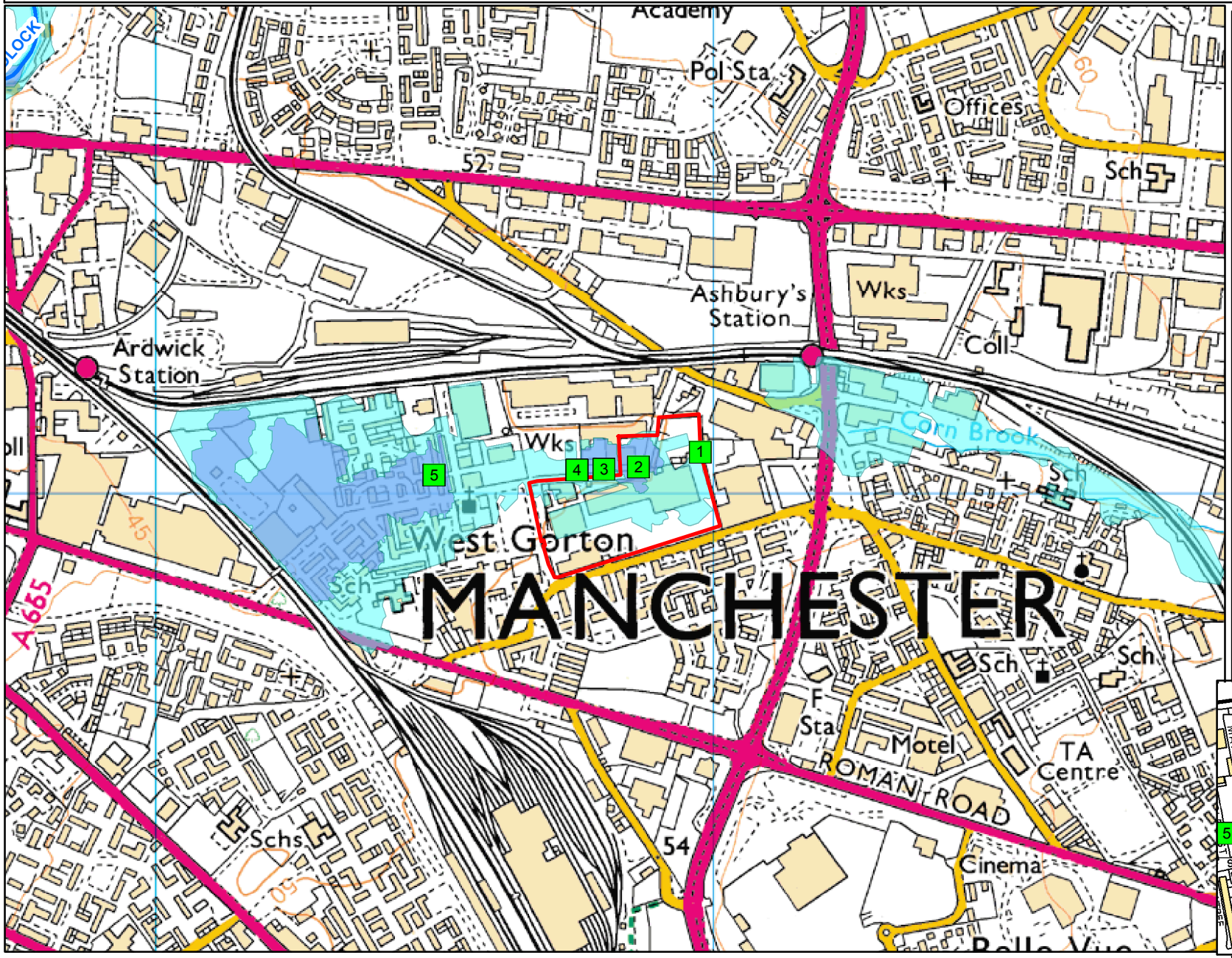
# APPENDIX 5

# ENVIRONMENT AGENCY FLOOD MAP AND FLOOD DATA

# Basic map centred on Wenlock Way, West Gorton, Manchester. Created on 28th March 2013 [Ref. PRRWAR7297]



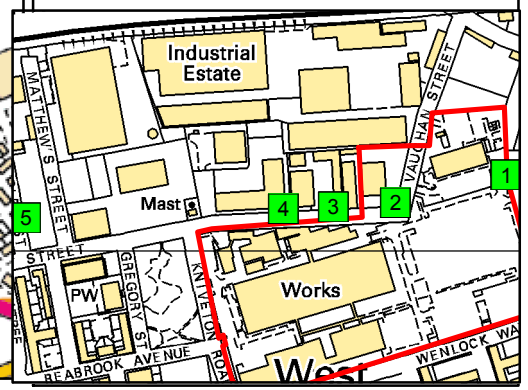

Environment Agency

Scale 1:10,000

N

## Legend

- Model_Measurements
- Site Location
- Main River
- Flood Zone 3
- Flood Zone 2

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# APPENDIX 6

# SURFACE WATER RUNOFF CALCULATIONS

| | | | | | Corn Brook 2009 (Undefended) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Map Reference | Model Node Reference | Easting | Northing | Data | 50 % AEP (1 in 2 year) | 20 % AEP (1 in 5 year) | 10 % AEP (1 in 10 year) | 4 % AEP (1 in 25 year) | 2 % AEP (1 in 50 year) | 1.33 % AEP (1 in 75 year) | 1 % AEP (1 in 100 year) | 1 % AEP (1 in 100 year) + Climate Change* | 0.5 % AEP (1 in 200 year) | 0.1 % AEP (1 in 1000 year) |
| 1 | ea013_Model_CORN02_00059 | 386978 | 397074 | Modelled Water Level (m aod) | 47.62 | 47.71 | 47.8 | 48.09 | 49.03 | 49.72 | 50.03 | 50.67 | 50.73 | 51.68 |
| | | | | Modelled Flow (cumecs) | 2.72 | 3.38 | 3.96 | 4.88 | 5.96 | 6.88 | 6.97 | 8.13 | 7.88 | 11.39 |
| 2 | ea013_Model_CORN02_00058 | 386868 | 397047 | Modelled Water Level (m aod) | 47.13 | 47.26 | 47.39 | 47.89 | 48.75 | 49.36 | 49.69 | 50.35 | 50.43 | 51.14 |
| | | | | Modelled Flow (cumecs) | 3.06 | 3.95 | 4.83 | 6.49 | 7.77 | 8.04 | 8.09 | 8.48 | 8.55 | 11.32 |
| 3 | ea013_Model_CORN02_00055 | 386806 | 397043 | Modelled Water Level (m aod) | 46.97 | 47.11 | 47.24 | 47.78 | 48.5 | 49.04 | 49.38 | 50.02 | 50.11 | 50.52 |
| | | | | Modelled Flow (cumecs) | 3.05 | 3.95 | 4.83 | 6.46 | 7.77 | 8.35 | 8.75 | 9.67 | 9.82 | 10.34 |
| 4 | ea013_Model_CORN02_00051 | 386757 | 397041 | Modelled Water Level (m aod) | 46.6 | 46.73 | 46.87 | 47.44 | 47.97 | 48.26 | 48.48 | 49.02 | 49.09 | 49.54 |
| | | | | Modelled Flow (cumecs) | 3.08 | 3.99 | 4.9 | 6.5 | 7.82 | 8.4 | 8.79 | 9.72 | 9.86 | 10.46 |
| 5 | ea013_Model_CORN02_00049 | 386501 | 397032 | Modelled Water Level (m aod) | 44.44 | 44.75 | 45.24 | 46.42 | 46.6 | 46.66 | 46.69 | 46.8 | 46.82 | 47.17 |
| | | | | Modelled Flow (cumecs) | 3.11 | 4.02 | 4.86 | 6.12 | 6.33 | 6.5 | 6.55 | 6.51 | 6.51 | 6.18 |

Model data taken from Corn Brook Study 2009

Notes:

AEP - Annual Exceedence Probability

m aod - metres above ordnance datum

cumecs - cubic metres per second

*Climate Change Scenario - 20% increase in flow

| Integra Consulting | | Job No. | Date |
|---|---|---|---|
| Calculations | Telephone: 0161 237 3400 | Sheet | By |

Job Title SUDS 3

FLOW CALCULATIONS:

TOTAL SITE AREA = 3.1 Ha

HOWEVER, MUCH OF THE SITE REMAINS UNCHANGED / MODIFIED SLIGHTLY AND THUS IT IS PROPOSED TO MAINTAIN EXISTING DRAINAGE TO THESE AREAS AS PER EXISTING EQUILIBRIUM

REFER TO THE ATTACHED PLANS:

- EXISTING CAR PARK REMAINS EXACTLY AS EXISTING (APPROX 1 Ha)
- EXISTING LARGE BUILDING - MODIFICATION / REFURBISHMENT WORKS ONLY TO THIS BUILDING. I.E. BUILDING IS SAME FOOTPRINT & THUS IT IS PROPOSED TO MAINTAIN EXISTING BELOW GROUND DRAINAGE TO THIS.
- EXISTING ACCESS PATHS AROUND BUILDING - REMAINS AS EXISTING FOOTPRINT, ALTHOUGH LEVELS INCREASE & PATHS ARE TO BE RESURFACED. PROPOSALS ARE TO MAINTAIN EXISTING BELOW GROUND DRAINAGE TO THESE AREAS.
- OUTBUILDINGS TO NORTH OF MAIN BUILDING - THESE ARE TO BE DEMOLISHED & REPLACED WITH NEW BUILDINGS & EXTERNAL HARDSTANDING AREAS. THUS PROPOSAL IS TO RESTRICT RUNOFF RATES TO 50% EXISTING RUNOFF RATES:

TOTAL AREA = 4900 m²;

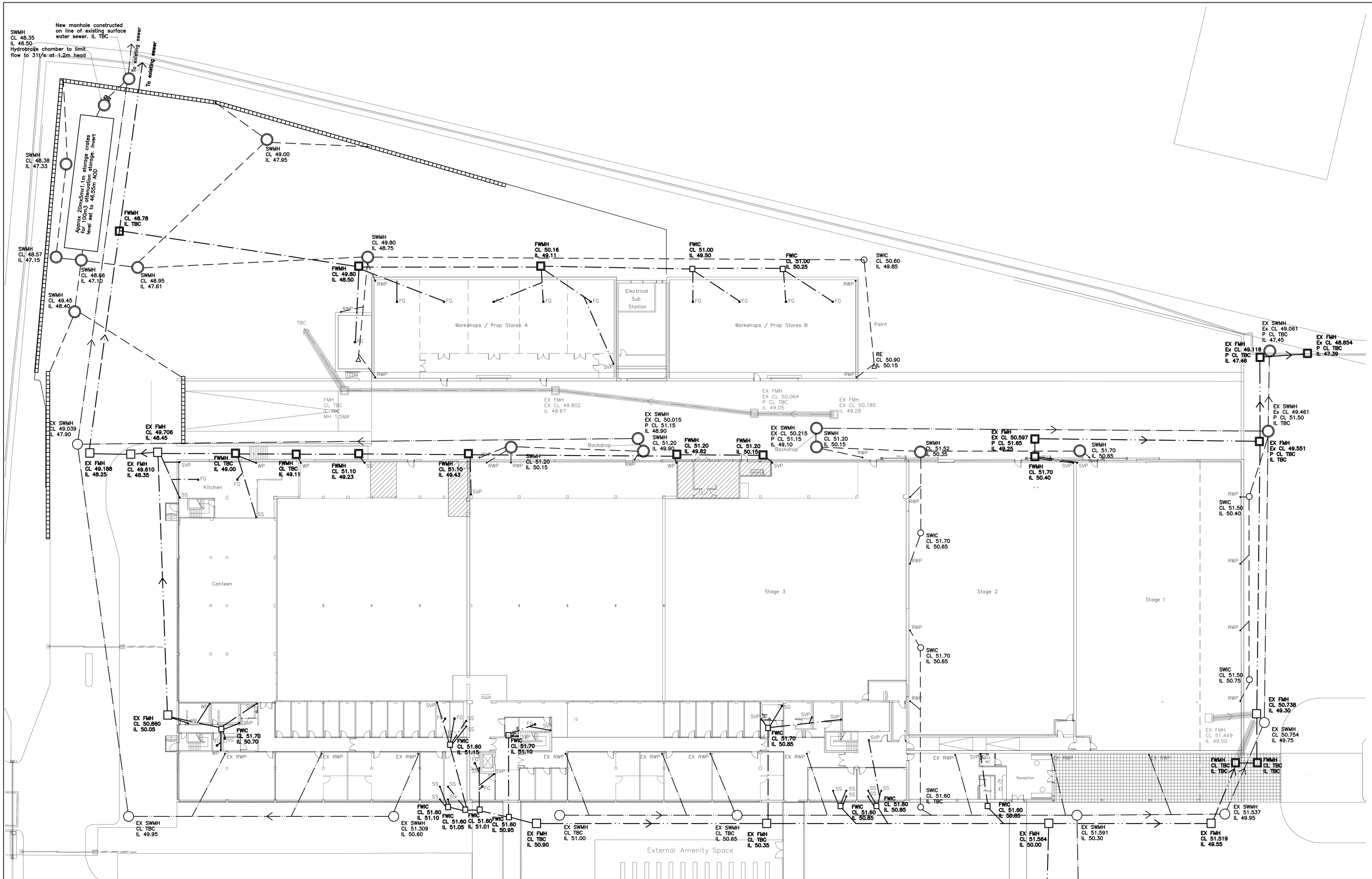
- BASED ON 50mm/hr = 68.11 l/s

∴ 50% = 34.06 l/s PROPOSED RESTRICTED DISCHARGE RATE TO SERVE 4900m² SITE AREA

- REMAINDER OF SITE (26100m²) TO REMAIN AS EXISTING DRAINAGE SITUATION - UNATTENUATED.

# APPENDIX 7

# PROPOSED DRAINAGE LAYOUT




## Notes.

1. All dimensions are in millimetres unless noted otherwise.
2. All levels are in metres unless noted otherwise.
3. This drawing is to be read in conjunction with all relevant Architects and Service Engineers drawings.
4. All drainage pipes to be plastic PVC
5. All road gullies to have Grade D400 gratings to B.S.E.N. 124 with 450ø x900 deep Pre-Cast concrete pots.
6. All Manhole covers to be Grade B125 in footpaths/ soft landscaping or D400 in trafficked areas to B.S.E.N. 124.
7. Invert levels quoted are exit inverts.
8. Pipes with cover of less than 900mm to be encased in concrete bedding class S under road/paved areas.
9. PVC pipes generally bedded on Class F single sized 14mm stone and backfilled with selected fill < 40mm in size.

   Surface water attenuation volumes are based on a 1 in 100 Year event plus an allowance for climate change and an allowable discharge of 31/s. Attenuation requirement and associated allowable discharge rate to be be confirmed by the local authority.
11. Drawing to have LA/EA/UU approval prior to construction.
12. Drainage channels to be ACO, Gatic or similar approved. Design/spec/installation inaccordance with manufacturers recommendations.
13. 225mm dia inspection chambers to be laid at a maximum depth of 600mm below ground level.
14. 450mm dia inspection chambers to be laid in areas exceeding 1200mm below ground level.
15. Foul water to be connected to main network via DN100 pipes at min 1:40 uno.
16. All connection joints to remain flexible.
17. Foundations to be taken below invert level of drainage where drainage is within 1m of the foundation.
18. All drainage is to comply with the requirements of BS8301 & building regulations part H
19. All bedding requirements / installation details to be to manufacturers instructions.
20. Installation of manholes, road gullies, pipes, channels etc to be as per the manufacturers details.
21. Manholes to typically be 1.5dia circular precast concrete
22. All new main FW drainage to be 150dia.
23. All new main SW drainage to be 225dia.
24. Storage crates to be 'Pluvial cube' or similar approved.

## Key

- SWMH – New / raised Surface Water Manhole
- FMH – New / raised Foul Water Manhole
- EX SWMH – Existing Surface Water Manhole
- EX FMH – Existing Foul Water Manhole
- SWIC – New Surface Water Inspection Chamber
- FWIC – New Foul Water Inspection Chamber
- RE – New surface water rodding eye
- Existing Surface Water Drain
- Existing Foul Water Drain
- New Surface Water Drain
- New Foul Water Drain
- Existing drain to be grouted up
- New channel drain

## Key (cont'd)

- SVP – Soil Vent Pipe
- RWP – Rain Water Pipe
- EX RWP – Existing Rain Water Pipe
- FG – Floor Gully
- SG – Shower Gully
- WP – Waste Pipe
- SS – Stub Stack

Note: Final position of attenuation storage is dependant upon the proposed final service yard layout

Note: Channel drains to be ACO type in areas of lightly loaded traffic (car parking areas only). In areas used by delivery / service vehicles, a heavy duty channel (e.g. Gatic slotdrain) is to be assumed. Exact position / type to be confirmed upon receipt of final layout.

| Rev | Drawn | Date | Description |
|---|---|---|---|

Drawing Status: PLANNING

Contract: THE SHARP PROJECT 3 FORMER FUJITSU PLANT WEST GORTON MANCHESTER

Drawing Title: DRAINAGE LAYOUT

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| Scales | Date | |
|---|---|---|
| 1:200 @ A0 | MAY 2013 | |
| Drawn: DNC | Checked: RH | |
| Contract No: 2692 | Drawing No: B-08 | Rev: A |