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# Report Document

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**Project: – Barbican Estate**  
**Non-Langley Roof Areas**

Barbican Estate  
City of London  
EC2Y

**Client:**

Paul Murtagh  
City of London Corporation  
City of London  
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**Report written by**

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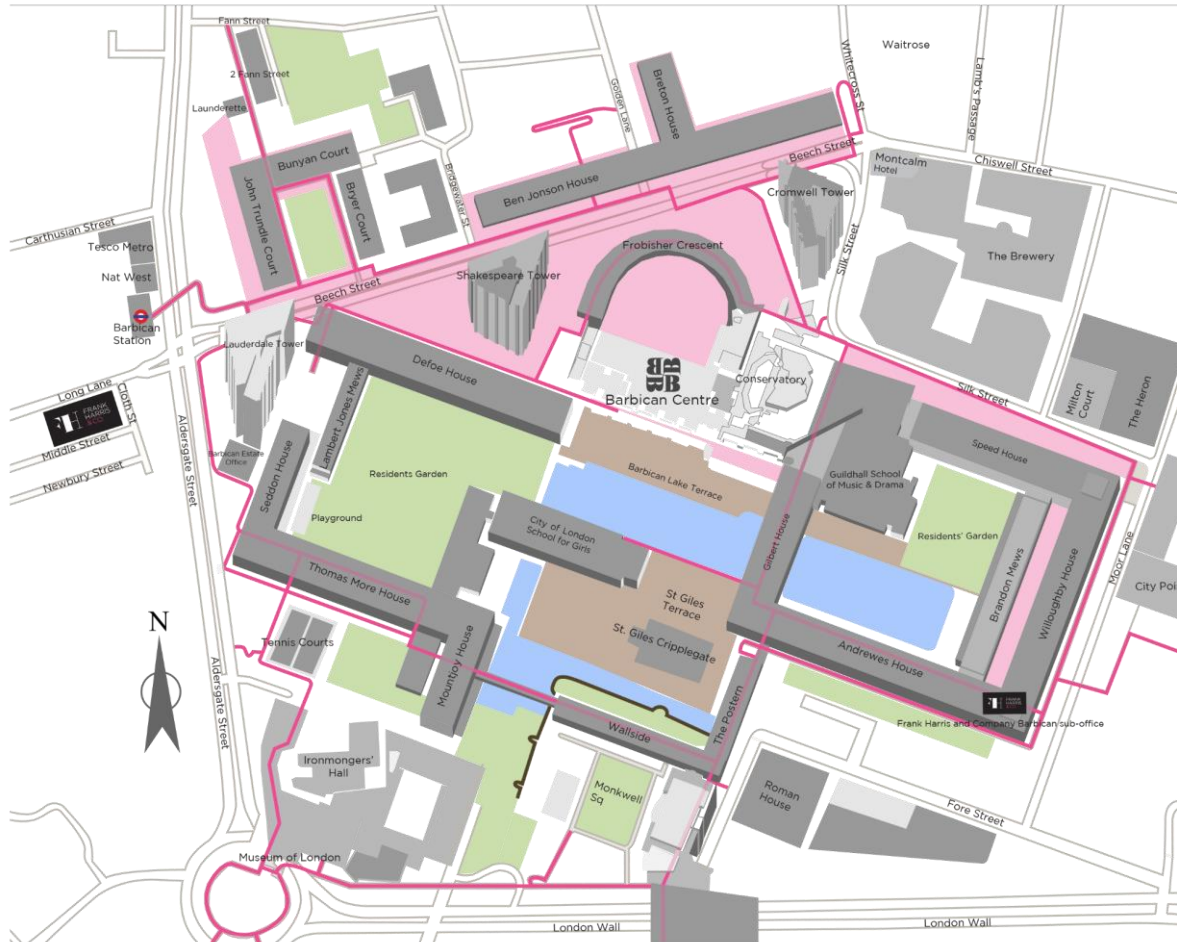


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## Roof Survey Report & Recommendations

Roof areas covered by this report: as identified below.



### 1.0 Outline Description:

- This report has been produced for Mr Paul Murtagh of the City of London Corporation for the express use in evaluating the condition of the current waterproofing of the Non-Langley roof areas.
- The report is based upon our site inspection survey undertaken in March 2017 and should be read in conjunction with the enclosed photographs.
- All buildings are under City of London Corporation.
- Access to the roofs is via communal staircases and tank room doors.
- Weather conditions at time of survey: Dry and Mild.

## 2.0 Scope of Report:

- Information contained within this report relates to the property as identified in the title headers of this document only.
- This report is not a structural survey.
- Any comments on roof structure or other building related issues in this report should not be taken to imply that its integrity has been assessed or deemed acceptable. A qualified party should verify any concerns relating to the integrity and/or capabilities of any part of the structure.
- Langley Waterproofing Systems Ltd reports are written on the basis that the substrates, roof deck and structure are sound and durable. We cannot accept responsibility for the consequences of the latent defects in the roof deck and structure.
- No tests were carried out to establish the presence of deleterious materials on, around or within the property. However, suspected items will be highlighted within this report that may require further investigation if noted.
- No tests were carried out to service installations.
- *General Note: "Listed Building Status" It is the responsibility of the building surveyor and/or client to ascertain the status of the building/s in question.*

## 3.0 Analysis:

The inspections were carried out to analyse the current condition of all roof areas currently that are non-Langley roof areas to ascertain if the specified areas were one of the following: -

- A In good condition and no refurbishment needed at this present time with a lifespan of 8-10 years.
- B In average condition with 4-5 years of lifespan. Some maintenance work required such as unblocking drainage.
- B2 Barrel Vault roofs only-** In average condition with 3-5 years of lifespan. Some maintenance work needed such as unblocking drainage and would benefit from cleaning of waterproofing. Note: Some have been coated in what appears to be simply a coat of paint or poor quality liquid system, which would negate the original guarantee.
- C In poor condition with signs that the waterproofing is likely to fail within 1-2 years' lifespan.
- D Urgent attention needed with 0 years' lifespan and the waterproofing non-effective.

The inspections were carried out by a member of the LWS technical team, Graham Jackson, along with an Assistant Area Manager Chetin Ali.

Overview of All Roof Areas inspected:-

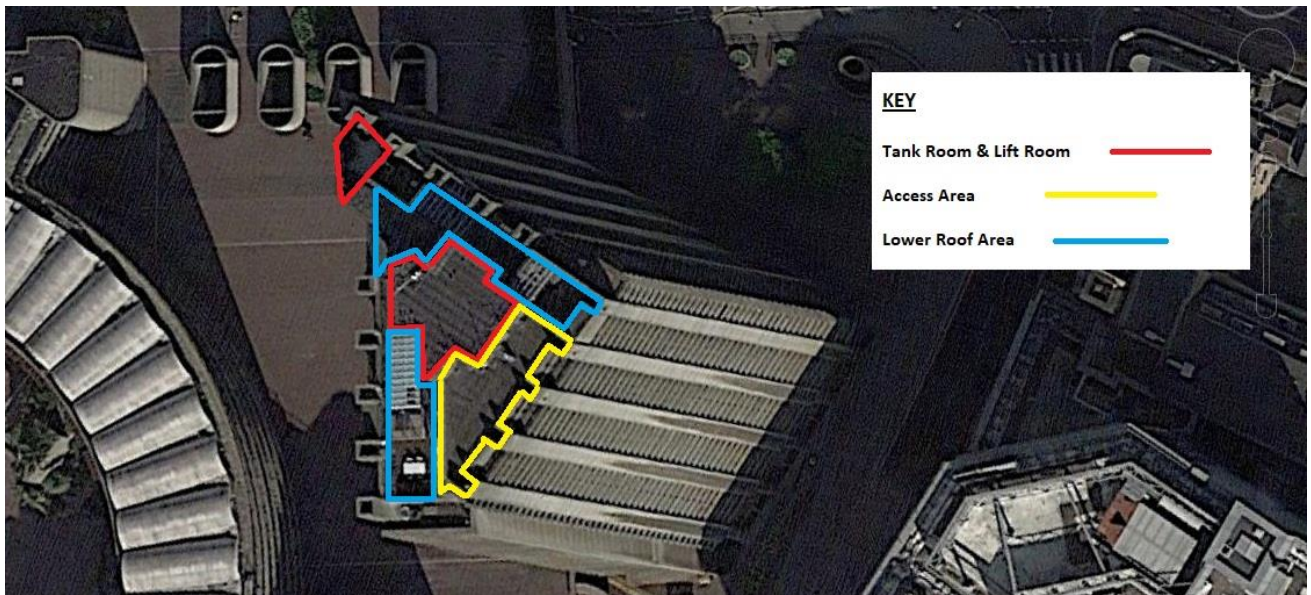
	Area	System	Lifespan	Condition	Comments
John Trundle Court	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
Bunyan Court	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
Bryer Court	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
Defoe House	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
Ben Jonson House	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
Breton House	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
Seddon House	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
Seddon House	Main Roof	BUR Felt	8-10 Years	A. Good	No signs of failure with good detailing – Keep the outlets clear.
Thomas More	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
Mountjoy House	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
Shakespeare Tower	Lower Roofs	BUR Felt	4-5 Years	B. Average	Average condition with good detailing. Boxed gutter needs to be unblocked.
	Access Area	BUR Felt	8-10 Years	A. Good	No signs of failure with good detailin, recent overlay apparent– Outlets to be cleared/ unblocked.
	Balcony Roofs	BUR Felt	4-5 Years	B. Average	Ceramic tiles over BUR felt – detailing looks good with no signs of failure – average condition.
	Link Roofs	BUR Felt	4-5 Years	B. Average	Tiny blisters, however waterproofing in average condition with good detailing.
	Tank Room	BUR Felt	2-3 Years	B. Average	Blistering and mineral migration, Apparent repairs around the perimeter.

	Area	System	Lifespan	Condition	Comments
<b>Cromwell Tower</b>	Lower Roofs	BUR Felt	4-5 Years	B. Average	Small amounts of mineral migration, felt waterproofing showing no signs of failure with average detailing.
	Access Area	BUR Felt	2-3 Years	C. Poor	Mineral migration, felt waterproofing showing signs of failure including blistering with average detailing.
	Balcony Roofs	Asphalt	1-2 Years	C. Poor	Poor condition with slumping in asphalt. Felt repairs have taken place and no counter flashing is present. Refurbishment needed soon.
	Link Roofs	BUR Felt	4-5 Years	B. Average	Average condition with detailing all in good condition.
	Tank Room	BUR Felt	2-3 Years	B. Average	Blistering and mineral migration, Apparent repairs around the perimeter.
<b>Barbican Centre</b>	Main Roof	Single Ply	1-2 Years	C. Poor	1no. repair with liquid, in overall average condition with no signs of failure. Guarantee will no longer be in force. Roof lights in OK condition.
	Lift/Stairwell Roofs	Asphalt	4-5 Years	B. Average	Average condition with vegetation growth. Some areas have been overlaid with BUR felt.
<b>Frobisher Crescent</b>	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
<b>Gilbert House</b>	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
	Main Roof	BUR Felt	4-5 Years	B. Average	Average condition with good detailing. No major repairs. Small amounts of moss and lichen build up
<b>Andrewes House</b>	Barrel Roofs	Liquid	4-5 Years	B2. Average/ D Urgent (outlets)	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed. Reported leaking within 2no scupper outlets within one valley section, cracking de-bonding of liquid material is evident around the outlets- <b>This will need urgent repair</b>
	Main Roof	Asphalt	4-5 Years	B. Average/ C. Poor	Asphalt waterproofing has had repairs with felt in places. Detailing with termination bar is showing no signs of failure.
	Tank Room Roofs	Asphalt	4-5 Years	B. Average	Asphalt waterproofing in average condition with minimal slumping in areas. Metal capping all intact. Outlets to be cleaned and maintained.
	Terrace Areas	Asphalt	4-5 Years	B. Average	Hard to identify condition due to concrete paving slabs not being lifted. All details and asphalt skirtings in average condition.



Guildhall School of Music and Drama	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
Willoughby House	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
	Main Roof	BUR Felt	4-5 Years	B. Average	Felt in average condition with no signs of failure or repairs. Maintain drainage and keep unblocked.
Speed House	Barrel Roofs	Liquid	4-5 Years	B2. Average	Would benefit from cleaning, and drainage to be maintained/unblocked. In areas, lightning strips need to be re-fixed.
Lambert Jones Mews	Main Roofs	Asphalt covered with block paving	4-5 Years	B. Average	Asphalt has been covered with block paving. Detailing looks in average condition with no signs of failure. Keep drainage maintained.
The Postern	Main roof	Asphalt	1-2 years	C. Poor	Moisture found within the insulation, and therefore consideration should be made for refurbishment
Wallside	Main roof	Asphalt	1-2 years	C. Poor	Roof appears to be in reasonable condition, but moisture within the insulation at the low point.
Lauderdale	Tank Room	BUR Felt	4-5 years	B. Average	In reasonable condition, and appeared to have been refurbished not too long in the past.
	Access Area	BUR Felt	2-3 years	Below Average	In fair condition, but much mineral migration and defects evident
	Lower Roof/Terrace	Partly felt	Nk		Due to inaccessible nature (private balcony) it was not possible to fully assess this roof area.

Please see aerial view below to identify roof areas on all 3 tower blocks – Lauderdale, Cromwell and Shakespeare. Cromwell Tower has been used as an example.



### 3.8 Photographic Record:



1.  
General condition of all barrel roofs that would benefit from being cleaned.



2.  
In many areas, lightning strips need to be re-fixed. This is evident on many of the Barrel roof areas.



3.  
As above.



4.  
Barrel roof area that has been painted/coated.



5.  
Close up of the existing lead and gutter that has been painted/coated.



6.  
Barrel roof drainage needs to be maintained and unblocked in places.



7.  
Main roof for Cromwell and Shakespeare Tower; BUR felt in average condition and no signs of repairs or failure.





8. Overview of Cromwell and Shakespeare Tower link roofs that are in average condition.



8. Cromwell Tower balcony roof  
Overview of Cromwell Tower balcony roof; in poor condition and has previous repairs.



9. Cromwell Tower balcony roof  
Felt repair has started to fail leaving an aperture for potential water ingress.



10. Cromwell Tower balcony roof  
Felt repair has become ruckled and blistered and liquid repairs have taken place to the concrete upstand.



**11. Cromwell Tower balcony roof**

Existing asphalt underneath the door threshold has started to slump.



**12. Barbican Centre roof**

Overview of the Barbican Centre roof.



**13. Barbican Centre roof**

Liquid repair indicating previous water ingress issues.



**14. Barbican Centre roof**

Vegetation growth on existing asphalt stairwell roof.



**15. Andrewes House Barrel Roof Areas**

Liquid has de-bonded from the concrete upstand with cracking also evident causing water ingress.



**16.**

As Above.



**17.**

As Above.



#### **4: Works required**

Based on the above analysis, we would therefore recommend the following works be carried out:-

##### **All Barrel Roof Areas**

Barrel roof areas are generally in average condition and have been waterproofed with a liquid material. Some barrel roofs have been re-painted/coated with others being dirty and dark in appearance. In areas, lightning strips have broken and lightning strip pads have de-bonded from the existing liquid material. Drainage is through an internal outlet or through an internal lead gutter that drains onto the main roof area.

We recommend that drainage is be maintained and kept unblocked, all lightning strips are to be re-fixed were needed. All barrel roof areas could be prepared, primed and coated with 2 additional re-enforced layers of liquid offering a 20-year guarantee.

##### **Andrewes House Barrel Roof Area**

One valley of the existing barrel roof area is leaking with reported water ingress from failed 2 no. scupper outlets through an expansion joint and down to the bottom of the building. The existing liquid waterproofing has de-bonded from the concrete upstand causing repeated leaking, with cracking of the existing liquid waterproofing also evident around both the failing scupper outlets with the metal guards currently loose and unfixd. This area will need to be repaired with a reinforced liquid system, and may require some substrate repairs also. Please note that a repair only would not carry any guarantee, and consideration should be made to upgrade the complete roofing area, depending on guarantee period remaining.

##### **Cromwell Tower Balcony Roof**

The existing roof area has been repaired with various materials such as BUR felt and liquid in different areas indicating previous water ingress issues; in places the repairs have started to fail becoming ruckled, blistered and worn. The existing asphalt has started to slump underneath the wooden door threshold.

We recommend that the repairs are to be stripped back and the existing asphalt is to be overlaid with 2 layers of bituminous elastomeric felt with counting flashing protection to the concrete upstand and door threshold.

##### **All Roof Areas**

##### **MAINTENANCE**

It is recommended that standard routine maintenance continue to include the clearing of all rainwater outlets, gutters and other drainage outlets, as well as removing any vegetation, loose debris and repair of any paving slabs as required.

In addition all asphalt areas exposed to UV degradation (i.e. not protected by Spartan tiles) should be painted with White Solar reflective paint at least every 5 years, and all areas should be ensured to be protected.

**Please note that Langley Waterproofing Systems Limited does not accept any responsibility or liability for all repairs that have been carried out during the guarantee period, and have prepared this report purely on the basis of the inspection recently carried out.**