

TRANSPORT & INFRASTRUCTURE

Panattoni
Newlands Road, Bognor Regis
Drainage Specification



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Newlands Road, Bognor Regis
Drainage Specification

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APPENDIX 1: TYPICAL DRAINAGE MAINTENANCE SCHEDULE

1. INTRODUCTION

- 1.1 The following substitutions shall be read in conjunction with this Specification:

SCHEME	Unit 2 Newsprint Avenue - Panattoni Park, Aylesford		
SPECIFICATION	Drainage Specification		
REFERENCE	COMPANY NAME	CONTACT NAME	CONTACT No. and EMAIL
CLIENT	Panattoni	Simon Wilgress	
ARCHITECT	UMC	Alastair Longden	
ENGINEER	BWB Consulting Ltd	Tim Jones	

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- 1.4 All materials and workmanship for private (non-adopted) drainage shall be in accordance with the 'Civil Engineering Specification for the Water Industry' (CESWI) 7th Edition, BS EN 752 "Drain and Sewer Systems outside Buildings", the Building Regulations 2015 Approved Document H (including any subsequent amendments) and the British Standards referred to therein.
- 1.5 All surface water and foul water drainage to be adopted by a local adopting authority (Local Authority or Water Company) shall be constructed in accordance with the Water UK Sewer Sector Guidance [SSG] 'Code for Adoption' [CfA], together with any particular requirements of the adopting authority.
- 1.6 The clauses in this specification are supplementary to the standards above.
- 1.6 The Contractor shall be deemed to be fully conversant with these documents and to possess his own copies.

2. EXTENT OF THE WORKS

- 2.1 This Specification relates to the proposed drainage works for the Scheme.
- 2.2 This Specification shall be read in conjunction with the following design Drawings/reports:
- 243912-BWB-EXT-XX-D-C-0001__Civil Engineering Notes
 - 243912-BWB-EXT-XX-D-C-0500__Drainage Layout
 - 243912-BWB-EXT-XX-D-C-0530__Drainage Catchment Plan
 - 243912-BWB-EXT-XX-D-C-0560__Drainage Standard Details Sheet 1
 - 243912-BWB-EXT-XX-D-C-0561__Drainage Standard Details Sheet 2
- 2.3 Where design information is contradicting this shall be communicated to the Engineer. In general the order of precedence shall be:

Private drainage	Adoptable drainage
a) Building Regulations	a) Sewer Sector Guidance (CfA)
b) Employer's (Project Specific) Requirements	b) Drawings
c) Drawings	c) CESWI
d) This Specification	d) This Specification
e) CESWI	

3. DRAINAGE SURVEY

- 3.1 At the beginning of the Contract and prior to any connections being made to existing sewers or upstream drainage works commencing, the Contractor shall carry out a full inspection of the point of connection to confirm the existing invert levels, pipe size (if applicable) and asset condition. Any obstructions, debris or deteriorated asset immediately downstream of the point of connection shall be reported to the Client and Engineer, and, in the case of Public Sewers, to the Drainage Authority.
- 3.2 Prior to the commencement of works a detailed asset condition survey shall be provided by the Contractor for any existing sewers or drains that may be affected by the permanent works or temporary works or site activities.
- 3.3 Towards the end of the Defects Liability Period the Contractor shall carry out CCTV surveys of all sewers and drains laid as part of the works, and the existing sewers or drains identified above. The survey results shall be provided in duplicate to the Client electronically (or on DVD) together with a key plan and written summary report provided in tabular form in line with the requirements of the Sewer Rehabilitation Manual (published by WPC PLC).

4. ANTI-POLLUTION MEASURES

- 4.1 The Contractor shall comply with all relevant legislation and the Environment Agency's guidance for preventing pollution.

- 4.2 All oil/petrol interceptors shall be installed in accordance with the manufacturer's detailed installation instructions and include for concrete encapsulation, access shafts, vent pipe work and suitable covers and frames.

5. PIPE MATERIALS/REQUIREMENTS

- 5.1 Unless otherwise stated on the Drawings, the following pipe material strengths and classifications represent the minimum standard to be used. For adoptable drainage the pipes must be in accordance with the adopting authority's requirements.

	Vitrified Clay	Concrete	PVC-U	Thermoplastic
≤150mm dia.	28 kN/m min crushing strength to BS EN 295 & BS 65	-	To BS EN 1401	To BS EN 13476 & WIS 4-35-01
225mm dia.	Class 160 to BS EN 295 & BS 65	-	To BS EN 1401	To BS EN 13476 & WIS 4-35-01
300mm dia.	Class 160 to BS EN 295 & BS 65	Class M to BS EN 5911 & 1916	To BS EN 1401	To BS EN 13476 & WIS 4-35-01
>300mm dia.	-	Class M to BS EN 5911 & 1916	To BS EN 1401	To BS EN 13476 & WIS 4-35-01

- 5.2 All pipe runs to be laid with flexi-joints.

6. BED AND SURROUND TO PIPES

- 6.1 Bedding, surround and backfill to pipework shall be in accordance with BWB's project specific standard details drawing(s), listed in the Drawings in Section 2.0 above.
- 6.2 Bedding and installation requirements for plastic pipework shall be undertaken in accordance with the manufacturer's specific requirements.

7. CONCRETE

- 7.1 Suitable applications for concrete mixes shall be in accordance with table E.11 of SSG, BS EN 206-1 and BS 8500.

Standard Mix	Strength class of Concrete	Applications
GEN 1	C8/C10	Fillings, blindings, soft spots and drainage sumps
GEN 3	C16/C20	All other applications

- 7.2 All ready mix concrete and precast concrete products (i.e. pipes, manholes rings etc) shall be of suitable concrete mix to cater for the class of sulphates as identified in the project specific site investigation.

8. TOLERANCES AND SETTING OUT

- 8.1 For schemes that will be adopted under CfA the required tolerances for the drainage can be found in Clause E5.9.

- 8.2 For private developments the required tolerances for drainage can be found in CEWSI 7th Edition Clause 5.26 and Clause 11.18.
- 8.3 Coordinates provided for manhole setting out are for the intersections of straight incoming and outgoing pipework. Setting out of the manhole chambers are to be adjusted on site to provide sufficient benching as illustrated in the BWB construction details.

9. MANHOLES, CHAMBERS AND GULLIES

- 9.1 Manhole covers and frames shall be ductile iron Group 4 Class D400 double triangular to BS EN124 in vehicular trafficked areas unless stated otherwise on the Drawings. Refer to BWB's project specific manhole schedule drawing, listed in the Drawings above, for specific manhole requirements.
- 9.2 Manhole covers and frames shall be ductile iron Group 2 Class B125 circular or rectangular to BS EN124 in positions outside vehicular trafficked areas unless stated otherwise on the Drawings.
- 9.3 Where stated on the Drawings, recessed covers of the appropriate strength class to accept surfacing materials matching adjacent areas shall be used.
- 9.4 In vehicular areas excluding those subject to trafficking by forklift trucks or other extreme loading, drainage channel gratings and road gully gratings shall, unless stated otherwise on the Drawings, be ductile iron Group 4 Class D400 to BS EN124.
- 9.5 In vehicular areas subject to trafficking by forklift trucks or other extreme loading, drainage channel gratings and road gully gratings shall, unless stated otherwise on the Drawings, be ductile iron Group 5 Class E600 to BS EN124.
- 9.6 Manholes, catchpits, chambers and gullies shall be constructed in accordance with BWB's project specific standard details drawing(s), listed in the Drawings above.
- 9.7 All pipes entering and existing manholes are to be connected with pipe soffits level unless noted otherwise.
- 9.8 Lateral / saddle connections shall be installed using preformed connection pieces / proprietary saddle products only.
- 9.9 Manholes with outgoing pipes greater than 600mm diameter shall be fitted with guard bars, safety chains or other safety devices.

10. PRODUCT SELECTION

- 10.1 Where products are specified these are provided as guidance. The contractor shall be responsible for sourcing a product which is in accordance with the performance criteria provided and the Employers Requirements.

- 10.2 The Contractor shall be responsible for installing all products in accordance with the manufacturer's installation details and specifications.
- 10.3 Where an equivalent alternative product is identified by the Contractor, the contractor shall be responsible for confirming that product meets the Employer's Requirements.
- 10.4 Where BWB installation details are shown and contradict the suppliers specific requirements, the suppliers details and specifications shall take precedence.
- 10.5 The Engineer will upon request review alternative products selected by the Contractor and provide advice on their performance capability, e.g. hydraulic performance, but shall not formally approve such products.

11. MAINTENANCE

- 11.1 The Contractor shall maintain the drainage network for the period of time as stated in their Contract, typical requirements are stated in **Appendix A**.
- 11.2 The Client's attention is drawn to **Appendix A** for typical ongoing maintenance requirements following completion and the end of any Contractor maintenance period.

12. HEALTH AND SAFETY

- 12.1 The Contractor shall liaise with the Principal Designer and Principal Contractor to ensure they comply with the relevant CDM 2015 regulations.
- 12.2 The Contractor shall pay particular attention to the following in the context of this Specification: -
- Potentially hazardous or contaminated materials used or encountered on site (refer to the project specific Site Investigation for guidance).
 - Deep excavations.
 - Working in the vicinity of underground or overhead services.
 - Working in confined spaces.
 - Working in or adjacent to watercourses/water features.
 - Working on or in the vicinity of highways.
- 12.3 The above is not an exhaustive list of hazards that could be encountered. The Contractor is responsible for reviewing the information provided and satisfying themselves they have the appropriate expertise and experience to undertake such works safely.



APPENDIX A: TYPICAL DRAINAGE MAINTENANCE SCHEDULE

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Drainage Item	General Requirements	Scheme Specific Requirements
Channel Drains	Annual visual check for blockages and remove as necessary.	
Gullies	Annual removal of any deposits from sump. Check outlets for blockages.	
Drainage pipework	Clean and Jet as required.	
Inspection Chambers / Catch pits / Manholes / Poddling Eyes	Remove cover annually to check for any sign of blockage and clear as required. Empty sumps as required.	
Attenuation Tank System	Annual check of all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed.	
Flow Control Chambers, penstocks, flap valves	Annual removal of any deposits from sump. Check outlets for blockages. Check flow control valve for blockage and remove as necessary.	
Oil separators	Check alarm system for any notifications, complete regular maintenance as per manufacturer requirements.	

