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Weston Shore Infant School

Roof Condition Survey

Southampton City Council

15 August 2018

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Contents

1.0 Executive Summary

Weston Shore Infant School is preparing to transfer to an Academy Trust from Southampton City Council. As part of that transfer process the condition of the fabric of the building should be considered.

A survey of the flat roofs of the school was carried out on 6th July 2018 and a follow up survey to report on construction elements associated to the flat roofs was carried out on 2nd August 2018. The weather was hot and dry and the weather prior to the first survey had been the same for a number of weeks with no rain for at least three weeks, subsequently the surfaces and debris were very dry. A few days prior to the second survey there had been heavy rainfall that had identified leaking areas of the roofs that had been patched just prior to the survey.

Bauder who manufacture and supply roofing materials also attended the first survey and took two core samples of the different areas of roof so the makeup beneath the surface could be ascertained. Their report is included within this report as appendix B.

The flat roofs are six separate areas as designated on the roof plan in appendix A. The main flat roof that covers the majority of the school is asphalt, the three smaller areas are three layer felt. The raised sections over the kitchen and tank room are asphalt similar to the main flat roof area. The school also has five mono pitched roofs with vertical glazing running up from the flat roof areas and a central square pyramidal pitched roof set into the centre of the asphalt roof that covers the hall within the school.

The roof areas have 32 double skin Perspex domed rooflights set into the roofs and a raised area on perimeter clerestory timber windows above the kitchen, this raised roof has a central extractor fan and cowling.

The condition of the roof materials and flashings to the upstands to the pitched roof areas are in a poor condition with cracking of the materials and sections of lead flashings missing. There is significant plant growth across most of the roof areas and subsequently significant plant debris accumulating on the roof areas. The adjacent Oak tree also adds to this debris when it loses its leaves.

The recommendation is that all the flat roof areas are replaced. The work would require cleaning off the surfaces, removing all debris, making localised repairs and overlaying with new insulation and a new waterproofing system. The works would also require new upstands, flashings and replacement of most, if not all, of the rooflights.

There are also associated defective areas above the flat roofs that should be considered as part of the works or as separate projects. Those areas are poor decoration, decaying timber elements, the timber windows above the roofs and localised repairs to other elements such as brickwork and the tank room cladding.

The Caretaker's bungalow has not been specifically reported on but should be considered as having the same defects as the school as it was constructed at the same time as the school.

The school is located about 340m from Southampton Water and therefore should be considered a marine environment.

There is one Health and Safety issue that should be attended, the broken tiles on the roof that contains the solar panels should be removed and replaced so they cannot slide down and off the roof.

It is recommended that the flat roof areas are replaced within the next one year and ideally in summer 2019.

The budget for re-roofing the flat roof areas of the school and replacing associated items is £672,431 including a contingency and fees, but excluding VAT.

This budget excludes works to the Caretaker's bungalow which are estimated at £40,000 including a contingency and fees. The other budget estimates not included within the re-roofing budget are shown on the second table in section 7.0.

The kitchen currently has a basic single extract fan set within the raised roof. If the roof and associated glazing are to be replaced then an upgrade to the extraction system should be considered in conjunction with any roofing works.

Refurbishment works would require Building Regulation approval to certify the improvement in the thermal capacity of the roofs and structural calculations to confirm that the structures will support the increased loadings.

It is considered that Planning Approval will not be required for any roof replacement works as the visual aspect of the construction would not be altered, the pitched roofs would be retained in a visually similar condition.

2.0 Report Requirements

2.1 Weston Shore Infant School are preparing to transfer to an Academy Trust from Southampton City Council control.

2.2 The Trust are concerned about the condition of the flat and pitched roofs and the associated elements of the roofing areas. The Trust have requested a contribution from Southampton City Council towards the repairs or renewal of roofing and elements associated with the roofs. Faithful+Gould have been appointed by Southampton City Council to provide an independent survey of the condition of the roofs and associated construction elements at the school to inform a decision over any contribution to be made.

3.0 Survey Method

3.1 The initial survey was carried out on 6th July 2018 and a second survey was carried out on 2nd August 2018. The weather was hot, sunny and dry on both occasions, it had not rained on the previous few weeks prior to the first survey but there had been extensive rainfall four days prior to the second survey. There was no retained water on the roof areas but leaks had occurred during the rainfall and some areas had been patch repaired prior to the second survey. Bauder, who manufacture and supply roofing materials also attended the first survey, carried out core samples of the roof structure and provided a report on their findings and recommendations.

3.2 We were able to access all of the roof areas for close up inspection, apart from the roof of the tank room which was not viewed and assumptions have been made regarding the condition of the roof.

3.3 Bauder produced their report following our joint inspection and this is attached as Appendix B.

3.4 For the purpose of this report we have followed the colour coding attributed to the roofs within the Bauder report and added numbers for the pitched roof areas as follows:-

Red	Main asphalt roof sections	390m^2
Yellow 1	Felt roof 1	15m^2
Yellow 2	Felt roof 2	38m^2
Yellow 3	Felt roof 3	12m^2
Green (K)	Kitchen asphalt roof	13m^2
Blue (T)	Tank room asphalt roof	15m^2
Pitched roof 1	Mono pitched tiled	120m^2
Pitched roof 2	Mono pitched tiled	104m^2
Pitched roof 3	Mono pitched tiled	85m^2
Pitched roof 4	Mono pitched tiled	105m^2
Pitched roof 5	Mono pitched tiled including integrated solar tiles	115m^2
Pitched roof 6 - hall	Four-sided pyramidal tiled pitched roof	125m^2

Roof areas are approximate. A copy of the colour coded plan is included in Appendix A.

3.5 During our visit we were informed that there was no knowledge of roofs being replaced in the past (other than pitched roof 5), which suggests, together with the visible condition, that the asphalt and pitched roofs are original from 1973. The felt roofs are infill sections so are younger but still of significant age. The only roof to have any significant works is the pitched roof 5 that has had the majority of the area laid with integrated solar panel tiles but this roof has tile and guttering defects. It has been assumed that the solar tiles will not need to be removed again, if they are there could be additional costs.

3.6 The roof areas have significant plant growth in the debris accumulated on the roofs and between the loose stone laid over the asphalt roof areas. The plant growth and debris had been removed from the felt roof 2 prior to the second survey.

3.7 The associated elements of construction are also thought to be original fixtures and are showing signs of their age and lack of maintenance. Timber fascias, brickwork gable walls and guttering are all defective and require maintenance or replacement.

3.8 We have categorized the current condition of the roofs in relation to condition and priority as the table below.

Condition Grade		Priority Grade	
A	**Good** – Performing as intended.	**4**	**More than 5 years** before remedial action required (default priority for Condition Grade A).
B	**Satisfactory** – Performing as intended, but exhibiting minor deterioration.	**3**	Remedial action required **within 3-5 years.**
C	**Poor** – Exhibiting major defects and operating as intended but with a serious risk of imminent failure.	**2**	Remedial action required **within 1-2 years.**
D	**Bad** – Life expired and/or not operating as intended.	**1**	**Immediate remedial action** or replacement required (default priority for Condition Grade D).

3.7 Category D states “Life expired” which is very difficult to confirm as elements may be past their intended useful life but still working satisfactorily, anything that has failed and is not carrying out its primary function has been graded D.

4.0 Survey Findings

4.1 Commentary on our findings is provided below. A summary table with costs is provided in section 7.0. There are no imminent Health and Safety risks associated with the roof structures or roof coverings (other than as stated within the Executive Summary). This survey comments on the condition and operation of the external roofing materials and associated building elements. Where it is recommended that a roof area or associated element is replaced, that work may be either strip/remove and replace or minor strip back and over lay of the existing roof or maintenance of the element. D1 category items should be replaced within one year. There are also elements that are not D1 category but require maintenance. Roof areas shown are approximate measurements.

4.1.1 **Main Asphalt roof. 390m²**

The roof covering is categorized as D1.

The ancillaries are categorized as C2.

This roof is thought to be the original covering and therefore laid in 1973 which is past its expected lifespan. The defects identified supports that assumption of age.

The roof is multi shaped to connect all the areas of the school and runs between the pitched roofs to enclose the school into a single block. The three small felt roof areas are either covering extensions or are areas of overlay repair and infill or add areas of roof to the school.

There are numerous defects evident within the asphalt upstands and patch repairs across the roof are visible. There are also significant lengths of lead flashing either missing or displaced to upstands above the roof covering.

The areas of the roof have significant plant growth that is rooting into the stone covering to the asphalt and the silt debris. This is most prevalent in the South West corner of the roof where it is nearest to the mature Oak tree. The roots do not seem to have penetrated the asphalt but not all the area was checked due to the extent of the growth. The plant roots will grow through any cracks in the asphalt and into down pipes and gullies if not removed.

There are cables running across the roof in a tray supported on concrete blocks or individually. If a new roof is laid these cables would require re-aligning or replacing.

The core sample identified the roof as asphalt laid onto Woodwool slabs with a nominal fall to the roof. The internal rainwater downpipes are all slightly raised locally above the roof finish that allows ponding to occur around the outlets.

Ponding has been assumed to be extensive due to debris retention and the near flat surfaces within the roof areas.

Ancillary items such as timber fascias, timber windows, guttering and flashings are in a poor condition and should also be considered for repair or replacement.

The current upstand below the concrete cills to the roof finish is approximately 200mm which is in excess of the recommended minimum 150mm. If the roof were to be replaced, any additional insulation that would be required to comply with Building Regulation Part L, would reduce the upstand below the minimum 150mm requirement. This reduction in upstand depth would necessitate either raising the cill height and reducing window size or building a channel below the cill with reduced insulation and increase detailing that is best avoided.

Just prior to the second survey there was heavy rainfall and the roof area leaked in a number of locations. New Acrypol coat on patch repairs were visible, where the stone covering had imbedded into the asphalt the operative had not raked out the stones but coated over them. Patch repairs of this nature should be considered short term repairs.

4.1.2 **Small Roof 1. 15m²**

The roof covering is categorized as B3.

The fascias are categorized as B3.

This is a small felt roof over an extension to the school and is in a fair condition. The roof has perimeter upstands where it joins the asphalt roof and a single outlet in the external corner.

There are no obvious defects to the felt or perimeter flashing and upstands apart from the blistered felt upstand section shown in the photos. There are signs of minor ponding on the lower level near to the gulley outlet.

It was noted that the lead flashing has been screw fixed to the upstand walls which, although punctures the lead, is probably to make theft more difficult.

If this roof were to be replaced the inner upstand should be removed, if possible, and the roof included as part of the main roof recovering. It would be beneficial to replace or overlay this roof when the main roof is replaced. The perimeter upstands and flashing should be replaced.

4.1.3 **Small Roof 2. 38m²**

The roof covering is categorized as C2.

The outlet and down pipe is D1.

This is a small felt roof over an extension to the school and is in a fair condition but has significant debris and plant growth within the debris. The debris was also blocking the only gulley outlet until pulled away by the surveyor.

The roof has upstands to its perimeter of approximately 150mm. It was reported that one of the roof areas had flooded to approximately this depth. It has been concluded that this area filled with water due to the blocked gullies and water had leaked into the school. Water staining was evident internally. This roof is approximately 120mm lower than the adjacent asphalt roof which would overload the rainwater outlet if the higher roofs were to overflow onto this roof.

The felt material looked to be in a fair condition but about a third of the area was covered in debris and plants. There is only one outlet in the corner near to the corner of the hall pitched roof and this area has leaked which is evidenced by internal water staining.

The second survey saw this area now cleared of debris and plant growth and a second gulley outlet was visible.

4.1.4 **Small roof 3. 12.5m²**

The roof covering is categorized as B3.

This roof is in a fair condition and is over what is thought to be an extension to the school on the East of the building adjacent to the tank room. The roof has had a patch repair, which could be a core sample patch. The roof has a reasonable fall to a gulley and the felt material has slight surface staining due to exposure and water washing down from the high level tank room cladding above.

4.1.5 The small roofs 1, 2 and 3 are adjacent and attached to the main roof and should be considered for overlaying as part of the re-roofing of the main asphalt roof. This method will provide a complete solution and an integrated roof by removing as many details and changes of level as possible. The kitchen roof and tank room roofs should ideally be replaced at the same time as the main roof and small roofs whilst access is available and repeat works are not required. A single contract to replace all the roof areas and associated items would be the most beneficial for costs and warranties.

4.1.6 **Small raised roof over kitchen 13m²**

The roof covering is categorized as D1.

This roof is raised up approximately 1m above the main asphalt roof by full perimeter timber clerestory windows. The roof is asphalt of the same design as the main roof and is therefore considered to be an original roof. The roof has probably leaked in the past and has been patched in the South West corner with a torch-on felt patch.

In the centre of the roof is an extract fan sat on a kerb and covered with a metal cowling. There is evidence internally of water staining around the fan opening in the ceiling.

The roof is in a similar condition to the main roof with loose stones covering most areas and moss growth over the area, which is generally acceptable on a roof of this age.

The roof area does not have any guttering or an obvious fall so it has to be assumed that the rainwater just runs off the edge of the roof, down the glazing and timber framework to the main roof area below. Uncontrolled water is likely to be very damaging to the timber and enter the building. As part of any roof replacement a fall and a gutter should be incorporated into the works.

4.1.7 **Tank Room Roof. 15m²**

The roof covering is categorized as D1.

The ancillary items are C2.

The roof was not inspected but is thought to be asphalt, similar to the main roof and kitchen roof, it looks to be the same material on the aerial photograph and it has the same edge detail. It is therefore thought to be the same age and condition as the main roof.

The roof has an internal gulley outlet that feeds a downpipe that exits the cladding and discharges onto the main flat roof.

The room is enclosed with steel plastic coated cladding that is corroding at sheet edges. There is also a small bulge in the cladding. The cladding could be replaced or it could be repaired, de-rusted and decorated at a lower cost, but provide a reduced lifespan.

4.1.8 **Pitched Roofs**

Pitched roofs 1 to 5 are laid to single pitch plain interlocking concrete tiles at approximately 20^0 pitch. Each roof area has vertical timber framed glazing from below the ridge of the tiled roof to a concrete cill set approximately 200mm above the flat roof areas. A short section of roof 4 vertical glazing does not sit above a flat roof area, the external wall runs down to ground level, the detail of roof, windows and cill are the same as the other areas and should be considered the same. The vertical elevation above the windows and below the ridge tiles is clad with approximately 300mm deep timber cladding formed of timber. The timber is showing signs of degradation, warping and poor decoration. Where some of the ridge tiles have been replaced with shorter items the previously covered timber is now exposed.

4.1.9 Pitched roof 6, Hall, has the same plain concrete interlocking tiles but is formed as a square pyramid that sits up above the surrounding flat roof areas by approximately 700mm that is clad with timber strip boarding. The boarding is in a poor condition and has defects apparent such as broken, warped and missing sections. The timber is very dry and has not been decorated recently. The centre of the pyramid has a square Perspex rooflight. There are also two Velux rooflights set into the Southern pitch of the hall roof. There is evidence of water staining internally which suggests that the roof has leaked on all elevations. There has been a repair carried out on the South West corner of the hip ridge that should be removed and carried out correctly. There are also signs of the underfelt, that is exposed at the eaves, degrading in the atmosphere of sunlight and wind. This felt should also be replaced with a formed edge detail.

4.1.10 The hall roof has a plastic gutter running around all four sides and two downpipes that discharge onto the flat roof areas. The gutters are uneven and the length of runs between down

pipes are considered too long and should have at least two additional down pipes fitted. The gutters should also be replaced with new gutters of sufficient depth and profile.

The gutter is categorized D1.

4.1.11 Pitched roof 5 has had solar panel tiles fitted recently. Information provided by the school confirmed that the original felt below the tiles was in a poor condition and had to be replaced. This would suggest that the other pitched roofs will have similar felt that would require replacement as part of maintenance works. The roof looks to be raised up by approximately 50mm which has been detailed with thicker tile edge mortar and lifting the tiles away from the eaves gutter. The gutter is now considered too low to satisfactorily collect and control the water running off the roof and should be either realigned or replaced with a suitable, possibly deeper, alternative. The associated fascias should also be extended up under the raised tile line. This roof also has some broken tiles that should be removed and replaced as an Health and Safety or maintenance issue.

The tiles and guttering have been categorized as D1.

4.1.12 The pitched roofs 1 to 5 have brick walls at each end forming the gable end elevations of that section of the building, the ridge tiles and roof tiles run over the brick walls as protection to the top of the walls. All of the ridge lines are lifted over the brick walls and some brickwork is cracked or leaning out away from the building and adjacent windows. The most pronounced is roof 5. There are no obvious cracks internally (viewed from the ground) so the cause is unknown and should be investigated by opening up the area to fully expose the cavity and the cause of the movement. The other roofs should also be inspected in the same fashion to ascertain common causes. The top corners of all the gable walls should be taken down and rebuilt, correcting any faults in the process.

The brick gable walls are all categorized D1.

4.1.13 The eaves gutters are leaking in places, the leaking joint of pitched roof 2 has allowed water to damage the timber fascia. Both the gutter and fascia should be replaced as a non-timber system in conjunction with the main roofing works.

4.1.14 Pitched roof areas - approximate.

Pitched roof 1	120m^2
Pitched roof 2	104m^2
Pitched roof 3	85m^2
Pitched roof 4	105m^2
Pitched roof 5	115m^2
Pitched roof 6 – Hall roof	125m^2

4.1.15 **Timber fascias to roofs**

All the roof areas, both flat roofs and pitched roofs have timber fascias which are in a poor state. The timber has had little decoration in the last few years and has warped, cracked, broken and dried out with bare timber showing through the weathered decoration exposing the timber to rain and sunlight. All the timber fascias should be replaced as part of a reroofing contract, a non-timber alternative to reduce on-going maintenance should considered. The existing timbers are unlikely to be able to be refixed and decorated, hence the grading od D1.

The fascias are Categorized D1.

5.0 Other Considerations

5.1 Rooflights

All rooflights can be categorized as B3.

There are 31 rooflights on the main roof, 1 rooflight on the small flat felt roof 2 and 1 metal fan cowling on the raised kitchen roof. All the rooflights are double skin domed Perspex in frames in good condition. Information provided by the school suggests that the rooflights were replaced between 5 to 8 years ago. There have been roof leaks that have had Acrypol repairs to the roof adjacent to rooflights. The rooflights do not necessarily require replacement but not replacing them with the roof covering could compromise the roof warranty provided by the roof material manufacturer and some elements of the rooflight may be damaged.

5.2 The raised roof to the kitchen is formed with a four-sided timber structure that contains glazing to all four sides and a ventilation louvre. The timber is in a poor condition and the decoration is very poor. There is evidence of temporary waterproofing repairs to the timber sections.

It was noted that the kitchen has cookers and is thought to cook meals daily. Most kitchens of this type have extensive extract and filter systems, this kitchen has a single extract fan set into the raised roof. Upgrading the extract system should be considered as changes could affect the kitchen roof areas. An indication of costs are shown as a separate item in section 7.0 but are not included within the roofing budget costs.

The roof area does not have a gutter so as part of re-roofing works a gutter should be added.

The timber structure over the kitchen can be categorized as D1.

5.3 Insulation

If roofs are replaced they must be constructed to current regulatory standards (the Building Regulations Part L) and therefore usually require additional insulation that raises the height of the surface of the roof. The main asphalt roof is laid on Woodwool slabs (approximately 50mm thick) that form the deck that sits on the timber roof joists. In most areas there is a modern ceiling grid with laid in ceiling tiles but no insulation. The insulation qualities of this construction is extremely low and any insulation over lay would significantly improve the thermal capacity of the roof.

This requirement to increase insulation thickness has implications on flashings, upstands and anything that is above the roof such as the hall roof upstand cladding and the windows to the mono pitched roof areas. There are also a number of cables and other piped services across the roofs that would require re-routing. All of these items need to be considered and factored into any budget cost for roof replacement.

It should be noted that the high level windows are single glazed with louvres that have virtually no thermal properties. Replacing windows would require new thermally efficient windows and glazing which would improve the thermal efficiency of the glazing and reduce heating costs. Replacing windows with a higher cill would also negate the need to have a trough formed below the existing window cill level to keep the recommended 150mm upstand.

5.4 Asbestos

The age of the building (c: 1973) suggests that asbestos will be present in some areas. The school's Asbestos Management Plan and Record would need to be consulted, with a full intrusive Refurbishment and Demolition (R&D) survey carried out to the relevant areas before works could progress. This cost has been factored into the budget in section 7.0.

5.5 Access to carry out works

Due to the nature of any remedial works it should be carried out when the school is closed, or at least that section of the school is closed off i.e. during school holidays or with partial closure of sections of the school. Splitting contracts, restricting access to small areas or carrying out works in holiday periods can increase costs which should be factored into budgets. These costs have not been included within the budget costs in section 7.0.

5.6 Tank room cladding

The tank room is clad on all elevation with plastic coated steel cladding sheets that are corroding at sheet edges. This is usually where sheets are cut and the exposed steel edges are not sealed to form a protective coating. The sheets are generally in a fair condition for their age but should be considered for refurbishment or replacement. Sheets of this type can be coated but the coating is susceptible to peeling after a few years. If the flat roofs below the cladding are replaced they would be raised and therefore the cladding would have to be shortened. Recladding would be the best option. This would also allow a colour change. The internal framework should also be considered for preparing and decorating to protect the materials from corrosion.

The cladding is categorized B3.

5.7 Consequential improvements

Some items not directly associated with the roof coverings such as vertical cladding to the hall roof upstand, kitchen clerestory windows, fascias, downpipes and minor repairs to items above the flat roof areas would benefit from repair or replacement, especially if those items would be disturbed to facilitate the roof replacement.

Ancillary items that are not a D1 category that are attached to roof areas that are replaced would most likely require all or partial replacement due to damage caused by removing the roof coverings and therefore should be included with budget estimates.

The pitched roof over the hall has a perimeter gutter and a single downpipe that discharges onto the main flat roof area. This gutter would benefit by being replaced and the number of outlets increased so the gutter does not become overloaded during heavy rainfall.

The five window screens above the roof should be considered for replacement as part of a re-roofing project to both allow raising of the upstand to the roof and to improve the glazing insulation and security.

5.8 Downpipes.

All of the flat roofs have internal downpipes passing through the roof covering and down through the building to underground drainage. These pipes and adjacent roof areas are showing evidence of leaks with water stains on internal ceilings.

Outlets have received temporary repairs with coat on Acrypol waterproofing solution that clearly show where the roof surface raises adjacent to the outlet and will cause water to pond and not flow to the outlet. A new roof system will address this issue with suitable sump details around the outlets.

It is considered that the number of rainwater outlets is the minimum required for the roof areas and additional outlets should be considered where possible. A cost for this possible improvement has not been included in the budget but is shown in the additional table of section 7.0.

Replacement or refurbishment of these pipes should be carried out if the roofs are replaced because they are leaking and they would be disturbed when the roofs are removed and the new materials laid.

The pitched roofs have uPVC eaves gutters that are in a fair to poor condition. Some joints are leaking and some areas have plant growth evident which would suggest that the gutters have not been cleaned out for some time. The gutter to pitched roof 5 has not been raised with the roof tiles and there is now a significant gap between the eaves tiles and the gutter that should be raised.

The downpipes are categorized as D1, C2, C3 and B3 (see 7.0 Summary Table).

5.9 **Structure.**

The structure of the main flat roofs was ascertained as woodwool slab under the asphalt and timber boarding under the felt roofs. The core sample to the felt small roof 1 confirmed that the insulation beneath the waterproofing layer was dry. The core sample of the asphalt roof was also dry but this roof is known to leak in areas as was apparent during the heavy rainfall just prior to the second survey. It was also noted that the high level panelling within the school hall have significant staining and it is thought that the structure has also become wet due to the same leaks.

It should be noted that the core samples undertaken only inspect a small area of a roof.

The pitched roof areas have internal timber boarding which is thought to be laid directly below the waterproofing felt and tile battens and therefore there will be no insulation. To add insulation to these roofs would require either raising the tiles (possibly what has been done to roof 5), to insulate between the joists once the roof is removed or insulate below the timber boarding and fixing a new ceiling. Carrying out any work internally also has implications on the lighting and other fixed items.

It has been assumed that the roof structures are sound and suitable to support the current roofs and any re-roof decided upon, but any change in structural load should be considered by a Structural Engineer. The main structural elements should be checked as part of a re-roofing contract. Where leaks are known to have occurred the structures should be checked to confirm no serious damage has occurred. Localised repairs may be required which are included within the contingency in the budget.

5.10 **Safe access to service air conditioning units over main roof.**

There are two units placed on the main flat roof adjacent to the high level windows of pitched roof 2 and a rooflight. There is no provision for Engineers to safely access the condensers or any edge protection to the roof areas. Suitable safe access and fall restraint or fall arrest equipment should be installed to provide a safe working environment for Engineers accessing the units to undertake maintenance and repairs. This could be fixed ladders, lashing points for removable ladders, handrails, harness latches or similar. A new roof covering can have an additional sacrificial layer and differentiated colour to form walkways across the roof laid as required.

5.11 **Fees.**

The client should allow for professional fees to cover specifications, structural and thermal calculations and for managing and administering the project on behalf of the client during the works.

Allow 16% of the works costs for Professional fees and £1,000 for a Structural Engineer.

Allow for incidental costs to remove and refix services and to re-run services as required. As an example, the cable tray and cables running across the main roof would need to be removed and refixed (or replaced) to allow replacement of the roof. This should be done by a qualified and certified Engineer who can certify the completed work.

Allow a contingency of 10% to cover unknown items discovered and identified during the works.

The imposed loadings of a new roof should be assessed and the existing structures confirmed as suitable to support the loading by a Structural Engineer. Generally existing structures are suitable to support the additional materials laid on the roof but this should not be assumed.

5.12 Internal Ceilings

The ceilings within the school are in a good condition other than where they are water stained. The ceilings are either lay in tiles in a suspended grid system, fixed panels, plaster or exposed Woodwool slabs. The roofs above should be able to be replaced without affecting the ceilings, other than rooflight apertures, already stained areas, or if there is rain penetration during the works. Replacing the roof decking materials, if required, may produce debris and dust that could contaminate or damage the upper face of the ceilings. Because any new tiles will probably look slightly different to the existing tiles it may be possible to utilise existing ceiling tiles to replace damaged tiles and then refitting an individual small area with new tiles to avoid a mismatch.

6.0 Conclusion

6.1 Reroofing – Flat roofs

It is recommended that the main flat roof areas, raised kitchen roof and tank room roof are all replaced in the near future, within one year. The existing flat roofs can be cleaned back, stripped of debris and minor localised repairs made prior to overlaying new insulation and a full three layer roofing system that will have at least a 15 year guarantee. Longer guarantees are available depending upon manufacture and specification of materials.

Roof gradients to increase falls and reduce ponding can be improved by installing tapered insulation, although this has a cost premium. Additional insulation will be required to ensure the new roof covering conforms to the current Building Regulations.

The small felt flat roofs 1, 2 and 3 should be considered for overlaying as part of the roofing of the main roof to ensure continuity of finish.

D1 category items should be considered for replacement within one year.

6.2 Reroofing – Pitched roofs

Generally, the roofs are sound but probably have no insulation. If any works are carried out then insulation should be added to improve the thermal capacity of the roofs.

Pitched roof 5 has damaged tiles that should be replaced. The gutter line should be raised to suit the raised tiles.

Guttering should be refurbished or replaced.

6.3 Ancillary items

The existing flat roof downpipes should be replaced and additional ones added if possible.

All the rooflights should be replaced as part of a re-roofing contract to maintain any warranties. If the existing rooflights are refitted an allowance for breakages should be included.

Gutters to pitched roofs should be replaced.

The associated repairs and improvements to vertical cladding, upstands, windows above the roof areas improved insulation and service runs should be considered as part of a contract to integrate the works.

The windows, cladding, facias and eaves gutters should all be replaced with non timber materials to extend maintenance schedules.

6.4 Timescales

It is recommended that all the works to flat roofs, pitched roofs and ancillary items are carried out at the same time as one contract, by approved and experienced contractors, during a school closure period within the next year. It is unlikely that a contract of this size could be accommodated within the six week summer holiday period but may be possible with suitable pre-planning.

To ensure a suitable contractor is appointed and a satisfactory lead-in time is provided, any proposed works should ideally be tendered in the next six months.

7.0 Summary Table

Sub-element	Item	Condition/Priority	Cost (budget)	Location	Defect/Remedy
Main roof	Asphalt roof	D1	£140,000	All roof covering, including infill areas, kerbs and flashings	End of life, previous repairs, leaks and surface cracks. Replace within 1 year.
	Rooflights, and flues	C2	£35,000	Throughout roof area (31No.)	Replace all within year 7 and ideally with roof replacement
	Internal downpipes	D1	£5,000	Pass through roof and building to underground drainage.	Renew gullies and pipes as part of roof replacement.
	Fascias	D1	£10,000	To perimeter of roof.	Replace all areas.
	Safe Engineer's access		£7,500	To main roof	New safe access apparatus.
	Cladding to hall	C2	Included	Above main roof	Rotten timber likely to disintegrate when removed
Small flat roof 1	Felt roof	B2	£7,000	All roof covering.	Near end of life with minor surface degradation, cracks and compression marks. Replace within 4 years or with main roof.
	Internal downpipe	B3	£1,000	Passes through roof and building to underground drainage.	Renew gully and pipe as part of roof replacement.

	Rooflight	C2	£1,500		Replace within 2 years or with main roof.
	Fascias and flashings	B2	£1,000	To perimeter of roof.	With roof replacement.
Small flat roof 2	Felt roof	C3	£15,000	All roof covering.	In fair condition. Surface markings and minor degradation, significant debris and plant growth. Replace within 5+ years or with main roof.
	Internal gutters and downpipes	C2	£1,500		Renew gully and pipe as part of roof replacement.
	Fascias	D1	£2,000	To perimeter of roof.	As part of roof replacement.
Small flat roof 3	Felt roof	C3	£8,000	All roof covering, including kerbed areas to adjacent roofs.	End of life, blisters, rucks, creases and surface cracks. Replace within 2 years or with main roof.
	Internal downpipe	C3	£1,000	Passes through roof and building to underground drainage.	Not leaking – Clean. Renew gullies as part of roof replacement.
	Fascias	D1	£1,500	To perimeter of roof.	
Kitchen roof	Asphalt roof	D1	£7,500	All roof covering.	Patch repairs to asphalt and no gutter. Replace within 2 years or when

					main roof replaced.
	New gutter and downpipe	D1(nominal as none present)	£500	No gutter	Install guttering.
	Fascias	A4	£500	To perimeter of roof.	Install new.
	Timber structure to raised roof and windows	D1	£12,000	All structure replaced	New structure and windows
Tank room roof	Asphalt roof (assumed)	D1 (assumed)	£8,000	All roof covering including all kerbed areas.	Replace within 5 years or as part of a larger project to replace all the roofs.
	Internal downpipe	B3	£500	Passes through roof and building to discharge on main roof.	Not leaking – Clean. Renew gully as part of roof replacement.
	Edge trim	C3	£500	To perimeter of roof.	As part of roof replacement.
	Cladding	B3	£10,000	All elevations and decoration of framework internally.	New cladding.
Pitched roof 1	Felt and battens	C3 (assumed)	£10,000	To allow insulation and to replace old felt.	New felt and battens.
	Guttering	C3	£1,500	Replace with new uPVC.	New guttering.
	Insulation	Unknown	£10,000	To improve thermal capacity.	Install new.
	Brickwork	D1	£1,000	Repairs to gable ends and window reveals.	Open up, inspect and repair.
	Windows	C2	£15,000	Replace.	All new uPVC or aluminium.

Pitched roof 2	Felt and battens	C3 (assumed)	£10,000	To allow insulation and to replace old felt.	New felt and battens.
	Guttering	C3	£1,500	Replace with new uPVC.	New guttering.
	Insulation	Unknown	£10,000	To improve thermal capacity.	Install new.
	Brickwork	D1	£1,000	Repairs to gable ends and window reveals.	Open up, inspect and repair.
	Windows	C2	£15,000	Replace.	All new uPVC or aluminium.
Pitched roof 3	Felt and battens	C3 (assumed)	£10,000	To allow insulation and to replace old felt.	New felt and battens.
	Guttering	C3	£1,500	Replace with new uPVC.	New guttering.
	Insulation	Unknown	£10,000	To improve thermal capacity.	Install new.
	Brickwork	D1	£1,000	Repairs to gable ends and window reveals.	Open up, inspect and repair.
	Windows	C2	£15,000	Replace.	All new uPVC or aluminium.
Pitched roof 4	Felt and battens	C3 (assumed)	£10,000	To allow insulation and to replace old felt.	New felt and battens.
	Guttering	C3	£1,500	Replace with new uPVC.	New guttering.
	Insulation	Unknown	£10,000	To improve thermal capacity.	Install new.
	Brickwork	D1	£1,000	Repairs to gable ends and window reveals.	Open up, inspect and repair.
	Windows	C2	£15,000	Replace.	All new uPVC or aluminium.

Pitched roof 5	Tiles	D1	£400	Replace broken items.	
	Guttering	D1	£3,000	Raise level or replace.	
	Brickwork	D1	£1,000	Repairs to gable ends and window reveals.	Open up, inspect and repair.
	Insulation	Unknown – may have been improved	£10,000	To improve thermal capacity.	Install new.
	Windows	C2	£15,000	Replace.	All new uPVC or aluminium.
Hall roof	Felt and battens	C3 (assumed)	£11,000		
	Guttering	D1	£4,000	Replace.	All 4 sides and add 2 downpipes
	Insulation	Unknown	£10,000	To improve thermal capacity.	
	Rooflights	B3	£500	Service.	
	Cladding	D1	£4,500	Replace.	With non-timber to all 4 sides.
Asbestos			£10,000	Assumed in some areas – subject to survey.	
Services	Removing and replacing		£5,000		
Structural works	Roof structure	Provisional	£15,000	If required.	Structural improvements.
		Incidental items	£10,000	Including internal repairs.	
		Total	£526,200		
		Contingency 10%	£52,620		
		Fees 16%	£92,611		
		Structural Engineer	£1,000		
		Budget	**£672,431**		

All sums exclude VAT

Not included within budget

Kitchen Extract system			£50,000	If required	New extract hood with filters and gas cut off valve.
Caretaker's Bungalow			£40,000	New felt, insulation, guttering and repairs	Roofing as school pitched roofs.
Additional gullies and downpipes			£7,500	To increase capacity	New roof outlets

All sums exclude VAT

Summary of D1 items

Main roof	Asphalt roof replacement	D1	£140,000		
	Internal downpipes	D1	£5,000		
	Fascias	D1	£10,000		
Small flat roof 2	Fascias and flashings	D1	£2,000		
Small flat roof 3	Fascias	D1	£1,500		
Kitchen roof	Asphalt roof	D1	£7,500		
	Timber structure	D1	£12,000		
Tank room roof	Asphalt roof	D1	£8,000		
Pitched roof 1	Brickwork	D1	£1,000		
Pitched roof 2	Brickwork	D1	£1,000		
Pitched roof 3	Brickwork	D1	£1,000		
Pitched roof 4	Brickwork	D1	£1,000		
Pitched roof 5	Tiles	D1	£400		
	Guttering	D1	£3,000		
	Brickwork	D1	£1,000		
Pitched roof 6 - Hall	Guttering	D1	£4,000		
	Cladding	D1	£4,500		
		Total	£202,900		
		Contingency 10%	£20,290		
		Fees 16%	£35,710		
		Budget	**£258,900**		

All sums exclude VAT

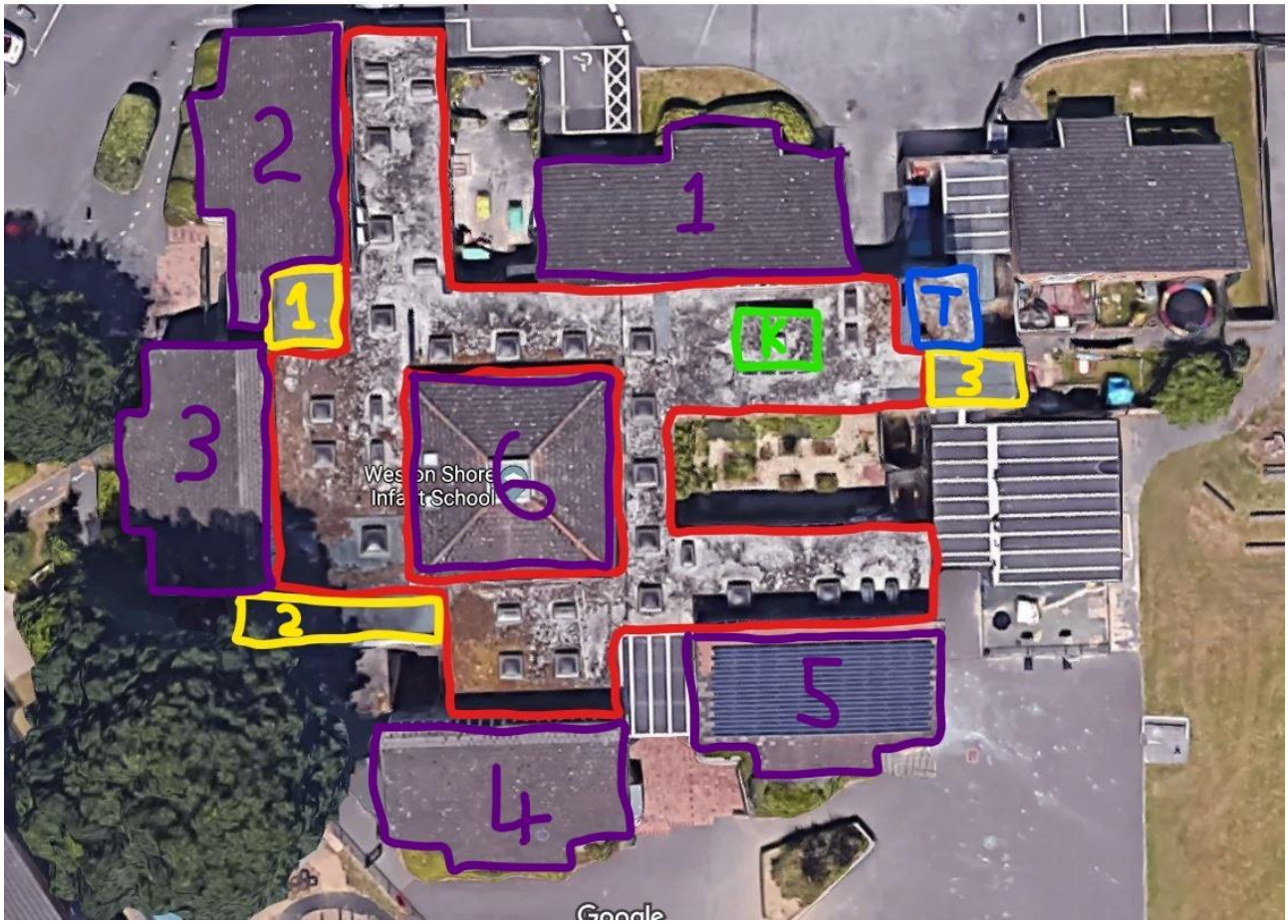
It should be noted that associated works may also be required in addition to the D1 items shown above.

Appendices

8.0 Appendices

Appendix A

Roof Plan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Appendix B

Bauder Report

Roof Survey **Report**

Western Shore Infant School
Foxcott Close, SOUTHAMPTON
SO19 9JQ, England

6th July 2018
Project Reference: B182424/1

PREPARED FOR:
Allan Fenn
Faithful + Gould

PREPARED BY:
Matthew Tenison
Area Technical Manager
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Contents

1 Introduction

Further to our site inspection we have prepared the following survey report based on the current condition of the existing roof/s. This survey report is based on our visual inspection of the roof/s together with our exploratory core test samples. It should be noted that core test samples are taken to identify the existing roof construction to deck level and to provide an indication of the roof condition. Due to the limited number of core samples that can be practically taken on a roof, Bauder Ltd cannot be held responsible for any changes in roof build-up in areas where core samples have not been taken.

1.1 Description of Building and Weather Conditions

Building use – Educational
Height in Storeys: - one

The weather conditions at the time of our survey inspection were dry and sunny.
The Roof surface at the time of our survey was dry.

1.2 Roof Access

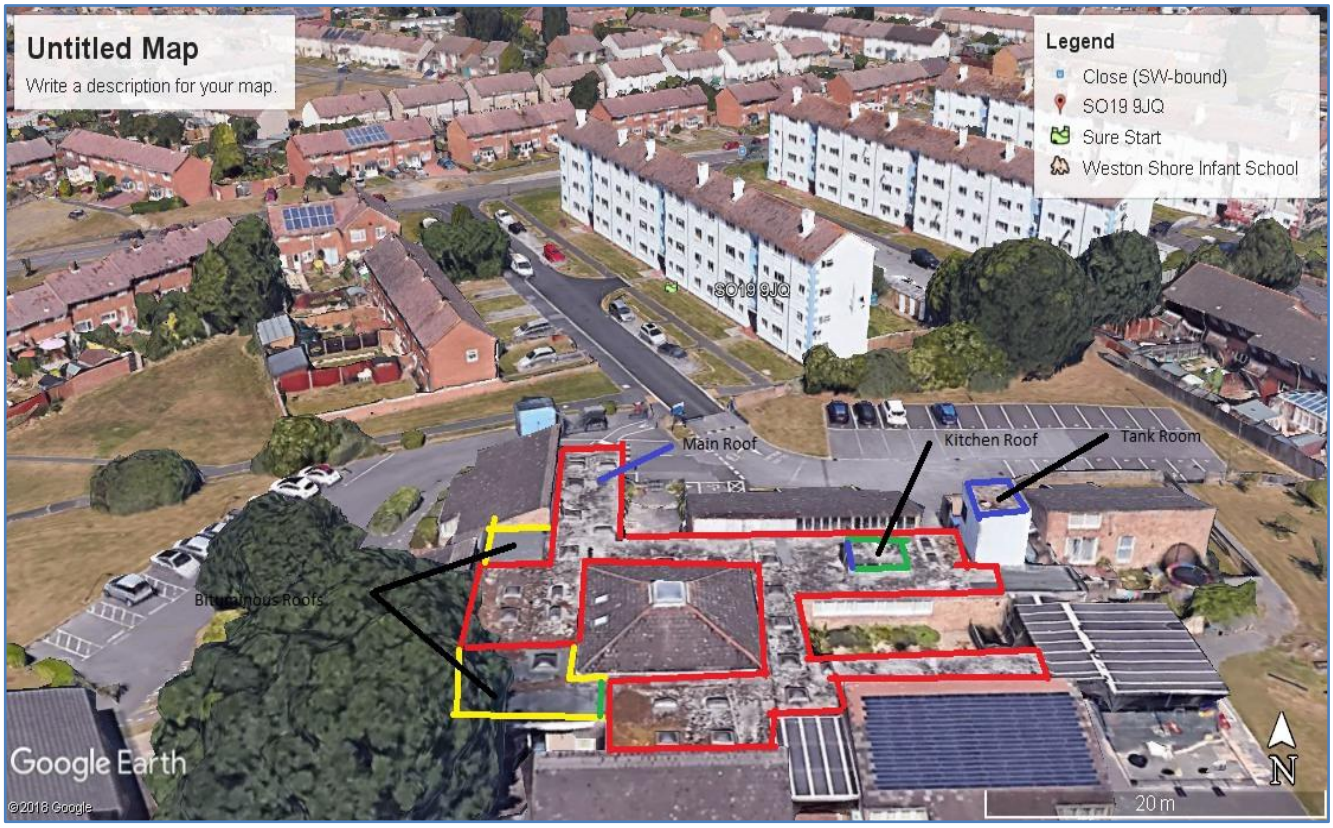
Roof access was gained externally using a single storey surveyor's ladder.

1.3 Confirmation of Client brief

To carry out an evaluation and produce a condition report for the roof areas concerned.

1.4 Roof Plan

1.4.1 Main Roof, Classroom Roof



Any measurements displayed on the map above are approximated and are therefore not to be used in tenders.

2 Existing Roof Construction

2.1 Core Sample Analysis

Core samples are taken as a method of confirming the existing deck and waterproofing system construction and provide indicative feedback regarding general condition. Please note that the findings are representative only of the particular location tested and this is used to give general guidance as to the likely overall condition and deck construction.

2.1.1 Main Roof

No. of core samples taken: 1

Construction Type: Cold Roof

Surfacing: Stone Chippings
Waterproofing: Mastic Asphalt
Insulation: None present
Vapour Control: Not applicable
Screed: Sand/cement screed
Roof Deck: Woodwool slab
Internal inspection: No internal access available at the time of our inspection

Condition of core sample: The deck is dry.

Core Analysis sample showed the deck to be dry.

2.1.2 Classroom Roof

No. of core samples taken: 1

Construction Type: Warm Roof

Surfacing: Self finished waterproofing
Waterproofing: BS747 Built-up bituminous membrane system
Insulation: Rigid PUR/ PIR board
Vapour Control: Bituminous membrane vapour control layer
Roof Deck: Timber boarding
Internal inspection: No internal access available at the time of our inspection

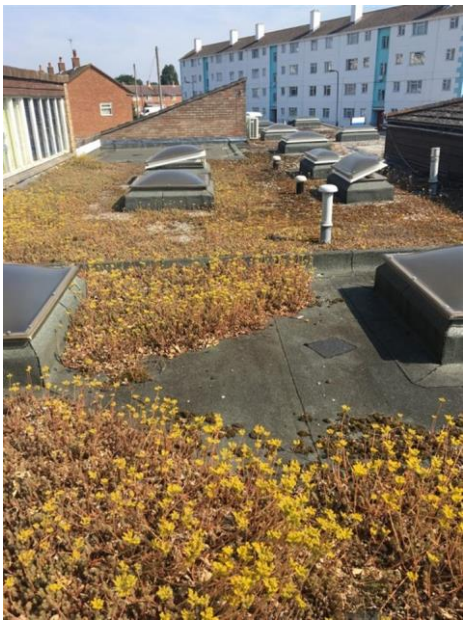
Condition of core sample: Insulation is dry.

The core analysis was dry in the area that was cored.

Both core samples were left in a water tight condition.

3 Issues and Considerations

3.1 Main Roof



This picture shows an overview of the main roof.

3.1.1 Decks

The decking is believed to be in a good condition and of a suitable construction type to be reused as part of the roof refurbishment.

3.1.2 Existing Waterproofing

The existing waterproofing system is constructed as a warm roof, comprising built-up bituminous membranes incorporating insulation and a vapour control layer, installed onto the roof deck.

The existing waterproofing system is constructed as a cold roof, comprising of mastic asphalt, on a loose laid sheathing applied directly to the deck.

From our inspection, the existing waterproofing system appears to be in reasonable condition, but with some isolated defects noted. Whilst it is presumed to be generally watertight, some remedial works are required to maintain integrity and on-going serviceability. It is worth investing in this work now before the current defects have the opportunity to deteriorate further.

This waterproofing system is showing all the typical defects consistent with a covering of this age including; surface oxidisation, cracks, splits, blisters, rucks and signs of repair.

The asphalt is showing all the typical defects consistent with a covering of this age including; surface oxidisation, cracks, splits, blows, slumping and signs of repair.

The thermal performance of the existing roof build-up is poor and well below current standards. If re-waterproofed, the roof would not meet current Building Regulation requirements without the insulation also being upgraded. One of the risks associated with inadequate levels of insulation is the potential for condensation to form within the structure or waterproofing system during

periods of climatic extreme. This roof would therefore benefit from being thermally upgraded in line with current standards.

Alternative view of the main roof.

Many areas of this roof have been repaired using either Aquapol or a commodity membrane.

There are splits and cracks in the asphalt. This school was built in 1974 and this is probably the original roof.

The area under the windows shows where the cover flashing is missing and a repair using felt has been carried out.

This picture shows where the detailing is failing and water ingress has occurred.

3.1.3 Falls

Current roof falls are minimal, but appear to be generally functional. Should ponding water be deemed undesirable there is an opportunity whilst re-waterproofing to enhance the existing falls utilising tapered insulation.

3.1.4 Drainage

In our opinion the number of outlets is inadequate to service this roof area. Therefore consideration should be given to increasing drainage provision by installing additional outlets.

The amount of vegetation on this roof is causing real issues and water can not drain freely to the internal outlets. When this roof is replaced I would recommend a regular inspection and maintenance programme to keep the roof clear.

The amount of vegetation on the roof suggests that ponding water is a real issue.

More evidence of ponding water.

3.1.5 Upstands and Details

Requirements for waterproofing at upstands and details

Codes of Practice (BS 8217: 2005) dictate that the minimum height for waterproofing upstand detailing is 150 mm, taken from the finished surface. Perimeter kerbs should be a minimum height of 50 mm above the finished surface and detailed with a welted drip detail or edge trim.

There should be no mechanical penetrations to kerb waterproofing or need for secondary weathering. Kerbs that are weathered with mechanically fixed metal capping or concrete copings are categorised as 'abutment upstands' and must comply with the minimum height requirement of 150 mm.

This minimum height rule applies equally to upstands to roof lights, pipes, vents and door and window thresholds.

Waterproofed upstand detailing is usually weathered with lead or metal counter-flashings, metal capping and cladding. Termination bars should only be used when fixing to concrete abutments, where no provision exists for other forms of secondary weathering.

Low Upstands beneath Clerestory Windows

Once the roof has been refurbished there will not be sufficient height beneath the existing clerestory windows to form a sufficient waterproofing upstand. Due to new surface levels it will be necessary to remove and replace the clerestory windows with smaller units to fit a reduced opening.

Removal of vertical cladding for access to re-waterproof

The existing cladding obstructs access to re-waterproof the upstand. It will therefore be necessary to remove the cladding to enable the roofing works to be undertaken. Upon completion the cladding can be reinstated allowing for any modification that maybe required.

With the introduction of insulation on this roof the windows will need to be raised.

The cladding will need to be raised to allow the introduction of insulation onto this roof.

Increasing the height of perimeter kerbs

When the waterproofing is refurbished the perimeter check kerbs will not provide a 50mm upstand above the finished roof level. As a consequence the perimeter kerb will require raising.

3.1.6 Rooflights

The current rooflights are proprietary plastic glazed units. These fall below current thermal and light transmittance standards and the performance will continue to decrease with age. The service life of these rooflights is not compatible with the service life of the new waterproofing system and for these reasons we propose that they are replaced. Please be aware that these units may contain asbestos in the internal linings.

All the roof lights will be changed in the event of a complete refurbishment. The new lights will be triple skinned poly carbonate.

3.2 Classroom Roof

3.2.1 Existing Waterproofing

The existing waterproofing system is constructed as a warm roof, comprising built-up bituminous membranes incorporating insulation and a vapour control layer, installed onto the roof deck.

From our observations, we found the existing waterproofing appears to be in serviceable condition and presumed watertight, with no obvious defects that are likely to affect waterproofing integrity in the short to medium term.

The bituminous roof sections are in good condition.

4 Proposals

4.1 Main Roof

- The existing deck is to be re-used.
- The condition of the existing waterproofing is considered suitable for receiving an overlay system.
- Bauder Tapered Insulation will be incorporated into our specification, as provision for improving the roof falls and overall drainage performance.
- The existing internal rainwater outlets are to be removed and replaced with new Bauder Insulated rainwater outlets. These prevent thermal bridging and offer improved drainage performance, ensured compatibility and a secure method of attachment to the new waterproofing. The life expectancy of these outlets is consistent with the new waterproofing system and is covered within our guarantee.
- The existing clerestory windows are to be removed to allow access to raise the upstand kerb in preparation for re-waterproofing. New counter flashings must be installed prior to the new resized window units being fitted. Work should include making good and redecoration.
- The height of existing perimeter check kerbs must be increased to provide a minimum 50mm upstand above the finished roof level. The perimeter is to be raised to one consistent level around the full roof area.
- The existing rooflights should be replaced with new modular Bauder Rooflight units that offer improved thermal and light transmittance performance and are classified as being non-fragile These will complement the performance of the replacement waterproofing system during its serviceable life. Please advise your requirements and we will include these within our separate schedule and specification for replacement Bauder Rooflights.

4.2 Proposed Waterproofing System

Main Roof and Classroom Roof

Bauderflex Roof System

The Bauderflex Roof System offers an exceptional waterproofing solution to the specifier working with a limited budget, whilst still delivering a robust quality system with proven longevity. This product uses high tensile polyester reinforcement with highly modified SBS elastomeric bitumen. This produces a finished product with an elasticity of over 40%.

Where required the system will include Bauder PIR with a choice of either glass tissue or aluminium facing offering versatility in installation methods for both the insulation and the membranes. Bauder insulation provides excellent thermal performance and has outstanding dimensional stability and compressive strength, achieving an "A" rating in the BRE Green Guide. Bauderflex is suited to both new build projects and the refurbishment of existing buildings.

Guarantee Information

The Bauderflex system is supplied with a 15 year guarantee that includes products and workmanship. Full terms and conditions are available by request.

Key Features

- Insulation and waterproofing products are all manufactured by Bauder resulting in complete system compatibility and single source responsibility.
- Robust and extremely durable waterproofing that minimises the risk of physical damage and is capable of withstanding maintenance foot traffic.
- Bauderflex has an outstanding track record and has been used in the UK for over 30 years with proven durability in service. This provides complete peace of mind to specifiers past and present.
- 4.2mm cap sheet with high tensile strength and choice of 3 colours.
- Bauder site technicians monitor and sign off each installation and provide up-to-date site inspection reports directly to our clients via email.
- Bauder provides installation training for our approved contractor operatives to ensure the highest quality of the workmanship maintained.
- Reliable application in both high and low ambient temperatures – enables all year around installation.
- Reduced rain noise to gain an extra credit under point 5 of section Hea of BREEAM education 2008 for most projects.

5 Health & Safety and Construction Design Management

Bauder believes in promoting a strong safety culture at all times. Our Staff will adhere to the appropriate risk assessments and method statements as required under the Health and Safety at Work Act 1974 and Work at Height Regulations 2005. It is the client's duty of care to advise of any specific health and safety issues pertaining to the project as required under the Work at Height Regulations 2005.

As part of our duty of care we would like to draw attention to the following information:

The HSE Guide H&S in Roof Work (HSG33) states that **all** roofs should be treated as fragile unless declared otherwise by a competent person. Please refer to the Work at Height Regulations 2005 provision 9 for information on working with fragile/suspected fragile roof areas. Under the Health and Safety at Work Act 1974 Sections 3 and 4, it is the responsibility of employers and anyone who controls the work of others to ensure so far as it is reasonably practicable that persons are not exposed to risks that impact on their health and safety. Appropriate control measures must be in place before any work or contact with a fragile/suspected fragile roof area commences.

Safe access and egress to a roof is a major risk and requires careful planning. In particular, the following are likely to be fragile:

- Non reinforced fibre cement sheets e.g. asbestos
- Corroded metal decking
- Woodwool slabs
- Rotten chipboard or similar
- Stramit
- Slates or tiles
- Old roof lights
- Glass (including wired)

Specifying non fragile rooflights will help reduce the risk of falls from height. A non-fragility rating is required by the HSE (Health and Safety Executive) in order to comply with CDM (Construction Design and Management) Regulations 2015.

We draw your attention to your duties under the Construction (Design and Management) Regulations 2015. Regulation 4, Client's duties in relation to managing projects states that the client must make suitable arrangements for managing a project, including the allocation of sufficient time and other resources. Regulation 5, Appointment of the Principal Designer and the Principal Contractor states that where more than one contractor will be working on a project at any time, the client must appoint a Principal Designer and a Principal Contractor.

Please note that although Bauder will assist with the roof waterproofing system design, we will

not undertake the role of Principal Designer.

It is always the responsibility of the contractor to carry out a risk assessment on all aspects of the contract. The 'Safe2Torch' checklist is solely for guidance for the safe installation of torch-on reinforced bitumen membranes and use of gas torches in the workplace.

Appendix C

Photographs

WESTON SHORE INFANT SCHOOL

Aerial Photograph (© Google)

Front elevation of school

Main roof

Main roof

Main roof – Rooflight and Air conditioning condenser on asphalt roof adjacent to pitched roof 3

Main roof looking towards tank room, pitch roof 1 on left, hall roof on right

WESTON SHORE INFANT SCHOOL

Main roof, pitched roof 4 on left, hall roof on right

Main roof flashing example – pitched roof 5

Main roof – Excessive plant growth

Main roof and high level glazing, pitched roof 4

Main roof – plant growth. Pitched roof 4 on right and pitched roof 5 on left

Plant growth and cracking to brickwork, pitched roof 2

WESTON SHORE INFANT SCHOOL

Main roof - patch repair

Main roof – edge patch repair

Split asphalt edge detail

Split asphalt edge detail

Main roof – poor detailing, level change and damaged flashing

Edge detail patch repair

WESTON SHORE INFANT SCHOOL

Main roof flashings and high level windows

Main roof gully outlet and rooflight

Hall roof above main asphalt roof

Service trunking on blocks

Hall roof above main asphalt roof – one of two downpipes

Example of non-roofing fabric requiring repairs

Core sample of Asphalt roof

WESTON SHORE INFANT SCHOOL

Small felt roof 1 - Felt

Core Sample of small felt roof 1

Small felt roof 1 – upstand, flashings screw fixed and blister

Small felt roof 1 - blister

Small felt roof 2 in back ground, main roof in fore ground

Small felt roof 2 to lower level showing step down from main roof

WESTON SHORE INFANT SCHOOL

Small felt roof 2 – plants and debris in gully

Small felt roof 2 – cleared gully

Small felt roof 3

Patch repair to main asphalt roof adjacent small roof 3

Tank room roof edge detail similar to main roof

Gutter outlet of tank room roof onto main roof

WESTON SHORE INFANT SCHOOL

Main roof, raised kitchen roof and tank room in distance

Raised kitchen roof – asphalt with patch repairs

Kitchen roof – patch repair

Clerestory kitchen windows

Kitchen internal

Kitchen internal

WESTON SHORE INFANT SCHOOL

Water staining to corner of hall roof

Area of building requiring maintenance

Patch repair to hall roof hip tiles

Area of building requiring maintenance and single glazing

Brickwork cracking and excessive plant growth on roof

Plant growing in stones and debris on roof

WESTON SHORE INFANT SCHOOL

Corroding Tank room cladding at sheet ends

Bulge in cladding – East elevation

Felt roof 2 swept off exposing felt and gully

Felt roof 2 swept of debris and plant growth

Hall roof. Decaying cladding and poor guttering

Warped and cracked cladding

WESTON SHORE INFANT SCHOOL

Recent Acrypol repair to asphalt roof adjacent to hall roof North East corner

Broken hall roof cladding and plant growth below

Recent Acrypol patch repair to asphalt roof adjacent to pitched roof 3

Pitched roof 1, lifting and opening mortar joints

Pitched roof 1

Pitched roof 1

WESTON SHORE INFANT SCHOOL

Pitched roof 5 – leaning brick gable and opened joints

Pitched roof 5 – ridge dropped away from brick wall gable

Pitched roof 3

Pitched roof 3

Pitched roof 2 – gable end South

Pitched roof 2 – eroded pointing

WESTON SHORE INFANT SCHOOL

Pitched roof 4 – newer shorter ridge tiles

Pitched roof 4

Water staining in hall

Stained ceiling below pitched roof 1

Internal of rooflight

Underside of woodwool decking below asphalt roof

WESTON SHORE INFANT SCHOOL

Woodwool deck below asphalt, timber joist and ceiling tile lifted out

Ceiling tiles in grid below woodwool deck

Fixed (probably plasterboard) and painted ceiling below felt roof 2

Interior of pitched roof 5 – no obvious movement

Pitched roof 1 – trim pulling away

Pitched roof 2

WESTON SHORE INFANT SCHOOL

Leaking gutter water damage to fascia

Pitched roof 5 – Solar panel tiles

Solar tiles

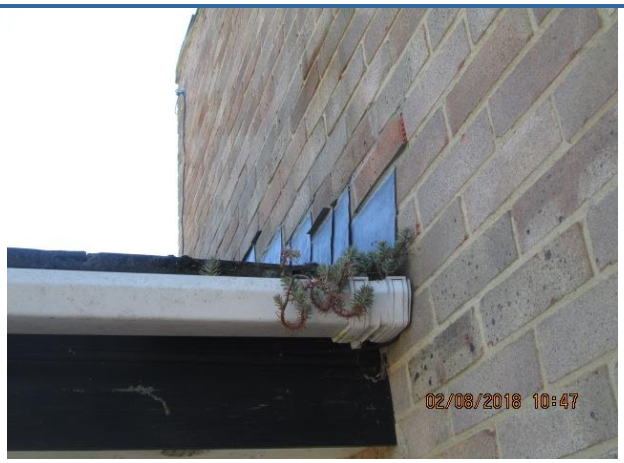
Pitched roof 5 – broken tiles

Pitched roof 5 – raised tiles but gutter at original lower level

Pitched roof 5 – raised tiles and infill barge board strip

WESTON SHORE INFANT SCHOOL

Pitched roof 4



Gutter with plant growth

Example of warped and cracking fascia with minimal decoration

Degraded timber barge board

Corner post under asphalt roof

Previous repair to post now failing

WESTON SHORE INFANT SCHOOL

Repaired and eroding post

Lintol rusting and lifting brickwork over store door

Rusting lintol lifting brickwork

Rusting lintol over store door

Caretaker's bungalow – North elevation

Caretaker's bungalow – East and South elevations

WESTON SHORE INFANT SCHOOL

Aerial Photograph (© Google) North ↑

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