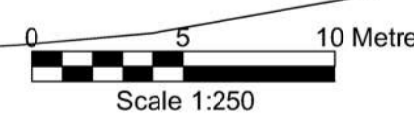
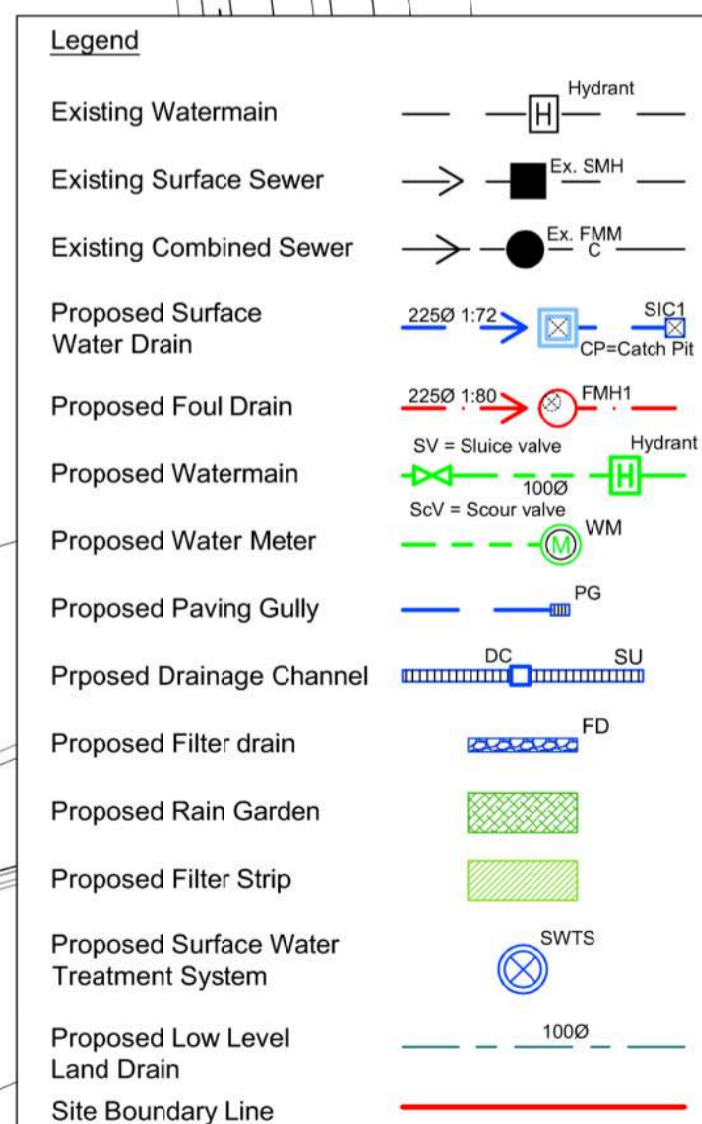




- Notes:**
- Drawing to be read in conjunction with all Arup drawings and all other relevant architects drawings.
 - Surface water drains to be spigot and socket flexibly jointed class M concrete pipes to I.S.6.
 - Foul drains to be clayware pipes to I.S.106.
 - This drawing is to be read in conjunction with all other Arup drawing & specifications.
 - Manholes to be constructed of precast concrete as shown on Arup drawings PGATE-ARUP-ZZ-00-DR-CD-0050.
 - Manhole covers in trafficked areas to be min Class D400 to E.N. 124 ductile iron covers/ frames, all other areas to be min Class C250 to EN 124. Manhole covers in trafficked areas to have polyester resin bedding material for fixing manhole frames as per Arup Specification.
 - Prior to completion of drainage construction on the site the contractor shall in accordance with the specification:
 - cleanse the system.
 - test a pipework.
 - carry out a cctv inspection.
 - Complete a set of as-constructed drawings. All drains with cover less than 0.9m in paved & grassed areas & 1.2m under roads to be bed & surrounded in grade 20 concrete. A 20mm gap filled with an approved flexible material shall be provided at pipe joints not more than 5.0m apart in the concrete surround. Otherwise all pipework to be bed & surrounded in granular material to clause 503 TII Specification.
 - All trenches in roads or service yards to be backfilled to formation level with clause 808 material to TII Specification.
 - Foul & surface water rising mains (75 dia or greater) to be ductile iron pipe work to EN 545 & EN 598.
 - Dimensioned position of pop-ups, floor gullies & stacks to be provided by the architect.
 - Foul drain connections from pop-ups (builders upstands) to external manholes or inspection chambers to be laid to a minimum fall of 1 in 60. RWP connections to external system to be laid to a minimum fall of 1 in 100.
 - Manhole covers / inspection chamber to match finished levels of external paving, road, concrete yard slab, hardstanding or landscaped areas as indicated on the architects drawings.
 - Drainage channels to be purpose made polymer concrete channels "ACO M100 D" OSA units with class C250 ductile iron lockable grating & frame. Internal manhole covers to be recessed to match floor finish, class C250 or B125 loading, as agreed with the Engineer and be gas, air and water tight (double sealed) "Howe Green" OSA. Gravity outfall drains and manholes to be constructed to Irish Water and DCC Drainage Division Code of Practice.
 - Watermains in ground to be HDPE pipes PE100 (SDR17) to conform with: the UK water industry specification No. 4-32-17, 4-32-14, 4-32-15 & manufacturers shall operate a quality system in compliance with BS 5750 Part 2 (EN29002).
 - Watermains to be bed & surround in 150mm thick pea gravel or as per Arup specification.
 - Fire hydrants, sluice valves etc. indicators to be agreed with architect prior to installation, regarding location, stainless steel fixings and backing marker.
 - Suspended watermain at high level basement -1 to be ductile iron pipes PN16 flanged pipework to BS EN 545 to conform with the UK Water Industry specificate No. 4-21-01.
 - Information on existing services has been compiled from record drawings provided by the Local Authority, Client/ Engineers/ Architects historical construction drawings and various utility services companies eg. Bord Gais and the ESB.

- GENERAL SURFACE WATER MANAGEMENT PLAN**
- Notes:
- Proposed extensive and intensive greenroof equivalent to 60% of total roof area offering a two-stage treatment train including interception and primary treatment in line with CIRIA Manual C753 Table 26.7. Run-off from the amenity area at roof level equivalent to 374m³ or 11% of total roof area will discharge into the proposed greenroofs. Therefore a roof area equivalent to 60% of total roof area, will discharge into the proposed extensive and intensive greenroofs providing interception of rainfall, filtration through the medium, storage within the voids and evapotranspiration. The remaining 40% will collect roof run-off into the rainwater butts for re-use as irrigation of planting in the amenity roof gardens.
 - Run-off from pavement at ground level equivalent to 941m³ or 13.8% of site area will discharge into the proposed filter drain, offering a three-stage treatment train including interception, primary and secondary treatment in line with CIRIA Manual C753 Table 26.7. The proposed filter drain will reduce peak run-off rates prior to discharge into raingardens or surface water drainage system.
 - Proposed filter strips will provide interception from impermeable areas before discharge into filter drains. This additional measure will promote sedimentation and filtration thereby providing 2 stage treatment.
 - Run-off from pavement at ground level equivalent to 707m³ or 10.3% of site area will discharge into the proposed raingardens, (Bio-retention system) offering a three-stage treatment train including interception, primary and secondary treatment in line with CIRIA Manual C753 Table 26.7. The proposed raingardens will allow surface water run-off from paved areas to pond temporarily before filtering through vegetation and underlying soils and discharge into the system.
 - Discharge to the River Liffey through a proposed surface water treatment system as shown.



<table border="1"> <tr><th>Rev</th><th>Date</th><th>By</th><th>Chkd</th><th>Appd</th></tr> <tr><td>PL3</td><td>08/06/21</td><td>SB</td><td>KD</td><td>GS</td></tr> </table> <p>Issued for Planning (Status A2)</p>	Rev	Date	By	Chkd	Appd	PL3	08/06/21	SB	KD	GS	<table border="1"> <tr><th>Rev</th><th>Date</th><th>By</th><th>Chkd</th><th>Appd</th></tr> <tr><td>PL2</td><td>11/12/20</td><td>SB</td><td>KD</td><td>KD</td></tr> <tr><td>PL1</td><td>17/12/19</td><td>MC</td><td>AB</td><td>KD</td></tr> </table> <p>Pre-app Submission Planning Issue</p>	Rev	Date	By	Chkd	Appd	PL2	11/12/20	SB	KD	KD	PL1	17/12/19	MC	AB	KD	<p>ARUP</p> <p>Arup, 50 Ringsend Road Dublin, D04 T6X0 www.arup.ie Tel +353(0)1 233 4455 Fax +353(0)1 668 3169</p>	<p>Client: Ruirside Developments Limited</p> <p>Project Title: 42A Parkgate Street</p> <p>Drawing Title: Proposed Drainage and Watermain Layout</p>	<p>Scale at A1: 1:250</p> <p>Role: Civil</p> <p>Suitability: A2 - Approved for Planning</p> <p>Arup Job No: 265381-00</p> <p>Name: PGATE-ARUP-ZZ-00-DR-CD-0002</p> <p>Rev: PL3</p>
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