- DO NOT SCALE -

Proposed Surface Water and Foul Water Connections to be made within site at NWL Combined manhole indicated. Direct connection to Northumbrian Water combined sewer to be agreed under a Section 106 organised by the contractor. Existing manhole to be surveyed to confirm cover level, invert level and outlet pipe size and condition prior to any construction works.
Existing NWL 4701 CL = 17.060
Existing IL = N/A (To be investigated)
(Allow for Section 185 to rebuild combined 150Ø NWL combined sewer into site if required due to levels).
New CL 17.060
New IL 12.900

Ex NWL MH 3704
CL N/A
IL 3.010 Depth

Ex NWL MH 3705
CL 15.930
IL 12.166

Existing 300Ø Backdrop
RE IL 13.530
IL 12.530

Ex NWL MH 3709
CL 15.830
IL 12.270

Ex NWL MH 4801
CL 16.070
IL 12.240

Ex NWL MH 4601
CL 15.720
IL 13.630

Ex NWL MH 5601
CL 15.770
IL 14.160

Ex 300Ø Cmb. NWL Sewer
Ex 150Ø Cmb. NWL Sewer
Ex 225Ø Cmb. NWL Sewer
BELASIS AVENUE
COWPEN LANE

Permeable Paving w/ perforated pipe (typ.)
100Ø PP
Attenuation Tank (See *Note)
Low Flow Channel / Flow through Units
Vortex Flow control @ 3.5 l/s
600Ø SW @ 1:98.4
525Ø SW @ 1:201
150Ø SW @ 1:17.5
150Ø FW @ 1:100
525Ø SW @ 1:406.2
375Ø SW @ 1:30.3
525Ø SW @ 1:450
225Ø SW @ 1:46.3
225Ø SW @ 1:97.4
450Ø SW @ 1:300
150Ø FW @ 1:63
450Ø SW @ 1:305.8
150Ø SW @ 1:67.6
New MH C1
CL 16.000
IL 12.875
Type = Conc.
Lid = D400
Dia = 1200
Aco MultiDrain MD with M150D 20.0 Ch. (To be set 1 block width off face of building)
Aco MultiDrain MD with M100D 00.0 Ch.
Aco MultiDrain MD with M150D 20.0 Ch.
Non-return valve on SW Inlet
Type 2 Tank by others (P7)
Routing of 'Tank 2 outlet into Ancillary Building' and 'Ancillary Building outlet to F18' to be determined onsite.
Note: CAT2 drainage arrangement to be confirmed/agreed with ESD prior to construction.
Gully to be connected into MH S9 and located to face of building. Vented heelsure cover to draw in air to break siphon. Ventilated free area of cover to suit Siphonic designer requirements. Number of gullies to suit required free area to be confirmed by Siphonic designer.
200Ø outlet pipe to be laid at min. 1:15 gradient.
200Ø Siphonic downpipe @ 90.0 l/s by Fullflow
Gully to be located within service trench and connected into nearby FW MH. Non-return valve to be located on inlet to MH. (FG*)
Gully to be connected into MH S3 and located to face of building. Vented heelsure cover to draw in air to break siphon. Ventilated free area of cover to suit Siphonic designer requirements. Number of gullies to suit required free area to be confirmed by Siphonic designer.
375Ø outlet pipe to be laid at min. 1:100 gradient.
200Ø/375Ø Siphonic downpipe @ 95.0 l/s by Fullflow (siphonic broken part way up stack due to terrace connections).
RWP (to connect into siphonic above GF level)
Swale to drain footpath run off (typ.)
Kitchen pop ups indicative and allowed for pricing only. Architect to confirm requirement.
Any requirements over and above typical foul and surface waste water drainage required to serve the laboratories are to be confirmed by the Architect/M&E.
R&D Building FFL 16.300
Existing Project Meridian
Hauraton RecyfixPro 300 (010) w/ D400 lid
Aco MultiDrain MD with M150D 20.0 Ch.

Note: Contractor to allow for all attenuation tank backfill, surround and foundation.

All Internal floor gullies to be trapped, to be specified by Architect.

Note: New Surface and Foul water connections are to be carried out under a Section 106 with Northumbrian Water, contractor to organise.

Note: All level access doors to be provided with threshold linear drains. Linear drains to thresholds to connect into nearby SW sewers.

Note: Positions of RWPs and soil penetrations are indicative only. Setting out positions TBC by Architect / M&E engineer.

Note: Linear type and drain size is based on 75mm/hr rainfall intensity and is for pricing purposes only. Final design and optimisation of linear drainage systems to be undertaken by contractors chosen manufacturer and approved by engineer.

It is assumed that Grease Traps are built into the kitchen appliances and units. Grease trap requirements subject to number of expected meals per day and method of dosing to be confirmed by Kitchen manufacturer/client.

Flow Control Details - (S7)
Crown Water Vortex Flow Control - Surface/Storm Drainage System
1Nr 81mm Type QR5 Vortex Flow Control (Horizontal Discharge)
Technical Criteria: Design / Duty Point Flow = 3.5 l/s
Head = 1.420m
Flush-Flo™ Point Flow = 2.640 l/s Head = 0.215m
Kick-Flo® Point Flow = 2.150 l/s Head = 0.525m

*Note: Attenuation Tank
555m³ Net storage volume required based on 1 in 100 year storm + 45% climate change and 3.5 l/s discharge rate.
Tank Depth = 1.090m / Tank Base = 14.000
Tank Dimensions = See Plan
1 in 30 Water Level = 14.480
1 in 100 + CC Water Level = 15.084
Vent pipe & access points TBC by Manufacturer.
Contractor to arrange for tank construction drawings to be issued to BGP for comment.

Notes

1. All works to be carried out in accordance with:
   - 1.1 Design and Construction Guidance (DCG) and Sewerage Sector Guidance (SSG) for all sewers proposed to be offered for adoption. (note - the SSG replaces Sewers for Adoption (SfA) for all new developments)
   - 1.2 BS EN 752 - 'Drain and Sewer Systems Outside Buildings'
   - 1.3 Current applicable Building Regulations
   - 1.4 BGP Specifications
   - 1.5 Manufacturer installation guidance and requirements
2. All levels shown are in metres and are relative to ordnance datum (m AOD).
3. Connection to Northumbrian Water sewers are only to be carried out under an S106 agreement by NWL approved term contractors unless agreed otherwise between both parties. (organised by main contractor)
4. Invert levels of all existing chambers and connection points are to be confirmed and engineer advised prior to commencement of any Drainage Works.
5. Where proposed sewers connect into existing sewers, the existing sewers must to be checked for line, level and condition preferably by a CCTV survey
6. Concrete bed and surround is required to all gully leads and to all pipes in highways/hardstanding where cover to pipe <1200mm
7. All pipes to be either extra strength V.C. to BS 65 or PVC certified to WIS 4-35-01 and BS/EN13476 'UPONOR ULTRARIB' or concrete pipes Class 120 to BS/EN 1916/BS5911-1 2002.
8. All RWP & slab penetration locations are indicative and accurate positions should be taken from the Architects drawings. All slab penetrations to be roddable above ground level via access pipe
9. Existing sewer positions are indicative and are not to be used in conjunction with design. Contractor to confirm location.
10. All existing drainage to be cleaned and jetted as part of the contract.
11. All Gully connections to be 100Ø & Surface water sewers between manholes to be 150Ø unless noted otherwise.
12. All FW drains between manholes to be 150Ø UNO unless noted otherwise.
13. All FW sewers from floor penetration below ground to first manholes to be 100Ø UNO.
14. Contractor is responsible for positioning MHs so they do not compromise line or level of kerbing or other delineation at the juncture of two surface materials.
15. Cover levels shown are indicative and may vary on site. The contractor should adjust levels to suit site conditions
16. Other services are not shown on this drawing,however their presence must be anticipated. The contractor is to confirm prior to commencing any works, the location and depth of all services that may affect the works the manufacturers requirements and recommendations.
17. Underground attenuation is to be provided which has a min. capacity of 555m³. Attenuation shall be designed by specialist contractor to provide the net volume of attenuation required and comply with recommendations by Ciria with regard to access for maintenance and strength. The strength of the tank should comply with Ciria document C680" Structural design of Modular Geocell drainage tanks" and be suitable for landscape maintenance vehicle loading.

Legend

- Propsed SW Sewer
- Proposed FW Sewer
- Proposed Perforated Pipe
- Proposed Combined Sewer
- Proposed Type 2 Drainage (HDPE) 150Ø between MHs (Size TBC by M&E)
- Existing NWL Combined Sewer
- Site Boundary
- Linear Drain inc. Outlet Unit
- Foul Outlet / Slab Penetration — PU
- Highway Gully — G
- Yard Gully — YG
- Internal Foul Gully — FG
- Filter Drain (100Ø laid nom. fall) — FD
- Swale Outlet — S.O
- Backdrop Manhole — BD
- Pipe beneath ground beam
- Pipe over ground beam

Issued for Construction: See	JJH	C09	SR	26.01.2024
Issued for Construction: See	JJH	C08	SR	22.01.2024
Issued for Construction: See	JJH	C07	SR	05.01.2024
Issued for Construction: See	JJH	C06	SR	16.08.2023
Issued for Construction: See	JJH	C05	SR	16.06.2023
Issued for Construction - Ancillary B. added	JJH	C04	SR	09.06.2023
Issued for Construction	JJH	C03	SR	10.03.2023
Issued for Construction	JJH	C02	SR	22.02.2023
Issued for Construction	JJH	C01	SR	09.02.2023
Issued for Stage 4 Information	JJH	P06	SR	22.12.2022
Issued for Stage 4 - GB's Rationalised	JJH	P05	SR	20.12.2022
Issued for Stage 4 Information: G's added	JJH	P04	SR	25.11.2022
Issued for Stage 4 Information: BD's added	JJH	P03	SR	10.11.2022
Issued for Stage 4 Information	JJH	P02	SR	09.11.2022
Preliminary Issue	JJH	P01	SR	18.08.2022

AMENDMENT	BY	REV	CHK	DATE

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Client	Willmott Dixon
Project	FUJIFILM, Project Newton, R&D Building
BGP Project No.	212269
Drawing Title	Drainage Plan

Drawn	Date	Checked	Date	Size	Scale	Rev.
JJH	Aug '22	SR	Aug '22	A1	1:300	C09

Location	Originator	Volume	Level	Form	Role	Unique No.
FUJIL	BGP	01	ZZ	DR	C	01130

File Reference
FUJIL-BGP-01-ZZ-DR-C-01130

S.H.E.
Do not excavate until all underground services have been identified and marked out. Refer to service providers drawings and to the utilities survey drawings. Unknown underground services may exist. Check for services by carrying out a scan with a cable avoidance tool.

In instances where this drawing completes or partly completes a contract, Billinghurst George & Partners will consider that it's product has been validated, unless in a period not exceeding 90 working days, the client advises to the contrary.