FLOOD RISK

AND

SURFACE WATER DRAINAGE ASSESSMENT

FOR

PROPOSED RESIDENTIAL / RETAIL DEVELOPMENT

LAND OFF

NANNY MARR ROAD, DARFIELD, BARNSLEY

ON BEHALF OF

ROTHSTONE

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CONTENTS

1. EXECUTIVE SUMMARY

1.1 Integra Consulting have been commissioned by Mark Rothery of Rothstone to undertake a Flood Risk Assessment in accordance with the National Planning Policy Framework for the proposed residential / retail development off Nanny Marr Road, Darfield, Barnsley. This document has been prepared to accompany the planning application for the site.

1.2 The site is approximately 2.44 hectares in area and is located directly to the east of Nanny Marr Road, Darfield, as shown in the location plans in Appendix 1. The national Ordnance Survey grid reference for the centre of the site is E 441533 N 404510 and it is located at post code S73 9AB. The site is bounded by housing on Coronation Street to the north, housing on Queen Street and Victoria Street with an area of open land to the east, Barnsley Road to the south and Nanny Marr Road to the west.

1.3 Following appraisal of the Environment Agency flood maps, the site lies entirely within Flood Zone 1.

1.4 The BGS 1:50,000 geological map of the area shows the site to be underlain by silty sands and clayey sands across the site which are in turn underlain by solid deposits of Mexborough Rock sandstone.

1.5 On the basis of the anticipated site ground conditions, the use of sustainable urban drainage systems (SUDS) in the form of infiltration techniques is considered to be a potential post development surface water drainage strategy. This will naturally be verified by the construction of infiltration test pits on site in order to determine the soil permeability.

2. INTRODUCTION

Integra Consulting have been commissioned by Mark Rothery of Rothstone to undertake a Flood Risk Assessment in accordance with the National Planning Policy Framework for the proposed mixed use development off Nanny Marr Road, Darfield, Barnsley. This document has been prepared to accompany the planning application for the site.

The objective of the Flood Risk Assessment was to identify potential flooding issues and any consequent implications on the proposed development. Existing and proposed foul and surface water drainage for the site development are considered in detail.

This assessment has been undertaken in accordance with the following documents:

- Pro-forma guidance contained in the Department for Communities and Local Government document 'Technical Guidance to the National Planning Policy Framework' dated March 2012;
- Barnsley Strategic Flood Risk Assessment Level 1 dated September 2010.
- DEFRA / Environment Agency publication SR744 Preliminary Rainfall Runoff Management for Developments revision E dated January 2012.

3. STANDARDS AND LIMITATIONS

This report has been prepared solely for use by Rothstone. It shall not be relied upon or transferred to any other party without prior written authorisation of Integra Consulting.

The findings and opinions in the report are based on information derived from a variety of different sources. Integra Consulting do not accept any liability for the accuracy or otherwise of any information provided by third parties.

It should be noted that some aspects considered in this study may be subject to change with time. Therefore, consideration should be given to reviewing such issues to confirm that no changes have taken place, either at the site or within relevant legislation at the detailed design stage.

4. CURRENT SITUATION

4.1 Site Location and Description

The site is approximately 2.44 hectares in area and is located directly to the east of Nanny Marr Road, Darfield as shown in the location plans in Appendix 1. The national Ordnance Survey grid reference for the centre of the site is E 441533 N 404510 and it is located at post code S73 9AB.

The site is the former Foulstone School site which has now been demolished and is bound by housing on Coronation Street to the north, housing on Queen Street, Victoria Street and open land to the east, Barnsley Road to the south and Nanny Marr Road to the west.

4.2 Hydrology and Flooding

Following an appraisal of current Environment Agency flood maps, the entire site is situated in Flood Zone 1.

It is noted that the proposed residential development is classified as 'more vulnerable' and the proposed retail development is classified as 'less vulnerable' in accordance with Table 2 of the Department for Communities and Local Government document 'Technical Guidance to the National Planning Policy Framework' dated March 2012.

4.3 Watercourses and Surface Water Features

The nearest significant watercourse is the River Dearne which is situated approximately 500m to the east of the development site.

4.4 Existing Site Combined Water Drainage

From a review of the Yorkshire Water sewer record drawings, the following adopted sewers lie adjacent to the site.

- 225mm diameter combined sewer running across the northern section of the site from west to east – subject to detailed liaison with Yorkshire Water, this sewer will be subject to either diversion or a 'build over' agreement to suit the proposed development plan.

- 225mm diameter combined sewer to the east of the site running from west to east beneath Queen Street.

- 225mm diameter combined sewer to the east of the site running from west to east beneath Victoria Street.

- 225mm diameter combined sewer to the south of the site running from west to east beneath Barnsley Road.

5. PROPOSED DEVELOPMENT

5.1 Development Proposals

The proposed development extends over an area of 2.44 hectares. The planning application proposes the erection of food retail units and associated parking with an area of residential development to the north for up to 35 dwellings.

It is noted that the proposed residential development is classified as 'more vulnerable' and the proposed retail development is classified as 'less vulnerable' in accordance with Table 2 of the Department for Communities and Local Government document 'Technical Guidance to the National Planning Policy Framework' dated March 2012.

5.2 Surface Water Drainage Proposals

It should be noted that, following the submission of the planning application, detailed drainage design will be undertaken and, accordingly, the outline drainage proposals presented in the document are subject to further design work.

The issue of surface water drainage to the proposed development has been considered with reference to the hierarchy of surface water disposal as noted in the Building Regulations H3:

i) Sustainable urban drainage systems (SUDS)
ii) Discharge of surface water off site direct to watercourse
iii) Discharge to adopted sewer

Using the above hierarchy, the potential for using soakaways at the site was considered in relation to the nature of the existing soils. The BGS 1:50,000 geological map and historical BGS borehole logs located on the site shows the site to be underlain by silty sands and clayey sands across the site, which are in turn underlain by solid deposits of Mexborough Rock sandstone.

SUDS are made up of one or more structures built to manage surface water runoff. They are used in conjunction with good management of the site to prevent flooding and pollution. There are four general methods of control:

- Filter strips and swales
- Filter drains and permeable surfaces
- Infiltration devices
- Basins and ponds

On the basis of the ground conditions on site, the use of sustainable urban drainage systems (SUDS) in the form of infiltration techniques is considered to be a potential post development surface water drainage strategy. This will naturally be verified by the construction of infiltration test pits on site in order to determine the soil permeability.

5.3 Construction

Where appropriate, all construction will be carried out in accordance with the DTLR document 'Interim Guidance for Improving the Flood Resistance of Domestic and Small Business Properties' and 'Improving the Flood Performance of New Buildings, Flood Resilient Construction 2007.'

All proposed building footprints lie in Flood Zone 1 and there will therefore be no loss of floodplain volume requiring consideration during the 1 in 100 year enhanced flood event.

A safe emergency access can be maintained at all times during a 1 in 100 year enhanced flood event.

There will be a site management Health and Safety document prepared in respect of the site.

6. CONCLUSIONS

6.1 Flooding

Following review of the Environment Agency flood maps, it has been confirmed that the site lies entirely within Flood Zone 1.

The Environment Agency has stipulated that there are to be no off site surface water flood routes generated by the development during an enhanced 1 in 100 year storm.

6.2 Site Surface Water Drainage

The issue of surface water drainage to the proposed development has been considered with reference to the hierarchy of surface water disposal as noted in the Building Regulations H3.

On the basis of the ground conditions on site, the use of sustainable urban drainage systems (SUDS) in the form of soakaways is considered a practical option. This will naturally be verified by the construction of soil infiltration test pits to be carried out as part of future site investigation works.

6.3 Flood Risk Management Measures

There will be a site management Health and Safety document prepared in respect of the site.

6.4 Off Site Impacts

The proposed site drainage infrastructure will be designed and constructed in accordance with Yorkshire Water sewer adoption design standards. It will also be designed so that it does not compromise the existing Yorkshire Water public sewerage system infrastructure.

All roofed and paved areas are to be drained into the site surface water drainage system. The design of the on site surface water drainage system will ensure that no off site flood flows are generated by the proposed development in the 1% plus climate change event.

6.5 Residual Risk

With careful design of the drainage elements as described above, there will be no residual flood related risks remaining after the development has been completed.

A safe emergency access can be maintained at all times during a 1 in 100 year enhanced flood event.

This system will also act to ensure that there are no off site overland flood flows generated by the proposed development. There is no evidence to indicate that there will be any impact on the flora and fauna that depend on the local watercourses for their survival

APPENDIX 1

SITE LOCATION PLANS

APPENDIX 2

YORKSHIRE WATER SEWER PLANS