
Report Document

Project: 43165

Project Name: Regina Road 2-56a
Project Address: Regina Road
London
SE25 4TT

Client:

Client Details: Ridge & Partners LLP

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Roof Survey Report & Recommendations

Roof area covered by this report: Existing Main Roof , Profiled Metal Extension Roof



1. Outline Description

This report has been produced for Ridge & Partners LLP for the express use in the refurbishment of the designated roof areas of the property stated above. It is based on our site inspection of Regina Road, London, SE25 4TT and should be read in conjunction with the enclosed photographs.

2. Scope of Report

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.

All the 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.

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. Roofs

Core Samples: These are taken for guidance purposes and indicate the construction only at the sample locations. Condition or levels of degradation affecting the coverings are only applicable at the time of inspection. Both construction and condition may vary throughout the roof area.

3.1. Existing Main Roof

Existing Construction

Core Sample 01

- Deck - Un screeded Concrete
- Air and Vapour Control Layer - Bituminous
- Insulation - Expanded Polystyrene
Thickness: 50 mm
- Insulation - Fibreboard
Thickness: 20 mm
- Waterproofing - Built Up Felt
- Surface Finish - Liquid Coating
- Surface Finish – Cement Boards (Insulated)
Thickness: Circa 50mm

Photographic Record



***Note – Interlocking cement boards hampered the survey therefore only one core sample was possible. We recommend further core sampling is undertaken prior to the commencement of any works.**

Thermal Properties

- Langley U-value calculations are carried out in accordance with BS EN ISO 6946: 2007. Condensation calculations performed in accordance with BS5250.
- Building Regulations – Approved Document L1B Conservation of fuel and power in existing buildings: requires that (when re-roofing), the existing roof construction must achieve the threshold U-value of 0.35 W/m²K or better. If the threshold value is not achieved then the roof must be thermally upgraded to meet the current required maximum U-value of 0.18 W/m²K.
- The current U-value of the main roof is circa 0.32W/m²K which is within the threshold U-value of 0.35 W/m²K and should be considered adequate. However, where moisture has been detected within the insulation zone, this area is unlikely to be achieving said U-value.

Roof Defects and Design Considerations

- **Main Area**
Details: Interlocking insulated slabs to main field area of original roof. Slabs have been installed above an existing RBM System.
Defects: Slabs have been removed in specific locations. Removal of the slab enabled us to carry out core sampling, although they hampered our survey overall. Existing RBM system has received a liquid overcoat.
- **Drainage/Falls**
Details: Downpipes from higher roof level draining into internal outlets.
Defects: Outlets appeared blocked with areas of ponding water located close by.
- **Lift/Tank**
Details: Underside of woodwool deck to lift motor room.
- **Parapets**
Details: Dwarf parapet wall with fixed steel beam for supporting the above profile metal structure.
- **Skirtings**
Details: Skirting to brickwork upstands to tank room and housing. Concrete supporting plinth.
Defects: Loose filled insulation can be seen between the tank room upstand and outside metal cladding. No cover flashings present on the upstands.
- **Penetrations**
Details: Flue from higher roof level runs down the side of the building, encapsulated within the cladding.
- **Cills**
Details: Door thresholds to tank and lift motor room.

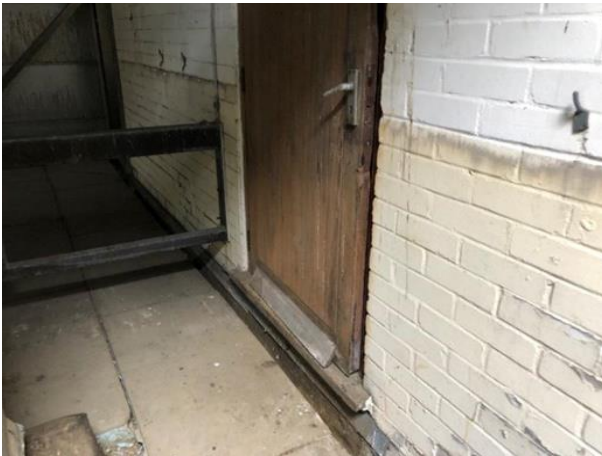
Photographic Record



Main Roof Area - Description

Image of main field area with interlocking insulated slabs.

Slabs have been installed directly above the existing waterproofing. Slabs consist of a pre-faced XPS insulation (50mm) with a cementitious board usually used on inverted roof systems.



Main Roof Area - Description

Additional image of main field area with timber door threshold leading to tank a lift motor room.



Main Roof Area - Defects and Design Notes

Image of insulated slab that had been lifted prior to our survey. This left the waterproofing exposed which enabled us to undertake core sampling.



Drainage Falls - Description

Downpipe from higher roof level discharging into internal outlets.

Outlet appears blocked at the time of the survey which had led to a build up of ponding water in this location.



Lift Tank Notes - Description

Underside of woodwool slab deck to tank and lift motor room.



Parapets - Description

Supporting steel beams have been installed directly to the original parapet wall and coating with a liquid resin.



Skirtings - Description

Loose filled insulation located between the upstand to existing building and cladding system.



Skirtings - Description

Skirting to brickwork upstand with minimal cover flashing present.



Skirtings - Description

Concrete plinth with fixed handrail supports.



Skirtings - Defects and Design Notes

Additional image of upstand with air brick.



Skirtings - Description

Brickwork housing with concrete coping located in the corner of the roof.



Penetrations - Description

Flue penetrating the profile metal roof system.



Penetrations - Description

Flue is fixed, runs down the outside of the existing building and is encapsulated with the cladding system.

3.2. Profiled Metal Extension Roof

Thermal Properties

- No core samples were carried out in this area. The full build up can be seen to the underside of the metal roof, therefore no samples were required.

Roof Defects and Design Considerations

- **Main Area**
Details: No access available. Wired mesh has been fixed to hatch preventing access to the profiled metal roof. Assumptions to be made based on our findings from Regina Road 58-108a.

Photographic Record



Main Roof Area - Description

No access available due to the fixed wire mesh. Access hatch had been left open leaving the original waterproofing and internal areas exposed to the elements.

4. Summary

Existing Main Roof

The level of water found in the core samples, along with the noted defects, lead us to the conclusion that the roof is well past its serviceable life. In terms of fire compliance, Part B (fire performance) of the Building Regulations stipulates that the flat roofing system must achieve a AA, AB, AC (BS476-3) or Broof(t4) (EN 13501-5) fire rating to pass across compartmented walls.

The only insulation that is outlawed above compartmented walls is “thermoplastic” insulations such XPS/EPS as they tend to drip and melt when exposed to fire. PIR is a “thermoset” insulation and will not react in the same way and is perfectly suitable to bridge compartmented walls as per Part B of the Building Regulations.

All our insulated RBM systems achieve Broof(t4) and utilising PIR insulation as an integral part of the system.

Therefore, we recommend that the existing waterproofing system, including Expanded Polystyrene Insulation, is removed back to the original concrete deck and roof area upgraded as per our specification to current regulations.

Profiled Metal Extension Roof

No access was available on this roof, therefore assumptions have been made based on findings from Roof 58-108a. Should the areas be the same as assumed then we would recommend that the existing profiled metal sheeting remain in situ and the area coated with a new cold applied liquid system. Option is subject to CA confirmation.

Key Design Notes

- Door thresholds will require raising to accommodate the proposed insulation. The thresholds are required to be 150mm above the finished roof surface to comply with BS 6229:2019.
- Subject to confirmation of the size and nature of the internal downpipes, the rainwater outlets can be refurbished with a Parafurb unit. This will provide a robust seal at the junction and in the event of blockages or ‘backing-up’ prevent breaching of the new system.
- Metal Cappings/Cladding are required to be temporary removed and reinstated after the waterproofing system has been installed.
- Tapered insulation is to be installed to increase the falls on the roof to direct the rainwater more efficiently to the outlets.

- Further investigations to be carried out to the profiled metal extension roof to determine its suitability for a liquid overlay subject to CA authorization.

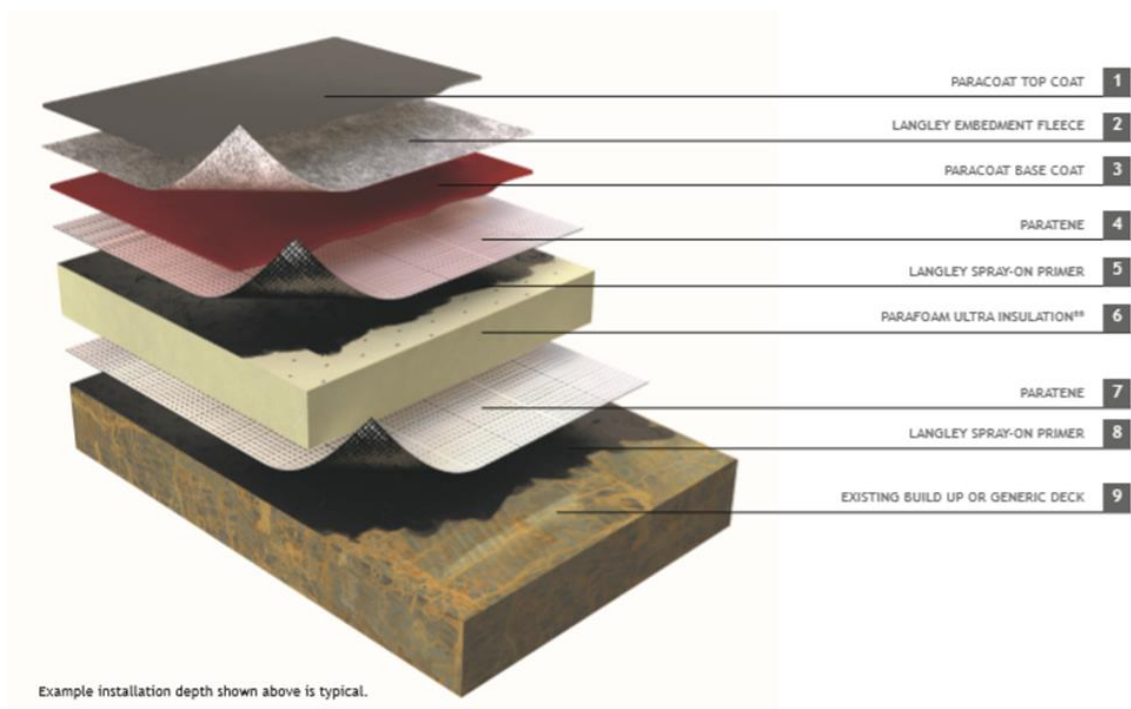
5. Recommendations

Existing Main Roof

Remove the existing waterproofing system to the original concrete deck, complete the necessary preparatory works and prime.

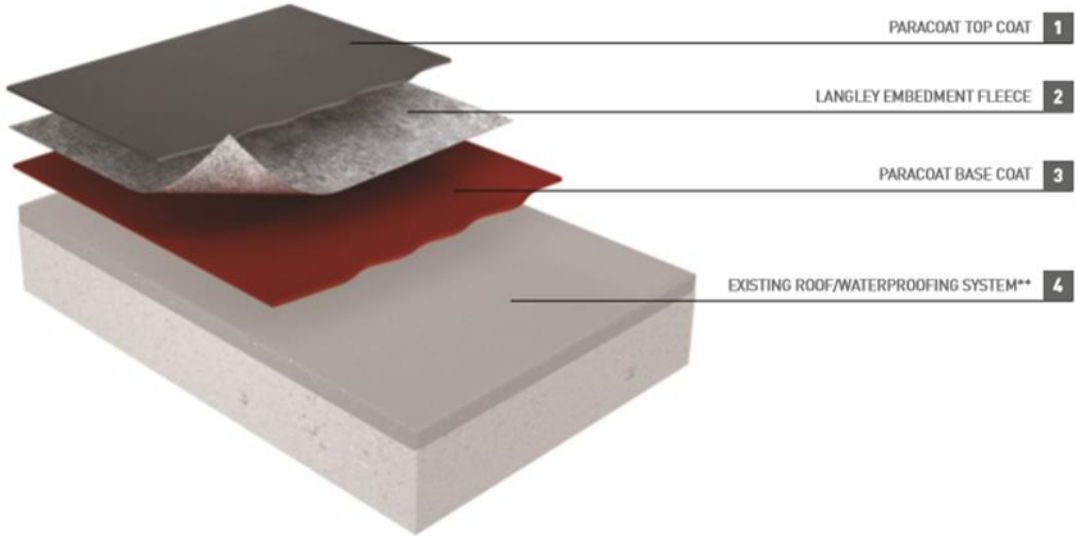
On completion of the preparatory works, install Langley Waterproofing Systems Ltd, High Performance, Cold Applied Liquid, warm roof system, incorporating cut-to-falls insulation to achieve the average U-value of 0.18 W/m²K required under Part L of current Building Regulations.

PC – 25 – Paracoat Liquid System 25 year insurance backed guarantee.



Profiled Metal Extension Roof

On completion of the preparatory works overlay the existing waterproofing system with our Langley Waterproofing Systems Ltd, High Performance, Cold Applied Liquid, cold roof system.



Langley Waterproofing Systems Ltd Guarantee

All the specified systems come with Langley Waterproofing Systems Ltd, unique single premium, independent insurance-backed guarantee. The premium is pre-paid, in full, for the guarantee period stated in the specification and covers the following:

- ✓ **Materials**
- ✓ **Labour**
- ✓ **System Design**
- ✓ **Consequential Loss**

In addition:

- **The guarantee is transferable between building owners**
- **Cover increases in line with an approved construction price index**
- **Each project is covered for the full value of reinstatement of materials including installation**
- **Insurance cover automatically reverts to the building owner should Langley and the roofing contractor fail to rectify defects for whatever reason**

Langley Waterproofing Technical Support

The project/works will also be monitored by a Langley Technical Manager on a weekly basis, who will provide a written report on the progress and any issues arising. This monitoring service is provided to ensure full compliance with the specification and to approve the completed works for guarantee purposes and includes:

- A detailed final inspection highlighting any snagging items.
- A joint 6 or 12 month defects inspection.

Appendices

- Glossary of Terms
- Bibliography

GLOSSARY OF TERMS

A/C units	Air conditioning plant.
ACM	Asbestos Containing Material.
Attachment layer fixed/nailed)	An underlay used to isolate the new system from the substrate (usually mechanically).
Bunding	Internal waterproofing creating a 'tank' to contain potential leaks from water tanks.
BUR	Built-up felt roofing.
Cap sheet	Top layer of a built-up membrane system.
Cat ladder	Fixed (vertical) access ladder.
Cold roof	Roof structure designed with the insulation on the warm side (inside) of the roof deck.
Composite deck	A hybrid structural deck of rigid foam insulation with a factory bonded plywood top.
Cut-to-falls insulation	Insulation boards manufactured with a built-in fall.
Dew point (condensate).	Temperature at which moisture laden air releases the moisture as liquid water.
Free-draining edge	Roof perimeter that allows water to drain over, usually to an external gutter.
Free-standing	Not affixed to or through the structure.
Granule finish	Factory applied protective layer of fine granules to cap sheet.
Hard edge	A timber batten installed at exposed edges of insulation as a support to prevent damage to the insulation.
Hybrid deck	A structural deck that is also an insulant.
Inverted roof	A warm roof structure designed with the insulation placed over the waterproofing system.
LMR	Lift Motor Room.
Mushroom vent	Roof penetration used as a pressure release to the substrate.
OSB	Oriented Strand board.
Partial bonding layer	See venting layer.
Pour & Roll	Method of bonding of bituminous membranes using hot bitumen.
PIR	Rigid polyisocyanurate.
Protected membrane roof	See Inverted Roof.
PUR	Rigid polyurethane.
RWO	Rain water outlet.
Refurbidrain	A purpose made rainwater outlet designed to fit inside an existing outlet.
Sandwich construction	A warm roof configuration, where the insulation is sandwiched between a vapour control layer and the waterproofing.
Scupper	Low level over-flow outlet from a banded area such as a tank room etc.
Stramit	Trade name for a 'hybrid' supporting deck of compressed straw board.
SVP	Soil vent pipe.
SBS	Styrene-Butadiene-Styrene.
Tapered insulation	Insulation boards manufactured with a built-in fall.
Temperature gradient	The path of temperature change through a (roof) structure from inside to outside, plotted on a graph.
Timber deck	Either close boarding or tongue and grooved boards. (Not panelled material such as plywood, OSB board etc).
Torching	Method of bonding of bituminous membranes using propane gas torches.
Vapour barrier	See Vapour Control Layer. Bituminous membrane designed to prevent the passage of moisture laden air. Usually with an aluminium core.
Vapour check	See Vapour Control Layer. Bituminous membrane designed to restrict the passage of moisture laden air.
Vapour control layer	Underlay used below insulation to control the passage of moisture laden air.
Vapour barrier	See Vapour Control Layer. Bituminous membrane designed to prevent the passage of moisture laden air. Usually with an aluminium core.
Venting layer	Bituminous felt underlay with regular holes at predetermined centres to allow partial bonding of membranes on certain types of substrate.
Underlay	Interim layer of a multi-layer built-up membrane system.
Upside-down roof	See Inverted roof.
WBP	Water and Boil Proof (plywood).
Warm roof	Roof structure designed with the insulation on the cold side (outside) of the roof deck.

Welled drip
Woodwool slab

Felt membrane edge detail.
Hybrid structural deck of cement coated wood shavings.

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BS 6651: 1999	Code of Practice for protection of structures against lightning.
BS 3837 – 2: 1990 (2002)	Expanded polystyrene boards. Specification for extruded boards.
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BS 1105: 1981 (1994)	Specification for woodwool cement slabs up to 125mm thick.
BS 8281: 1998	Code of practice for mastic asphalt roofing.
BS EN 795: 1997	Protection against falls from height. Anchor devices. Requirements and testing.