LEGEND

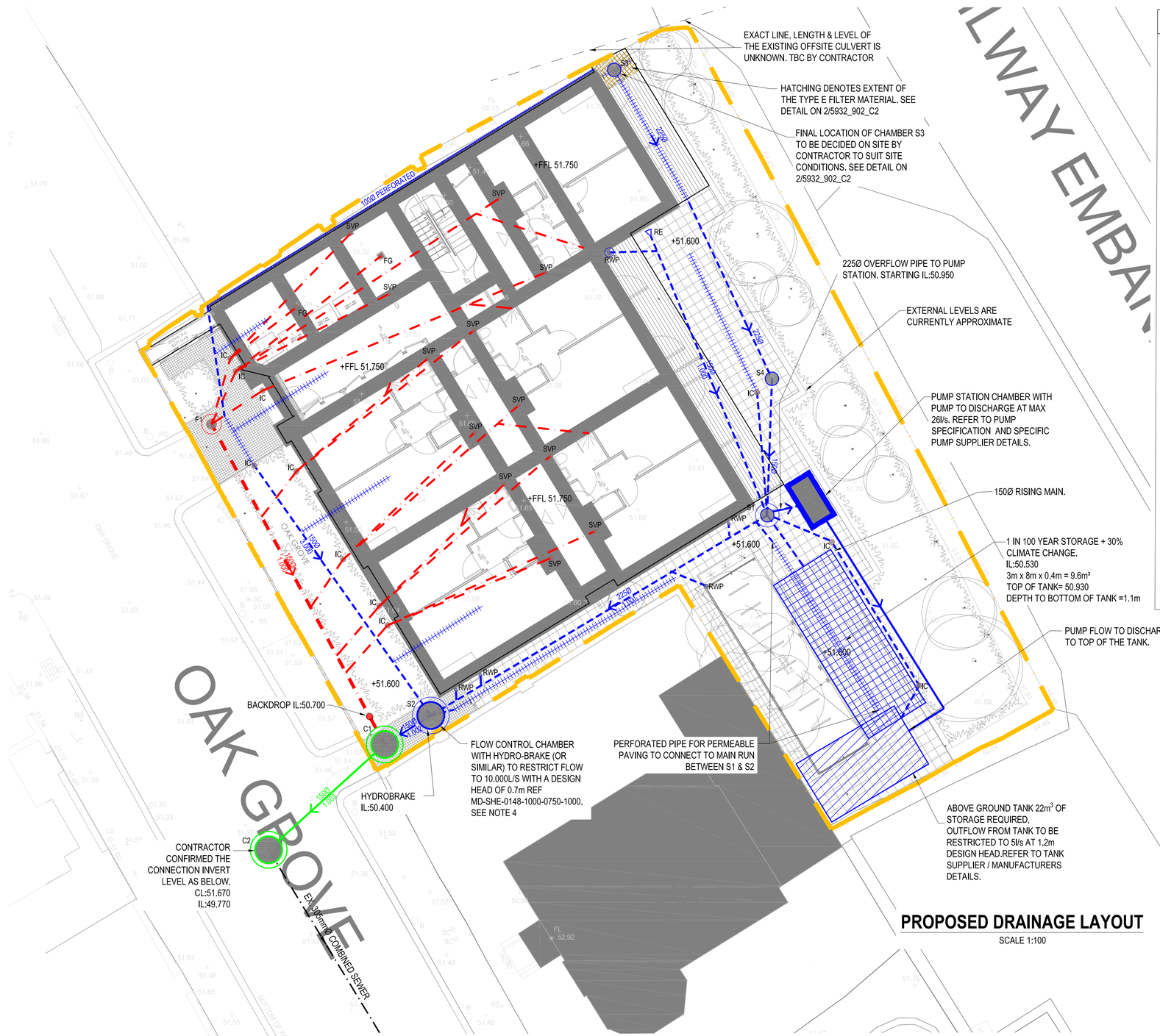
SW	NEW SURFACE WATER SEWER (450Ø POLY MANHOLES, 150Ø PIPES UNO)
FW	NEW FOUL WATER SEWER (450Ø POLY MANHOLES, 150Ø PIPES UNO)
CW	NEW COMBINED DRAINAGE
EX.01	EXISTING COMBINED WATER DRAINAGE
EX.01	EXISTING SURFACE WATER DRAINAGE
	EXISTING DRAINAGE TO BE ABANDONED
	SITE BOUNDARY
G	NEW GULLY
FG	NEW FLOOR GULLY
FG ⁎	NEW FLOOR GULLY (FOR FUTURE SHOWER)
RWP	NEW 100Ø RAINWATER PIPE
RWP	NEW 100Ø RAINWATER PIPE/WATER BUTT
RWP ⁎	NEW 100Ø RAINWATER PIPE WITH BACK INLET ACCESS GULLY
IC	NEW 250Ø INSPECTION CHAMBER
WP	NEW WASTE PIPE
SS	NEW STUB STACK
SVP	NEW SOIL AND VENT PIPE
FS	NEW FLOOR SOCKET
RE	NEW RODDING EYE
ACO	NEW ACO DRAINAGE CHANNEL
	NEW 100Ø PERFORATED PIPE TO PERMEABLE PAVING
AO	NEW ACO DRAIN OUTLET
poly	NEW POLYPROPYLENE MANHOLE
PC	NEW PRECAST CONCRETE MANHOLE
FW/SW = ? l/s	FINAL FLOW RATE TO THE MAIN PUBLIC DRAINAGE SYSTEM
	NEW GEO-CELLULAR STORAGE TANK (REFER TO DETAILS)
	NEW ABOVE GROUND STORAGE TANK (REFER TO DETAILS)
43.20 +	EXISTING LEVELS

MANHOLE SCHEDULE

MH REF	MH TYPE	SIZE Ø	COVER TYPE	COVER LEVEL	INVERT LEVEL	DEPTH
S1	NIC	600Ø	MD	51.600	50.210	1.390
S2	TYPE B	1200Ø	MD	51.600	50.110	1.490
S3	POLY CATCHPIT	600Ø	MD	51.400	50.650	0.750
S4	POLY CATCHPIT	600Ø	MD	51.600	50.550	1.050
F1	UIC	450Ø	MD	51.600	50.900	0.700
C1	TYPE B	1200Ø	MD	51.600	50.270	1.330
C2	TYPE B	1200Ø	HD	51.670	49.770	1.900

CDMC NOTES:

- REFER TO EXISTING DRAWINGS, SURVEY DRAWINGS AND GROUND PENETRATING RADAR RESULTS BEFORE EXCAVATING TO AVOID HITTING ANY LIVE SERVICES.
- TRENCHES FOR SERVICES, DRAINAGE SOME DEPTHS ARE SHOWN IN EXCESS OF 1.2m DEEP. SUITABLE SUPPORT SYSTEMS TO BE PROVIDED TO PREVENT TRENCHES COLLAPSING.
- POSSIBLE MADE GROUND, POTENTIAL CONTAMINANTS INCLUDE HEAVY METALS, PAHS, SULPHATE, ASBESTOS, GROUND GAS.
- UTILITIES MAY NOT BE SHOWN IN EXACT LOCATIONS SHOWN ON SERVICES PLANS. A GROUND PENETRATING RADAR SURVEY SHOULD BE UNDERTAKEN TO IDENTIFY THE SERVICES PRIOR TO CONSTRUCTION WORKS.
- CONSTRUCTING NEW CONNECTIONS TO EXISTING MANHOLES AND NEW MANHOLES, POTENTIAL FOR HAZARDOUS GASES. PERMIT TO ENTER EXISTING MANHOLES SHOULD BE OBTAINED FROM THAMES WATER BEFORE UNDERTAKING THE WORK. RELEVANT P.P.E SHOULD BE WORN AT ALL TIMES.
- ANY CHANGES TO OR CLEANING OF THE EXISTING OFF SITE CULVERT SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY.



PROPOSED DRAINAGE LAYOUT

SCALE 1:100

NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER ENGINEER'S AND ARCHITECT'S DRAWINGS, DETAILS & SPECIFICATIONS.
2. THE DRAINAGE DESIGN IS BASED UPON THE LATEST ARCHITECTS LAYOUT AT THE TIME OF DESIGN. HTA ARCHITECTS DRAWING No, OGC-AL13-200 GROUND FLOOR PLAN, DATED MARCH 2014.
3. REFER TO CLANCY DRAWING NO. 2/5932 - 901 & 902 & 903 FOR DRAINAGE CONSTRUCTION DETAILS.
4. THAMES WATER SECTION 106 APPROVAL GAINED 09/06/15 REFERENCE 50066060.
5. REFER TO THE ARCHITECT FOR SETTING OUT OF ALL BUILDINGS & INTERNAL DOWN PIPES & RWP'S UNO
6. REFER TO SERVICE ENGINEERS DRAWINGS FOR FINAL SETTING OUT OF RWP AND SVP'S (BASED ON GUTTER SYSTEM).
7. REFER TO SERVICE ENGINEERS DRAWINGS FOR ABOVE GROUND PLUMBING ROUTES FROM APPLIANCES TO STUB STACKS ETC.
8. REFER TO LANDSCAPING PROPOSALS FOR EXTERNAL WORKS ARRANGEMENTS.
9. ALL EXISTING DRAINAGE THAT ARE TO BE ABANDONED TO BE 'PLUGGED' IN WITH MASS CONCRETE (150mm MIN).
10. ALL PIPEWORK TO HAVE CLASS S GRANULAR BED AND SURROUND UNO.
11. PIPES FOR ADOPTION: VITRIFIED CLAY TO BSEN 295. (CONNECTION C1-C2)
    PIPES TO PRIVATE AREAS: VITRIFIED CLAY TO BSEN 295 OR PVC-U TO BSEN 1404-1:1998
12. MINIMUM FALLS TO PIPES :-
    100Ø FOUL 1 : 80 MIN FALLS
    100Ø SURFACE WATER 1 : 100 MIN FALLS
    150Ø SURFACE WATER 1 : 200 MIN FALLS (MIN 0.75m/s SELF CLEANSING VELOCITY)
    150Ø FOUL PIPES 1 : 150 MIN FALLS
13. INSPECTION CHAMBERS ON PLAN NOT REFERENCED IN SCHEDULE TO BE 250mm Ø BY HEPWORTH OR SIMILAR.
14. THE INFORMATION INDICATED ON THIS DRAWING IS BASED ON THE SURVEY CARRIED OUT BY 'MURPHY SURVEYS'. DRAWING No. MSL8720_T DATED 06/12/13. ANY DISCREPANCIES SHOULD BE REPORTED IMMEDIATELY PRIOR TO ANY WORKS BEING UNDERTAKEN.
15. ANY EXISTING SERVICES TO BE LOCATED AND CLEARLY MARKED PRIOR TO EXCAVATIONS.
16. ALL LEVELS ARE TO BE CONFIRMED BY THE CONTRACTOR ON SITE PRIOR TO CONSTRUCTION.
17. PROPOSED COVER AND INVERT LEVELS ON MANHOLES ARE SUBJECT TO DESIGN CHANGES DURING DESIGN DEVELOPMENT.
18. CONTRACTOR TO AVOID UNDERMINING ANY EXISTING FOOTPATHS/ BUILDINGS DURING WORKS BY ALLOWING ADEQUATE PROTECTION ADJACENT TO THESE AREAS.
19. MANHOLE COVER TYPES:
    LD : LIGHT DUTY COVER & FRAME
    MD : MEDIUM DUTY COVER AND FRAME (B125 TO BS EN 124 i.e. PEDESTRIAN AREAS)
    HD : HEAVY DUTY COVER AND FRAME (D400 TO BS EN 124 i.e. TRAFFIC AREAS)
20. MANHOLE TYPE LEGEND :
    SIC = WAVIN MANUFACTURED POLYPROPYLENE SHALLOW INSPECTION CHAMBER (250Ø mm SHAFT, 0.6m MAX DEPTHS),
    UIC = WAVIN MANUFACTURED POLYPROPYLENE UNIVERSAL INSPECTION CHAMBER (450Ø mm SHAFT, 1.2m MAX DEPTHS),
    NIC = WAVIN MANUFACTURED POLYPROPYLENE NON-ENTRY INSPECTION CHAMBER (500/600Ø mm SHAFT, 1.2m - 3m DEPTHS),
    PC = PRECAST CONCRETE RING MANHOLE (SEE MANHOLE REF. TYPE),
21. THE PROPOSED FOUL AND SURFACE WATER NETWORKS HAVE NOT BEEN DESIGNED TO MEET WITH SEWERS FOR ADOPTION 7TH EDITION STANDARDS AND ANY SUBSEQUENT ADOPTION REQUIREMENTS IN THE FUTURE COMPLIANCE WITH SECTION 42 OF THE FLOOD AND WATER MANAGEMENT ACT 2010 MAY BE REQUIRED.
22. CATCHPIT CHAMBERS TO HAVE A MINIMUM SUMP DEPTH OF 300mm. THESE CHAMBERS SHOULD BE REGULARLY MAINTAINED / CLEANED (MONTHLY INSPECTION AS A MINIMUM) TO ENSURE NO SILT IS TRANSPORTED INTO THE ATTENUATION TANK. POLYPIPE OR SIMILAR APPROVED CATCHPIT CHAMBERS.

OFF SITE CULVERT REMEDIATION WORKS ASSUMPTIONS AND REQUIREMENTS

IT IS ASSUMED THAT THE CULVERT SERVING THE RAILWAY LINE HAS A CATCHMENT AREA OF APPROXIMATELY 100m X 15m (1500m^2) BASED UPON POTENTIAL FLOW PATHS TO THE CULVERT. THIS CATCHMENT DRAINS VIA LAND DRAINS BENEATH THE RAILWAY PRIOR TO DISCHARGING INTO THE CULVERT. HOWEVER IT HAS BEEN ASSUMED THAT ONLY APPROXIMATELY 1000m^2 IS ACTUALLY CONNECTED TO THE CULVERT DUE TO THE LAND DRAINAGE NATURE OF WATER FLOW PATHS AND THE HEAVY SILTATION OF THE CULVERT (AS SHOWN IN THE CCTV SURVEY RECORD PROVIDED TO US REF: AMCO/LNE/059-101). 1000m2 WAS USED IN THE DRAINAGE DESIGN MODEL.

THE CULVERT IS CURRENTLY HEAVILY SILTED AND SHOULD NOT BE CLEANED OUT OR MODIFIED IN ANYWAY. ITS CONDITION IS AS PER THE ALREADY ISSUED CULVERT REPORT. SHOULD THIS CHANGE WE SHOULD BE IMMEDIATELY NOTIFIED AS THIS COUULD AFFECT FLOW RATES AND THE REQUIRED ATTENUATION VOLUMES.

AS THE CULVERT IS EFFECTIVELY DISCHARGING LAND DRAINAGE; ANY NEW DRAINAGE SYSTEM DESIGNED TO CATER FOR THE CULVERT DISCHARGE (WITHIN THE OAK GROVE SITE BOUNDARY) SHOULD BE REGULARLY MAINTAINED BY THE LANDOWNER AND INSPECTED TO PREVENT SILTATION AND BLOCKAGES. THIS WILL HELP TO ENSURE THAT THE DRAINAGE SYSTEM IS WORKING TO ITS DESIGNED OPTIMUM PERFORMANCE AND PREVENT LOCALISED FLOODING WITHIN THE OAK GROVE SITE BOUNDARY.

PLEASE ALSO REFER TO CLANCY FEE PROPOSAL DATED 15/05/15 FOR FURTHER CLARIFICATION ON THIS ISSUE & DESIGN.

THE SURFACE WATER DISCHARGE RATE HAS BEEN RESTRICTED TO A MAXIMUM OF 10L/S TO ACCOUNT FOR THE RUN OFF FROM THE NEW DEVELOPMENT AND THE RUN OFF FROM THE CULVERT. THIS IS TO BE CONFIRMED BY THAMES WATER AND MAY NOT BE ACCEPTED. IF A LOWER DISCHARGE RATE IS REQUIRED THEN THE ATTENUATION VOLUME WILL HAVE TO BE INCREASED.

SUDS STRATEGY (OAK GROVE DEVELOPMENT ONLY):

- THE SURFACE WATER DRAINAGE DESIGN IS BASED UPON THE SITE CURRENTLY BEING GREENFIELD GIVING A MAX FLOW RATE OF 5l/s.
- THE PROPOSED STORAGE IS THEN CALCULATED ON THE BASIS OF RETAINING A 1 in 100 YEAR RAINFALL EVENT AND AN ALLOWANCE OF 30% INCREASE FOR CLIMATE CHANGE.
- ATTENUATED STORAGE IS CALCULATED ONLY FOR ROOF & BIKE STORE AREAS
- PERMEABLE PAVING AREAS DESIGNED TO DRAIN THEMSELVES INDEPENDENTLY.
- STORAGE VOLUME FOR PAVING CALCULATED BY ASSUMING NO PERMEABLE AREAS CAN DRAIN AWAY UNTIL THE ATTENUATED STORAGE HAS COMPLETELY EMPTIED FOR A 30min WINTER STORM AT 5l/s.

TOTAL SITE AREA = 765m²
EXISTING IMPERMEABLE AREA = 0m²
PROPOSED IMPERMEABLE AREA = 387m²
PROPOSED PERMEABLE PAVING = 140m²
PROPOSED SOFT LANDSCAPE = 238m²

ATTENUATED STORAGE REQUIRED FOR 1 in 100 YEAR AND CLIMATE CHANGE = 9.6m³ (FOR OAK GROVE DEVELOPMENT SITE ONLY)

FINAL CONSTRUCTION ISSUE
DRAWING WITH AS BUILT INFORMATION AS PROVIDED BY CONTRACTOR

Rev	Date	Description	By	Check	App.
FC1	16/11/15	ISSUED AS FINAL CONSTRUCTION	MO	PP	PP

Client	POCKET LIVING LTD
Project	OAK GROVE, CAMDEN
Office	LONDON - 020 3077 0970
Discipline	CIVIL ENG.
Title	DRAINAGE LAYOUT & MANHOLE SCHEDULE

Drawn	JS	Date	SEPTEMBER 2014
Checked	GS	Scale @ A1	1:100
Approved	GS	Status	CONSTRUCTION

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Birmingham 0121 200 7800, Glasgow 0141 222 7720, Liverpool 0151 227 3300, London 020 3077 0970, Manchester 0161 613 6000, Newcastle 0191 221 0702, Norwich 01603 305190, Prestwick 01292 475371, Reading 0118 941 1888

Job number	Drawing number	Revision
2/5932	900	FC1