

Project Name: Sea Street Whitstable

Maintenance Manual for Drainage Systems

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1.0 Introduction

- 1.1 This report has been produced to provide general maintenance procedures for the various components of the foul and surface water drainage systems serving the proposed development at Sea Street Whitstable. The design is not yet complete and so the full and final details are not yet developed. This report covers possible scenarios some of which may not be required in the final design (for example porous paving).
- 1.2 This document has been produced in accordance with current best practise and the recommendations and guidance set out in CIRIA C697 'The SuDs Manual'.
- 1.3 CTP has no responsibility to any other parties to whom this report may be circulated, in part or in full, and any such parties rely on the contents of this report solely at their own risk.
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2.0 Surface Water Drainage

This section of the report will provide general maintenance procedures for the various components comprising the surface water drainage system serving the proposed development.

2.1 Permeable Pavements

- 2.1.1 Permeable surfaces need to be regularly cleared of silt and other debris to ensure their permeability is preserved. Current advise suggest that a minimum of three surface sweepings per year. However, manufacturer's specific recommendations should always be followed.
- 2.1.2 A brush and suction cleaner, which can be a lorry mounted devise or smaller precinct sweeper, should be used and the sweeping regime should be as follows:
 - 1. End of winter (April) to collect winter debris
 - 2. Mid-summer (July/August) to collect dust and flower other plant type deposits
 - 3. End of autumn (November) to collect leaf fall.



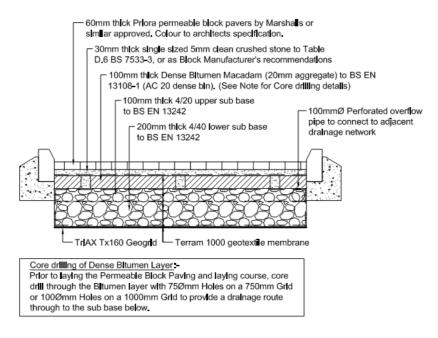
2.1.3 In addition to surface sweeping and vacuuming the following maintenance regime would also be recommended.

Maintenance Schedule	Required Works/Action	Frequency
Regular Maintenance	Brushing and Vacuuming.	Three times a year as above or as required following further monitoring
Occasional Maintenance	Removal of weed growth.	3 Monthly
Ongoing Monitoring	 Inspection for evidence of poor operation or ponding marks. Inspect debris accumulation on surface and adjust sweeping regime if necessary. Inspect silt accumulation in inspection chambers and remove as necessary. 	3 Monthly, 24-48h after a storm Annually Annually
	 Inspect silt accumulation in overflow pipework and remove as necessary. 	Annually

 Table 2.1 – Recommended Maintenance Requirements



- 2.1.4 Rehabilitation of the surface laying course should be carried out if evidence of poor performance is observed during the quarterly inspections. If it is deemed necessary the following procedures should be followed:
 - 1. Lift block pavers and set aside or reuse removing jointing material.
 - 2. Remove laying course and geotextile membrane.
 - 3. Inspect cores and replace granular fill as required.
 - 4. Renew geotextile membrane.
 - 5. Renew laying course, block pavers and jointing material in accordance with the construction detail shown in figure 3.1 below.



Typical Permeable Parking Area Construction Design 3%< CBR <4%

Fig 2.1 – Typical Permeable Parking Area Construction.



2.2 Attenuation Tanks

- 2.2.1 Regular inspection of buried storage systems is required to ensure effective long term performance of the system. Maintenance needs of the system should be monitored and schedules adjusted to suit the specific requirements of the development.
- 2.2.2 The following maintenance regime would be recommended as a minimum but actions and frequencies should be adjusted to suit the specific requirements of this development. However, manufacturer's specific recommendations should always be followed.

Maintenance Schedule	Required Works/Action	Frequency
	 Inspect and identify incorrect operation. 	Monthly
Regular Maintenance	 Debris removal from catchment area using sweeping and vacuuming. 	3 Monthly
	 Removal of sediment from pre- treatment components i.e catchpits. 	Annually

 Table 2.2 – Recommended Maintenance Requirements

2.2.3 Current best practise suggests that underground storage systems are constructed with access 'turrets' to ease future maintenance. These 'turrets' allow the annual removal of any silts or sediments directly from the tank ensuring effective long term performance. Personnel should not enter the storage tank for cleaning purposes without having detailed training for confined space working and all the necessary PPE, risk assessments and support equipment. No single working operative working alone to carry out this work.

2.3 Flow Controls

- 2.3.1 Regular inspection of flow control devices is required to ensure effective long term performance of the system. Maintenance needs of the system should be monitored and schedules adjusted to suit the specific requirements of the development.
- 2.3.2 The following maintenance regime would be recommended as a minimum but actions and frequencies should be adjusted to suit the specific requirements of this development. However, manufacturer's specific recommendations should always be followed.



Maintenance Schedule	Required Works/Action	Frequency
Regular Maintenance	 Inspect and identify incorrect 	Monthly
	operation.	Monthly
	• Removal of sediment from pre-	
	treatment components i.e	Annually
	catchpits.	

Table 2.3 – Recommended Maintenance Requirements

2.4 Oil/Petrol Interceptors

- 2.4.1 Regular inspection and maintenance of interceptor is required to ensure effective long term performance of the system. Maintenance needs of the system should be monitored and schedules adjusted to suit the specific requirements of the development.
- 2.4.2 The following maintenance regime would be recommended as a minimum but actions and frequencies should be adjusted to suit the specific requirements of this development. However, manufacturer's specific recommendations should always be followed.

Maintenance Schedule	Required Works/Action	Frequency
Regular Maintenance	Removal of stored oil/petrol.	Product dependant
	 Inspect and identify incorrect operation. 	Monthly
	 Removal of sediment from pre- treatment components i.e catchpits. 	Annually

 Table 2.4 – Recommended Maintenance Requirements

- 2.4.3 It is recommended that all interceptors are fitted with high level alarms to ensure the system does not exceed its oil and sediment storage capacity. The alarm should be linked to the building management system to ensure the system is constantly monitored.
- 2.4.4 It is also recommended that all interceptors are installed and commissioned by the manufacturer, or their approved sub-contractor to ensure correct operation from first installation.



2.5 General Maintenance

- 2.5.1 Regular inspection and maintenance of drainage systems is essential to ensure effective long term performance. Maintenance needs of the system should be monitored and schedules adjusted to suit the specific requirements of the development.
- 2.5.2 The following maintenance regime would be recommended as a minimum but actions and frequencies should be adjusted to suit the specific requirements of this development. However, the previous discussed, component specific regimes and any manufacturer's specific recommendations should always be followed.

Maintenance Schedule	Required Works/Action	Frequency
Routine Maintenance	 Inspect and identify incorrect operation. Debris removal from catchment area using sweeping and vacuuming. Removal of sediment from pretreatment components i.e catchpits. 	Monthly 3 Monthly Annually

Table 3.5 - Recommended Maintenance Requirements



3.0 Foul Water Drainage

This section of the report will provide general maintenance procedures for the foul water drainage system serving the proposed development.

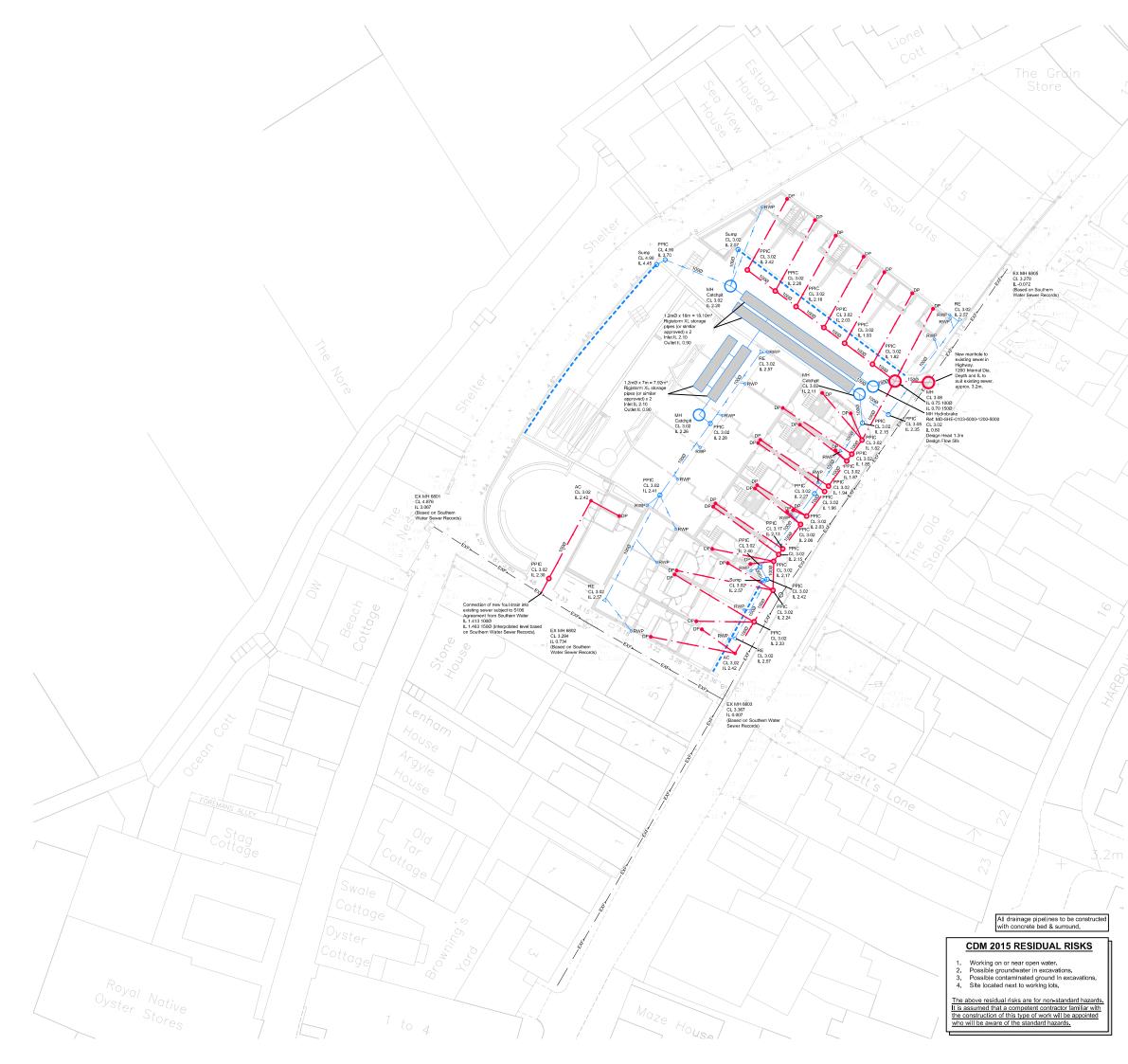
3.1 General Maintenance

3.1.1 Regular inspection and maintenance of drainage systems is essential to ensure effective long term performance. Maintenance needs of the system should be monitored and schedules adjusted to suit the specific requirements of the development.

Maintenance Schedule	Required works/Action	Frequency
Routine Maintenance	 Inspect and identify incorrect operation. 	Monthly



Appendix A - Drainage Strategy, Drawing A4453-1500 Rev P2



7			
		P2 Connection to Existing Sewer revised.	16.02.18 JT PNH
		P1 Initial Issue	20.12.17 JT PNH
		Revision Amendments Created by: Date created: JT December 2017	Date Rev'd Child Discipline: CIVIL
A Key			nsulting gineers
xxxØ @ 1:xx	Surface Water Drain		
MH CL xx.xx IL xx.xx	Surface Water Manhole	Sevenoaks K UK: +-	se 154 High Street Gent TN13 1XE UK 44 (0)1732 740195 ta: +356 2778 0051
O CL XX.XX IL XX.XX	Surface Water PPIC - 450mm dia	Project THe:	www.ctp-llp.com
	Surface Water Drainage Channel	Sea Street Whitstable	
RE	Surface Water Rodding Eye	WINGLODIC	
O RWP	Rainwater Pipe		
xxxØ @ 1:xx	Foul Water Drain	Drawing Title:	
	Foul Water Manhole	Drainage Strategy Lower Ground Floor	
O CL XX.XX IL XX.XX	Foul Water PPIC - 450mm dla		
AC CL XX.XX IL XX.XX	Foul Water Access Chamber - 225Ø	Drawing Number:	1:200 @A1
OP	Foul Drainage Connection Point (SVP / SS / AAV)	A4453-1500	Unless Noted Otherwise Revision
— · — EXF>—	Existing Foul Sewer		- P2

This drawing is to be read in conjunction with all relevant Architect's, Engineer's and Specialist's drawings and their respective Specifications. All work to comply with the relevant British Standards, Codes of Practice and the Bulding Regulations.

NOTES

 Any discrepancies between all working drawings, specifications and schedules of all disciplines to be Immediately nottiled to CTP for clarification/correction prior to construction of relevant structure.

EMTRADA

DO NOT SCALE THIS DRAWING. WORK TO FIGURED DIMENSIONS ONLY. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.

- All private drainage works shall be in accordance with 'The Building Regulations Approved Document H' and British Standard EN 752.
- 6. Prior to commencement of the works the contractor shall laise with all relevant authorities to obtain their requirements and to obtain approval for his method of working and where appropriate his intended choice of materials.
- Refer to site survey for details of existing site conditions and bench marks.
 Prior to commencement of the works the contractor shall liste with all relevant authorities to locate, protect and where necessary civent all existing services affected by the vorks.
- All excavations shall be kept free of standing water.
- The contractor shall ensure the stability of all excavations is maintained at all times.
- All works in, or adjacent to, the public highway shall be in accordance with the requirements of the highway authority. The contractor shall obtain all necessary licenses required to carry out the works within the public highway.
- 12. Prior to commencement of the works all drainage outfall points, whether existing sever, drain or watercourse, shall be welfied on site by the contractor. If the outfall point is found to be higher or significantly lower than shown on the drawings then the contract administrator shall be notified immediately (significant reades) or drainage and welfser may be necessary). Prior to commencement of construction on-site the contractor shall installal of r-list drainage connections, or satisfy himself that there are no obstructions or other reasons why, the drain connections can not be made.
- All cover levels shown on this drawing are approximate. Exact levels of new covers and frames to be determined on site to match level and profile of finished surface.
- 14. The construction of all existing chambers, gullies etc. and their covers, gratings and frames to be improved, repaired or replaced as necessary to suit their location within the finished development.
- All covers, gratings and frames to chambers, gullies, channels etc. shall be of the correct load class to suit their location.
- Load class A15 pedestrian areas (not accessible by vehicles) Load class B125 private drives Load class C250 basements/parking bays / lightly trafficked roads. Load class D400 main roads
- 12. All existing chambers, guilies channels, pipes and other drainage apparatus shall be protected from damage during the works. The contractor shall take all necessary measures to ensure that no material enters the drains (other than that which they are designed to carry).
- 13. Refer to site investigation report for existing ground conditions and any special requirements for buried concrete (special requirements for buried concrete (special requirements). Where appropriate refer to contamination reports for details of chemicals affecting choice of materials and other additional requirements.
- All pre-cast and in-situ concrete and mortars used in the construction of foul drains and sewers shall be made from sulphate resisting cement.
- 15. Unless noted otherwise all pipework shall be 100mm diameter laid to a fall of 1 in 100 or steeper for surface water and 1 in 40 or steeper for foul vater. Condiciting with one or more w.c. connected may be big at 1 in 80 or steeper. Where appropriate road guly connections shall be 150mm dia at 1 in 150 or steeper.
- unless noted otherwise all pipework shall be constructed from 'super strength' vitrified clay to bs 65, bs en 295 or upve to bs en 1201 bec/ded and backfilled as per the manufacturers recommendations and the above listed publications.
- Exact location of guilies to be determined on site to suit low points. The contractor shall ensure that all finished surface are laid to falls that are sufficient for all surface water to drain without surface ponding.
- Prior to commencement of any works the existing drainage must be traced to ensure that no 'live' connections remain. Any such connections must be reported to the contract administrator, prior to diversion into the new drains.
- Existing pipes to be abandoned shall be broken out or filled with PFA grout. manholes shall be broken out and filled with compacted granular material.

PRELIMINARY