PROJECT No: 1823

PROJECT TITLE: Herne House

CLIENT: Impressive Erections

PLANNING DRAINAGE/SUDS STATEMENT

A	FOR APPROVAL	MAC	SH	JS	14/06/19
Revision	Purpose/ Description	Originated	Reviewed	Authorised	Date

DRAINAGE STRATEGY/SCHEME

This statement has been prepared to support planning application CA/17/02746/FUL for the development of a new three storey building comprising 10 No. flats with associated parking, refuse and cycle storage following demolition of the existing dwelling on the site.

Condition 7 of the planning consent states

"No development shall take place until details of the means of foul and surface water disposal, including a detailed sustainable surface water drainage scheme for the site, which is compliant with the non-statutory technical standards for sustainable drainage and shall demonstrate the surface water run-off generated up to and including the 100yr critical storm (including allowance for climate change) will not exceed the run off from the undeveloped site following the corresponding rainfall event, and so as not to increase the risk of flooding both on- or off-site, and including details for the long term maintenance of all surface water drainage infrastructure on site, and including the provision of measures to prevent the discharge of surface water onto the highway, have been submitted to and agreed in writing by the Local Planning Authority. The development shall be carried out in accordance with such details as are agreed and thereafter maintained"

The site ownership boundary is approximately 1926m^2 in size (with the new building roof occupying 610m^2) and the site is will continue to be accessed as existing from Morris Avenue to the east of the site.

The site is bounded to the north by a Coastal Protection Zone under Policy CC10 of the Canterbury City Council Local Plan 2017. The southern boundary of this zone runs along the northern edge of the existing dwelling and no works are permitted to the north of this boundary line.

The existing site is predominantly permeable/garden area with the existing dwelling draining to soakaways and so there is no surface water run-off from the existing site. A Southern Water foul sewer runs under the existing dwelling and this will be diverted around the new dwelling as part of the new scheme

In their response to consultation at planning stage Southern Water stated that

"Our initial investigations indicate that there are no public surface water sewers in the area to serve this development. Alternative means of draining surface water from this development are required. <u>This should not involve disposal to a public foul sewer</u>"

The soil report for the development produced in August 2018 states that from an examination of data supplied by British Geological Survey the solid geological deposit for the site is London CLAY. No superficial deposits are recorded. The actual bore holes on site go on to show that the site is

"overlain with a thin mantle of made ground/topsoil between 0.45m to 0.60m. From these depths, soft or soft to firm brown weathered silty clay was encountered to between 7.80m to 9.50m. Stiff grey fissured silty clay was then encountered to the full depths of both boreholes at 18.45m"

In terms of surface water discharge we have the following constraints

- No public surface water sewers in the area to serve this development
- No watercourses close to the site
- No possibility of discharge to the sea as no works permitted in the Coastal Protection Zone
- Clay subsoil suggesting that soakaways may not work suitably despite the fact that the existing site drains to soakaways

It is anticipated that soil infiltration tests will be carried out in due course and these will used to refine the soakaway design based on the principles of BRE Digest 365, so that no water leaves the site of the new development. Any soakaway would have to be located such that they are a minimum of 5m away from the new buildings in line with Building Regulations requirements.

The new drainage system, as shown on drawing numbers 1823-5001 Rev T1 and 1823-5002 Rev T1 (See Appendix A), has actually been developed to provide a new soakaway formed in cellular storage blocks (Wavin Aquacell Core units or similar approved) and located in the car park area to the south of the building, on the basis that the existing site drains to soakaways so they must work in some way (as the site doesn't flood)

As there is no soil infiltration rate available the soakaway has been designed based on the provisions of BS EN 752:2008 “Drain and sewer systems outside buildings” for sites in the absence of a soil permeability test. Clause NA.4.4.8 suggests

“In ground with low permeability where soakaways are a feasible solution, storage capacity should be provided to retain the flows during prolonged or heavy rainfall (e.g. a capacity equal to 20 mm of rainfall over the area being drained should be adopted)”.

BN EN 752 states that for sites up to 4000m^2 in terms of drained area then a flat rainfall rate of 50mm/hour can be used which equates to a 1 in 2 year storm, and the inference from BS EN 7522 is that the 20mm storage capacity for soakaways is also based on a 1 in 2 year storm.

As the design has to be for the 1:100 year storm with an allowance of for climate change in accordance planning condition 7 the storage capacity has been growthed up to 56mm (1:100 year + 40%) which for the roof drained area of 610m^2 gives a require soakaway storage volume requirement of 34.2m^3. Due to the available sizes of soakaway crates the resultant soakaway is 7m x 3.5m in plan and 1.6m deep (storage volume of 39.2m^3)

The driveways and parking areas for the new development will be constructed in permeable paving materials in keeping with the SUDs Manual recommendations and guidance on treating surface water at source.

As mentioned above the existing foul sewer under the existing building will be diverted to the north of the new building between Southern Water manholes 6701 and 7607. Initial discussions have taken place with Southern Water and the principle of diversion agreed. A new private foul drainage network will also be provided to the south of the new building to connect to the sewer system at MH 7607. Formal applications will be made to Southern Water for the sewer diversion and connection of the new foul network to the sewer at MH 7607.

MANAGEMENT AND MAINTENANCE PLAN

Drainage Maintenance measures are suggested as follows:-

- Regular inspection comprising of the inspection and cleaning of roof catchment, gutters etc to reduce the likelihood of contamination; this is recommended to be carried out every 6 months.

- Visually inspect the roof every month and remove any debris or other items that represent blockage risks particularly in vicinity of the outlets

- After significant storm events, visually inspect the roof to confirm that the roof outlets are not blocked.

- The soakaway crates will be effectively maintenance free but it is suggested that the crates be exposed and be inspected every 10 years (unless evidence of ponding suggesting they are not functioning correctly) to check for silting. The system can then be jetted if necessary and any silt removed.

- Routine maintenance of any permeable surfaces will be via

  (1) visual inspection
  (2) preventative street sweeping
  (3) weeding.

  Inspection will look for weed growth plus areas of ponding and if required a water test will be carried out on the surface to see how well the pavement is infiltrating.

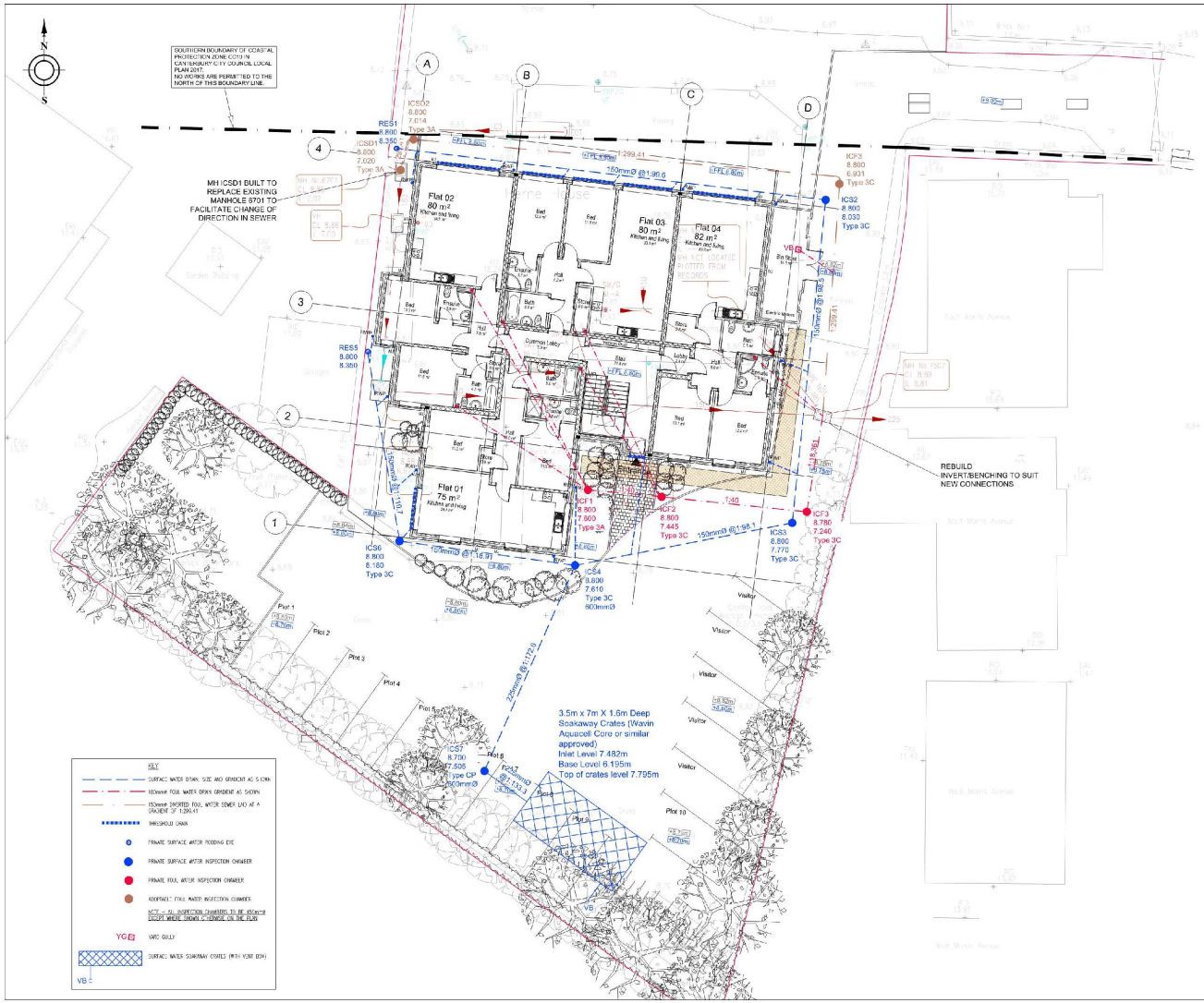
  Visual inspection of the paved areas and preventative sweeping will take place twice a year.

- The drainage facilities (other than the diverted foul sewer) will not be adopted by any authority so site maintenance will be the responsibility of the developer/flat owners. The drainage maintenance measures above shall be incorporated into any sales documentation produced for both dwellings.

APPENDIX A

DRAINAGE GA 1823-5001 Rev T1

DRAINAGE DETAILS 1823-5002 Rev T1



Drainage notes

1. Construction details shown on drawing 1909/03
2. All foul and surface water drains must be constructed in accordance with the Building Regulations 2000 Part H, BS En 752 and where appropriate the relevant Agrement Certificates.
3. Drains are to be constructed using Hepworth vitrified clay pipes or Wavin/Osmo uPVC pipes bedded and backfilled in accordance with the manufacturers instructions and the publication listed in Note 2 above.
4. All private drains (existing adjacent to dwellings are to be constructed in accordance with Fig B of Approved Document H1.
5. All downpipes/stacks etc are to be fitted with a removable access/rodding point max 1200mm above ITL.
6. Lintels or sleeves are to be provided for drains passing through foundation brickwork.
7. Pipes within close proximity of foundations may need to be encased in concrete, subject to final setting out and invert levels of drainage relative to foundations. Please refer to Diagram B of Approved Document H (and as shown on details drawing 1823/5001)
8. Private connection to the adoptable sewer is a minimum 100mm diameter and laid 600 to soffit.
9. Information adjacent to inspection chambers is as follows
   Chamber Number
   Cover Level
   Invert Level
   Chamber Type
10. Soakaway size based on the suggested note in BS EN 752:2008 for the design of storage systems where drained area (in this case a roof area of 810m²) in the absence of a soil permeability test.
However on this scheme the storage rate has been adjusted upwards to allow for the 1:00 year storm + 40% climate change as the design used 50mm of storage rather than 20mm over the roof area of 810m² giving a minimum soakaway volume to 34.2M³.

ISSUE	REVISION	DATE	INITIAL
T1	FIRST ISSUE FOR TENDER	12/06/19	SH

Project
DEVELOPMENT AT HERNE HOUSE, HERNE BAY, KENT

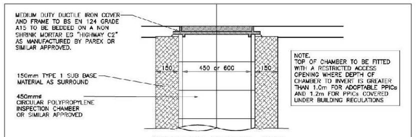
Client
IMPRESSIVE ERECTIONS

dda ENGINEERS
Unit 1 Spa Heights, 17&20 Athenian Street, London E16 3BN

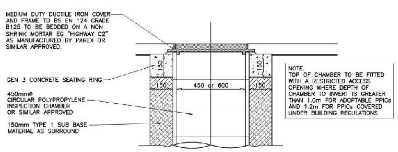
Title
EXTERNAL DRAINAGE GENERAL ARRANGEMENT

CIVILS DRAWING

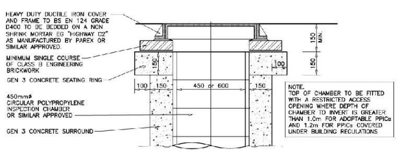
Designed	SH	Approved	
Drawn	MPL	Project Engineer/Director	Date
Scale	1:100 @ A1	Prefix	Drawing No.	Issue
Date	JUNE 2019		1823-5001	T1



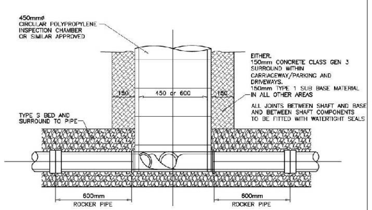
INSPECTION CHAMBER, PPIC, TYPE 3A, A15 MANHOLE COVER (in grass or soft landscaped areas)



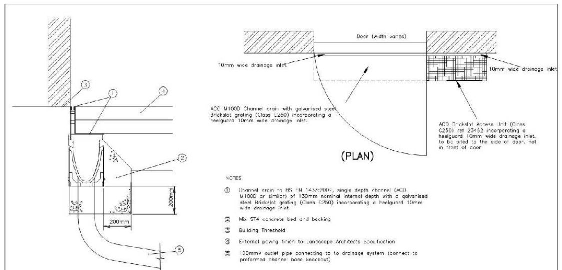
INSPECTION CHAMBER PPIC, TYPE 3B, B125 MANHOLE COVER (in paved areas)



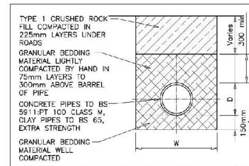
INSPECTION CHAMBER PPIC, TYPE 3C, D400 MANHOLE COVER (in parking areas and carriageway)



INSPECTION CHAMBER PPIC, TYPE 3A, 3B, 3C, BASE DETAIL, common to all 3 types



THRESHOLD DRAIN DETAIL (CONNECTING TO DRAINAGE NETWORK)



TYPICAL PIPE BEDDING DETAIL TYPE S

DN	100	150	200	300	375
W	450	600	700	850	1050
Y	50	50	50	50	50

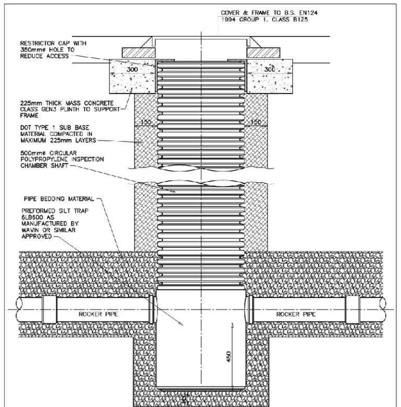
NOTE: WHEN PIPES BEING USED ARE A SOCKET TYPE THEN THE BEDDING DIMENSION 'Y' GIVEN IS TO BE A MINIMUM UNDER THE SOCKET

TABLE 3
TRENCH DIMENSIONS

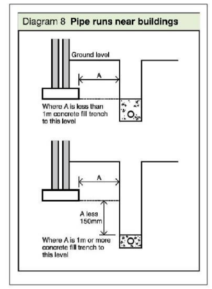
PIPE DIA. (mm)	MATERIAL (B.S. 882)
110	10 SINGLE SIZE
160	10, 14 SINGLE SIZED or 14–5 GRADED

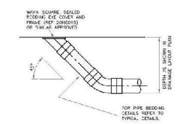
NOTE: FOR CLARITY ALL PIPES NOTED WITHIN THE EXTERNAL WORKS DRGS. ARE REFERED TO AS THEIR NOMINAL BORE SIZE FOR ALL TYPES OF PIPE MATERIAL

GRANULAR BEDDING MATERIAL TO B.S. 5955: Pt 6:1980: TABLE 2

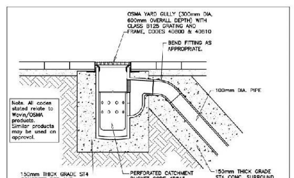


CATCHPIT/SILT TRAP TYPE CP (REDUCED ACCESS TELESCOPIC P.P.I.C.)
DEPTH TO INVERT 3.0m MAX



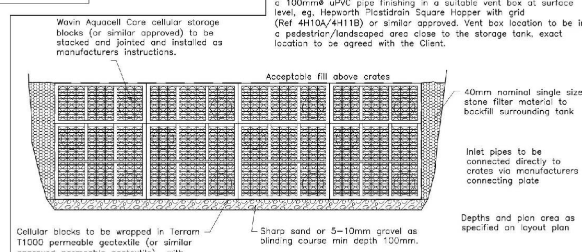


RODDING EYE DETAIL.
TO BE USED IN PEDESTRAIN AND LANDSCAPED AREAS NOT SUBJECT TO VEHICULAR LOADING.



BIN STORE FLOOR GULLY

Note. The storage tank must be vented to finish surface level with a 100mmø uPVC pipe finishing in a suitable vent box at surface level, eg. Hepworth Plastidrain Square Hopper with grid (Ref 4H10A/4H11B) or similar approved. Vent box location to be in a pedestrian/landscaped area close to the storage tank, exact location to be agreed with the Client.



CRATE SOAKAWAY

ISSUE	REVISION	DATE	INITIAL
T1	FIRST ISSUE FOR TENDER	12/06/19	SH

Project
DEVELOPMENT AT HERNE HOUSE, HERNE BAY, KENT

Client
IMPRESSIVE ERECTIONS

dda
ENGINEERS
Unit 1 Spa Heights, 63/67 Rosoman Street, London EC1R 0HY

Title
EXTERNAL DRAINAGE CONSTRUCTION DETAILS

CIVILS DRAWING

Designed	SH	Approved	
Drawn	HAL	Project Engineer/Director	Date
Scale	NTS @ A1	North / Drawing No: 1823-5002	Issue: T1
Date	JUNE 2019		