
Specification Document

Project: 51939

Project Name: Mortimer Terrace 3
Project Address: 3 Mortimer Terrace
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Client:

Client Details: Wates Construction Limited

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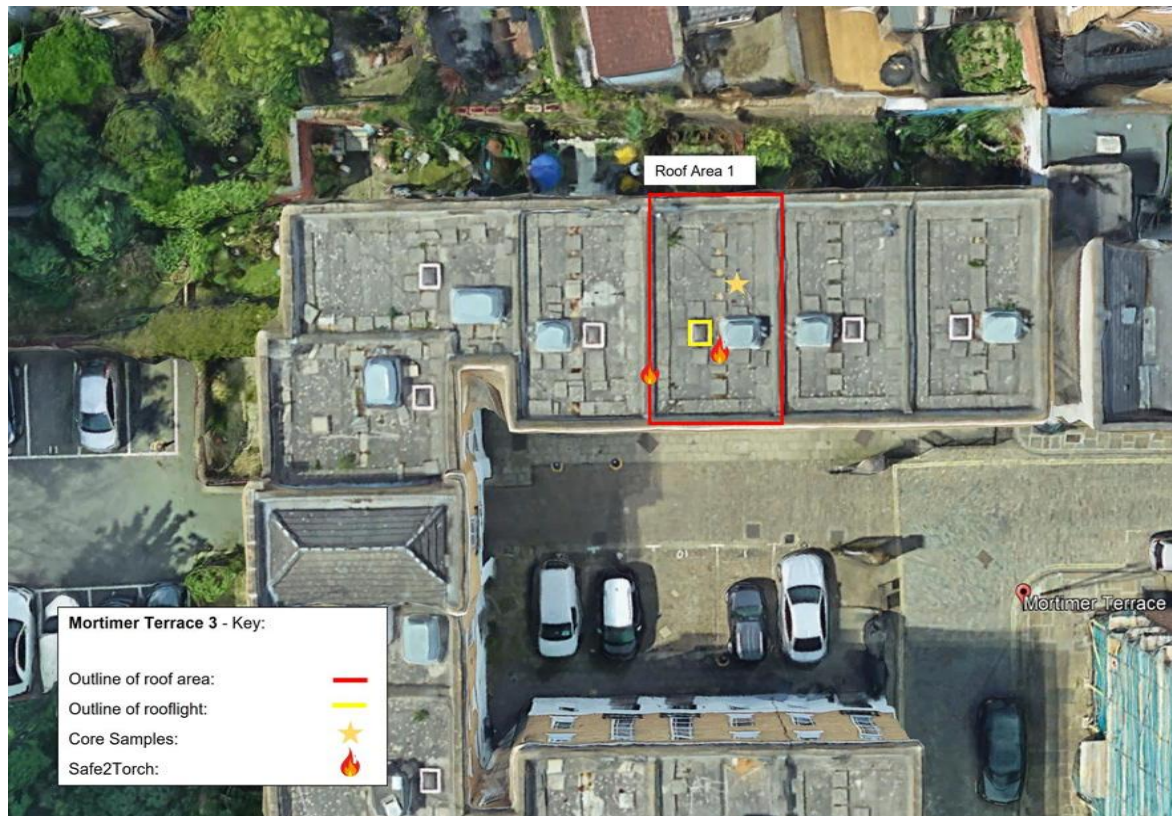
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Roofing Specification

Roof areas covered by this specification: Option 1 - Roof Area 1 Specification, Option 2 - Roof Area 1 Specification.



Outline Description

This specification has been produced for Wates Construction Limited for the express use in the construction of the designated roof areas of the property stated above.

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

Preliminaries and General Conditions

1. Before tendering, the contractor should examine the drawings and specification documents, visit the site and ascertain all local conditions and restrictions, accessibility, the full extent and nature of the work, the supply and conditions affecting labour and the execution of the contract generally. No claims arising from failure to do so will be considered.
2. The contractor shall provide, erect and maintain all necessary hoists, scaffolding, mechanical equipment, plant etc of all descriptions required for the satisfactory completion of the works and remove all, as and when required, or when directed by the Contract Administrator.
3. The contractor shall not display any advertisements on the scaffolding other than the firm's name board and contact details; neither shall he permit any other advertisements to be displayed without the written authority of the Contracts Administrator.
4. The contractor shall provide all necessary containers and storage facilities for materials and for workshops that may be required, maintain them and clear them away on completion.
5. The contractor shall provide all necessary latrines and other facilities for the use of operatives as required by the Construction (Design & Management) Regulations 2015 (CDM 2015), maintain them in decent condition and clear them away on completion.
6. All roofing materials are to be supplied by Langley Waterproofing Systems Ltd and to be fit for purpose and of the type and quality described herein. Any sub-standard materials will be rejected. No alternatives are to be substituted.
7. The contractor shall employ none but fully qualified, competent tradesmen and the whole of the work shall be carried out and completed in accordance with "Best Practice".
8. The contractor shall carry out the works without undue inconvenience and nuisance and without danger to occupants and users.

Note

These preliminaries and general conditions will apply in all situations, except where the specifying client inserts a more comprehensive section of preliminaries and conditions, encompassing the complete project.

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Detailed Specification: 1

Option 1 - Roof Area 1 Specification

No.	Item	Unit	Qty	Rate	Total
1	SPECIFICATION REQUIREMENTS				
1.1	<p>Guarantee:</p> <p>The following TA-25-W specification is to be covered by the Langley Waterproofing Systems Ltd, single-premium, pre-paid independently-insured workmanship and materials guarantee for a period of 25 years from the date of practical completion. In order to meet this requirement only roofing contractors that participate in this guarantee scheme may be used. The eligibility of proposed roofing contractors should be confirmed with Langley Waterproofing Systems Ltd, Tel: 01327 704778 prior to inviting tenders.</p>				
1.2	<p>Projects Under CDM:</p> <p>The Construction (Design and Management) Regulations 2015 (CDM 2015) apply to all construction projects. It is the Client's responsibility to ensure that all required duty holders are appointed as necessary.</p> <p>The Principal Designer must advise the Client on health and safety issues during the design and planning phases of construction work, using their expertise in health and safety, planning, management, construction, and communications to mitigate any health and safety risks.</p> <p>As part of our specification service, Langley may prepare or modify drawings, specifications, or design calculations. Under CDM 2015, Langley's role falls under the responsibilities of a Designer, working under the Principal Designer.</p> <p>When undertaking samples or inspecting works, Langley's role under CDM 2015 becomes that of a Worker, where we have a duty to cooperate and report any identified risks that may endanger the health and safety of ourselves or others.</p> <p>Since the roof area will require maintenance in accordance with BS 6229:2018, the Client should ensure that safe access to and from the roof area is considered under CDM 2015. This may include installing free-standing guardrails around potential hazards, such as rooflights, or implementing other appropriate fall prevention methods.</p> <p>A summary of duties can be found here: https://www.hse.gov.uk/construction/cdm/2015/summary.htm</p>				

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No.	Item	Unit	Qty	Rate	Total
1.3	<p>Items Not Supplied by Langley - Guarantee:</p> <p>Only products supplied by Langley are included in our guarantee.</p> <p>Products others supply are not included in our guarantee and are advised in good faith only to ensure compatibility and performance.</p> <p>Where existing items are reused (rainwater outlets etc.) their suitability and functionality are to be confirmed prior to works commencing and these items will be excluded from the guarantee. The waterproofing to these items will be included unless stated otherwise.</p>				
1.4	<p>Maintenance Item - Mastic Sealant:</p> <p>Please note that the Langley Gap Seal Mastic, like other mastic sealants, will degrade when exposed to ultraviolet (UV) and has a maximum life expectancy of 5 years under these conditions. This expected degradation can lead to potential failure and subsequent leaks in the waterproofing detail if remedial works are not undertaken promptly.</p> <p>As part of the scheduled maintenance program, it is recommended that all sealants be visually inspected and their elasticity checked twice yearly. Cracked and hard mastic, or evidence of moisture present, likely results in deteriorating sealant integrity and should be replaced.</p> <p>First, remove the aged/failed sealant, clear the substrate of loose material and any contamination that could cause adhesion issues, and then apply new Langley Gap Seal Mastic. It is essential to document areas where the sealant has been replaced as evidence against any future warranty or guarantee claims.</p>				
1.5	<p>Guardrail - Guarantee:</p> <p>The Langley Guardrail specified in the following document will be covered by the same insurance-backed guarantee (IBG) provided by Langley Waterproofing Systems Ltd. It will be effective for the same duration as the waterproofing system guarantee from the date of completion.</p> <p>Please note that the guardrail is to be supplied by Langley Waterproofing Systems Ltd (Langley) and is included as part of the guarantee terms. If the guardrail is not supplied by Langley, then Langley will take no responsibility for any damage caused during the install and may invalidate the waterproofing. Maintenance must be performed annually, in accordance with the Guardrail manufacturer's instructions, to ensure the guarantee remains valid.</p>				
1.6	<p>Rooflights - Guarantee or Warranty (As Applicable):</p> <p>The Langley Rooflights specified in the following document will be covered by the same insurance-backed guarantee (IBG) or product-only warranty provided by Langley Waterproofing Systems Ltd. It will be effective for the same duration as the waterproofing system guarantee or warranty from the date of practical completion. Certain industry standard term limitations may apply to the individual components of specialist, bespoke, and structural units. Please ask for more details</p>				

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No.	Item	Unit	Qty	Rate	Total
1.7	Roof Drainage - Guarantee Requirement - CCTV Inspection: Prior to works commencing and after practical completion; any existing external rainwater systems or internal outlet drainage points must be checked for blockages and cleared as necessary by the roofing contractor. In addition, it is a requirement that should internal drainage pipes exist, that they are inspected using CCTV technology to confirm their integrity and serviceability prior to the commencement of any works.				
1.8	Design Note - Warm Roof: This specification is based on a warm roof construction. The principal thermal insulation is above the structural deck.				
1.9	Falls - New Deck: The new system will follow the falls of the roof deck as provided by the roofing contractor or others. It must be expected that any or all deviations present within the deck will be replicated through to the new waterproofing system being installed. As a result, some areas of standing water may occur. Please note that neither ice, snow or ponding water will have an adverse effect on the Langley products specified. This applies to both the life expectancy and long-term performance of the system and will not affect, in any way, the guarantee status.				
1.10	Tapered Insulation: When preparing a tapered scheme, a flat and level deck is assumed and, although the tapered scheme is intended to provide adequate drainage, some ponding may still occur due to obstructions, membrane lap build-ups or unforeseen deck deflection. Please note that neither ice, snow or ponding water will have an adverse effect on the Langley products specified. This applies to both the life expectancy and long-term performance of the system and will not affect in any way, the guarantee status.				
1.11	Design Note - Changes & Adjustments: Variations 'A' (general): Any variations must be agreed in writing by both the contract administrator and Langley Waterproofing Systems Ltd. These must be costed and authorised by the client but not be implemented until instructed by the client. Variations 'B' (minor): During work in progress, Langley Waterproofing Systems Ltd must be informed immediately of any proposed change/s and operatives must not implement any change/s until agreed by Langley (minor changes are deemed to be any item not falling within the scope of section A). Unauthorised Changes 'C' (general): Langley Waterproofing Systems Ltd will not be responsible for any changes of which they are unaware or have not authorised, nor will they accept any liability or associated costs due to system failure, i.e. labour, materials, design or programme delays, etc., resulting from said changes.				

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No.	Item	Unit	Qty	Rate	Total
1.12	<p>Design Note - Approved Document Part B Building Regulations - Compartmented Walls:</p> <p>Removal of Existing Structural Deck and/or Waterproofing: Where the Langley Waterproofing system bridges a compartmented wall, it is expected that the existing underlying system is laid on a substrate or deck rated class A2-s3, D2 or better (non-combustible) to BS EN 13501-1. Some buildings (Hotels, boarding houses, residential colleges, residence halls, hostels, offices, assembly and recreation buildings) no taller than 15m are permitted to have a roof deck classified as Euroclass B-s3, D2 or worse (combustible). However, to comply with Approved Document Part B, additional fire stopping will be required underneath the roof deck. Because of the reduced resilience to fire, thermoplastic insulation materials (XPS, EPS) can only be used within the 1500mm zone on either side, and over the compartment wall when the deck is rated class A2-s3, D2 or better (non-combustible) to BS EN 13501-1. Double-skinned insulated roof sheeting, such as standing seam or profile metal sheet roofing, should incorporate a band of material rated class A2-s3, D2 or better, a minimum of 300mm in width, centred over the wall.</p> <p>Note: Proposed specification and design will be subject to LABC (Local Authority Building Control) or assigned AI (Approved Inspector) approval before works can commence on-site. Where appropriate, Langley Waterproofing can offer support and guidance to assist application.</p>				
1.13	<p>Roof Structure - Disclaimer: It is deemed the responsibility of the Client Representative, Contractor and/or Property Owner to give due consideration towards the ability of the existing roof structure accepting any additional loadings imposed by the application of the new waterproofing system proposed within this specification. Langley Waterproofing Systems Ltd will not be held responsible or accept any liability or associated costs should structural defects or structural failure occur.</p>				
1.14	<p>Electronic Roof Integrity Test & Root Protection (Compulsory For Buried Systems) - Disclaimer: Should the roof waterproofing system receive any subsequent coverings such as an inverted roof system, living roof system, paving slabs, ballast, decking, or similar, an electronic leak detection (ELD) test must be carried out by a qualified expert to confirm the waterproofing system integrity. You must also ensure an ELD is completed if the roof will receive a PV panel installation. You must ensure a record of this ELD test, and any repairs completed, is shared with Langley. Where appropriate, a root resistant membrane must be installed to protect the Langley waterproofing system from root penetration.</p>				

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No.	Item	Unit	Qty	Rate	Total
1.15	Fire Risks: This specification has been formulated with due regard to the inherent risks of fire when using hot work flat roof waterproofing systems and application methods. To the best of our knowledge any potential hazards have been identified and the specification tailored to minimise the risk of accidental ignition occurring. Notwithstanding the foregoing, the contractor / installer is reminded that they have a duty of care and responsibility to carry out their own assessment of the proposed works with regard to the potential fire risk, and introduce working practices that takes any such risks into account. Should the contractor / installer have any reservations about any aspect of the specification proposal, or if during the course of the works any unforeseen items are discovered that present an actual or potential fire risk, they should contact Langley Waterproofing Systems Ltd immediately so that safer methods can be agreed and implemented which do not compromise the integrity of the specification and or its guarantees.				
1.16	Fire Risk - Drying Out: In the event of the roof being/becoming wet and drying out is necessary, the use of gas torches is not recommended and should be avoided. In all cases Safe2Torch guidelines should be followed. Standing water should be swept to the nearest outlets with a broom or squeegee (care must be taken to avoid debris blocking outlets). The remaining moisture should be soaked up using mops or dry rags and the surface left to dry out naturally. To speed up the process, specialist equipment is commercially available, see 'General Guidance & Requirements' in the appendices of this specification.				
1.17	Safe2Torch - Flame-free Zones: This specification has been compiled in accordance with the NFRC Safe2Torch guidance and includes areas that have been identified as presenting a risk of fire if gas torches are used. This requires the substitution of membranes in these areas.				
1.18	Flame-free Zones - Definition: A Flame-free Zone is defined as being within 900mm of a combustible substrate / material. Note: If combustible material forms part of an overhang then the Flame-free Zone starts from the extremity of the overhang.				
1.19	Risk Assessment - Fire - Installing Contractor: In line with their own Risk Assessment and Method Statement, the installing contractor is to identify any areas where the use of a naked flame is deemed too great a risk. This matter should be raised at the pre-start / pre-commencement meeting or stated in writing to Langley in order that an alternative flame free method can be adopted and specified.				

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No.	Item	Unit	Qty	Rate	Total
1.20	<p>Flame-free Zones - Identified Risk Areas: In accordance with Safe2Torch guidance the following area/s have been designated as 'flame-free' zone/s:</p> <p>Detail Noted: Rooflight Aperture - Full SA Detail Noted: Party wall - Full SA</p> <p>Whilst these area/s have been identified, they may not be definitive. Due allowance must be made so that at any stage of this project, should any additional areas be designated a fire risk by any of the parties involved, they must be logged, all parties informed, and the appropriate measures employed.</p>				
1.21	<p>Fire Accreditation: Unless otherwise stated, the full waterproofing system and/or products contained within this specification have been tested for external fire exposure (both with and without insulation) in accordance with BS EN 13501-5: 2005 (European Test) and are accredited as Broof(t4).</p>				
1.22	<p>Langley Detailed Drawings: This specification is to be read in conjunction with detailed drawings issued and supplied by Langley Waterproofing. Should the contractor at any point find discrepancies between the issued specification and issued drawings, it is required that the specification takes precedence in all cases, unless otherwise notified and approved. No additional costs or liability arising from failure to follow specification or notifying Langley Waterproofing Systems Ltd of any discrepancies found in good time prior to commencement of works will be considered.</p>				
1.23	<p>Guarantee Requirement - Torch-on & Hot Air Applied Membranes: Applicable to all layers. A 5-10mm bead of bitumen must be exuded from all laps.</p>				
2	SCOPE OF APPLICATION				
2.1	<p>Existing Waterproofing System & Deck/Substrate - Removal: This specification is based on a full strip-up of the existing waterproofing system/s, including deck/substrate back to the supporting structure.</p>				
2.2	<p>Deck and Substrates - Exterior Grade Plywood: This specification is suitable for application to a class 3, exterior grade plywood roof deck not exceeding 5° from the horizontal.</p>				
2.3	<p>Day/Night Joints: The contractor must ensure at the end of each working day or period, that any exposed membranes or substrates that are susceptible to damage through water ingress are sealed with a Langley system compatible membrane to ensure complete water tightness. No loose laid membranes or other such covers are permitted.</p>				

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No.	Item	Unit	Qty	Rate	Total
2.4	U-value - Tapered Insulation: To comply with Part L of the current Building Regulations, the average thickness of the scheme included in this specification is calculated in accordance with Annex E of EN ISO 6946: 2017. This is to ensure that the effective thickness of the scheme is sufficient to meet the target U-value of 0.16W/m²K.				
2.5	Contractors Note - Tapered Insulation: The specified tapered insulation scheme is based on the assumption that the contours of the underlying substrate reflects that of the existing roof coverings. In the event of any abnormalities being uncovered, it is the responsibility of the Roofing Contractor to report these immediately to Langley so that any amendments to the insulation scheme that may be necessary can be made. This may result in a delay. No claims arising from any additional costs incurred from such delays will be entertained by Langley Waterproofing Systems Ltd.				
3	PREPARATION				
3.1	Contractor Preparation Note: The contractor must take his own roof core samples to satisfy himself with regard to the existing roof build-up and ascertain the extent of the work involved in stripping up the existing roof system and deck. No claims arising from failure to do so will be considered by Langley Waterproofing Systems Ltd.				
3.2	Contractor Note - Expansion Joints: Clean out existing joint in substrate and prepare as necessary, ready for the installation of the new expansion joint detail. Prior to installation, joint to be filled with suitable joint filler (by others). Supply and install a suitable new proprietary expansion joint, as approved by Langley Technical. Installation to be as per joint manufacturers written instructions.				
3.3	Damp-proof Courses / Cavity Trays - Requirement: Where tops of new waterproof skirtings will be above the line of the existing damp-proof course or cavity tray, it is a requirement that the contractor makes suitable provision to renew and raise these to a higher level. The contractor must liaise with, and seek separate instruction from the client contract administrator as to the method of raising these details. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd.				
3.4	Extractor Fans / Ventilators - Kerb Mounted - Temporary Removal: Carefully remove and set aside for re-fixing upon completion of the new waterproofing system. No equipment is to be stored during the course of the works on completed areas unless suitable protection has been provided beneath.				

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No.	Item	Unit	Qty	Rate	Total
3.5	TV Aerials and/or Satellite Dish Arrays - Temporarily Remove: Any TV aerials and/or satellite dish arrays that will impede roofing works are to be temporarily removed, raised, etc. to facilitate the works. The contractor must liaise with the client contract administrator directly in relation to how best serve the property so that minimal disturbance of services is achieved throughout the contract period.				
3.6	Load Bearing Plinths for Plant - Lead Saddles - Re-use: Lead saddles must be cut and lifted clear sufficiently to allow the plinth to be encapsulated with all necessary layers of the new waterproofing system. Upon completion the saddles are to be redressed. Any defective or damaged sections of lead must be replaced / repaired as required.				
3.7	Cables - Temporarily Remove: All cables must be carefully raised and/or temporarily supported clear of the roof surface to facilitate the works.				
3.8	Overflow Pipes / Scupper Outlets - Raise: Raise existing positions so they discharge above the new waterproof skirting height which must be a minimum of 150mm high. Block off redundant hole/s, prior to installing the new waterproofing system details. Allow for all modifications/adaptations to pipe work. Allow for raising and making good any internal bunding as necessary. Note: The contractor must not block off overflows or scupper outlets by detailing over with any new waterproofing membranes without prior approval from the Client Contract Administrator or Langley Waterproofing Systems Ltd.				
3.9	Existing Outlets - Refurbish with ParaFurb Outlets: Make ready to accept new ParaFurb Refurbishment Outlets (detailed elsewhere). Where necessary, cut back and remove sufficient existing waterproofing from around the outlets and as required from the surrounding area to allow for correct installation. Important Note: ParaFurb Outlets must not be installed to outlet positions that already have an existing refurbishment outlet in place. Prior to ParaFurb Outlets being installed, any existing refurbishment outlets or lead sleeve inserts must first be removed and surrounding substrates made good.				
3.10	Internal Gutters - Existing: Re-create within new insulation scheme (detailed elsewhere), matching existing locations.				
3.11	Rooflight/s - Discard: Remove and dispose of existing rooflight/s to suitable waste facilities.				
3.12	Rooflight Kerb/s - Repair and Raise: Inspect for deterioration. Repair and raise as necessary to achieve a minimum upstand height of 150mm above the finished level of the new waterproofing system.				

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No.	Item	Unit	Qty	Rate	Total
3.13	Kerbs to Plant Openings - Repair and Raise: Inspect for deterioration. Repair and raise as necessary to achieve a minimum upstand height of 150mm above the finished level of the new waterproofing system.				
3.14	Paving Slabs - Discard: Remove and dispose of to suitable waste facilities.				
3.15	Stone Ballast - Discard: Remove and dispose of to suitable waste facilities.				
3.16	Existing Cement Backed Inverted Insulation Boards - Remove: Strip and remove to suitable waste containers all inverted insulation, including insulated upstand boards and water filtration/control layers that may be found, back to but not including the original substrate.				
3.17	Existing Flashings / Termination Bars etc. - Remove: Carefully remove all existing secondary cover flashings, termination bars etc. and dispose of to suitable approved waste containers / facilities or return to contractors premises for safe disposal.				
3.18	Redundant Chases - Make Good: Rake out and prepare any redundant chase lines. In-fill with sand and cement mortar, flush with wall face.				
3.19	Upstands - New Chase: In preparation of a new cover flashing the contractor is to cut a new chase to a minimum 25mm depth and at a minimum height of 150mm above the intended finished roof level surface. Brush clean and prime with appropriate primer to seal substrate.				
3.20	Parapet Copings - Repoint: Copings. Rake out all loose pointing and re-point with suitable sand cement mortar mix. Exact scope of works to be confirmed by CA.				
3.21	Soil Vent Pipe/s - Extend: Extend where necessary. Collar or pipe sleeve/s must be a minimum of 150mm above the finished roof surface. Note: Extension pipe/s must be fixed inside the existing pipe/s.				
3.22	Existing Roof System and Deck Substrate - Remove: Strip and remove all waterproofing, insulation, vapour control layers and deck substrate back to but not including the supporting joists and dispose of to suitable waste containers. All supporting timbers, firings, etc. must be inspected and repaired/replaced as necessary. Important: Ensure all hazardous waste (which includes timber waste from buildings built between 1950-2007) is disposed of in accordance with current regulations.				

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No.	Item	Unit	Qty	Rate	Total
3.23	New Deck - Plywood: 18mm thick, class 3, exterior grade plywood. All edges to be supported. Secure with non-corroding screw fixings along all relevant supports at maximum 150mm centres around the perimeters of each panel and 300mm centres elsewhere (in accordance with PD CEN/TR 12872:2014) . Fix panels with staggered cross-joints and with a gap of 1mm per metre of panel size at all edges (including perimeters). Plywood and its fixing must comply with the recommendations of Section 5.1.6 of BS 8217: 2005.				
3.24	Plywood Decking Panel Joints - Tape: Cover panel joints with pre-cut 200mm wide strips of Paradiene SA underlay. Before application of Paradiene SA, prime area with Langley Spray-on Primer and allowed to dry. Butt joint at roll ends and perpendicular intersections.				
3.25	Priming Deck & Detail Substrates: All deck and detail substrate surfaces. Prime with Langley Spray-on (synthetic rubber) Primer or Langley SA Primer (roller applied) and allow to dry.				
3.26	Flame-free Zones - Priming Requirement - All Surfaces (Inc Insulation if applicable): Prime all flame-free zone surfaces with Langley Spray-on (synthetic rubber) Primer or Langley SA Primer (roller applied) and allow to dry. (bituminous primer must not be used).				
3.27	Flame-free Zones - Self-adhesive Membranes - Additional Priming: Adhesion issues may arise when applying membranes with a hot-air gun. Langley SA Primer or Langley Spray-on Primer can be applied to the surface of the Paradiene SA underlay to enhance adhesion of the Parafor Solo SA cap sheet. This 'additional priming' is also recommended when the Langley SA Membrane Detailing System is specified as the primary roof covering or over large areas. This will ensure a consistent bond across larger roof areas and improve application times				
4	AIR AND VAPOUR CONTROL				
4.1	Air and Vapour Control Layer - Self-Adhesive - Field Area: Install to a primed, prepared surface, Parevapo SBS ADH metal-lined, elastomeric air and vapour control layer. Top face: Heat activated self-adhesive edges and stripes for bonding insulation. Underside: Heat activated bitumen adhesive with silicone peel-off film. All laps over non-combustible substrates can be torched with a bead of bitumen exuded (sealing laps over combustible substrates, such as timber, must utilise heat welding with a hot-air gun only and applying pressure with a seam roller). Side and end laps must be a minimum 75mm. Detail flashings must be executed with separate underlay membrane.				

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No.	Item	Unit	Qty	Rate	Total
4.2	Flame-free Zones - Air and Vapour Control Layer - Change of Membrane - Flat Exclusion Area: Install Parevapo SA, double reinforced, metal-lined, self-adhesive SBS elastomeric bitumen air and vapour control layer. Fully bond to a prepared and primed substrate by means of the heat activated, self-adhesive face, applying pressure with a weighted roller. Side laps, minimum 75mm, end laps, 100mm, fully bond by heat welding with a hot-air gun and applying pressure with a seam roller. Priming of substrate must be with Langley Spray-on (synthetic rubber) Primer (bituminous primer must not be used). All heat activation and welding within the flame-free zone must be carried out with a hot-air gun. Note: All laps with main area AVCL, (outside the flame-free zone) must be minimum 150mm and torch bonded.				
4.3	Air and Vapour Control Layer - Non-combustible Detail Skirtings: Extend the air and vapour control layer as a separate flashing piece cut from full width of roll to the skirting. Fully bond by torch-on method to a fully prepared surface to a minimum height of 100mm past the finished proposed line of the new insulation level. A minimum of 100mm lap must be achieved to main field return. Side laps to be a minimum of 75mm and must be fully sealed by torch-on method.				
4.4	Flame-free Zones - Air and Vapour Control Layer - All Upstands, Skirtings & Details Generally: Extend Parevapo SA air and vapour control layer to the skirting / details as a separate flashing piece, cut from the width of a roll. Fully bond to a prepared and primed substrate by means of the heat activated self-adhesive face. Minimum height, 100mm above the finished height of the new insulation (or the full girth of details). Priming of substrate must be with Langley Spray-on (synthetic rubber) Primer, (bituminous primer must not be used). Lap to main field return, minimum 100mm, side laps minimum 75mm. Application method as per the main area. Detailing arrangements all as main specification.				
5	INSULATION				
5.1	Parafoam Ultra Tapered Board Insulation - Field Area: Install Tapered Parafoam Ultra Polyisocyanurate (PIR) roof insulation board. CFC/HCFC-free with zero ODP. Set out in accordance with tapered scheme drawings supplied by Langley Waterproofing Systems Ltd. Boards to be close butted with staggered joints.				
5.2	Parafoam Ultra Tapered Insulation Scheme - Sumps to Outlet Positions: Sumps to be a minimum of 500mm x 500mm square around outlet position. Form with Parafoam Ultra Polyisocyanurate (PIR) flat board insulation. Board thickness in accordance with Tapered Scheme drawing. A Langley Metal Hard Edge to be fixed to all exposed insulation edges. Bond to insulation with either low foaming PU adhesive or strapping with suitable fully bonded underlay membrane.				

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No.	Item	Unit	Qty	Rate	Total
5.3	Parafoam Ultra Insulation - Torch-on Attachment to ADH: Heat activate stripes on top surface of Parevapo SBS ADH Self-Adhesive Vapour Barrier by burning off release film by torch-on method. Lay insulation boards in close staggered butt jointed pattern. Surface substrate must be dry and swept clear of all dirt, debris and loose material, prior to heat application. <u><i>Note: PU adhesive is not to be used to adhere insulation to Parevapo SBS ADH</i></u>				
5.4	Parafoam Insulation - Sumps, Gutters & Abutments Only - PU Attachment: When using Parevapo SBS ADH, in areas such as sumps, internal gutters and along abutment details where the ADH has been covered by detail membranes that do not have the torch activated strips the insulation to these areas must be bonded with Lang-Stik Solvent Free PU Adhesive. Surface substrate must be swept clear of all dirt, debris and loose material, prior to application of the PU adhesive.				
5.5	Parafoam Ultra Insulation - Dual Layer Applications: Where thicknesses in excess of 150mm are specified the contractor must allow for the installation of a second layer of boards and the additional adhesive required. All boards to be laid close butted with staggered joints with the top layer off-set from the preceding one.				
5.6	Insulation - PU Attachment - Flame-free Zones: When using Parevapo SA, in designated flame-free zones, the insulation to these areas must be bonded with LangStik Solvent Free PU Adhesive. Surface substrate must be swept clear of all dirt, debris and loose material, prior to application of the PU adhesive.				
5.7	Insulation - Changes of Levels - Metal Hard Edge: Langley Metal Hard Edge to be fixed to all exposed insulation edges. Bond to insulation with either low foaming PU adhesive or strapping with suitable fully bonded underlay membrane.				
5.8	Priming - Hard Edges to Insulation: All hard edges, metal and/or timber, must be primed with Langley Spray-on (synthetic rubber) Primer and allow to dry.				
5.9	Surface Condensation/Moisture - Application Warning: Contractor to ensure that the surface of the insulation is free of surface condensation/moisture prior to the application of the waterproofing system. Important Note: Surface condensation/moisture is particularly prevalent during cold months and during extreme hot weather.				
6	WATERPROOFING - UNDERLAYS				
6.1	Detail Reinforcing Strip - Requirement in Lieu of Angle Fillets: Paradiene M3 S detail reinforcing strips must be fixed at the base of all upstands, prior to subsequent membranes being installed. At a minimum of 250mm width cut from roll, apply 125mm to the horizontal and 125mm to vertical prepared surfaces. Fully bond by torch-on method.				

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No.	Item	Unit	Qty	Rate	Total
6.2	Flame-free Zone - Detail Reinforcing Strip - Change of Membrane: Paradiene SA detail reinforcing strips must be installed at the base of all upstands, prior to subsequent membranes being installed. Strips to be minimum 250mm wide in pieces cut from roll, applied 125mm to the horizontal and 125mm to vertical surfaces. Fully bond to a prepared (and primed if applicable) substrate by means of the heat activated self-adhesive face, applying pressure with a seam roller. Where priming is required, it must be with Langley Spray-on (synthetic rubber) Primer, (bituminous primer must not be used).				
6.3	Underlay - Self-Adhesive - Field Area: Adepar JS VV glass fibre reinforced, SBS elastomeric bitumen membrane. Top Face: fusible film. Underside: sanded between self-adhesive strips with siliconised peel-off film over self-adhesive seldedge. Fixing: by means of factory-applied self-adhesive strips. Perimeters and Openings: 500mm wide, fully bond by torching. Side Lap: 80mm determined by seldedge. End Lap: minimum 120mm. Note: The siliconised film is not fusible. Fixing Method: See Fixing Instructions. Note: 5-10mm bead of bitumen must be exuded from all laps.				
6.4	Flame-free Zone - Underlay - Change of Membrane - Flat Exclusion Area: Install Paradiene SA, polyester reinforced, self-adhesive SBS elastomeric bitumen membrane. Fully bond to a prepared and primed substrate by means of the heat activated self-adhesive face, applying pressure with a weighted roller. Side laps, minimum 75mm; end laps, minimum 100mm; fully bonded by heat welding with a hot-air gun and applying pressure with a seam roller. Priming of substrate (including insulation if applicable) must be with Langley Spray-on (synthetic rubber) Primer (bituminous primer must not be used). All heat activation and welding within the flame-free zone must be carried out with a hot-air gun. Note: All laps with main area underlay, (outside the flame-free zone) must be minimum 150mm and torch bonded.				
6.5	Underlay - Upstands & Skirtings: To be formed separately using Paradiene M3 S underlay. Cut from the width of the roll and fully bond by torching to base membrane with a minimum 100mm lap. Both surfaces being bonded must be heated and a bead (5-10mm) of bitumen extruded from all head and side laps.				

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No.	Item	Unit	Qty	Rate	Total
6.6	Flame-free Zone - Underlay - Upstands & Skirtings - Change of Membrane: To be formed separately with Paradiene SA underlay, in pieces cut from the width of a roll. Fully bond to a prepared and primed substrate (or AVCL if applicable) by means of the heat activated self-adhesive face, applying pressure with a roller. Minimum height, 150mm above the finished height of the new insulation (or the full girth of details). Where applicable, priming of substrate must be with Langley Spray-on (synthetic rubber) Primer (bituminous primer must not be used). Lap to main field return, minimum 100mm; Side laps, minimum 75mm. Application method as per the main area. Detailing arrangements all as main specification.				
6.7	Underlay to Outlet Sumps & Internal/Integral Gutters: Paradiene M3 S underlay (fully bonded) must be used (detailed elsewhere). Extend onto main field area by minimum 150mm.				
7	WATERPROOFING CAP SHEETS				
7.1	Cap Sheet - Torch-on - Field Area: Install Elastoflex GS cap sheet. Elastoflex GS is a torch-on polyester-reinforced, SBS-modified elastomeric bitumen membrane. The surface has a Dark Grey granulated surface with a grooved thermofusible film underside. Lay: Fully bonded by torching with 90mm minimum side lap width as determined by the selvedge. Minimum end laps must be 150mm. This layer is to be laid parallel to the under layer, breaking joints by at least 300mm. Both surfaces being bonded must be heated and a bead of bitumen exuded from all laps.				
7.2	Flame-free Zone - Cap Sheet - Change of Membrane - Flat Exclusion Area: Install Parafor Solo SA, polyester reinforced, self-adhesive, SBS elastomeric bitumen, dark grey granule faced cap sheet. Fully bond to the underlay by means of the heat activated self-adhesive face, applying pressure with a weighted roller. Side laps to suit selvedge (minimum 75mm); end laps, minimum 150mm; fully bond by heat welding with a hot-air gun and applying pressure with a seam roller. A 5-10mm bead of bitumen must be extruded from all laps. All heat activation and welding within the flame-free zone must be carried out with a hot-air gun. Note: All laps with main area cap sheet, (outside the flame-free zone) must be minimum 150mm and torch bonded.				
8	DETAILS				
8.1	Detail Skirtings & Upstands - Requirement: All detail skirtings and upstands must be a minimum of 150mm above the finished horizontal roof surface level, including any paving, ballast, living roof coverings etc. Important Note: If the required height cannot be achieved for any reason, then the details below 150mm will not be covered by the Langley Waterproofing guarantee				

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No.	Item	Unit	Qty	Rate	Total
8.2	Cap Sheet - General Detailing: Detail flashings. Form separately with Elastoflex GS Cap Sheet cut from width of roll. Colour to match main field membrane. Fully bond by torching to the specified detail underlay membrane. Both surfaces being bonded must be heated and a 5-10mm bead of bitumen extruded from all head and side laps. Cap sheet detail must extend to a minimum of 150mm onto the main field area. Upstand heights must be a minimum of 150mm above the finished roof level.				
8.3	Flame-free Zone - Cap Sheet - General Detailing - Change of Membrane: Detail flashings to be formed separately using matching colour Parafor Solo SA Cap Sheet, in pieces cut from width of roll. Fully bond to the specified detail underlay by means of the heat activated self-adhesive face, applying pressure with a roller. Minimum height, 150mm above the finished height of the new system (or the full girth of details). Side laps to suit selvedge; end laps, minimum 150mm, bond by heat welding with a hot-air gun and applying pressure with a seam roller. A 5-10mm bead of bitumen is to be extruded from all laps. Lap to main field return, minimum 150mm.				
8.4	Internal Gutters: See Underlay section of this specification for gutter underlay membrane specification. At change in level from field area to gutter the underlay should be dressed over the hard edge, down the face of the field area insulation and lap onto the AVCL to form a bund. An additional section of underlay should also be dressed across the top of the gutter insulation, up the change in level and lap onto field area underlay by a minimum 75mm on either side of the gutter. Base of gutter upstand to be reinforced with the appropriate detail underlay (see Detail Reinforcing Strip in Underlay section of specification) prior to installation of cap sheet. All membranes to gutter to be laid lengthways to minimise laps. Laps to be laid with falls to assist drainage Side and end laps to be a minimum 75mm.				
8.5	Drainage - Outlet Sumps: See Underlay section of this specification for sump underlay membrane specification. At change in level from field area to sump the underlay should be dressed over the hard edge, down the face of the field area insulation and lap onto the AVCL to form a bund. An additional section of underlay should also be dressed across the top of the sump insulation, up the change in level and lap onto field area underlay by a minimum 75mm on either side of the sump. At the outlet opening the underlay should be dressed down the face of the insulation and lap onto the AVCL. Base of sump upstand to be reinforced with the appropriate detail underlay (see Detail Reinforcing Strip in Underlay section of specification) prior to installation of cap sheet. Side and end laps to be a minimum 75mm.				

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No.	Item	Unit	Qty	Rate	Total
8.6	Internal Drainage - ParaFurb Outlets: ParaFurb Outlet: Stainless Steel spigot with Ribseal gasket and SBS membrane flange. Select outlet to suit diameter/s of fall pipes. Fully bond flange membrane to previously installed underlay (see Underlay section for sump membrane specification) or soaker. Fully bond cap sheet over and cut hole to suit diameter of pipe. Install leaf guard/grating supplied. Installation to be in accordance with Langley fixing instructions.				
8.7	Expansion Joint - Flush: Loose cover joint with a 100mm wide strip of inverted (granule face down) cap sheet laid equidistant over the joint. Overlay with a 350mm wide strip of underlay, fully bonded. Fully bond a cap sheet layer (500mm overall width). Cap sheet to be laid in two separate pieces with a minimum 50mm lap running along the joint line.				
8.8	Splash Pads (Under Downpipes, Overflow Pipes etc.): 300mm x 300mm pad of cap sheet. Fully bond to the finished roof surface.				
8.9	Counter Flashing - Code 4 Lead: Install and protect detail abutment skirtings with Code 4 lead counter flashings. Dress lead into a prepared chase and wedge at 450mm centres with lead clips or mechanical fixings to suit chase conditions. Point with Langley Gap-Seal Mastic. Exposed Vertical Edges protect with vertical stepped flashings. All lead work must be fixed in accordance with LDA/LSA recommendations. Flashings must not exceed 1.5m in length with laps being a minimum of 100mm. Clips to be spaced along the free edge to suit the exposure conditions.				
8.10	Overhangs - Adapted Counter Flashing - Langley TB62 GRP Termination Bar: For use beneath Copings, Overhangs, Window cills and Door Frames etc, where required to suit site conditions. Install an adapted Langley TB62 GRP face-fixed Termination Bar. Modify by removing the bottom return section by cutting. Fix modified bar over the membrane, with the top angled return facing the upstand to form a "V" with the underside of the overhang. Apply a bead of Langley Gap-Seal Mastic to the rear surface before positioning over the membrane. Once aligned, secure in place by mechanically screwing and plug fixing with dome or pan head non-corroding screws at maximum 300mm centres. Infill the "V" with a bead of Langley Gap-Seal Mastic.				
8.11	Rooflight Kerbs - ParaKerb: Flashings to be formed separately. Must be minimum 150mm above the finished roof surface. To a primed surface, fully bond underlayer and detailing cap sheet to the full height of the kerb. Secure top edge with the retaining trim provided. Please Note - Contractor must ensure the detailed rooflight schedule has been duly checked with particular regard to the type of unit and fixing instructions. No claims arising from preparation/installation error by contractor will be entertained by Langley Waterproofing Systems Ltd.				

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No.	Item	Unit	Qty	Rate	Total
8.12	<p>Builders Kerb - Rooflight: Kerb must be minimum 150mm above the finished roof surface. Flashings to be formed separately. Fully bond both base layer and cap sheet of the detailing system to the vertical face. The cap sheet only to be taken across the top of kerb. When turning the cap sheet over the top of the kerb, all corners to be to be mitred and side laps to be butt-jointed to present a flat plane for the subsequent fixing of the rooflight.</p> <p>Please Note - Contractor must ensure the detailed rooflight schedule has been duly checked with particular regard to the type of unit and fixing instructions. No claims arising from preparation/installation error by contractor will be entertained by Langley Waterproofing Systems Ltd.</p>				
8.13	<p>Builders Kerb - Plant Openings: Kerb must be minimum 150mm above the finished roof surface. Flashings to be formed separately. Fully bond both base layer and cap sheet of the detailing system to the vertical face. The cap sheet only to be taken across the top of kerb. When turning the cap sheet over the top of the kerb, all corners to be mitred and side laps to be butt-jointed to present a flat plane for the subsequent fixing of the plant.</p>				
8.14	<p>Penetrations - Soil Vent Pipes: Soil vent pipes must be a minimum of 150mm high from the finished level of waterproofing. Install new Code 5 Lead pipe sleeves with integral lead flange. Sleeves must be a minimum of 30mm higher than pipe. Flange must be a minimum of 100mm wide. Prime both surfaces of the flange. Fully bond to the underlay or soaker, prior to fully bonding the cap sheet membrane. Sleeves to be turned into top of pipe by 25mm. Colour: Black.</p> <p>Note: Soil vent pipes greater than 300mm require a Code 5 Lead sleeve finishing a minimum of 150mm high above the finished level of the new waterproofing system and terminated with a weathering collar. Finish base of vertical sleeve as previously stated.</p>				
8.15	<p>Horizontal Pipe Penetrations (Clip and Mastic) - General: New Code 5 lead pipe sleeve with integral flange. Flange to be minimum 100mm wide, prime both surfaces. Prepare surrounding wall face. To a primed surface, fully bond the specified underlay (or soaker), which must extend minimum 100mm (in all directions) beyond the lead flange. Fully bond lead flange to the underlay (or soaker), prior to fully bonding the specified cap sheet over the flange. Cap sheet to extend minimum 50mm beyond the underlay. Secure top and sides of waterproofing with a TB62 Termination Bar. Secure sleeve to pipe with a stainless-steel jubilee clip and a bead of Gap-Seal mastic.</p>				

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9	WATERPROOFING COVER				
9.1	<p>Geotextile Separating Layer: Over the waterproofing and below the paving pedestals, loose lay a non-woven geotextile membrane separating layer, by others, density of no less than 250gsm (300gsm recommended). Installation as per manufacturers written instructions.</p> <p>Note: Where a geo-textile is used beneath decking, paving supports etc. it is intended as a separating layer between the supports and the waterproof covering and is only required where the two come into contact. It should be installed to allow free-draining of the areas so that water does not hold and stagnate.</p>				
9.2	<p>Maintenance, Pedestrian and Terraced Areas - Paving Slabs/Tiles on Freestanding Supports: To fully completed waterproof coverings (including inverted roof insulation and WFRL where applicable), install Paving Slabs/ Tiles to CA specification. To be laid loose on third party paving support pads and levelling shims or adjustable pedestals in accordance with the manufacturer's instructions. Size, colour and finish must be agreed with all parties Client / Contract Administrator & Roofing Contractor. NB: Slabs/ Tiling to be a minimum 80kg/m² to avoid floating, on inverted roof systems, and wind uplift</p>				
10	ROOFLIGHTS & OPENINGS IN DECK				
10.1	<p>ParaRange Modular Rooflights - Requirement: All Langley Waterproofing Systems Ltd Rooflights and ParaKerb Upstands are BBA accredited. Any deviation from the specification detailed below and or accompanying rooflight schedule can only be made with the approval of Langley Waterproofing Systems Ltd.</p>				
10.2	<p>ParaRange Modular Rooflights - Installation: All must be installed by the contractor strictly in accordance with BS 8217 and the fixing instructions provided in Detail Sheets of Agrément Certificate. When supplied as part of a total roofing package, ParaRange Rooflights are covered by all warranties and guarantees issued by Langley Waterproofing System Ltd Guarantee.</p> <p>Note: Installation must be carried out by an approved Langley installer in order to meet the requirements of the guarantee. See attached schedule for details.</p>				
10.3	<p>ParaRange Modular Rooflights - Schedule: A detailed Rooflight Schedule by Langley Waterproofing Systems Ltd will be issued at tender stage to support this specification.</p>				
10.4	<p>ParaRange Automatic Opening Vent: Installed to ParaKerb / Adaptor Kerb as required with the security fixings supplied. Wipe unit clean. This item must be read in conjunction with the Langley issued Rooflight Schedule.</p>				

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10.5	Aperture Linings: Internal linings must be installed/ made good as necessary and decorated in accordance with the client contract administrator's detailed instruction or specification. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd.				
10.6	Aperture Linings - Existing - Unchecked: Existing lining construction is unknown at this time. If confirmed to be an ACM item, under no circumstances are the internal linings to be disturbed. Any opening mechanisms/furniture etc. that are fixed through the linings are to be disconnected from the rooflight and left in-situ. The contractor must liaise with, and seek separate instruction from the client contract administrator as to the method of specialist testing and or handling of this item should a requirement for removal be necessary. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd.				
11	SAFETY SYSTEMS				
11.1	Guarantee Terms: Please note that the guardrail is to be supplied by Langley and is included as part of the guarantee terms. If the guardrail is not supplied by Langley, Langley will take no responsibility for any damage caused during the install and may invalidate the waterproofing guarantee.				
11.2	Free-standing Permanent Guardrail System: New LangGuard Free-standing Permanent Guardrail System, to be installed to the area/s designated on the attached roof plan. The guardrail system shall be designed, tested, inspected, and marked to ensure it meets performance requirements and safety factors specified in BS 13700:2021. The system shall allow for safe access and egress and include suitable, secure access gates where required.				
11.3	LangGuard - Standards: All posts, rails, bases and fittings are galvanised to BS EN ISO 1461. Fully tested to Health and Safety Specialist Report 15 September 1988, 'Handrails - Maintenance Uses Only', BS6399 Buildings and Loads. See LangGuard Data Sheet DsA2 0119 for further information.				
11.4	LangGuard - Base Plates: Supporting Base Plates (with integrated bonded ribbed rubber mat): To sit flat on the roof surface.				
11.5	LangGuard - Installation: To be installed, checked and certified by Langley Waterproofing Systems Ltd.				

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11.6	Maintenance of Guardrail: Annual Planned Preventative Maintenance (PPM) checks of the freestanding handrail system must be conducted in accordance with the Guardrail manufacturer's instructions to ensure the system's performance, safety, and guarantee is maintained. It will be the sole responsibility of the property owner to ensure safe access can be gained to the roof and that relevant Health and Safety procedures are followed when working at height. It is advised that any contractor wishing to undertake works to the roof areas should first seek proof of current maintenance logs/records for any roof access.				
11.7	Maintenance of Roof: The specified free-standing guardrail will enable that maintenance of the roof can be carried out in line with the waterproofing maintenance schedule. Yearly maintenance is required by the system manufacturer to ensure the guarantee is maintained.				
12	COMPLETION				
12.1	Guarantee Requirement - Final Inspection: In accordance with our guarantee requirements, Langley Waterproofing Systems Ltd are to be notified once all works are complete. A final inspection will then be undertaken by us and the contractor must ensure that safe working access is provided.				
12.2	Existing Lead Flashings - Re-dress: Upon completion of waterproof detailing, re-dress the lead flashings. Pointing to be raked out. Any missing or loose wedges must be replaced. Re-point chase with Langley Gap-Seal Mastic. The contractor must allow for the renewal of any damaged or unserviceable sections of lead.				
12.3	Extractor Fans / Ventilators: Re-fix on a bead of silicone or foam strip. Use appropriate fixings with sealed caps.				
12.4	TV Aerials and/or Satellite Dish Arrays - Reinstate: Reinstate to original locations or new positions as instructed by the client contract administrator all TV aerials and/or satellite dish arrays.				
12.5	Sacrificial Layers - Free-standing Plant / Handrails etc: All freestanding items. Install a sacrificial layer of cap sheet (granule surface down) under all load spreading supports / pads.				
12.6	Cables - Reinstate: Collate and support on cable trays if necessary. Secure cables to tray or to original locations and secure with plastic cable ties. If cable trays are used then they are to be rested on load-spreading bases on sacrificial pieces of cap sheet. Securely fasten trays to bases as required.				

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12.7	Rainwater Outlets - ParaFurb Outlets: Check for blockages. Clear if necessary and leave in a free-running condition. Ensure Ribseal (where present) is tightly secured to form correct pressure seal to pipe/s for applicable units. Ensure all supplied leaf guards are in place and tightly secured.				
12.8	Completed Roof Surface - General: Ensure visual inspection of all laps is undertaken to confirm integrity of system prior to final guarantee inspection. Sweep, clean and remove debris to suitable waste container.				
12.9	Arisings from Works: Remove from site all arisings for return to contractor storage or safe disposal.				

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Detailed Specification: 2

Option 2 - Roof Area 1 Specification

No.	Item	Unit	Qty	Rate	Total
1	SPECIFICATION REQUIREMENTS				
1.1	<p>Guarantee: The following TA-25-W specification is to be covered by the Langley Waterproofing Systems Ltd, single-premium, pre-paid independently-insured workmanship and materials guarantee for a period of 25 years from the date of practical completion. In order to meet this requirement only roofing contractors that participate in this guarantee scheme may be used. The eligibility of proposed roofing contractors should be confirmed with Langley Waterproofing Systems Ltd, Tel: 01327 704778 prior to inviting tenders.</p>				
1.2	<p>Projects Under CDM: The Construction (Design and Management) Regulations 2015 (CDM 2015) apply to all construction projects. It is the Client's responsibility to ensure that all required duty holders are appointed as necessary. The Principal Designer must advise the Client on health and safety issues during the design and planning phases of construction work, using their expertise in health and safety, planning, management, construction, and communications to mitigate any health and safety risks. As part of our specification service, Langley may prepare or modify drawings, specifications, or design calculations. Under CDM 2015, Langley's role falls under the responsibilities of a Designer, working under the Principal Designer. When undertaking samples or inspecting works, Langley's role under CDM 2015 becomes that of a Worker, where we have a duty to cooperate and report any identified risks that may endanger the health and safety of ourselves or others. Since the roof area will require maintenance in accordance with BS 6229:2018, the Client should ensure that safe access to and from the roof area is considered under CDM 2015. This may include installing free-standing guardrails around potential hazards, such as rooflights, or implementing other appropriate fall prevention methods. A summary of duties can be found here: https://www.hse.gov.uk/construction/cdm/2015/summary.htm</p>				

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No.	Item	Unit	Qty	Rate	Total
1.3	<p>Items Not Supplied by Langley - Guarantee:</p> <p>Only products supplied by Langley are included in our guarantee.</p> <p>Products others supply are not included in our guarantee and are advised in good faith only to ensure compatibility and performance.</p> <p>Where existing items are reused (rainwater outlets etc.) their suitability and functionality are to be confirmed prior to works commencing and these items will be excluded from the guarantee. The waterproofing to these items will be included unless stated otherwise.</p>				
1.4	<p>Maintenance Item - Mastic Sealant:</p> <p>Please note that the Langley Gap Seal Mastic, like other mastic sealants, will degrade when exposed to ultraviolet (UV) and has a maximum life expectancy of 5 years under these conditions. This expected degradation can lead to potential failure and subsequent leaks in the waterproofing detail if remedial works are not undertaken promptly.</p> <p>As part of the scheduled maintenance program, it is recommended that all sealants be visually inspected and their elasticity checked twice yearly. Cracked and hard mastic, or evidence of moisture present, likely results in deteriorating sealant integrity and should be replaced.</p> <p>First, remove the aged/failed sealant, clear the substrate of loose material and any contamination that could cause adhesion issues, and then apply new Langley Gap Seal Mastic. It is essential to document areas where the sealant has been replaced as evidence against any future warranty or guarantee claims.</p>				
1.5	<p>Guardrail - Guarantee:</p> <p>The Langley Guardrail specified in the following document will be covered by the same insurance-backed guarantee (IBG) provided by Langley Waterproofing Systems Ltd. It will be effective for the same duration as the waterproofing system guarantee from the date of completion.</p> <p>Please note that the guardrail is to be supplied by Langley Waterproofing Systems Ltd (Langley) and is included as part of the guarantee terms. If the guardrail is not supplied by Langley, then Langley will take no responsibility for any damage caused during the install and may invalidate the waterproofing. Maintenance must be performed annually, in accordance with the Guardrail manufacturer's instructions, to ensure the guarantee remains valid.</p>				
1.6	<p>Rooflights - Guarantee or Warranty (As Applicable):</p> <p>The Langley Rooflights specified in the following document will be covered by the same insurance-backed guarantee (IBG) or product-only warranty provided by Langley Waterproofing Systems Ltd. It will be effective for the same duration as the waterproofing system guarantee or warranty from the date of practical completion. Certain industry standard term limitations may apply to the individual components of specialist, bespoke, and structural units. Please ask for more details</p>				

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No.	Item	Unit	Qty	Rate	Total
1.7	Roof Drainage - Guarantee Requirement - CCTV Inspection: Prior to works commencing and after practical completion; any existing external rainwater systems or internal outlet drainage points must be checked for blockages and cleared as necessary by the roofing contractor. In addition, it is a requirement that should internal drainage pipes exist, that they are inspected using CCTV technology to confirm their integrity and serviceability prior to the commencement of any works.				
1.8	Design Note - Warm Roof: This specification is based on a warm roof construction. The principal thermal insulation is above the structural deck.				
1.9	Design Note - Existing Falls: Overlay of any existing roof system or deck. The new system will follow the existing falls and any deviations will be replicated. As a result, some areas of standing water may occur. However, please note the accumulation of ice, snow or ponding water will not have an adverse effect on the Langley products specified. This applies to both the life expectancy and/or long-term performance of the system specified and will not affect, in any way, the guarantee status.				
1.10	Tapered Insulation: When preparing a tapered scheme, a flat and level deck is assumed and, although the tapered scheme is intended to provide adequate drainage, some ponding may still occur due to obstructions, membrane lap build-ups or unforeseen deck deflection. Please note that neither ice, snow or ponding water will have an adverse effect on the Langley products specified. This applies to both the life expectancy and long-term performance of the system and will not affect in any way, the guarantee status.				
1.11	Design Note - Changes & Adjustments: Variations 'A' (general): Any variations must be agreed in writing by both the contract administrator and Langley Waterproofing Systems Ltd. These must be costed and authorised by the client but not be implemented until instructed by the client. Variations 'B' (minor): During work in progress, Langley Waterproofing Systems Ltd must be informed immediately of any proposed change/s and operatives must not implement any change/s until agreed by Langley (minor changes are deemed to be any item not falling within the scope of section A). Unauthorised Changes 'C' (general): Langley Waterproofing Systems Ltd will not be responsible for any changes of which they are unaware or have not authorised, nor will they accept any liability or associated costs due to system failure, i.e. labour, materials, design or programme delays, etc., resulting from said changes.				

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No.	Item	Unit	Qty	Rate	Total
1.12	<p>Design Note - Approved Document Part B Building Regulations - Compartmented Walls:</p> <p>Overlaying Existing Waterproofing/Substrate:</p> <p>Where the Langley Waterproofing system bridges a compartmented wall, it is expected that the existing underlying system is laid on a substrate or deck rated class A2-s3, D2 or better (non-combustible) to BS EN 13501-1.</p> <p>Some buildings (Hotels, boarding houses, residential colleges, residence halls, hostels, offices, assembly and recreation buildings) no taller than 15m are permitted to have a roof deck classified as Euroclass B-s3, D2 or worse (combustible). However, to comply with Approved Document Part B, additional fire stopping will be required underneath the roof deck. Because of the reduced resilience to fire, thermoplastic insulation materials (XPS, EPS) can only be used within the 1500mm zone on either side, and over the compartment wall when the deck is rated class A2-s3, D2 or better (non-combustible) to BS EN 13501-1.</p> <p>Double-skinned insulated roof sheeting, such as standing seam or profile metal sheet roofing, should incorporate a band of material rated class A2-s3, D2 or better, a minimum of 300mm in width, centred over the wall.</p> <p>Note: Proposed specification and design will be subject to LABC (Local Authority Building Control) or assigned AI (Approved Inspector) approval before works can commence on-site. Where appropriate, Langley Waterproofing can offer support and guidance to assist application.</p>				
1.13	<p>Roof Structure - Disclaimer:</p> <p>It is deemed the responsibility of the Client Representative, Contractor and/or Property Owner to give due consideration towards the ability of the existing roof structure accepting any additional loadings imposed by the application of the new waterproofing system proposed within this specification. Langley Waterproofing Systems Ltd will not be held responsible or accept any liability or associated costs should structural defects or structural failure occur.</p>				
1.14	<p>Electronic Roof Integrity Test & Root Protection (Compulsory For Buried Systems) - Disclaimer:</p> <p>Should the roof waterproofing system receive any subsequent coverings such as an inverted roof system, living roof system, paving slabs, ballast, decking, or similar, an electronic leak detection (ELD) test must be carried out by a qualified expert to confirm the waterproofing system integrity.</p> <p>You must also ensure an ELD is completed if the roof will receive a PV panel installation.</p> <p>You must ensure a record of this ELD test, and any repairs completed, is shared with Langley.</p> <p>Where appropriate, a root resistant membrane must be installed to protect the Langley waterproofing system from root penetration.</p>				

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No.	Item	Unit	Qty	Rate	Total
1.15	Fire Risks: This specification has been formulated with due regard to the inherent risks of fire when using hot work flat roof waterproofing systems and application methods. To the best of our knowledge any potential hazards have been identified and the specification tailored to minimise the risk of accidental ignition occurring. Notwithstanding the foregoing, the contractor / installer is reminded that they have a duty of care and responsibility to carry out their own assessment of the proposed works with regard to the potential fire risk, and introduce working practices that takes any such risks into account. Should the contractor / installer have any reservations about any aspect of the specification proposal, or if during the course of the works any unforeseen items are discovered that present an actual or potential fire risk, they should contact Langley Waterproofing Systems Ltd immediately so that safer methods can be agreed and implemented which do not compromise the integrity of the specification and or its guarantees.				
1.16	Fire Risk - Drying Out: In the event of the roof being/becoming wet and drying out is necessary, the use of gas torches is not recommended and should be avoided. In all cases Safe2Torch guidelines should be followed. Standing water should be swept to the nearest outlets with a broom or squeegee (care must be taken to avoid debris blocking outlets). The remaining moisture should be soaked up using mops or dry rags and the surface left to dry out naturally. To speed up the process, specialist equipment is commercially available, see 'General Guidance & Requirements' in the appendices of this specification.				
1.17	Safe2Torch - Flame-free Zones: This specification has been compiled in accordance with the NFRC Safe2Torch guidance and includes areas that have been identified as presenting a risk of fire if gas torches are used. This requires the substitution of membranes in these areas.				
1.18	Flame-free Zones - Definition: A Flame-free Zone is defined as being within 900mm of a combustible substrate / material. Note: If combustible material forms part of an overhang then the Flame-free Zone starts from the extremity of the overhang.				
1.19	Risk Assessment - Fire - Installing Contractor: In line with their own Risk Assessment and Method Statement, the installing contractor is to identify any areas where the use of a naked flame is deemed too great a risk. This matter should be raised at the pre-start / pre-commencement meeting or stated in writing to Langley in order that an alternative flame free method can be adopted and specified.				

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No.	Item	Unit	Qty	Rate	Total
1.20	<p>Flame-free Zones - Identified Risk Areas: In accordance with Safe2Torch guidance the following area/s have been designated as 'flame-free' zone/s:</p> <p>Detail Noted: Rooflight Aperture - Full SA Detail Noted: Party wall - Full SA</p> <p>Whilst these area/s have been identified, they may not be definitive. Due allowance must be made so that at any stage of this project, should any additional areas be designated a fire risk by any of the parties involved, they must be logged, all parties informed, and the appropriate measures employed.</p>				
1.21	<p>Fire Accreditation: Unless otherwise stated, the full waterproofing system and/or products contained within this specification have been tested for external fire exposure (both with and without insulation) in accordance with BS EN 13501-5: 2005 (European Test) and are accredited as Broof(t4).</p>				
1.22	<p>Langley Detailed Drawings: This specification is to be read in conjunction with detailed drawings issued and supplied by Langley Waterproofing. Should the contractor at any point find discrepancies between the issued specification and issued drawings, it is required that the specification takes precedence in all cases, unless otherwise notified and approved. No additional costs or liability arising from failure to follow specification or notifying Langley Waterproofing Systems Ltd of any discrepancies found in good time prior to commencement of works will be considered.</p>				
1.23	<p>Guarantee Requirement - Torch-on & Hot Air Applied Membranes: Applicable to all layers. A 5-10mm bead of bitumen must be exuded from all laps.</p>				
2	SCOPE OF APPLICATION				
2.1	<p>Partial Strip-up - Removal of Overlay to Existing Asphalt: This specification is based on the removal of an existing overlay system and re-covering of the underlying asphalt substrate.</p>				
2.2	<p>Deck and Substrates - Existing Asphalt on Chipboard: This specification is suitable for application to a substrate of an existing prepared asphalt system on a chipboard roof deck, not exceeding 5° from the horizontal.</p>				
2.3	<p>Chipboard and Flaxboard Decks - Caution: Chipboard and Flaxboard decks are regarded as fragile and hazardous. It is solely the responsibility of the contractor to provide all necessary and suitable safety precautions whilst executing the works to provide suitable protection for their work force operatives, building occupants and members of the general public at all times during the contract period, following and adhering to all current HSE and Local Authority safety requirements.</p>				

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No.	Item	Unit	Qty	Rate	Total
2.4	<p>Identified Fragile Decks - Loading: As per HSG33 (Health and Safety in Roof Work), a competent professional should determine the fragility of the existing substrate and clarify appropriate use.</p> <p>Any proposal to retain an identified fragile roof deck should involve a detailed assessment of load strength capabilities by a structural engineer. This assessment should allow for the weight of the newly proposed system (including an over-deck if necessary) and consider resistance to static or live loads that may be imposed on the existing roof structure. Suitability of use should be confirmed in writing to Langley Waterproofing Systems Ltd. prior to works being undertaken.</p>				
2.5	<p>Day/Night Joints: The contractor must ensure at the end of each working day or period, that any exposed membranes or substrates that are susceptible to damage through water ingress are sealed with a Langley system compatible membrane to ensure complete water tightness. No loose laid membranes or other such covers are permitted.</p>				
2.6	<p>U-value - Tapered Insulation: To comply with Part L of the current Building Regulations, the average thickness of the scheme included in this specification is calculated in accordance with Annex E of EN ISO 6946: 2017. This is to ensure that the effective thickness of the scheme is sufficient to meet the target U-value of 0.18W/m²K.</p>				
2.7	<p>Contractors Note - Tapered Insulation: The specified tapered insulation scheme is based on the assumption that the contours of the underlying substrate reflects that of the existing roof coverings. In the event of any abnormalities being uncovered, it is the responsibility of the Roofing Contractor to report these immediately to Langley so that any amendments to the insulation scheme that may be necessary can be made. This may result in a delay. No claims arising from any additional costs incurred from such delays will be entertained by Langley Waterproofing Systems Ltd.</p>				
3	PREPARATION				
3.1	<p>Contractor Preparation Note: The contractor is to carry out his own inspection to satisfy himself with regard to the extent of works involved in stripping up the current overlay system and subsequent preparation of the exposed waterproofing coverings and substrates. No claims arising from failure to do so will be considered by Langley Waterproofing Systems Ltd.</p>				
3.2	<p>Contractor Note - Expansion Joints: Clean out existing joint in substrate and prepare as necessary, ready for the installation of the new expansion joint detail. Prior to installation, joint to be filled with suitable joint filler (by others). Supply and install a suitable new proprietary expansion joint, as approved by Langley Technical. Installation to be as per joint manufacturers written instructions.</p>				

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No.	Item	Unit	Qty	Rate	Total
3.3	Damp-proof Courses / Cavity Trays - Requirement: Where tops of new waterproof skirtings will be above the line of the existing damp-proof course or cavity tray, it is a requirement that the contractor makes suitable provision to renew and raise these to a higher level. The contractor must liaise with, and seek separate instruction from the client contract administrator as to the method of raising these details. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd.				
3.4	Extractor Fans / Ventilators - Kerb Mounted - Temporary Removal: Carefully remove and set aside for re-fixing upon completion of the new waterproofing system. No equipment is to be stored during the course of the works on completed areas unless suitable protection has been provided beneath.				
3.5	TV Aerials and/or Satellite Dish Arrays - Temporarily Remove: Any TV aerials and/or satellite dish arrays that will impede roofing works are to be temporarily removed, raised, etc. to facilitate the works. The contractor must liaise with the client contract administrator directly in relation to how best serve the property so that minimal disturbance of services is achieved throughout the contract period.				
3.6	Load Bearing Plinths for Plant - Lead Saddles - Re-use: Lead saddles must be cut and lifted clear sufficiently to allow the plinth to be encapsulated with all necessary layers of the new waterproofing system. Upon completion the saddles are to be redressed. Any defective or damaged sections of lead must be replaced / repaired as required.				
3.7	Cables - Temporarily Remove: All cables must be carefully raised and/or temporarily supported clear of the roof surface to facilitate the works.				
3.8	Overflow Pipes / Scupper Outlets - Raise: Raise existing positions so they discharge above the new waterproof skirting height which must be a minimum of 150mm high. Block off redundant hole/s, prior to installing the new waterproofing system details. Allow for all modifications/adaptations to pipe work. Allow for raising and making good any internal bunding as necessary. Note: The contractor must not block off overflows or scupper outlets by detailing over with any new waterproofing membranes without prior approval from the Client Contract Administrator or Langley Waterproofing Systems Ltd.				

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No.	Item	Unit	Qty	Rate	Total
3.9	<p>Existing Outlets - Refurbish with ParaFurb Outlets: Make ready to accept new ParaFurb Refurbishment Outlets (detailed elsewhere). Where necessary, cut back and remove sufficient existing waterproofing from around the outlets and as required from the surrounding area to allow for correct installation.</p> <p>Important Note: ParaFurb Outlets must not be installed to outlet positions that already have an existing refurbishment outlet in place. Prior to ParaFurb Outlets being installed, any existing refurbishment outlets or lead sleeve inserts must first be removed and surrounding substrates made good.</p>				
3.10	<p>Internal Gutters - Existing: Re-create within new insulation scheme (detailed elsewhere), matching existing locations.</p>				
3.11	<p>Rooflight/s - Discard: Remove and dispose of existing rooflight/s to suitable waste facilities.</p>				
3.12	<p>Rooflight Kerb/s - Repair and Raise: Inspect for deterioration. Repair and raise as necessary to achieve a minimum upstand height of 150mm above the finished level of the new waterproofing system.</p>				
3.13	<p>Kerbs to Plant Openings - Repair and Raise: Inspect for deterioration. Repair and raise as necessary to achieve a minimum upstand height of 150mm above the finished level of the new waterproofing system.</p>				
3.14	<p>Paving Slabs - Discard: Remove and dispose of to suitable waste facilities.</p>				
3.15	<p>Stone Ballast - Discard: Remove and dispose of to suitable waste facilities.</p>				
3.16	<p>Existing Cement Backed Inverted Insulation Boards - Remove: Strip and remove to suitable waste containers all inverted insulation, including insulated upstand boards and water filtration/control layers that may be found, back to but not including the original substrate.</p>				
3.17	<p>Foliage - Remove: To facilitate the re-roofing works, remove and dispose of foliage to suitable waste facilities.</p>				
3.18	<p>Contamination - Remove: Remove any contamination that could impair system adhesion. All affected areas should be swept or power washed.</p> <p>Note: Power Washing (max. 2000 psi) Care must be taken to avoid penetrating the existing waterproofing system through any existing defects.</p>				

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No.	Item	Unit	Qty	Rate	Total
3.19	<p>Existing Overlay System - Remove and Prepare Asphalt Substrate:</p> <p>Overlay System: Strip and remove to suitable waste containers all component layers of the existing waterproofing overlay system including any insulation and or vapour control layers that may be found, back to the surface of the original asphalt covering.</p> <p>Asphalt Preparation: Warm and smooth out all ridges and blisters. Where necessary, make good any damage to the asphalt surface.</p> <p>Asphalt Details: Remove all existing asphalt flashings, aprons and collars to pipes, etc. and dispose of to suitable approved waste facilities. Cutting of asphalt must be undertaken with an angle grinder. The use of hammer and chisel is not permitted.</p>				
3.20	<p>Existing Asphalt Surface - Walkways and Balconies - Additional Requirements:</p> <p>Contractor Requirement: Prior to application of any primer. Contractor to ensure that any undulations, deflections or poor falls that cannot be overcome by warming and smoothing are reported to both Langley and the CA for further inspection.</p>				
3.21	<p>Existing Flashings / Termination Bars etc. - Remove:</p> <p>Carefully remove all existing secondary cover flashings, termination bars etc. and dispose of to suitable approved waste containers / facilities or return to contractors premises for safe disposal.</p>				
3.22	<p>Redundant Chases - Make Good:</p> <p>Rake out and prepare any redundant chase lines. In-fill with sand and cement mortar, flush with wall face.</p>				
3.23	<p>Upstands - New Chase:</p> <p>In preparation of a new cover flashing the contractor is to cut a new chase to a minimum 25mm depth and at a minimum height of 150mm above the intended finished roof level surface. Brush clean and prime with appropriate primer to seal substrate.</p>				
3.24	<p>Parapet Copings - Repoint:</p> <p>Copings. Rake out all loose pointing and re-point with suitable sand cement mortar mix. Exact scope of works to be confirmed by CA.</p>				
3.25	<p>Soil Vent Pipe/s - Extend:</p> <p>Extend where necessary. Collar or pipe sleeve/s must be a minimum of 150mm above the finished roof surface.</p> <p>Note: Extension pipe/s must be fixed inside the existing pipe/s.</p>				
3.26	<p>Priming - Asphalt Surface & Detail Substrates:</p> <p>Asphalt surfaces and substrates for details. Sweep clear of all dirt, debris and loose material. All surfaces must be dry. Prime with Langley Spray-on (synthetic rubber) Primer or Langley SA Primer (roller applied) and allow to dry.</p>				

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No.	Item	Unit	Qty	Rate	Total
3.27	Flame-free Zones - Priming Requirement - All Surfaces (Inc Insulation if applicable): Prime all flame-free zone surfaces with Langley Spray-on (synthetic rubber) Primer or Langley SA Primer (roller applied) and allow to dry. (bituminous primer must not be used).				
3.28	Flame-free Zones - Self-adhesive Membranes - Additional Priming: Adhesion issues may arise when applying membranes with a hot-air gun. Langley SA Primer or Langley Spray-on Primer can be applied to the surface of the Paradiene SA underlay to enhance adhesion of the Parafor Solo SA cap sheet. This 'additional priming' is also recommended when the Langley SA Membrane Detailing System is specified as the primary roof covering or over large areas. This will ensure a consistent bond across larger roof areas and improve application times				
4	AIR AND VAPOUR CONTROL				
4.1	Air and Vapour Control Layer - Torch-on - Field Area: Install Parevapo SBS metal-lined, double reinforced, elastomeric air and vapour control layer. Top Face: Sanded. Underside: Macro perforated fusible film. Fully bond to prepared surface by torch-on method. Side and end laps to overlap by a minimum of 75mm and must be fully sealed by torch-on method.				
4.2	Flame-free Zones - Air and Vapour Control Layer - Change of Membrane - Flat Exclusion Area: Install Parevapo SA, double reinforced, metal-lined, self-adhesive SBS elastomeric bitumen air and vapour control layer. Fully bond to a prepared and primed substrate by means of the heat activated, self-adhesive face, applying pressure with a weighted roller. Side laps, minimum 75mm, end laps, 100mm, fully bond by heat welding with a hot-air gun and applying pressure with a seam roller. Priming of substrate must be with Langley Spray-on (synthetic rubber) Primer (bituminous primer must not be used). All heat activation and welding within the flame-free zone must be carried out with a hot-air gun. Note: All laps with main area AVCL, (outside the flame-free zone) must be minimum 150mm and torch bonded.				
4.3	Air and Vapour Control Layer - Non-combustible Detail Skirtings: Extend the air and vapour control layer as a separate flashing piece cut from full width of roll to the skirting. Fully bond by torch-on method to a fully prepared surface to a minimum height of 100mm past the finished proposed line of the new insulation level. A minimum of 100mm lap must be achieved to main field return. Side laps to be a minimum of 75mm and must be fully sealed by torch-on method.				

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No.	Item	Unit	Qty	Rate	Total
4.4	Flame-free Zones - Air and Vapour Control Layer - All Upstands, Skirtings & Details Generally: Extend Parevapo SA air and vapour control layer to the skirting / details as a separate flashing piece, cut from the width of a roll. Fully bond to a prepared and primed substrate by means of the heat activated self-adhesive face. Minimum height, 100mm above the finished height of the new insulation (or the full girth of details). Priming of substrate must be with Langley Spray-on (synthetic rubber) Primer, (bituminous primer must not be used). Lap to main field return, minimum 100mm, side laps minimum 75mm. Application method as per the main area. Detailing arrangements all as main specification.				
5	INSULATION				
5.1	Parafoam Ultra Tapered Board Insulation - Field Area: Install Tapered Parafoam Ultra Polyisocyanurate (PIR) roof insulation board. CFC/HCFC-free with zero ODP. Set out in accordance with tapered scheme drawings supplied by Langley Waterproofing Systems Ltd. Boards to be close butted with staggered joints.				
5.2	Parafoam Ultra Tapered Insulation Scheme - Sumps to Outlet Positions: Sumps to be a minimum of 500mm x 500mm square around outlet position. Form with Parafoam Ultra Polyisocyanurate (PIR) flat board insulation. Board thickness in accordance with Tapered Scheme drawing. A Langley Metal Hard Edge to be fixed to all exposed insulation edges. Bond to insulation with either low foaming PU adhesive or strapping with suitable fully bonded underlay membrane.				
5.3	Parafoam Ultra Insulation - PU Attachment: To prepared surface. Bond insulation with LangStik Solvent Free PU Adhesive. Surface of substrate must be swept clear of all dirt, debris and loose material, prior to application of the adhesive. Boards to be laid close butted with staggered joints. Note: For further information, please refer to 'Fixing Instructions' section of this specification.				
5.4	Parafoam Ultra Insulation - Dual Layer Applications: Where thicknesses in excess of 150mm are specified the contractor must allow for the installation of a second layer of boards and the additional adhesive required. All boards to be laid close butted with staggered joints with the top layer off-set from the preceding one.				
5.5	Insulation - PU Attachment - Flame-free Zones: When using Parevapo SA, in designated flame-free zones, the insulation to these areas must be bonded with LangStik Solvent Free PU Adhesive. Surface substrate must be swept clear of all dirt, debris and loose material, prior to application of the PU adhesive.				
5.6	Insulation - Changes of Levels - Metal Hard Edge: Langley Metal Hard Edge to be fixed to all exposed insulation edges. Bond to insulation with either low foaming PU adhesive or strapping with suitable fully bonded underlay membrane.				

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No.	Item	Unit	Qty	Rate	Total
5.7	Priming - Hard Edges to Insulation: All hard edges, metal and/or timber, must be primed with Langley Spray-on (synthetic rubber) Primer and allow to dry.				
5.8	Surface Condensation/Moisture - Application Warning: Contractor to ensure that the surface of the insulation is free of surface condensation/moisture prior to the application of the waterproofing system. Important Note: Surface condensation/moisture is particularly prevalent during cold months and during extreme hot weather.				
6	WATERPROOFING - UNDERLAYS				
6.1	Detail Reinforcing Strip - Requirement in Lieu of Angle Fillets: Paradiene M3 S detail reinforcing strips must be fixed at the base of all upstands, prior to subsequent membranes being installed. At a minimum of 250mm width cut from roll, apply 125mm to the horizontal and 125mm to vertical prepared surfaces. Fully bond by torch-on method.				
6.2	Flame-free Zone - Detail Reinforcing Strip - Change of Membrane: Paradiene SA detail reinforcing strips must be installed at the base of all upstands, prior to subsequent membranes being installed. Strips to be minimum 250mm wide in pieces cut from roll, applied 125mm to the horizontal and 125mm to vertical surfaces. Fully bond to a prepared (and primed if applicable) substrate by means of the heat activated self-adhesive face, applying pressure with a seam roller. Where priming is required, it must be with Langley Spray-on (synthetic rubber) Primer, (bituminous primer must not be used).				
6.3	Underlay - Self-Adhesive - Field Area: Adepar JS VV glass fibre reinforced, SBS elastomeric bitumen membrane. Top Face: fusible film. Underside: sanded between self-adhesive strips with siliconised peel-off film over self-adhesive selvedge. Fixing: by means of factory-applied self-adhesive strips. Perimeters and Openings: 500mm wide, fully bond by torching. Side Lap: 80mm determined by selvedge. End Lap: minimum 120mm. Note: The siliconised film is not fusible. Fixing Method: See Fixing Instructions. Note: 5-10mm bead of bitumen must be exuded from all laps.				

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No.	Item	Unit	Qty	Rate	Total
6.4	Flame-free Zone - Underlay - Change of Membrane - Flat Exclusion Area: Install Paradiene SA, polyester reinforced, self-adhesive SBS elastomeric bitumen membrane. Fully bond to a prepared and primed substrate by means of the heat activated self-adhesive face, applying pressure with a weighted roller. Side laps, minimum 75mm; end laps, minimum 100mm; fully bonded by heat welding with a hot-air gun and applying pressure with a seam roller. Priming of substrate (including insulation if applicable) must be with Langley Spray-on (synthetic rubber) Primer (bituminous primer must not be used). All heat activation and welding within the flame-free zone must be carried out with a hot-air gun. Note: All laps with main area underlay, (outside the flame-free zone) must be minimum 150mm and torch bonded.				
6.5	Underlay - Upstands & Skirtings: To be formed separately using Paradiene M3 S underlay. Cut from the width of the roll and fully bond by torching to base membrane with a minimum 100mm lap. Both surfaces being bonded must be heated and a bead (5-10mm) of bitumen extruded from all head and side laps.				
6.6	Flame-free Zone - Underlay - Upstands & Skirtings - Change of Membrane: To be formed separately with Paradiene SA underlay, in pieces cut from the width of a roll. Fully bond to a prepared and primed substrate (or AVCL if applicable) by means of the heat activated self-adhesive face, applying pressure with a roller. Minimum height, 150mm above the finished height of the new insulation (or the full girth of details). Where applicable, priming of substrate must be with Langley Spray-on (synthetic rubber) Primer (bituminous primer must not be used). Lap to main field return, minimum 100mm; Side laps, minimum 75mm. Application method as per the main area. Detailing arrangements all as main specification.				
6.7	Underlay to Outlet Sumps & Internal/Integral Gutters: Paradiene M3 S underlay (fully bonded) must be used (detailed elsewhere). Extend onto main field area by minimum 150mm.				
7	WATERPROOFING CAP SHEETS				
7.1	Cap Sheet - Torch-on - Field Area: Install Elastoflex GS cap sheet. Elastoflex GS is a torch-on polyester-reinforced, SBS-modified elastomeric bitumen membrane. The surface has a Dark Grey granulated surface with a grooved thermofusible film underside. Lay: Fully bonded by torching with 90mm minimum side lap width as determined by the selvedge. Minimum end laps must be 150mm. This layer is to be laid parallel to the under layer, breaking joints by at least 300mm. Both surfaces being bonded must be heated and a bead of bitumen exuded from all laps.				

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No.	Item	Unit	Qty	Rate	Total
7.2	Flame-free Zone - Cap Sheet - Change of Membrane - Flat Exclusion Area: Install Parafor Solo SA, polyester reinforced, self-adhesive, SBS elastomeric bitumen, dark grey granule faced cap sheet. Fully bond to the underlay by means of the heat activated self-adhesive face, applying pressure with a weighted roller. Side laps to suit selvedge (minimum 75mm); end laps, minimum 150mm; fully bond by heat welding with a hot-air gun and applying pressure with a seam roller. A 5-10mm bead of bitumen must be extruded from all laps. All heat activation and welding within the flame-free zone must be carried out with a hot-air gun. Note: All laps with main area cap sheet, (outside the flame-free zone) must be minimum 150mm and torch bonded.				
8	DETAILS				
8.1	Detail Skirtings & Upstands - Requirement: All detail skirtings and upstands must be a minimum of 150mm above the finished horizontal roof surface level, including any paving, ballast, living roof coverings etc. Important Note: If the required height cannot be achieved for any reason, then the details below 150mm will not be covered by the Langley Waterproofing guarantee				
8.2	Cap Sheet - General Detailing: Detail flashings. Form separately with Elastoflex GS Cap Sheet cut from width of roll. Colour to match main field membrane. Fully bond by torching to the specified detail underlay membrane. Both surfaces being bonded must be heated and a 5-10mm bead of bitumen extruded from all head and side laps. Cap sheet detail must extend to a minimum of 150mm onto the main field area. Upstand heights must be a minimum of 150mm above the finished roof level.				
8.3	Flame-free Zone - Cap Sheet - General Detailing - Change of Membrane: Detail flashings to be formed separately using matching colour Parafor Solo SA Cap Sheet, in pieces cut from width of roll. Fully bond to the specified detail underlay by means of the heat activated self-adhesive face, applying pressure with a roller. Minimum height, 150mm above the finished height of the new system (or the full girth of details). Side laps to suit selvedge; end laps, minimum 150mm, bond by heat welding with a hot-air gun and applying pressure with a seam roller. A 5-10mm bead of bitumen is to be extruded from all laps. Lap to main field return, minimum 150mm.				

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No.	Item	Unit	Qty	Rate	Total
8.4	Internal Gutters: See Underlay section of this specification for gutter underlay membrane specification. At change in level from field area to gutter the underlay should be dressed over the hard edge, down the face of the field area insulation and lap onto the AVCL to form a bund. An additional section of underlay should also be dressed across the top of the gutter insulation, up the change in level and lap onto field area underlay by a minimum 75mm on either side of the gutter. Base of gutter upstand to be reinforced with the appropriate detail underlay (see Detail Reinforcing Strip in Underlay section of specification) prior to installation of cap sheet. All membranes to gutter to be laid lengthways to minimise laps. Laps to be laid with falls to assist drainage Side and end laps to be a minimum 75mm.				
8.5	Drainage - Outlet Sumps: See Underlay section of this specification for sump underlay membrane specification. At change in level from field area to sump the underlay should be dressed over the hard edge, down the face of the field area insulation and lap onto the AVCL to form a bund. An additional section of underlay should also be dressed across the top of the sump insulation, up the change in level and lap onto field area underlay by a minimum 75mm on either side of the sump. At the outlet opening the underlay should be dressed down the face of the insulation and lap onto the AVCL. Base of sump upstand to be reinforced with the appropriate detail underlay (see Detail Reinforcing Strip in Underlay section of specification) prior to installation of cap sheet. Side and end laps to be a minimum 75mm.				
8.6	Internal Drainage - ParaFurb Outlets: ParaFurb Outlet: Stainless Steel spigot with Ribseal gasket and SBS membrane flange. Select outlet to suit diameter/s of fall pipes. Fully bond flange membrane to previously installed underlay (see Underlay section for sump membrane specification) or soaker. Fully bond cap sheet over and cut hole to suit diameter of pipe. Install leaf guard/grating supplied. Installation to be in accordance with Langley fixing instructions.				
8.7	Expansion Joint - Flush: Loose cover joint with a 100mm wide strip of inverted (granule face down) cap sheet laid equidistant over the joint. Overlay with a 350mm wide strip of underlay, fully bonded. Fully bond a cap sheet layer (500mm overall width). Cap sheet to be laid in two separate pieces with a minimum 50mm lap running along the joint line.				
8.8	Splash Pads (Under Downpipes, Overflow Pipes etc.): 300mm x 300mm pad of cap sheet. Fully bond to the finished roof surface.				

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No.	Item	Unit	Qty	Rate	Total
8.9	Counter Flashing - Code 4 Lead: Install and protect detail abutment skirtings with Code 4 lead counter flashings. Dress lead into a prepared chase and wedge at 450mm centres with lead clips or mechanical fixings to suit chase conditions. Point with Langley Gap-Seal Mastic. Exposed Vertical Edges protect with vertical stepped flashings. All lead work must be fixed in accordance with LDA/LSA recommendations. Flashings must not exceed 1.5m in length with laps being a minimum of 100mm. Clips to be spaced along the free edge to suit the exposure conditions.				
8.10	Overhangs - Adapted Counter Flashing - Langley TB62 GRP Termination Bar: For use beneath Copings, Overhangs, Window cills and Door Frames etc, where required to suit site conditions. Install an adapted Langley TB62 GRP face-fixed Termination Bar. Modify by removing the bottom return section by cutting. Fix modified bar over the membrane, with the top angled return facing the upstand to form a "V" with the underside of the overhang. Apply a bead of Langley Gap-Seal Mastic to the rear surface before positioning over the membrane. Once aligned, secure in place by mechanically screwing and plug fixing with dome or pan head non-corroding screws at maximum 300mm centres. Infill the "V" with a bead of Langley Gap-Seal Mastic.				
8.11	Rooflight Kerbs - ParaKerb: Flashings to be formed separately. Must be minimum 150mm above the finished roof surface. To a primed surface, fully bond underlayer and detailing cap sheet to the full height of the kerb. Secure top edge with the retaining trim provided. Please Note - Contractor must ensure the detailed rooflight schedule has been duly checked with particular regard to the type of unit and fixing instructions. No claims arising from preparation/installation error by contractor will be entertained by Langley Waterproofing Systems Ltd.				
8.12	Builders Kerb - Plant Openings: Kerb must be minimum 150mm above the finished roof surface. Flashings to be formed separately. Fully bond both base layer and cap sheet of the detailing system to the vertical face. The cap sheet only to be taken across the top of kerb. When turning the cap sheet over the top of the kerb, all corners to be mitred and side laps to be butt-jointed to present a flat plane for the subsequent fixing of the plant.				

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No.	Item	Unit	Qty	Rate	Total
8.13	<p>Penetrations - Soil Vent Pipes: Soil vent pipes must be a minimum of 150mm high from the finished level of waterproofing. Install new Code 5 Lead pipe sleeves with integral lead flange. Sleeves must be a minimum of 30mm higher than pipe. Flange must be a minimum of 100mm wide. Prime both surfaces of the flange. Fully bond to the underlay or soaker, prior to fully bonding the cap sheet membrane. Sleeves to be turned into top of pipe by 25mm. Colour: Black.</p> <p>Note: Soil vent pipes greater than 300mm require a Code 5 Lead sleeve finishing a minimum of 150mm high above the finished level of the new waterproofing system and terminated with a weathering collar. Finish base of vertical sleeve as previously stated.</p>				
9	WATERPROOFING COVER				
9.1	<p>Geotextile Separating Layer: Over the waterproofing and below the paving pedestals, loose lay a non-woven geotextile membrane separating layer, by others, density of no less than 250gsm (300gsm recommended). Installation as per manufacturers written instructions.</p> <p>Note: Where a geo-textile is used beneath decking, paving supports etc. it is intended as a separating layer between the supports and the waterproof covering and is only required where the two come into contact. It should be installed to allow free-draining of the areas so that water does not hold and stagnate.</p>				
9.2	<p>Maintenance, Pedestrian and Terraced Areas - Paving Slabs/Tiles on Freestanding Supports: To fully completed waterproof coverings (including inverted roof insulation and WFRL where applicable), install Paving Slabs/ Tiles to CA specification. To be laid loose on third party paving support pads and levelling shims or adjustable pedestals in accordance with the manufacturer's instructions. Size, colour and finish must be agreed with all parties Client / Contract Administrator & Roofing Contractor. NB: Slabs/ Tiling to be a minimum 80kg/m² to avoid floating, on inverted roof systems, and wind uplift</p>				
10	ROOFLIGHTS & OPENINGS IN DECK				
10.1	<p>ParaRange Modular Rooflights - Requirement: All Langley Waterproofing Systems Ltd Rooflights and ParaKerb Upstands are BBA accredited. Any deviation from the specification detailed below and or accompanying rooflight schedule can only be made with the approval of Langley Waterproofing Systems Ltd.</p>				

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No.	Item	Unit	Qty	Rate	Total
10.2	ParaRange Modular Rooflights - Installation: All must be installed by the contractor strictly in accordance with BS 8217 and the fixing instructions provided in Detail Sheets of Agrément Certificate. When supplied as part of a total roofing package, ParaRange Rooflights are covered by all warranties and guarantees issued by Langley Waterproofing System Ltd Guarantee. Note: Installation must be carried out by an approved Langley installer in order to meet the requirements of the guarantee. See attached schedule for details.				
10.3	ParaRange Modular Rooflights - Schedule: A detailed Rooflight Schedule by Langley Waterproofing Systems Ltd will be issued at tender stage to support this specification.				
10.4	ParaRange Automatic Opening Vent: Installed to ParaKerb / Adaptor Kerb as required with the security fixings supplied. Wipe unit clean. This item must be read in conjunction with the Langley issued Rooflight Schedule.				
10.5	Aperture Linings: Internal linings must be installed/ made good as necessary and decorated in accordance with the client contract administrator's detailed instruction or specification. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd.				
10.6	Aperture Linings - Existing - Unchecked: Existing lining construction is unknown at this time. If confirmed to be an ACM item, under no circumstances are the internal linings to be disturbed. Any opening mechanisms/furniture etc. that are fixed through the linings are to be disconnected from the rooflight and left in-situ. The contractor must liaise with, and seek separate instruction from the client contract administrator as to the method of specialist testing and or handling of this item should a requirement for removal be necessary. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd.				
11	SAFETY SYSTEMS				
11.1	Guarantee Terms: Please note that the guardrail is to be supplied by Langley and is included as part of the guarantee terms. If the guardrail is not supplied by Langley, Langley will take no responsibility for any damage caused during the install and may invalidate the waterproofing guarantee.				

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No.	Item	Unit	Qty	Rate	Total
11.2	Free-standing Permanent Guardrail System: New LangGuard Free-standing Permanent Guardrail System, to be installed to the area/s designated on the attached roof plan. The guardrail system shall be designed, tested, inspected, and marked to ensure it meets performance requirements and safety factors specified in BS 13700:2021. The system shall allow for safe access and egress and include suitable, secure access gates where required.				
11.3	LangGuard - Standards: All posts, rails, bases and fittings are galvanised to BS EN ISO 1461. Fully tested to Health and Safety Specialist Report 15 September 1988, 'Handrails - Maintenance Uses Only', BS6399 Buildings and Loads. See LangGuard Data Sheet DsA2 0119 for further information.				
11.4	LangGuard - Base Plates: Supporting Base Plates (with integrated bonded ribbed rubber mat): To sit flat on the roof surface.				
11.5	LangGuard - Installation: To be installed, checked and certified by Langley Waterproofing Systems Ltd.				
11.6	Maintenance of Guardrail: Annual Planned Preventative Maintenance (PPM) checks of the freestanding handrail system must be conducted in accordance with the Guardrail manufacturer's instructions to ensure the system's performance, safety, and guarantee is maintained. It will be the sole responsibility of the property owner to ensure safe access can be gained to the roof and that relevant Health and Safety procedures are followed when working at height. It is advised that any contractor wishing to undertake works to the roof areas should first seek proof of current maintenance logs/records for any roof access.				
11.7	Maintenance of Roof: The specified free-standing guardrail will enable that maintenance of the roof can be carried out in line with the waterproofing maintenance schedule. Yearly maintenance is required by the system manufacturer to ensure the guarantee is maintained.				
12	COMPLETION				
12.1	Guarantee Requirement - Final Inspection: In accordance with our guarantee requirements, Langley Waterproofing Systems Ltd are to be notified once all works are complete. A final inspection will then be undertaken by us and the contractor must ensure that safe working access is provided.				
12.2	Existing Lead Flashings - Re-dress: Upon completion of waterproof detailing, re-dress the lead flashings. Pointing to be raked out. Any missing or loose wedges must be replaced. Re-point chase with Langley Gap-Seal Mastic. The contractor must allow for the renewal of any damaged or unserviceable sections of lead.				

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No.	Item	Unit	Qty	Rate	Total
12.3	Extractor Fans / Ventilators: Re-fix on a bead of silicone or foam strip. Use appropriate fixings with sealed caps.				
12.4	TV Aerials and/or Satellite Dish Arrays - Reinstate: Reinstate to original locations or new positions as instructed by the client contract administrator all TV aerials and/or satellite dish arrays.				
12.5	Sacrificial Layers - Free-standing Plant / Handrails etc: All freestanding items. Install a sacrificial layer of cap sheet (granule surface down) under all load spreading supports / pads.				
12.6	Cables - Reinstate: Collate and support on cable trays if necessary. Secure cables to tray or to original locations and secure with plastic cable ties. If cable trays are used then they are to be rested on load-spreading bases on sacrificial pieces of cap sheet. Securely fasten trays to bases as required.				
12.7	Rainwater Outlets - ParaFurb Outlets: Check for blockages. Clear if necessary and leave in a free-running condition. Ensure Ribseal (where present) is tightly secured to form correct pressure seal to pipe/s for applicable units. Ensure all supplied leaf guards are in place and tightly secured.				
12.8	Completed Roof Surface - General: Ensure visual inspection of all laps is undertaken to confirm integrity of system prior to final guarantee inspection. Sweep, clean and remove debris to suitable waste container.				
12.9	Arisings from Works: Remove from site all arisings for return to contractor storage or safe disposal.				

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Schedule of Products

Langley Spray-on Primer - Canister

Synthetic rubber primer. Supplied as a canister (450mm x 330mm). Packaged in a cardboard carry box. Canister content: 18.5 kg. Gross canister weight: 24.5 kg
Coverage Rates: Self-adhered systems – up to 150m² (0.12m²/kg) Torch-on system – up to 250m² (13.5m²/kg). Other components required and supplied separately include: Applicator gun and 3m hose (re-usable). Spray-tip and Spray Cleaner

Langley SA Primer

Synthetic rubber primer. Supplied by the pail (5 or 15 litre).
Coverage Rates: 4 - 8m² per litre dependent upon substrate porosity.
Other components required: Applicator roller or brush

Parevapo SBS Metal Lined Vapour Barrier - Roll Size: 10m x 1m

Metal-lined, double-reinforced, SBS-modified, elastomeric bitumen vapour barrier. Top Face: Sanded. Underside: Macro-perforated fusible film. Nominal Weight: 38kg/roll.

Parevapo SBS ADH Vapour Barrier - Roll Size: 10m x 1m

SBS modified bitumen metal lined self-adhesive vapour barrier with a double composite reinforcement. Underside: Heat-activated adhesive under-face, protected by a silicon peel-off film. Top Surface: Heat-activated adhesive with adhesive edges and strips for bonding insulation panels. Nominal Weight: 38kg/roll.

Parevapo SA Self-Adhesive Metal Lined Air and Vapour Control Layer - Roll Size: 15m x 1M

Double-reinforced, metal-lined, SBS elastomeric bitumen vapour barrier. Top Face: resin coating, colour Blue. Selvedge: Self-adhesive with a peel-off polyethylene film; Nominal Width 100mm. Underside: Heat activated self-adhesive bitumen with a siliconised peel-off release film. Nominal Weight: 25kg/roll (1.6kg/m²).

LangStik SF Can - Solvent-free PU Insulation Adhesive

Single component moisture curing solvent free polyurethane adhesive. Packaging: 6.5kg can. Nominal Coverage: 35m²/can.

LangStik SF Canister - Solvent-free PU Insulation Adhesive

Single component moisture curing solvent free polyurethane adhesive. Container: 18.5 kg / metal canister. Labelling: LangStik SF Canister. Nominal coverage, up to 350 m² / canister.

Parafoam Ultra Tapered Insulation

Parafoam Ultra Tapered Polyisocyanurate (PIR) roof insulation boards. CFC/HCFC-free with zero ODP. Both Faces: Perforated mineral coated glass fibre tissue. Board Size: Variable to scheme. Cut-to-falls scheme drawings are supplied by Langley Waterproofing Systems Ltd.

Paradiene M3 S Underlayer - Roll Size: 10m x 1m

Polyester-reinforced, torch-applied SBS-modified elastomeric bitumen underlay. Top Face: Sanded. Underside: Thermo-fusible film. Nominal Weight: 36.5 kg/roll (3.6 kg/m²)

Adepar JS VV Underlayer - Roll Size: 10m x 1m

Self-adhesive, partially bonded, glass fibre reinforced, SBS-modified, elastomeric bitumen underlay. Top surface: Macro-perforated fusible film with siliconised peel-off film over self-adhesive selvedge. Underside: Sanded between self-adhesive strips, protected with siliconised peel-off film. Nominal Weight: 27kg/roll.

Paradiene SA Self-Adhesive Underlayer - Roll Size: 10m x 1m

Polyester reinforced, SBS elastomeric bitumen membrane. Top Face: resin coating, colour Red. Selvedge: Self-adhesive with a polyethylene peel-off film. Nominal Width 100mm. Underside: heat activated self-adhesive bitumen with a siliconised peel-off release film. Nominal Weight: 30kg/roll (3kg/m²).

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Elastoflex GS (30 - Dark Grey) Cap Sheet - Roll Size: 8m x 1m

Polyester-reinforced, SBS-modified, elastomeric bitumen cap sheet with granule surface finish. Colour: Dark Grey. Selvedge: Nominal 90mm with fusible film. Underside: Grooved with continuous fusible film. Nominal Weight: 47.7kg/roll.

Parafor Solo SA (Dark Grey) Self-Adhesive Cap Sheet - Roll Size: 7.5m x 1m

Polyester reinforced, SBS elastomeric bitumen cap sheet with granule surface finish. Colour: Dark Grey. Selvedge: Self-adhesive with a polyethylene peel-off film. Nominal width 100mm. Underside: heat activated, self-adhesive bitumen with a siliconised peel-off release film. Nominal Weight: 38kg/roll (5kg/m²).

Langley Metal Hard Edge

Galvanised Steel Angle. 3m lengths x 50mm x 50mm. Thickness 0.7mm.

ParaRange Modular Rooflights and Kerbs

All Langley Waterproofing Systems Ltd Rooflights and ParaKerb Upstands are BBA accredited. Accompanying Rooflight Schedule will be supplied by Langley Waterproofing Systems Ltd.

Exterior Grade Plywood

Conforming to the relevant requirements of BS EN 636:2012 + A1:2015 Class 3 and marked BS EN 636-3. To be sourced direct from supplier.

ParaFurb Outlets

Internal rainwater outlet with 500mm x 500mm flexible SBS felt membrane attachment flange.

Spigot Depth as Standard: 400mm.

Available Sizes:

- Drain Diameter 50mm - To suit existing pipe sizes of 59mm-75mm complete with EPDM rubber Ribseal and aluminium turbine leaf guard
- Drain Diameter 62mm - To suit existing pipe sizes of 71mm-88mm complete with EPDM rubber Ribseal and aluminium turbine leaf guard
- Drain Diameter 75mm - To suit existing pipe sizes of 85mm-106mm complete with EPDM rubber Ribseal and aluminium turbine leaf guard
- Drain Diameter 95mm - To suit existing pipe sizes of 103mm-109mm complete with EPDM rubber Ribseal and aluminium turbine leaf guard
- Drain Diameter 145mm - To suit existing pipe sizes of 150mm-198mm complete with EPDM rubber Ribseal and aluminium turbine leaf guard

Additional diameter, spigot sizes and accessories are available upon request.

Langley TB62 GRP Termination Bar

Dimensions: 62mm Deep x 3m Length

Available Colours: White - Dove Grey - Charcoal

LangGuard

Free-standing permanent guardrail edge protection system.

Langley Gap-Seal Mastic

For use with ParaFlash B3, termination bars and lead counter flashings to close joints. Low modulus neutral cure silicone mastic sealant. Approximately 6Lm for 10mm x 10mm bead. Supplied in 310ml tube cartridges. Colour: Black.

Code 4 Rolled Lead Sheet

For use as counter flashings. To be sourced directly from a supplier of the contractors choice but must conform to BS EN 12588: 1999.

Code 5 (red) Rolled Lead Sheet

For use to create chutes, pipe sleeves, outlets, saddles and where specified. To be sourced direct from supplier and conform to BS EN 12588: 2006.

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Fixing Instructions

Bitumen Membranes Generally

Waterproofing membranes must be installed in accordance with BS 8217: 2005, BS 8000: Part 4: 1989 and the Langley Fixing Instructions.

Membranes Generally

Lay in direction of fall. Lay parallel to the preceding layer, breaking joints by at least 300mm. Stagger end laps by minimum 300mm. In gutters, membranes to be laid lengthways to minimise laps.

Note: When lifting membrane roll weights in excess of 25kg, a two person or mechanical lift is required.

Bitumen Membranes - Internal Gutters

To minimise laps, membranes must be laid lengthways, in direction of fall. Both surfaces being bonded must be heated and a 5mm-10mm bead of bitumen exuded from all laps.

Requirement when Torching & Hot Air Applying Bitumen Membranes

Surfaces being bonded must be heated and a required 5mm-10mm bead of bitumen must be extruded from all laps and is applicable to all layers. End laps, or as details require when bonding onto granule surfaced membranes, must first be heated and the granules removed to ensure a bitumen-to-bitumen bond.

Hot Air Welding Bitumen Membranes

Both surfaces being bonded must be heated and a narrow bead of bitumen 5mm-10mm must be exuded from all laps. Laps onto granule surfaces, end laps etc must first be heated and the granules removed to ensure a bitumen-to-bitumen bond.

Spot Bonding Bitumen Membranes by Torching

Torch top of roll in a staggered spot formation as the roll is pushed forward. Side and end laps to be fully bonded by torching. Both surfaces being bonded must be heated and a 5mm-10mm bead of bitumen exuded from all laps.

Bonding Bitumen

Bitumen must not be heated to a temperature in excess of 260°C, or above its flash point minus 15°C (whichever is the lower), and should not exceed 240°C at the time of laying. **Please note** that Langley Waterproofing Systems Ltd do not advocate the use of bonding bitumen unless other means of attachment are not possible.

Adepar Self Adhesive Bitumen Membranes

Fix in dry conditions at an ambient temperature greater than 15°C. At lower temperatures, but never less than 5°C, warm the self-adhesive compound with a torch. Unroll sheet and position. Re-roll and remove siliconised release film as the sheet is fixed in position with applied pressure. Side lap is self-adhesive. Apply pressure to lap with roller if required. End lap, seal by torching: Perimeters and Opening, 500mm wide, fully bond by torching. When torching, re-roll sheet and torch as it is unrolled, whilst simultaneously removing the siliconised film. Surfaces being bonded must be heated and a narrow bead of bitumen, 5mm-10mm, must be exuded from all laps.

Langley Spray-on Primer

Ensure substrates are dry and clean from grease, dirt and other contaminants before applying the primer. Set-up the canister as described in the Set-up & Maintenance Guides. Ensure the canister spray-system is spraying correctly and the spray-pattern is 300mm wide.

Apply 1-2 coats of the primer to the substrate, ensuring an even distribution of primer is achieved.

Allow the solvents to evaporate from the primer layer for a minimum of 20 minutes at 10°C. NB: this time will vary depending on temperature.

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Flame-free Self-Adhesive Bitumen Membranes

Fix in dry, frost-free conditions and (where required) to a primed substrate. Note, primer must be Langley Spray-on (synthetic rubber) Primer (bituminous primer must not be used). Unroll membrane and set out. Re-roll and remove siliconised release film as the sheet is rolled into position, gently heating the underside with a hot air gun and applying pressure with a weighted roller. Side lap is self-adhesive (AVCL & underlay only), however in certain conditions heat may be required. End lap, bond by heat welding with a hot-air gun. Lap must be sealed and checked for security as work proceeds. Cap sheet: All laps must be heat welded and a 5 - 10mm bead of bitumen exuded. For detailed information, refer to Langley Installation Guide IG5-0917 - SA-20 Flame Free Detailing System.

Fixings Generally - Pull-Out Tests and Fixing Types

Fixing Pull-out Tests to be carried out by; and all fasteners to be obtained from:
Fixfast Ltd, Merlin House, Seven Mile Lane, Borough Green, Sevenoaks. Kent TN15 8QY.
Phone: 01732 882 387
Email: sales@fixfast.com

Bonding PIR Insulation with LangStik SF PU Adhesive LangStik SF PU Adhesive - Canister (18.5 kg).

Guidelines for Use: Please note: A spray-tip is not required.

1. Ensure the insulation board or other roof substrate is dry and clean from grease, dirt and other contaminants before applying adhesive.
2. Set the canister up as described in the Set-Up and Maintenance Guide.
3. Ensure the LangStik SF Canister is applying a bead of adhesive approximately 20-40mm wide.
4. Apply beads at 300mm centres in the field area and 200mm centres in exposed perimeter zones of the roof or in compliance with specific wind uplift calculations.
5. Place the insulation board directly into LangStik SF.
6. Apply pressure to the insulation board to ensure full contact with LangStik SF Canister.
7. Allow to cure before weatherproofing the insulation board.

LangStik SF PU Adhesive - Can (6.5 kg).

Guidelines for Use: Applied direct from the can. Note. Once opened, contents of can must be used. Do not re-seal.

1. Substrate to be swept clear of all dirt, debris and loose material, prior to application of adhesive.
2. Pierce can to form a 20 mm hole.
3. Apply 20mm beads at 300mm centres in the field area and 200mm centres in exposed perimeter zones of the roof or in compliance with specific wind uplift calculations. Beads to be applied in a serpentine pattern.
4. Set board into the beads within 10-15 minutes and immediately walk-in the board to spread the beads for maximum contact.
5. Repeat walking-in every 5-7 minutes, until the board is firmly attached.
6. Allow to cure before weatherproofing the insulation board.

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ParaFurb Outlets

ParaFurb Outlets must not be installed to outlet positions that already have an existing refurbishment outlet in place. Any existing refurbishment outlets or lead sleeve inserts must be removed with surrounding substrates being made good prior to any new ParaFurb Outlets being installed.

Fitting Instruction for units with EPDM rubber RibSeals:

- Select the correct size of outlet to suit the diameter of the downpipe.
- Check depth of existing outlet / downpipe and, if necessary, cut spigot to length. Minimum length of spigot must be 150mm.
- Prior to installing outlet, fix in place required system underlay or underlay soaker, 500mm x 500mm.
- Insert EPDM rubber Ribseal onto the end of the spigot. Ensure Ribseal fits tightly and shoulder is in full contact with the end of the spigot. Then Insert the complete assembly into the downpipe, ensuring the stainless steel supporting flange under the membrane flange is in full contact with the underlay / soaker. Secure in position with suitable fixings and washers through the four holes provided. Fully bond the outlet membrane flange to the underlay / soaker. Where applicable, fully bond the system cap sheet to the membrane flange. Install leaf guard / grating supplied.

ParaRange Rooflights, Hatches and Kerbs

To be installed strictly in accordance with BS 8217 / 8218, Langley Rooflight Schedule and the fixing instructions as detailed in accompanying Agrément Certificate.

Exposed Substrates - General Requirement

All structural deck types and detail substrates must be kept dry at all times during the construction phase.

Hybrid Roof Construction

Where applicable, in hybrid roof constructions, consideration must be given to ensuring that adequate condensation control is achieved in accordance with BS 6229: 2018 and BS 5250: 2021.

Damp Proof Course

Where waterproof skirtings and counter-flashings are being installed at a higher position than an existing damp-proof course, a new cavity tray must be installed above the new proposed finishes, especially in exposed conditions. Any damp-proof courses that are covered by Langley waterproofing membranes or roof coverings are done so purely at client risk and will not be covered by the Langley Guarantee.

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General Guidance and Requirements

Drying Out - Equipment Suggestions

Commercially available equipment includes the following:

- Leaf Blowers
- Hot Air Blowers
- Roof Pumps (puddle suckers)
- Bowdry Roller

Latent Defects

All specifications provided by Langley Waterproofing Systems Ltd are written on the basis that the substrates, roof deck and structure are sound and durable. We cannot accept responsibility for the consequences of latent defects in the roof deck and/or structure.

Installation

Waterproofing systems are to be installed in accordance with BS 8217: 2005, BS 8000: Part 4: 1989 and Langley Fixing Instructions.

Hybrid Roof Constructions

Consideration should be given to ensuring that adequate condensation control is achieved in accordance with BS 6229: 2018 and BS 5250: 2021.

Building Works - Caution Note

Building works adjacent to roofing operations: It is the roofing contractor's responsibility to ensure suitable protection of semi-completed or completed works is provided should any building works be undertaken, either by the roofing contractor or others; such as cutting of chases, re-pointing, new brickwork, rendering, etc.

Leadwork

Flashings and other sheet leadwork must be carried out in accordance with the recommendations of the Lead Development Association and the Lead Sheet Association.

Protection of Works - Caution Note

Any references within this specification relating to plant, equipment or materials being temporarily removed and/or stored for use / re-use, must not be stored, during the entire course of the works, at any time, on semi-completed or completed areas unless suitable protection measures are provided beneath. No claims arising from failure to protect Langley Waterproofing Systems Ltd installed products will be entertained.

Damp-Proof Courses / Cavity Trays

Where there is no existing damp-proof course, or where the skirtings and/or counter-flashings are being installed at a higher level than the existing D.P.C., a new cavity tray should be installed, especially in exposed conditions. Where tops of new waterproof skirtings will be above the line of the existing damp-proof course or cavity tray, it is a requirement that the contractor makes suitable provision to renew and raise these to a higher level. The contractor must liaise with, and seek separate instruction from the client contract administrator as to the method of raising these details. Any damp-proof courses that are covered by Langley waterproofing membranes or roof coverings are done so purely at client risk and will not be covered by the Langley Guarantee. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd.

Exposed Openings - Caution Note

It is solely the contractor's responsibility that any exposed openings created during the construction phase; removal of rooflights / structural glazing, ducting, replacement of deck substrates, etc. must be temporarily and fully protected at all times to protect workforce and building occupants. Furthermore, any and all openings must be made watertight at the end of each working period.

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Langley Felt Membrane Systems - Storage

Rolls of Langley waterproofing are to be stored under cover, on end, on a flat firm surface and, if outside, clear of the ground or supporting surface and sheet covered.

Unforeseen - Deleterious Materials

During the construction phase, any exposed or discovered unforeseen deleterious materials must be notified immediately upon finding to the client contract administrator and Langley Waterproofing Systems Ltd to await further instruction before works proceed. No claims arising will be considered through failure to report such findings.

Prepared Surfaces - Requirement

Prepared surfaces and substrates to receive new waterproof coverings must be prepared all in accordance with detailed specification notes contained herein and must be swept clean of all dirt, debris and loose material. In addition, all surfaces must be dry.

Upstand Skirtings - Requirement

For guarantee purposes, all upstand and skirting details must be a minimum height of 150mm above the finished roof surface level.

Upstand Skirtings - Requirement

It is the contractor's responsibility to ensure that any and all details found to be below the required 150mm requirement are raised to accommodate the extra thickness created by the new waterproofing system. No claims arising from failure to do so will be entertained by Langley Waterproofing Systems Ltd.

Perimeter Kerbs - Requirement

It is the contractor's responsibility to ensure that any perimeter non-watershed check kerb details meet the 50mm height requirement. The contractor must raise any perimeter kerbs where necessary to accommodate the new finished levels created by the new waterproofing system. No claims arising from failure to do so will be entertained by Langley Waterproofing Systems Ltd.

Langley Insulation Products - Storage

All insulation materials **must be** stored under cover. Plastic wrappings should not be considered to be sufficient protection for storage outside. If stored outside, insulation materials should be adequately protected with tarpaulins / sheeting and also be clear of the ground or supporting surfaces.

Completed Works Protection

Each layer of the installed Langley waterproofing system **must be** protected from any following trades, foot traffic, or other sources of damage during installation and other construction work. Where necessary, appropriate protection, such as new plywood sheets, must be provided.

Fire Safety

The Roofing Contractor is to provide adequate fire extinguishers and fire safety measures throughout the duration of the contract period.

Protection of Internal Outlet Positions - Requirement

All outlets must be temporarily covered throughout the contract period to prevent debris entering the outlet / drainage system. Covering to be such, that water run off is not impeded at any time.

Safe Working

All works are to be carried out in accordance with current Health and Safety Legislation.

Inclement Weather Protection

All necessary measures and allowances **must be** made for protecting the works from damage due to inclement weather. The contractor must ensure at the end of each working day or period, that any exposed membranes or substrates that are susceptible to damage through water ingress are sealed with a Langley system compatible membrane to ensure complete water tightness. No loose laid membranes or other such covers are permitted.

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House Keeping

The Roofing Contractor is to maintain and keep the site tidy at all times. All debris, wrappers and surplus materials, etc. to be removed from the site each day or deposited in secure storage.

Gas Cylinders

Remove from roof levels at the end of each working day and store in a secure compound designed for the purpose.

Temporary Removal - General

Roof mounted plant and equipment to be temporarily removed and set aside for re-fixing upon completion. No plant and equipment is to be stored on semi-completed or completed areas of new works during the course of the contract unless suitable protection has been provided beneath.