**SITE SUMMARY**

THE EXISTING SITE IS A PART BROWNFIELD SITE WHICH COMPRISES A COMBINED (SURFACE AND FOUL WATER) THAMES WATER SEWER WHICH IS NEEDING TO BE DIVERTED. THE BELOW GROUND DRAINAGE SYSTEM HAS BEEN TRANSCRIBED OVER A TOPOGRAPHICAL SURVEY CARRIED OUT BY ENGINEERING LAND & BUILDING SURVEYS [DRAWING REFERENCE 7656].

**SITE RUN-OFF**

NO PART OF THE PROPOSED DEVELOPMENT SITE DRAINS INTO THE PUBLIC SEWER DUE TO THE PERMEABLE NATURE OF THE SITE COVERING. THE PROPOSED DRAINAGE DESIGN HAS BEEN DESIGNED USING LATEST FEH22 DATASET AND MODELED UP TO THE 1 IN 100 YEAR + 40% CLIMATE CHANGE EVENT.

THE PROPOSED SITE DISCHARGE HAS BEEN RESTRICTED TO 0.8 l/s

**LONDON BOROUGH OF CAMDEN LOCAL POLICY GUIDANCE AND COMPLIANCE**

IN LINE WITH POLICY CC3 - *WATER AND FLOODING*; SURFACE WATER HAS BEEN DESIGNED TO BE EFFECTIVELY STORED 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. THE FOLLOWING COUNCIL'S PREFERRED DRAINAGE HIERARCHY HAS BEEN FOLLOWED IN THE ORDER SHOWN BELOW:

1) RAINWATER STORAGE FOR LATER USE WILL BE PROPOSED FOR THIS SITE. THIS IS IN THE FORM OF A RAINWATER BUTTS WITH OVERFLOW SYSTEMS WHERE IT IS FULL.
2) 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. THE DENSITY OF THE SITE ALSO PREVENTS THE USE OF A SOAKAWAY.
3) POND FEATURES OR OPEN WATER FEATURES HAVE NOT BEEN PROPOSED DUE TO THE LIMITED SPACE AVAILABLE ON THE DEVELOPMENT PLOT.
4) 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. SURFACE WATER BE CONTROLLED PRIOR TO RELEASE INTO THE PRIVATE SEWER SYSTEM.
5) THERE ARE NO WATERCOURSES WITHIN THE VICINITY OF THE SITE TO CONNECT INTO
6) THERE ARE NO SURFACE WATER SEWERS IN FRONT OF THE DEVELOPMENT SITE FOR CONNECTION INTO.
7) AN EXISTING COMBINED WATER SEWER WILL BE USED TO DISCHARGE BOTH FOUL AND SURFACE WATER.

**SuDS STATEMENT**

THIS DEVELOPMENT WILL BENEFIT FROM A FULL GREENROOF SYSTEM WHICH HAS A LOW SUBSTRATE DEPTH, SIMPLE PLANTING AND A GENERAL LOWER MAINTENANCE REGIME. THE GREENROOF WILL COVER THE ENTIRE AREA WITH HARDY PLANTING WHICH WILL ESTABLISH SLOWLY BUT THE LONG TERM BIODIVERSITY IS PROPOSED TO BE OF HIGH VALUE. THE GROWING MEDIUM WILL BE TYPICALLY 20-150mm THICK WHICH WILL PROVIDE WATER RETENTION ASSUMED FOR THE FIRST 5mm OF RAINWATER THAT LANDS ON IT. ONCE THE MEDIUM IS FULLY SATURATED; SURFACE WATER WILL ENTER THE BELOW GROUND DRAINAGE SYSTEM.

A FLOW CONTROL CHAMEBR HAS BEEN PROPOSED TO CONTROL THE SURFACE WATER DISCHARGING INTO THE THAMES WATER SEWER. THE CONTROL RATE IS 0.8 l/s AND ACHIEVED USING A HYDROBRAKE (VORTEX FLOW CONTROL DEVICE).

**DESIGN NOTES / CONDITIONS:**

1. THIS DRAWING HAS BEEN ISSUED FOR THE PURPOSES OF PLANNING CONDITIONS SIGN-OFF AND NOT CONSTRUCTION LEVEL DESIGN.
2. ANY REQUIREMENTS FOR GULLIES OR CHANNEL DRAINS TO BE CONFIRMED BY THE ARCHITECT/LANDSCAPE ARCHITECT. ANY GULLY AND ACO CHANNELS SHOULD BE POSITIONED SUCH TO CAPTURE THE EXTERNAL LAND FALLS AND GRADIENTS. SIZE OF CHANNELS AND GULLIES TO SPILLWAYS LIMITED DESIGN.
3. ALL GULLIES AND CHANNELS TO BE TRAPPED UNITS. SPECIFICATION FOR ALL INTERNAL GULLIES REQUIRED.
4. FINAL EXTERNAL LEVELS AND LANDSCAPING STRATEGY TO BE CONFIRMED.
5. FOUNDATION TYPE AND DETAIL LEVELS DATA TO BE PROVIDED TO SPILLWAYS LIMITED TO PROVIDE DESIGN OF PIPE PENETRATIONS THROUGH THE STRUCTURE BELOW GROUND.
6. ANY CAVITY DRAIN REQUIREMENTS TO BE CONFIRMED BY OTHERS.
7. ANY TREES MUST INCORPORATE ROOT BARRIERS TO PREVENT DAMAGE TO BELOW GROUND DRAINAGE. THIS IS TO LANDSCAPE ARCHITECT SPECIFICATION AND DETAIL.
8. LANDSCAPE ARCHITECT TO CONFIRM MANHOLE COVER ORIENTATION.

**Surface Water Manhole Schedule**

| Reference No. | Manhole Size | Material | Cover Type | Size | Load Grade | Note |
|---|---|---|---|---|---|---|
| SWMH-01 | 1200mm x 1200mm | In-Situ Concrete | CAST IRON | 600x600 | C250 | Double Sealed / Recessed Covers to Architects Preference |

**Combined Water Manhole Schedule**

| Reference No. | Manhole Size | Material | Cover Type | Size | Load Grade | Note |
|---|---|---|---|---|---|---|
| CWMH-01 | 1200Ø | P.C Concrete | CAST IRON | 600x600 | C250 | Cover to be adoptable standard |

**CONNECTION TO THAMES WATER COMBINED WATER DRAIN SUBJECT TO APPROVAL. CAPACITY CHECK RESPONSE PENDING.**

**1.2m RADIUS ROOT PROTECTION EASEMENT ZONE**

**NEW 150mm VITRIFIED CLAY PIPE**

**CWMH-01**
**CL: 41.500m**
**IL: 40.912m - 100Ø (IN) - A BD**
**IL: 39.580m - 150Ø (IN) - B**
**IL: 40.300m - 100Ø (IN) - C BD**
**IL: 39.580m - 150Ø (IN) - D**
**IL: 40.975m - 100Ø (IN) - E BD**
**IL: 39.580m - 150Ø (IN) - F**
**IL: 39.530m - 150Ø (OUT)**

**INLET [B] IS TO BE FITTED WITH A FLAP VALVE**

**SWMH-01**
**FLOW CONTROL CHAMBER**
**DEVICE: HYDROBRAKE**
**RATE: 0.8 l/s**
**CODE: CTL-SHE-0041-8000-1085-8000**
**CL: 41.500m**
**IL: 40.854m - 100Ø (IN-A) BD**
**IL: 40.831m - 100Ø (IN-B) BD**
**IL: 40.706m - 100Ø (IN-C)**
**IL: 39.600m - 150Ø (OUT)**
**IL: 39.350m - SUMP**
**CHAMBER BASE = 39.050m TO CLEAR BOTTOM OF THAMES WATER PIPE.**

**PIPE IS SUBJECT TO THAMES WATER BUILD-OVER AGREEMENT AND DIVERSION APPLICATION.**

**450mm LONG RADIUS BEND ON EXISTING 150mm DIAMETER CLAY PIPE.**

DRAINAGE KEY:

- BELOW GROUND SURFACE WATER PIPE
- PRE-CAST CONCRETE MANHOLE 1200Ø SURFACE WATER CHAMBER
- LINEAR CHANNEL
- BELOW GROUND COMBINED WATER PIPE
- PRE-CAST CONCRETE MANHOLE 1200Ø COMBINED WATER CHAMBER
- PIPES TO BE REMOVED FROM THE GROUND AS PART OF DIVERSION WORKS
- EXISTING PUBLIC SEWER

## 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 ADOPTABLE 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.

ISSUED FOR APPROVAL

| Rev. | Description | Date | By |
|---|---|---|---|
| P2 | ISSUED FOR APPROVAL | 31.10.24 | SK |
| P1 | ISSUED FOR APPROVAL | 12.07.24 | SK |

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Client: FLAWK

1609-SPW-Z0-ZZ-DR-C-6000
BELOW GROUND DRAINAGE

| Drawn | Date | Scale | Checked | CAD Filename |
|---|---|---|---|---|
| SK | 12.07.24 | 1:40 @ A1 | SK | BGD |

| Job No. | Drawing No. | Revision |
|---|---|---|
| 1609 | C-6000 | P2 |

A1