



SURFACE WATER MANAGEMENT COMPLIANCE

THIS BELOW GROUND DRAINAGE DRAWING HAS BEEN PREPARED IN SUPPORT OF THE PLANNING APPLICATION WITH REFERENCE 2020/3945/P CONDITION NUMBER 10. THE CONDITION STATES:

Condition 10: Prior to commencement of development details of a sustainable urban drainage system shall be submitted to and approved in writing by the local planning authority. Such system shall be based on a 1:100 year event with 30% provision for climate change demonstrating 50% attenuation of all runoff. The system shall be implemented as part of the development and thereafter retained and maintained. Reason: To reduce the rate of surface water run-off from the buildings and limit the impact on the storm-water drainage system in accordance with Policies CC1, CC2, CC3 of the London Borough of Camden Local Plan 2017.

TABLE 1 (below) ILLUSTRATES THE PRE-DEVELOPMENT DISCHARGE RATES BY WAY OF MODELING THE EXISTING DRAINAGE SYSTEM ON THIS SITE USING INDUSTRY APPROVED SOFTWARE (FLOW).

Existing Site Run-off	
Based on existing impermeable area positively drained catchment area of 60m². Refer to Hydraulic Model of existing drainage network for results	
Storm	Peak flowrate (l/s)
1 in 1 Year	1.1 l/s
1 in 30 Year	2.5 l/s
1 in 100 Year	3.1 l/s

IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONDITIONS; THE PROPOSAL IS TO ACHIEVE A 50% BETTERMENT OF THE EXISTING SITE RUN-OFF RATE FOR ALL EVENTS INCLUDING AN ALLOWANCE FOR CLIMATE CHANGE AT 30%.

THE POST-DEVELOPMENT DISCHARGE RATE IS PROPOSED TO BE 0.55 l/s FOR ALL EVENTS UPTO AND INCLUDING THE 1 IN 100 YEAR + 30% CLIMATE CHANGE EVENT. THE PERCENTAGE BETTERMENT IS ILLUSTRATED IN TABLE 2 (below).

Proposed Site Run-off		
Storm	Peak flowrate (l/s)	Percentage Betterment (%)
1 in 1 Year	0.55 l/s	50%
1 in 30 Year	0.55 l/s	78%
1 in 100 Year	0.55 l/s	82%
1 in 100 Year + 30% CC	0.55 l/s	-

TABLE 2
TO EFFECTIVELY STORE WATER DURING HIGH INTENSITY OR PROLONGED STORM PERIODS; SUDS DEVICES ARE PROPOSED TO BE INTRODUCED TO MANAGE SURFACE WATER ON SITE AND TO ENSURE THEY DO NOT INCREASE THE RISK OF FLOODING WITHIN OR OUTSIDE OF THE SITE BOUNDARY.

- RAINWATER STORAGE FOR LATER USE WILL BE PROPOSED FOR THIS SITE. THIS IS IN THE FORM OF RAINWATER BUTTS WITH OVERFLOW SYSTEMS WHERE THEY ARE FULL.
- INFILTRATION IS NOT FEASIBLE DUE TO THE POOR PERMEABILITY OF THE SOILS AND LIMITATIONS FOR MASS QUANTITIES OF SURFACE WATER TO RECHARGE AS PART OF THE GROUND WATER.
- POND FEATURES OR OPEN WATER FEATURES HAVE NOT BEEN PROPOSED DUE TO THE LIMITED SPACE AVAILABLE ON THE DEVELOPMENT PLOT. THE GARDEN SPACE HAS BEEN DEDICATED TO PLAY AND AMENITY SPACE FOR THE FAMILY.
- ATTENUATING RAINWATER BY STORING IN TANKS OR SEALED WATER FEATURES WILL BE PROPOSED AS THERE IS ADEQUATE SPACE BELOW GROUND TO STORE THE WATER IN A SUSTAINABLE WAY. A GREENROOF DESIGN ALSO BETTERS THE TIME OF CONCENTRATION FOR SURFACE WATER TO ENTER THE BELOW GROUND DRAINAGE NETWORK.

THE SITE CURRENT IS DESIGNED AS COMBINED WATER DRAIN TO MATCH THE EXISTING NETWORK WHICH IN TURN DISCHARGES INTO THE THAMES WATER COMBINED WATER SEWER.

PLEASE REFER TO DOCUMENT 1573-HYDM-230608 - P1 IN CONJUNCTION WITH THIS DRAWING FOR SUPPORTING THE HYDRAULIC MODEL FOR THE DRAINAGE SYSTEM.

MAINTENANCE SCHEDULE		
PRODUCT	REQUIRED ACTION	RECOMMENCED FREQUENCY
CHANNEL DRAINS, YARD & PAVED GULLIES	INSPECT GRILLIES & INVERTS, ARE FREE OF LEAVES & DETRITUS - REMOVE AS REQUIRED	EVERY 6 MONTHS AND AFTER AUTUMN LEAF FALL
PIPES	REMOVE SILT & DETRITUS	EVERY 12 MONTHS PRIOR TO WINTER
CATCHPITS	REMOVE SILT & DETRITUS	EVERY 6 MONTHS AND AFTER AUTUMN LEAF FALL
ATTENUATION TANK	CCTV SURVEY TANK AND JETTING OUT	EVERY 12 MONTHS AND AFTER AUTUMN LEAF FALL
PUMP SYSTEM	INSPECTION, SERVICE AND TESTING	EVERY 12 MONTHS OR THAT SPECIFIED BY THE SUPPLIER

NOTES

- NOTES
- ALL DRAINAGE SHALL COMPLY WITH THE TYPICAL DRAINAGE CONSTRUCTION DETAILS AND THE REQUIREMENTS OF BS EN 752.
- ACCESS COVERS AND FRAMES SHALL COMPLY WITH THE LOADINGS SPECIFIED AND TO BS EN 124 AND KITEMARKED OR IF RECESSED COVERS ARE SPECIFIED THEN IN ACCORDANCE WITH FACTA ASSOCIATION EQUIVALENT.
- THE PROPOSED BUILDING OUTLINES SHOWN ON THIS DRAWING ARE FOR INFORMATION ONLY. REFER TO ARCHITECTS PLANS FOR PRECISE LOCATION SETTING OUT INFORMATION AND DETAILS.
- ALL DRAINAGE PIPEWORK SHOWN SHALL BE 150mm DIAMETER UNLESS NOTED OTHERWISE.
- ALL UNDERSLAB DRAINAGE SHALL BE LAID AT GRADIENTS OF 1:40 MIN. FOR FOUL PIPEWORK AND 1:80 MIN. FOR SURFACE WATER UNLESS NOTED OTHERWISE.
- ALL UNDERSLAB DRAINAGE SHALL BE CLEAR OF FOUNDATIONS UNLESS SHOWN OTHERWISE WITH LONG RADIUS BENDS KEPT TO A MINIMUM AND USED WHERE UNAVOIDABLE.
- AT LEAST ONE SOIL PIPE AT THE HEAD OF EACH FOUL RUN SHALL BE VENTED TO THE ATMOSPHERE.
- ALL GUTTERS SHALL BE FITTED WITH A LEAF FILTER AT EACH OUTLET TO REDUCE THE RISK OF BLOCKAGE.
- ALL RAINWATER DOWNPIPES SHALL BE ACCESSIBLE ABOVE GROUND FOR RODDING PURPOSES.

ANY PART OF THE EXISTING DRAINAGE SYSTEM TO BE RETAINED AS PART OF THE NEW SCHEME SHALL BE CLEANED AND INSPECTED BY CCTV SURVEY. ANY STRUCTURAL DEFECTS SHALL BE REPAIRED OR REPLACED AS MAY BE REQUIRED USING APPROPRIATE AND APPROVED METHODS.

WHERE EXISTING ACCESS LOCATIONS ARE TO BE RETAINED THE COVER AND FRAMES SHALL BE CHECKED TO ENSURE THEY ARE OF A SUITABLE DUTY FOR REUSE AND LEVELS ADJUSTED TO SUIT PROPOSED FINISHED GROUND LEVELS.

ALL INTERNAL AND EXTERNAL ACCESS COVERS SHALL BE RECESSED, DOUBLE SEALED AND LOCKABLE.

COVER LEVELS SHOWN ON THIS DRAWING ARE APPROXIMATE AND SHALL BE ADJUSTED TO SUIT FINISHED PAVEMENT LEVELS ON SITE BY CONTRACTOR. COVERS SHALL BE ORIENTATED TO SUIT PAVEMENT FINISHES WHERE APPROPRIATE.

ALL PRIVATE DRAINAGE PIPEWORK FOR FOUL AND SURFACE WATER SYSTEMS HAVE BEEN DESIGNED ON THE BASIS OF CAST IRON.

ALL ADAPTABLE DRAINAGE PIPEWORK FOR FOUL AND SURFACE WATER SYSTEMS HAVE BEEN DESIGNED ON THE BASIS OF CLAYWARE TO COMPLY WITH SEWERAGE SECTOR GUIDANCE APPROVED VERSION 1.0, INCLUDING APPENDIX C "THE CODE" APPROVED VERSION 2.0.

CONCRETE ENCASEMENT OF THE PIPEWORK SHALL BE REQUIRED WHERE THE VERTICAL CLEARANCE BETWEEN TWO PIPES CROSSING IS LESS THAN 300MM

ALL EXISTING DRAINAGE SHALL BE ASSUMED TO BE 'LIVE' AND SHALL BE MAINTAINED AT ALL TIMES DURING THE WORKS. EXISTING DRAINAGE SHALL BE RECONNECTED TO THE NEW DRAINAGE SYSTEM UNLESS PROVEN TO BE REDUNDANT FOR 'ABANDONMENT'. ALL EXISTING DRAINAGE TO BE ABANDONED SHALL BE SEALED BY APPROPRIATE MEANS.

ALL DRAINAGE CONNECTING TO THE PUBLIC SEWER NETWORK SHALL NOT COMMENCE UNTIL RECEIPT OF THE APPROVAL FROM THE DRAINAGE AUTHORITY AND SHALL COMPLY WITH REQUIREMENTS USING VITRIFIED CLAY PIPEWORK TO BS EN 295 WITH PLAIN SLEEVED OR SOCKETED FLEXIBLE JOINTS SUBJECT TO THEIR APPROVAL.

WHERE DRAINAGE WORKS ARE CARRIED OUT IN THE PUBLIC HIGHWAY THE RELEVANT NECESSARY APPROVALS AND ROAD OPENING NOTICES SHALL BE OBTAINED FROM THE HIGHWAY AUTHORITY AND UTILITY COMPANIES.

UPON COMPLETION ALL NEW DRAINAGE INSTALLATION TOGETHER WITH ANY EXISTING DRAINAGE RETAINED SHALL BE JETTED AND CCTV SURVEYED UPON COMPLETION. CONTRACTOR TO ENSURE THAT THE DRAINAGE SYSTEM IS FULLY OPERATIONAL, FREE OF EXCESS DEBRIS/SILT AND ALL IDENTIFIED FAULTS RECTIFIED.

AN AIR TIGHTNESS TEST MUST BE PERFORMED FOR THE PIPEWORK THAT SITS WITHIN THE BUILDING TO ENSURE NO LEAKS ARE PRESENT. THE CONTRACTOR IS EXPECTED TO PROVIDE ADDITIONAL WATERTIGHTNESS MEASURES TO PIPEWORK BELOW GROUND.

HEALTH & SAFETY: FUTURE WORKS SHALL BE CARRIED OUT BY SPECIALIST COMPETENT AND EXPERIENCED CONTRACTORS. ALL OPERATIVES SHALL HAVE RECEIVED FULL AND APPROPRIATE TRAINING WITH APPROPRIATE QUALIFICATIONS FOR THE OPERATIONS THEY ARE REQUIRED TO UNDERTAKE. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT HEALTH & SAFETY REGULATIONS.

FOR APPROVAL

P3	ISSUED FOR INFORMATION	20.06.23	SK
P2	ISSUED FOR INFORMATION	20.06.23	SK
P1	ISSUED FOR INFORMATION	08.06.23	SK
Rev.	Description	Date	By



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Job Title	117 CRANFIELD GARDENS, NW6
Client	NEIGHBOURHOOD STUDIO

1573-SPW-Z0-ZZ-DR-C-6000 BELOW GROUND DRAINAGE				
Drawn	Date	Scale	Checked	CAD Filename
SK	08.06.23	1:30 @ A1	SK	BGD
Job No.	Drawing No.		Revision	
1573	C-6000		P3	

- IMPORTANT NOTES**
- THIS DRAWING HAS BEEN RELEASED FOR PLANNING CONDITIONS SIGN-OFF ONLY.
 - CONSTRUCTION INFORMATION BASED ON THE DESIGN INFORMATION AVAILABLE TO DATE. A DETAILED LEVELS AND FALLS DRAWING IS TO BE FORWARDED TO SPILLWAYS LIMITED. NOTE THAT CHANNEL AND GULLY LOCATIONS MAY CHANGE TO SUIT THE FALLS.
 - DETAILED MATERIAL CHOICES ARE TO BE CONFIRMED TO INCORPORATE BUILD-UPS.
 - WORKS IN THE VICINITY OF LIVE SERVICES INCLUDING GAS, ELECTRICITY AND BT WILL BE NECESSARY AND THE ADVICE OF ALL STATUTORY SERVICE COMPANIES MUST BE SOUGHT BEFORE ANY WORKS COMMENCE.
 - THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE VICINITY OF THE WORKS HAND DUG AND ENSURE THESE ARE PROTECTED THROUGHOUT THE DURATION OF THE WORKS. ALL UTILITY PLANT SHOULD BE CLEARLY MARKED ON THE GROUND PRIOR TO COMMENCEMENT OF THE WORKS.
 - GROUND INVESTIGATION REPORT TO BE CARRIED OUT TO CONFIRM EXISTING GROUND CONDITIONS.
 - THIS DESIGN IS SUBJECT TO THAMES WATER APPROVAL FOR DISCHARGE RATE. NO WORKS SHOULD PROCEED UNTIL THAMES WATER CONSENT HAS BEEN RECEIVED.
 - DETAIL, SPECIFICATION AND TYPE OF RAINWATER HARVESTING TANK TO BE PROVIDED BY OTHERS. DEVICE TO HAVE OVERFLOW.
 - RAINWATER PIPE AND FOUL WATER PIPE LOCATIONS TO BE PROVIDED BY ARCHITECT / M/E ENGINEER.