



SURFACE WATER FLOW REGIME

1. RUNOFF FROM ROOFS ENTERS UNDERGROUND DRAINAGE NETWORK VIA RAIN WATER PIPES AND DISTRIBUTION TANKS TO ENTER TO THE TYPE C NO INFILTRATION PERMEABLE PAVING OGCR SUB-BASE.
2. RUNOFF FROM EXTERNAL PATIOS DRAINS TO THE UNDERGROUND DRAINAGE NETWORK VIA TYPE C NO INFILTRATION OGCR PERMEABLE SUB-BASE.
3. RUNOFF FROM ACCESS DRIVE / EXTERNAL PARKING AREAS DRAINS TO THE UNDERGROUND DRAINAGE NETWORK VIA TYPE C NO INFILTRATION PERMEABLE PAVING OGCR SUB-BASE.
4. UNDERGROUND DRAINAGE NETWORK WILL INFILTRATE INTO THE GROUND VIA A GEOCELLULAR SOAKAWAY. INFILTRATION RATE HAS BEEN ASSUMED. BRE 365 SOAKAGE TESTS WILL NEED TO BE UNDERTAKEN AT THE DETAILED DESIGN STAGE. SURFACE WATER RUNOFF UP TO THE 1 IN 100 YEAR PLUS 40% CLIMATE CHANGE ALLOWANCE EVENT WILL BE ATTENUATED ON SITE WITHIN THE BELOW GROUND GEOCELLULAR SOAKAWAY.

BUILDING REGULATIONS PART H3. SURFACE WATER HIERARCHY:

1. REUSE: WATER BUTTS WILL BE INCORPORATED.
2. INFILTRATION: THE LOCAL GEOLOGY COMPRISES OF SANDSTONE, SILTSTONE, MUDSTONE AND CLAY. SOAKAGE TESTING HAS NOT BEEN COMPLETED TO DATE. AN ASSUMED INFILTRATION RATE OF 3.5 X 10⁻⁷ IS HAS BEEN USED.
3. WATERCOURSE: DISCHARGE TO A WATERCOURSE IS NOT FEASIBLE AS THERE ARE NO WATERCOURSES WITHIN CLOSE PROXIMITY TO THE SITE.
4. STORMSURFACE WATER SEWER: THERE ARE NO SURFACE WATER SEWERS WITHIN CLOSE PROXIMITY.
5. COMBINED SEWER: THERE ARE NO COMBINE SEWERS WITHIN CLOSE PROXIMITY.

Notes:

1. DO NOT SCALE FROM THIS DRAWING.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT.
3. THE DEVELOPMENT LAYOUT HAS BEEN TAKEN FROM OPEN ARCHITECTURE'S PROPOSED SITE PLAN DRG. NO. 24130 REV P1 DATED FEB 2025 & THE SURVEY FROM SITECH SURVEYING SERVICES TOPOGRAPHICAL LAND SURVEY DRG. NO. 16807 TO 16809 DATED NOV 2022.
4. ALL DRAINAGE WORKS SHALL BE DESIGNED IN ACCORDANCE WITH DESIGN AND CONSTRUCTION GUIDANCE FOR FOUL & SURFACE WATER SEWERS OFFERED FOR ADOPTION (DCG) APPROVED CURRENT VERSION.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO RECORD THE POSITION, SIZE, DEPTH, MATERIAL AND TYPE OF ALL EXISTING UTILITY MAINS AND SERVICES (E.G. POWER, GAS, TELECOM, WATER, SEWERAGE) IN CLOSE PROXIMITY TO THE PROPOSED WORKS PRIOR TO CONSTRUCTION COMMENCING ON SITE.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK ALL LEVELS AND SETTING OUT INFORMATION PRIOR TO CONSTRUCTION WORKS COMMENCING ON SITE. ANY DISCREPANCIES MUST BE REPORTED TO THE PROJECT MANAGER IMMEDIATELY.
7. EXCAVATIONS WITHIN ROOT PROTECTION AREAS SHALL BE UNDERTAKEN STRICTLY IN ACCORDANCE WITH THE ARBORICULTURISTS DETAILED METHOD STATEMENT, BS 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION AND CONSTRUCTION, NJUG VOLUME 4' GUIDANCE FOR THE PLANNING, INSTALLATION AND MAINTENANCE OF UTILITY APPARATUS IN PROXIMITY TO TREES.
8. NEW UTILITY SERVICES ARE TO BE INSTALLED IN ACCORDANCE WITH NJUG VOLUME 2 'GUIDANCE ON THE INSTALLATION OF NEW SERVICES TO DEVELOPMENT SITES'.

**CDM REGULATIONS 2015
- SIGNIFICANT RISKS -**

1. EXISTING HIGHWAY DRAINAGE CONNECTION TO POND IS PRESENT AND HAVE BEEN TAKEN FROM RECORDS OBTAINED FROM KCC. THERE IS A RISK OF UNCHARTED SERVICES BEING PRESENT.
2. THERE IS A RISK OF UNCHARTED SERVICES BEING PRESENT.
3. THE CONTRACTOR MUST TAKE ADEQUATE PRECAUTIONS FROM THE POSSIBLE PRESENCE AND CONTAMINATION FROM LEPTOSPIROSIS (WEILS DISEASE).
4. THE WORKS WILL INVOLVE THE MOVEMENT OF PLANT AND MACHINERY IN A LIVE CARRIAGEWAY. THERE IS A RISK OF POTENTIAL CONFLICT BETWEEN PLANT AND ROAD/PEDESTRIAN USERS.
5. THE WORKS WILL INVOLVE WORKING WHERE THERE IS A DANGER OF SUDDEN RISES IN WATER LEVELS AND THE ASSOCIATED DANGER OF DROWNING.

KEY	
	SITE BOUNDARY
	SURFACE WATER DRAINAGE - DIA GRADIENT/PIPE NUMBER
	YARD GULLY
	DRAIN OUTLET TO BE 100 DIA UNLESS STATED OTHERWISE
	THRESHOLD, DRAIN OUTLET TO BE 100 DIA
	DISTRIBUTION TANK
	EXCEEDANCE FLOW ROUTE
	GEOCELLULAR STORAGE CRATE
	RAINWATER PIPE, DRAIN OUTLETS TO BE 100 DIA
	CHANNEL DRAIN
	DRAIN OUTLET TO BE 100 DIA UNLESS STATED OTHERWISE
	PERMEABLE AREA SUB-BASE FORMATION GRADIENT (NO INFILTRATION)
	PERMEABLE SURFACE SUB-BASE FORMATION LEVEL (NO INFILTRATION)
	FOUL WATER DRAINAGE - DIA GRADIENT/PIPE NUMBER
	TYPE D FOUL WATER INSPECTION CHAMBER MIN 450DIA
	TYPE A/B/C FOUL WATER MANHOLE
	SOIL VENT PIPE / SOIL STACK, DRAIN OUTLET TO BE 100 DIA

LAND USE	POLLUTION HAZARD LEVEL	TOTAL SUSPENDED SOLIDS (TSS)	METALS	HYDROCARBONS
RESIDENTIAL ROOFS	VERY LOW	0.2	0.2	0.05
OTHER ROOF (TYPICALLY COMMERCIAL / INDUSTRIAL ROOFS)	LOW	0.3	0.2 (UP TO 0.8 WHERE THERE IS POTENTIAL FOR METALS TO LEACH FROM THE ROOF)	0.05
INDIVIDUAL PROPERTY DRIVEWAYS, RESIDENTIAL CAR PARKS, LOW TRAFFIC ROADS (EG OUL DE SACS, HOMEZONES AND GENERAL ACCESS ROADS) AND NON-RESIDENTIAL CAR PARKING WITH INFREQUENT CHANGE (EG SCHOOLS, OFFICES) IE < 300 TRAFFIC MOVEMENTS/DAY	LOW	0.5	0.4	0.4
COMMERCIAL YARD AND DELIVERY AREAS, NON-RESIDENTIAL CAR PARKING WITH FREQUENT CHANGE (EG HOSPITALS, RETAIL), ALL ROADS EXCEPT LOW TRAFFIC ROADS AND TRUNK ROADS/MOTORWAYS ¹	LOW	0.7	0.6	0.7
SITES WITH HEAVY POLLUTION (EG HAULAGE YARDS, LORRY PARKS, HIGHLY FREQUENTED LORRY APPROACHES TO INDUSTRIAL ESTATES, WASTE SITES), SITES WHERE CHEMICALS AND FUELS (OTHER THAN DOMESTIC FUEL OIL) ARE TO BE DELIVERED, HANDLED, STORED, USED OR MANUFACTURED; INDUSTRIAL SITES; TRUNK ROADS AND MOTORWAYS ¹	HIGH	0.8 ²	0.8 ²	0.9 ²

- NOTES:
1. MOTORWAYS AND TRUNK ROADS SHOULD FOLLOW THE GUIDANCE AND RISK ASSESSMENT PROCESS SET OUT IN HIGHWAYS AGENCY (2009).
 2. THESE SHOULD ONLY BE USED IF CONSIDERED APPROPRIATE AS PART OF A DETAILED RISK ASSESSMENT - REQUIRED FOR ALL THESE LAND USE TYPES (TABLE 4.3). WHEN DEALING WITH HIGH HAZARD SITES, THE ENVIRONMENTAL REGULATOR SHOULD FIRST BE CONSULTED FOR PRE-PERMITTING ADVICE. THIS WILL HELP DETERMINE THE MOST APPROPRIATE APPROACH TO THE DEVELOPMENT OF A DESIGN SOLUTION.

TABLE 26.4: INDICATIVE SUDS MITIGATION INDICES FOR DISCHARGES TO GROUNDWATER

CHARACTERISTICS OF THE MATERIAL OVERLYING THE PROPOSED INFILTRATION SURFACE, THROUGH WHICH THE RUNOFF PERCOLATES ¹	TSS	METALS	HYDROCARBONS
A LAYER OF DENSE VEGETATION UNDERLAIN BY A SOIL WITH GOOD CONTAMINANT ATTENUATION POTENTIAL ² OF AT LEAST 300 mm IN DEPTH ³	0.6 ⁴	0.5	0.6
A SOIL WITH GOOD CONTAMINANT ATTENUATION POTENTIAL ² OF AT LEAST 300 mm IN DEPTH ³	0.4 ⁴	0.3	0.3
INFILTRATION TRENCH (WHERE A SUITABLE DEPTH OF FILTRATION MATERIAL IS INCLUDED THAT PROVIDES TREATMENT, IE GRADED GRAVEL WITH SUFFICIENT SMALLER PARTICLES BUT NOT SINGLE SIZE COARSE AGGREGATE SUCH AS 20 mm GRAVEL, UNDERLAIN BY A SOIL WITH GOOD CONTAMINANT ATTENUATION POTENTIAL ² OF AT LEAST 300 mm IN DEPTH ³	0.4 ⁴	0.4	0.4
CONSTRUCTED PERMEABLE PAVEMENT (WHERE A SUITABLE FILTRATION LAYER IS INCLUDED THAT PROVIDES TREATMENT, AND INCLUDING A GEOTEXTILE AT THE BASE SEPARATING THE FOUNDATION FROM THE SUBGRADE) UNDERLAIN BY A SOIL WITH GOOD CONTAMINANT ATTENUATION POTENTIAL ² OF AT LEAST 300 mm IN DEPTH ³	0.7	0.6	0.7
BIORETENTION UNDERLAIN BY A SOIL WITH GOOD CONTAMINANT ATTENUATION POTENTIAL ² OF AT LEAST 300 mm IN DEPTH ³	0.8 ⁴	0.8	0.8
PROPRIETARY TREATMENT SYSTEMS ^{5,6}	THESE MUST DEMONSTRATE THAT THEY CAN ADDRESS EACH OF THE CONTAMINANT TYPES TO ACCEPTABLE LEVELS FOR INFLOW CONCENTRATIONS RELEVANT TO THE CONTRIBUTING DRAINAGE AREA.		

- NOTES:
1. ALL DESIGNS MUST INCLUDE A MINIMUM OF 1 m UNSATURATED DEPTH OF AQUIFER MATERIAL BETWEEN THE INFILTRATION SURFACE AND THE MAXIMUM LIKELY GROUNDWATER LEVEL (AS REQUIRED IN INFILTRATION DESIGN - CHAPTER 25).
 2. FOR EXAMPLE AS RECOMMENDED IN SNIFFER (2008A AND 2008B), SCOTT WILSON (2010) OR OTHER APPROPRIATE GUIDANCE.
 3. ALTERNATIVE DEPTHS MAY BE CONSIDERED WHERE IT CAN BE DEMONSTRATED THAT THE COMBINATION OF THE PROPOSED DEPTH AND SOIL CHARACTERISTICS WILL PROVIDE EQUIVALENT PROTECTION TO THE UNDERLYING GROUNDWATER - SEE NOTE 1.
 4. IF SIGNIFICANT VOLUMES OF SEDIMENT ARE ALLOWED TO ENTER AN INFILTRATION SYSTEM, THERE WILL BE A HIGH RISK OF RAPID CLOGGING AND SUBSEQUENT SYSTEM FAILURE.
 5. SEE CHAPTER 14 FOR APPROACHES TO DEMONSTRATE PRODUCT PERFORMANCE. NOTE: A BRITISH WATER/ENVIRONMENT AGENCY ASSESSMENT CODE OF PRACTICE IS CURRENTLY UNDER DEVELOPMENT THAT WILL ALLOW MANUFACTURERS TO COMPLETE AN AGREED TEST PROTOCOL FOR SYSTEMS INTENDED TO TREAT CONTAMINATED SURFACE WATER RUNOFF. FULL DETAILS CAN BE FOUND AT: www.britishtwater.co.uk/Publications/codes-of-practice.aspx
 6. SEPA ONLY CONSIDERS PROPRIETARY TREATMENT SYSTEMS AS APPROPRIATE IN EXCEPTIONAL CIRCUMSTANCES WHERE OTHER TYPES OF SUDS COMPONENT ARE NOT PRACTICABLE. PROPRIETARY TREATMENT SYSTEMS MAY ALSO BE CONSIDERED APPROPRIATE FOR EXISTING SITES THAT ARE CAUSING POLLUTION, WHERE THERE IS A REQUIREMENT TO RETROFIT TREATMENT. WAT-RM-08 (SEPA, 2014) ALSO PROVIDES A FLOWCHART WITH A SUMMARY OF CHECKS ON SUITABILITY OF A PROPRIETARY SYSTEM.

FOR PLANNING

Scale @ A1 1:100	Date 28.02.25	Drawn by SBR	Checked CJM
Job No.	Drg. No.	Rev	
25-0040		C10501 A	