760-A APPLICATION OF ROOF COATINGS

- Apply product to suitably prepared substrate by squeegee, at a rate of 6.5kg/m² in two layers of total (nominal) thickness of 6mm (not including protection sheet), reinforced with Flex-Flash F (or Flex-Flash UN, where appropriate).
  - Flex-Flash F reinforcement is to be fully bonded into the first 3mm coat of membrane and brushed in with a soft broom or brush. Side and end laps 75mm (also sealed with Hydrotech).
  - Apply Hydrogard protection sheet immediately into second 3mm coat of membrane, with 75mm side and end laps sealed with Hydrotech.
- Reinforcement/s: Ensure reinforcement is firmly embedded before the second coat of membrane is applied to ensure positive adhesion and free of trapped air pockets.
- Thickness: Monitor by taking regular thickness tests using a depth gauge, to ensure consistent and correct thickness and coverage of membrane. Seal pinhole after removal of gauge by applying direct pressure.
- Continuity: Maintain full thickness of coatings around angles, junctions and features.
- Rainwater outlets: Form with watertight joints.
- Drainage systems: Do not allow liquid coatings to enter piped rainwater or foul systems.

770-A SKIRTINGS AND UPSTANDS / GENERAL DETAILING

- Preparation: Prepare the substrate to provide an acceptable base for waterproofing.
  - Prime substrate with the specified primer, as clause 530-A.
- Reinforcement strip: Where minor movement or changes in level, direction or dissimilar materials occur, the reinforcement is to be Flex Flash UN uncured neoprene, overlap to Flex Flash F, 75mm.
  - Bedding: Bonded into the first 3mm coat of membrane and gently smoothed in by gloved hand.
  - Side and end laps: 75mm (also sealed with Hydrotech).
- Flashings and detail work:
  - The design should ensure that the continuity of the waterproof covering is maintained for a vertical height of 150mm above the finished roof level at all abutments, parapets etc. Alumasc cannot take responsibility in the event of water ingress over and above the termination of our waterproofing.
  - Additional fixing of membranes: Where applicable, mechanically fix termination bar at 300mm (max.) centres placed at the top edge of the flashing detail, sealed with Alumasc Derbitech Sealstick HD.
- Install 75mm deep metal framework around groups of pipes and/or other penetrations as necessary, and fill with Hydrotech Monolithic Membrane 6125 to form a permanent waterproof pitch pocket. Apply protection sheet to pitch pocket upon completion.
- In any situation where a structural expansion detail is to be incorporated into the Hydrotech waterproofing and the percentage movement is less than 50%, the contractor is to install the detail as per the relevant nominal width of joint as shown in the Hydrotech Installation manual. Should any expansion joint detail require a degree of movement in excess of 50%, consult with the coating manufacturer for guidance.
- Leadwork: Where applicable, code 4 or 5 lead is required for flashing of details. Maximum lengths and girth should be established and carried out in accordance with the Lead Sheet Association recommendations.
- Seal the connection between roofing membranes to all common building materials: Apply Alumasc Derbitech Sealstick HD polymer sealant to all exposed edges, termination bars, flashings, connections with roof penetrations etc. Surfaces must be dry, clean and free from contaminants.
- Additional requirements: The contractor is to install all details in a manner to comply with current quality assessment recommendations for the installation of the specified system. Should any detail arise where it is not clear how this can be achieved, the contractor is to seek advice and approval for all proposals from Alumasc before completing the works.

SURFACING

833-A LAYING SUB-SURFACE DRAINAGE LAYER

- Condition of substrate: Clean.
- Setting out:
  - Loose lay ensuring that the filter fabric is uppermost and facing the backfill. Adjacent rolls are to be positioned so that the cuspated cores are butt-jointed.
  - The filter fabric has a 100mm wide lap for lapping over the fabric of the adjoining unit prior to backfilling.
- Completion:
  - Must be in good condition, well fitting and stable.

COMPLETION

910-A INTERIM/FINAL INSPECTION

- Interim and final roof inspections: Strictly in accordance with Alumasc's requirements to satisfy the warranty requirements.
- The contractor is to submit reports to Alumasc clearly recording all depth test and bond test data.
- Rainwater goods must be tested by the contractor upon completion of the works prior to handover.
- The contractor must contact Alumasc to arrange a final inspection upon completion of each stage of the works. It is strictly the responsibility of the contractor to notify Alumasc that a final inspection is required, and also to ensure that the inspection takes place prior to the application of any surfacing above the waterproof covering. Failure on either or both counts will jeopardise approval and/or warranty release.
- Once the final inspection has been carried out, the warranty will be issued via the roofing contractor upon acceptable rectification of any snags as identified by Alumasc, or without undue delay should all be satisfactory.
  - The contractor must apply to Alumasc for the warranty within three months of completion.

920-A ELECTRONIC ROOF INTEGRITY TEST

- Test Authority: The contractor must arrange final documented leak testing for each waterproofed area, which must be conducted by the Alumasc in-house leak detection service, who will provide the following:
  - A method statement explaining the test methods employed.
  - Up-to-date instrument calibration documentation.
  - Confirmation of correct voltage setting according to the dielectric value of the material to be tested.
  - Numbered and dated reports including annotated roof plan in .pdf format.
  - Confirmation of testing of all waterproofed areas, including upstands.
- Timing of Tests:
  - Primary test must take place within seven days of completion of each roof area.
  - Final test must take place within 24 hours prior to applying finishes to the waterproofing. A minimum of three days notification of the final test must be given to Alumasc who will be in attendance during the test.
- Condition of roof covering prior to testing: Complete to stage where integrity can be tested.
- Surface: Clean and free of site debris.
- Breaches detected: Re-test immediately following repair and confirm watertight.
- Test Results: Submit on completion, to include annotated plan of area tested.
- Waterproofing Integrity Certificate: Submit on completion of a single test or series of tests to the nominated roof or section thereof.
- The issue of the warranty is conditional upon the provision of satisfactory leak test certification covering all areas.

921-A PROTECTION

- As soon as an area of waterproofing has been completed, it should be inspected and tested upon notification of completion by the contractor. Completed areas should not be used as a building platform or as an access route by other trades. If unavoidable, appropriate protection must be provided for the duration of the construction period. Care should be taken not to mark or dent the works while laying any additional protection. Inspection and/or leak testing must always take place after removal of such protection.
- Roofs accessed for regular maintenance of plant, or parts of the building, should be given consideration in providing a predetermined route to and from the entry point to minimise potential hazards.

940-A COMPLETION

- Roof areas: Clean.
- Outlets: Clear.
- Flashings: Dressed into place.
- Work necessary to provide a weathertight finish: Complete.
- Storage of materials on finished surface: Not permitted.
- Completed membrane: Do not damage. Protect from chemicals, traffic and adjacent or high-level working.

941-A MANUFACTURER'S WARRANTY

- The works shall be installed by an Alumasc Registered Contractor, and, as agreed in the contract, the Hydrotech Warranty shall be issued to the Building Owner from the date of final completion.
  - The warranty offered is subject to the ruling terms and conditions.
- The warranty is conditional upon the full system being purchased from Alumasc and installed in accordance with the specification outlined. Substitution of any products, or installation by means other than those described, will invalidate the warranty offered.

942-A MAINTENANCE

- It is recommended that all flat roofs be inspected at a minimum frequency of twice a year. Ideally, inspections should be carried out in spring and autumn accounting for the effects of annual extremes of weather to be checked. Inspection should also be carried out following works on the roof by other trades, or following installation of new roof equipment.
- All inspections/and or maintenance actions carried out at roof level must be in full compliance with the appropriate health and safety regulations, and particularly those specifically dealing with working at height.

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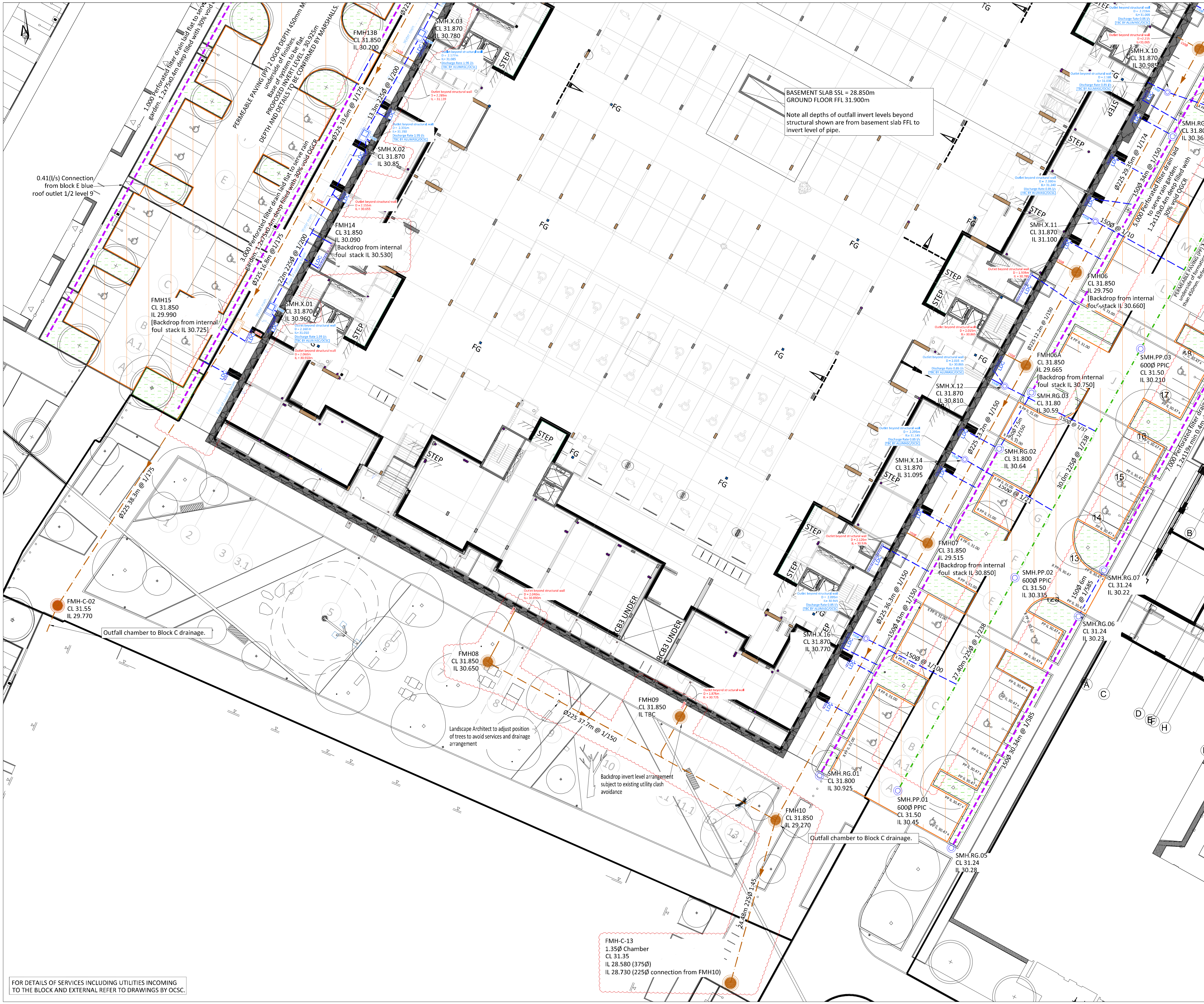
9. Appendix G – Drainage Layout



BASEMENT SLAB SSL = 28.850m
GROUND FLOOR FFL 31.900m
Note all depths of outfall invert levels beyond structural shown are from basement slab FFL to invert level of pipe.
0.41(l/s) Connection from block E blue roof outlet 1/2 level 9
FMH13B CL 31.850 IL 30.200
SMH.X.03 CL 31.870 IL 30.780
SMH.X.02 CL 31.870 IL 30.85
FMH14 CL 31.850 IL 30.090 [Backdrop from internal foul stack IL 30.530]
FMH15 CL 31.850 IL 29.990 [Backdrop from internal foul stack IL 30.725]
SMH.X.01 CL 31.870 IL 30.960
FMH-C-02 CL 31.55 IL 29.770
Outfall chamber to Block C drainage.
FMH08 CL 31.850 IL 30.650
FMH09 CL 31.850 IL TBC
Landscape Architect to adjust position of trees to avoid services and drainage arrangement
Backdrop invert level arrangement subject to existing utility clash avoidance
FMH10 CL 31.850 IL 29.270
Outfall chamber to Block C drainage.
FMH-C-13 1.35Ø Chamber CL 31.35 IL 28.580 (375Ø) IL 28.730 (225Ø connection from FMH10)
SMH.X.10 CL 31.870 IL 30.985
SMH.X.11 CL 31.870 IL 31.100
FMH06 CL 31.850 IL 29.750 [Backdrop from internal foul stack IL 30.660]
FMH06A CL 31.850 IL 29.665 [Backdrop from internal foul stack IL 30.750]
SMH.X.12 CL 31.870 IL 30.810
SMH.RG.03 CL 31.80 IL 30.59
SMH.PP.03 600Ø PPIC CL 31.50 IL 30.210
SMH.RG.02 CL 31.800 IL 30.64
SMH.X.14 CL 31.870 IL 31.095
FMH07 CL 31.850 IL 29.515 [Backdrop from internal foul stack IL 30.850]
SMH.PP.02 600Ø PPIC CL 31.50 IL 30.335
SMH.RG.07 CL 31.24 IL 30.22
SMH.RG.06 CL 31.24 IL 30.23
SMH.X.16 CL 31.870 IL 30.770
SMH.RG.01 CL 31.800 IL 30.925
SMH.PP.01 600Ø PPIC CL 31.50 IL 30.45
SMH.RG.05 CL 31.24 IL 30.28
CB3 UNDER
FOR DETAILS OF SERVICES INCLUDING UTILITIES INCOMING TO THE BLOCK AND EXTERNAL REFER TO DRAWINGS BY OCSC.

KEY PLAN

LEGEND

- FOUL WATER SEWER
- SURFACE WATER SEWER
- FOUL WATER MANHOLE
- FOUL WATER INSPECTION CHAMBER (PPIC)
- SURFACE WATER MANHOLE
- SURFACE WATER INSPECTION CHAMBER
- SURFACE WATER CHANNEL (REFER TO DRAWING FOR TYPE)
- PERMEABLE PAVING
- RAIN GARDEN
- 100mm DIAMETER PERFORATED PIPE WITHIN RAIN GARDEN
- Concrete rectangular manhole chamber 1200mm x 675mm
- PERFORATED LAND DRAIN FOR CAR PARK SURFACE WATER
- CONCRETE CHANNEL DRAIN, 150MM X 100MM (MARSHALLS OR SIMILAR PRODUCT). REFER TO SITE WIDE EXTERNAL DETAILS DRAWING FNF-C-SITE-HYD-DR-02-0205. ASSOCIATE GULLIES TO BEEN 124, CLASS C250, HINGED, 340MM X 170MM, FRAME DEPTH 145MM, EJ PROPRIETARY GULLY (CODE D58) OR SIMILAR PRODUCT
- FOUL WATER RISING MAIN

REVISIONS

REV	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
C15	Foul drainage FMH08, 09, 10 & FMH-C-13 relocated to avoid existing utilities. Storm drainage arrangement SMH5.14, 21A, to 5.17 updated to reflect as built changes.					
	GJ	22.03.2023	DB	22.03.2023	DB	22.03.2023
C14	Foul and storm drainage updated on western side to avoid existing water main.					
	GJ	17.02.2023	DB	16.02.2023	DB	17.02.2023
C13	Landscape plan updated. Foul and storm drainage updated on western side to avoid existing water main. Some chambers changed to rectangular arrangement.					
	GJ	16.02.2023	DB	16.02.2023	DB	16.02.2023
C12	Permeable paving altered to new landscape Architect proposals, reduction in build outs					
	GJ	01.12.2022	DB	01.12.2022	DB	01.12.2022
C11	Perforated pipe and permeable paving levels updated below rain garden and permeable paving					
	GJ	30.11.2022	DB	30.11.2022	DB	30.11.2022
C10	Landscape Architect GA plan updated. FMH-C-13 relocated. Changes as clouded.					
	AT	08.11.2022	GJ	08.11.2022	GJ	08.11.2022

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CLIENT
BARRATT LONDON

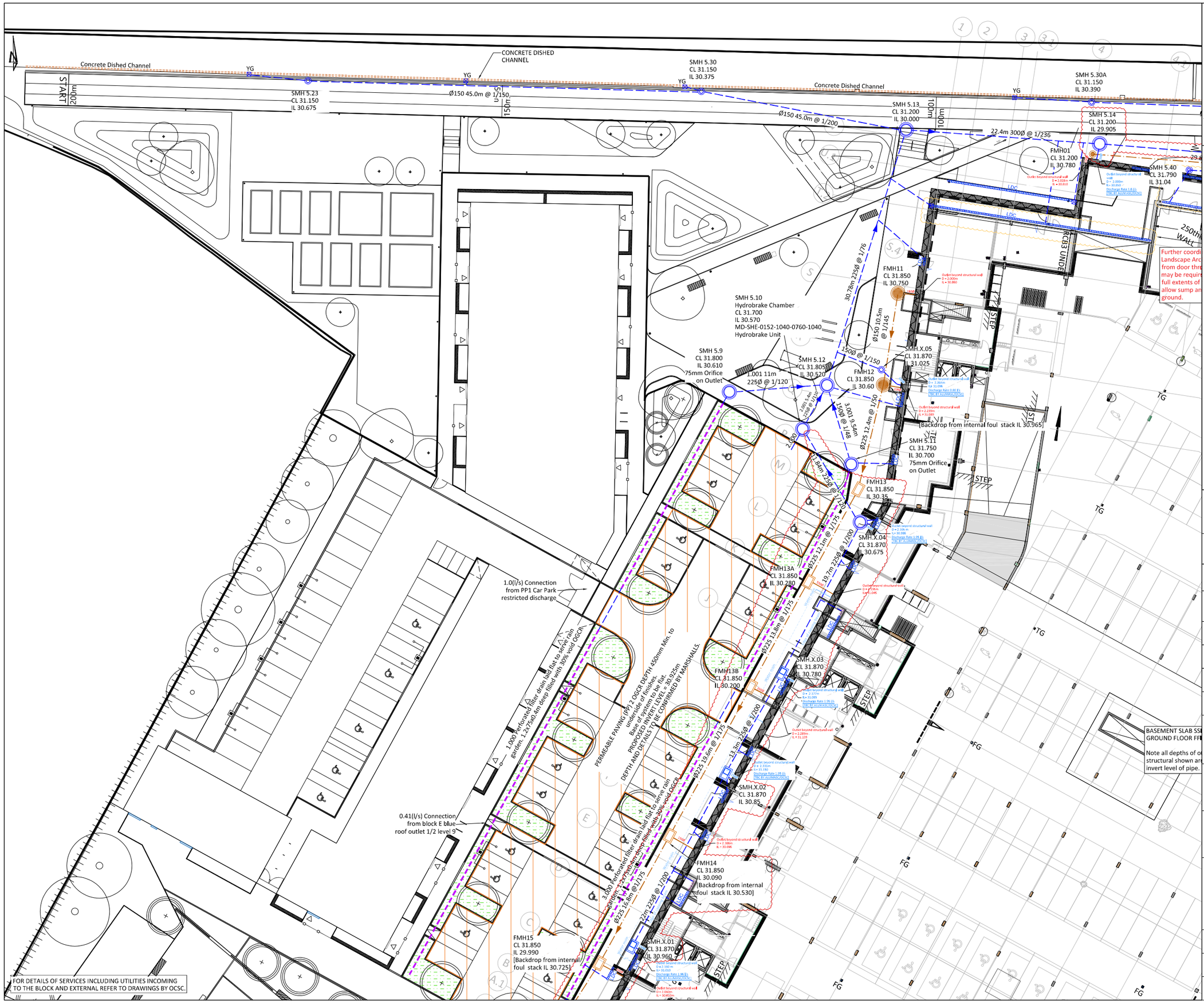
PROJECT
FORMER NESTLE SITE
HAYES

TITLE
DRAINAGE LAYOUT
BLOCK B
SHEET 1 OF 3

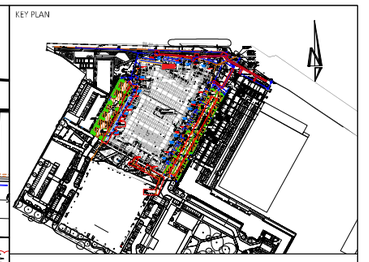
HYDROCK PROJECT NO.	SCALE @ A1
C-01669	1:250

STATUS DESCRIPTION	STATUS
CONSTRUCTION (FULL APPROVAL)	A

DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
FNF-C-B-HYD-DR-01-0200	C15



KEY PLAN



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- SURFACE WATER MANHOLE
- SURFACE WATER INSPECTION CHAMBER
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- RAIN GARDEN
- 100mm DIAMETER PERFORATED PIPE WITHIN RAIN GARDEN
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- PERFORATED LAND DRAIN FOR CAR PARK SURFACE WATER
- CONCRETE CHANNEL DRAIN, 150MM X 100MM (MARSHALLS OR SIMILAR PRODUCT). REFER TO SITE WIDE EXTERNAL DETAILS DRAWING FNF-C-SITE-HYD-DR-02-0205. ASSOCIATE GULLIES TO BEEN 124, CLASS C250, HINGED, 340MM X 170MM, FRAME DEPTH 145MM, EJ PROPRIETARY GULLY (CODE DS8) OR SIMILAR PRODUCT
- FOUL WATER RISING MAIN

REVISIONS

REV						
C12	Foul drainage FMH08, 09, 10 & FMH-C-13 relocated to avoid existing utilities. Storm drainage arrangement SMH5.14, 21A, to 5.17 updated to reflect as built changes.					
	GJ	22.03.2023	DB	22.03.2023	DB	22.03.2023
C11	Foul and storm drainage updated on western side to avoid existing water main.					
	GJ	17.02.2023	DB	16.02.2023	DB	17.02.2023
C10	Landscape plan updated. Foul and storm drainage updated on western side to avoid existing water main. Some chambers changed to rectangular arrangement.					
	GJ	16.02.2023	DB	16.02.2023	DB	16.02.2023
C9	Landscape Architect GA plan updated. FMH-C-13 relocated. Changes as clouded.					
	AT	08.11.2022	GJ	08.11.2022	GJ	08.11.2022
C8	Backdrop information added					
	GJ	20.10.2022	DB	20.10.2022	DB	20.10.2022
C7	Changes as clouded.					
	AT	15.09.2022	GJ	15.09.2022	GJ	15.09.2022
REV	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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BARRATT LONDON

PROJECT

FORMER NESTLE SITE
HAYES

TITLE

DRAINAGE LAYOUT
BLOCK B
SHEET 2 OF 3

HYDROCK PROJECT NO.	SCALE @ A1
C-01669	1:250
STATUS DESCRIPTION: CONSTRUCTION (FULL APPROVAL)	STATUS: A
DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER): FNF-C-B-HYD-DR-01-0201	REVISION: C12

Further coordination with M&E, Architect and Landscape Architect required to establish outfalls from door threshold drainage. Below slab drainage may be required or alternatively aco channel to run full extents of wall and return to edge of slab to allow sump and outfall pipe to be installed within ground.

Incoming rising main shown indicatively. Refer to M&E and Canal River Trust layouts for more information.

High level outflow pipe to existing manhole. To be used temporarily during pumping activities in case of pump failure, until permanent outfall is installed. Contractor to confirm condition of existing chamber and outfall and levels.

Refer to Drainage Details Sheet 8, FNF-C-SITE-HYD-DR-01-0217 for headwall arrangement. Headwall invert level at 29.53m (above existing canal level)

2no. 300Ø outfall pipes have nominal fall, to ensure minimum discharge velocity is less than 0.3 m/s.
It is imperative these pipes are laid correctly with no depressions with suitable bedding and cover to prevent movement. Catchpit chamber upstream to limit sediment build up within pipes.

Foul drain for Fire Hydrant to be connected to foul drainage system. Detail provided by others.

SMH 5.22
Hydrobrake Chamber 2400Ø
CL 31.275
IL 29.545
MD-SHE-0273-4500-1625-1500
Hydrobrake Unit to be mounted on internal wall. Access to be provided to both sides of chamber. Downstream side of wall to be catchpit.
Max discharge rate = 45(l/s)
Temporary overflow outfall IL TBC following survey works.

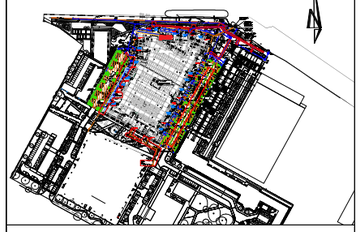
SMH 5.18
Hydrobrake Chamber
CL 31.675
IL 29.950
MD-SHE-0148-1040-1042-1040
Hydrobrake Unit

BASEMENT SLAB SSL = 28.850m
GROUND FLOOR FFL 31.900m

Note all depths of outfall invert levels beyond structural shown are from basement slab FFL to invert level of pipe.

FOR DETAILS OF SERVICES INCLUDING UTILITIES INCOMING TO THE BLOCK AND EXTERNAL REFER TO DRAWINGS BY OCSC.

KEY PLAN



LEGEND

- FOUL WATER SEWER
- SURFACE WATER SEWER
- FOUL WATER MANHOLE
- FOUL WATER INSPECTION CHAMBER (PPIC)
- SURFACE WATER MANHOLE
- SURFACE WATER INSPECTION CHAMBER
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- FOUL WATER RISING MAIN

REVISIONS

REV						
C16	Foul drainage FMH08, 09, 10 & FVH-C-13 relocated to avoid existing utilities. Storm drainage arrangement SMH5.14, 21A, to 5.17 updated to reflect as built changes.					
	GJ	22.03.2023	DB	22.03.2023	DB	22.03.2023
C15	Foul and storm drainage updated on western side to avoid existing water main.					
	GJ	15.03.2023	DB	15.03.2023	DB	15.03.2023
C14	Landscape plan updated. Foul and storm drainage updated on western side to avoid existing water main. Some chambers changed to rectangular arrangement.					
	GJ	16.02.2023	DB	16.02.2023	DB	16.02.2023
C13	Linear drainage channels added to canal square					
	GJ	13.02.2023	DB	13.02.2023	DB	13.02.2023
C12	Permeable paving altered to new landscape Architect proposals, reduction in build outs					
	GJ	01.12.2022	DB	01.12.2022	DB	01.12.2022
REV	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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CLIENT

BARRATT LONDON

PROJECT

FORMER NESTLE SITE
HAYES

TITLE

DRAINAGE LAYOUT
BLOCK B
SHEET 3 OF 3

HYDROCK PROJECT NO.	SCALE @ A1
C-01669	1:250

STATUS DESCRIPTION	STATUS
CONSTRUCTION (FULL APPROVAL)	A

DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
FNF-C-B-HYD-DR-01-0202	C16

10. Appendix H – Blue roof maintenance

A flat roof, as per codes of practice, should be inspected at a minimum frequency of twice a year, in spring and autumn. Also inspect following work on roof by other trades and after installation of new roof equipment, control access and maintain inspection records.

Internally:

- Check visually for any signs of condensation, presence of moisture or leakage (e.g. wet patches, stains etc).

Externally:

- Check visually for any loosened flashings at perimeters and penetrations.
- Check soundness of pointing and any mastic sealants at terminations.
- Check exposed membrane for any signs of mechanical or chemical damage.
- Remove any unnecessary debris from the roof area (especially objects which could cause damage to the membrane).
- Remove any blockages to outlet gratings/drainage points/gutters (e.g. leaves, litter, and sediment).
- Visually check exposed membrane laps for secureness.
- Cut back overhanging trees.
- Remove or repair disused or redundant roof mounted equipment.
- Ensure continuity of chipping/ballast coverage, where present.
- Inspect rooflights and other penetrations for any damage (e.g. cracks to glazing, missing vent tops), which could result in leakage or condensation.
- Check exposed membrane for any stress damage (e.g. ruckling or cracking of membrane).
- Check for any other building components for soundness (e.g. glazing, parapet walls etc).
- Keep records of your inspections for future reference.

Spillage:

- The following basic chemical products - diesel oil, fuel oil, kerosene, lubrication oils, vegetable oils and animal fats, affect modified bitumen roofing. In the event of spillage of any of these (or any other compounds not listed) consult Alumasc Technical Services for remedial instructions/advice.

Loading:

- Modified bitumen waterproofing is designed to withstand the levels of foot traffic associated with regular roof maintenance. If any point loads (such as ladders) are exerted on the roof, they should be spread using a flat protection board. Where loads may exceed these, please contact Alumasc Technical Services for specific advice.

If it is found that remedial or maintenance work is thought necessary, please get in touch with the roofing contractor and/or our Regional Manager for your area. Where the work has been warranted always check with Alumasc Building Products Ltd that the proposed remedial work would not invalidate the warranty. The maintenance requirements must be followed for continuity of the Alumasc warranty.

Sample Maintenance Log:

ROOF MAINTENANCE LOG					
Project		Manufacturer	Alumasc Roofing		
Location		Contact Number	01744 648400		
SP Number		Contractor			
Practical completion		Contact Number			
Please keep a photographic record of each inspection					
Date of inspection	Inspected by	Company	Comments	Remedial works required (Y/N)	Date of next inspection