

LTR/16185/04

7th November 2017

Darren Pickens
Campbell Driver Partnership
Capricorn Park
Blakewater Road
Blackburn
BB1 5 QR

Dear Darren,

PRESSPARTS GATE 4 – DELIVERY BAY, PHILIPS ROAD, BLACKBURN
VALIDATION OF HYDROCARBON MEMBRANE INSTALLATION,

Following on from the submission of our Phase II Geoenvironmental Assessment for the above development at Presspart, Philips Road, Blackburn (Ref: R.14110/G/1 Nov 2014), which recommended the installation of ground gas protection measures to achieve a two point score in accordance with BS8485:2007 (subsequently updated in 2015). PWAG were subsequently called out to site after groundworkers encountered suspected hydrocarbon type contamination in soils located adjacent to the excavation for foundation footings for the loading bay. The impacted soils from the foundation excavations were separated and quarantined while chemically analysis was undertaken, and a waste disposal facility was organised. The soils have subsequently been taken to a Biffa Waste/Biogenie Soil Treatment centre for disposal – as previously reported in Letter Report (Ref: 16185/02).

It was subsequently recommended by PWAG that the ground gas membrane for the loading bay building area should be upgraded to a hydrocarbon resistant membrane, to prevent any significant vapour ingress. As the gas protection measures (and upgraded hydrocarbon vapour resistant membrane) were not to be installed by a specialist installation contractor building control required the installation of these measures to be independently verified and this letter details the findings of this work.

The proposed building is detailed on Campbell Driver Partnership (projects architects) drawings No. 13.190.04/25A, provided as Enclosure 1. In addition Visqueen Standard

Detail: Visqueen Ultimate VOC Block drawing no.VOC-5 provided as Enclosure 1 shows the installation detail to which the membrane has been installed.

A hydrocarbon vapour resistant membrane (Visqueen GX Flexi Hydrocarbon Barrier) was installed across the machine shop extension floor area in general accordance with , with all joints lapped (150mm) and sealed with double sided visqueen jointing tape and single sided lap tape as detailed on Visqueen drawing no. JD-06 'DPM to DPM Jointing Detail'. Columns were sealed in accordance with Visqueen drawing no. GX-22 'Sealing around Universal Column Penetrations. A copy of the specification sheets, jointing details and delivery notes are attached as Enclosures 2. Given the complex nature of the development, which involved the new extension tying in with existing historic buildings (which are not installed with ground gas protection), a 450mm plinth was cast and dowelled to the existing floor slab and the gas membrane was taken to near the top of the existing slab and bonded with bitumen primer and gas tape.

An engineer from Paul Waite Geo-Environmental Limited (PWAG) visited the site on the 3rd November 2017 to validate the installation of the hydrocarbon vapour resistant membrane. The validation records along with a selection of photographs are attached as Enclosures 3 and 4.

The validation records indicate that the hydrocarbon membrane had been installed appropriately.

If you have any questions concerning the above please do not hesitate to contact us.

Yours sincerely

A handwritten signature in black ink, appearing to read 'D. Kitching', with a stylized flourish at the end.

David Kitching
On behalf of PWA Geoenvironmental Limited

Encs.

- Enclosure 1: Development Layout and Hydrocarbon Resistant Membrane Details (CPD drawing no. 13.190.04.25A and Visqueen drawing no. VOC-5)
- Enclosure 2: Delivery Notes, Specification Sheets and Jointing Details
- Enclosure 3: Validation Visit Records (3rd November 2017)
- Enclosure 4: Site Photographs

Enclosure 1

Development Layout (drawing no. 13.190.04.25A)

Hydrocarbon Membrane Detail (drawing no. VOC-5)

NEW ROOF CLADDING:
Provide new Kingspan KS1000 DR/DRC 80mm th core composite roof cladding to run flush with existing / replaced roof sheeting (Colour: RAL 7016) and fixed to Kingspan steel section purlins to structural engineers / manufacturers details and design calculations. Include for Kingspan Trapezoidal KS1000 TR Rooflights equal to 10% of the new roof area created (see roof plan) with red capped fixings heads. Allow for all ridge / verge and gutter flashings lapped and sealed with 6mm butyl seals as required.

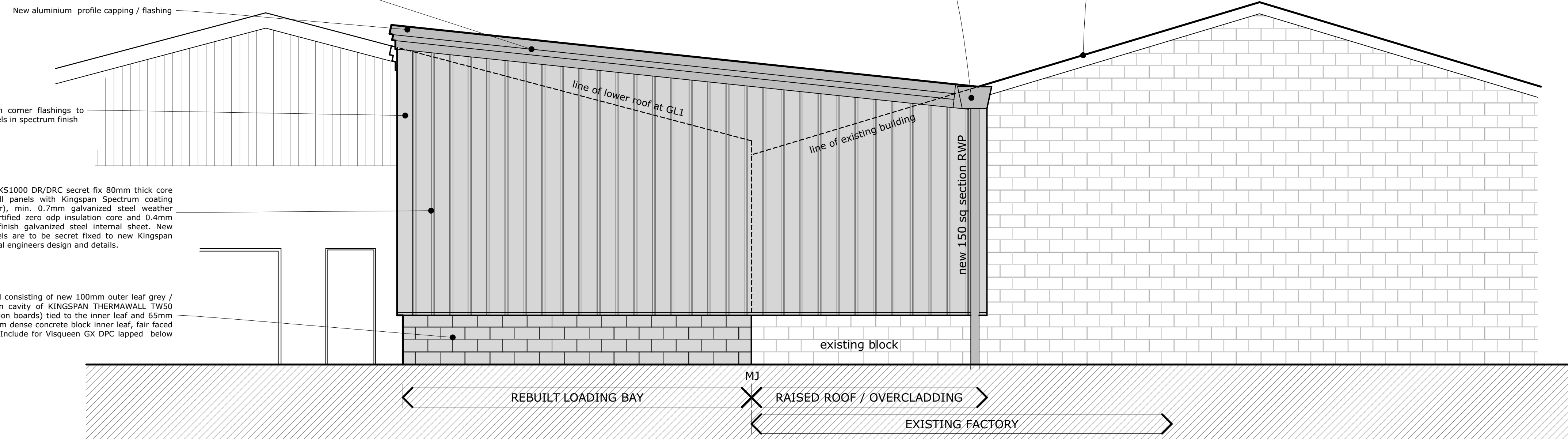
NEW WALL CLADDING:
New pre-formed 300mm corner flashings to match new cladding panels in spectrum finish

NEW WALL CLADDING:
Vertically laid Kingspan KS1000 DR/DRC secret fix 80mm thick core composite insulated wall panels with Kingspan Spectrum coating (Colour Spectrum Silver), min. 0.7mm galvanized steel weather sheet, LPCB Firesafe certified zero odp insulation core and 0.4mm gauge white polyester finish galvanized steel internal sheet. New composite cladding panels are to be secret fixed to new Kingspan Cladding rails to structural engineers design and details.

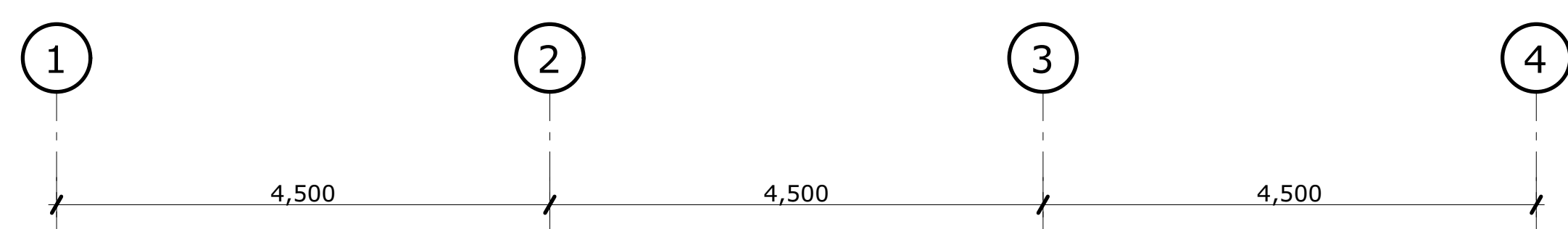
NEW EXTERNAL WALL:
new insulated cavity wall consisting of new 100mm outer leaf grey / black blockwork, 115mm cavity of KINGSpan THERMAWALL TW50 50mm thick rigid insulation boards) tied to the inner leaf and 65mm residual air space. 100mm dense concrete block inner leaf, fair faced for internal paint finish. Include for Visqueen GX DPC lapped below slab DPM.

Provide proprietary site measured Kingspan insulated box gutters extended from existing valleys with depths and widths to suit by specialist roofing subcontractor discharging through rainwater outlets where shown on plan with membrane disc and flashings.

Include for stripping back and replacement of existing metal sheet roofing and polycarbonate rooflights



north



NEW ROOF CLADDING:
Provide new Kingspan KS1000 DR/DRC 80mm th core composite roof cladding to run flush with existing / replaced roof sheeting (Colour: RAL 7016) and fixed to Kingspan steel section purlins to structural engineers / manufacturers details and design calculations. Include for Kingspan Trapezoidal KS1000 TR Rooflights equal to 10% of the new roof area created (see roof plan) with red capped fixings heads. Allow for all ridge / verge and gutter flashings lapped and sealed with 6mm butyl seals as required.

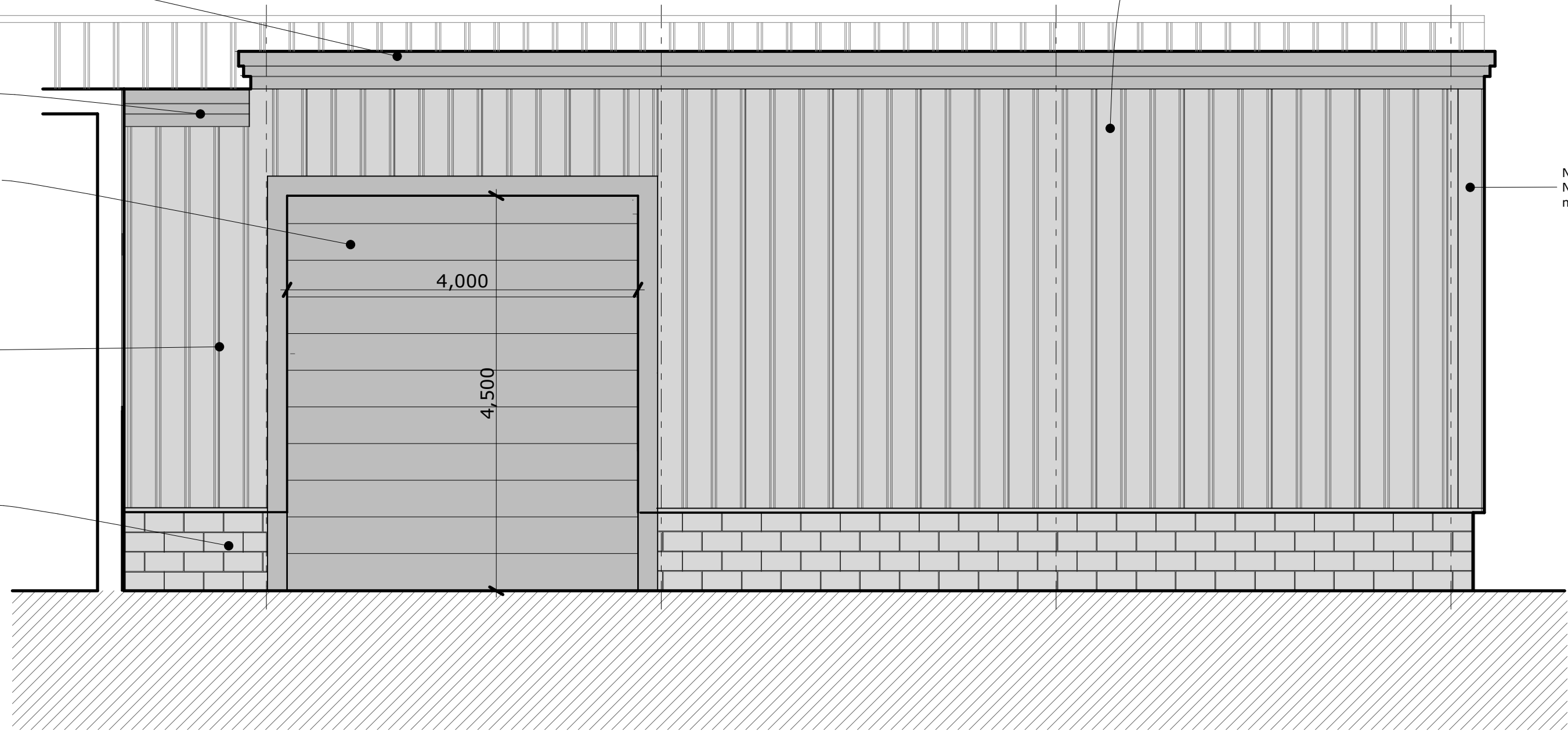
NEW SECTIONAL DOOR:
Provide new sectional door by specialist subcontractor in existing structural opening. Allow for new PPC head support to structural engineers details and allow for forming metal stud, ply lined bulkhead for door roller / recess. Sectional door to have minimum U Value of 0.25w/m²K and Colour: RAL 7016

NEW WALL CLADDING:
Vertically laid Kingspan KS1000 DR/DRC secret fix 80mm thick core composite insulated wall panels with Kingspan Spectrum coating (Colour Spectrum Silver), min. 0.7mm galvanized steel weather sheet, LPCB Firesafe certified zero odp insulation core and 0.4mm gauge white polyester finish galvanized steel internal sheet. New composite cladding panels are to be secret fixed to new Kingspan Cladding rails to structural engineers design and details.

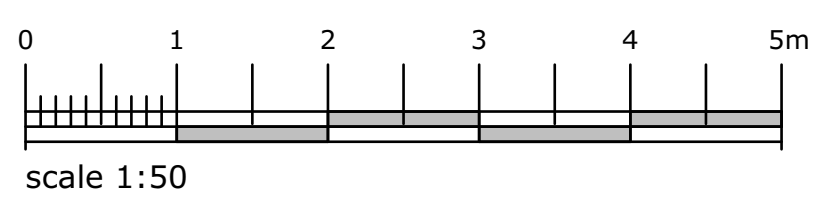
NEW EXTERNAL WALL:
new insulated cavity wall consisting of new 100mm outer leaf grey / black blockwork, 115mm cavity of KINGSpan THERMAWALL TW50 50mm thick rigid insulation boards) tied to the inner leaf and 65mm residual air space. 100mm dense concrete block inner leaf, fair faced for internal paint finish. Include for Visqueen GX DPC lapped below slab DPM.

Include for stripping back and replacement of existing metal sheet roofing and polycarbonate rooflights

NEW WALL CLADDING:
New pre-formed 300mm corner flashings to match new cladding panels in spectrum finish



east



campbell driver partnership
architects designers surveyors

client: **presspart manufacturing**

project: **phase 4 development**
phillips road blackburn

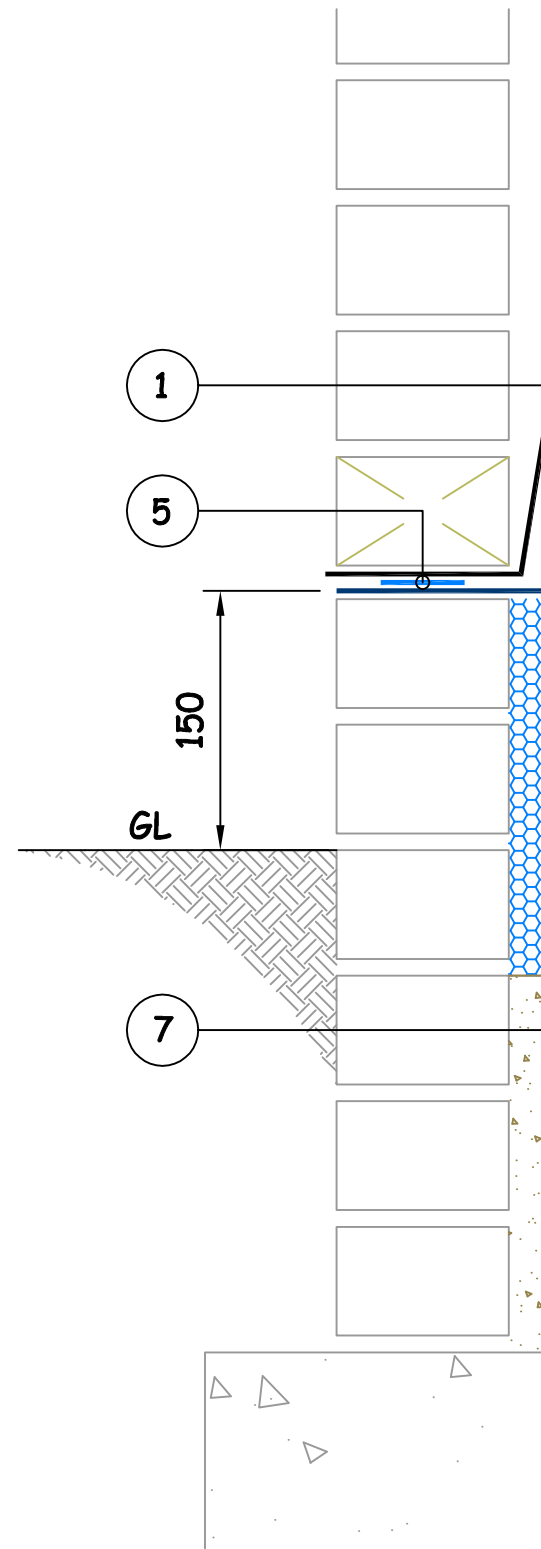
sheet: **gate 4 - proposed elevations**

dwg no: 13.190.04	025	A
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scale: 1:50 @ A1
date: 23.01.17
drawn: dp
capricorn park
blakewater road
blackburn bb1 5qr
t: 01254 297700

email: design@cdparchitects.co.uk

Key to Materials :-	
1	Visqueen Zedex CPT DPC
2	Visqueen GX DPC
3	Visqueen Ultimate VOC BLOK
4	Visqueen 150mmx10m GR Lap Tape
5	Visqueen 50mmx10m Jointing Tape
6	Visqueen 100mmx15m GX Jointing Tape
7	Rigid polystyrene insulation



Typical Edge Detail Ground Bearing Slab

NB ; DO NOT SCALE - USE FIGURED DIMENSIONS ONLY.



Visqueen Build
 Contact Technician
 t : 0333 202 68
 f : 0333 202 68
 e : enquiries@visqueenbu
 www.visqueenbu

Project: Standard Detail : Visqueen Ultimate VOC BLOK

©

VOC-05

Ground Bearing Slab

Ultimate VOC BLOK

-

VC

Enclosure 2

Visqueen GX Flexi Barrier Specification Sheets

Visqueen Jointing Details

Delivery notes

VISQUEEN

BUILDING PRODUCTS
visqueenbuilding.co.uk

Heanor Gate Road, Heanor, Derbyshire, DE75 7RG
0333 202 6800, 0333 202 6886

Page 1

SHIPMENT Proof of Delivery

Dale Contractors
Presspart Phillips Road
Whitebirk Ind Estate
BLACKBURN
BB1 5RF

Shipment No. RSH542821
Pallet Ref SHP549451
Date 30. October 2017
Requested Delivery Date 31. October 2017
Your Reference 275807472
Order No. ORD284573

Account No. CU100001
Ship-to Code 2768

Ship Agent FREIGHTROU
Vehicle ID
Haulier Reference

Item No	Cust No	Reference	Quantity	UoM	Net Wgt(KG)
RS058035	994394	Ultimate VOC Blok	2.44mx41m1mm Smooth	1	EA
RS000540	693507	Ultimate D/Sided Tape 693507	100mm x 15M	10	EA
RS014443	693508	Ultimate Lap Tape 693508	150mm x 10M	5	EA
RS014408	527144	300mm Detailing Strip 527144	300mmx10m	1	EA

Site Contact - Graham 07595541006

Shipment No. RSH542821

Total Net Weight (kg)

No Of Pallets

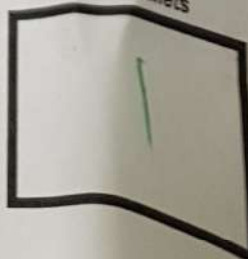
Received in good condition: _____

(Date)

(Time)

(Signature)

(Printed)



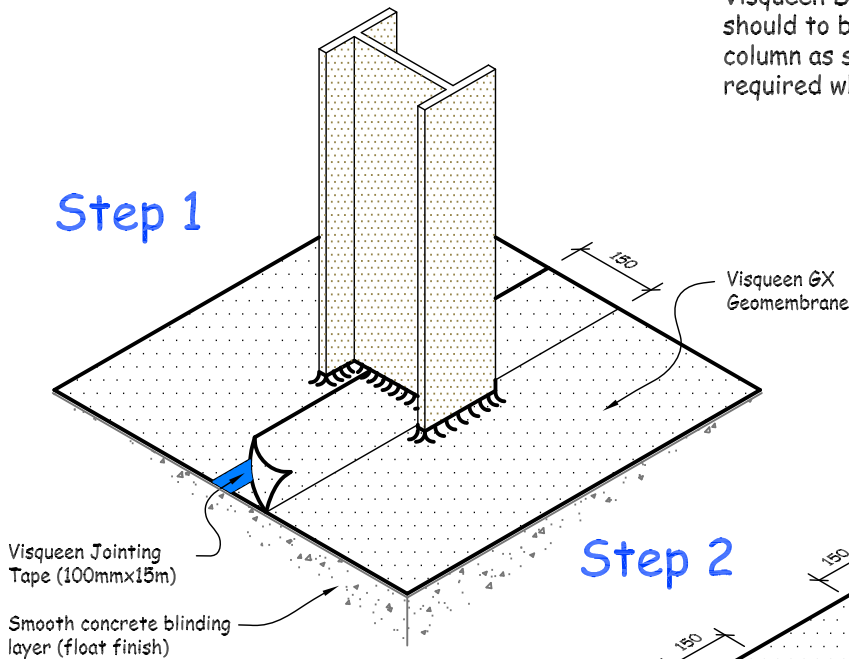
R675

All laps must be fully sealed.

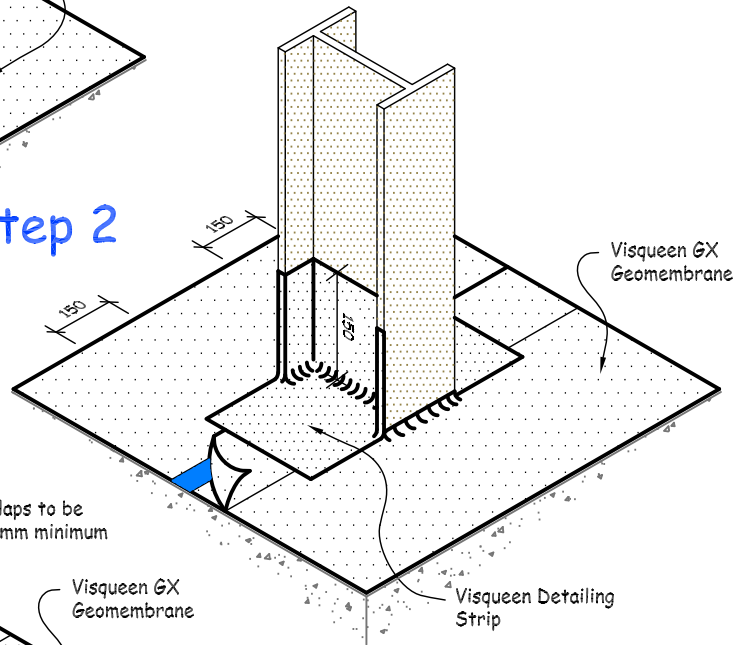
Detail Issued For Guidance Only,
Designer's Approval Required

All surfaces to be primed before applying Visqueen Detailing Strip. The Detailing Strip should to be cut and dressed up the primed steel column as shown. Special detailing measures required when ground movement anticipated.

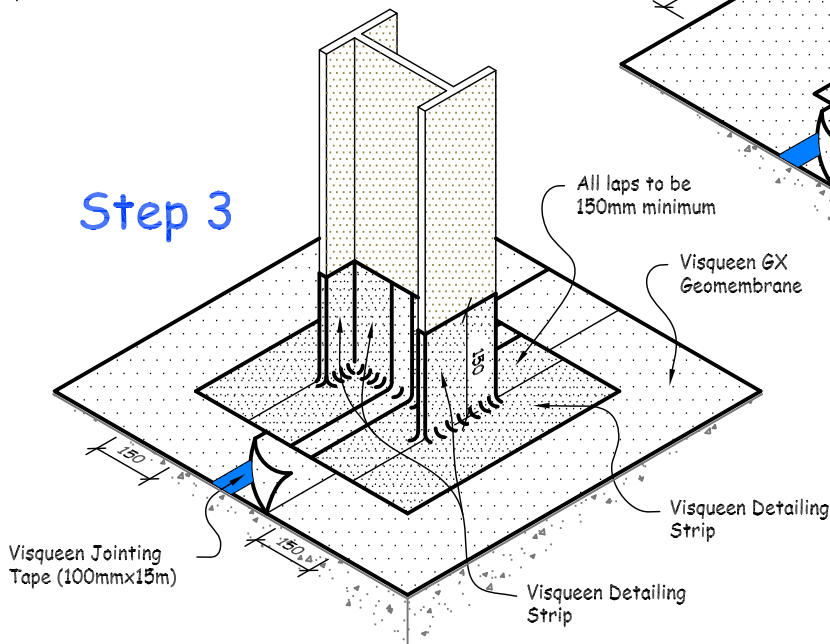
Step 1



Step 2



Step 3



NB: DO NOT SCALE - USE FIGURED DIMENSIONS ONLY.

Site construction sequencing should be assessed before the appropriate Visqueen Standard Detail is selected & approved by the Designer



Visqueen Building Products
Contact Technical Support :
t : 0333 202 6800
f : 0333 202 6886
e : enquiries@visqueenbuilding.co.uk
www.visqueenbuilding.co.uk

Project: Standard Detail : Sealing Method Around Universal Column Penetration (Slab Junctions Only).

Drawing No.- GX-22.

Date.- 11/11.

Scale.- NTS.

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GX Flexi Hydrocarbon Barrier

CE Mark to EN 13967

Page 1



- Independently tested against various hydrocarbons
- High puncture, flexibility and tear resistance
- Minimal linear expansion
- Complies with current codes of practice
- Manufactured in the UK

Description

Visqueen GX Flexi Hydrocarbon Barrier is an enhanced polymer modified flexible membrane designed to comply with current guidance on Hydrocarbons. Manufactured using the latest extrusion technology and drawing on our extensive knowledge and expertise in gas protection, Visqueen has developed a new flexible barrier membrane suitable in brownfield applications that are affected by Hydrocarbons.

The product is available in Single Wound Sheeting (SWS) roll format, 1.4mx 50m, and in 2 colours; white to reduce linear expansion in hot weather or grey.

Application

Visqueen GX Flexi Hydrocarbon Barrier offers a safe solution for the protection of buildings and occupiers against all levels of hydrocarbons, methane, carbon dioxide and radon ingress. Typically these are sites previously used as petrol stations, coalfields, landfill sites or are contaminated industrial sites. The membrane also acts as a damp-proof membrane. Due to the polymeric structure Visqueen GX Flexi Hydrocarbon Barrier also provides a flexible membrane suitable for various applications unlike rigid HDPE rich membranes.

Due to the wide variety of hydrocarbon contaminants found, we strongly recommend the use of the Visqueen Building Products Technical Support Team at an early design stage so that the most appropriate detailing and material specifications are adopted.

Testing for Chemical Resistance (EN 14414 and EN 14415)

The membrane has been tested against various harmful gases and dangerous contaminants such as hydrocarbons. In addition to this, the membrane has been subjected to accelerated life immersion tests. EN 14414 and EN 14415 - Chemical resistance to leachates and aggressive chemicals - are designed to stress the membrane at a higher level of chemical concentration and temperature than it would experience in normal use. Changes in weight, volume, tensile strength and visual degradation are recorded to obtain the membrane's suitability to the challenge chemical.

These results are published below and assist designers and engineers in the suitability of Visqueen GX Flexi Hydrocarbon in various applications.

Installation Guidelines

Visqueen GX Flexi Hydrocarbon Barrier and ancillary components must be installed in accordance with the recommendations of CIRIA C665 "Assessing risks posed by hazardous ground gases to buildings", NHBC guidelines, Chartered Institute of Environmental Health Ground Gas Handbook and CIRIA C682 the VOC Handbook.

Visqueen GX Flexi Hydrocarbon Barrier system is suitable where hydrostatic pressure is present, however in this application the joints must be welded and not

VISQUEEN
BUILDING PRODUCTS



GX Flexi Hydrocarbon Barrier

CE Mark to EN 13967

Page 2

taped. The membrane should be installed on a blinded or smooth surface allowing adequate overlap for jointing between the sheets and avoiding bridging (i.e. areas of unsupported membrane).

For taped joints, overlap the membranes by at least 150mm and bond together using Visqueen GX Double Sided Jointing tape. Secure the lap using Visqueen Gas Resistant Lap Tape.

In areas where high levels of unsupported membrane occur it is recommended that Visqueen Pre Applied Membrane is used.

When a welded joint system is being used, punctures to the membrane can only be repaired by welding a patch of membrane with identical thickness and lapped at least 150mm beyond the limits of the puncture. Where this is not possible and the three dimensional shapes are complex it is recommended a preformed unit is used. The membrane has been designed to perform in circumstances where linear expansion could occur, however in high temperatures the membrane should be covered immediately after installation.

Ventilation

When medium to high levels of ground gases are present or when the generation of gases still occurs, then an open void beneath the ground floor should be constructed as ventilation beneath the ground floor will dilute and disperse the gases to atmosphere. Open voids are normally restricted to beam and block floors or other precast concrete floor systems. An alternative for providing ventilation to in situ concrete floor slabs is to install a Visqueen Ventilation System.

System Components:

- Visqueen GX Double Sided Bonding Tape
- Visqueen Gas Resistant Lap Tape
- Visqueen Surface DPC Fixing System
- Visqueen GX DPC

Storage and Handling

Visqueen GX Flexi Hydrocarbon Barrier is classified as nonhazardous when used in accordance with the relevant British Standards. The product is chemically inert and is not affected by acids and alkalis that may be present in the sub-soils. The product should be stored in a warm dry environment and not exposed to long periods of sunlight.

Technical Data and CE Mark

Visqueen GX Flexi Hydrocarbon Barrier complies with the requirements and clauses of EN 13967 - Flexible sheets for waterproofing - Plastic and rubber damp proof sheets including plastic rubber basement tanking sheet - Definitions and characteristics.

British Board of Agreement performed the initial inspection of the manufacturing plant and of factory production control and the continuous surveillance, assessment and evaluation of factory production control, and issued the certificate of constancy of conformity of the factory production control. 0836-CPD – 13/F028 applies.



GX Flexi Hydrocarbon Barrier

CE Mark to EN 13967

Product Data

Product Data

heading	Characteristic	Test method	Units	Compliance criteria	Value or Statement
	Colour				Grey or White
	Length	EN 1848-2	m	-0/+10%	50
	Width	EN 1848-2	m	-0/+10%	1.4
	Thickness	EN 1849-2	mm	+/-20%	1
	Mass	EN 1849-2		-12%/+12%	974
	Tensile Strength - MD	EN EN12311	N/mm2	>MLV	22
	Tensile Strength - CD	EN EN12311	N/mm2	>MLV	20
	Tensile Elongation - MD	EN EN12311	%	>MLV	799
	Tensile Elongation - CD	EN EN12311	%	>MLV	848
	Joint Strength	EN12317-2	N	>MLV	515
	Watertightness - 2kPa	EN 1928	-	Pass/Fail	Pass
	Resistance to impact	EN 12691	mm	>=MLV	600
	Resistance to static loading	EN 12730	kg	MLV	Pass-20
	Resistance to Nail tear - MD	EN 12310-1	N	>=MLV	705
	Resistance to Nail tear - CD	EN 12310-1	N	>=MLV	745
	Durability-Heat ageing	EN 1296	-	Pass/Fail	Pass
	Durability-Chemical resistance	EN 1847	-	Pass/Fail	Pass
	Resistance to Low temperature	EN 495-5		MDV	Pass at - 40oC
	Water vapour transmission - resistance	EN 1931	MNs/g	MDV	1171
	Water vapour permeability	EN 1932		MDV	0.11
	Reaction to Fire	EN 13501-1	Class	MDV	F
	Diesel Permeability	ISO 6179		MDV	0.4
	Petrol Permeability	ISO 6179		MDV	8.6
	Xylene Permeability	ISO 6179		MDV	14.6
	Toluene Permeability	ISO 6179		MDV	23
	Chemical Resistance - Acids	EN 14414-A	-	Pass/Fail	Pass
	Chemical Resistance - Alkalies	EN 14414-B	-	Pass/Fail	Pass
	Chemical Resistance - Organic Solvents	EN 14414-C	-	Pass/Fail	Pass
	Chemical Resistance - Visual Defects	EN 14414	-	Pass/Fail	Pass
	Resistance to Leaching - Hot Water	EN 14415-A	-	Pass/Fail	Pass
	Resistance to Leaching - Aqueous alkaline liquids	EN 14415-B	-	Pass/Fail	Pass
	Resistance to Leaching - Organic alcohols	EN 14415-C	-	Pass/Fail	Pass
	Resistance to Leaching - Visual Defects	EN 14415-A	-	Yes/No	No



GX Flexi Hydrocarbon Barrier

CE Mark to EN 13967

Appendix A



Visqueen Building Products

Visqueen is the market leader in the manufacture and supply of structural waterproofing and gas protection systems. Visqueen offers the complete package - a proven, reliable range backed by a technical support service that goes unmatched in the market - everything you would expect from a reputable and ethical company.

System Accessories

To ensure full waterproofing protection please use the following certified system components:

- Visqueen High Performance (HP) Tanking Primer
- Visqueen TreadGUARD1500
- Visqueen Protect&Drain
- Visqueen Top Hat Unit

Downloads Library

- Technical Datasheet
- Declaration of Performance
- Visqueen's Guide to CE Marking

Find your local stockist

Search our directory of Visqueen specification Stocking Centres to locate your nearest Visqueen Partner.

Distributor Support

Our specification Stocking Centres can access a free library of sales support tools, bespoke catalogues and more, [click here](#).

Technical support throughout your project

We are specialists in our field and can help you specify the correct solutions with the necessary performance levels, in accordance with building regulations.

- Nationwide site support team
- Specification advice
- Installation guidance & project sign off
- System design including CAD details



Enclosure 3

Validation Visit Record

GAS PROTECTION VALIDATION REPORT



One sheet to be completed for each plot inspected by a suitably qualified engineer

Job Number	16185	Design Source		Specification Source	Visqueen	Other Documents Attached	YES
Site Name	Pressparts	Building Use	<i>Commercial</i>				
Plot Number	Phase 4 (loading bay)	Building Description	No. of storeys	1	Building Type: <i>Extension to existing building/loading bay</i>		
Compiled by	David Kitching	Gas Protection Type	<i>Passive</i>		Foundation Type:	<i>Reenforced Ground Bearing Floor slab</i>	

Ventilated sub-floor (if present)		Inspection date / time	03/11/2017	Inspected by	David Kitching	Photographed?	Yes
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* Notes / Recommendations (see guidelines below)

Void Former Type	N/A	1.					
Height of Void Space	N/A	2.					
Gravel Type	N/A	3.					
Pipe Size and Spacing	N/A	4.					
External Wall Airbricks	N/A	5.					
Internal Sleeper Walls	N/A	6.					
External Vent Trenches / Ducts	N/A	7.					

Gas Barrier		Inspection Date /Time	12/10/2017	Inspected by	Lindsay Palmer	Photographed?	YES
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Notes / Recommendations

Membrane Type	✓	Visqueen GX Flexi Hydrocarbon Barrier					
Extent of Coverage	✓	Complete coverage					
Underside of Membrane	✓	Sand					
Slab / Membrane Condition	✓	Good condition, no debris or punctures noted..					
Laps and Joints	✓	Joints lapped (150mm), sealed with double sided visqueen jointing tape between sheets and on top surface with visqueen lap tape					
Damp-proof Course	✓	Gas membrane also serves as damp proof membrane, sealed to outer edge of building cladding.					
Service Entries and Seals	✓	Membrane taken up 150mm around service entry (top hat style) and penetrations, lapped and sealed.					
Cavity Inspection	N/A	N/A					

This plot has PASSED inspection

(Any proposed remedial works will be noted in the 'Remarks' column on this form)

An additional inspection visit IS NOT required for this plot

Qualified Engineer:

(PRINT NAME)

David Kitching

Signed:

*Delete as appropriate

GAS PROTECTION VALIDATION REPORT



One sheet to be completed for each plot inspected by a suitably qualified engineer

Guide Notes

1. Void Former Type	Proprietary Type - Manufacturer and Specification, in accordance with design? Installed properly without damage?
2. Height of Void Space	Height of proprietary former or constructed ventilation space below suspended flow - note any debris on void / obstructions to air flow, note formation surface soil type (e.g. crushed concrete / brick), any evidence of flooding.
3. Gravel Type	Gravel type, if used (limestone / granite, etc.) and any specification (e.g. 6F2), typical particle dimensions (mm), apparent fines content (low / high), compaction (loose / dense), waterlogging / contamination by clay, organic matter, other debris. Take photographs of stockpile, close up shot of stone with tape measure. Alternatively, check details on delivery tickets for stone. Take photographs of adjacent plots if at this stage of construction. Check depth of stone confirms to at least 300mm if visible.
4. Pipe Size and Spacing	Diameter in mm, material type (e.g. PVC), slotted / perforated, positioning and spacing / separation and jointing as on design drawing - if not sketch arrangement - do pipes connect with external (telescopic / swan-neck) vents? Take photographs of vents on external walls for each plot (May be possible to photograph other plots on-site, which are at a stage of installing vents. Will be useful for these plots later on).
5. External Wall Airbricks	Check numbers, size and positions as design drawing (if not shown, make sketch, check for blockage, e.g. by mortar / soil / pavings, etc.
6. Internal Sleeper Walls	Check for ventilation holes, e.g. honeycomb brickwork or pipe crossings, note size, spacing and location, in accordance with design?
7. External Vent Trenches / Ducts	Check whether located and constructed in accordance with design drawings, if open-topped gravel, note gravel type and presence of fines / contamination. If pipe or other vents, check positions and construction for functionality and absence of blockages - vents may be built over.
8. Membrane Type	Note manufacturer and product specification, including batch / roll numbers if present - in accordance with specification? Check stock storage arrangements - protected from dirt and damage?
9. Extent of Coverage	If membrane is incomplete, further inspection will be required - note areas completed / incomplete - is membrane fully visible or have internal walls been constructed over membrane / screed placed?
10. Underside of Membrane	Where necessary, for example when using a granular blanket as a ventilation layer, check the underside of the membrane has adequate protection, e.g. minimum 50mm no fines concrete blinding layer or appropriate geo-textile (see below).
11. Slab / Membrane Condition	Record presence of debris / rough surfaces, in particular sharp projections, below or above membrane, record location of all punctures or repairs, note arrangements to protect membrane surface from traffic / tools and equipment / materials, and temporary weighting down of membrane, e.g. use of boards - record evidence of footprints / tracks on membrane surface, creases or water / wind damage. Take photographs of each plot inspected.
12. Laps and Joints	Check all the joints are lapped and sealed in accordance with the manufacturers requirements / specification, particularly where creases / folds are present (usually minimum 150mm laps, with double-sided tape between sheets and single sided tape on top surface, note size of sheets and frequency of edge sheets). Take photographs of jointing for each plot.
13. Damp-proof Course	Record DPC manufacturer and product code, usually integrated with the membrane, measure the DPC projection from external wall in mm, check laps and seals between membrane and DPC - note any particular stress points and tension between the two, check for damage to the DPC
14. Service Entries and Seals	Note number, position and diameter of service entries - check top hat seal arrangements in accordance with design / specification (laps and seals between top hat and floor membrane, pipe upstand is usually a minimum of 150mm) check jubilee clips to secure top had seal to pipe - note presence of clips and tightness of connections. Take photographs for all plots inspected.
15. Cavity Inspection	Check gas membrane of gas resistant DPC is taken across cavity. Check for rips across cavity. Check for jointing detail of gas resistant DPC or membrane across cavity to main membrane. Take photographs for all plots inspected.

Enclosure 4

Site Photographs



Plate 1: Hydrocarbon Membrane installation across Loading Bay building.



Plate 2: Hydrocarbon Membrane installation around column and up to external wall.



Plate 3: Hydrocarbon Membrane installation around column and up to internal wall.



Plate 4: Hydrocarbon Membrane installation around column and up to external wall.



Plate 5: Hydrocarbon Membrane installation.