soffit, on the underside of the lintol and the concrete is spalling behind, as shown on photograph No. 258.



Photograph No. 258

It can also be seen that there is cracking to the top right hand corner of the window and also a slight diagonal crack to the bottom right hand corner.

Room UG9 – This is the main sink area and there is slight cracking to the top corner of the window, as shown on photograph No. 259, and based on the damage to WU10, this raises concerns that there is corroding concrete behind this area.



Photograph No. 259

There is also slight cracking to the bottom right hand corner of the window.

The walls have generally superficial damage and to the cubicle area, there are previous corroding, straps and fixings and also it can be seen where pipes have been poorly inserted.

The cross wall at the southern side has minor areas of making good and there is one central ceiling crack. However, this is quite historic in nature and has been painted inside the crack.

Room UG10 – This has a central vertical crack in the wall, as shown on photograph No. 260.



Photograph No. 260

The lower bricks have been removed and this area is rendered.

The main area of defect is at the entrance door where it can be seen that the ceramic bricks are 60mm wide and the end ones are hollow with a reinforcing bar down the edge which has corroded and split the bricks, as shown on photograph No. 261, and this needs to be re-formed.



Photograph No. 261

Room UG11 – This is the stairwell area leading down to the basement and it can be seen that there is damp ingress through the wall half way up, as shown on photograph No. 262.



Photograph No. 262

To the bottom of the stairs the window is in a poor state of repair, as shown on photograph No. 263. Similarly, the plaster work needs attention as there appears to have been some damp ingress.



Photograph No. 263

At the bottom of the stairs is the basement area, where the ceiling is in a poor condition with most of the paint coming away through damp ingress, as shown on photograph No. 264.



Photograph No. 264

Room UG 12 – This is the southern upper deck which housed the female dressing boxes. Starting at the western end there is horizontal and diagonal cracking, but only hairline to 1mm in width and is not cause for structural concern.

To the soffit to the underside of the ring beam area, again there are signs of leakage and subsequent damage, as shown on photograph No. 265.



Photograph No. 265

The majority of this finish is suffering from damp ingress and a typical example of the damage that is occurring, is shown on photograph No. 266.



Photograph No. 266

In the area of frame No. 4, there is noticeable water damage and it can also be seen that where the stalls have been removed, the spray concrete finish is badly damaged.

There are historic areas of diagonal cracking, especially to the centre of the bay, but no sign of major structural movement.

The downstand beam shows no sign of any failure, but the large amount of damp ingress does give rise for concern and the corrosion to the reinforcing bar which may be occurring.

Room UG 13 – This is the Swimming Pool area and starting at the western end, where the wall is faceted in front of the toilets, apart from the damage noted at the entrance into UG10, the remainder was in a reasonable structural condition.

To the pool walkway there is a drainage channel set within the tiling and the covers to this are quite loose. The remainder of the upstand walls showed no major damage, just localised areas of cracking where previous fixings were present, as typically shown on photograph No. 267.



Photograph No. 267

To the main concrete cross frames and the main end walls, starting at the eastern end, a general view is shown on photograph No. 268.



Photograph No. 268

The upper part of the wall has been sprayed with the same concrete finish as the underside of the ceiling, and generally this was in a reasonable condition, showing no sign of major cracking. To the main window the open cill joints noted externally can be seen internally, as shown on photograph No. 269.



Photograph No. 269

To the main frames there was no cracking through the finishes to indicate any areas of major structural failure and the significant areas of spalling are actually at the upper levels, supporting the lantern roof, and the area in question is shown on photograph No. 270.



Photograph No. 270

What is apparent is the amount of leakage coming through the roof and typical damage to some of the roof vents is shown on photograph No. 271.



Photograph No. 271

To the ceiling slab there are occasional areas where the finish is slightly discoloured which is an indication that water may be penetrating, as shown on photograph No. 272.



Photograph No. 272

Generally however, there were no signs of major structural cracking.

The main western wall is shown on photograph No. 273.



Photograph No. 273

This has slight staining underneath the main window cill, but overall, from what could be seen, there were no signs of any major cracking or failure of this end wall.

2.3.4. Discussions and Recommendations for the Upper Ground Floor

The eastern corridor section is generally only deteriorating through water ingress and it is felt that with the repair of the flat roof above and the water being adequately taken away, all the loose plaster can be removed and the decorations made good. Structurally there are no areas of significant concern.

At the western end, the toilet areas have localised damage. The vertical cracks through the ceramic bricks are not cause for major structural concern and these can be repaired, and the areas at the bottom of the two staircases leading to the basement, these are all maintenance issues in repair of plaster and ensuring the external windows are made good. There is one area of reinforced concrete to window WU10 which does need repair.

To the ceramic brick partitions forming the opening into UG10, there is again damage at this position and it is felt that this will likely need to have the end section carefully dismantled and if this is to be retained, new ceramic bricks made to match the existing.

The main elements of structure are the six concrete frames which the lower sections all appeared to be in a reasonable condition. The eaves beam at the changing dressing box positions have had a lot of water ingress and it is likely that there will be elements of repair required to the concrete. However, at present, this only appears to be superficial.

The main frames show no sign of any structural defect.

In 2003, a structural report was prepared by W.S. Atkins and associated with this, Birmingham City Laboratories carried out a series of concrete tests. These showed that on the main concrete portal frame, there was adequate cover to the reinforcement and the carbonation, which is one of the affects that causes corrosion of the steelwork, had not yet reached a depth to cause structural problems. What is noted is that this report was carried out eight years ago and since then, the depth of carbonation is likely to have increased.

The visual assessment leads us to consider that the frames can be fully retained with only localised areas of traditional concrete repair. However, prior to a major scheme being implemented, a further full concrete analysis would be recommended, similar to the form previously carried out in 2003.

The remainder of the work required to this upper ground floor is of an aesthetic nature in making good minor areas of cracked tiles and ceramic bricks, making good areas of delaminated plaster and also decorations.

2.3.5. **Ground Floor**

Room G1 – This is the original Children’s Pool and a general view is shown on photograph No. 274.



Photograph No. 274

The roof over here is a replacement where the original lantern roof has been removed and it is now supported by a series of three main steel beams spanning north-south and then smaller steels acting as joists supporting a Woodwool type slab with the felt over, as shown on photograph No. 275.



Photograph No. 275

The lighting was poor but from what could be seen, there are damp patches indicating water ingress in localised areas, as shown on photograph No. 276.



Photograph No. 276

The steels all appear in a reasonable condition, although the secondary steels, where they bear into the wall, do show slight signs of damp and it would be recommended that a further check is carried out to the end of these.

Starting on the northern wall, in the western corner there are ceramic tiles for approximately 2m and then plastered above. There is an occasional crack in the plaster finish but no signs of any significant structural cracking.

There is also water damage where it can be seen that the flashings have been leaking.

Adjacent to the doorway in the north-eastern corner, this is in a reasonable condition. On the eastern wall there is a lot of flaking paint which would indicate damp ingress. There is also staining to the floor, as if water is running down the wall and then collecting.

On the southern wall, there is significant water ingress over the doorway DG15 and DG13 in the south-eastern corner. To the former, the lintol has now heavily corroded and there is also staining to the latter. The leakage and the doorways are shown on photographs numbered 277 to 279 inclusive.



Photograph No. 277



Photograph No. 278



Photograph No. 279

It is noticeable that due to this heavy water ingress, the plaster is becoming saturated.

Moving along the southern wall there are again signs of damp ingress. There is a recessed area (G2 and G3) and the remainder of the wall showed no major structural defect.

On the western wall, the finishes have been affected by the damp ingress coming in which is generally at flashing positions above. There is one vertical crack towards the northern side, as shown on photograph No. 280. However, this is not considered to be structurally serious.



Photograph No. 280

Room G2 – This has a low ceiling and was originally a dressing room and now has a sprayed concrete finish. There are no significant structural defects visible, although it can be seen that the southern wall is slightly damaged.

Room G3 – This is identical to Room G2 and the main area of concern is the water ingress on the southern junction. However, there is no major cracking to the walls.

Room G4 – This is in the north-eastern corner and there is a noticeable amount of damp penetration on the western wall, as shown on photograph No. 281.



Photograph No. 281

The window WG14 is now missing, although the surround is in a reasonable condition with just a small amount of exposed concrete on the edge.

On the eastern wall there were previously W.C.'s, and there is slight cracking on the northern part of the eastern wall, as shown on photograph No. 282.



Photograph No. 282

To the southern wall there is again crazed cracking in the plaster, but the remainder appeared to be in a reasonable structural condition.

Room G5 – At the eastern end in the toilet, there was no significant cracking, although the decorations are quite poor. In the main urinal area, there is a sprayed concrete ceiling. Slight damage here where there have been conduits and pipes which are now corroding and it is also noted that where fixings have been ripped off the wall, this has damaged the ceramic bricks. The plaster work appears to be quite damp, although there were no signs of structural cracking, apart from the issues already noted to the main doorway DG13.

Room G6 – This is the access corridor to G1 and the finishes to the ceiling are quite noticeably coming away and there are hairline cracks across the ceiling towards the southern end. On the western wall there are ceramic bricks and the paint is peeling off the upper section. Apart from decoration defects and minor disturbance to the plaster work, there were no signs of major structural defects.

To the southern section of the corridor there was localised damage to the plaster and also areas where there is paint peeling from the walls, indicating damp ingress. There is also blown plaster to the ceiling and this is shown on photograph No. 283.



Photograph No. 283

The door to the eastern wall which gives access to the lightwell is boarded up, but it can be seen that there is a large amount of damp coming in through this area, as can be seen by the darkened plaster areas on photograph No. 284.



Photograph No. 284

Room G7 – This is the access stair up to the main pools and a view from the upper ground floor level looking down, is shown on photograph No. 285.



Photograph No. 285

The walls have superficial damage and the lintol is quite poor, indicating a large amount of corrosion, as shown on photograph No. 286.



Photograph No. 286

The ceiling into the basement areas shows a lot of water ingress and this may be related to that already noted in the south-eastern corner of G1. The paint finish is coming off the walls and the majority of the structural issues are related to damp ingress.

Room G8 – This is the lightwell area and access was not possible at the time of the survey. However, comments on this area externally have been made above.

Room G9 – This is a short corridor leading to the main eastern rooms and there is blown plaster, especially to the southern wall and also the decorations are in a poor condition. However, there were no major structural problems.

Room G10 – This is a small room off G9 which is a small toilet and there are large amounts of damp ingress as this borders the lightwell G8 and this is causing the plaster to come off the walls.

Room G11 – This is a corridor area and appears to be in a reasonable structural condition with just superficial damage to the finishes.

Room G12 – This is the disabled toilet and again the paint finish is coming away from the walls, and also the ceiling. There is damp ingress from the lightwell G8 and this has not been aided by the lack of windows. There was no significant structural cracking, only damage from water ingress.

Room G13 – This is a storage room and a crude hole has been put through the southern wall. However, structurally there was no significant cracking which would indicate that there are no major defects. The decorations are in a poor state of repair.

Room G14 – This is a large open room which has main beams spanning north-south which trim the large lantern, as shown on photograph No. 287.



Photograph No. 287

This is now decked over with softwood joists and chipboard. The beams have been covered with a sprayed concrete finish and from the darkening of the plaster to the western side, this would indicate damp ingress. From what could be seen however, there were no signs of major structural failure.

Between G14 and G15, there is a small mono pitched area which again has softwood joists and chipboard over, as shown on photograph No. 288, and this seems to be working satisfactorily.



Photograph No. 288

To the walls of G14, the northern wall is largely covered with broken mirrors, but from what could be seen, the painted brickwork behind just have the finishes coming away. The eastern wall is open with G15 and the southern wall is similar to the northern wall in terms of condition.

The western wall has no sign of any cracking, just localised damage and poor finishes.

Room G15 – This is the eastern area of the same room and the dividing wall between the two has been removed and supplemented with a downstand beam and post, as shown on photograph No. 289.



Photograph No. 289

The downstand beams are sprayed with concrete and show no sign of any major failing or cracking. The light fittings are all corroding, and this would indicate a damp atmosphere.

To the panels between the downstand beams, there is a large amount of darker staining, indicating water ingress, as shown on photograph No. 290. However, it should be stated that there was no major cracking to indicate any failure.



Photograph No. 290

The northern wall has a large window and this appears to be in a reasonable condition and there was no significant cracking to the brickwork. Previous work in patching is slightly untidy.

The remainder of the room showed no significant structural movement and the works required are making good the decorative finishes.

Room G16 – The northern section has a lot of the decorations coming away, which again is an indication of damp ingress. The front eastern elevation is tiled up to dado level and then painted plaster above. There were no signs of any significant structural cracking, only localised damage to the finishes. There is a similar situation with the southern and western walls, although there are slight damp issues.

Room G17 – This is the main front Reception and starting with the northern wall, to the western side this is tiled up to picture rail level. The floor above is supported with one downstand beam which showed no sign of any major cracking. The eastern half is painted plaster work and there is superficial damage, but nothing which is considered structurally significant.

There is a second cross beam to the southern side and the ceiling between this and the previous has a slight loss of finish. The eastern wall has signs of damage from previous fixings, but no significant cracking.

To the remainder of this room, there is minor disturbance to the finishes and over the front window to the southern side, there is an indication of spalling.

Room G18 – This is a small storage room to the northern side of the front door and has painted bricks walls and a flat ceiling. The paint is peeling off the walls but no sign of any structural movement.

Room G19 is a similar room to the southern side and again, structurally is in a sound condition but decoratively it is poor with paint flaking from the ceilings.

Room G20 – This is the front entrance lobby which has slight streaking on the southern wall and this again is indicative of water ingress. There is also a slight split at the south wall to east wall junction, as shown on photograph No. 291.



Photograph No. 291

The remainder appears to be in a reasonable condition.

Room G21 – This is accessed externally and is between the two arches to the northern side of the front elevation. There is repointing work required to the brickwork and making good to the window. However, it is noticeable that the plaster is coming away from the ceiling. However the concrete underneath the plaster is in a reasonable condition, as shown on photograph No. 292.



Photograph No. 292

The brickwork on the northern wall of the recess is in a reasonable condition.

Room G22 – This is the northern entrance lobby to the Library Tower and this area is in a reasonable structural condition. However, it is noticeable that the paint is flaking off the walls. The cantilever staircase is constructed with concrete treads and this was in a reasonable condition. (?????) Overall there was no major cracking, just decorative works required.

Room G23 – This is the southern area underneath the arches on the front elevation, which includes a ramp access. There are concerns that this may induce damp into the building. The ceiling is in need of decoration, but the brickwork is in a reasonable condition. The lintol over the ground floor window has an occasional vertical hairline crack, as shown on photograph No. 293.



Photograph No. 293

To the pier between the two windows there is a minor crack on the inside face.

To the southern most window the surrounding brickwork is quite reasonable, although again to the lintol, there is an occasional hairline crack noted.

Room G24 – This is the southern entrance lobby to the Library stair tower. On the southern wall there is a large amount of damp ingress and the plaster is coming away from the wall, as shown on photograph No. 294.



Photograph No. 294

To the remainder there is paint coming away from the underside of the soffit of the stair, as shown on photograph No. 295, although it should be noted that the cantilevered stair itself is working quite adequately. A typical example of the profile of the balustrading is shown on photograph No. 296.



Photograph No. 295



Photograph No. 296

Room G26 – This is the main Reception area and above the picture rail level there is paint flaking off. The northern wall has a pier supporting the main downstand beams and then lintols across which carry on through to support the remainder, and all these beams showed no significant distress. The remainder of the area is formed by a timber glazed partition which has no glass in it.

The ceilings are in a reasonable order with no significant loss of finishes.

Room G27 – This is a small storage area under the staircase. However, it is noticeable that there is a large amount of damp ingress on the floor, as shown on photograph No. 297.



Photograph No. 297

It can also be seen that the paint is flaking off the walls, but apart from the damp issues there were no signs of any significant structural defect.

Room G28 – This originally had a glazed lantern over the top which has been removed and softwood joists and chipboard with felt put in instead, as shown on photograph No. 298.



Photograph No. 298

There is also a walkway past here and the most noticeable item is the amount of damp penetrating through the roof, as can be seen on photograph No. 298 above.

On the northern wall there is a large amount of damp on the eastern side and the areas of plaster also show evidence of damp ingress.

The plaster to the eastern wall has a large amount of crazed cracking and it can be seen that where the wall was extended, the boarding is rotted, as shown on photograph No. 299.



Photograph No.299

The southern wall has been extended up and there is damp to the western wall. However, although viewing was restricted, there does not appear to be any structural defect, apart from the damp ingress.

Room G29 – This is a mirror corridor to G6 and the finishes are peeling off quite noticeably to the ceiling all the way round. Moving to the south, the walls generally show signs of damp ingress as this is adjacent to a lightwell area, but apart from the decorative issues, there are no signs of structural movement.

Room G30 – This is a storage cupboard under the stairs. There are again signs of rising damp to the bottom courses indicated by the loss of paint and damp on the floor, as shown on photograph No. 300. The soffit of the stairs appears to be in a reasonable condition and there were no signs of any structural failure.



Photograph No. 300

Room G31 – This is a corridor leading to the east and the finishes are coming away. It is noted that there is a large fruiting body, as shown on photograph No. 301.



Photograph No. 301

Although there are no significant structural issues, the ingress of damp does give rise for concern.

In the eastern section leading towards the Reception area, the finishes have come away from the ceiling. However, the downstand beams are in a satisfactory condition.

Room G32 – This is a small toilet and the walls are saturated which is due to the relationship with the lightwell adjacent to the southern wall. The damp has caused a degree of cracking and damage to the decorations and plaster and it can also be seen that the soffit of the lintol is fractured. A general view is shown on photograph No. 302.



Photograph No. 302

Room G33 – This is to the eastern side and is in a more reasonable condition with only a minor amount of damp ingress and failure of the finishes in the south-western corner.

Room G34 – This is adjacent to the reception on the eastern side and the northern wall is a partition where the plasterboard lines can be seen. The ceiling finishes are coming away. The eastern wall has the main window which has been damaged previously. The wall is dry lined and generally it is only the plasterboard joints that can be seen.

Room G35 – The northern wall is a partition underneath a downstand beam. The downstand beam itself has one hairline vertical crack, but no sign of major failure. The decorations are coming away from the ceiling and the wall. The eastern wall is also dry lined and there are signs of rot to the window cill. The southern wall has a plywood covering with brickwork behind and the plywood is coming away. The western wall is of similar construction.

Room G36 – This is a small toilet room which backs onto the lightwell. The ceiling has noticeable damp penetration and the damp is causing fruiting bodies and there is a heavy loss of finishes due to this damp ingress, as shown on photograph No. 303.



Photograph No. 303

Room G37 – This again has a large amount of damp coming through causing the start of fruiting bodies, as shown on photograph No. 304.



Photograph No. 304

Structurally, there was no significant cracking, although the amount of damp entering the building is a structural concern.

Room G38 – The northern wall is a white ceramic brick or tile which has been painted over. The wall itself shows no significant structural cracking. The eastern wall is in a similar condition, but it is noticeable where previous walls have been built and then latterly removed. This room is basically an infill as the southern and western walls are at a lower level than the ceiling. This is supported by a downstand beam which spans east-west onto a northern beam and these appear quite reasonable. The ceiling is suffering from loss of decoration.

Room G39 – This is to the west of this room and is a changing area, and there is patent glazing over the top which now has boarding over, as shown on photograph No. 305.



Photograph No. 305

The walls are painted ceramic bricks and this is all coming away. However, there are no signs of any structural cracking. The downstand beams show no sign of any failure, but there are signs of damp ingress.

Room G40 – This is a similar room to G39 which shares the same roof and the finishes are coming away, but there are no signs of major cracking. To the southern side there is a pier which supports the end of the downstand beam and this has disintegrated at the base, as shown on photograph No. 306.



Photograph No. 306

This will need to be fully exposed and the structure made sound.

Room G41 – This is a later inserted sauna which is a timber box set below the ceiling line. To the ceiling over the top and also to the walls, the paint is flaking quite noticeably, as shown on photograph No. 307.



Photograph No. 307

Room G42 – This is the original remaining section of this south-eastern room and generally shows no major cracking. The pier on the northern wall shows slight disturbance to the bottom right hand corner. To the remainder the decorations are coming away and it is noted that the roof has been replaced. The downstand beams show no sign of any significant cracking.

Room G43 – This is a sauna constructed within the south-eastern room and from what could be seen, there were no signs of any significant defect. To the southern side however, there is a small gap which shows that the window cill to WG06 is noticeably cracked, as shown on photograph No. 308.



Photograph No. 308

Room G44 – This previously had a lantern light over the top supported by downstand beams spanning north-south. Starting at the northern end the finishes are coming away, the downstand beams appear in a reasonable condition with only localised damage but no sign of any failure.

To the eastern side there are changing cubicles which show signs of damp coming through the ceiling.

The walls are ceramic bricks which are painted lower down and generally there just appears to be damp ingress.

To the doorway leading through to G42, this is quite badly damaged to the reveal, as shown on photograph No. 309.



Photograph No. 309

There is again damp staining and mould on the underside of the ceiling, but overall there was no major structural defect.

Room G45 – This is on the northern wall of G44 and has the lightwell to the northern side. There is damage to the ceiling due to the amount of water ingress and there are also signs of rot and fungi starting to grow here. The remainder of the walls have their finishes coming away due to damp ingress, but no sign of structural failure, and this is all shown on photograph No. 310.



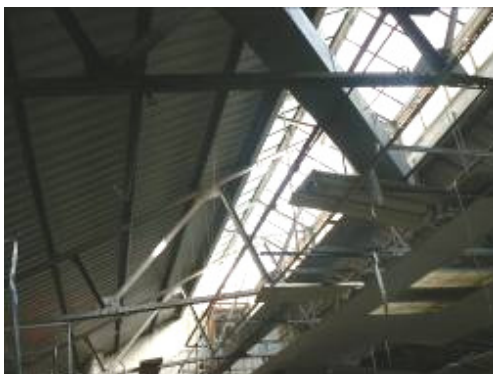
Photograph No. 310

Room G46 – This is a link leading to the G29 corridor. The right hand eastern wall is saturated with damp ingress tracking through from the lightwell. The remainder of the walls have decorative damage and also areas where the plaster has blown.

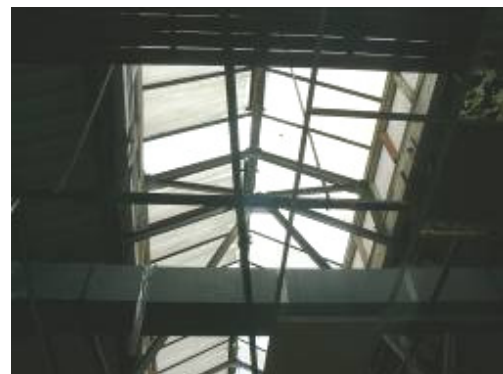
Room G47 – This is the lightwell and access could not be gained at the time of the survey.

Room G48 – This is a staircase leading up to the pool and is in a similar condition to G7 above.

Room G49 – This is the original public wash house but has now had an internal room created. The monitor roof is supported by a series of steel angle trusses which then have an additional section bolted to the top to form the upper lantern, as shown on photographs numbered 311 and 312.



Photograph No. 311



Photograph No. 312

The trusses themselves actually look to be in a reasonable condition with only slight surface corrosion. The sheeting is supported by a series of four angle purlins. On the northern side with the new sheeting, the valley is in a poor condition and is clearly leaking, as shown on photograph No. 313. This is now causing considerable damage to the brickwork and also to the lintol over door DG08.



Photograph No. 313

There is minor cracking to the upper courses on this northern wall, but nothing which gives rise for significant concern. The paint finish is coming away in large sections and to the middle pier there is slight plaster damage, as can be seen on photograph No. 314.



Photograph No. 314

The western wall is a plain gable, but the damage from the leaking valley gutter can be seen in the north-east corner on photograph No. 315.



Photograph No. 315

Where services have been put through the wall this has been quite crudely carried out. There is slight disturbance to the purlin ends where the angles are built in. However, to the remainder, it is just a loss of decorative finish.

On the first part of the northern wall, the western side is saturated. However, there was no significant cracking. Around the first truss bearing there has been previous water ingress, but there was no sign of any failure to the truss. The doorway leading down into G48, the plaster has come away from the wall, as shown on photograph No. 316. There are also a lot of salts washed through from the leaking valley above.



Photograph No. 316

The remainder of the room showed no major damage, apart from a loss of decoration. However, the concern is in the north-east corner where water is ingressing and the plaster around the beams is starting to show signs of cracking, as shown on photograph No. 317.



Photograph No. 317

The eastern wall is masked by Room G50, but from what could be seen the flashing to the outlet pipe is now not present and this is clearly leaking, as shown on photograph No. 318.



Photograph No. 318

To the northern side there is one vertical split running from the valley, but nothing which gives rise for structural concern.

In the south-eastern corner, at the doorway leading into G51, there is a noticeable amount of mould growth and also decorations coming off the ceramic bricks, as shown on photograph No. 319.



Photograph No. 319

Room G50 – This was a space created with a timber partition and suspended ceiling, as shown on photograph No. 320. This shows no sign of any structural failure.



Photograph No. 320

Room G51 – This is a lobby to the toilets in the south-eastern corner and does show a noticeable amount of mould on the southern wall and also the eastern wall, but no sign of structural cracking.

Room G52 – This is the urinal and toilet area and the soffit to the lintol is coming away, as shown on photograph No. 321.



Photograph No. 321

There is slight cracking to the top right hand corner of the eastern window, WG04, and also there is generally a lot of mould to the walls and condensation damage to the ceiling.

2.3.6. Discussions and Recommendations for the Ground Floor

The main area of concern is the amount of damp which has ingressed into the building, especially around the lightwell cores, as this has affected all of the surrounding rooms. A large majority of the ceilings and plaster work to the walls will now be lost and it should also be appreciated that the building will take a considerable time to dry once the roof has been repaired, to allow re-plastering and restoration work.

The northern roof over the original Children's Swimming Pool is leaking where the flashings externally are noted as being poor and this is now causing damage to the Woodwool slabs and also to the lower lintols. Therefore, if this flat roof is to be kept, although the steelwork can be kept and cleaned, an allowance should be made for new boarding and roof finishes.

The eastern section is generally under the first floor Library and therefore, apart from the damage noted from the damp ingress, the majority of the works required are all decorative with a slight loss of plaster.

In the southern section to the original public wash rooms, the original steel angle trusses are working quite adequately and the main area of concern is where the new northern roof pitch was installed, in that the flashings have either been removed or were not correctly installed as there is a large amount of water damage caused by this poor valley junction. If this is to be retained then an allowance should be made for the steelwork to be cleaned and re-utilised and the valley re-formed and also the lintols in this area replaced.

In the south-eastern corner there is a lot of additional rooms been created in the form of saunas and plywood walls, but these do not have any structural implications.

Overall to the ground floor, the main area of structural concern was the amount of damp ingress which is now in the building and whilst this occurs, the fabric will continue to deteriorate.

2.3.7. Basement

Service Duct – This is a corridor which runs down around the side of the Swimming Pool and is typically shown on photograph No. 322.



Photograph No. 322

Starting along the northern passageway, at the north-western corner there is a corroded beam supporting the walkway around the Swimming Pool, as shown on photograph No. 323.



Photograph No. 323

The underside of the concrete slab is painted and this is generally coming away.

The ceiling slab to the underside of the walkway around the pool has a central downstand which is the drainage channel. On the northern side there is one exposed reinforcement bar and then further along there is cracking to the downstand section of the drainage channel, as shown on photographs numbered 324 and 325 respectively.



Photograph No. 324



Photograph No. 325

The northern wall is brickwork and generally just shows signs of damp penetration.

On the pool wall there is a pier supporting the downstand beam, but this has been largely removed at the base for a service pipe, as shown on photograph No. 326.



Photograph No. 326

To the pool structure itself, it would appear that this is insitu concrete with a thickening at the top of the floor slab, and to the lower areas there are sections of spalling concrete and the top pool detail and the example of spalling concrete are shown on photographs numbered 327 and 328.



Photograph No. 327



Photograph No. 328

It is apparent that the cover from the reinforcing steel to the concrete is at little as 10mm in places.

Moving along the wall and the ceiling, there are signs of reinforcement bars showing. The majority of the spalling to the pool concrete is in the bottom 1m, as typically shown on photographs numbered 329 and 330.



Photograph No. 329



Photograph No. 330

To the ceiling above there are further areas of exposed reinforcement.

Half way along this northern walkway there is a doorway to the northern side into B6 and the brickwork above this area is quite poor and it would appear that previously an attempt has been made for this to be rendered over, as shown on photograph No. 331.



Photograph No. 331

To the east of here there is a lot of water penetration which is now causing the face of the bricks to spall.

There is then a recessed area leading to the service passageway of the Children's Pool which housed the boilers. The lintols are steel 'I' beams cased in concrete and to the first, this has hairline cracking and also the bearing is in a poor condition with exposed steelwork as again there is very little cover.

The eastern most beam over the entrance to B4, again the concrete is spalling away, as typically shown on photograph No. 332 and also falling away from the underside of the soffit, as shown on photograph No. 333.



Photograph No. 332



Photograph No. 333

To the ceiling in the service duct where service fixing points are in place, there is again exposed reinforcing steel, as shown on photograph No. 334 and the pool wall again has flaking paint and an indication of spalling.



Photograph No. 334

In the eastern corner there is a downstand beam which is propped, as shown on photograph No. 335.



Photograph No. 335

To the northern side there is a sloping soffit which is the staircase and on the eastern face there is a large amount of reinforcing steel. The steel beam at this position would also appear to be two steels, one on top of the other with the web to the upper one having disintegrated, and this is all shown on photograph No. 336.



Photograph No. 336

The soffit to the underside of the drainage channel is also in a poor condition with a large amount of spalled concrete, as shown on photograph No. 337.



Photograph No. 337

Moving along the eastern service duct, the soffit on the underside of the walkway around the pool is in a poor condition, as can be seen on photograph No. 338.



Photograph No. 338

Generally, this is in a similar condition to the northern side in that there are localised areas of exposed concrete to both the ceiling and the pool wall, and this is typically shown on photographs numbered 339 and 340.



Photograph No. 339



Photograph No. 340

At the downstand for the drainage channel, there is again nominal cover to the reinforcement steel and there is a large amount now exposed, as shown on photograph No. 341.



Photograph No. 341

Moving along the southern service duct, it can be seen that there is an open drainage channel and where the pipework comes out of the floor channel above, this concrete is in a poor condition, as shown on photograph No. 342.



Photograph No. 342

There does appear to be a large amount of damp coming through this slab and half way along this side, the drainage downstand is heavily spalled, as shown on photograph No. 343. Moving further to the north there is a similar situation, as shown on photograph No. 344, and there are also indications that further areas are about to come away, and a typical example is shown on photograph No. 345.



Photograph No. 343



Photograph No.344



Photograph No. 345

In the south-west corner, the soffit is in a poor condition, as typically shown on photograph No. 346.



Photograph No. 346

Moving along the western side, this is all in a similar condition to that previously noted with localised areas of spalling.

Service Duct to Children's Pool – This is at the northern part of the building and starting on the eastern side, the eastern wall is brickwork and the pool wall is reinforced concrete, and the soffit to this area is quite low. On the pool wall there is an area of exposed reinforcement, although it would appear that this is in a more reasonable condition than the main pool.

On the north-eastern corner, there is a small steel beam set off a pier which is heavily corroded.

Moving along the northern side, there is one area which is in a very poor condition, as shown on photograph No. 347, although the pool wall is in a slightly better condition.



Photograph No. 347

The external wall is in a reasonable condition, although the vents are blocked in. The areas of defect are more localised to the soffit of this slab and also occasional spalling at the bottom of the pool wall, examples of which are shown on photographs numbered 348 and 349.



Photograph No. 348



Photograph No. 349

On moving round to the western side, there are localised areas where the soffit is starting to come away, as shown on photograph No. 350. The remainder is in a more reasonable condition.



Photograph No. 350

Room B1 – This area was heavily propped and there is a large amount of chemical drums stored in the corner and due to the amount of water on the floor, access was not gained into this area. Typical examples taken from the entrance are shown on photographs numbered 351 and 352.



Photograph No. 351



Photograph No. 352

Room B2 – In the area leading up into the entrance to B1, the steels are supported off the mini tri-shores which can be noted on photograph No. 351 above, and the exposed steelwork leading through into this area is all showing signs of corrosion, as shown on photograph No. 353.



Photograph No. 353

Room B3 – This is in the area of the staircase and the brickwork has slight cracking to the cupboard under the stairs. The underside of the stair soffit is very poor with all the reinforcing steel exposed, as shown on photograph No. 354.



Photograph No. 354

The stair itself in the bottom corner has also fractured, as shown on photograph No. 355.



Photograph No. 355

There is a diagonal crack over the head of the cupboard under the stairs and also the lintol leading into this area shows fracturing to the bottom section, as shown on photograph No. 356.



Photograph No. 356

Room B4 – This is a lower area of the service duct corridor between this and the service duct to the Children’s Pool and the underside of the floor slab is quite poor, but the main steel beam over opening DB13 is in a more reasonable condition. A typical view of the floor slab is shown on photograph No. 357.



Photograph No. 357

Room B5 – The downstand beam at the northern side over DB15 has got surface corrosion, but is working satisfactorily and this is shown on photograph No. 358.



Photograph No. 358

The ceiling is showing signs of spalling, as shown on photograph No. 359.



Photograph No. 359

Room B6 – This is a tiled area and the underside of the ceiling has an occasional hole within in.

Room B7 – These are again fully tiled areas and the ceiling shows quite a lot of damp penetration and a general view is shown on photograph No. 360.



Photograph No. 360

The main columns from the pool structure above extend down into this area, and these are in a reasonable condition.

Around window WB03 on the northern wall, this has a large amount of water coming in around the lintol and also to the reveals, as indicated on photograph No. 361.



Photograph No. 361

Room B8 – This is in a similar condition in that some of the plaster is coming off the reveals to expose the brickwork behind. The lintol shows no sign of any failure, but there is a large amount of water coming through here and this does give rise for concern.

There is also damp coming through the ceiling on the northern edge and this gives concern as to the condition of the concrete behind.

Room B9 – Through the northern wall there is a large amount of damp penetration coming through, as can be seen on photograph No. 362 and although no major cracking, the plaster has de-bonded from the wall.



Photograph No. 362

Over the entrance door DN19, this steel is now propped and is heavily corroded, as shown on photograph No. 363 and there is a large amount of water ingress coming down the face of the wall.



Photograph No. 363

Adjacent to entrance door DB20, there is exposed reinforcing steel across the corner and this area is also propped, and this is all shown on photograph No. 364.



Photograph No. 364

Room B10 – This is a small staircase area and the condition of which has already been covered in item UG6.

Room B11 – This is a small store room with brickwork walls with a concrete ceiling over and generally shows no major defect.

Room B12 – This is a similar construction and it can be seen that where the pipework was put through on the southern wall, this was quite crudely carried out and there is corrosion noted here, as shown on photograph No. 365. There are also indications of damp within this room.



Photograph No. 365

Room B13 – This is a small entrance corridor and generally shows no major defect.

Room B14 – This was originally classed as the Club Room, where the floor above is supported by a central column and four downstand beams. The eastern most beam at the column bearing is quite corroded, as shown on photograph No. 366.



Photograph No. 366

The ceiling has a lot of paint flaking away and in the north-eastern corner there is an area of exposed reinforcing steel to the ceiling, as shown on photograph No. 367. On the south-eastern corner there is a similar situation, as shown on photograph No. 368.



Photograph No. 367



Photograph No. 368

The window to the northern wall has been quite crudely ripped out and this just has a grill in front of it. Over WB08, the lintol has failed in that the reinforcement is now showing, as shown on photograph No. 369.



Photograph No. 369

To WB11 on the southern wall, there is a similar situation where the reinforcing steel is now present. It is also noted that this concrete was made up with crushed bricks and this is all shown on photograph No. 370.



Photograph No. 370

Room B15 – This is a small entrance lobby and was in a reasonable condition.

Room B16 – This is painted brickwork where the majority of the paint is coming away. The lintol over the external window is in a reasonable condition and there were no significant structural problems noted in this room.

Room B17 – This is in a similar condition to B16.

Room B18 – This is a stairwell area and joins on with UG11. There is a lot of damp penetration on the western wall and also above the windows frames. There is minor cracking on the northern wall just above the floor level. There is also a noticeable amount of damp penetration coming through the ceiling to the soffit over the stairs.

Room B19 – Viewing is slightly restricted as this is where the ‘asbestos tent’ has been constructed. The ceiling shows a large amount of flaking paint and there are signs of water damage. The walls appear to be in quite a poor condition and to the lower area, there is a crack to the side of the column, as shown on photograph No. 371.



Photograph No. 371

Room B20 – The ceiling has a large amount of flaking paint and an occasional amount of spalling. Some of the holes which have been put through the wall are quite crudely formed, but structurally, apart from the ceiling, there are no major concerns. This can all be seen on photographs numbered 372 and 373.



Photograph No. 372



Photograph No. 373

Room B21 – The ceiling is damp and there is cracking to the finishes which are indications that sections may soon begin to spall, as shown on photograph No. 374.



Photograph No. 374

The walls again show signs of damp ingress extending down from above, but there are no signs of major cracking. The damp ingress is shown on photograph No. 375.



Photograph No. 375

Room B22 – The soffit is in a poor condition with both the downstand and the main ceiling having large areas of exposed concrete, and this is shown on photographs numbered 376 and 377.



Photograph No. 376



Photograph No. 377

The walls are in a more reasonable condition with no sign of any significant cracking to the main pool hall columns or the walls.

Room B23 This has a set of steps up to the original wash house area and the soffit of the ceiling has lost a lot of paint and the concerns are that there is spalling concrete behind, as shown on photograph No. 378.



Photograph No. 378

The tiled walls are in a reasonable condition and there is no significant cracking to the main column supporting the pool hall roof which extends to this level. A typical example is shown on photograph No. 379.



Photograph No. 379

Room B24 – The walls are tiled and the ceiling does have a downstand which has an occasional surface crack through the paint finish. The external walls show no sign of any significant cracking, although there is an indication of slight water leakage in the south-western corner.

On the eastern wall there is a slight crack down the edge of the column and this is to the main pool supporting structure, as shown on photograph No. 380.



Photograph No. 380

Room B25 – This is the staircase and the brickwork needs repointing on the western wall and the paint is coming away from the remainder. The underside of the soffit of the stairs, there is a lot of peeling paint, but no sign of any major structural defect.

Room B26 – This is a mirror of Room B2, however, the steel beams are in a slightly better condition, as is the soffit on the underside of the stairs. Leading into the south-east corner, before Room B27, the steel beam does show signs of corrosion and there is a slight spalling on the underside of the concrete, as shown on photograph No. 381.



Photograph No. 381

Room B27 – This is equivalent to Area B1 where access was not possible. It can be seen that the slab is supported by a series of steel beams spanning onto brick piers and the most noticeable item is major damp to this section. The steelwork is showing surface corrosion and there have been attempts to patch the ceiling which can be depicted on photograph No. 381 above.

The bearing of the steel in the south-western bay is heavily corroded and the soffit of the concrete above is also starting to spall, all as shown on photograph No. 382.



Photograph No. 382

Moving along the southern side, the underside of the slab shows exposed reinforcement, as shown on photograph No. 383.



Photograph No. 383

The cross beam which runs north-south on the southern side is now propped, as is the floor, and this is shown on photograph No. 384.



Photograph No. 384

In the south-eastern bay the condition of the floor is exceptionally poor, as shown on photograph No. 385 and the steelwork is also quite heavily propped, as shown on photograph No. 386.



Photograph No. 385



Photograph No. 386

On the eastern middle bay the steelwork shows a lot of surface corrosion and to the southern beam, the end bearing has now failed with holes in the web, as shown on photograph No. 387.



Photograph No. 387

On the middle on the eastern side, the northern most beam is in a poor state of repair and the floor and ceiling are all propped. Where there have been apertures put through for the drainage, the concrete around these holes is in a poor condition.

Generally, the steelwork has noticeable corrosion and there are sections of the slab which are also in a poor condition, all as generally shown on photograph No. 388.



Photograph No. 388

Room B28 – The floor is supported by three cross beams and the concrete soffit is in a reasonable condition in the southern bay. In the southern bay itself there are just localised areas of spalling and the third bay is similar. The steelwork needs cleaning down.

Under the northern most steel beam the ground floor slab has become damaged and this does need repair, and a general view of the room is shown on photograph No. 389 and the floor slab damage on photograph No. 390.



Photograph No. 389



Photograph No. 390

There is then a small corridor which leads up to Room B26 and this also has a lot of water present. There are downstand beams supporting the floor over and at the western edge the steel beam does need attention as it has corroded, and the slab requires repairing where there is exposed steelwork, as shown on photograph No. 391.



Photograph No. 391

The slab does require areas of localised repair, but this apart it was in a reasonable condition, as was the brickwork.

Room B29 – It is apparent that where there is roof leakage above, the water is penetrating down into this area. B29 has a low ceiling and has a downstand section. There is a steel beam running through east-west and in the northern most bay a previous pipe came through here, and where this was inserted it has now exposed the reinforcement.

The cross steel is corroding and the soffit is damaged with areas of exposed reinforcing steel, as shown on photograph No. 392.



Photograph No. 392

To the middle section on the eastern side there are two downstands in the concrete and adjacent to here the reinforcing steel is all exposed, as shown on photograph No. 393.



Photograph No. 393

Moving to the southern side there is another cross beam and this appears to be in a reasonable condition, although the concrete does require repair. The steel beam is partially encased and against the western wall the underside of the steel beam is corroded, as shown on photograph No. 394.



Photograph No. 394

Adjacent to the entrance there is one section of slab which is in a very poor condition, with a large amount of exposed reinforcing steel, and this is shown on photograph No. 395.



Photograph No. 395

Room B30 – The upper roof is supported by two large downstand steel beams spanning east-west with the walls all being brickwork. Starting on the northern wall which houses the stairs, this is showing significant signs of damp. To the lintol over WB13, this is badly corroded and needs to be re-formed as the reinforcing bar is visible, as shown on photograph No. 396.



Photograph No. 396

The eastern wall has two brick piers to support the main downstand beams and apart from damp penetration, these appear to be in a reasonable condition. In the south-eastern corner the paint finish is coming off the ceiling, but there were no signs of major spalling.

On the southern wall there is a large area which has been blocked in and the upper windows here have cracking to the lintols, as shown on photograph No. 397.



Photograph No. 397

The western wall is brickwork and apart from damp penetration, appears to be in a reasonable structural condition.

Room B31 – This is the old Boiler House and the upper floor is supported by main steels spanning north-south and a general view is shown on photograph No. 398.



Photograph No. 398

In the north-east corner there is a large brick chimney and from the bottom of this there is now a large amount of debris, as shown on photograph No. 399.



Photograph No. 399

The main steel beams show signs of surface corrosion, as typically shown on photograph No. 400.



Photograph No. 400

The brickwork displays no real sign of cracking, but there are many previous service entry points and the decorative condition is poor.

The main area of defect is the condition of the lintols, which have all now largely failed and typical examples are shown on photographs numbered 401 to 403 inclusive.



Photograph No. 401



Photograph No. 402



Photograph No. 403

To the main concrete beam over the original sliding door, there are areas of surface cracking to the underside and the face which do give rise for concern. Similarly on the western wall, the lintols are also in a very poor condition with large amounts of exposed reinforcement, as shown on photograph No. 404.



Photograph No. 404

2.3.8. Discussions and Recommendations for the Basement

The main area where there is significant structural defect is to the swimming pool walls and the promenade deck around the edge. This was noted as being in a poor condition and requiring significant remedial works in the W. C. Atkins report 2003 and as there has been no intervention in the last 8 years, the condition will only have deteriorated.

The results of the non-destructive testing in 2003 indicated the poor condition of the concrete and this is clearly evident visually, which can be seen in the photographs above, where there are large amounts of reinforcing bars showing.

Starting with the main pool walls, copied below are the conclusions from the concrete investigation carried out in 2003, with which I would concur.

“ . . . The main pool walls and promenade deck slab show an advanced level of deterioration, including deeply penetrating carbonation, very poor concrete cover and exceedingly high chloride levels. Many areas show patent defects resulting in corrosion of the reinforcement and movement of pool water through the construction. The half cell potential surveys indicate that the probability of corrosion self formation is high. The general level of deterioration and condition of reinforcement where exposed would concur with the half cell potential readings, in that severe corrosion of the reinforcement is taking place and is wide spread . . . ”

The previous recommendations were that a cathodic protection scheme be introduced. As no work has been carried out since 2003, the level of deterioration over the last eight years should be established by commissioning an up-date of the original Birmingham University Concrete Survey and then specialist concrete repair firms invited to prepare schemes. However, it should always be accepted that the concrete may have deteriorated to such an extent that large areas may need to be demolished, as it is important that the structural integrity of the concrete is re-established, whereas at present, the composite action of the reinforcing steel and the concrete is often not present due to the spalled concrete.

The Children's Pool is considered to be in better condition, with only localised areas of reinforcement damage and this is generally considered to be due to the fact that the cover to the reinforcement, which is the distance from the outside face of the concrete to the steel is slightly greater. However, the depth of carbonation which causes the corrosion, and also from the report of 2003, it can be seen that '*. . . Severe corrosion of the reinforcement is taking place and is widespread . . .*', means that this would also require a cathodic protection scheme.

The remainder of the basement structure also need attention, in that the areas of to north-east and south-east side, namely B1 and B27, the steel beams supporting the floor above show noticeable corrosion and there are many instances where they are already propped and it is felt that these floors will need to be broken out and re-cast. Alternatively, a new structure formed making the existing system redundant. Also the majority of the other steel beams are in need of replacement in the basement.

To the boiler rooms on the southern elevation, all the lintols appear to have failed, although the main steel beam supporting the flat roof are in a more reasonable condition.

In the three central rooms, there are areas of surface corrosion to the concrete which needs attention and also works to the lintols, although these are in a more reasonable condition and are still capable of being repaired.

The rooms to the north and south of the service corridor to the pool show localised areas of defect, but the majority of the walls are in a reasonable condition. It can also be seen that there is no significant cracking to the main columns supporting the arched beams over the pool hall itself. There is one which shows slight cracking down the front edge which would be recommended is exposed, but generally the main issues are decorative and relate to damp.

Similarly in the former club room, B14, work is required to the lintols and also the supporting steels require remedial works.

The main area of concern is the walls to the pool itself and most especially the soffit of the promenade deck which extends around the pool surface above.

3.0. CONCLUSIONS

Structurally, this building requires a substantial amount of remedial work as when the original report was carried out by W.S. Atkins in 2003, the building was considered to be in a poor condition at that time. Since then there has been very little intervention and it has deteriorated further. It will be recommended that all the roofs are replaced with regard to the finishes, namely the sheeting to the pitched roofs to the swimming pool and also the former wash room, the flat roof over the Children's Swimming Pool and also all the asphalt finishes over the Library and the passageway between. The only roof which is considered to be in a reasonable condition is the raised turret section of the Library.

In replacing all the roof finishes and due to the fact that there has been leakage, there should also be a generous allowance made for repairing the substructure below.

Internally in the first floor, the Library requires more superficial repairs due to water ingress, in respect of replacement of the plaster work and this applies to the majority of the ground floor rooms which have been greatly accentuated by the water coming in through the two lightwells.

The reinforced concrete structures to the swimming pool and the floors over the basement areas show noticeable corrosion, the environment in which they are exposed throughout its life has been exceptionally aggressive and there will need to be substantial intervention to reinstate the integrity of these areas.

In 2003, a 'ball park figure' in the region of £250,000.00 was thought feasible to carry out the remedial works to the pool concrete only. Due to the deterioration which has taken place over the past 8 years, it is felt that the figure for the concrete repair alone will have increased significantly.

To the remainder of the building there is noticeable defects with a large majority of the lintols, this relating to not only the decorative style to the Library but also the more functional ones to the boiler rooms and these often require complete replacement.

To the reconstituted stone lintols at the front, although it is considered that they could be repaired insitu, the aesthetics of the repairs should be taken into consideration, which may involve more substantial intervention.

Overall, it is considered that this building is in a poor state of repair and requires substantial remedial works to all areas.

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DATED: