BAUDER

Roof Survey **Report**

Russell House
Cambridge Street, LONDON
SW1V 4EQ, England

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Project Reference: B183123/1

PREPARED FOR:
[redacted]
Westminster City Council

PREPARED BY:
[redacted]

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 – Residential
Height in Storeys: Various

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

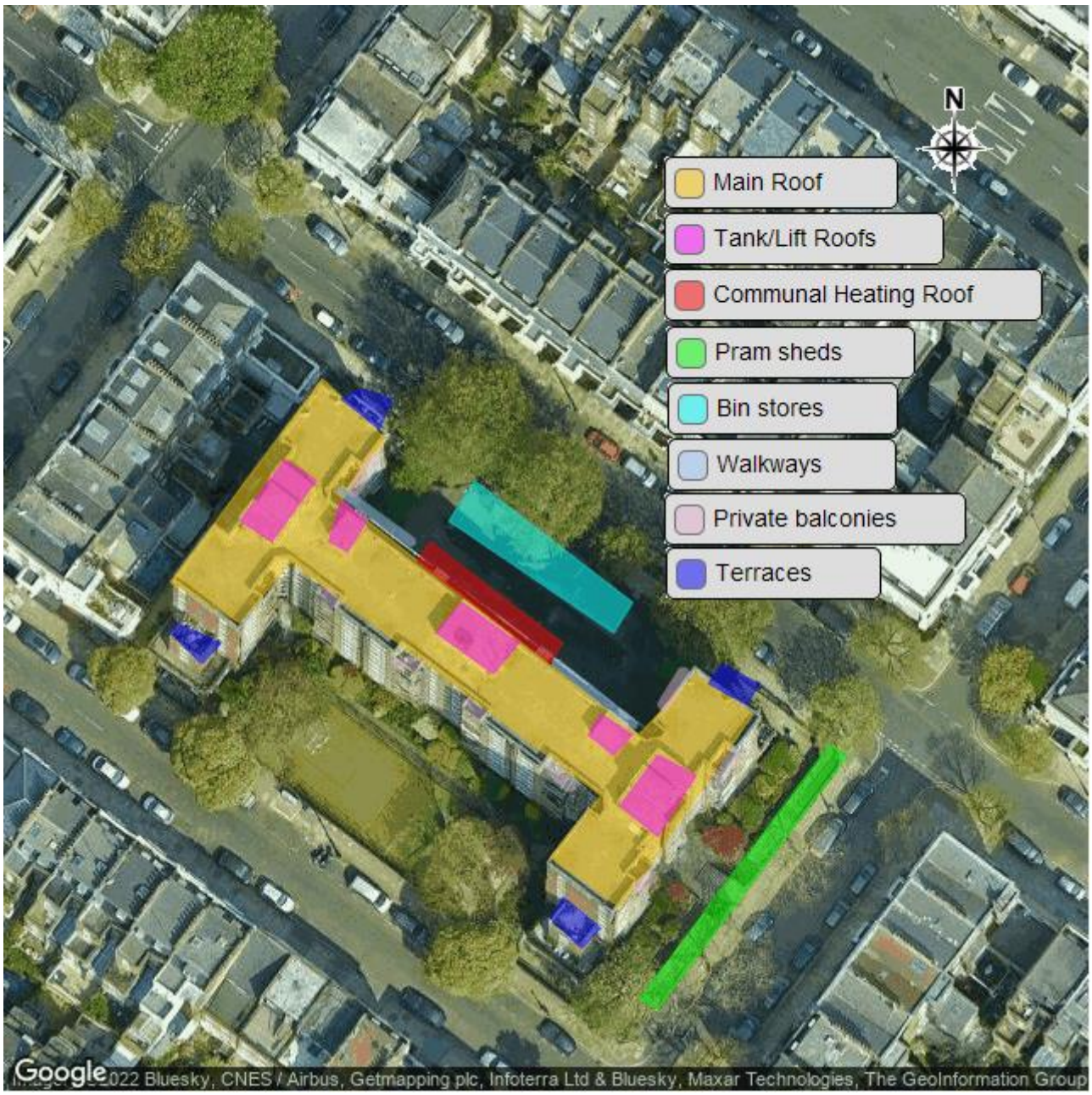
Roof access was gained internally, with a door access to the roof.

1.3 Confirmation of Client brief

To carry out an evaluation and produce a condition report for the flat roof areas concerned, together with specification proposals for upgrading the thermal performance and renewing the waterproofing system.

1.4 Roof Plan

1.4.1 All Roofs



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

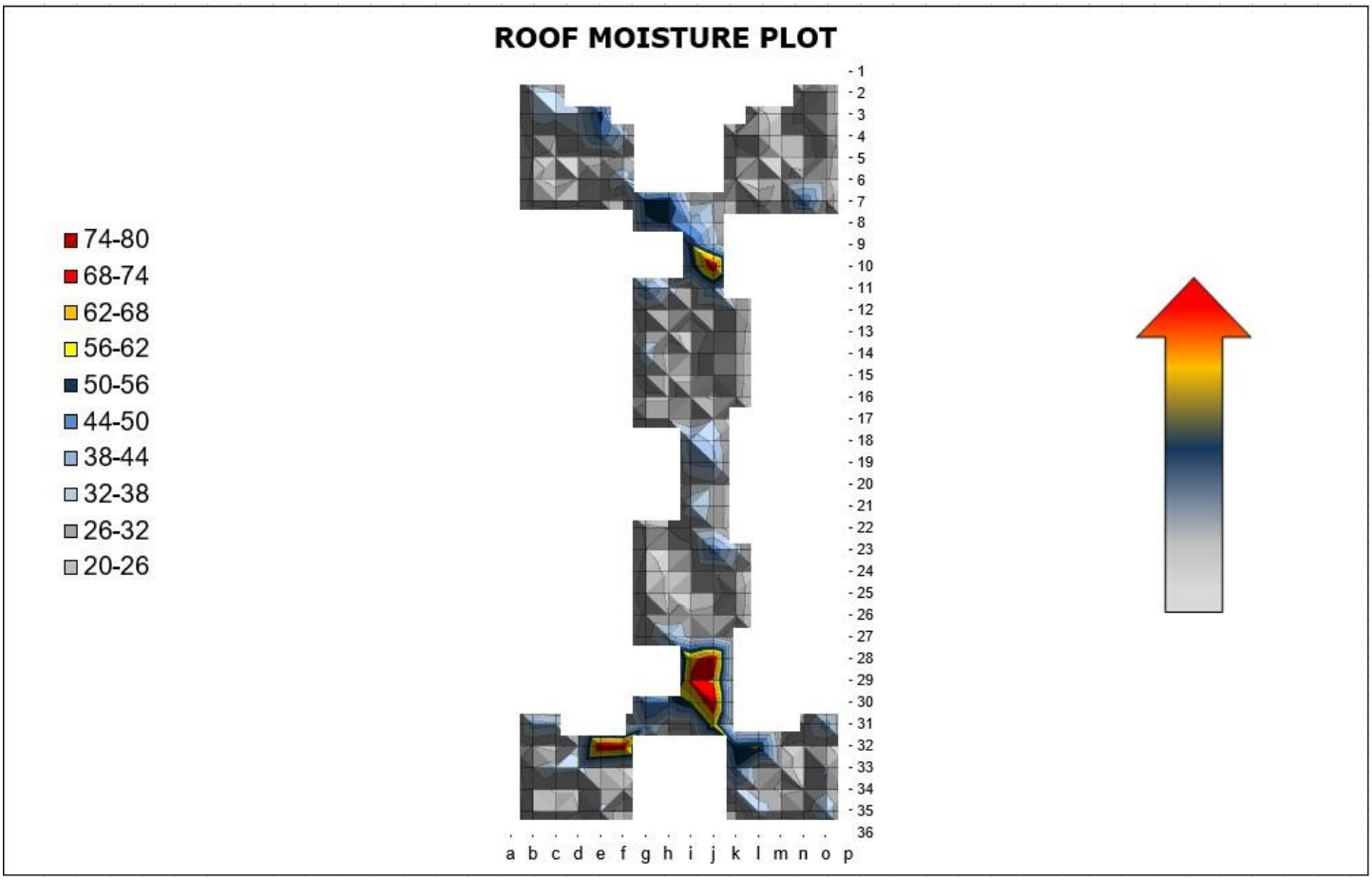
2 Existing Roof Construction

2.1 Core Sample Analysis and Moisture Readings

Core samples are taken as a method of confirming the existing deck and waterproofing system construction and provide indicative feedback regarding general condition.

Bauder's Nuclear Density Moisture reading tests were used to indicate the percentage of moisture present within the insulation and provide an analysis of the roof in its entirety, mapped out below.

2.1.1 Main Roof



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

Moisture mapping confirms that the existing waterproofing has reached the end of its life and is compromised with water present within the build up.

3 Issues and Considerations

3.1 Main Roof

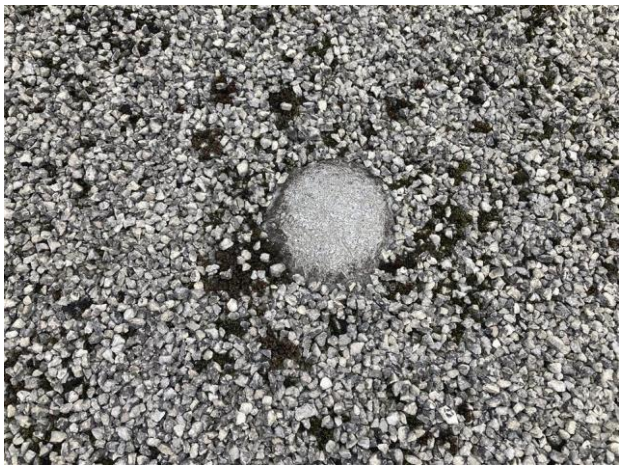
3.1.1 Existing Waterproofing

The existing waterproofing system is constructed as a warm roof, comprising of mastic asphalt, on a loose laid sheathing layer over insulation and a vapour control layer, installed to the deck.

Overview of main roof.

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.

There is evidence of water ingress that has contaminated and degraded the existing insulation. This will impact upon the thermal performance of the system and potentially the resistance to wind uplift if the adhesion between the waterproofing and insulation components have become impaired.



Blisters in the asphalt indicate the presence of air and/or moisture.

The asphalt upstand is failing and coming away from the brick parapet, this will let water by.

Further evidence of failed asphalt upstand.

Termination to penetrations is no longer adequate.

Liquid applied remedial coatings provide evidence of previous issues and repair history.

Advisory - vertical expansion joints should be renewed.

Advisory - coping stones should be repointed or encapsulated.

The exposed asphalt is badly blistered and slumping in areas.

The condition of the existing waterproofing is extremely poor and is worthy of concern. There is extensive evidence of water ingress, due to advanced deterioration. As such, the existing system is beyond salvage and should be removed and replaced, using this opportunity to thermally upgrade the replacement system to comply with current Building Regulations.

3.2 Tank/Lift, Bin, Pram & Communal Heating Roofs

3.2.1 Existing Waterproofing

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

Asphalt to lift/tank roofs is failing. The drip edge is breaking away.

Blistering asphalt to communal heating room roof.

The fascia have reached the end of their life.

The bin store waterproofing is delaminating.

Overview of pram shed roofs.

Pram shed roofs currently considered suitable to overlay.

The condition of the existing waterproofing is of concern. The material covering is coming to the end of its serviceable life and demonstrating signs of age, fatigue and fragility that could lead to serious failure.

3.3 Private balconies, Terraces and Walkways

3.3.1 Existing Waterproofing

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

Overview of typical walkway.

Split and cracks are occurring in areas.

There are defects in the asphalt surface.

Splits and cracks are occurring in areas.

The asphalt upstand is beginning to come away from the brick parapet in areas, this will let water by.

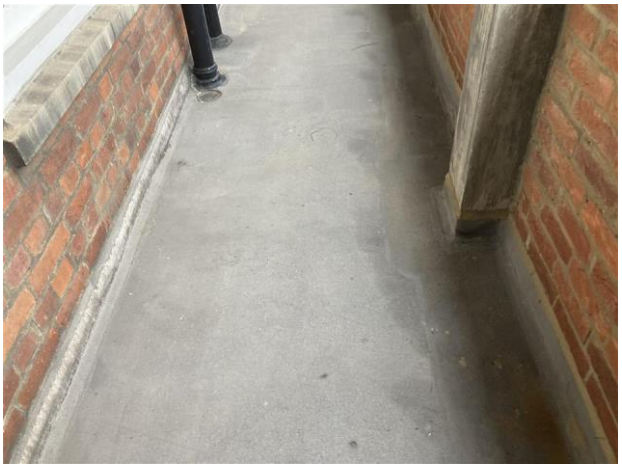
There is some damage to the concrete slab in areas.

Issues and Considerations

Liquid applied remedial coating indicating previous issues and repair history.

No access to private balconies.

No access to terraces.



Asphalt currently suitable to overlay and extend life.

The condition of the existing waterproofing is of concern. The material covering is coming to the end of its serviceable life and demonstrating signs of age, fatigue and fragility that could lead to serious failure.

4 Proposals

4.1 Main Roof

- The existing deck is to be re-used.
- Due to its condition, the existing waterproofing system should be completely removed and replaced.

  Note - an adequate provisional sum should be set aside to cover for any unforeseen issues related to the removal of the existing waterproof covering that may necessitate localised repairs to the existing deck
- Bauder Tapered Insulation will be incorporated into our specification, as provision for creating a minimum fall of 1:80 on all areas of the roof in accordance with BS6229:2018. Our standard design will direct water to drainage outlets, sumps and external gutters.
- The existing drainage chutes are to be removed and new site fabricated lead replacement items installed.
- Once the new waterproofing upstands have been formed against the abutment wall a 25mm deep chase is to be cut into the wall and new counter flashings are to be fixed and sealed into the chase.
- The existing door and frame are to be removed to allow access to raise the upstand kerb in preparation for re-waterproofing. The door and frame are to be either modified or replaced, these works need to be included within the main client specification/ schedule of works.
- The existing concrete coping to be left in situ and the upstand suitably prepared so that the new waterproofing system can encapsulate the upstand and top of the parapet wall, terminating with a GRP trim or welted drip detail.
- Provision should be made for extending the existing soil vent pipes in order to accommodate the increase in the finished surface level resulting from the thickness of the new waterproofing system.

4.2 Tank/Lift Roofs, Pram sheds, Bin stores and Communal Heating Roof

- The condition of the existing waterproofing is considered suitable for receiving an overlay system.

4.3 Proposed Waterproofing System

All Roofs

Bauder Total Roof System (BTRS PLUS)

The Bauder Total Roof System PLUS (BTRS PLUS) utilises the latest manufacturing technology for Bauder's first dual formulation capping sheet, uniting both APP and SBS polymer bitumen modifications to create Bauder KARAT. The system also incorporates KSA DUO 35 self-adhesive SBS modified underlay which, when combined with the Bauder KARAT cap sheet, jointly provides a formidable waterproofing solution with exceptional durability and system longevity.

The complete system is manufactured to exacting specifications and is applied within cold, warm or inverted roof constructions with a choice of Bauder insulations.

Where required the system will include BauderPIR insulations with a choice of either flatboard (FA-TE) or tapered (FA Tapered) with aluminium facing offering versatility in installation methods for both the insulation and the membranes. For inverted applications Bauder offers its JFRI inverted insulation. Bauder also offers non-combustible warm roof insulation where required.

Bauder insulation provides excellent thermal performance and has outstanding dimensional stability and compressive strength, achieving an "A" rating in the BRE Green Guide.

BTRS PLUS is designed for use in both refurbishment and new build projects particularly when long life-span and high durability are required.

Guarantee Information

This system is supplied with a 30 year guarantee that covers products, workmanship, design, consequential damage and financial loss. 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 foot traffic.
- These products are BBA certified with a Broof(t4) fire rating and has been extensively used in mainland Europe for over 20 years with proven durability in service. This provides complete peace of mind to specifiers.
- 5.2mm cap sheet with high tensile strength – 1450N/50mm. 40% stronger than our K5K capsheet.
- Bauder site technicians monitor and sign off each installation and provide up-to-date inspection reports directly to our clients via email.
- Bauder provides installation training for our approved company operatives ensuring the highest quality of workmanship is maintained.
- Reliable application in both high and low ambient temperatures – enables all year round installation.

- Reduced rain noise to gain an extra credit under point 5 of section Hea of BREEAM education 2008 for most projects (dependent upon insulation used).

Private balconies, Terraces and Walkways

Bauder Balcony, Walkway & Terrace System

Bauder Cold Liquid Applied Balcony systems are based on PMMA (Poly Methyl Methacrylate) resin technology. This technology combines ease of application, exceptionally fast cure, and durability, to provide a cold liquid applied waterproofing and surfacing product.

Two versions of the system are available; an un-reinforced system for simple cantilever balconies, and a polyester reinforced system for use on walkways, balconies and terraces over occupied premises.

The systems are intended for both new build and refurbishment projects and can be applied to a wide variety of substrates including concrete and timber decks, as well as existing asphalt.

The Bauder Balcony, Walkway and terrace System incorporates a heavy duty wearing course to make it suitable for use in both light and heavy trafficked areas.

Guarantee Information

The Bauder Cold Liquid Applied Balcony, Walkway and Terrace Systems are supplied as standard with a 20 year guarantee. Full terms and conditions are available by request.

Key Features

- All elements of the system are totally cold applied, avoiding the risks and insurance costs associated with hot works.
- Works on site can commence immediately, with no waiting time for the heating of materials.
- Due to short "rain proof" times and rapid cure times, installation times on site are more controlled.
- Can be installed all year round at temperatures as low as -5°C.
- The product can be trafficked and/or ready to overcoat within an hour of application.
- The Bauder cold liquid applied balcony system is extremely tough and durable.
- The reinforced system incorporates a 2mm thick waterproofing layer with 110g/m² polyester fleece reinforcement.
- The system provides a seamless waterproofing layer that can be dressed around awkward shapes and penetrations.

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.