

Our Ref: ENQ690555



raising standards in property preservation

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Dear Mr Hunt

Property – Freetrade Exchange, 37 Peter Street, Manchester, Lancashire, M2 5GB

In accordance with your verbal instructions, we set out below a revised budget cost given the clients cost constraints.

LOWER GROUND FLOOR

The lower ground floor is set at approximately 2.3m below external ground levels, inspection holes were formed in the modern dry lining during out site visit to the rear and right elevations. This revealed what appeared to be a Type A cementitious waterproofing membrane to the retained walls, which on the day of inspection was dry with no signs of defects to the areas inspected.

There were a number of leaky service penetrations, some of which appeared redundant which will require sealing/waterproofing.

The floor is of suspended timber construction set over sub floor voids and the basement.

BASEMENT

Walls

The external ground retaining walls are of brick construction; internal walls are a mix of brick and block dividing walls with some timber stud partitions.

Floor

The lower basement floor is a concrete slab of unknown depth assumed to be cast directly onto the earth. The rear stairwell floor has stone flags which are also assumed to be laid directly over earth.



The existing solid floor appears to be structurally sound however to comply with BS 8102 it will be necessary for your structural engineer to determine its ability to withstand any upward forces exerted by hydrostatic pressure. No allowance has been made in our quotation for this report or any such works recommended within it.

The stone flags are not deemed to be structural and subject to the conservation officer's approval should be renewed in concrete to comply with BS 8102.

Stairs

The existing stairs to the rear of the building are formed from historic stone, which are bearing directly into the retaining walls. There is therefore a risk of ground water penetrating at the joint between the steps/landing areas as they cannot be isolated from the building structure. In the absence of being able to physically isolate these from the retaining walls, there is nothing which can be done, unless the treads and risers are covered with a cavity membrane which 22mm plywood boards are laid to form the treads and risers. Otherwise, it would have to be accepted that they could be damp.

DESIGN CRITERIA

BS 8102: 2022 (Protection of below ground structures against water ingress - Code of practice).

Damp proofing to basements is covered by British Standards document **BS 8102:2022**. This document specifies the performance level for the design of the waterproofing based upon the end use of the basement, grading from 1-3.

Grade ^{A)}	Performance definition
1a	Seepage ^{B)} and damp areas ^{C)} from internal and external sources are tolerable, where this does not impact on the proposed use of below ground structure. Internal drainage might be necessary to deal with seepage.
1b	No seepage ^{B)} . Damp areas ^{C)} from internal and external sources are tolerable.
2	No seepage ^{B)} is acceptable. Damp areas ^{C)} as a result of internal air moisture/condensation are tolerable; measures might be required to manage water vapour/condensation ^{D)} .
3	No water ingress or damp areas ^{C)} is acceptable. Ventilation, dehumidification or air conditioning necessary; appropriate to the intended use ^{D)} , ^{E)} .
^{A)} The agreed grade should meet with the client's expectations for the intended use of the below ground space. Reducing the grade could increase the risk of not meeting the expectations of the client for the intended use of the below ground space.	
^{B)} Seepage (sometimes referred to as weeping) is defined in 3.15 . If there is seepage, there is a possibility of mineral deposits forming.	
^{C)} Damp area is defined in 3.4 .	
^{D)} The scope of this document is limited to detailing the process and best practices that can be followed when creating a waterproof or water-resistant structure below ground. The additional considerations that are required to achieve the required environment are beyond the scope of this document.	
^{E)} See BS 5454 for recommendations for the storage and exhibition of archival documents.	

Having reviewed the drawings, we would suggest a Grade 3 environment for the below ground areas.

Proposed Specifications

Limited Waterproofing.

At your request we have allowed for a limited waterproofing system only insofar as the existing cementitious waterproofing is to remain at lower ground floor level and you have asked us to omit a waterproofing floor membrane to the basement; we understand you do not wish to go to the extent of compliance with British Standard 8102. Compliance with this code is not mandatory.

Accordingly, this specification does not offer full protection against water ingress. If surrounding ground water conditions change, the existing lower ground floor and basement system may be unable to prevent potential flooding or moisture ingress. Any guarantee issued will therefore be limited to ingress through basement walls only and not the lower ground floor areas and basement floors which both may breach the basement waterproofing.

In some circumstances limited waterproofing systems may be able to be upgraded at extra cost at a future date if required. Alternatively, if you wish to have full protection from the outset we will be pleased to provide a price for this option on request; this is likely to be less expensive than upgrading in the future and is always our recommendation.

If we have misinterpreted your instructions, please let us know at once.

LOWER GROUND FLOOR

Walls are dry lined with metal frame system with plasterboard and a polythene vapour check.



A render coating was noted to the retained areas which appears to be well adhered. The walls appeared to be dry to the areas exposed. The coating may be a Type A cementitious multi coat render barrier tanking system, which is intended to protect against water ingress by providing a physical barrier to hold back water.

Based on the condition of the retained walls at lower ground floor level, we have assumed as per our discussions on site, that these are to remain untouched given they appear to be working effectively at preventing water penetration and guiding ingress down to the sub floor voids and adjacent basement.

The leaky service penetrations will require sealing/waterproofing, and at present no allowance has been made for these works in our budget cost as numbers and locations will need to be determined following the strip out.

Basement

Drainage

The effectiveness of the Dry Room system is dependent upon discharging free water before pressure can build up behind the system.

It is therefore essential that an effective drainage system is installed and maintained.

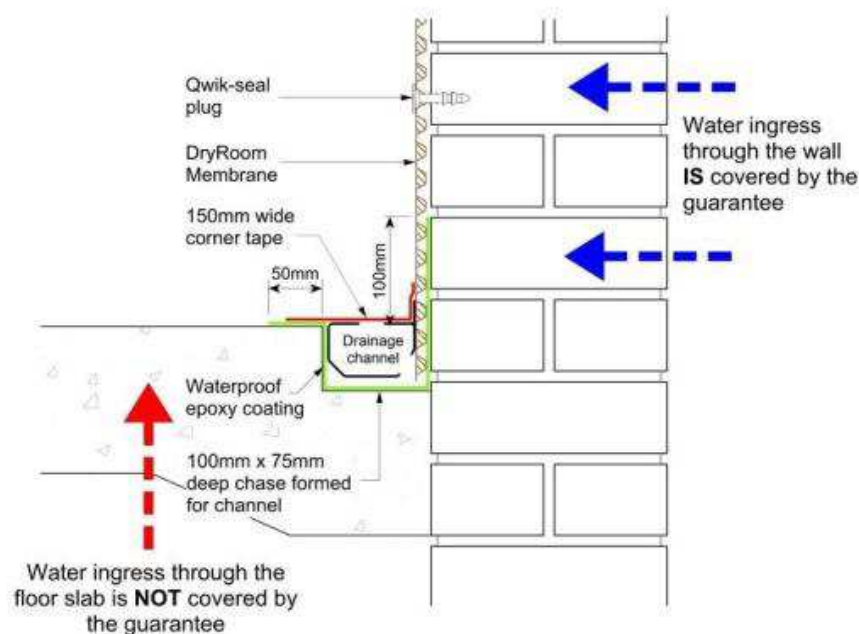
We recommend the installation of 4no new sump chambers to evacuate water from behind the system.

Carry out a water flow test to establish falls and low spots and to also establish that water will reach the discharge point, without build up. Where necessary temporarily connect pump(s) to facilitate testing and subsequently disconnect.

NB. Where existing floors are allowed to remain and are found to be uneven or unlevel, should this necessitate further works a supplementary estimate will be supplied, prior to the application of a membrane.

The Proposed System

- 8mm Cavity Drainage Membrane is to be installed on internal face of retaining perimeter walls this will return approximately 4.5m high and approximately 3m across the internal walls abutting the retained walls.
- The perimeter wall membrane will terminate into perimeter drainage channels (**recesses to be formed in the slab by your own appointed contractor 100mm wide x 100mm deep**).
- Apply an epoxy resin/crystalline slurry to the channel extending 50mm horizontally along the floor and 100mm vertically up the wall above the floor level.
- The drainage channels will terminate into 4no sump chambers (**slab excavations to be formed by your own appointed contractor 1m x 1m x 1m deep**) each incorporating 2 pumps and high water level alarms.
- Wall membrane will be tapped to inside edge of slab and remaining recess backfilled flush with floor.
- Pump electrical connection by main contractor.
- Wall finishes (**independent stud frame**) and floor finishes (**70mm screed**) by main contractor.



LIMITED GUARANTEE WHERE WHERE FLOOR IS NOT BEING TREATED

8mm Cavity drainage membrane 300mm high

Liquid dpm



Sump

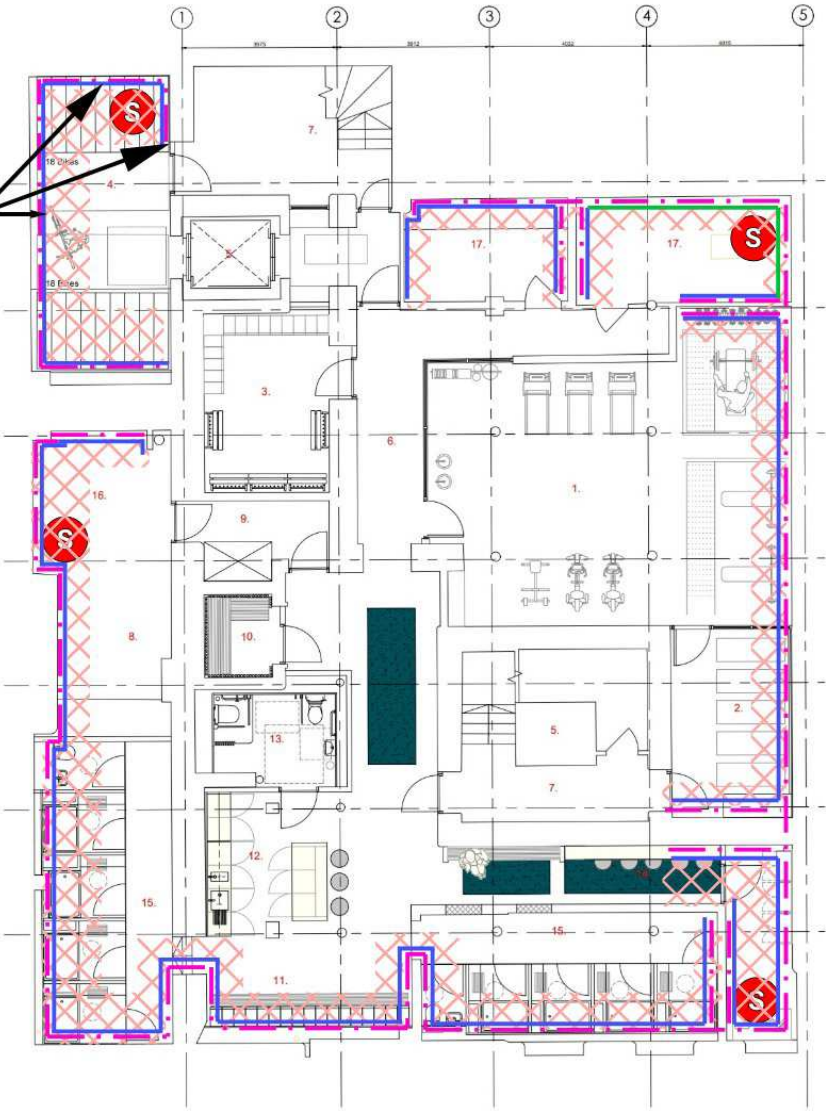


8mm Cavity drainage membrane full height

Drainage channel



Membrane to extend up to lower ground floor level.



Budget Costing For the design, supply and installation of the above:-

£98,374.00 + VAT

LIMITED WATERPROOFING GUARANTEE

Upon completion of the contract and where applicable our 10 Year Guarantee will be issued, protecting you against the re-occurrence of water penetration through our waterproofing fitted to the walls ONLY, offering you peace of mind for your property in the future. A specimen guarantee is available on request.

Water Penetration through the floor areas is not covered by the guarantee.

The installation can be upgraded to a full Waterproofing specification, and full Waterproofing guarantee upon request.

In deciding on your preferred contractor to deal with the above, I would like to clarify if the NHBC or a similar warranty provider is involved, I am CSSW qualified (the benchmark waterproofing qualification) to meet their criteria.

With the best guarantees on the market we are also an established member of the BSWA (British Structural waterproofing Association) and all our services are administered under a third party accredited ISO 9001 Quality Management System.



Peter Cox have allowed to supply Alertmaxx 2 EC high water level alarms for each of the sump chambers.

The AlertMaxx2 EC is a state-of-the-art system that not only provides a high-water level alarm but can also monitor you're pumps activity when connected to WIFI. Once the AlertMaxx2 EC has been registered with Sidewinder Technology through WIFI connection, clients will have access to monthly health reports on the condition of their basement sump pump system and regular algorithm information providing differential patterns of the sump pumps to be detected (Free for 12 months, subscription required thereafter).

ADDITIONAL PROTECTION

The effectiveness of this system is totally reliant upon the pump working and discharging; you should therefore consider the implications of pump or electrical supply failure.

We strongly recommend that you consider the additional features listed below if they have not already been included in the specification.

- Pump battery backup.

For further details and the additional cost of any of the above options please contact our Surveyor.

WORK TO BE COMPLETED BY THE CLIENT UNDER A SEPARATE CONTRACT

PREPARATORY WORKS

All existing and new drains within the below ground areas should be protected with anti-flood valves by the client's own plumber/builder under separate contract. This is to prevent flooding via a charged sewer system. Manhole covers should be raised and double sealed.

Provide skips.

Remove any fixtures, fittings or any other items preventing full access to the areas of application.

Remove heating / plumbing pipework, isolate electrical circuits and remove switches and sockets from the areas of work.

Remove door linings and windows in specified walls to allow waterproof membrane system to extend into reveals and subsequently re-fix prior to finished detail.

Prior to the application of the membrane remove the existing waterproofing and lightweight or defective plasters to include loose and flaking paint from the area(s) as detailed on the enclosed sketch plans. These plasters must be removed to prevent their deterioration which will ultimately lead to the blockage of the drained cavity and prevent the free passage of water and gasses.

Upgrade the rear stairwell floor to accommodate the waterproofing system. If not possible due to Listed building constraints, an "aco" drain will be required to the thresholds of this area.

Where steel beams penetrate into the retaining wall or there are embedded steel items such as lintels and floor beams, ground water has come into contact with these causing them to severely corrode. We recommend that you have these checked by a Structural Engineer.



Embedded Timbers:

Any embedded timbers must be removed by others with any incidence of decay. Any in-situ timber (lintels, old fixing plugs etc.), left in place represent a risk in respect of fungal decay.

Wall mounted services:

Please note that there will be some areas of wall which we may not be able to line, such as where electrical boards are present and cannot be removed from walls. In such areas, we cannot guarantee grade 3 (unless removed and reinstated by others), If not possible, an "aco" drain will be required to the thresholds of this area.



The client is to arrange for a competent electrician to connect the pumps in accordance with the manufacturer's instructions and provide within 6m of each of the sump chambers 2 neon 13-amp non-switched fused spurs on their own 16-amp RCBO circuits from the fuse board, MCB to be 'Type C'. The electrician is to also connect the alarms and fully test the system. When notified that the installation is complete, independent commissioning of the system will be carried out by PPS and overseen by Peter Cox Ltd.

In the interim the pumps should be soft wired to power to allow their unhindered operation until such time as the final connections can take place.

Excavate the existing floor slab to accommodate the installation of the recommended perimeter drainage to the areas shown on the enclosed plan. NB. When cutting a channel in an existing concrete floor it is likely that the full thickness of the slab will be broken through. Where this happens, the floor will need to be over-excavated, and concrete re-laid to form a solid channel base. channels **(Recesses to be 100mm wide x 100mm deep)**.

Carry out a water flow test to establish falls and low spots and also establish that water will reach the discharge point, without build up.

Excavate the sub site to accommodate the installation of the sump chamber(s) in location(s) detailed. **(1.2m x 1.2m x 1m deep)**

Breakthrough / make access points in division walls to allow perimeter drainage pipe through at the base minimum 150mm diameter.

FINISHING SPECIFICATIONS

WORK TO BE COMPLETED BY THE CLIENT UNDER A SEPARATE CONTRACT

Walls

Provide and fix a free standing pre-formed metal/timber framework to support the plasterboard linings.

Initially, fix 1200 gauge 'Visqueen' dpm to the metal framework using tape. Provide and fix Thermal plasterboards to the free-standing metal framework, apply scrim tape to the joints and skim using multi-coat finishing plaster.

Please Note

The costing has been provided subject to contract. This is a budget costing and is only intended as a guide price for you. It does not constitute a full survey/inspection report or infer that a full inspection has been undertaken hence it may not fully reflect all works required. We would welcome the opportunity to

discuss these proposals further, where we can determine final construction details and phases. We would then provide a fixed price quotation for the installation and design.

Unless specified otherwise, our budget costing does not include for any preparatory or other associated works which may be required.

Our Assumptions

To allow us to provide the above budget costing we made the following assumptions. We welcome the opportunity to discuss this further. There will inevitably be other issues and design considerations, but the above are the main ones based on the level of information supplied to date.

The proposed Grade and limitations of the system under **BS 8102** is suitable for your client.

We are unaware of the water table for this particular site. However as stated in BS8102 "waterproofing measures should be designed on the basis of water to the full height of the retained ground at some time during the structure's life where:

- *no detailed geological or hydrogeological assessment has been undertaken*
- *the results of the soil investigations are inconclusive with respect to ground water*

The pumping system has been designed to deal with a flow rate of 150 litres per minute entering the sump chamber with a 7.5m discharge head.

The quotation(s) have been prepared on the assumption that the building programme will enable us to carry our work within 1 continuous visit by our team.

Our charge for additional visits (due to measures beyond our control) per technician will be £450.00 + vat per ½ day visit or part thereof.

Standing time beyond our control will be charged at £80.00/hr + VAT or part thereof per technician, this to be agreed with the client/site manager and entered into the standing time log and signed on site at each occurrence by the technician and client/site manager.

Our report and quotation do not make any allowance for the application of planning, building regulations approval or any licenses/permits should they be required for water discharge, which is the responsibility of the client.

Ground Gas protection has not been allowed for in our quotation unless explicitly stated otherwise.

QUALITY ASSURANCE

Included within our quotations is the assurance that at every step of the installation, checks will be undertaken by Peter Cox Ltd to ensure the system is installed correctly and a photographic log kept of each visit, snagging noted will be remedied without delay for further inspection.

There are to be a minimum of 1 site visit per week undertaken by either the local Surveyor, Branch Manager, Area Operations Manager, National Waterproofing Manager or National Commercial Manager

In addition to the above, additional unannounced inspections may be undertaken by the membrane manufacturers to ensure compliance with their installation guidelines; any snagging noted will be remedied without delay for further inspection.

Should you wish to discuss this costing or our design in any greater detail or you would like clarification of the specification or works allowed for in our budget cost, please contact me through this office or on 07771 931927 any time up to 5.30pm.

Yours sincerely
For and on behalf of Peter Cox

A handwritten signature in dark ink, appearing to be 'AS', with a long horizontal stroke extending to the right.

Andrew Singleton CSRT, CSSW
Senior Surveyor