



## **FORMER ST GABRIELS CONVENT, LIVERPOOL**

### **FOUL WATER DRAINAGE STRATEGY** Final Report v1.0

**October 2015**

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Report Title: **Former St Gabriels Convent, Liverpool**  
Foul Water Drainage Strategy  
Final Report v1.0

Client: St Gabriels (Liverpool) Ltd

Date of Issue: 23 October 2015

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## Contents

	Page
Signature Sheet	i
Contents	ii
List of Figures and Appendices	iii
<b>1 INTRODUCTION .....</b>	<b>1</b>
1.1 Purpose of Report .....	1
1.2 Approach .....	1
1.3 Report Structure .....	1
<b>2 SITE DETAILS .....</b>	<b>2</b>
2.1 Site Description .....	2
2.2 Proposed Site Development .....	2
2.3 Site Levels .....	2
<b>3 FOUL WATER SEWERAGE INFRASTRUCTURE .....</b>	<b>3</b>
3.1 Existing Apparatus .....	3
<b>4 FOUL WATER DRAINAGE ASSESSMENT .....</b>	<b>4</b>
4.1 Foul Water Loadings .....	4
4.2 New Connections .....	4
4.3 Off-Site Infrastructure Reinforcement .....	5
4.4 Easements and Diversions .....	5
<b>5 SUMMARY .....</b>	<b>6</b>

List of Figures

Figure 1: Site Location ..... 2

Figure 2: UU Sewerage Network ..... 3

Figure 3: Potential Connection Points to Public Sewer Network ..... 4

List of Appendices

Appendix A: United Utilities Sewer Records

Appendix B: United Utilities Correspondence

## 1 INTRODUCTION

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### 1.1 PURPOSE OF REPORT

Weetwood Services Ltd ("Weetwood") has been instructed by St Gabriels (Liverpool) Ltd to prepare an indicative strategy for the disposal of foul water from the proposed redevelopment of a site located at the former St Gabriels Children's Home, Liverpool.

### 1.2 APPROACH

This strategy is informed by an assessment of existing sewerage infrastructure in the vicinity of the site and the projected service demand of the proposed development. This strategy may be subject to revision as the illustrative masterplan is developed.

### 1.3 REPORT STRUCTURE

The report is structured as follows:

- Section 1** Introduction and report structure
- Section 2** Provides background information relating to the development site
- Section 3** Provides background information relating to foul water sewerage infrastructure
- Section 4** Presents a foul water drainage assessment for the development proposals including calculations for provisional load estimations, potential connection points based on existing infrastructure and diversions
- Section 5** Presents a summary of the findings

## 2 SITE DETAILS

### 2.1 SITE DESCRIPTION

The approximately 2.7 hectare (ha) site is located at the junction between Beaconsfield Road and Church Road, Liverpool, at Ordnance Survey National Grid Reference SJ 418 875, as shown in **Figure 1**.

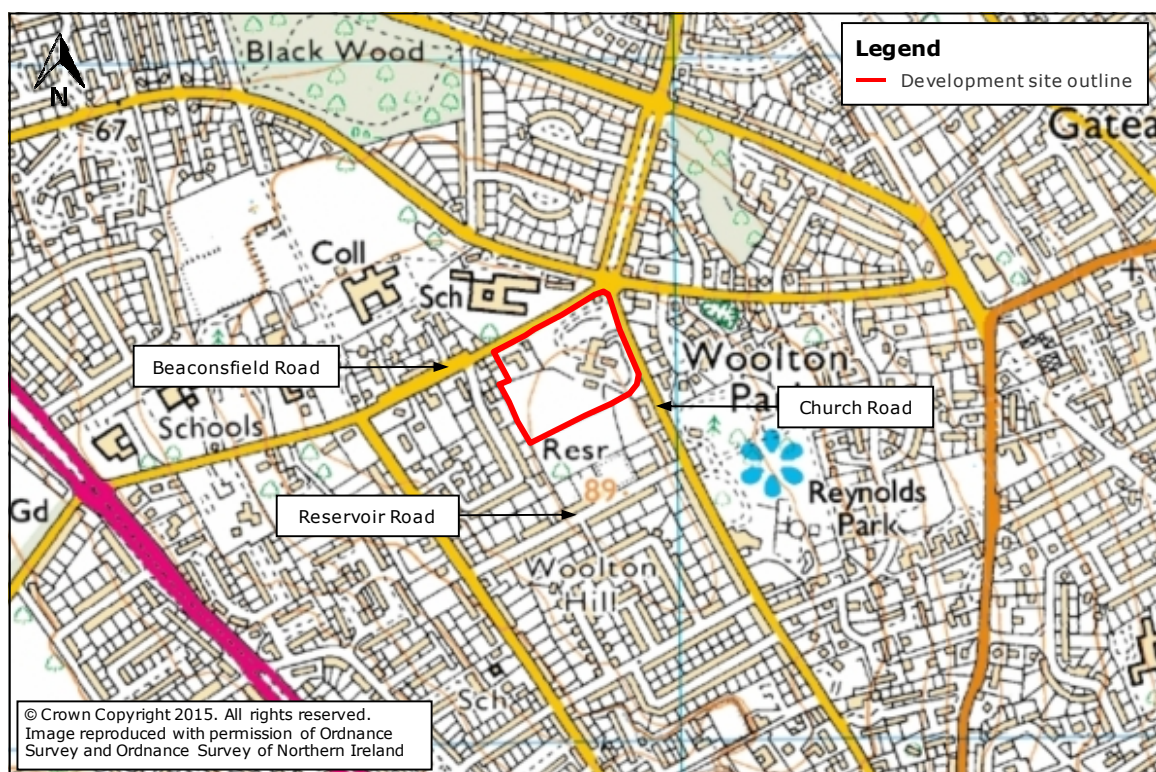
The site currently comprises of the former St Gabriels Children's Home and is subject to an extant full planning permission<sup>1</sup> for the development of care village for the elderly.

### 2.2 PROPOSED SITE DEVELOPMENT

It is proposed to construct up to 48 residential dwellings with associated access roads, driveways and public open space.

### 2.3 SITE LEVELS

The topography at site is shown to slope down from the southern boundary in all directions; with levels ranging between approximately 80.4 and 89.6 metres above Ordnance Datum (m AOD).



**Figure 1: Site Location**

<sup>1</sup> Ref: 12F/1571

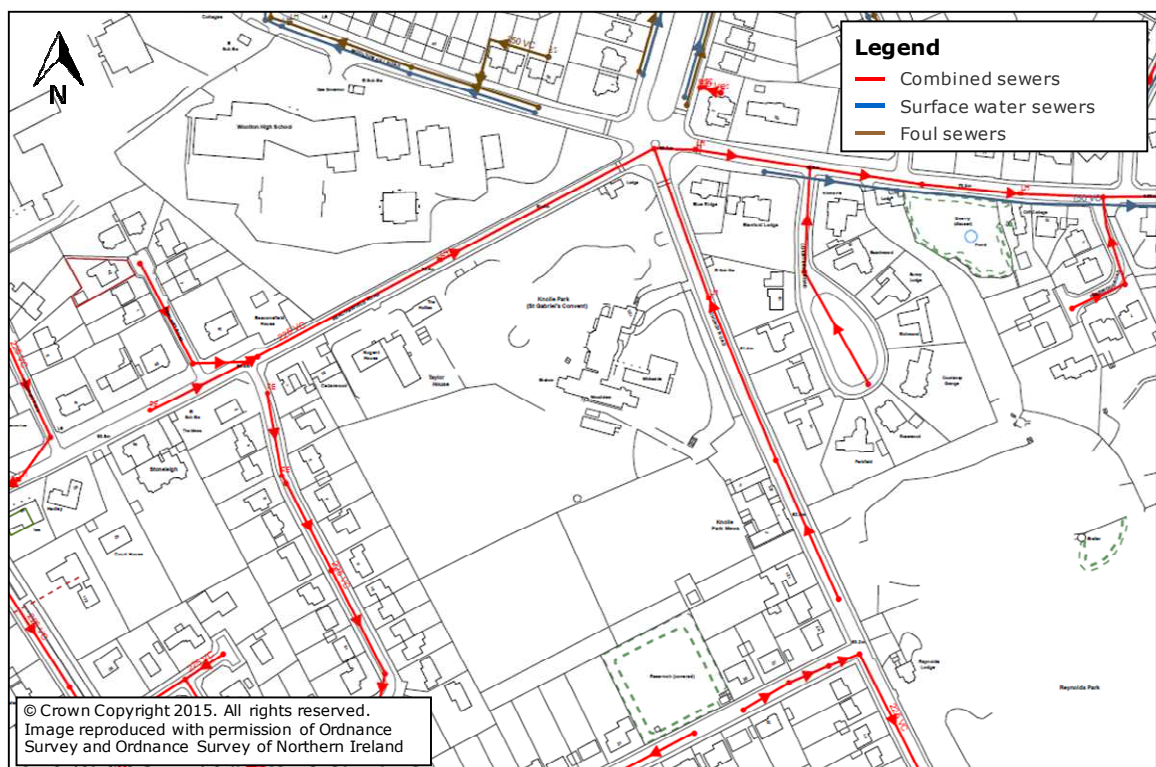
### 3 FOUL WATER SEWERAGE INFRASTRUCTURE

#### 3.1 EXISTING APPARATUS

The local public sewer network is owned and operated by United Utilities (UU).

Details of existing apparatus in the vicinity of the site, based upon the public sewer records obtained from UU (see **Appendix A** and extract in **Figure 2**) are summarised below:

- A 225 mm diameter combined gravity sewer runs on a south-west to north-east alignment adjacent to the northern boundary of the site along Beaconsfield Road.
- A combined gravity sewer (size not stated on the public sewer records) runs on a south-east to north-west alignment adjacent to the eastern boundary of the site along Church Road. It outfalls to the aforementioned 225 mm combined sewer at the Beaconsfield Road roundabout.
- There is a network of combined gravity sewers serving the areas surrounding the site.



**Figure 2: UU Sewerage Network**



## 4 FOUL WATER DRAINAGE ASSESSMENT

### 4.1 FOUL WATER LOADINGS

The peak foul flow from the development has been calculated to be 0.8 l/s based on the following assumptions:

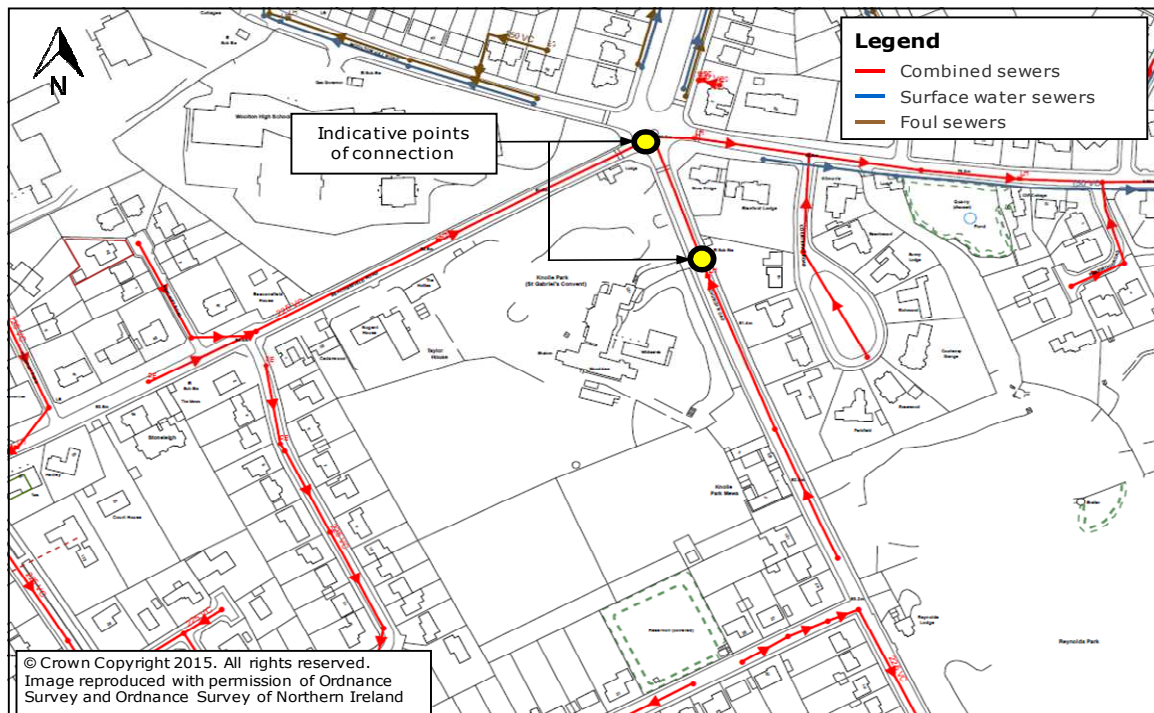
- 48 residential dwellings
- Occupancy rate of 2.3 heads per dwelling<sup>2</sup>
- Domestic water consumption of 150 l/head/day<sup>3</sup>
- Infiltration allowance of 10% of dry weather flow (DWF)
- A DWF to peak flow conversion factor of 4

### 4.2 NEW CONNECTIONS

UU has confirmed by way of an email dated 14 July 2015 (see **Appendix B**) that foul flows from the proposed development would be allowed free discharge to the public combined sewerage system adjacent to the site.

It is expected that connections to the public sewerage system will be made to the combined sewers along Beaconsfield Road and Church Road. Indicative points of connection are shown on **Figure 3**.

A preliminary assessment of existing infrastructure and site topography indicates that gravity foul flows to the public sewer network may be feasible, but this would need to be confirmed following a more detailed assessment.



**Figure 3: Potential Connection Points to Public Sewer Network**

<sup>2</sup> Office for National Statistics - Census 2011

<sup>3</sup> Butler, D and Davies JW, (2011) Urban Drainage, 3rd Edition, SPON publishing, 10.3.3, page 216



#### **4.3 OFF-SITE INFRASTRUCTURE REINFORCEMENT**

UU has not highlighted any capacity issues relating to the existing sewerage infrastructure.

#### **4.4 EASEMENTS AND DIVERSIONS**

The position of UU apparatus shown on the existing mains record drawings indicates the general position and nature of their apparatus and the accuracy of this information cannot be guaranteed. Prior to commencing construction work, a survey to determine the exact location of apparatus should be undertaken.

## 5 SUMMARY

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This foul water drainage strategy has been prepared on behalf of St Gabriels (Liverpool) Ltd and relates to the proposed redevelopment of a site located at the former St Gabriels Children's Home, Liverpool.

The peak foul flow from the development has been estimated to be 0.8 l/s.

Public combined gravity sewers are located in Beaconsfield Road and Church Road along the north-west and north-east boundaries of the site.

United Utilities (UU) has confirmed that foul flows emanating from the site are allowed free discharge to the public combined sewerage system.

Site levels indicate that gravity connections to the public combined sewers along Beaconsfield Road and Church Lane may be feasible.

APPENDIX A:

United Utilities Sewer Records

# Extract from Map of Public Sewers

The position of underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available.

The actual positions may be different from those shown on the plan and private pipes, sewers or drains may not be recorded.

United Utilities will not accept any liability for any damage caused by the actual positions being different from those shown.

United Utilities Water Limited 2014

The plan is based upon the Ordnance Survey Map with the sanction of the Controller of H.M. Stationery Office. Crown and United Utilities copyrights are reserved. Unauthorised reproduction will infringe these copyrights.

## LEGEND

	Water Course
	Overflow Pipe
	Sludge Main
	Highway Drain
	Combined
	Surface Water
	Foul
	Abandoned
	Public Sewer
	Private Sewer
	Section 104
	Rising Main

**ST GABRIELS CONVENT CHURCH  
ROAD WOOLTON LIVERPOOL L25  
6EJ**

Printed By : Property Searches Date: 23/09/2015

**DO NOT SCALE**  
Approximate Scale: 1:2500



**APPENDIX B:**

United Utilities Correspondence

**From:** Lunt, John [mailto:John.Lunt@uuplc.co.uk]  
**Sent:** 14 July 2015 09:26  
**To:** James.Aldridge@weetwood.net  
**Cc:** Wastewater Developer Services  
**Subject:** (UU ref: DE1259) Beaconsfield Road, Liverpool [Filed 30 Jul 2015 16:39]

Hi James,

In reply, I have carried out an assessment of your pre-development enquiry based on the information submitted of which the advice provided will remain valid for 12 months.

The foul water flows emanating from the proposed development will be allowed a free discharge in to the public combined sewerage system adjacent to the site.

The surface water flows generated from the site should discharge to soak-away wherever practicable and thereafter UU would allow a surface water discharge in to the nearby public surface water sewerage system at a run-off rate of 78 l/s.

In addition to the above comments please be aware that any on site drainage systems must be designed in accordance with Building Regulations, National Planning Policies, Planning Conditions and Local Lead Flood Authority Guidelines of which we would recommend that you liaise and make suitable agreements with the relevant statutory bodies beforehand.

If you have any queries or comments in relation to the above then please don't hesitate to get in touch.

Regards,

John

John Lunt  
Developer Query Engineer  
Developer Services and Planning  
Operational Control  
United Utilities

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