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E14/6120/MH/PW/010

23 July 2015

FAO Martin Brown
Barratt Homes / David Wilson Homes
Vico Court
Ring Road
Lower Wortley
Leeds
LS12 6AN

Dear Sir,

Re: Development near Millers Inn, Dearne Hall Road, Low Barugh, Barnsley for Barratt David Wilson Homes.

Further to your request please find attached a drainage statement in relation to the proposed outline drainage proposals for the new development.

1. Foul Water

1.1 The Yorkshire Water records indicate that there is a 150mm diameter combined sewer running partially along the north-eastern site boundary of the proposed site, at the rear of plots 84-114 Dearne Hall Road. This existing sewer will require a 3m standoff easement within the site. There is also a 225mm diameter combined sewer crossing within the southwest corner of the site, this will potentially lie beneath the proposed new roundabout construction forming the access to the site. The proposed new S278 works are likely to require existing site levels to be raised and therefore some alternative diversion work may be required to the existing sewer.

1.2 In addition there are two further combined sewers within Dearne Hall Road 225/300mm and 600mm diameter sewers within Dearne Hall Road.

1.3 At present the proposed foul drainage for the development has been indicated to discharge into the existing 300mm diameter sewer located within Dearne Hall Road. Levels of the existing sewer require to be checked to confirm connection level. We understand that Yorkshire Water have confirmed that foul water may discharge to the sewer under a separate pre-planning enquiry.

1.4 We would recommend that depths and exact location of the existing sewers are checked on site to ensure a gravity connection can be achieved.

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2. Surface Water

2.1 The Yorkshire Water records do not indicate any surface water sewers crossing the site. Furthermore there are no adoptable surface water sewers adjacent to the site.

2.2 The existing site falls towards the railway embankment located to the northeast of the site. A pond forms adjacent to the railway embankment due to surface water run-off from the site. The pond appears to enter a drain of unknown construction and condition which in turn is indicated to be constructed beneath the railway embankment and is then thought to be culverted towards the sewer treatment works and River Dearne east of the site. At present no surface water outfall from the new impermeable area is proposed to discharge to the existing pond. The existing feature is proposed to remain unaltered on-site.

2.3 The legal plans for the site also indicate a land drainage connection directly to the River Dearne through the car park of the Miller Inn Public House opposite the site. At present we have indicated the existing land drainage connection as our surface water discharge point for the site. See attached plan in Appendix A.

2.4 The current hierarchy of drainage requires sustainable drainage technology to be thoroughly investigated first. The feasibility of soakaways should be investigated on site as part of any planned site investigation works.

2.5 The trial pit records indicate clays and mudstone underlying the site and therefore the use of soakaways on site would be highly unlikely, and a positive outfall should be considered.

2.6 The previous flood risk assessment has calculated the discharge rate based upon the impermeable area post development, with a greenfield run-off rate of 3.4 l/s/hectare. This equates to a surface water discharge rate of 12.3 l/s for the site.

2.7 The drainage feasibility layout attached is based on providing surface water storage below ground for storms up to and including 1 in 30 years, with a high level overflow from the control manhole into a dry detention basin which has been sized to store the 1 in 100 year plus climate change run-off volume as the pipe surcharges. This equates to approximately 940m^3 below ground storage and 1500m^3 being incorporated in the above ground detention basin.

2.8 The detention basin has been sized to hold a max depth of 900mm of water. At present it is envisaged that Yorkshire Water will adopt the on-site below ground and dry detention basin proposed for the site. We are not aware of any previous schemes adopted by Barnsley Council and Yorkshire Water would not consider a private management company as a suitable stakeholder in the long-term maintenance of the above ground feature.

2.9 Alternatively a new outfall sewer could be constructed under a requisition agreement with Yorkshire Water (although agreeing a new headwall may be problematic). A gravity connection should be achievable given that the water level on the River Dearne has been surveyed at 52.50m, compared to a proposed control manhole invert of 54.10m.

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3. FRA Summary

3.1 According to the EA flood map the proposed development area is located wholly within Flood Zone 1, with a small portion of proposed public open space to the north east of the site located in Flood Zone 2.

3.2 The River Dearne and Cawthorne Dike are situated approximately 100m to the north of the site. Based on the modelled flood levels obtained from the EA, some flooding of the north-eastern part of the site may be expected during all modelled levels; however this contradicts the EA flood map.

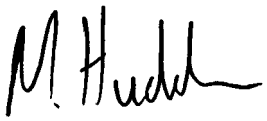
3.3 A sequential approach was undertaken for locating the proposed development with all built development located within Flood Zone 1. The requirements of the Sequential Test have therefore been addressed.

3.4 The risk of flooding from the existing pond, drains, pluvial flooding, highway flooding and groundwater flooding is considered to be low to moderate. Any residual flood risk can be readily mitigated.

3.5 Dry access and egress to the site will be provided via Barnsley Road. This route is shown to be located within Flood Zone 1 and will therefore provide safe, dry access and egress to the site. A new access point is proposed to the north east of the site. According to the EA flood map, some inundation may be expected during the 1 in 1000 year event; however if this occurs, alternate access/egress can continue to be provided via Barnsley Road.

I trust that the above is sufficient for your present requirements should you have any queries please do not hesitate to contact me direct.

Yours faithfully,



MARTIN HUDDLESTON M.Eng
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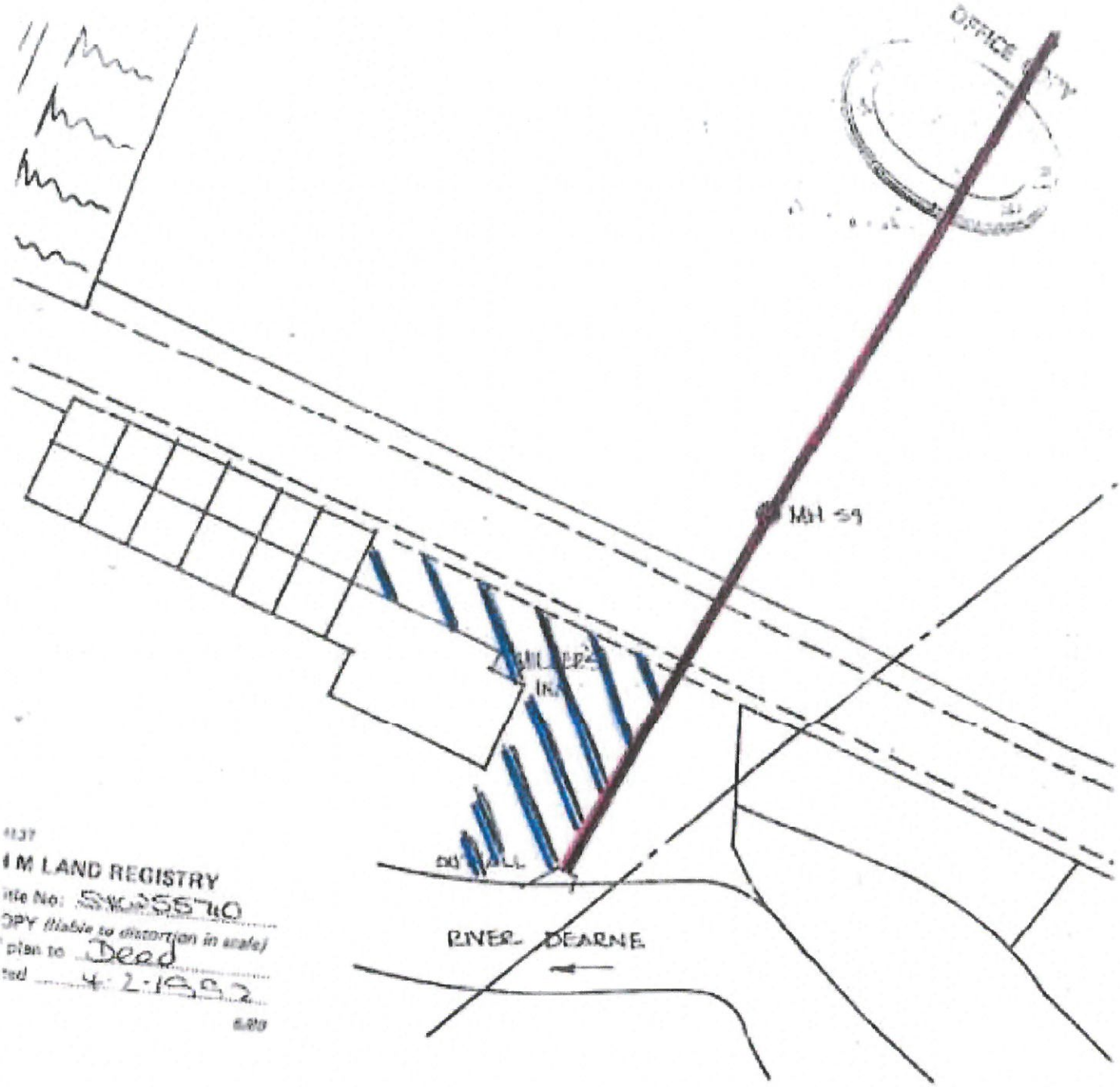
APPENDIX A

EXISTING DRAINAGE OUTFALL



1137

M LAND REGISTRY

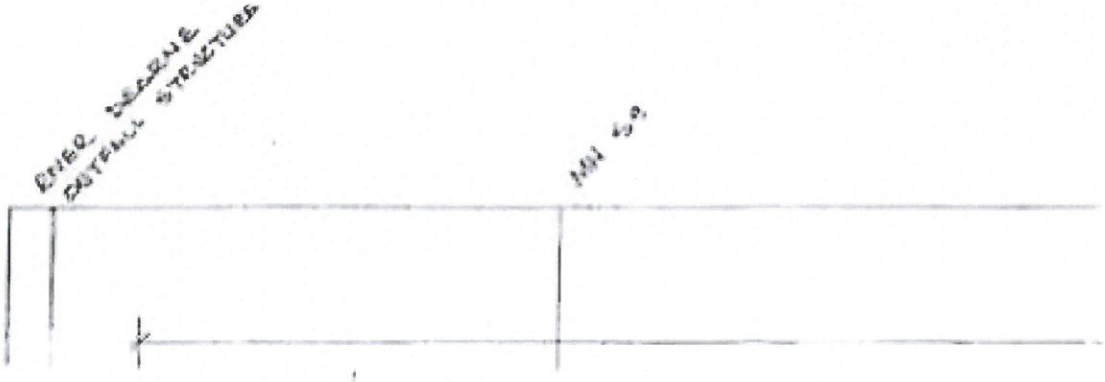
itle No: SYK355740

OPY (liable to distortion in scale)

plan to Deed

ted 4-2-1992

6.89



APPENDIX B

YORKSHIRE WATER DRAINAGE RECORDS

safe-move
A part of YorkshireWater

Cawthorne Dike
A637
Drain
Track
Pond
Barugh House Farm
Weir
Water Mill Court
Millers Inn (PH)
B3
87
B6428
55.3m
55.9m
60.1m
MP 25
River Dearne
DEARNE HALL ROAD
Low Barugh
ETL
BARNSLEY ROAD
63.3m
DEARNEHALLROAD
El Sub Sta
Low Barugh
DEARNEHALLFOLD
96.8m
Pond
Ward Bdy
Stone
Drain
MP.5
Track
ROYAL COURT
TCB
68.5m
Royal Hotel (PH)
LB Shelter
Church
Canal (disused)
Stone
72.7m
Garage
71.8m
Barugh
Crown and Anchor (PH)
75.0m
70.3m
Tanks

431253 : 408526	Map Name : SE3108SW	Title	Partial Key Foul Sewer = F Combined Sewer = C Surface Water Sewer = SW Trade Sewer = TD Partially Separate = PS
YorkshireWater Yorkshire Water, PO Box 500, Halifax Road, Bradford BD6 2LZ Contact Name : Ms H Webster Contact Tel :		Notes	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 : 12/09/2014, 09:18:53 Source : Sewer Network Enquiry
			Date Gen : 12/09/2014, 09:18:53

UPN: Undefined Originator: H Webster, Safe Move,

APPENDIX C

PRELIMINARY ENGINEERING FEASIBILITY

Barugh House Farm

Millers Inn (PH)

Water Mill Court

60.1m

63.3m

96.8m

DEARNE HALL ROAD

DEARNE HALL FOLD

B 6428

Low Barugh

Church

Pond

Drai

El Su

ETL

4.5m VISIBILITY SPLAYS

FORWARD VISIBILITY ENVELOPE

* Discharge joint for new highway drainage within hatched area to be agreed with YW & local authority. *

Flow Control device fitted

Proposed foul water network to connect into existing 300mm ø clayware sewer. Location & invert level to be checked prior to final design

CCTV survey of existing 3M outfall connection to be undertaken. Invert level to be confirmed prior to final design stage.

* 3M Pumping Station maybe required

Proposed Road. Min. Thk. 55-725m (1 in 100yr +30% cc).

Proposed surface water network to connect into existing outfall connection to River Dearne with a maximum discharge rate of 12.3 l/s/sec. Underground storage to be provided to cater for 1 in 2yr & 1 in 30yr Storm events. New attenuation pond to be provided to cater for additional flood volumes for 1 in 100yr & 1 in 100yr +30% increase in climate change. Maximum volume provided in pond 1520m³

* Proposed 3M invert levels may change upon receipt of outfall invert level. Surface water pumping station maybe required.

random tipping (building waste etc)

dense saplings

dense undergrowth

saplings (birch etc)

hawthorn/birch/ dense undergrowth

tarmac

wire fence

mature oak trees

overgrown area

concrete slab

marshy area with ponding

galvanised security fence

stone bags

Name	Type
Ashford	House
Finchley	House
Dewsbury	House
Barwick	House
Falmouth 1	House
Morpeth	House
Alston	House
Chesham	House
Tavistock	House
Thornbury	House
Kennington	House
Lincoln	House
Total	

	hectares
rea	9.9
a	4.91
	33.4

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Client: BARRATT DAVID WILSON HOMES

Project: LOWER BARUGH, BARNSLEY

Detail: PRELIMINARY ENGINEERING FEASIBILITY

Dwn	Chkd	Date	Scale	Dwg No.
HH		JUN-14	1:500@A1	E14/6120/001