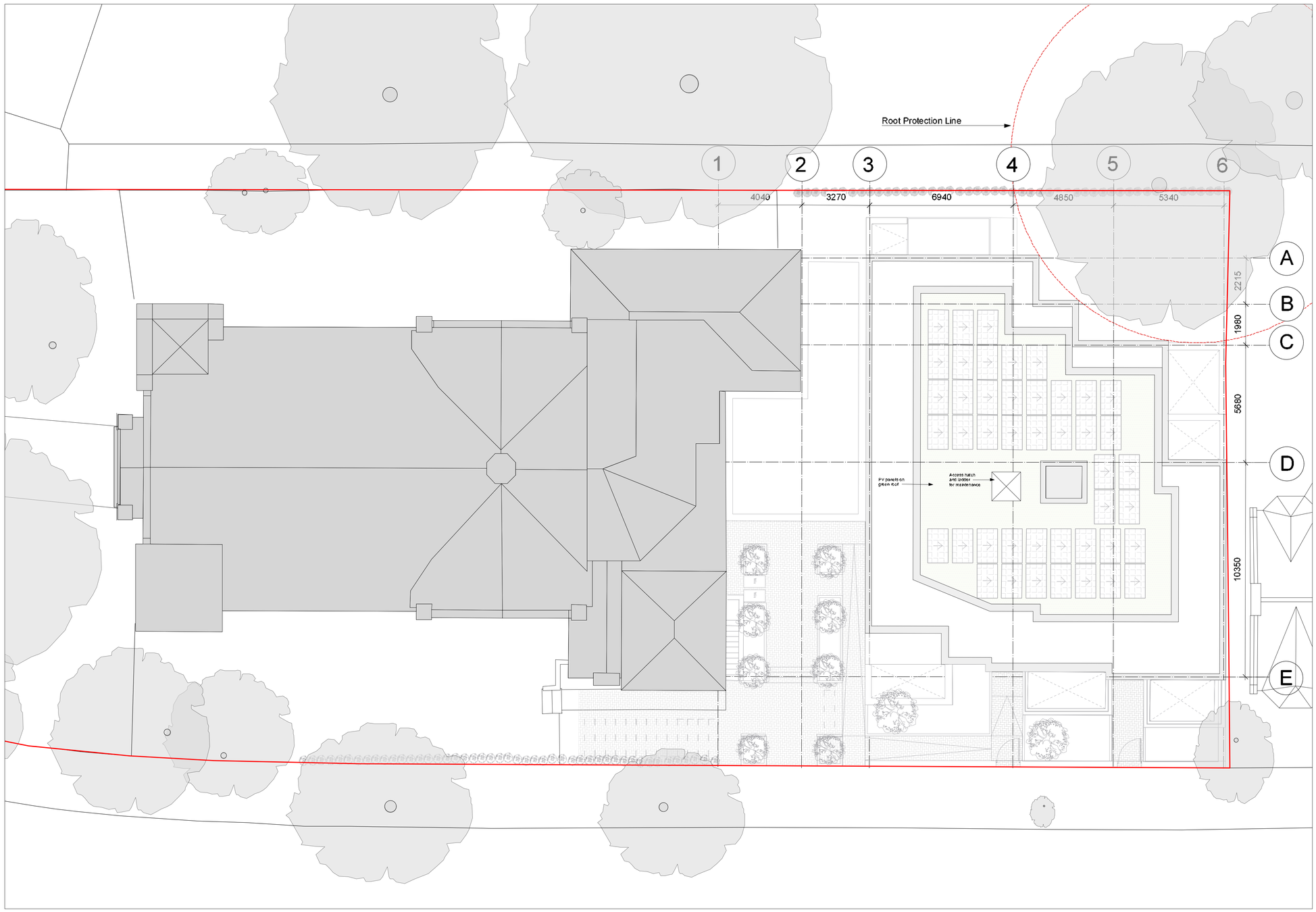

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NOTE

This drawing is copyright. Do not scale off dimensions. All dimensions are to be checked on site by contractor. Contractor to report any dimensional discrepancies, errors or omissions prior to commencing on site.

SCALE BAR

0 2 4 6 8 10 M

KEY

Indicates site boundary

Indicates location of PV Panels

REV	DATE	DETAILS	BY	✓
I				
H				
G				
F				
E				
D				
C				
B				
A				

CLIENT SIGNATURE

CLIENT

-

PROJECT

Braemar Avenue, Wood Green

DRAWING TITLE

Proposed Plans - Roof Plan

STATUS

Planning Application

DATE	SCALE
May 2022	1:100@A1;1:200@A3

JOB NO.	TYPE	DRAWING NO.	REVISION
1802	GA	036	-

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D Calculations

Modified Ration Method for Brownfield Runoff
Project Number: 2220367
Project Name: Braemar Avenue Baptist Church
Date: 14/11/2022

Q= 2.78 * Cv * Cr * I * A

Q = flow rate (l/s)
Cv = Volumetric Runoff Coefficient
Cr = Routing Coefficient
I - Rainfall intensity
A = Area (Ha)

Under summer rainfall conditions Cv ranges from 0.6 - 0.9, for fully impermeable areas value of 0.75 should be used.

The routing coeffcieint varies between 1 and 2 and accounts for the effect of rainfall characterisitcs and catchment shape on the peak runoff magnitude
The SuDS manual recoomends a fixed value for Cr of 1.3 for design.

Rainfall intensity is calculated following Walling Procedure Volume 4 and is as follows:

1.0 Determination of M5-60 min and r
60 minute, 5 year storm (M5-60) has a rainfall depth M5-60 20.000
Ratio r 0.4

2.0 Determination of M5-D
M5-D = Z1 (M5-60min)
Z1 is taken from A3.a or A.3b for values between 0.12 and 0.45 and for durations between 5 minutes and 48 hours read to 0.01

Assuming 1yr 15min, 30yr 15 min, 100yr 15min

Z1 0.64
M5-15 12.8 mm

3.0 Determination of MT-D
MT-D is obtained from the relationship:
MT-D = Z2(M5-D)

Taken from Table A1 for 1yr return period 15min storm
Z2 = 0.62
M1-15= 7.9

Taken from Table A1 for 30yr return period 15min storm
Z2= 1.56
M30-15= 20.0

Taken from Table A1 for 100yr return period 15min storm
Z2= 1.99
M100-15= 25.5

4 **Determination of point rainfall intensities**
i= 31.744 mm/hr
i= 79.872 mm/hr
i= 101.888 mm/hr

5 Application of areal reduction factor
From chart A4 where area is greater than 1km2
ARF= 1

Average 1yr intensity
31.7

Average 30yr intensity
79.9

Average 100yr intensity
101.9

Average 100yr+40% intensity
142.6

EXISTING SITE

Area building (Ha)	0.0251
Area hardstanding (Ha)	0.0064

If using Cv = 0.95 for roofs and 0.9 from external areas.

Storm Return Period	Existing Discharge (L/S)
1yr	3.4
30yr	8.5
100yr	10.9
100yr+40%	15.3

IH 124 Mean Annual Flood

Input

Return Period (years)	1	Soil	0.450
Area (ha)	0.069	Urban	0.000
SAAR (mm)	682	Region Number	Region 6

Results	**l/s**
QBAR Rural	0.6
QBAR Urban	0.6
Q1 year	0.5
Q1 year	0.5
Q2 years	0.5
Q5 years	0.8
Q10 years	1.0
Q20 years	1.2
Q25 years	1.3
Q30 years	1.4
Q50 years	1.6
Q100 years	1.9
Q200 years	2.3
Q250 years	2.4
Q1000 years	3.1

Warning: It is unusual to use the IH124 method with an area < 50ha. The Interim Code of Practice recommends that the IH124 method is applied with 50ha and the resulting discharge is linearly interpolated for the required area. The ICP SUDS tab will do this automatically.

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BLUE ROOF ATTENUATION AND OUTFLOW SUMMARY

PRIVATE & CONFIDENTIAL - NOT FOR DISTRIBUTION

abg creative geosynthetic engineering

Project Name:	Braemar Avenue, Wood Green, London, N22 7BY - Roof 1		
Prepared for:	Elliott Wood, London.		
Date:	25/11/2022		
ABG Project ID:	24694	Calculator version:	1.30
Prepared by:	Andrew Keer, andrew@abgltd.com, 07525-808700		
Notes/description:	Green roof; with free-standing/ballasted PV panels to be installed, on top of the 'blue roof' system (recommended). Maintenance access only - TBC. Warm/inverted roof, construction, with zero falls - TBC.		

Blue Roof Estimate

Input Parameters - Rainfall Information (Flood Studies Report 1975)		
Return period:	100 years	*As supplied by Client*
Allowance for Climate Change:	40 %	*As supplied by Client*
Location selected for FSR data:	London (N)	

Input Parameters - Roof Information		
Total catchment area:	172 m^2	*As supplied by Client*
Attenuation area:	145 m^2	*As supplied by Client*
Maximum allowable runoff:	0.6 l/s	*As supplied by Client*

Output - Rainfall Calculation

Duration	Time to Empty	Restricted Outflow (l/s)
15 mins	5 hours and 20 minutes	0.4
30 mins	6 hours and 20 minutes	0.5
1 hour	6 hours and 50 minutes	0.5
2 hours	7 hours and 10 minutes	0.5
4 hours	6 hours and 50 minutes	0.5
6 hours	6 hours and 10 minutes	0.5
10 hours	4 hours and 50 minutes	0.4
24 hours	0 hours and 40 minutes	0.1
48 hours	0 hours and 0 minutes	0.0

Total attenuation required: 10.2 m^3
Half empty time: 1 hours and 0 minutes.

Output - Recommended Blue Roof System	
System Name:	ABG blueroof VF HD 129mm
Description:	The blue roof depth of 129mm, already includes for a 25mm reservoir board. No. of control positions TBC by design team, and also with the structural engineer's deflection analysis. Additional 'tell-tale'/emergency parapet overflow outlets, may also be added by the architect.
Total attenuation capacity:	16.5 m^3
Number of Blue Roof outlets:	2

Notes:

1. This document contains an estimate which has been prepared by ABG Ltd and is illustrative only and not a detailed design.
2. Further details on the theories used in this estimate are available upon request from ABG. The values given for the performance of the system relate to testing, modelling and analysis of our systems obtained from laboratories and testing institutes. In line with our policy of continuous improvement the right is reserved to make changes to our systems without notice at any time.
3. The estimate given in this report is based on the stated parameters as per the brief. If these parameters are not correct or have changed, ABG should be contacted to provide a revised estimate.
4. This estimate is specific to the characteristics of ABG products/systems and is not applicable to other competitor products. The substitution of the whole or any component of this design for a material supplied from another source renders this estimate invalid.
5. Final determination of the suitability of any information is the sole responsibility of the user. ABG will be pleased to discuss the use of this or any other product but responsibility for selection of a material and its application in any specific project remains with the user.

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www.abgltd.com

BLUE ROOF ATTENUATION AND OUTFLOW SUMMARY

PRIVATE & CONFIDENTIAL - NOT FOR DISTRIBUTION

abg creative geosynthetic engineering

Project Name:	Braemar Avenue, Wood Green, London, N22 7BY - Roof 2		
Prepared for:	Elliott Wood, London.		
Date:	25/11/2022		
ABG Project ID:	24694	Calculator version:	1.30
Prepared by:	Andrew Keer, andrew@abgltd.com, 07525-808700		
Notes/description:	Green roof and/or hard landscaping (pavers on pedestals/ballast) - TBC; with potential free-standing/ballasted PV panels, and planters, to be installed, on top of the 'blue roof' system (recommended). Pedestrian/amenity access and/or maintenance access - TBC. Warm/inverted roof, construction, with zero falls - TBC.		

Blue Roof Estimate

Input Parameters - Rainfall Information (Flood Studies Report 1975)		
Return period:	100 years	*As supplied by Client*
Allowance for Climate Change:	40 %	*As supplied by Client*
Location selected for FSR data:	London (N)	

Input Parameters - Roof Information		
Total catchment area:	63 m^2	*As supplied by Client*
Attenuation area:	50 m^2	*As supplied by Client*
Maximum allowable runoff:	0.5 l/s	*As supplied by Client*

Output - Rainfall Calculation

Duration	Time to Empty	Restricted Outflow (l/s)
15 mins	1 hour and 50 minutes	0.4
30 mins	2 hours and 10 minutes	0.5
1 hour	2 hours and 10 minutes	0.5
2 hours	1 hour and 50 minutes	0.4
4 hours	1 hour and 10 minutes	0.3
6 hours	0 hours and 30 minutes	0.2
10 hours	0 hours and 0 minutes	0.0
24 hours	0 hours and 0 minutes	0.0
48 hours	0 hours and 0 minutes	0.0

Total attenuation required: 2.9 m^3
Half empty time: 0 hours and 20 minutes.

Output - Recommended Blue Roof System

System Name:	ABG blueroof VF HD 108mm/129mm
Description:	The blue roof depth of 129mm, already includes for a 25mm reservoir board. No. of control positions TBC by design team, and also with the structural engineer's deflection analysis. Additional 'tell-tale'/emergency parapet overflow outlets, may also be added by the architect.
Total attenuation capacity:	4.8 m^3
Number of Blue Roof outlets:	2

Notes:

1. This document contains an estimate which has been prepared by ABG Ltd and is illustrative only and not a detailed design.
2. Further details on the theories used in this estimate are available upon request from ABG. The values given for the performance of the system relate to testing, modelling and analysis of our systems obtained from laboratories and testing institutes. In line with our policy of continuous improvement the right is reserved to make changes to our systems without notice at any time.
3. The estimate given in this report is based on the stated parameters as per the brief. If these parameters are not correct or have changed, ABG should be contacted to provide a revised estimate.
4. This estimate is specific to the characteristics of ABG products/systems and is not applicable to other competitor products. The substitution of the whole or any component of this design for a material supplied from another source renders this estimate invalid.
5. Final determination of the suitability of any information is the sole responsibility of the user. ABG will be pleased to discuss the use of this or any other product but responsibility for selection of a material and its application in any specific project remains with the user.

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1. DEFINITIONS

'Consultant' means ABG Geosynthetics Ltd and its legal successors. 'Client' means the person, firm, company or organisation for whom the Consultant is performing the Services. 'Agreement' means the contract referred to in Clause 2. 'Services' means the services to be performed by the Consultant in accordance with the proposal from the Consultant. 'Project' means the project or works for which the Client has commissioned the Services.

2. GENERAL

Unless and until a formal agreement is entered into, the Client's acceptance of the proposal for Services from the Consultant or a request for some or all the Services to be performed by the Consultant, shall constitute a binding
contract between the Client and the Consultant which contract will be subject to any terms and conditions contained or referred to in the aforementioned proposal and these terms and conditions. In the event of any conflict, the terms and conditions in the proposal shall prevail over these terms and conditions. The Agreement so formed shall supersede all previous understandings, commitments or agreements whether written or oral between the Client and the Consultant relating to the subject matter hereof. No person or entity shall have any rights in relation to this Agreement, whether as third parties or otherwise, save the parties to this Agreement. Should any term or condition of this Agreement be held to be unenforceable or invalid by the courts of any jurisdiction to which it is subject then such term or condition shall be disregarded and the remaining terms and conditions shall remain in full force and effect.

3. PERFORMANCE OF SERVICES AND SCOPE

The Consultant shall perform the Services using the degree of skill care and diligence to be expected from a consultant experienced in the provision of services of similar scope size and complexity. The Consultant shall use reasonable endeavours to complete the Services within the time or programme agreed but shall not be responsible for any delay beyond the reasonable control of the Consultant.

The fee contained in the proposal is for the scope of services as defined therein. If not already contained in the proposal the Consultant and the Client shall agree as an initial activity an integrated project services programme to
include the activities of all the parties to the Project relevant to the Services to be supplied by the Consultant. The
aforesaid programme shall show the key dates for final information and the delivery of such to the Consultant so as to enable the Consultant to carry out the services in an efficient once through manner to achieve the programme delivery dates for the Services.

The Consultant provides various services including Design and Product use advice which is distinct from a Design Service. The Design Service may or may not attract a fee.

Where the Consultant's services are of an advisory nature and dependent upon the degree of information and release thereof by the Client then the Client agrees that any reliance placed on the services by the Client shall take due account of such constraints.

4. CONFIDENTIALITY AND INTELLECTUAL PROPERTY RIGHTS

i. The Consultant and the Client shall keep confidential all information pertaining to the Services.

ii. Copyright for all reports, documents and the like produced by the Consultant in the performance of the Services
shall remain vested with the Consultant but the Consultant shall grant an irrevocable royalty free license to the Client to use such reports, documents and the like for any purpose in connection with the Project.

5. LIABILITY

i. The Consultant shall be liable to pay compensation to the Client arising out of or in connection with this
Agreement only if a breach of the duty of care in Clause 3 is established against the Consultant.

ii. Notwithstanding any other term to the contrary in this Agreement or any related document and whether the cause of action for any claim arises under or in connection with the Agreement in contract or in tort, in negligence or for breach of statutory duty or otherwise the Consultant shall have no liability to the Client in respect of any claim for loss or damage arising from acts of war or terrorism or arising from flooding, burst water mains or failed drainage or arising from any incidence of toxic mould or asbestos but otherwise in relation to any cause of action as aforesaid the total liability of the Consultant in the aggregate for all claims shall be limited to a sum equivalent to ten (10) times the fee payable under this Agreement or £50,000, whichever is the lesser, or such other sum as may be expressly stated in the Consultant's proposal, and further but without prejudice to the aforesaid limit of liability any such liability of the Consultant shall be limited to such sum or sums as it would be just and equitable for the Consultant to pay having regard to the Consultant's responsibility for the same and on the basis that all other parties appointed or to be appointed by the Client to perform related services in connection with the Project shall be deemed to have provided undertakings on terms no less onerous than this Agreement and shall be deemed to have paid to the Client such contribution as it would be just and equitable for them to pay having regard to their responsibility for any loss or damage and providing that it shall be deemed that such other parties have not limited or excluded their liability to the Client for such loss or damage in any way which may be prejudicial to the Consultant's liability under this clause. Nothing in this clause shall operate to exclude or limit the Consultant's liability for death or personal injury.

iii. The Client shall indemnify and keep indemnified the Consultant from and against all claims, demands,
proceedings, damages, costs and expenses arising out of or in connection with this Agreement or the Project
arising from acts of terrorism or arising otherwise in excess of the liability of the Consultant under this
Agreement or which may be made in respect of events occurring after the expiry of the period of liability stated
in this Agreement.

iv. No action or proceedings under or in connection with this Agreement shall be commenced against the Consultant after the expiry of one year from completion of the Services.

v. ABG Geosynthetics Ltd is not responsible for consequential, indirect or incidental losses.

6. INSURANCE

The Consultant shall arrange Professional Indemnity Insurance cover for the amount stated in Clause 5(ii). The Consultant will use all reasonable endeavours to maintain Professional Indemnity Insurance cover for the period stated in 5(iv) above, providing such insurance remains available to the Consultant at commercially reasonable rates.

7. CLIENT'S OBLIGATIONS

The Client shall supply, without charge and in such time so as not to delay or disrupt the performance of the Consultant in carrying out the Services, all necessary and relevant information, in his possession or available to him from his other agents or consultants and all necessary approvals or consents. Any deviation on any information from the proposal shall be confirmed in writing and any attendant consequential fees will be forwarded for approval by the Client before any changes are made. The Consultant shall not be liable for any consequential delays on site. Every reasonable effort will be made to mitigate against delays, however no liability for losses and costs will be accepted. The approval or consent by the Client to the Services shall not relieve the Consultant from any liability under this Agreement. All work undertaken by the Consultant must be ratified and signed off by the Client.

8. PAYMENT

i. The Client shall pay the Consultant for the Services in accordance with the proposal and this Agreement. If the Consultant performs any additional services or if the Services are delayed or disrupted for reasons beyond the
reasonable control of the Consultant then the Consultant shall be entitled to such additional fees as are fair and
reasonable in the circumstances. The Consultant may render an invoice at monthly intervals for services properly
performed. The agreed invoice, or in the event of a dispute the undisputed element, shall be paid within 28 days of receipt of the invoice by the Client. Any invoice paid after this period will attract interest at 3% above the base
rate of the central bank of the country of the currency of payment along with any collection costs which may occur.

ii. The Client shall not withhold any payment of any sum or part of a sum due to the Consultant under this
Agreement by reason of claims or alleged claims against the Consultant unless the amount to be withheld has
been agreed between the Client and the Consultant as due to the Client or such sum arises from an award in
adjudication, arbitration or litigation in favour of the Client and arises under or in connection with the Agreement.
Save as aforesaid all rights of set off at common law, in equity or otherwise which the Client may otherwise be
entitled to exercise are hereby expressly excluded.

9. TERMINATION

If a party is in breach of a material term of this Agreement and despite written notice from the other party fails to
remedy such breach within 30 days or such other period as may be agreed between the parties, then the other party shall be entitled to terminate this Agreement forthwith. The Consultant may seek to recoup costs incurred for works completed prior to termination.

10. DISPUTE RESOLUTION

Any dispute between the parties that cannot be settled by mutual agreement shall be referred for final settlement to the arbitration of a person agreed between the parties or failing such agreement appointed upon the application of either party by the President of the Chartered Institute of Arbitrators and the said arbitration shall be carried out in accordance with the Construction Industry Model Arbitration Rules 1998 or such other version current at the time of the referral under this clause. Where the Agreement is subject to a governing law other than that of England and Wales then any dispute between the parties that cannot be settled by mutual agreement shall be finally settled by arbitration in accordance with the UNCITRAL Arbitration Rules by one arbitrator appointed in compliance with the said Rules. In either case such rules as appropriate are deemed to be incorporated into this Agreement by reference.

11. COMPLIANCE WITH LAWS

This Agreement shall be governed by and construed in accordance with the law of England and Wales unless stated
otherwise in the proposal for services from the Consultant.

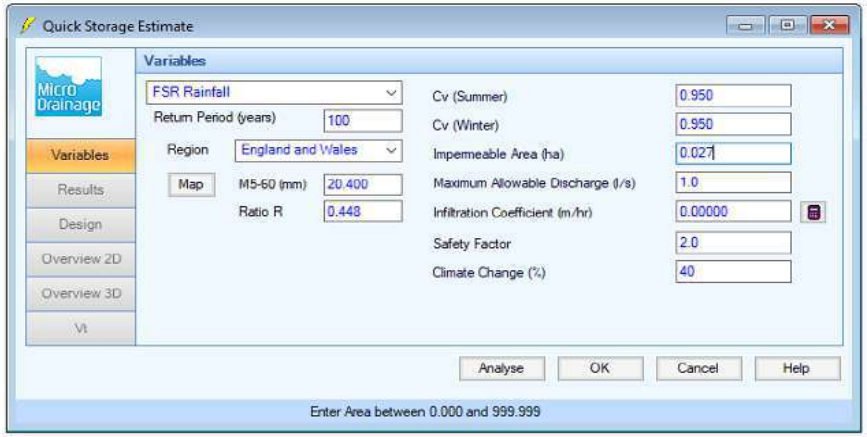
Changes to the above terms and conditions will only be considered if agreed in writing as
part of the appointment process prior to ABG Geosynthetics commencing work.

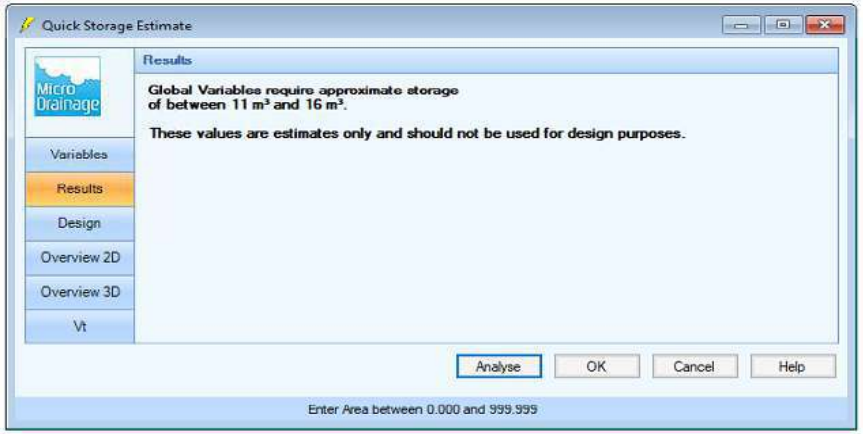
Braemar Evnue Baptist Church

Quick Storage Estimate calculations

Area draining to basement = 266 m2

Take 1.0l/s discharge rate from pump

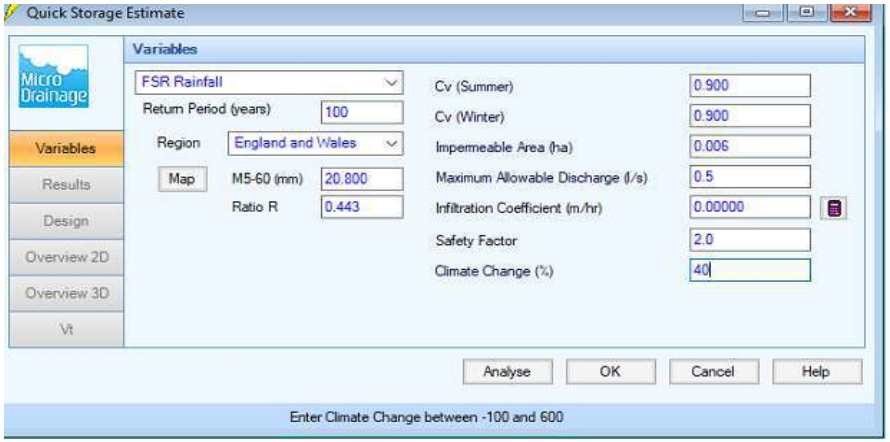


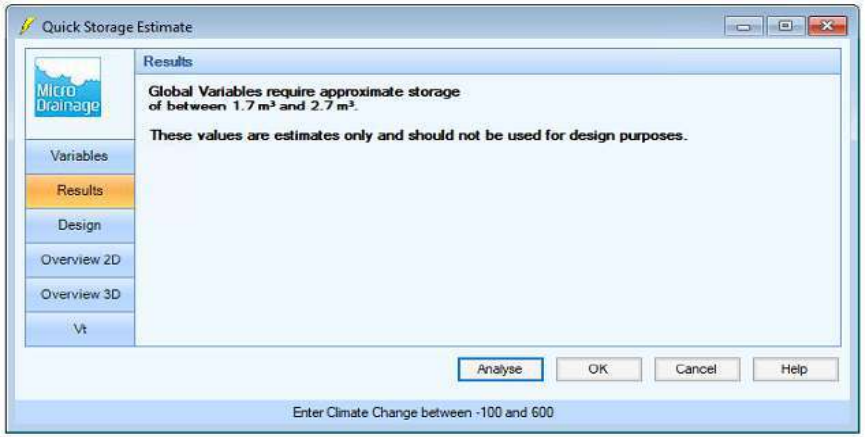


Permeable paving area = 48 m3 Storage provided: 300 mm subbase

Catchment area = 59 m3 4.32 m3

Discharge rate set to 0.5l/s for existing 1 in 1 year runoff rate





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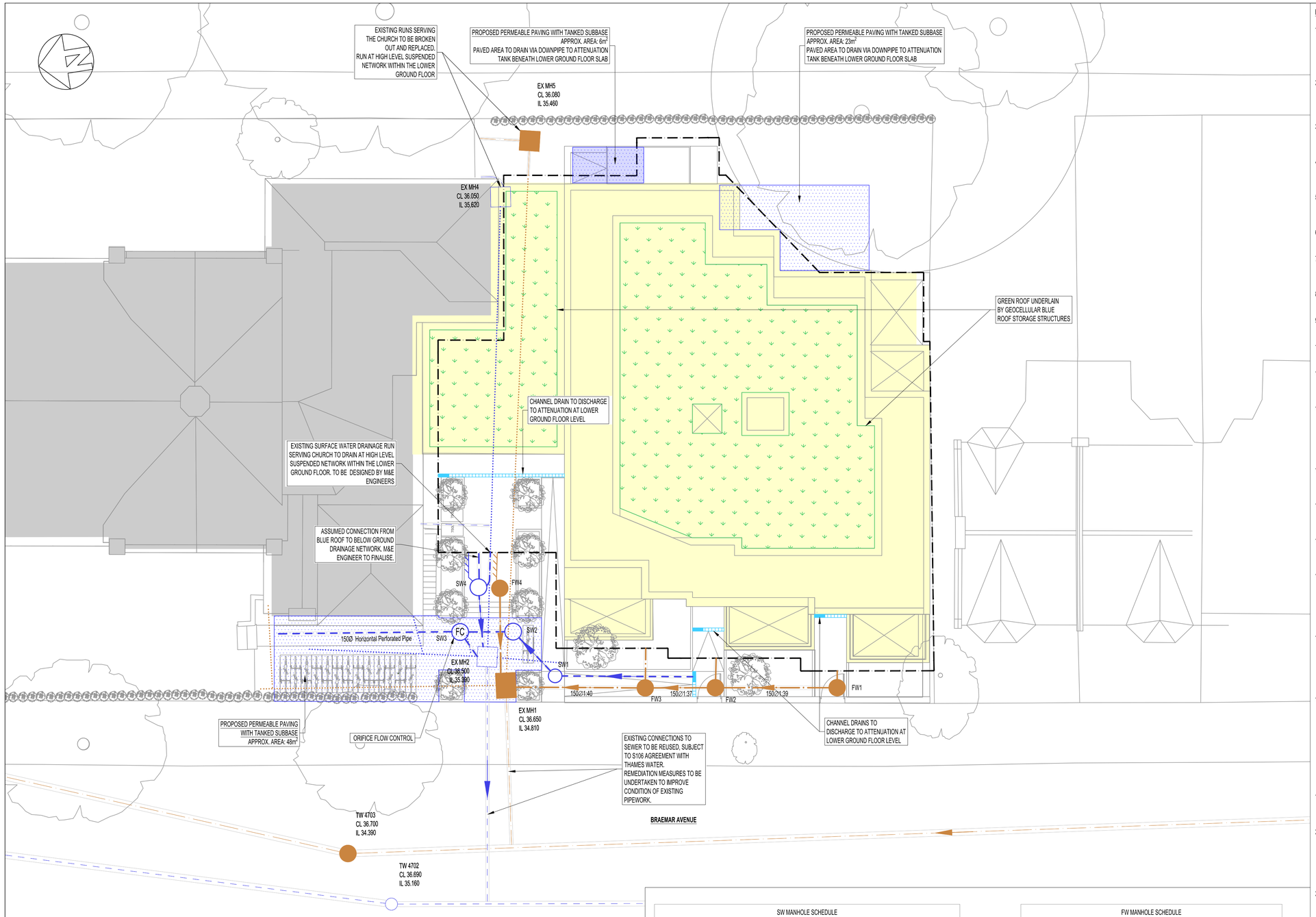
E Drawings



SW MANHOLE SCHEDULE						
Manhole	Chamber Type	Cover Level (m)	Depth	Chamber Size	Clear Opening	Cover Grade
SW1	PPIC	CL = 36.660 SUMP LEVEL OF MANHOLE = 35.460 INV IN = 35.460 INV OUT = 35.460	1.200	450Ø	450x450	B125
SW2	PPIC	CL = 36.440 SUMP LEVEL OF MANHOLE = 35.435 INV IN = 35.435 INV OUT = 35.435	1.005	450Ø	450x450	B125
SW3	PPIC	CL = 36.500 SUMP LEVEL OF MANHOLE = 35.405 INV IN = 35.405 INV OUT = 35.405	1.095	450Ø	450x450	B125
SW4	PPIC	CL = 36.190 SUMP LEVEL OF MANHOLE = 35.420 INV IN = 35.420 INV OUT = 35.420	0.770	450Ø	450x450	B125

FW MANHOLE SCHEDULE						
Manhole	Chamber Type	Cover Level (m)	Depth	Chamber Size	Clear Opening	Cover Grade
FW1	PPIC	CL = 36.760 INV IN = 35.260 INV OUT = 35.260	1.500	450Ø	450x450	B125
FW2	PPIC	CL = 36.760 INV IN = 35.110 INV IN = 35.110 INV OUT = 35.110	1.650	450Ø	450x450	B125
FW3	PPIC	CL = 36.690 INV IN = 35.020 INV IN = 35.020 INV OUT = 35.020	1.670	450Ø	450x450	B125
FW4	PPIC	CL = 36.190 INV OUT = 34.970	1.220	450Ø	450x450	B125

BELOW GROUND DRAINAGE NOTES

1. THE LOCATION AND LEVEL OF EXISTING DRAINAGE CONNECTIONS AND EXISTING SERVICES IS TO BE CHECKED PRIOR TO COMMENCEMENT OF DRAINAGE WORKS. ANY VARIANCE TO THE DETAILS ON THIS DRAWING AND THE SCHEDULE IS TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
2. THE DESIGN IS BASED ON THE INFORMATION AVAILABLE ON THE DATE OF ISSUE FROM OTHER PARTIES (EG. ARCHITECT AND M & E ENGINEER). IT IS SUBJECT TO CHANGE RESULTING FROM UPDATES TO THE AVAILABLE INFORMATION FROM OTHERS.
3. THE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE NBS SPECIFICATIONS, ASSOCIATED MANHOLE SCHEDULE AND STANDARD DRAINAGE DETAIL DRAWINGS WHERE APPLICABLE.
4. THE POSITIONS OF FOUL AND SURFACE WATER DRAINAGE POINTS ARE INDICATIVE ONLY, REFER TO THE ARCHITECTS DRAWINGS FOR SETTING OUT DETAILS.
5. PRIVATE FOUL AND SURFACE WATER DRAINAGE IS TO BE CONSTRUCTED IN ACCORDANCE WITH BUILDING REGULATIONS PART H, BS EN752 AND BS EN12056.
6. DRAINS AT BASEMENT LEVEL ARE TO BE CONSTRUCTED USING CAST IRON (ENSIGN OR EQUIVALENT) AND FLEXIBLY JOINTED TO BS 437.
7. DRAINS AT GROUND LEVEL ARE TO BE CONSTRUCTED USING VITRIFIED CLAY PIPES TO BS EN 295-1 SUPER STRENGTH SPECIFICATION (HEPWORTH SUPERSLEVE) OR SIMILAR APPROVED.
8. ALL SOIL CONNECTIONS UNDER BUILDINGS TO BE 100mm DIA LAID AT A MINIMUM GRADIENT OF 1/40 UNLESS NOTED OTHERWISE.
9. ALL SURFACE WATER CONNECTIONS TO BE 150mm DIAMETER AND TO BE LAID AT A MINIMUM GRADIENT OF 1/80 UNLESS NOTED OTHERWISE .
10. ALL SOIL CONNECTIONS AND RAINWATER PIPES SHOULD BE RODDABLE FROM GROUND LEVEL.
11. RAINWATER DOWN PIPES ARE TO CONNECT TO A DRAIN VIA A REST BEND. WHERE DRAINAGE IS COMBINED A 'P' TRAP MUST ALSO BE PROVIDED.
12. IN CASES OF IN SITU CONCRETE FLOOR SLABS, DRAINS ARE TO BE CAST INTEGRAL WITH THE SLAB WHERE PIPE COVER TO THE CROWN IS LESS THAN 300mm. - NOTE SPECIAL PROVISIONS APPLY TO BASEMENT FLOOR SLABS - SEE DETAILED DRAINAGE AND STRUCTURAL DRAWINGS. CONCRETE ENCASEMENT TO BE REINFORCED AS PER DRAINAGE DETAIL.
13. IN CASES OF SUSPENDED FLOORS WHERE A VOID OF 300mm OR MORE EXISTS BELOW FLOOR DRAINS ARE TO BE SUSPENDED USING A PROPRIETARY HANGER SYSTEM OR CAST INTEGRAL WITH THE FLOOR.
14. WHERE DRAINS PASS THROUGH FOUNDATIONS OR OTHER RIGID STRUCTURES A LINTEL OR SLEEVE IS TO BE USED AND PROVISION FOR FLEXIBILITY IS TO BE MADE USING ROCKER PIPES.
15. BACKFILLING OF DRAIN TRENCHES ADJACENT TO BUILDING OR OTHER STRUCTURES IS TO BE IN ACCORDANCE WITH DIAGRAM 8 OF THE BUILDING REGULATIONS.
16. ANY PIPE OR GULLY OR OTHER FITTING OR DUCT PENETRATING THE BASEMENT SLAB OR WALL IS TO BE WATERPROOFED USING HYDROPHILIC STRIPS OR PUDDLE FLANGES TO ENSURE A WATER TIGHT JOINT. CONCRETE SURROUND TO DRAINAGE PIPES AND FITTINGS MAY BE REQUIRED IN CERTAIN CASES - REFER TO DETAILED DRAINAGE DRAWINGS AND RELEVANT STRUCTURAL DETAILS.
17. EXISTING FOUNDATIONS AND RETAINING WALLS MUST NOT BE UNDERMINED BY NEW DRAINAGE RUNS UNLESS AGREED IN WRITING WITH THE STRUCTURAL ENGINEER. CONTRACTOR TO SUBMIT METHOD STATEMENTS AND TEMPORARY WORKS PROPOSALS TO THE STRUCTURAL ENGINEER FOR COMMENT PRIOR TO COMMENCEMENT OF WORKS.
18. ALL DRAINAGE EXCAVATIONS SHOULD BE RISK ASSESSED BY THE CONTRACTOR TO ENSURE TRENCH SAFETY / STABILISATION MEASURES ARE CONSIDERED DURING THE CONSTRUCTION PERIOD. ANY EXCAVATIONS LEFT EXPOSED SHOULD BE INSPECTED BY A COMPETENT PERSON ON A DAILY BASIS. GROUND CONDITIONS SHOULD BE MONITORED AND TOOL BOX TALKS SHOULD INCLUDE SITE INVESTIGATION INFORMATION TO AID THE CONTRACTORS ONGOING RISK ASSESSMENT AND METHOD OF EXCAVATION. ALL EXCAVATIONS SHOULD BE ASSESSED BY A COMPETENT PERSON FOR CONFINED SPACES REQUIREMENTS.
19. THE CONTRACTOR IS TO CONSIDER PHASING OF THE DRAINAGE INSTALLATION AND ARE TO PROVIDE TEMPORARY DRAINAGE MEASURES THEY DETERMINE ARE REQUIRED.
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This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

LEGEND

- FOUL WATER MANHOLE
- SURFACE WATER MANHOLE
- EXISTING FOUL WATER MANHOLE
- EXISTING SURFACE WATER MANHOLE
- EXISTING FOUL WATER
- EXISTING SURFACE WATER
- PROPOSED FOUL WATER
- PROPOSED SURFACE WATER
- PROPOSED FOUL WATER RISING MAIN
- PROPOSED SURFACE WATER RISING MAIN
- PROPOSED LINEAR CHANNEL WITH HEELGUARD GRATING
- FC FLOW CONTROL CHAMBER
- EXISTING BUILDING
- PROPOSED BUILDING
- LOWER GROUND FLOOR OUTLINE
- EXISTING FOUL WATER TO BE ABANDONED
- EXISTING SURFACE WATER TO BE ABANDONED
- PROPOSED PERMEABLE PAVING

NOT FOR CONSTRUCTION

rev	sc	date	by	chk	description
P2	S2	16.12.22	MAs	LKi	Issued for information
P1	S2	12.12.22	MAs	LKi	Issued for information

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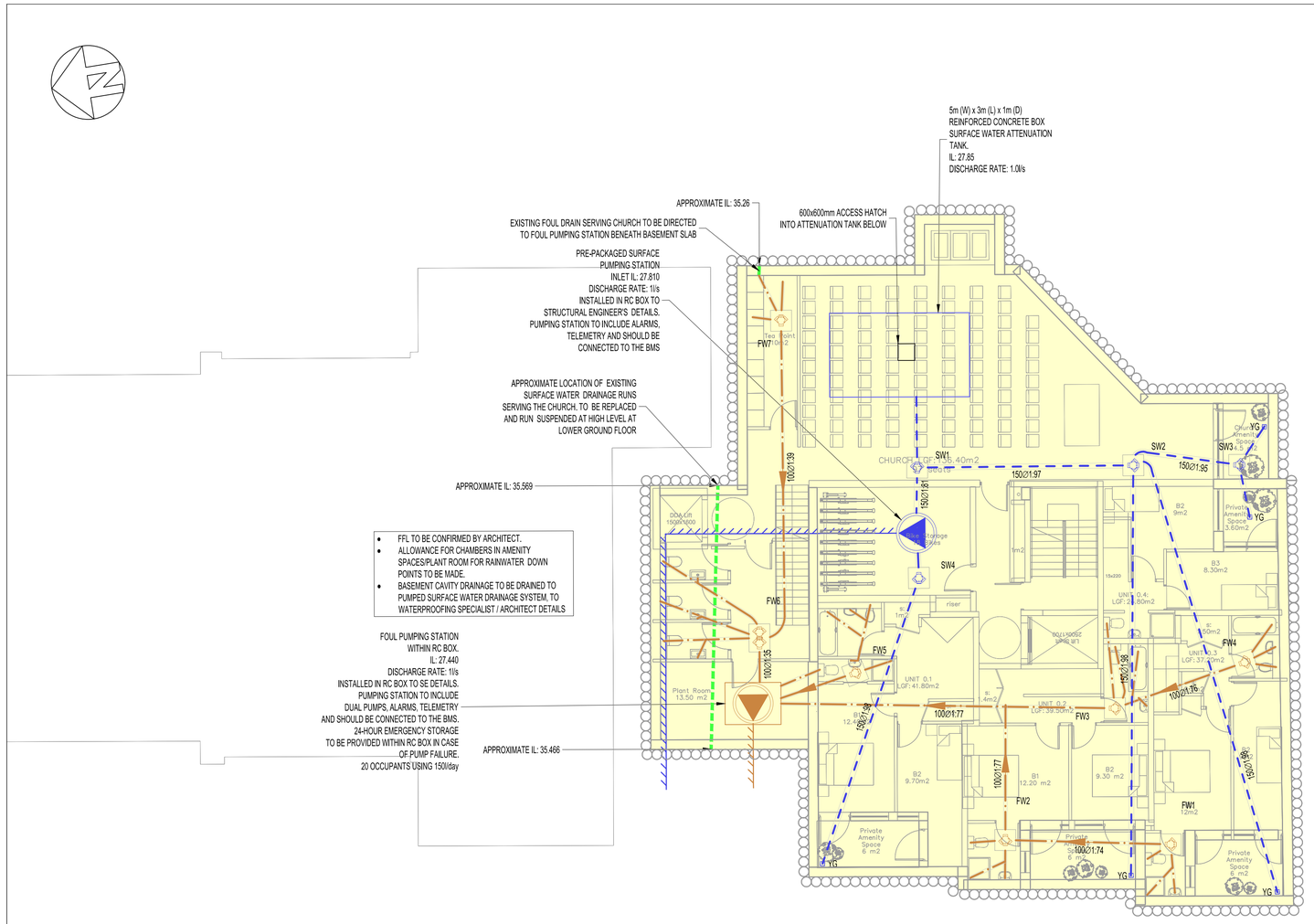
Project
Braemar Avenue Baptist Church
N22 7NY

Drawing title
Proposed Below Ground Drainage General Arrangement - Ground Floor

Scale (s)	Date	Drawn
1:100@ A1; 1:200@ A3	December 2022	MAs

Drawing status	Status	Revision
Preliminary	S2	P1

Project no.	Originator	Zone	Level	Type	Role	drg no.
2220367	EWP	ZZ	XX	DR	C	10000



- FFL TO BE CONFIRMED BY ARCHITECT.
- ALLOWANCE FOR CHAMBERS IN AMENITY SPACES/PLANT ROOM FOR RAINWATER DOWN POINTS TO BE MADE.
- BASEMENT CAVITY DRAINAGE TO BE DRAINED TO PUMPED SURFACE WATER DRAINAGE SYSTEM. TO WATERPROOFING SPECIALIST / ARCHITECT DETAILS

SW MANHOLE SCHEDULE						
Manhole	Chamber Type	Cover Level (m)	Depth	Chamber Size	Clear Opening	Cover Grade
SW1	RC	CL = 29.400 SUMP LEVEL OF MANHOLE = 28.635 INV IN = 27.830 INV IN = 27.830 INV OUT = 27.830	0.765	750Ø	750x750	B125
SW2	RC	CL = 29.400 SUMP LEVEL OF MANHOLE = 27.910 INV IN = 27.910 INV IN = 27.910 INV IN = 27.910 INV OUT = 27.910	1.490	750Ø	750x750	B125
SW3	RC	CL = 29.400 SUMP LEVEL OF MANHOLE = 28.720 INV IN = 27.950 INV IN = 27.950 INV OUT = 27.950	0.680	750Ø	750x750	B125
SW4	RC	CL = 29.400 SUMP LEVEL OF MANHOLE = 28.690 INV IN = 27.820 INV OUT = 27.820	0.710	750Ø	750x750	B125

FW MANHOLE SCHEDULE						
Manhole	Chamber Type	Cover Level (m)	Depth	Chamber Size	Clear Opening	Cover Grade
FW1	RC	CL = 29.400 INV IN = 28.690 INV IN = 28.690 INV OUT = 28.690	0.710	750Ø	750x750	B125
FW2	RC	CL = 29.400 INV IN = 28.610 INV IN = 28.610 INV IN = 28.610 INV OUT = 28.610	0.790	750Ø	750x750	B125
FW3	RC	CL = 29.400 INV IN = 28.600 INV IN = 28.600 INV IN = 28.600 INV OUT = 28.600	0.800	750Ø	750x750	B125
FW4	RC	CL = 29.400 INV IN = 28.665 INV IN = 28.665 INV IN = 28.665 INV OUT = 28.665	0.735	750Ø	750x750	B125
FW5	RC	CL = 29.400 INV IN = 28.480 INV IN = 28.480 INV OUT = 28.480	0.920	750Ø	750x750	B125
FW6	RC	CL = 29.400 INV IN = 28.490 INV IN = 28.490 INV IN = 28.490 INV IN = 28.490 INV OUT = 28.490	0.910	750Ø	1000x750	B125
FW7	RC	CL = 29.861 INV IN = 28.800 INV IN = 28.800 INV IN = 29.350 INV OUT = 28.800	1.061	750Ø	750x750	B125

BELOW GROUND DRAINAGE NOTES

1. THE LOCATION AND LEVEL OF EXISTING DRAINAGE CONNECTIONS AND EXISTING SERVICES IS TO BE CHECKED PRIOR TO COMMENCEMENT OF DRAINAGE WORKS. ANY VARIANCE TO THE DETAILS ON THIS DRAWING AND THE SCHEDULE IS TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
2. THE DESIGN IS BASED ON THE INFORMATION AVAILABLE ON THE DATE OF ISSUE FROM OTHER PARTIES (EG. ARCHITECT AND M & E ENGINEER). IT IS SUBJECT TO CHANGE RESULTING FROM UPDATES TO THE AVAILABLE INFORMATION FROM OTHERS.
3. THE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE NBS SPECIFICATIONS, ASSOCIATED MANHOLE SCHEDULE AND STANDARD DRAINAGE DETAIL DRAWINGS WHERE APPLICABLE.
4. THE POSITIONS OF FOUL AND SURFACE WATER DRAINAGE POINTS ARE INDICATIVE ONLY, REFER TO THE ARCHITECTS DRAWINGS FOR SETTING OUT DETAILS.
5. PRIVATE FOUL AND SURFACE WATER DRAINAGE IS TO BE CONSTRUCTED IN ACCORDANCE WITH BUILDING REGULATIONS PART H, BS EN752 AND BS EN12056.
6. DRAINS AT BASEMENT LEVEL ARE TO BE CONSTRUCTED USING CAST IRON (ENSIGN OR EQUIVALENT) AND FLEXIBLY JOINTED TO BS 437.
7. DRAINS AT GROUND LEVEL ARE TO BE CONSTRUCTED USING VITRIFIED CLAY PIPES TO BS EN 295-1 SUPER STRENGTH SPECIFICATION (HEPWORTH SUPERSLEVE) OR SIMILAR APPROVED.
8. ALL SOIL CONNECTIONS UNDER BUILDINGS TO BE 100mm DIA LAID AT A MINIMUM GRADIENT OF 1/40 UNLESS NOTED OTHERWISE.
9. ALL SURFACE WATER CONNECTIONS TO BE 150mm DIAMETER AND TO BE LAID AT A MINIMUM GRADIENT OF 1/80 UNLESS NOTED OTHERWISE .
10. ALL SOIL CONNECTIONS AND RAINWATER PIPES SHOULD BE RODDABLE FROM GROUND LEVEL.
11. RAINWATER DOWN PIPES ARE TO CONNECT TO A DRAIN VIA A REST BEND. WHERE DRAINAGE IS COMBINED A 'P' TRAP MUST ALSO BE PROVIDED.
12. IN CASES OF IN SITU CONCRETE FLOOR SLABS, DRAINS ARE TO BE CAST INTEGRAL WITH THE SLAB WHERE PIPE COVER TO THE CROWN IS LESS THAN 300mm. - NOTE SPECIAL PROVISIONS APPLY TO BASEMENT FLOOR SLABS - SEE DETAILED DRAINAGE AND STRUCTURAL DRAWINGS. CONCRETE ENCASEMENT TO BE REINFORCED AS PER DRAINAGE DETAIL.
13. IN CASES OF SUSPENDED FLOORS WHERE A VOID OF 300mm OR MORE EXISTS BELOW FLOOR DRAINS ARE TO BE SUSPENDED USING A PROPRIETARY HANGER SYSTEM OR CAST INTEGRAL WITH THE FLOOR.
14. WHERE DRAINS PASS THROUGH FOUNDATIONS OR OTHER RIGID STRUCTURES A LINTEL OR SLEEVE IS TO BE USED AND PROVISION FOR FLEXIBILITY IS TO BE MADE USING ROCKER PIPES.
15. BACKFILLING OF DRAIN TRENCHES ADJACENT TO BUILDING OR OTHER STRUCTURES IS TO BE IN ACCORDANCE WITH DIAGRAM 8 OF THE BUILDING REGULATIONS.
16. ANY PIPE OR GULLY OR OTHER FITTING OR DUCT PENETRATING THE BASEMENT SLAB OR WALL IS TO BE WATERPROOFED USING HYDROPHILIC STRIPS OR PUDDLE FLANGES TO ENSURE A WATER TIGHT JOINT. CONCRETE SURROUND TO DRAINAGE PIPES AND FITTINGS MAY BE REQUIRED IN CERTAIN CASES - REFER TO DETAILED DRAINAGE DRAWINGS AND RELEVANT STRUCTURAL DETAILS.
17. EXISTING FOUNDATIONS AND RETAINING WALLS MUST NOT BE UNDERMINED BY NEW DRAINAGE RUNS UNLESS AGREED IN WRITING WITH THE STRUCTURAL ENGINEER. CONTRACTOR TO SUBMIT METHOD STATEMENTS AND TEMPORARY WORKS PROPOSALS TO THE STRUCTURAL ENGINEER FOR COMMENT PRIOR TO COMMENCEMENT OF WORKS.
18. ALL DRAINAGE EXCAVATIONS SHOULD BE RISK ASSESSED BY THE CONTRACTOR TO ENSURE TRENCH SAFETY / STABILISATION MEASURES ARE CONSIDERED DURING THE CONSTRUCTION PERIOD. ANY EXCAVATIONS LEFT EXPOSED SHOULD BE INSPECTED BY A COMPETENT PERSON ON A DAILY BASIS. GROUND CONDITIONS SHOULD BE MONITORED AND TOOL BOX TALKS SHOULD INCLUDE SITE INVESTIGATION INFORMATION TO AID THE CONTRACTORS ONGOING RISK ASSESSMENT AND METHOD OF EXCAVATION. ALL EXCAVATIONS SHOULD BE ASSESSED BY A COMPETENT PERSON FOR CONFINED SPACES REQUIREMENTS.
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LEGEND

- PROPOSED SINGLE ENSIGN ED012 CHAMBER IN 750x750mm (INTERNAL DIMS) RC BOX
- PROPOSED FOUL WATER
- PROPOSED SURFACE WATER
- PROPOSED SURFACE WATER PACKAGED PUMPING STATION
- PROPOSED FOUL WATER PACKAGED PUMPING STATION
- PROPOSED FOUL WATER RISING MAIN
- PROPOSED SURFACE WATER RISING MAIN
- YG TRAPPED YARD GULLY
- SURFACE WATER ATTENUATION TANK
- FOUL WATER 24 HOUR EMERGENCY STORAGE TANK
- EXISTING DRAINAGE RUNS TO BE SUSPENDED AT HIGH LEVEL
- PROPOSED BUILDING

NOT FOR CONSTRUCTION

rev	sc	date	by	chk	description
P1	S2	16.12.22	MAs	LKi	Issued for information
P1	S2	12.12.22	MAs	LKi	Issued for information

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Project
Braemar Avenue Baptist Church
N22 7BY

Drawing title
Proposed Below Ground Drainage General Arrangement - Lower Ground Floor

Scale (s)	Date	Drawn
1:100@ A1; 1:200@ A3	December 2022	MAs

Drawing status	Status	Revision
Preliminary	S2	P1

Project no.	Originator	Zone	Level	Type	Role	drg no.
2220367	- EWP	- ZZ	- B1	- DR	- C	- 09000

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F Haringey SuDS Proforma

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LoDEG

1. Project & Site Details	
Project / Site Name (including sub-catchment / stage / phase where appropriate)	Braemar Avenue Baptist Church
Address & post code	Braemar Avenue, Wood Green, London, N22 7BY
OS Grid ref. (Easting, Northing)	E 530479
	N 190772
LPA reference (if applicable)	
Brief description of proposed work	Demolition of the tin tabernacle and the existing church prayer room. Construction of a new building alongside the church which will incorporate new residential units and amenity space for the church.
Total site Area	687 m^2
Total existing impervious area	315 m^2
Total proposed impervious area	559 m^2
Is the site in a surface water flood risk catchment (ref. local Surface Water Management Plan)?	Yes - site lies within a Critical Drainage Area, Group4_010
Existing drainage connection type and location	Existing saddle connection to surafce water sewer beneath Braemar Avenue
Designer Name	Laura Kirk
Designer Position	Senior Civil Engineer
Designer Company	Elliott Wood

2. Proposed Discharge Arrangements		
2a. Infiltration Feasibility		
Superficial geology classification	No superficial deposits	
Bedrock geology classification	London Clay	
Site infiltration rate	(assumed) <3x10-8 m/s	
Depth to groundwater level	(approx.) 7 m below ground level	
Is infiltration feasible?	No	
2b. Drainage Hierarchy		
	Feasible (Y/N)	*Proposed (Y/N)*
1 store rainwater for later use	Y	Y
2 use infiltration techniques, such as porous surfaces in non-clay areas	N	N
3 attenuate rainwater in ponds or open water features for gradual release	N	N
4 attenuate rainwater by storing in tanks or sealed water features for gradual release	Y	Y
5 discharge rainwater direct to a watercourse	N	N
6 discharge rainwater to a surface water sewer/drain	Y	Y
7 discharge rainwater to the combined sewer.	N	N
2c. Proposed Discharge Details		
Proposed discharge location	Thames Water sewer beneath Braemar Av	
Has the owner/regulator of the discharge location been consulted?	Yes	

3. Drainage Strategy

3a. Discharge Rates & Required Storage				
	Greenfield (GF) runoff rate (l/s)	*Existing discharge rate (l/s)*	*Required storage for GF rate (m^3)*	*Proposed discharge rate (l/s)*
Qbar	0.6			
1 in 1	0.5	3.4	8	1.9
1 in 30	1.4	8.5	18	2.2
1 in 100	1.9	10.9	23	2.4
1 in 100 + CC			35	2.5
Climate change allowance used		40%		
3b. Principal Method of Flow Control		Pump for basement tank, orifice flow control for permeable paving, flow controls for blue roofs		

3c. Proposed SuDS Measures			
	Catchment area (m^2)	*Plan area (m^2)*	*Storage vol. (m^3)*
Rainwater harvesting	0		1.78
Infiltration systems	0		0
Green roofs	0	202	0
Blue roofs	234	202	21.3
Filter strips	0	0	0
Filter drains	0	0	0
Bioretention / tree pits	0	0	0
Pervious pavements	59	48	0
Swales	0	0	0
Basins/ponds	0	0	0
Attenuation tanks	266		15
Total	**559**	**452**	**38.08**

4. Supporting Information

4a. Discharge & Drainage Strategy	*Page/section of drainage report*
Infiltration feasibility (2a) – geotechnical factual and interpretive reports, including infiltration results	Sections 3.4 & 8.3.2
Drainage hierarchy (2b)	Sections 8.2 & 8.3
Proposed discharge details (2c) – utility plans, correspondence / approval from owner/regulator of discharge location	Section 8.3.4
Discharge rates & storage (3a) – detailed hydrologic and hydraulic calculations	Section 8.3.3
Proposed SuDS measures & specifications (3b)	Section 8.3.2

4b. Other Supporting Details	*Page/section of drainage report*
Detailed Development Layout	Appendix C
Detailed drainage design drawings, including exceedance flow routes	Appendix E
Detailed landscaping plans	Appendix C
Maintenance strategy	Section 10
Demonstration of how the proposed SuDS measures improve:	
a) water quality of the runoff?	Section 9
b) biodiversity?	Section 8.3.2
c) amenity?	Section 8.3.2

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