CIVIL & STRUCTURAL ENGINEERING

DRAINAGE & FLOOD RISK STATEMENT

Proposed Commercial Development
Birdwell Common
Rockingham, Barnsley

Reference	**AMF/DFS/4652.v2**
Date	**September 2014**
Version	**2**

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CONTENTS

APPENDICES

CONFIDENTIALITY STATEMENT

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

Harworth Estates Property Group Limited
AMP Technology Centre
Advanced Manufacturing Park
Waverley
Rotherham
S60 5WG

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	Draft – For issue to Client	July 2014
2	Final – For Planning Submission	September 2014

1.0 INTRODUCTION

JPG (Leeds) Limited has been instructed by Harworth Estates Property Group Limited to carry out a Drainage and Flood Risk Statement for a proposed commercial development at Birdwell Common, Barnsley.

The report will review the drainage and flood risk issues associated with the proposed commercial 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.

In accordance with NPPF guidelines, sites within Flood Zone 1 need only consider the vulnerability to flooding from sources other than river and/or sea and the potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of new development on surface water runoff.

2.0 THE SITE

The site is located at Bridwell Common, in Birdwell approximately 5km to the south of Barnsley town centre in South Yorkshire. The approximate centre of the site is located at NGR 435047, 400874. A site location plan and aerial photograph are provided in Appendix A.

The commercial development site covers an area of approximately 8.36ha and is part of an area of restored ground forming a cleared development platform.

The site is bound along the southeast boundary by a public highway (Dearne Valley Parkway A6195), to the southwest by a residential development and open fields to the northwest and northeast. The site is roughly rectangular in shape.

The site slopes down from south to north from a maximum level of approximately 134m AOD in southern corner of site to a level of 128.5m AOD in the north.

A topographical survey of the site is provided in Appendix B.

3.0 EXISTING DRAINAGE AND SEWER NETWORK

A pre-planning sewer enquiry response has been received from Yorkshire Water, a copy of which is provided in Appendix C, this indicates the following public sewers in close proximity to the site:

- 375mm and 300mm diameter public surface sewers passes are recorded crossing the site.
- A 150mm diameter public foul sewer is recorded crossing the site at the north eastern boundary.

An open watercourse/pond exists approximately 60m beyond the north eastern boundary of the site in an adjacent field, this being a tributary of the downstream watercourse known as Short Wood Dike.

A surface water balancing pond exists at the eastern corner of the site, this feature is understood to be a facility associated with the adjacent public highway (Dearne Valley Parkway).

4.0 DEVELOPMENT PROPOSALS

It is proposed to develop the site for a commercial end use. A proposed site layout drawing has been made available which is referenced below and a copy is contained in Appendix D.

- The Harris Partnership. Proposed Development Rockingham 1, Dearne Valley Parkway, Barnsley. Proposed Site Plan. Drawing No. 11462-110 Revision F.

5.0 FLOOD RISK ASSESSMENT

Barnsley Metropolitan Borough Council (BMBC) have been consulted and advised they are not aware of any flooding issues associated with the site, and have confirmed that to the best of their knowledge it is not affected by any flood plains from major watercourses in the area. A copy of correspondence with BMBC is provided in Appendix G.

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.

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

As the site area is greater than 1ha all other sources of flooding need to be considered. These include:

- Adjoining land.
- Ground water.
- Flooding from sewers.
- Flooding from reservoirs, canals and other artificial sources.

5.1 Flooding from Adjoining Land

The land beyond the northeast and northwest boundaries falls away from the site, therefore overland flows will not enter site from this direction. The site is bound along the southeast boundary by a public highway (Dearne Valley Parkway A6195) at elevated position above the site therefore overland flows from the southeast will be retained by the highway. The residential development beyond the south west boundary will be provided with its own drainage system, therefore overland flow from this location is unlikely.

The risk of flooding from adjoining land is considered to be low.

5.2 Flooding from Groundwater

The site is elevated circa 5m to 10m above the nearest watercourse to the northeast, thus it is unlikely there will be an issue with groundwater effecting the site.

The risk of flooding from ground water is considered to be low.

5.3 Flooding from Sewers

The sewers in close proximity to the site are public sewers owned Yorkshire Water, therefore will be subject to regular maintenance and inspection therefore blockage of these sewers is unlikely.

The risk of flooding from sewers is considered to be low.

The measures to mitigate the risks of flooding from new drainage are as detailed in Section 6.0 below.

5.4 Flooding from Reservoirs, Canals and Other Artificial Sources

A surface water balancing pond exists at the eastern corner of the site, this feature is understood to be a facility associated with the adjacent public highway (Dearne Valley Parkway), which is owned/maintained by the highway authority and will be subject to regular maintenance and inspection therefore blockage/overtopping of this facility unlikely.

There are no other known reservoirs, canals or artificial sources within the vicinity of the site.

The risk of flooding from other sources is considered to be low.

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 Sustainable Urban Drainage Systems (SUDS)

Initial investigations indicate the site is underlain by significant depths of made ground/fill due to former mine workings in the area, therefore the disposal of surface water by infiltration methods is not deemed feasible.

Sustainable Urban Drainage System (SUDS) may be used in conjunction with conventional drainage systems to improve water quality as well as manage surface water discharge. This should be considered at the detailed drainage design stage.

The following audit has been carried out relating to suitability of SUD's systems.

DRAINAGE METHOD	DESCRIPTION / SUITABILITY	PROPOSAL / FEASIBILITY
1. Infiltration.	Methods not suitable due to underlying ground strata.	Not applicable.
2. Ponds and wetlands.	May be suitable if land is allocated	Applicable.
3. Infiltration Basins.	Methods not suitable due to underlying ground strata.	Not applicable.
4. Detention Basins.	May be suitable if land is allocated.	Applicable.
5. Swale.	May be utilised convey water.	Applicable.
6. French drain.	May be utilised convey water.	Applicable.
7. Pervious/Permeable Pavement.	Methods not suitable due to underlying ground strata.	Not applicable.
8. Geocellular Systems/Tank systems.	May be used as on plot attenuation.	Applicable.
9. Oversized pipes.	May be used as on plot attenuation.	Applicable.
10. Box culverts.	May be used as on plot attenuation.	Applicable.
11. Purpose designed tanks.	May be used as on plot attenuation.	Applicable.

6.2 Surface Water Drainage

The disposal of surface water shall be in accordance with the Requirement H3 of Building Regulations 2000. This establishes a preferred hierarchy for surface water disposal. Consideration should firstly be given to discharge to soakaway/infiltration system, watercourse and public sewer in that priority order.

As noted in Section 6.1 the discharge of surface water drainage via infiltration methods is not deemed feasible.

It is proposed to discharge surface water to the open watercourse located approximately 60m beyond the north eastern boundary of the site in an adjacent field.

The existing greenfield run-off rate has been calculated using the Source Control element of Windes Microdrainage, a copy of the calculation is provided in Appendix F, this is based on an area of 50ha (the minimum area advised by Windes for the IH124 method). The greenfield discharge rate (Qbar) for the site therefore equates to 1.85 litres/second/hectare. Barnsley Metropolitan Borough Council have advised the discharge of surface water at a rate of 1.85 litres/second/hectare is acceptable. A copy of correspondence with BMBC is provided in Appendix G.

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

On site attenuation will be required due to the restricted discharge rate. The following provides brief details of the attenuation that will be required.

Surface Water Attenuation

Design Parameters:

- Proposed Site area = 6.10Ha.
- Proposed Impermeable area = 5.490 Ha (90% of site area)
- Restricted discharge rate = 10.16 l/s (1.85 l/s/ha x 5.490 ha).
- M5-60 = 18.8.
- Ratio R = 0.36.

Attenuation Volumes.

1:30 Year Return Period = 2725 m3.
1:100 Year Return Period (+20% cc) = 4530 m3.

It is proposed to provide surface water attenuation in a combination of ground level features (e.g. swales, ponds) and underground drainage features suitable for adoption by Yorkshire Water. Details are subject to the final drainage design.

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

- No surcharge of pipes occurs in the 1 in 2 year rainfall event.
- 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.

6.3 Foul Water Drainage

A pre-planning sewer enquiry response has been received from Yorkshire Water, a copy of which is provided in Appendix C, this advises foul water domestic waste should discharge to the 150mm diameter public foul sewer recorded crossing the site at the north eastern boundary.

Drainage from cafeteria/kitchen areas within the commercial units shall be passed through a suitable designed grease trap prior to discharge into the drainage sewer.

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 Birdwell Common, Barnsley.

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.

Other sources of flooding have been assessed and the risk of flooding from these sources is considered to be low.

Surface water shall discharge to the open watercourse located approximately 60m beyond the north eastern boundary of the site at the equivalent existing greenfield discharge rate of 1.85 litres/second/hectare, with on-site attenuation provided as required.

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

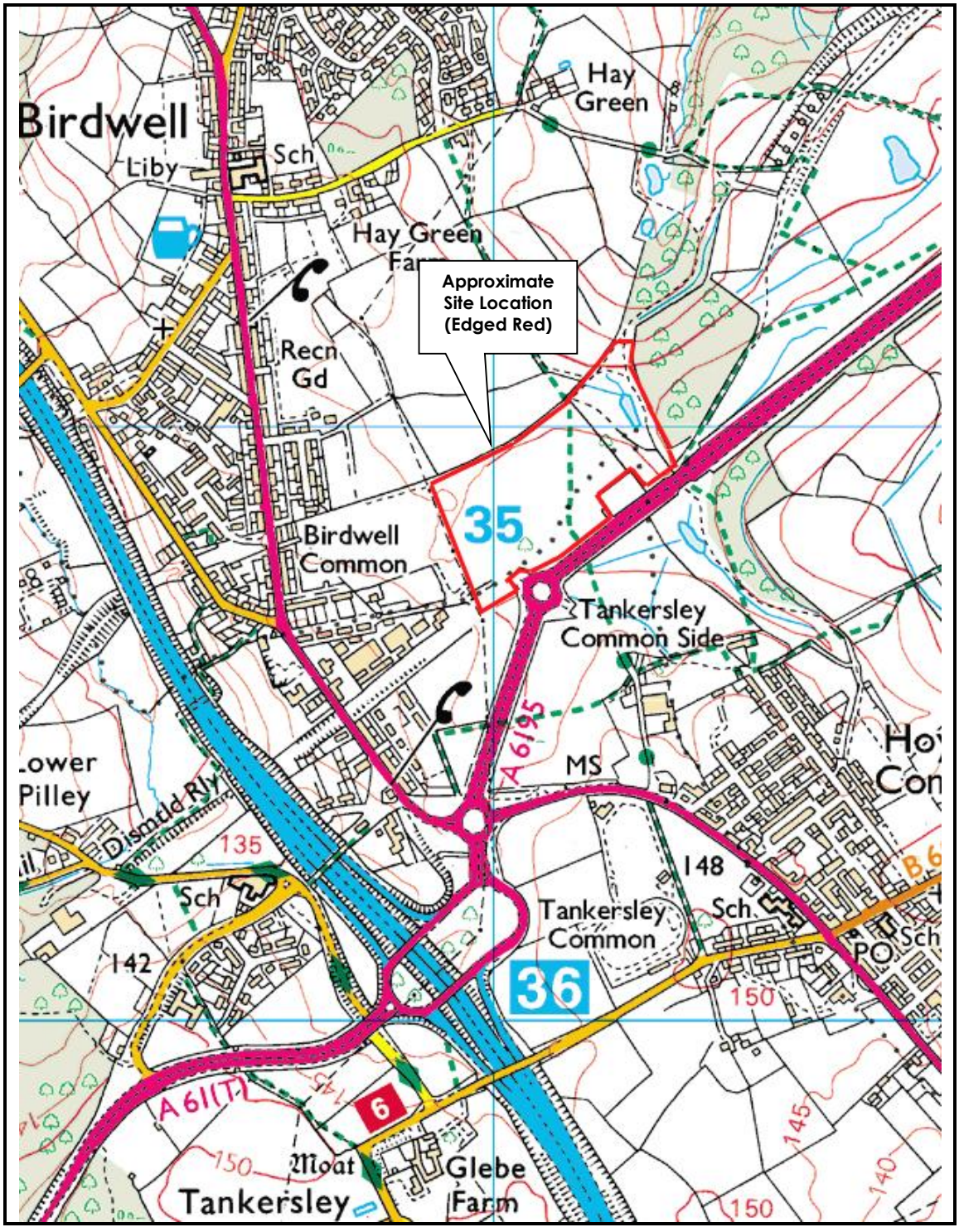
Foul water domestic waste shall discharge to the 150mm diameter public foul sewer recorded crossing the site at the north eastern boundary.

Drainage from cafeteria/kitchen areas within the commercial units shall be passed through a suitable designed grease trap prior to discharge into the drainage sewer.

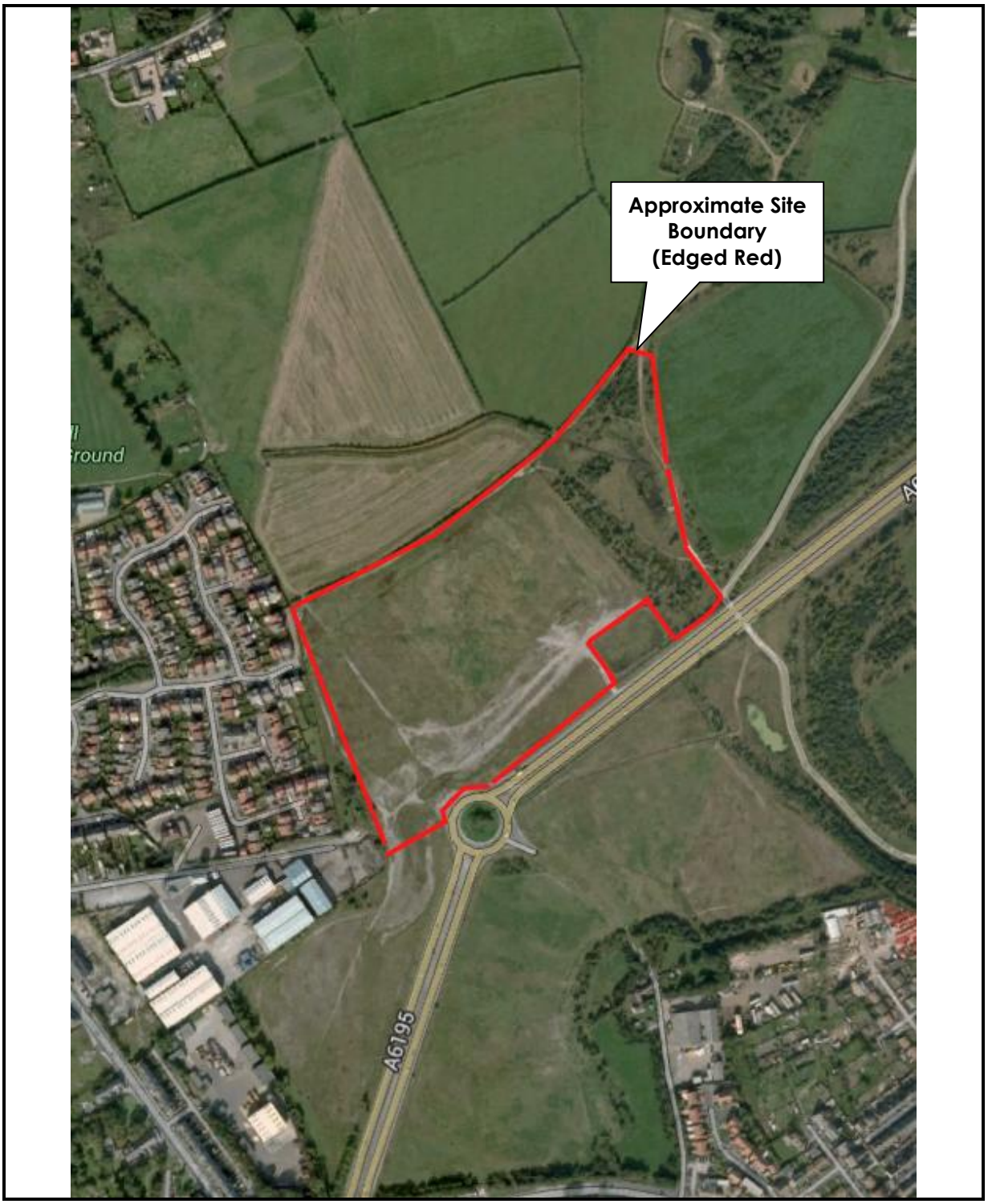
Andrew Fairburn
For and behalf of JPG (Leeds) Limited

September 2014

Appendix A Site Location Plan and Aerial Photograph



Site Location Plan	
Site	**Commercial Development, Birdwell Common**
Client	**Harworth Estates Property Group Limited**
Job Number	**4652**
Scale	**NTS**



Aerial Photograph	
Site	**Commercial Development, Birdwell Common**
Client	**Harworth Estates Property Group Limited**
Job Number	**4652**
Scale	**NTS**

Appendix B Topographical Survey

Station Information:

Station	Easting (m)	Northing (m)	Level (m)
GH1	435043.238	400723.247	134.937
GH2	435031.709	400619.700	137.278
GH3	435120.481	400749.733	134.498
GH4	434943.500	400812.930	131.750
GH5	434922.190	400911.273	130.448
GH6	434954.751	400706.372	134.458
GH7	434906.815	400693.101	135.700
GH8	435091.803	401023.460	129.245
GH9	435191.677	400865.549	132.576
R1	435197.652	400844.867	132.813
R2	435105.959	400754.502	134.787
R3	435048.800	400738.727	134.717

OS Note:

Some services may have been omitted due to parked vehicles. The Ordnance Survey tile is to be used as a guide only.

OS Buildings — *Surveyed Buildings*

This survey has been orientated to the Ordnance Survey (O.S) National Grid (OSGB36) via Global Navigational Satellite Systems (GNSS) and the O.S. Active Network (OS Net).

A true OSGB36 coordinate has been established near to the site centre via a transformation using the OSTN02 & OSGM02 transformation models.
The survey has been correlated to this point and a further one or more OSGB36 points established to create a true O.S. bearing for angle orientation.

No scale factor has been applied to the survey therefore the coordinates shown are arbitrary & not true O.S. Coordinates which have a scale factor applied.

Please refer to Survey Station Table to enable establishment of the on-site grid and datum.

Legend:

Rev	Date	Description	Drawn	Q. Ref.
1	12.06.14	Drainage Info Added	CS	A1042

greenhatch group

- Topographical Surveys
- Site Engineering
- Utility / CCTV Surveys
- Measured Building Surveys
- 3D Laser Scanning
- Revit & BIM Models

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CLIENT
Harworth Estates Ltd

PROJECT
Rockingham Phase 1
Dearne Valley Parkway
Birdwell

TITLE
Topographical Survey

SCALE	DATE
A0@ 1: 500	05-06.06.14
DRAWN	**QUALITY REF**
LP/CS	A1042

Level datum	See OS Note
Grid orientation	See OS Note
Job number	20379

Drawing No.	Rev.
20379 OGL	1

Comments
This plan should only be used for its original purpose. Greenhatch Group accepts no responsibility for this plan if supplied to any party other than the original client.

All dimensions should be checked on site prior to design and construction.

Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

Notes:

Appendix C Yorkshire Water Public Sewer Plan

YorkshireWater

Yorkshire Water Services
Developer Services
Sewerage Technical Team
PO BOX 52
Bradford
BD3 7AY

Tel: 0845 120 8482
Fax: (01274) 372 834

Email:
Technical.Sewerage@yorkshirewater.co.uk

027
JPG (Holdings) Limited
5 John Charles Way
LEEDS
LS12 6QD
For the attention of Mr A Fairburn

Your Ref: 4652
Our Ref: Q010695

For telephone enquiries ring:
Vada Newbould
on (0845)120 8482

3rd July 2014

Dear Sir/Madam,

A6195, Dearne Valley Parkway, Barnsley, S70 5 - Pre planning sewerage enquiry on P468746

Thank you for your recent enquiry. Our charge of £150.00 (plus VAT) will be added to your account with us, reference JPG027. You will receive an invoice for your account in due course.

Please find enclosed a complimentary extract from the Statutory Sewer Map which indicates the recorded position of the public sewers. Please note that as of October 2011 and the private to public sewer transfer, there are many uncharted Yorkshire Water assets currently not shown on our records. The following comments reflect our view, with regard to the public sewer network only, based on a 'desk top' study of the site and are valid for a maximum period of twelve months:

The local Waste Water Treatment Works (WWTW) is Lundwood . It is understood that this WWTW may only have limited spare capacity, if any, available. We have contacted the respective treatment team for more information regarding the impact of proposed development and will contact you when an assessment has been made.

There is a 375mm and a 300mm diameter public foul surface water sewer recorded crossing the site. No buildings, or other obstructions, are to be erected within three (3) metres, nor trees planted within 5 (five) metres of this public sewer. It may not be acceptable to raise or lower ground levels over the sewer, nor to restrict access to the manholes on the sewer. If you wish to have this sewer diverted under Section 185 of the Water Industry Act 1991 an application should be made in writing. To discuss this matter, please telephone 0845 120 84 82.

Development of the site should take place with separate systems for foul and surface water drainage. The separate systems should extend to the points of discharge to be agreed.

Foul water domestic waste should discharge to the 150 mm diameter public foul sewer recorded in crossing the site at the north eastern boundary.

The developer's attention is drawn to Requirement H3 of the Building Regulations 2000. This establishes a preferred hierarchy for surface water disposal. Consideration should firstly be given to discharge to soakaway, infiltration system and watercourse in that priority order.

Sustainable Drainage Systems (SuDS), for example the use of soakaways and/or permeable hardstanding etc, may be a suitable solution for surface water disposal appropriate in this situation. You are advised to seek comments on the suitability of SuDS in this instance from the appropriate authorities.

The local public sewer network does not have capacity to accept any discharge of surface water from the proposal site. If SuDS are not viable, the developer is advised to contact the relevant authority (Environment Agency/local Land Drainage Authority/Internal Drainage Board) with a view to establishing a suitable watercourse for discharge.

Please note further restrictions on surface water disposal from the site may be imposed by other parties. You are strongly advised to seek advice/comments from the Environment Agency/Land Drainage Authority/Internal Drainage Board, with regard to surface water disposal from the site.

It is understood that a watercourses are located to the north, east and south of the site. This appears to be the obvious place for surface water disposal if SuDS are not viable.

Surface water run-off from communal parking (greater than 800 sq metres or more than 50 car parking spaces) and hardstanding must pass through an oil, petrol and grit interceptor/separator of adequate design before any discharge to the public sewer network. Roof water should not pass through the traditional 'stage' or full retention type of interceptor/separator. It is good drainage practice for any interceptor/separator to be located upstream of any on-site balancing, storage or other means of flow attenuation that may be required.

Foul water from kitchens and/or food preparation areas of any restaurants and/or canteens etc. must pass through a fat and grease trap of adequate design before any discharge to the public sewer network.

Under the provisions of section 111 of the Water Industry Act 1991 it is unlawful to pass into any public sewer (or into any drain or private sewer communicating with the public sewer network) any items likely to cause damage to the public sewer network interfere with the free flow of its contents or affect the treatment and disposal of its contents. Amongst other things this includes fat, oil, nappies, bandages, syringes, medicines, sanitary towels and incontinence pants. Contravention of the provisions of section 111 is a criminal offence.

Prospectively adoptable sewers and pumping stations must be designed and constructed in accordance with the WRc publication "Sewers for Adoption - a design and construction guide for developers" 6th Edition as supplemented by Yorkshire Water's requirements, pursuant to an agreement under Section 104 of the Water Industry Act 1991. An application to enter into a Section 104 agreement must be made in writing prior to any works commencing on site. Please contact our Developer Services Team (telephone 0845 120 84 82) for further information.

The public sewer network is for domestic sewage purposes. This generally means foul water for domestic purposes and, where a suitable surface water or combined sewer is available, surface water from the roofs of buildings together with surface water from paved areas of land appurtenant to those buildings. Land and highway drainage have no right of connection to the public sewer network.

No land drainage or highway drainage to be connected/discharged to public sewer.

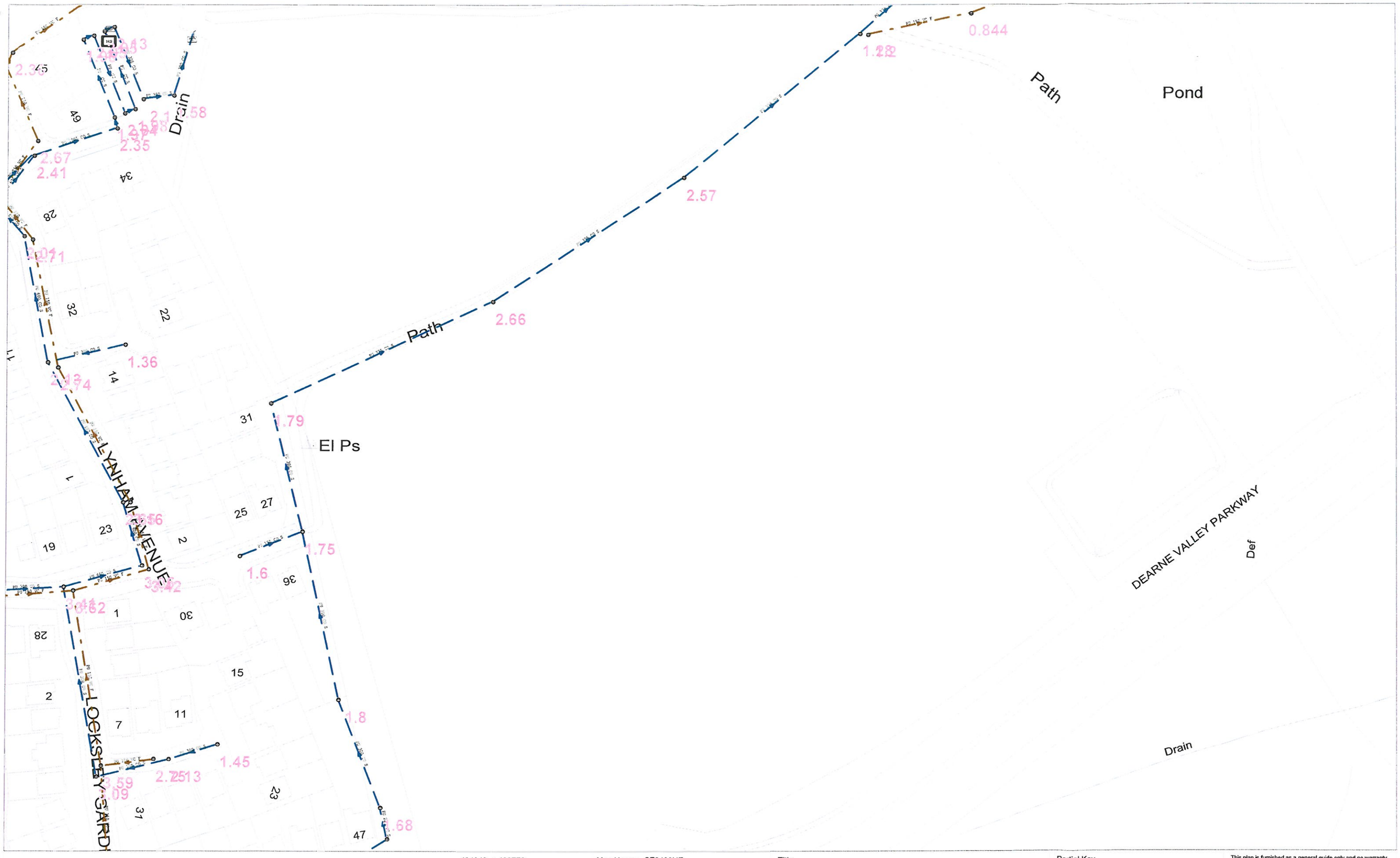
Any new connection to an existing public sewer will require the prior approval of Yorkshire Water. You may obtain an application form from our website (www.yorkshirewater.com) or by telephoning 0845 120 84 82.

All the above comments are based upon the information and records available at the present time. The information contained in this letter together with that shown on any extract from the Statutory Sewer Map that may be enclosed is believed to be correct and is supplied in good faith. Please note that capacity in the public sewer network is not reserved for specific future development. It is used up on a 'first come, first served' basis. You should visit the site and establish the line and level of any public sewers affecting your proposals before the commencement of any design work.

Yours faithfully

Developer Services Team

cc:



434848 : 400778 Map Name : SE3400NE

Yorkshire Water,
PO Box 500,
Halifax Road,
Bradford BD6 2LZ
Contact Name :
Newbould
Contact Tel :

Title

Notes

Partial Key

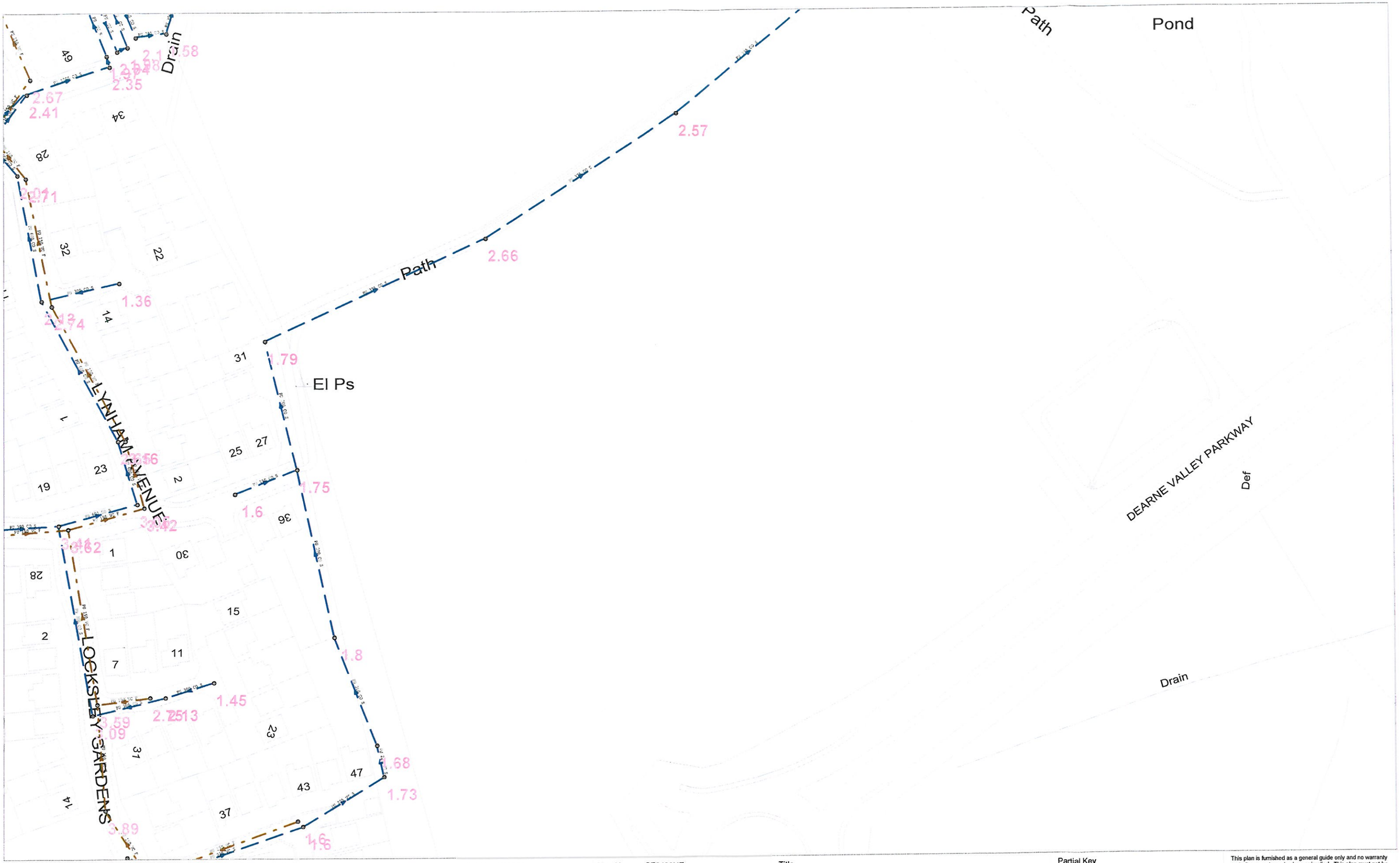
Foul Sewer = F
Combined Sewer = C
Surface Water Sewer = SW
Trade Sewer = TD
Partially Separate = PS

This plan is furnished as a general guide only and no warranty as to its correctness is given or implied. This plan must not be relied upon in the event of excavations or other works made in the vicinity of public sewers. No house or property connections are shown.

Date Req : 03/07/2014, 15:19:38 Date Gen : 03/07/2014, 15:19:47

Source : Sewer Network Enquiry

UPN: Undefined Originator: Newbould, ,



434849 : 400753

Map Name : SE3400NE

Yorkshire Water,
PO Box 500,
Halifax Road,
Bradford BD6 2LZ
Contact Name :
Newbould
Contact Tel :

Title

Notes

Partial Key

Foul Sewer = F
Combined Sewer = C
Surface Water Sewer = SW
Trade Sewer = TD
Partially Separate = PS

This plan is furnished as a general guide only and no warranty as to its correctness is given or implied. This plan must not be relied upon in the event of excavations or other works made in the vicinity of public sewers. No house or property connections are shown.

Date Req : 03/07/2014, 15:16:41

Date Gen : 03/07/2014, 15:16:42

Source : Sewer Network Enquiry

UPN: Undefined

Originator: Newbould, ,

Andrew Fairburn

From: vada.newbould@yorkshirewater.co.uk
Sent: 12 August 2014 13:10
To: Andrew Fairburn
Subject: A6195, Dearne Valley Parkway, Barnsley, S70 5 - Pre planning sewerage enquiry on P468746

Yorkshire Water Services
Developer Services
Sewerage Technical Team

JPG (Holdings) Limited
5 John Charles Way
LEEDS
LS12 6QD
For the attention of Mr A Fairburn

PO BOX 52
Bradford
BD3 7AY
Tel: 0345 120 8482
Fax: (01274) 372 834

Email: Technical.Sewerage@yorkshirewater.co.uk
For telephone enquiries ring: Vada Newbould on 0345 120 8482

Your Ref: 4652
Our Ref: Q010695

Date: 12/08/2014

Dear Sir/Madam,

A6195, Dearne Valley Parkway, Barnsley, S70 5 - Pre planning sewerage enquiry on P468746

Further to my letter dated 03/07/2014 and to your email dated 25/07/2014, I can confirm that the anticipated domestic foul flows can be accommodated at the WWTW, however it is imperative that a separate outfall is provided for surface water.

Yours faithfully

Developer Services Team

Appendix D Proposed Site Layout Plan

PROPOSED DEVELOPMENT

Dearne Valley Parkway, Barnsley,(Junction 36 M1)

Schedule of accommodation

Unit 1 -Fast Food	348 m²	3,750 ft²
Unit 2 -Industrial	929 m²	10,000 ft²
Unit 3 - Industrial	1858 m²	20,000 ft²
Unit 4 - Industrial	2787 m²	30,000 ft²
Unit 5 - Industrial	3716 m²	40,000 ft²
Unit 6 - Industrial	1626 m²	17,500 ft²
Unit 7 - Car show room	1858 m²	20,000 ft²
Unit 8 - Public House	871 m²	9,375 ft²
Unit 9 - Starter Units (Divisible)	650 m²	7,000 ft²
TOTAL -	**14644 m²**	**157,625 ft²**

OVERALL SITE AREA (Edged in red)
20.65 acre (8.36 hectare)

Plot 1 -0.80 acre (0.33 hectare)
Plot 2 -1.09 acre (0.44 hectare)
Plot 3 -1.27 acre (0.51 hectare)
Plot 4 -1.47 acre (0.59 hectare)
Plot 5 -2.47 acre (1.00 hectare)
Plot 6 -1.30 acre (0.53 hectare)
Plot 7 -1.38 acre (0.56 hectare)
Plot 8 -1.27 acre (0.51 hectare)
Plot 9 -0.63 acre (0.26 hectare)

Total -11.67 acre (4.72 hectare)

Note:
Assumed site boundary and site constraints subject to confirmation.
All Legal easements and extent of existing underground services locations are subject to confirmation.

0 5 10 15 20 25m
SCALE 1:500

Rev	Date	Description	Rev By	Chk'd By
F.	02.09.14	Updated	NBB	JMR
E.	26.08.14	Boundary Updated	NBB	JMR
D.	20.08.14	Updated footpath	NBB	JMR
C.	19.08.14	Updated with amended highways and Plot 8 requirements	NBB	JMR
B.	29.07.14	Updated to comments received	NBB	JMR
A.	10.07.14	Updated to comments received	NBB	JMR

Project Title	PROPOSED DEVELOPMENT ROCKINGHAM 1 Dearne Valley Parkway Barnsley
Client	Harworth Estates
Status	FOR PLANNING
Scale	1:500 — Drawing Size A0
Drawn By	NBB — Checked By JMR — Date 07/2014
Drawing Title	PROPOSED SITE PLAN
Job-Dwg No	11462-110 — Rev F

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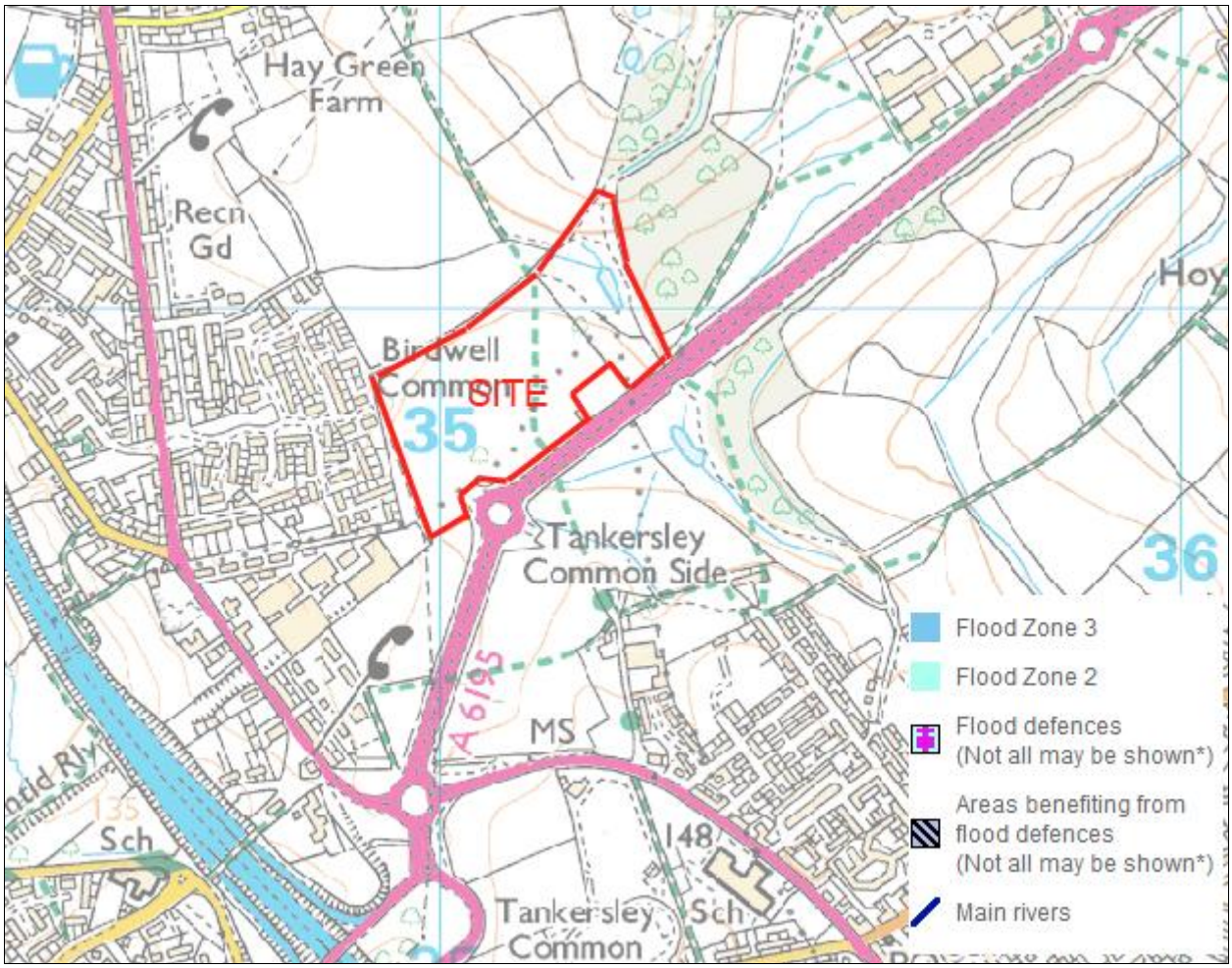
THE HARRIS PARTNERSHIP
ARCHITECTS
www.harrispartnership.com

Appendix E National Flood Risk Assessment (NaFRA) Flood Map



Flood Map obtained from Environment Agency website (22 August 2014)

Appendix F Windes Microdrainage Greenfield Run-off Calculations

IH 124 Mean Annual Flood

Input

Return Period (years)	1	Soil	0.300
Area (ha)	50.000	Urban	0.000
SAAR (mm)	708	Region Number	Region 3

Results	**l/s**
QBAR Rural	92.3
QBAR Urban	92.3
Q1 year	79.4
Q1 year	79.4
Q2 years	87.1
Q5 years	115.4
Q10 years	133.9
Q20 years	151.6
Q25 years	157.5
Q30 years	162.3
Q50 years	174.9
Q100 years	192.1
Q200 years	217.9
Q250 years	226.2
Q1000 years	280.7

Appendix G Barnsley Metropolitan Borough Council Correspondence

Andrew Fairburn

From: Grayson , Ian <iangrayson@barnsley.gov.uk>
Sent: 03 July 2014 12:11
To: Andrew Fairburn
Subject: RE: 4652 - Proposed Development - Birdwell , Adjacent Dearne Ian Valley Parkway.

Hello Andrew

The discharge of surface water at a rate 1.85 l/s/Ha is acceptable.

Thanks

From: Andrew Fairburn [mailto:AndrewFairburn@jpgleeds.com]
Sent: 03 July 2014 11:19
To: Grayson , Ian
Subject: RE: 4652 - Proposed Development - Birdwell , Adjacent Dearne Ian Valley Parkway.

Ian

Thank you for the response.

We note the comments regarding SUD's and generally work to the hierarchy provided in Building Regs Part H for discharge of surface water ie. soakaway, watercourse, public sewer. We will also investigate SUD's for treatment as well as disposal.

Our initial investigations indicate the site is underlain by significant depths of made ground/fill due to mine workings in the area, therefore the use of soakaway systems may not be appropriate. This will be confirmed once we received the intrusive ground investigation report.

We are therefore investigating the second option of discharge to watercourse, we are aware watercourse/drain ditches cross the site and propose to discharge to the watercourse at the existing greenfield discharge rate.

We have carried out a greenfield discharge rate assessment using Windes Microdrain which provides a discharge rate of 1.85 litres/second/hectare (calculation attached). The attached greenfield runoff calculation is based on an area of 50Ha (the minimum area advised by Microdrain for the IH124 method). I would be grateful if you could confirm a discharge of surface water at a rate 1.85 l/s/Ha is acceptable.

If you wish to discuss or require any further information, then please get in touch.

Regards

Andrew Fairburn

For and on behalf of JPG (Leeds) Limited

www.jpgleeds.com

CIVIL & STRUCTURAL ENGINEERING

5 John Charles Way, Leeds, LS12 6QA Tel 0113 263 1155 Fax 0113 263 0405

From: Grayson , Ian [mailto:iangrayson@barnsley.gov.uk]
Sent: 23 June 2014 10:50
To: Andrew Fairburn
Subject: RE: 4652 - Proposed Development - Birdwell , Adjacent Dearne Ian Valley Parkway.

Morning Andrew

The Council have no records of any culverted or open watercourses crossing the site indicated on the attached plan.

I am not aware of any flooding issues associated with the site, and would confirm that to my knowledge it is not affected by any flood plains from major watercourses in the area.

The developer's attention is drawn to the following:

There should be no increase in surface water runoff from the new development. PPS25 recognises that the management of flood risk is not simply restricted to flood plains and that a catchment-wide approach should be employed.

There are Foul and Surface water Sewers adjacent to this site. The developer should contact Yorkshire Water if they wish to discharge to these sewers to discuss allowable discharge rates.

Any balancing facility should be designed to accommodate a 1 in 30 year flow from the site below ground and a 1 in 100 year flow retained within the site (including an allowance of 30% for climate change), without causing any flooding to buildings.

There are alternatives to conventional storage for the control of surface water run-off that are favoured by the authority where ground conditions are suitable. Sustainable Urban Drainage techniques (SUD's) tackle surface water run-off problems at source using features such as soakaways, permeable pavements, grassed swales, infiltration trenches, ponds and wetlands to attenuate flood peak flows, produce water quality improvements and environmental enhancements.

The authority seeks to promote the use of SUD's techniques to this site and the authority expects the developer of the site to submit detailed investigations such that the use of SUD's has been fully explored.

As the Site area is greater than 1 Ha then a flood risk assessment in accordance with NPPF is required to be submitted with any planning application

The balancing pond at the eastern corner of the site was built for the highway drainage associated with the Dearne Valley Parkway
The balancing pond adjacent the north east boundary of the site is part of Shortwood Dyke watercourse

Thanks

From: Andrew Fairburn [mailto:AndrewFairburn@jpgleeds.com]
Sent: 20 June 2014 09:37

To: Grayson , Ian
Subject: 4652 - Proposed Development - Birdwell , Adjacent Dearne Ian Valley Parkway.

Ian

Further to our earlier telephone conversation, as discussed we are looking at a proposed commercial development at the above site which is currently greenfield (a location plan is attached).

I would be grateful for your advice on the following;

- As the site is greenfield we assume a discharge of SW runoff from the site to the surrounding drainage network would be acceptable. Could you advise the greenfield rate and if a discharge to pond feature to the north east of the site would be acceptable?
- We note there are a number of drainage features in the area including a balancing facility on the eastern corner of the site. Could you provide any advice on these features you feel is applicable to our site in particular the balancing pond adjacent the north east boundary of the site?

As discussed, I am happy to come to your office to meet and discuss the above if you feel it is appropriate

Thank you

Regards

Andrew Fairburn

For and on behalf of JPG (Leeds) Limited

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