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DO NOT SCALE THIS DRAWING.

HEALTH AND SAFETY INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING

CONSTRUCTION:
- WORKS UNDER MANCUNIAN WAY ELEVATED CARRIAGEWAY AND IN CLOSE PROXIMITY TO FOUNDATIONS
- WORKS IN PROXIMITY TO LIVE SERVICES
- WORKS INTERFACE WITH THE PUBLIC ON OXFORD ROAD AND STUDENTS USING THE SURROUNDING FACILITIES DURING CONSTRUCTION

MAINTENANCE/CLEANING/OPERATION:
- WORKS IN PROXIMITY TO LIVE SERVICES
- WORKS INTERFACE WITH THE PUBLIC ON OXFORD ROAD AND STUDENTS USING THE SURROUNDING FACILITIES DURING CONSTRUCTION

DECOMMISSIONING/DEMOLITION:
- WORKS IN PROXIMITY TO LIVE SERVICES
- WORKS INTERFACE WITH THE PUBLIC ON OXFORD ROAD AND STUDENTS USING THE SURROUNDING FACILITIES DURING CONSTRUCTION

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. THE DESIGN OF THIS SCHEME HAS BEEN BASED ON THE FOLLOWING DRAWINGS AND INFORMATION:
   - TOPOGRAPHICAL SURVEY DRAWING No. 20A265 RECEIVED MARCH 2020, BY SURVEY OPERATIONS.
   - GPR SURVEY DRAWING REFERENCE S24032-U RECEIVED JULY 2023 BY SURVEY & ENGINEERING PROJECTS.
   - ARCHITECTS PROPOSED GROUND FLOOR PLAN DRAWING No. 1350B-HBA-XX-00-DR-A-200100 RECEIVED 18.03.26, BY HAWKINS BROWN
   - TREE CONSTRAINTS PLAN DRAWING No. TR-01 RECEIVED 04.02.19, BY PLANT-IE
   - LANDSCAPE ARCHITECT PROPOSED GENERAL ARRANGEMENT PLAN DRAWING No. 1350B-PLA-XX-XX-DR-L-000001 RECEIVED 23.04.26, BY PLANT-IE
   - LANDSCAPE ARCHITECT PROPOSED LEVELS & DRAINAGE DRAWING No. 1350B-PLA-XX-XX-DR-L-002001 RECEIVED 23.04.26, BY PLANT-IE
   - CRANE BASE AND BOOM BASE LOCATION AND EXTENTS BASED ON INFORMATION PROVIDED BY KIER CONTRACTORS.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS, DETAILS AND SPECIFICATIONS.
4. ALL ABOVE GROUND RAINWATER AND SANITARY PIPEWORK IS SHOWN INDICATIVELY. REFERENCE SHOULD BE MADE TO MEP DESIGN DRAWINGS FOR ALL ABOVE GROUND DRAINAGE APPARATUS.
5. PROPOSED DRAINAGE HAS BEEN COORDINATED WITH EXISTING UTILITIES AS FAR AS PRACTICABLE WITH THE INFORMATION AVAILABLE. CONTRACTOR TO UNDERTAKE UP-TO-DATE SURVEY TO IDENTIFY EXISTING UTILITIES WHICH HAVE BEEN INSTALLED FOLLOWING THE PREVIOUS GPR SURVEY.
6. PROPOSED DRAINAGE HAS BEEN COORDINATED WITH PROPOSED AND EXISTING FOUNDATIONS AS FAR AS PRACTICABLE. CONTRACTOR TO CONFIRM EXISTING FOUNDATIONS ON SITE.
7. PROPOSED CRANE BASE AND BOOM BASE LOCATION HAS BEEN ASSUMED BASED ON INFORMATION BY KIER CONTRACTORS. KIER TO CONFIRM SETTING OUT INFORMATION AND DIMENSIONS OF CRANE BASE AND BOOM BASE.
8. REFER TO LANDSCAPE, STRUCTURAL AND MEP SPECIFICATIONS FOR ASSOCIATED DETAILS.
9. ALL INTERNAL INSPECTION CHAMBERS GREATER THAN 1.2m DEPTH TO BE FITTED WITH RESTRICTED ACCESS REDUCER SUCH AS POLYPIPE UG514 OR EQUIVALENT APPROVED.
10. TOTAL ATTENUATION VOLUME OF 177.5m³ IS PROPOSED (BELOW GROUND TANK AND GRANULAR STORAGE BENEATH PERMEABLE PAVING). THIS IS BASED ON A MAXIMUM DISCHARGE RATE OF 11.0 L/S AS AGREED IN PRINCIPLE WITH UNITED UTILITIES AND THE LLFA, OFFERING A BETTERMENT WHEN COMPARED WITH EXISTING BROWNFIELD DISCHARGE RATES.
11. PRIOR TO THE COMMENCEMENT OF WORK THE LOCATION, SIZE AND DEPTH OF ALL EXISTING DRAINS/SEWERS AND SERVICES SHALL BE ESTABLISHED BY THE CONTRACTOR. ANY DISCREPANCIES FROM THE INFORMATION INDICATED ON THESE DRAWINGS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OR ENGINEER.
12. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT AND DIVERSION WORKS AS NECESSARY, TO ALL EXISTING SERVICES TO THE SATISFACTION OF THE PUBLIC UTILITIES.
13. ANY DRAINAGE TO BE ABANDONED SHALL BE DONE IN ACCORDANCE WITH MCHW CC 500 - DRAINAGE DOCUMENT.
14. DRAINAGE TO BE ABANDONED MUST BE PROVEN TO BE NOT IN USE BEFORE BEING ABANDONED. IF FOUND TO BE LIVE, CONTRACTOR WILL NEED TO PROVE TYPE (SURFACE OR FOUL WATER) AND CONNECT TO APPROPRIATE SYSTEM.
15. REFER TO DRAWING 1350B-BHE-XX-XX-DR-C-003800 FOR MANHOLE SCHEDULES.
16. ALLOWANCE TO BE MADE FOR REMEDIATION OF RETAINED DRAINAGE E.G. JETTING.
17. LANDSCAPE ARCHITECTS TO SET OUT ALL SLOT DRAINS AND THRESHOLD DRAINS.
18. SETTING OUT OF ALL DROP POINTS INTO BELOW GROUND DRAINAGE NETWORK TO BE PROVIDED BY ARCHITECT.
19. SHORT LENGTHS OF LONG RADIUS BENDS TO BE USED ON OUTLET OF ACO SUMP UNITS TO ACHIEVE ALIGNMENT SHOWN.

Rev	Description	Date	Iss'd	Rev'd	App'd
P05	STAGE 4 UPDATES	27.04.2026	TB	NC	PA
P04	STAGE 4 ISSUE	25.03.2026	NC	NC	PA
P03	STAGE 4 INTERIM ISSUE	25.02.2026	TB	NC	PA
P02	ISSUED FOR COORDINATION	16.01.2026	NC	PA	MW
P01	ISSUED FOR INFORMATION	05.09.2025	NC	PA	MW

RIBA STAGE 4

Project Stage

S4 - FOR REVIEW AND AUTHORISATION

Status of Drawing

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Client: MANCHESTER METROPOLITAN UNIVERSITY
Architect: HAWKINS BROWN
Project: **MMU LIBRARY REDESIGN**
Drg Title: PROPOSED SURFACE WATER DRAINAGE PLAN

Job No.	Scale@A0
065290	1:100

Drawing Prepared By	Checked By	Approved By
T.BOWERS	N. CULLEN	P. ANWYL

Drawing No.: 1350B-BHE-XX-XX-DR-C-003101 Revision: P05

WASTOP INLINE CHECK VALVE OR SIMILAR APPROVED TO INSTALLED UPSTREAM OF CONNECTION TO EXISTING COMBINED WATER PRIVATE DRAINAGE NETWORK.

S13 FLOW CONTROL MANHOLE
COVER LEVEL: 37.000m AOD
INVERT LEVEL: 34.800m AOD
DESIGN HEAD: 2.15m
LIMITED DISCHARGE RATE = 11.0 L/S

PROPRIETARY TREATMENT DEVICE
HYDROINTERNATIONAL DOWNSTREAM DEFENDER OR EQUIVALENT APPROVED.
COVER LEVEL: 37.150m AOD
INCOMING / OUTGOING PIPE INVERT LEVEL: 34.850m AOD
UNIT SUMP INVERT LEVEL: 33.850m AOD

EX MH 15
CL: 37.00
IL: 34.74
1400x1000

S13 - FLOW CONTROL
CL= 37.000
IL = 34.800
1500Ø

S12 - GRIT SEPARATOR
CL= 37.014
IL = 34.850
1500Ø

S09
CL= 37.140
IL = 34.975
1350Ø

S08
CL= 36.970
IL = 35.075
1350Ø

S07
CL= 37.200
IL = 35.300
1200Ø

S06
CL= 37.150
IL = 35.000
1200Ø

S05
CL= 37.150
IL = 35.150
1200Ø

S04
CL= 37.150
IL = 35.300
1200Ø

S03
CL= 37.150
IL = 35.425
1200Ø

S02
CL= 37.120
IL = 35.700
1350Ø

S10
CL= 37.140
IL = 34.925
1200Ø

S11
CL= 37.21
IL = 36.10
600Ø

M150D/DS UNIVERSAL SUMP SEE NOTE 19.

M100D/DS UNIVERSAL SUMP SEE NOTE 19.

M200D/DS UNIVERSAL SUMP SEE NOTE 19.

ACO MULTIDRAIN MD M150D 0.0

ACO MULTIDRAIN MD M100D 10.0

ACO MULTIDRAIN BRICKSLOT TWIN M100D 10.0

ACO MULTIDRAIN BRICKSLOT SINGLE M150D 0.0

ACO MULTIDRAIN BRICKSLOT TWIN M150D 0.0

ACO MULTIDRAIN BRICKSLOT TWIN M200D 10.0

1000 PERFORATED PIPE

1500 PERFORATED PIPE @ 1:150

PERMEABLE PAVING 1
COVER LEVEL: 37.100m AOD
BASE LEVEL: 36.710m AOD
AREA: 122.70m²
STORAGE DEPTH: 0.3m
POROSITY: 30%
STORAGE VOLUME: 11.4m³

PERMEABLE PAVING 2
COVER LEVEL: 37.080m AOD
BASE LEVEL: 36.760m AOD
AREA: 60.40m²
STORAGE DEPTH: 0.225m
POROSITY: 30%
STORAGE VOLUME: 4.31m³

PERMEABLE PAVING 3
COVER LEVEL: 37.140m AOD
BASE LEVEL: 36.820m AOD
AREA: 73.90m2
STORAGE DEPTH: 0.225m
POROSITY: 30%
STORAGE VOLUME: 5.30m³

PERMEABLE PAVING 4
COVER LEVEL: 37.140m AOD
BASE LEVEL: 36.820m AOD
AREA: 36.30m²
STORAGE DEPTH: 0.225m
POROSITY: 30%
STORAGE VOLUME: 2.62m³

PROPOSED SURFACE WATER DRAINAGE TO DISCHARGE TO EXISTING COMBINED WATER PRIVATE DRAINAGE MANHOLE

ROOT PROTECTION BARRIER REQUIRED TO PROTECT BELOW GROUND GEOCELLULAR ATTENUATION TANK, AS PER MANUFACTURER GUIDANCE.

GEOCELLULAR ATTENUATION TANK ACCESS CHAMBER

GEOCELLULAR ATTENUATION TANK VENTILATION

GEOCELLULAR ATTENUATION TANK
COVER LEVEL: 37.140m AOD
BASE OF TANK: 34.900m AOD
LENGTH: 13.5m
WIDTH: 10.0m
AREA: 135.00m²
DEPTH: 1.2m
POROSITY: 0.95
STORAGE VOLUME: 153.90m³

REFER TO DRAWING 1350B-BHE-XX-XX-DR-C-003702 FOR TYPICAL DOWNPIPE DETAIL PASSING OVER PILE CAP / RAFT FOUNDATION.

PIPE TO BE GROUTED IN LINE WITH MCHW CC 500 IF FOUND. THIS MAY HAVE BEEN PREVIOUSLY REMOVED.

PR RWP
IL = 36.600m

PR RWP
IL = 36.450m

PR RWP
IL = 36.700m

PR RWP
IL = 36.600m

E: 384204.282
N: 397172.503

E: 384216.201
N: 397178.841

E: 384208.976
N: 397163.674

E: 384220.896
N: 397170.012

300Ø @ 1:125
300Ø @ 1:116
300Ø @ 1:175
300Ø @ 1:181
300Ø @ 1:182
300Ø @ 1:240
300Ø @ 1:108
150Ø @ 1:12
150Ø @ 1:14
150Ø @ 1:10
150Ø @ 1:49
150Ø @ 1:9
150Ø @ 1:84
300Ø @ 1:100
300Ø @ 1:96
150Ø @ 1:97
150Ø @ 1:18
225Ø @ 1:143
300Ø @ 1:131
150Ø @ 1:121
150Ø @ 1:21
150Ø @ 1:7
300Ø @ 1:115
150Ø @ 1:10
225Ø @ 1:34
225Ø @ 1:188
150Ø @ 1:4
150Ø @ 1:20
150Ø @ 1:6
225Ø @ 1:18
150Ø @ 1:12
225Ø @ 1:135

LEGEND

- RED LINE BOUNDARY
- EXISTING TREE ROOT PROTECTION ZONE
- EXISTING TREE CANOPY
- MANCUNIAN WAY ELEVATED CARRIAGEWAY
- ELEVATED CARRIAGEWAY NO DIG ZONE (INDICATIVE)
- ASSUMED PROPOSED CRANE AND BOOM BASE
- EXISTING PRIVATE SURFACE WATER DRAIN
- EXISTING PRIVATE COMBINED WATER DRAIN
- EXISTING LINEAR CHANNEL DRAIN
- EXISTING DRAINAGE TO BE ABANDONED
- EXISTING GULLY TO BE ABANDONED
- EXISTING GULLY TO BE RETAINED
- PROPOSED PRIVATE SURFACE WATER DRAIN
- PROPOSED RAINWATER PIPE AND BELOW GROUND DRAIN
- PROPOSED PERMEABLE PAVING
- PROPOSED BELOW GROUND GEOCELLULAR ATTENUATION TANK
- PROPOSED PERFORATED PIPE
- PROPOSED CHANNEL DRAIN:
  - MULTIDRAIN MD
  - BRICKSLOT
- PROPOSED GULLY
- PROPOSED FOUNDATIONS (REFER TO STRUCTURAL ENGINEERS DRAWINGS)

2 1 0 2 4 6 8
1 : 100
SCALE BEFORE REDUCTION