DRAINAGE & FLOOD RISK STATEMENT

Wentworth Park Estate
Tankersley

Reference	**AMF/DFS/4776.v2**
Date	**February 2016**
Version	**2**

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APPENDICES

CONFIDENTIALITY STATEMENT

This report is addressed to and may be relied upon by the following:

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This report has been prepared for the sole use and reliance of the above named party. This report shall not be relied upon or transferred to any other parties without the express written authorisation of JPG (Leeds) Limited. No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party.

DOCUMENT HISTORY

VERSION	PURPOSE/DESCRIPTION	DATE
1	Final – For issue to Client	December 2015
2	Final – Latest Site Plan Added	February 2016

1.0 INTRODUCTION

JPG (Leeds) Limited has been instructed by Wilton Developments Limited to carry out a Drainage and Flood Risk Statement for a proposed commercial development at Wentworth Park Estate, Tankersley.

The report will review the drainage and flood risk issues associated with the proposed development and recommend any mitigation which should take place as part of the development.

This document is prepared in accordance with the requirements of and in response to the Planning Practice Guidance & National Planning Policy Framework (NPPF) which states that those proposing particular developments are responsible for:

- Providing an assessment of whether any proposed development is likely to be affected by flooding and whether it will increase the flood risk elsewhere and of the measures proposed to deal with these effects and risks, and
- Satisfying the local planning authority that any flood risk to the development or additional risk arising from the proposal will be successfully managed with the minimum environmental effect, to ensure that the site can be developed and occupied safely.

NPPF defines flood zones as follows:

- Zone 1 – Low Probability – less than 1 in 1000 annual probability (< 0.1%) of river or sea flooding in any year.
- Zone 2 – Medium Probability – between a 1 in 100 and 1 in 1000 annual probability (1% - 0.1%) of river flooding or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% - 0.1%) in any year.
- Zone 3a – High Probability – 1 in 100 or greater annual probability (> 1%) of river flooding or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
- Zone 3b – Functional Floodplain – 1 in 20 or greater annual probability (5%) of river flooding in any year. This is land on which water has to flow or be stored in times of flood.

A Flood Risk Assessment is required for all sites in excess of 1ha within Zone 1 and all sites within Zones 2 and 3.

2.0 THE SITE

The site is located approximately 7.0 km to the south of Barnsley town centre, adjacent to Carr Lane in Tankersley, with the approximate centre of the site being at NGR 433303, 399790. A site location plan and aerial photograph are provided in Appendix A.

The site has a roughly rectangular shape and covers an area of approximately 9.6ha.

The site was subject site infrastructure works during 2007, this involved an earthworks exercise to provide level development plateaus, a new site access road with foul and surface water sewers to serve the development plots.

A copy of the as-built site topographic survey following the infrastructure works is provided in Appendix B.

3.0 EXISTING DRAINAGE AND SEWER NETWORK

The proposed development plots are served by foul and surface water sewers constructed within the 2007 site infrastructure works, with foul and surface water tails provided to each development plot.

An attenuation pond constructed with the site infrastructure works is located to the east of the site. Surface water run-off from the infrastructure drainage serving the site is attenuated in this facility prior to discharging at a restricted rate of 57.9 litres/second to the public sewer in Stone Leigh.

The sites foul infrastructure sewers discharge to the foul public sewer in Wentworth Way.

A copy of the site infrastructure drainage layout and pond plan prepared by WYG are provided in Appendix C.

4.0 DEVELOPMENT PROPOSALS

It is proposed to develop the site with four large commercial units.

A proposed site layout plan has been provided. This is referenced below and a copy is presented in Appendix D:

- Kilmartin Plowman and Partners. Site Plan. 1979-201 P6

5.0 FLOOD RISK ASSESSMENT

Publicly available information on flooding obtained from the Environment Agency (EA) website database is provided in Appendix E.

The site is indicated to fall within Flood Zone 1 which comprises land assessed as at a low risk of flooding from watercourse and/or sea with less than a 1:1000 annual probability of river or sea flooding.

6.0 SURFACE AND FOUL WATER DRAINAGE

The proposed site drainage will comprise of a separate surface and foul water drainage system.

The following summarises the requirements for the discharge of surface and foul water from the site.

6.1 Surface Water Drainage

Surface water from the development plots shall discharge to the surface water infrastructure sewers within the site access road, utilising the tails provided to each plot, ultimately outfalling to the existing attenuation pond adjacent the sites eastern boundary.

Surface water run-off from the infrastructure drainage is attenuated in the pond prior to discharging at a restricted rate of 57.9 litres/second to the public sewer in Stone Leigh. The pond was designed by WYG to allow an unrestricted discharge from the development plots.

JPG have undertaken design calculations on Windes Microdrainage software to check the existing attenuation pond has capacity to accept the development proposals. The following provides a summary of the design check:

Attenuation Pond Design Check

Storage Design Parameters

- Restricted discharge rate 57.8 litres/second.
- Proposed Impermeable area = 4.97ha.
- M5-60 = 18.8
- Ratio R = 0.36
- Pond Base level = 153.650m AOD.
- Pond top level = 156.500m AOD.

Storage Design Calculations Summary

- 1:30 Year Return Period Water Level = 155.431 AOD (1.069m freeboard).
- 1:100 Year Return Period (+20% cc) Water Level = 156.086m AOD (0.414m freeboard).

The design check confirms the existing attenuation pond has the capacity to accept an unrestricted discharge from the proposed development site.

A copy of the Windes Microdrainage are provided in Appendix F.

The proposed on site drainage system shall be designed in accordance with the requirements of Sewers for Adoption and shall demonstrate that:

- No surface flooding occurs in 1 in 30 year rainfall event.
- No flooding to buildings and adjacent properties occurs in 1 in 100 year rainfall event (including an allowance of 20% for the effects of future climate change), as defined in NPPF Technical Guidance.

Surface water discharge from new car parking/service areas shall be passed through a suitably designed oil interceptor prior to discharge to sewer.

6.2 Foul Water Drainage

Domestic foul water from the development plots shall discharge to the foul water infrastructure sewers within the site access road, utilising the tails provided to each plot. The foul infrastructure sewers ultimately discharge to the foul public sewer in Wentworth Way.

Drainage from restaurant/cafeteria/kitchen areas shall be passed through a suitable designed grease trap prior to discharge into the foul drainage system.

Any discharge of trade effluent to the sewer network shall be discussed and the relevant consent licences obtained from Yorkshire Water.

7.0 CONCLUSIONS

This assessment has looked at the drainage and flood risk issues to support a planning application for a proposed commercial development at Wentworth Park Estate, Tankersley.

The site lies within Flood Zone 1 and is therefore at low risk of flooding from river or sea. NPPF Technical Guidance states all uses of land are appropriate in Flood Zone 1.

NPPF Technical Guidance states all uses of land are appropriate in Flood Zone 1.

Surface water from the development plots shall discharge to the existing surface water infrastructure sewers within the site access road, outfalling to the attenuation pond adjacent the sites eastern boundary, prior to discharging at a restricted rate of 57.9 litres/second to the public sewer in Stone Leigh.

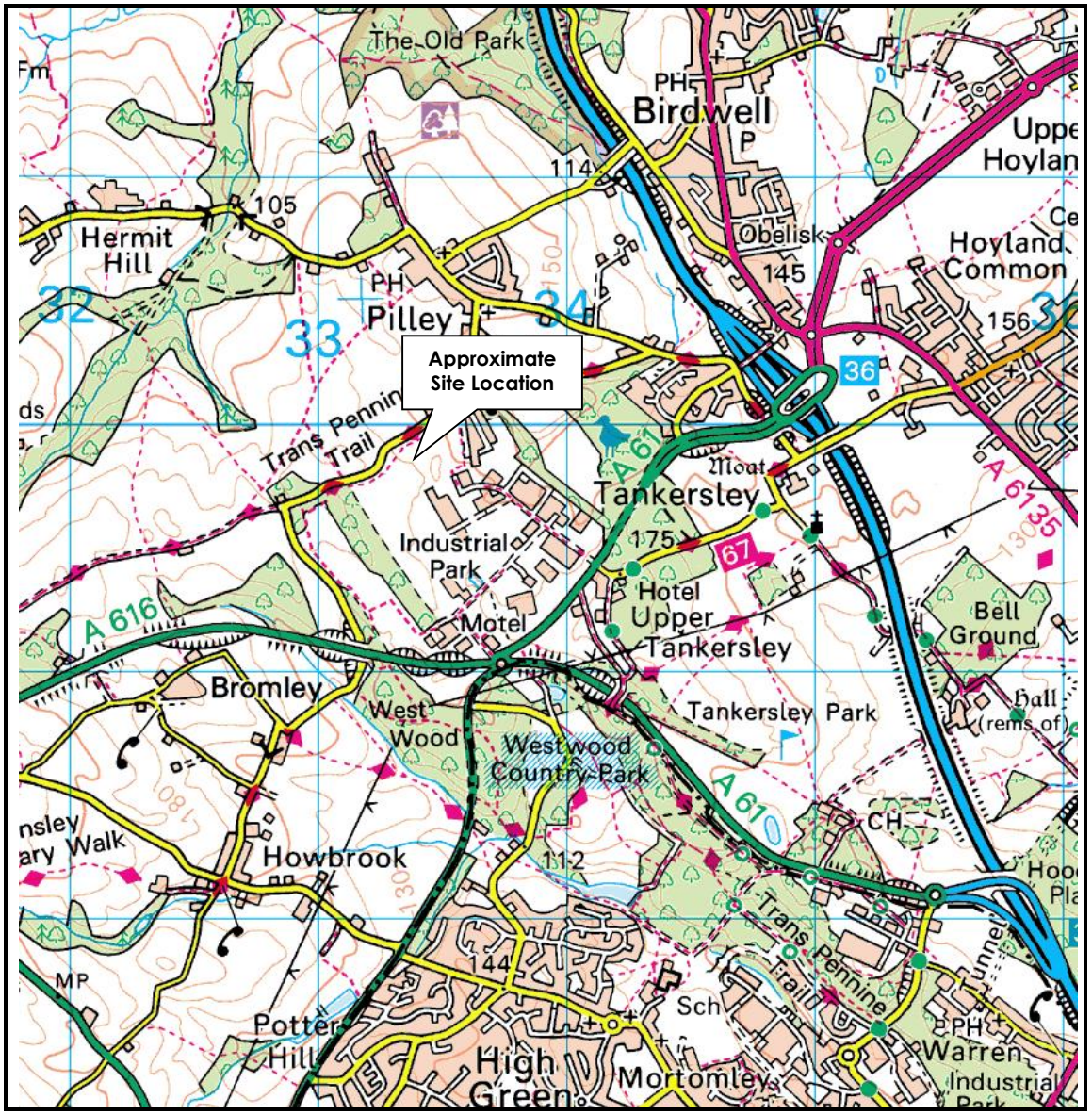
A design check of the attenuation pond has been undertaken by JPG which confirms it has sufficient capacity to accommodate the development proposals.

Domestic foul water from the development plots shall discharge to the foul water infrastructure sewers with the site access road, utilising the tails provided to each plot. The foul infrastructure sewers ultimately discharge to the foul public sewer in Wentworth Way

Andrew Fairburn
For and behalf of JPG (Leeds) Limited

February 2016

Appendix A Site Location Plan and Aerial Photograph



Site Location Plan	
Site	**Wentworth Park Estate, Tankersley**
Client	**Wilton Developments Limited**
Job Number	**4776**
Scale	**NTS**

Aerial Photograph	
Site	**Wentworth Park Estate**
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