ALLOWANCE SHOULD BE MADE FOR FOUL WATER STORAGE TANK AND PUMP SET CONSTRUCTED OFF B3 SLAB - TANK DEVELOPED TO PROVIDE 24 HOUR FOUL STORAGE FROM SPA AND FACILITIES AT B2 AND B1 LEVELS.

STORAGE DESIGN DEVELOPED BASED ON THE BRITISH WATER WAYS CODE OF PRACTICE - FLOWS AND LOADS 4 - SIZING CRITERIA, TREATMENT, CAPACITY FOR SEWAGE TREATMENT SYSTEMS, FOR THE FOLLOWING OCCUPANCY CRITERIA DEFINED BY THE CLIENT BY EMAIL FEBRUARY 2023 :-

40% AVERAGE OCCUPANCY OF 672 PEOPLE OVER THE FOLLOWING OPERATIONAL HOURS :-
24 HOURS GYM
16 HOURS POOL
12 HOURS SPA

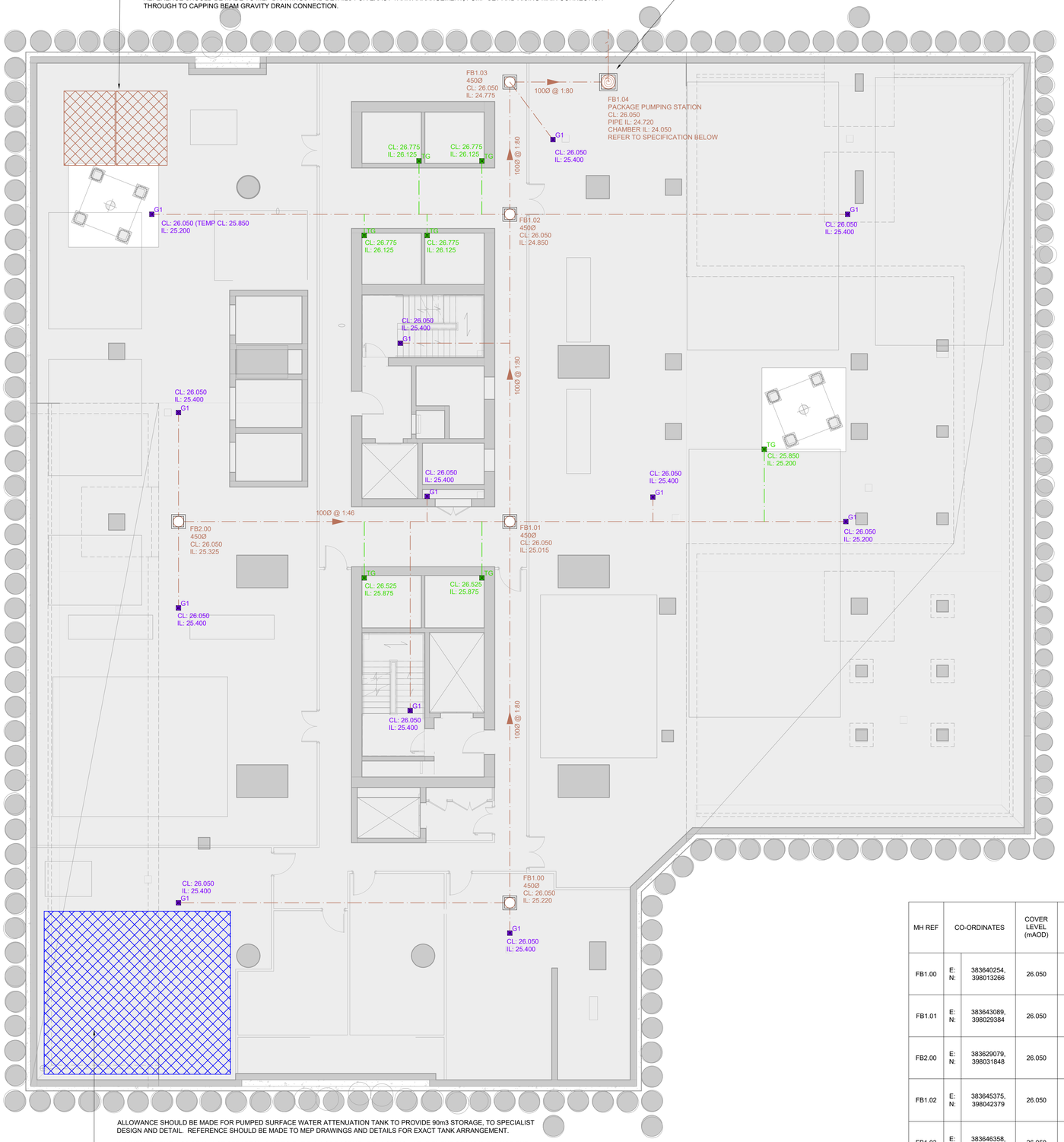
BASED ON THE ABOVE TANK STORAGE VOLUME 20m3 TO SPECIALIST DESIGN AND DETAIL. IF OCCUPANCY OR OPERATIONAL HOURS DIFFER THE ABOVE VOLUME MAY NEED TO INCREASE AND THE MAIN CONTRACTOR SHOULD AGREE ACCEPTANCE OF THE OCCUPANCY.

REFERENCE SHOULD BE MADE TO MEP DRAWINGS AND DETAILS FOR EXACT TANK ARRANGEMENT, PUMP SET AND RISING MAIN CONNECTION THROUGH TO CAPPING BEAM GRAVITY DRAIN CONNECTION.

MEP DESIGNER TO CONFIRM POWER REQUIREMENTS, LOCATION, CONDUIT REQUIRMENTS AND RISING MAIN LOCATION / PATH TO PACKAGE PUMP STATION INSTALLATION.

PACKAGED PUMP SET DEVELOPED FOR PERMANENT CONDITION, MAIN CONTRACTOR TO PROVIDE TEMPORARY SUMP PUMP AND RISING MAIN TO MANAGE SURFACE WATER DURING CONSTRUCTION.

THE MAIN CONTRACTOR TO COMPLETE ANY APPLICATIONS TO THE STATUTORY AUTHORITIES FOR ANY TEMPORARY APPROVALS FOR DISCHARGE TO THE PUBLIC SEWER SYSTEM.



ALLOWANCE SHOULD BE MADE FOR PUMPED SURFACE WATER ATTENUATION TANK TO PROVIDE 90m3 STORAGE, TO SPECIALIST DESIGN AND DETAIL. REFERENCE SHOULD BE MADE TO MEP DRAWINGS AND DETAILS FOR EXACT TANK ARRANGEMENT.

IN LINE WITH THE WSP DRAINAGE STRATEGY, DUE TO THE RISK OF BASEMENT FLOODING IN THE EVENT OF PUMP FAILURE THE MEP SPECIALIST TO MAKE PROVISION'S TO MANAGE RISK FOR BOTH FOUL AND SURFACE WATER TANK'S. IN ADDITION TO THE MEP SPECIALIST DESIGN FOUL AND SURFACE WATER ABOVE GROUND SYSTEM THE FOLLOWING REQURIEMENTS SHOULD BE INCLUDED TO BE COMPLIANT WITH THE DRAINAGE STRATEGY :-

1. PUMP SET / TANK CONNECTION TO CENTRAL BMS
2. STANDBY PUMP WITHIN PUMP SET IN EVENT OF FAILURE SUFFICIENT TO ATTAIN DESIGN FLOWS
3. PUMP SET CONNECTION TO STAND BY POWER SUPPLY IN THE EVENT OF MAINS INTERUPTION
4. MAINTENANCE STRATEGY THAT ENSURES NO INTERUPTION OF PUMP OPERATION TO SEWER SYSTEM

PRINCIPALS OF LEVEL B3 BASEMENT DRAINAGE DESIGN & OPERATION
THE BELOW GROUND DRAINAGE INDICATED IS BASED UPON NORMAL OPERATION i.e. GENERAL CLEANING, WASHDOWN AND SPILLAGES ON THE BASEMENT FLOOR. HIGH CAPACITY FLOWS ARE NOT PERMITTED AS THESE WILL EXCEED THE PUMP CAPACITY AND RESULT IN FLOODING OF THE BASEMENT.

NO ALLOWANCE HAS BEEN MADE WITHIN THE DESIGN FOR THE BASEMENT FLOODING OR DRAIN-DOWN OF THE SPRINKLER TANK. WATER ASSOCIATED WITH EMPTYING OR TESTING OF THE SPRINKLER TANK IS TO BE MANAGED SEPARATELY AND IS NOT TO DISCHARGE INTO THE BASEMENT DRAINAGE.

THE BUILDING MANAGERS ARE TO MANAGE AND OPERATE THE SPACES TO ENSURE THAT THE BASEMENT PUMP IS NOT OVERLOADED.

FOUL WATER PUMPING STATION
FOUL WATER PUMPING STATION TO SPECIALIST SUPPLIERS DESIGN AND DETAIL. TO SUIT THE BELOW SPECIFICATION AND PERFORMANCE REQUIREMENTS. RISING MAIN LENGTH TO BE CONFIRMED ON SITE. CONNECTION OF RISING MAIN TO ABOVE GROUND DRAINAGE TO BE DETAILED BY BUILDING SERVICES ENGINEER.

FOUL WATER PUMPING STATION SPECIFICATION
SINGLE SEWAGE PUMPING STATION
- CHAMBER SIZE: 610x2000mm HDPE (584 LITRES)
- COVER: ECOGRID ALUMINIUM TRIPLE SEAL RECESS MANHOLE COVER - 600x600x60mm - TSL-60-60-60
- RISING MAIN: 63mm MDPE CONNECTOR TO CONNECT TO DISCHARGE PIPEWORK.
- INLET: 1 NUMBER 100/110mm INLET SEAL
- PUMP: FEKA VS1000 AUTO FOUL PUMP WITH ON PUMP AND INTEGRAL FLOAT OR EQUALLY APPROVED.
- INTERNAL: 2" PIPEWORK AND FITTINGS INCLUDING BACKWATER VALVE
- ALARM: TO BE INCLUDED - ELECTRICAL SUPPLY BY BUILDING SERVICES ENGINEER. ARCHITECT TO SPECIFY LOCATION
- POWER: POWER SUPPLY TO BE PROVIDED BY BUILDING SERVICES ENGINEER
- VENT PIPE: TO BE PROVIDED - ARCHITECT TO SPECIFY LOCATION

NOTE:
1. THERE MUST BE A MINIMUM OF 450MM BELOW THE BOTTOM OF THE INLET PIPE TO THE BASE OF THE CHAMBER TO ALLOW FOR THE PUMP TO OPERATE.
2. INLETS TO BE CUT ON SITE AND SEALED.
3. ALLOW FOR MAINTENANCE ACCESS OF PUMP STATION. REFER TO PUMP STATION MAINTENANCE REQUIREMENTS.

LEGEND	
REF	DESCRIPTION
	PROPOSED FOUL WATER DRAINAGE (100Ø @ 1:80 U.N.O.)
	INDICATIVE FOUL WATER RISING MAIN
G1	PERMANENT GULLY - ACO TOTAL FLOW GULLY, CAST IRON, WITH VERTICAL OUTLET AND FOUL AIR TRAP. ARCH TO CONFIRM GULLY GRATING FINISH
TG	TEMPORARY GULLY - REFER TO NOTES
	FOUL WATER PUMPING STATION REFER TO SPECIFICATION.

MH REF	CO-ORDINATES		COVER LEVEL (mAOD)	INVERT LEVEL (mAOD)	DEPTH TO INVERT (m)	DEPTH TO SOFFIT (m)	PIPES IN		PIPE OUT (mm)	INTERNAL SIZE (mm)	MANHOLE TYPE	COVER		COMMENTS
							SIZE (mm)	INVERT LEVEL mAOD)				SIZE	RATING	
FB1.00	E: N:	383640254, 398013266	26.050	25.470	0.580	0.480	100 Ø 100 Ø	25.470 25.470	100 Ø	450 Ø	PPIC	450x450	FACTA AAA	ALUMINIUM RECESSED TRIPLE SEALED ECOGRID TSL-60-45-45
FB1.01	E: N:	383643089, 398029384	26.050	25.265	0.785	0.685	100 Ø 100 Ø 100 Ø	25.265 25.265 25.265	100 Ø	450 Ø	PPIC	450x450	FACTA AAA	ALUMINIUM RECESSED TRIPLE SEALED ECOGRID TSL-60-45-45
FB2.00	E: N:	383629079, 398031848	26.050	25.450	0.600	0.500	100 Ø 100 Ø	25.450 25.450	100 Ø	450 Ø	PPIC	450x450	FACTA AAA	ALUMINIUM RECESSED TRIPLE SEALED ECOGRID TSL-60-45-45
FB1.02	E: N:	383645375, 398042379	26.050	25.100	0.950	0.850	100 Ø 100 Ø	33.935 33.935	100 Ø	450 Ø	PPIC	450x450	FACTA AAA	ALUMINIUM RECESSED TRIPLE SEALED ECOGRID TSL-60-45-45
FB1.03	E: N:	383646358, 398047969	26.050	25.025	1.025	0.925	100 Ø 100 Ø	33.804 33.804	100 Ø	450 Ø	PPIC	450x450	FACTA AAA	ALUMINIUM RECESSED TRIPLE SEALED ECOGRID TSL-60-45-45
FB1.04	E: N:	383650519, 398047237	26.050	24.050	2.000	N/A	100 Ø	24.970	RISING MAIN	REFER TO FOUL WATER PUMPING STATION SPECIFICATION FOR DETAILS				

NOTES:
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RENAISSANCE, ARCHITECTS, LANDSCAPE ARCHITECTS AND BUILDING SERVICES ENGINEERS DRAWINGS.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE BELOW GROUND DRAINAGE SPECIFICATION SP-C-00050 AND DETAILS SHOWN ON DRAWING SERIES C-03100 & C-03101 TO C-03102.
3. THE FINAL CONNECTIONS TO THE PUBLIC SEWER ARE SUBJECT TO UNITED UTILITIES APPROVAL AND ARE TO BE IN ACCORDANCE WITH THEIR AGREED DETAILS.
4. FOR ALL ABOVE GROUND DRAINAGE AND ASSOCIATED PUMPS REFER TO BUILDING SERVICES AND ARCHITECT'S DRAWINGS.
5. ALL BELOW GROUND DRAINAGE WORKS TO BE IN ACCORDANCE WITH RELEVANT BUILDING REGULATIONS AND SEWER SECTOR GUIDANCE APPENDIX C- DESIGN AND CONSTRUCTION GUIDANCE. IF DISCREPANCIES ARE NOTED BETWEEN SSG AND DRAWINGS THESE SHOULD BE BROUGHT TO THE ATTENTION OF RENAISSANCE FOR REVIEW.
6. THE CONTRACTOR IS TO UNDERTAKE A FULL CCTV SURVEY AT COMPLETION OF THE PROJECT TO DEMONSTRATE THAT THE DRAINAGE IS CLEAN. ANY DEFECTS ARE TO BE CORRECTED BY THE CONTRACTOR PRIOR TO HANDOVER OF THE SYSTEM TO THE CLIENT.
7. THE CONTRACTOR IS TO KEEP A RECORD SET OF THE AS INSTALLED DRAINAGE ON SITE AND PROVIDE THIS TO RENAISSANCE UPON COMPLETION OF THE WORKS TO ALLOW FOR PRODUCTION OF A 'FINAL CONSTRUCTION' ISSUE DRAWING.
8. DURING THE WORKS ALTERATIONS TO THE DRAINAGE LAYOUT ARE TO BE MARKED UP BY THE CONTRACTOR AND AGREED WITH RENAISSANCE IN WRITING.
9. THE CHAMBER SIZE OF PCC MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BENDS.
10. MANHOLE COVERS ARE TO BE IN ACCORDANCE WITH BS EN 124 FOR THE RATING INDICATED IN THE MANHOLE SCHEDULE. THE CONTRACTOR IS TO SUBMIT DETAILS FOR THE PROPOSED MANHOLE COVERS TO THE ENGINEER AND LANDSCAPE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION.
11. ALL INTERNAL COVERS TO BE RECESSED AND TRIPLE SEALED
12. COVER SLABS MUST CARRY THE BSI KITEMARK. WHERE THE CLEAR OPENING OF THE KITEMARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOAD BEARING REDUCING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN TO REQUIRED SIZE.
13. ALL SEWERS TO BE BSI KITEMARK (CERTIFIED TO WIS 4-35-01)
14. ALL CONCRETE PIPES TO BE TO ES EN 1916 CLASS 120 (54kN/m).
15. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENTS OF THE WATER INDUSTRY SPECIFICATION 4-08092 (TABLE A2).
16. IF PLASTIC PIPES ARE TO BE USED THEN THE FOLLOWING MUST APPLY:
    A. BSI KITEMARK (CERTIFIED TO BS EN 13476-1 AND WIS 4-35-01)
    B. PIPES LESS THAN OR EQUAL TO 500mm DIA
    C. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENTS OF THE WATER INDUSTRY SPECIFICATION 4-08092 (TABLE A2)
19. THE MINIMUM CRUSHING STRENGTH FOR CLAY PIPES SHOULD BE AS FOLLOWS: 100mm DIA. 40kN/m, 150mm DIA. 40kN/m, 225mm DIA. 45kN/m AND 300mm DIA. 72kN/m.
20. THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE - (CLASS 120 TO EN 1916/BS5911-1 2002). PLASTIC PIPES SHOULD CONFORM TO WIS 4-35-01 AND BS EN13476.
21. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVIDING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
22. SEWER PIPES TO BE LAID IN MAXIMUM 3 METER LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER PIPES, AND THIS IS AGREED BY THE CONTRACTOR WITH THE PIPE MANUFACTURER.
23. FLOW CONTROL IS INDICATIVE AND SUBJECT TO STAGE 4 TECHNICAL DESIGN.
24. ALL CHANNEL LOCATIONS, MANHOLE AND DRAINAGE LOCATIONS SUBJECT TO RECEIPT OF STAGE 4 STACK LOCATIONS AND CONFIRMATION OF FLOW RATE / DISCHARGE UNITS BY BUILDING SERVICES ENGINEER.
25. ALL COVER LEVELS ASSUMED. SCHEME DEVELOPED WITHOUT INPUT FROM LANDSCAPE ARCHITECT.
26. ALL FOUL AND SURFACE WATER BELOW GROUND SYSTEMS ARE TO BE VENTED WITHIN THE ABOVE GROUND DRAINAGE TO THE BUILDING SERVICES ENGINEERS DETAILS.

NOTE :-
ALL TEMP SUMPS NOTED IN GREEN ARE INCLUDED TO FACILITATE RAIN WATER MANAGEMENT ON SITE. THESE DRAINS ARE TO BE CAPPED / PLUGGED IN THE PERMANENT CONDITION.
IT IS ASSUMED A TEMPORARY PUMP WILL BE UTILISED TO REMOVE WATER FROM THE COLLECTION SUMP.

THIS DRAWING HAS BEEN PREPARED WITH REFERENCE TO NOVO INTEGRATION LTD DRAWING P1785-NOV-XX-B3-DR-P-5301_P02

Rev:	Description:	Date:	By:	Chkd:
P02	STAGE 4	14.05.24	JB	AI
P01	STAGE 3	15.02.23	HW	AI

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Project:
ST MICHAELS, MANCHESTER

Drawing Title:
B3 LEVEL BELOW GROUND DRAINAGE PLAN

Status:
STAGE 4

Size:	Date:	Drawn by:	Designed by:	Checked by:
A1	FEB 23	HW	HW	AI

Scale:	Project No:
1:100	2203-05

Project – Originator – Volume – Level – Type – Role – Number: STM-REN-XX-B3-DR-C-01106

Revision: P02

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