



Hampshire
County Council

**GODBey HOUSE, HAYLING ISLAND
PRELIMINARY DRAINAGE STRATEGY**

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JOB NO: Y01389



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Appendix A – Topographical Survey

Appendix B – Proposed Site Plan

Appendix C – Borehole Logs

Appendix D – Drainage Strategy

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1. EXISTING SITE

1.1. Introduction

Engineering Consultancy have been commissioned by Estates & Development Dept. to prepare a preliminary drainage strategy report for a possible new residential development to replace an existing Children's Home on Hayling Island.

The site is located on Sea Front at the south of Hayling Island.

It is proposed to demolish all existing buildings on the site to make way for the redevelopment.

1.2. Scope of Report

This report outlines the drainage proposals for the development site with regards to surface water and foul water flows generated by the proposed development.

This document considers the following:

- Existing drainage regime for the site
- Drainage design options considered for the site
- Design parameters
- The outline drainage strategy for the site

This document has been prepared based on the following information:

- Draft Geotechnical Assessment Report prepared by Terrafirma Ltd.
 - Information supplied by architect (topographical survey & proposed site plan)
 - GIS Data from the HCC GIS Database
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2. SITE CONTEXT

2.1. Existing Site

The site currently consists of an existing residential Children's Home with associated access and parking.

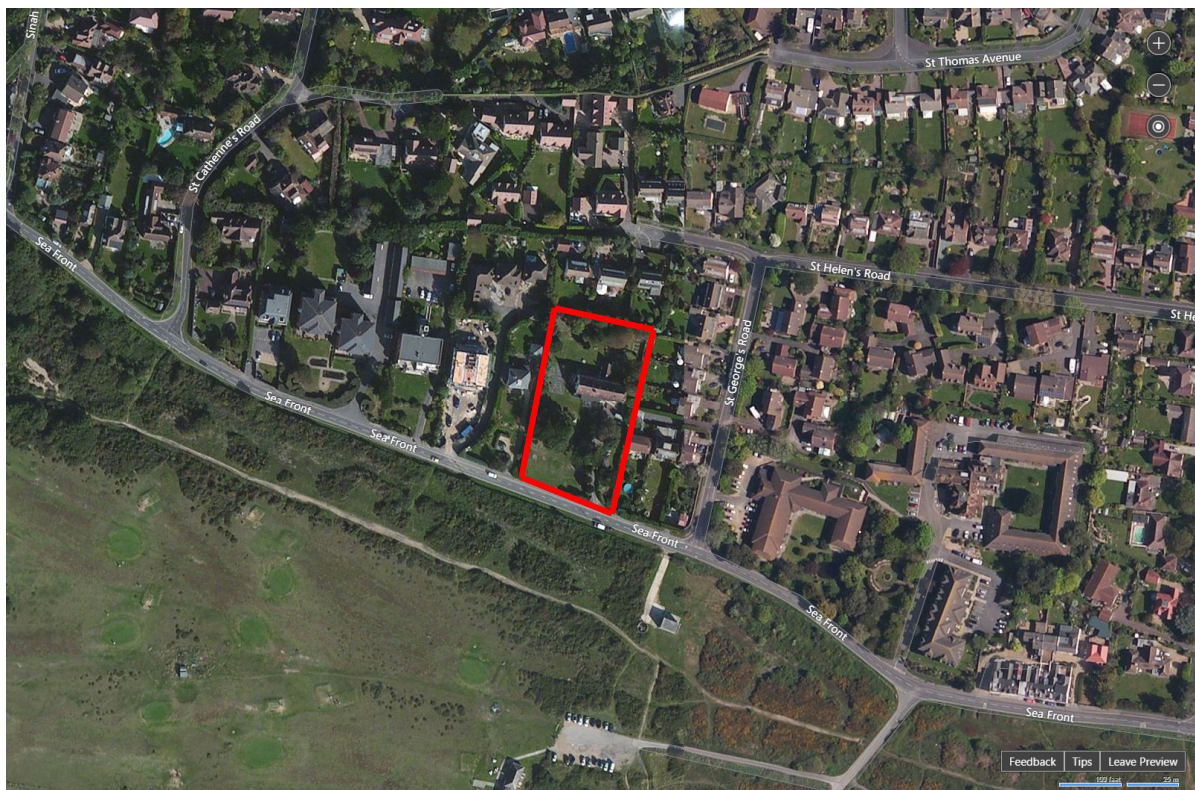
The topography of the site falls from the north corner of the site to the south by approximately 1.73m. The highest recorded level on site is 5.38m AOD and the lowest 3.65m AOD.

2.2. Proposed Site

Current proposals for the site consist of a block of 12 x two bed apartments over three storeys with a three bed penthouse above i.e. 13 residential units. There are also proposals to provide 26 car parking spaces and 26 secure cycle spaces.

It is proposed to demolish all existing buildings and remove associated car parking. The access road may be retained, replaced or upgraded to adoptable standards.

Fig.1 - Aerial Photograph



Environment Agency Maps confirm that the site is located outside of both Flood Zones 2 and 3 and is therefore situated in a Flood Zone 1 i.e. less than 1 in 1000 chance of flooding.

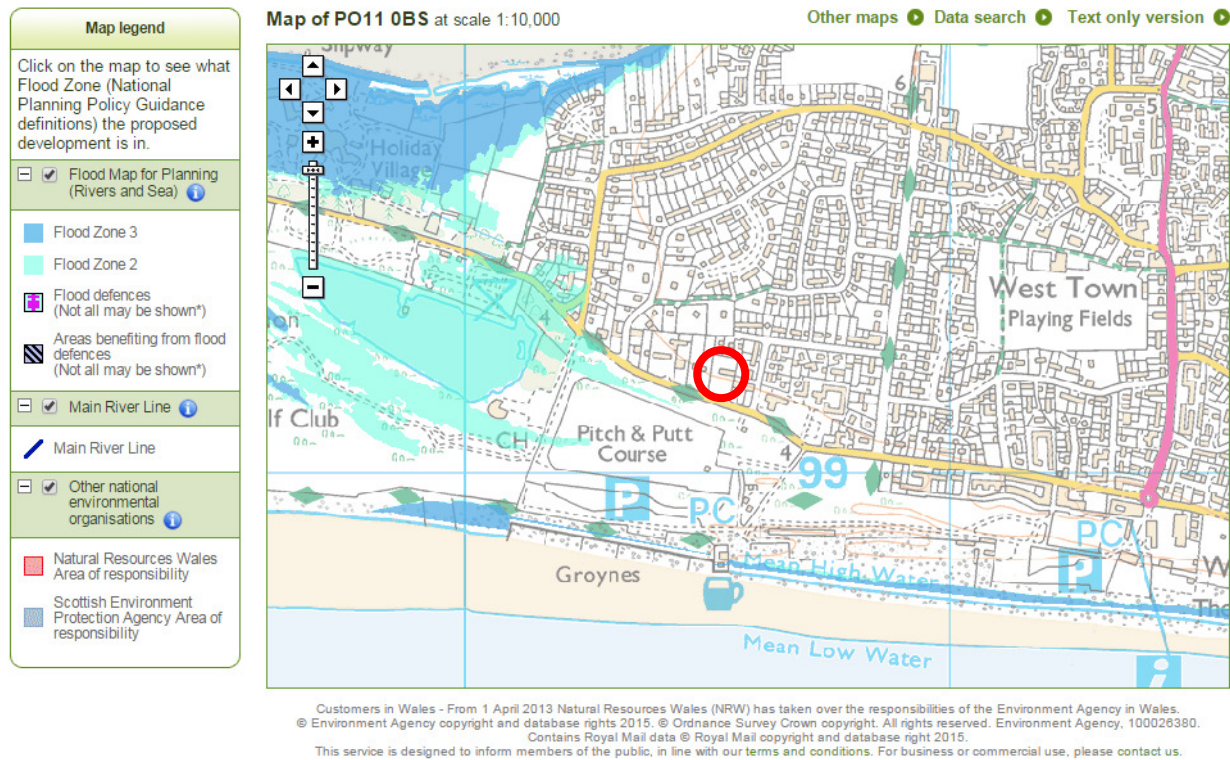


Fig.2 – EA Flood Map

2.3. Existing Infrastructure

Public sewer records indicate the presence of a 225mm dia foul water sewer located in Sea Front to the south of the site. This pipe discharges into an adopted pumping station to the south east of the site.

There is a 525mm diameter surface water sewer that runs through the site from north to south which passes just inside of the eastern boundary. According to the GIS database this discharges into a soakaway however there is also likely an overflow into the sea.

2.4. Existing Drainage Regime

A topographical survey of the site (Appendix A) has identified the foul water drainage system which connects into the 225mm foul water sewer in Sea Front. This system is 100mm diameter and discharges into the foul water sewer via a running trap (foul air interceptor) within the manhole.

Due to the presence of the running trap on the foul water manhole and no identified surface water system, it is very likely that the system is combined with surface water from the site discharging into the foul water system.

2.5. Geology

A Geotechnical Assessment Report has been carried out for the site. Borehole logs report that the site is underlain by Clays, Gravels and Sands.

Trial pits were taken to depths up to 2.5m bgl and water strikes were noted at varying depths between 1.7m and 2.5m bgl. The shallower strikes were noted to the south of the site. The borehole logs are attached in Appendix C.

Infiltration testing to BRE365 was undertaken on site in three locations and produced rather varied results, with the poorest being $2.36 \times 10^{-6} \text{m/s}$ and the best being $1.83 \times 10^{-4} \text{m/s}$.

The better results were identified at the southern end of the site and this is likely due to the testing being carried out within the Storm Beach Deposits, a medium dense and porous stratum.

3. DRAINAGE PROPOSALS

3.1. Surface Water

Due to the favourable infiltration rates recorded at the south end of the site it is proposed to discharge all surface water into a shallow trench soakaway using geo-cellular units within the car park. This will also have the added benefit of removing the existing surface water from the foul water sewer thereby reducing the impact on it.

Existing site levels fall towards the site entrance and it is proposed to store all flood waters below ground to prevent the risk of off site flooding. All soakaways will be designed to store and infiltrate to ground surface water run-off up to the 1:100 year storm return period with an additional 30% allowance for climate change.

During detailed design, it may be feasible to design finished levels such that some flood water can be stored above ground and directed away from structures and boundaries to landscaped areas to infiltrate to ground or stored above the car park.

The access road and car parking areas will drain via gullies however there is the option at detail design stage to have these be of porous construction.

The size and location of the soakaway is to be confirmed during the detailed design and it is recommended, due to the varied soakage results, that additional soakage testing is carried out at the base of the proposed tank to confirm the infiltration rates recorded.

3.2. Foul Water

It is proposed to connect the foul water into the existing system where it will then discharge into the 225mm foul water sewer in Sea Front. It is recommended that a CCTV drainage survey be carried out to confirm that condition of the exiting pipework before the new drainage is connected into it.

The proposed development will likely consist of 13 residential units which when using Sewers for Adoption 6th Edition will equate to 0.6l/s discharge rate into the foul water sewer.

The proposals will now facilitate the removal of the existing surface water flows from the foul water sewer and into soakaway. As a result of this we will now see an overall net decrease of loading into the foul water sewer by approximately 3.5l/s. This is based on a 50mm/hr rainfall event. On this basis the above proposals will create an overall betterment over the existing drainage disposal scenario.

Appendix A

Topographical Survey

Appendix B
Proposed Site Plan

Appendix C
Borehole Logs

Appendix D

Proposed Drainage Strategy

Appendix E

Microdrainage Calculations
