

FOUL WATER PUMP STATION 1
CL:32.80
IL:31.12
PEAK FLOW 3.2 L/S (DU20.80)k:0.7
VENT/ CABLES/ RISING MAIN LOCATION TBC BY M&E ENGINEER

24 HOUR STORAGE BELOW LOWEST INCOMING CONNECTION 9.2 m³
3000Ø CHAMBER
1.4m BELOW LOWEST CONNECTION
BASE: 29.72

ATTENUATION TANK
AREA 86 m²
TANK HEIGHT 1.60m
VOLUME 130.7 m³ BASED ON 95% VOID
BASE 30.84
TOP 32.44
CL:32.88
LOCATION OF VENT PIPE TBC BY M&E ENGINEER

PUMP CHAMBER MAX DISCHARGE 23.4l/s Up to 1 in 100 YEAR +40%cc EVENT. SUGGEST 2 PUMPS, SECOND AS A BACK UP IF PUMP 1 FAILS. SPECIALIST TO CONFIRM. IL:30.842

LOCATION OF CABLES/ VENT PIPE AND RISING MAIN FROM PUMP CHAMBER BY M&E ENGINEER
RISING MAIN TO HIGH LEVEL TO BE DISCHARGED OFF SITE BY GRAVITY SEE CUR DRAWING 92501

FOUL WATER PUMP STATION 2
SUMP WITH PUMP EITHER GRP PACKAGE PUMP STATION CL:30.80
IL:30.24
BASE 29.74 TBC BY SUPPLIER
VENT/ CABLES/ RISING MAIN LOCATION TBC BY M&E ENGINEER

IT HAS BEEN ASSUMED THAT SPRINKLER TANK WOULD HAVE SEPARATE PUMP SYSTEM (25L/MIN PER VALVE AS PER EMAIL 18.03.22 SUPPLY OTHERS) SUBJECT FOR COORDINATION ON NEXT STAGE

BASEMENT DRAINAGE KEY

- APPROXIMATE EXTENT OF WORKS FOR BLOCK B
- PROPOSED FOUL DRAINAGE (BELOW GROUND)
- RISING MAIN - FOUL DRAINAGE ROUTE (TBC BY OTHERS)
- PROPOSED SURFACE WATER DRAINAGE
- RISING MAIN - SURFACE WATER DRAINAGE ROUTE (TBC BY OTHERS)
- PROPOSED SW PUMP CHAMBER
- PROPOSED FW PUMP CHAMBER
- PROPOSED UNDERGROUND ATTENUATION STORAGE
- FG PROPOSED FOUL WATER GULLY
- SH PROPOSED SHOWER GULLY
- DP PROPOSED FOUL WATER DOWNPIPE
- RWP PROPOSED RAINWATER PIPE

FOUL PUMPING STATION 1 & STORAGE
IT WILL BE NECESSARY TO PROVIDE 24 HOUR STORAGE PROVISION FOR ALL DRAINAGE REQUIRING DISCHARGE VIA A PUMED OUTFALL AT BASEMENT LEVEL.

IT IS THEREFORE PROPOSED THAT ALL DRAINAGE AT GROUND FLOOR LEVEL AND ABOVE, WILL BE SUSPENDED BELOW GROUND FLOOR LEVEL AND DISCHARGED DIRECTLY TO THE PUBLIC SEWER BY GRAVITY TO LIMIT PUMPED STORAGE VOLUMES.

PUMPED VOLUMES WILL BE BASED ON OCCUPANCY NUMBERS USING THE BASEMENT FACILITIES - OCCUPANCY NUMBERS 184 CYCLIST

PUMP STATION SIZE REQUIRES TO BE APPROVED BY BUILDING CONTROL

FOUL WATER PUMP STATION 1 24 H STORAGE VOLUME CALCULATION

	Max number of cyclist	User based on British Flow and Loads part 4	Total usage	
WC 10l	184	10	1840	
showers	184	40	7360	
		Total	9200	l/d
		Total	9.2	m3

THE ASSUMPTIONS ABOVE HAVE BEEN USED AS CONFIRMED AS CONFIRMED INFORMATION HAS NOT BEEN PROVIDED TO CURTINS. THE CONTRACTOR/ CLIENT AND M&E DESIGNER SHOULD BE SATISFY THEMSELVES THAT THE ASSUMPTIONS ARE SUFFICIENTLY ROBUST

FOUL PUMPING STATION 2 & STORAGE
FOUL WATER PUMP STATION TAKE FLOWS ONLY FROM GULLIES. IT HAS BEEN ASSUMED THAT SPRINKLER TANK HAS SEPARATE PUMP FOR SPRINKLER WASHDOWN PROVIDED BY SPLINKER TANK SUPPLIER. IF WASHDOWN FROM SPRINKLER TANK HAS TO BE CONNECTED TO FOUL WATER PUMP 2, PUMP CHAMBER SHOULD BE UPSIZED

- THE DESIGN RESPONSIBILITIES FOR THE FOUL AND SURFACE WATER PUMP SYSTEMS ARE AS STATED BELOW:-
- PUMPING STATION DESIGN AND SPECIFICATION - **MANUFACTURER/SUPPLIER.**
 - PUMPING STATION CIVIL WORKS - **MAIN CONTRACTOR.**
 - SITE LAYOUT AND PUMPING STATION LOCATION - **ARCHITECT/CLIENT**
 - PUMPING STATION INSTALLATION - **MANUFACTURER/SUPPLIER.**
 - RISING MAIN, BREAK CHAMBER AND OUTFALL DESIGN AND SPECIFICATION - **MANUFACTURER/SUPPLIER.**
 - RISING MAIN ROUTE - **ARCHITECT/M&E ENGINEER.**
 - RISING MAIN, BREAK CHAMBER AND INSTALLATION - **MAIN CONTRACTOR.**
 - FABRICATION AND CONSTRUCTION DRAWINGS - **MANUFACTURE/SUPPLIER.**
 - REVIEW OF LAYOUT AND LEVELS TO COMPLY WITH DRAINAGE DESIGN - **MAIN CONTRACTOR'S DESIGNER (CURTINS).**
 - REQUIREMENTS FOR APPROVAL OF PUMP STATIONS - **MANUFACTURE/SUPPLIER.**
 - ACCEPTANCE AND APPROVAL FROM CONSTRUCTION - **MAIN CONTRACTOR.**
 - APPROVAL OF TESTING REGIME - **MAIN CONTRACTOR.**

DESIGN PHILOSOPHY
SURFACE WATER DESIGN
THE DESIGN PROVIDES CAPACITY UP TO THE 100 YEAR 40% CLIMATE CHANGE EVENT.
SW FLOW RATE: 23.4L/S (BASED ON 50% OF EXISTING AS AGREED PRIOR) STORAGE REQUIREMENT: 131M³
OUTFALL IL TBC - TO BE AGREED WITH UU (S106 APPLICATION)
LEVELS INDICATE THAT PUMPING WILL BE REQUIRED.
INFILTRATION IS NOT CONSIDERED APPROPRIATE FOR THIS SCHEME.

FOUL WATER DESIGN
ALL FOUL WATER DRAINAGE FROM UPPER FLOORS TO BE SUSPENDED
FOUL WATER PUMP STATION IN BASEMENT SERVES ONLY BASEMENT FACILITIES

PROPOSED 2 PUMP STATIONS:
FOUL WATER PUMP STATION 1
FW PEAK FLOW RATE: 3.2L/S
24h FOUL WATER STORAGE REQUIRED 9.2 m³
ROUT ABOVE GROUND BY M&E ENGINEER

FOUL WATER PUMP STATION 2
GULLIES IN PLANT ROOM
TBC WASHDOWN FROM SPRINKLER TANK

DRAWING BASED ON:

- ARCHITECT BASEMENT 63068-HOD-ZZ-B1-DR-A-2001-P02-GA Plan - Level B1
- FOUNDATION 63068-CUR-00-FN-DR-S-20090 22.03.22
- POPUUP, RWPS AND ROOF AREA BASED ON:
- 63068-HL-ZZ-B1-DCD RWS-P1 Layout1-220329-YV

GENERAL NOTES:

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
- ALL ADAPTABLE DRAINAGE WORKS INCLUDING WORKS TO EXISTING PUBLIC SEWERS TO BE UNDERTAKEN IN ACCORDANCE WITH "SEWERS FOR ADOPTION 7th EDITION" AND "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION" AND CONSTRUCTED TO THE RELEVANT STATUTORY UNDERTAKERS DETAILS.
- ALL PRIVATE DRAINAGE WORKS TO BE IN ACCORDANCE WITH CURTINS DRAINAGE SPECIFICATION, "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION", BS EN 752 2017 'DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS' AND THE BUILDING REGULATIONS APPROVED 'DOCUMENT H'.
- DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
- OUTFALL CONNECTION(S) SUBJECT TO AGREEMENT WITH THE APPROVING AUTHORITY.
- ALL DIMENSIONS ARE IN METRES AND LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS OTHERWISE NOTED.
- COVER LEVELS, GULLY POSITIONS, AND BUILDINGS LOCATION ARE APPROXIMATE AND SHALL BE CONFIRMED BY ARCHITECT/ LANDSCAPE ARCHITECT. CONTRACTOR TO ALLOW FOR ADJUSTMENT TO SUIT AGREED POSITIONS AND FINISHED LEVELS, AND CONFIRM ALL COVER LEVELS ON SITE.
- ALL INTERNAL DRAINAGE CONNECTIONS ARE PROVIDED TO THE PENETRATION POSITIONS SHOWN ON ARCHITECT AND M&E DRAWINGS. REFER TO DIMENSIONED LOCATIONS AND DIAMETERS ON ARCHITECT'S GROUND FLOOR SETTING-OUT PLANS.
- ALL UNDERGROUND FOUL DRAINAGE SHOULD BE SUITABLY VENTED AT OR NEAR TO THE HEAD OF RUNS.
- ALL ACCESS FITTINGS, STACKS, RWPS AND GULLIES TO BE RODDABLE. ALL TO HAVE LOW LEVEL RODDING ACCESS PLATES UNLESS AN ALTERNATIVE MEANS OF ACCESS IS AGREED. ACCESS POINT TO BE ABOVE ANY GROUND FLOOR CONNECTED APPLIANCE SPILL LEVEL.
- LARGE ACCESS FITTING REQUIRED ABOVE GROUND WHERE GREATER THAN 12M UP TO 22M TO A JUNCTION. SMALL ACCESS FITTING REQUIRED UP TO 12M TO A JUNCTION.
- ALL GULLY AND CHANNEL DRAIN OUTLETS AND TERMINATION POINTS TO BE TRAPPED AND RODDABLE. INTERNAL GULLIES AND CHANNEL DRAINS TO BE SPECIFIED BY OTHERS.
- WHERE NO WC'S ARE CONNECTED UPSTREAM, UNDERSLAB FW DRAINAGE TO BE LAID AT 1:40 MIN. AFTER THE CONNECTION OF AT LEAST 1NO WC, A MIN. FALL OF 1:80 APPLIES.
- ALL CONNECTIONS FROM POP-UPS TO BE LAID AT A CONSTANT GRADIENT TO JUNCTION/ INSPECTION CHAMBER/ MANHOLE UNLESS NOTED OTHERWISE. ANY ISSUES RELATING TO CLASHES WITH FOUNDATIONS ARE TO BE FORWARDED TO THE ENGINEER, ALLOWING SUFFICIENT TIME FOR AN ALTERNATIVE SOLUTION TO BE PROPOSED.
- INVERT LEVELS AT MANHOLES/ INSPECTION CHAMBERS TO BE USED TO SET OUT PIPEWORK. PIPE GRADIENTS ARE SHOWN INDICATIVELY ONLY.
- ALL PIPE DIAMETERS GIVEN ARE NOMINAL INTERNAL PIPE DIAMETERS.
- ALL SEWERS, UNLESS AGREED OTHERWISE STATED, SHALL BE:
 - 100mm to 300mm DIA TO BE VITRIFIED CLAY.
- AS AN ALTERNATIVE THE CONTRACTOR MAY USE AN APPROVED UNPLASTICISED POLYVINYL CHLORIDE (PVCU) WITH APPROVAL FROM THE ENGINEER.
- SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.
- THE FIRST PIPE OUT OF MANHOLES TO BE AS SHORT AS PRACTICABLE SO AS TO PROVIDE A FLEXIBLE JOINT AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF THE CONCRETE SURROUND AND CONNECTED TO A LENGTH OF ROCKER PIPE.
- ALL NEW CONNECTIONS INTO EXISTING MANHOLES (OR INTO

GENERAL NOTES:

- EXISTING SEWERS) TO BE 'SOFFITS LEVEL' UNLESS OTHERWISE NOTED.
- ALL ADOPTABLE DRAINAGE PIPES WILL REQUIRE A MINIMUM OF 1200mm COVER. IN ACCORDANCE WITH SEWERAGE UNDERTAKERS REQUIREMENTS. WHERE THIS IS NOT ACHIEVED, IT WILL BE NECESSARY TO AGREE THE BED AND SURROUND DETAIL.
 - ALL PRIVATE DRAINAGE PIPES WITH A COVER OF LESS THAN 600mm IN NON-TRAFFICKED AREAS AND LESS THAN 1200mm IN TRAFFICKED AREAS TO BE BEDDED AND SURROUNDED IN CONCRETE (CLASS Z), COMPRESSIBLE MATERIAL SHALL BE PROVIDED AT EVERY PIPE JOINT. WHERE COVER EXCEEDS THIS DEPTH, PIPES ARE TYPICALLY BEDDED AND SURROUNDED IN CLASS S. REFER TO PIPE EMBEDMENT DETAILS DRAWING FOR SPECIFIC TYPES.
 - WHERE DRAINAGE PIPES ARE LESS THAN 300mm BELOW THE UNDERSIDE OF THE GROUND FLOOR SLAB, CONCRETE ENCASEMENT IS REQUIRED (CLASS Z). COMPRESSIBLE JOINTS ARE TO BE PROVIDED AT EVERY PIPE JOINT WITHIN THE CONCRETE.
 - WHERE PIPES ARE MORE THAN 300mm BELOW THE UNDERSIDE OF THE SLAB, CLASS S BEDDING IS ACCEPTABLE.
 - SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED TO PROVE THAT SUCH PRECAUTIONS ARE NOT REQUIRED.
 - WHERE FOUL SEWERS RUN ABOVE SURFACE SEWERS, CONCRETE PROTECTION MAY BE REQUIRED AT CROSSOVERS TO PREVENT ANY POTENTIAL CONTAMINATION.
 - ALL CONNECTIONS PASSING THROUGH BASES OR EDGE BEAMS TO BE IN SEALED SLEEVES. ALTERNATIVELY CONNECTIONS MAY BE CAST-IN WITH FLEXIBLE JOINTS NOT GREATER THAN 150MM FROM FACE OF CONCRETE.
 - THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION MAY NEED TO BE INCREASED TO ACCOMMODATE THE CONNECTIONS AND BENDS.
 - ALL MANHOLE COVERS IN BLOCK/SLAB AND EXTERNAL PAVING AREAS TO HAVE RECESSED COVERS OF THE APPROPRIATE GRADE TO ACCEPT ARCHITECT'S PAVING PROPOSAL.
 - ALL INTERNAL COVERS TO HAVE MECHANICALLY JOINTED CORNERS AND DOUBLE SEALED WITH RECESSED TRAY TO ALLOW FOR FINISHES.
 - UNLESS NOTED OTHERWISE IN THE MANHOLE SCHEDULE, ALL MANHOLE, GULLY AND CHANNEL COVERS (IRONWORK) SHOULD BE THE FOLLOWING SPECIFICATION:
 - B125 LOAD CLASS IN PEDESTRIAN AREAS
 - D400 LOAD CLASS IN VEHICULAR AREAS.
 - ALL PROPRIETARY PRODUCTS TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS, INSTRUCTIONS AND RECOMMENDATIONS.
 - THE DESIGN IS BASED ON A GRAVITY RAINWATER SYSTEM.

P04	STAGE 3 ISSUE	04.04.22	MW	MW
P03	UPDATE TO B & K COMMENTS	06/12/21	CS	CG
P02	STAGE 2 ISSUE	17/09/21	CD	AN
P01	ISSUED FOR COMMENTS	17/08/21	CG	CG
Rev:	Description:	Date:	By:	Chkd:



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Status:

STAGE 3

Project:

ST MICHAELS - PHASE 1

Orig Title:

DRAINAGE LAYOUT
(BASEMENT)

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	15/08/21	CG	CG	CG
Scale: 1:50				
Project No:	Originator:	Volume:	Level:	Type:
				Role:
				Category / Number:
				Rev:

63068 - CUR - XX - B1 - DR - C - 5200 - P04