

APPENDIX A
ENVIRONMENT AGENCY FLOOD MAP AND RISK ASSESSMENT GUIDANCE (FRA 1)



DO NOT SCALE FROM THIS DRAWING



Encia Environmental Limited

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 Registered in England & Wales No. 04060000

PROJECT

Leslie Road, Barnsley

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REV.	DESCRIPTION	DATE

DRAWN	DATE	APPROVED	DATE
D.L.	23/03/09		

SCALE	SHEET	DRAWING NO.
Not to scale	A4	9507/FRA2

CLIENT

Keepmoat Homes

DRAWING TITLE

EA Flood Zone Plan



Flood Risk Assessment (FRA) Guidance Note 1

Development Greater Than 1 Hectare (ha) in Flood Zone 1 (and Critical Drainage areas less than 1ha)

Environment Agency guidance on requirements for undertaking a Flood Risk Assessment (FRA) for planning applications.

Flood Risk Assessments at all levels should be undertaken under the supervision of an experienced flood risk management specialist (who would normally be expected to have achieved chartered status with a relevant professional body such as the Institution of Civil Engineers (ICE) or the Chartered Institution of Water and Environmental Management (CIWEM)).

This guidance note principally relates to the commissioning and undertaking of FRA studies for development greater than 1.0 ha in Flood Zone 1 (see footnote1). It is designed:

- a. to consider the principles of the sustainable drainage² of surface water;
- b. for use where works may affect watercourses or flood defences; or
- c. for use where a Critical Drainage³ area has been identified by the Environment Agency, or where the Local Planning Authority (LPA) has identified that a drainage problem exists on which they would like assurance from the developer that flood risk has been addressed.

Exceptions to this guidance note

For sites less than 1 hectare in Flood Zone 1, a formal FRA will not *usually* be required (see Table D1 of Planning Policy Statement 25 - PPS25). In these cases, applicants are advised to refer to the standard comments on managing surface water drainage as set out in our standing advice on development and flood risk. However, where (b) and/or (c) above apply, a FRA may still be required for development of less than 1 hectare and this guidance note can be used to inform the FRA.

¹ Flood Zone 1 comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding (<0.1%) in any year.

² Sustainable Drainage Systems (SUDS) seek to mimic natural drainage systems and retain water on, or near to the site in contrast to traditional drainage approaches which tend to pipe water off site as quickly as possible. When considering site drainage in Flood Zone 1, the focus within the FRA must be on flood risk management, but the use of SUDS should also seek to maximise opportunities for water quality and amenity benefits.

³ Critical Drainage Areas are areas with drainage problems that have been identified as such by the Environment Agency. A full list of Critical Drainage areas can be access from the Environment agency website on the Flood Risk Standing Advice pages - www.environment-agency.gov.uk



Why is a FRA required?

In Flood Zone 1, where the risk of flooding from rivers or the sea is classified as low, a FRA is still required **but it should be focused on the management of surface water run-off**. Development that increases the amount of impermeable surfaces can result in an increase in surface water run-off, which in turn can result in increased flood risk both on site and elsewhere within the catchment⁴. This is particularly important for larger scale sites, which have the potential to generate large volumes of surface water run-off. In addition, the site may also still be at risk from other sources of flooding (e.g. groundwater and overland runoff), which are not considered in the mapping of Flood Zones. Further information on flooding from other sources is provided in Annex C of PPS25.

What should be in the FRA?

The detail and technical complexity of a FRA will reflect the scale, nature and location of the development. Where available, reference should be made to the Strategic Flood Risk Assessment (SFRA) for locally specific guidance and information.

The following list sets out information that should be submitted as a FRA for developments covered by this guidance note:

Plans

- A location plan that includes geographical features, street names and identifies the catchment, watercourses or other bodies of water in the vicinity.
- A plan of the site showing:
 - i. existing site;
 - ii. development proposals; and
 - iii. identification of any structures (e.g. embankments), which may influence local flood flow overland or in any watercourses (e.g. culverts) present on the site.

Surveys

- Site levels - both existing and proposed. Reference to Ordnance Datum⁵, may be required where details of context of the site to its surroundings is needed.

Assessments

The Applicant should submit:

- Proposals for surface water management that aims to not increase, and ~~where practicable~~ reduce the rate of runoff from the site as a result of the

⁴ Catchment - The land which drains (normally naturally) to a given point on a river or drainage system.

⁵ Ordnance Datum or the abbreviation 'OD' is the mean level of the sea at Newlyn in Cornwall from which heights above sea level are taken. The contour lines on Ordnance Survey maps measure heights above OD for example, though these are not accurate enough for a FRA.

- development (in accordance with sustainable drainage principles, and the Local Planning Authority's published SFRA).
- Information about the surface water disposal measures already in place and their state of maintenance.
 - An assessment of the volume of surface water run-off likely to be generated from the proposed development.
 - Allowance in design for how the increased frequency and intensity of rainfall that is predicted as a result of climate change will affect the proposal (see Annex B of PPS25).
 - Information about other potential sources of flooding, if any, that may affect the site e.g. streams, surface water run-off, sewers, groundwater, reservoirs, canals and other artificial sources or any combination of these; including details on how these sources of flooding will be managed safely within the development proposal.
 - Confirmation as to whether Environment Agency consent is needed for any aspect of the work, and whether this has been applied for or not.

Dry islands

Some areas within Flood Zone 1 are surrounded by areas at a higher risk of flooding i.e. areas falling within Flood Zones 2 and 3. In certain cases development within such 'dry islands' can present particular hazards to public safety such as people being surrounded by water and needing to be rescued. The distribution of dry islands and risks posed by them in terms of access/exit vary considerably across the country. If you are in any doubt about how flood risks associated with 'dry islands' may affect your area, please contact your local Environment Agency Planning Liaison team on 08708 506 506.

Climate Change

As highlighted above, the frequency and intensity of rainfall is predicted to increase as a result of climate change and an allowance for how this will affect the proposal will need to be factored into design.

In addition rising sea levels may put some areas currently within Flood Zone 1 at risk from tidal flooding. These areas should have been identified in your Local Planning Authority's Strategic Flood Risk Assessment

What is the Environment Agency's Role?

We recommend that pre application discussions take place for developments covered by this guidance note. We will usually provide comments at the planning application stage on FRAs covered by this guidance note (unless indicated otherwise by Environment Agency Planning Liaison team in the area where the development is proposed).



We have three main interests:

- Ensuring that the design of the site drainage system meets the aims of sustainable drainage management, and does not increase, and where practicable reduces, the current runoff from the site.
- If the proposal is within the Byelaw Distance⁶ of a Main River⁷, sea defence, or flood defence structure; or includes diversion, culverting or erection of control structures in an Ordinary Watercourse⁸, then formal consent for the proposal may also be required from us.
- Prior to carrying out a FRA, developers should contact the Environment Agency and other operating authorities (such as the engineering department of the local authority or Internal Drainage Board as appropriate) to establish whether information is available relating to flood risk at the site they propose to develop. Account should also be taken of local knowledge of flooding held in the community. Our records of flooding are not exhaustive and the absence of information does not mean that a site will not flood. Whilst we can provide information on flooding from rivers and the sea, we only record known problems relating to other sources.

Sources of information:

1. PPS25 Practice Guide and Appendix F of the PPS⁹.
2. CIRIA C522 - Sustainable Urban Drainage Systems-design manual for England and Wales.
3. Interim Code of Practice for Sustainable Drainage Systems¹⁰.
4. The Local Planning Authority's Development Plan and Strategic Flood Risk Assessment.

⁶ Byelaw distance varies across the country. To find out what distance applies in your area call 08708 506 506 and ask to speak to a member of your local Development Control team in the area where the development is planned.

⁷ Main Rivers are watercourses designated as such on Main River maps and are generally the larger arterial watercourses. Main Rivers are indicated with a red line as part of the Flood Zones on maps held by the Local Planning Authority and on maps held by the Environment Agency.

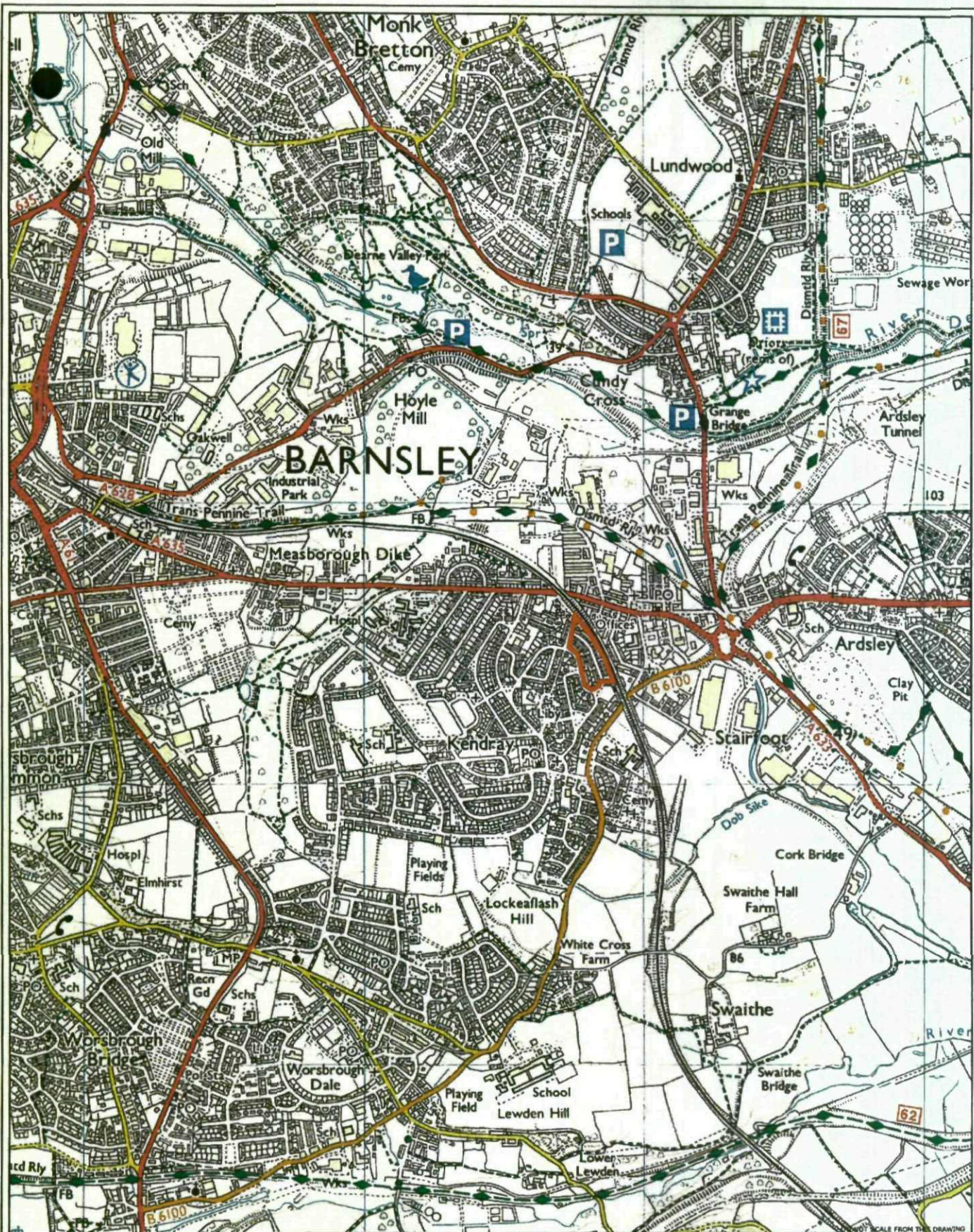
⁸ An Ordinary Watercourse is any watercourse that doesn't form part of a Main River

⁹ PPS25 and the PPS25 Practice Guide can be viewed at -

http://www.communities.gov.uk/planningandbuilding/planning/planningpolicyguidance/planningpolicystatements/planningpolicystatements/pps25/?lang=_e

¹⁰ Interim Code of Practice for Sustainable Drainage Systems - this document provides advice on design, adoption and maintenance issues and a good overview of other technical guidance on SUDS. It is available electronically on both the Environment Agency's web site at: www.environment-agency.gov.uk and CIRIA's web site at: www.ciria.org.uk.

**APPENDIX B
SITE LOCATION PLAN**



NOT SCALE FROM THIS DRAWING



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Encia Environmental Limited is a member of the Encia Group of Companies

PROJECT

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SCALE	SHEET	DRAWING NO
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CLIENT

Keepmoat Homes

DRAWING TITLE

Location Plan

**APPENDIX C
SITE PHOTOGRAPHS**



PHOTOGRAPH 1-Leslie Road looking East



PHOTOGRAPH 2-Low spot n Leslie Road



PHOTOGRAPH 3-Low spot against rail embankment in NE corner



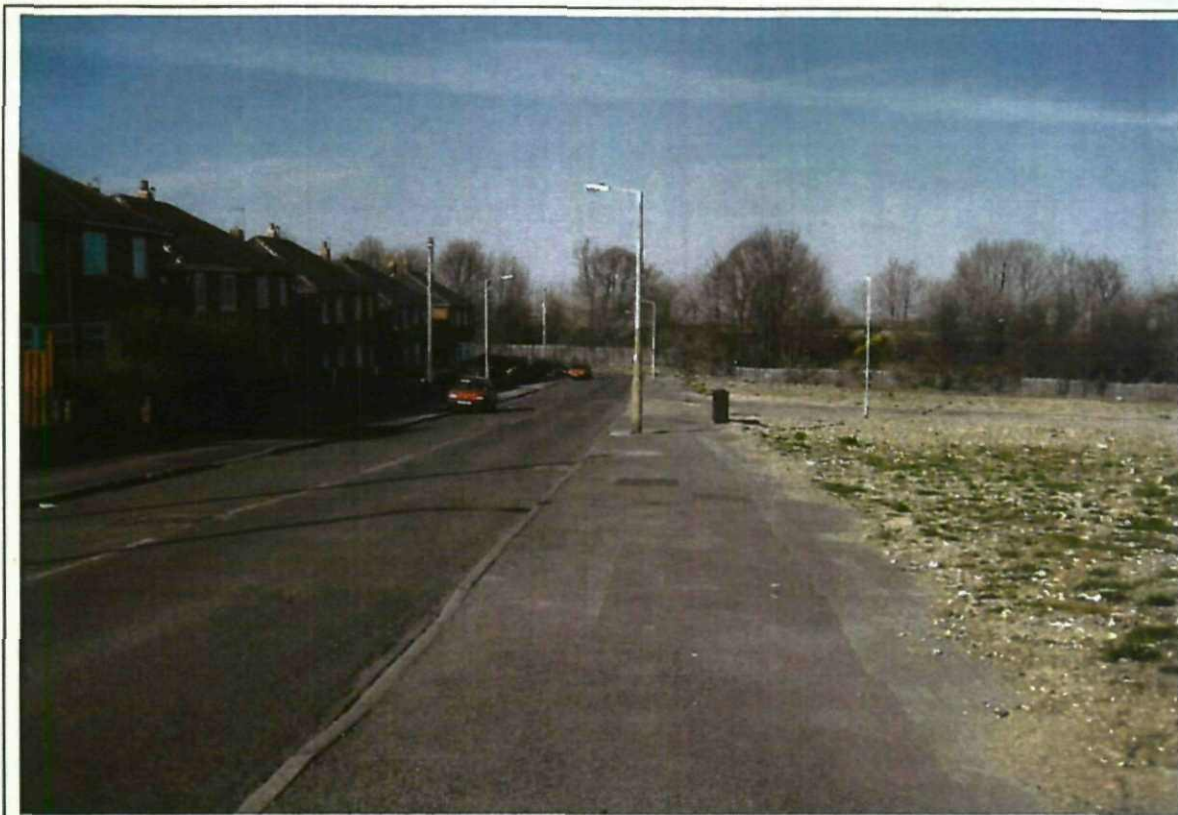
PHOTOGRAPH 4-View from site looking East



PHOTOGRAPH 5-Play Area adjacent site



PHOTOGRAPH 6-View towards Reginald Road

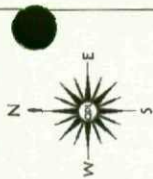


PHOTOGRAPH 7-View down Raymond Road



PHOTOGRAPH 8-View across site looking east

**APPENDIX F
LAYOUT**



ACCOMMODATION SCHEDULE

A	666 288D	= 12 UNITS
B	780 288D	= 23 UNITS
C	771 288D	= 12 UNITS
D	771 288D	= 12 UNITS
E	844 288D	= 6 UNITS
F	1011 288D	= 6 UNITS
G	780 288D	= 12 UNITS
H	800 288D	= 14 UNITS
TOTAL		= 94 UNITS

141 SPACES FOR 94 UNITS = 1.51 SPACES PER UNIT

NOTE AREA

24,871 m²
2,848 sqm
224,100 sqm

100% of the site area is covered by the proposed development.



NOTES: All other buildings, including any existing buildings, are shown in grey. The proposed development is shown in red. The site is bounded by the railway line to the north, the railway line to the east, the railway line to the south, and the railway line to the west.

PLANNING

KEEPMOAT HOMES
LESLIE, RAYMOND & REGINALD RD.
KENDRAY, BARNSELY
PLANNING LAYOUT

1:500 @A1

January 2008

QD254-01-01 A



Site Plan
The site is bounded by the railway line to the north, the railway line to the east, the railway line to the south, and the railway line to the west. The proposed development is shown in red. The site is bounded by the railway line to the north, the railway line to the east, the railway line to the south, and the railway line to the west.

Site Plan
The site is bounded by the railway line to the north, the railway line to the east, the railway line to the south, and the railway line to the west. The proposed development is shown in red. The site is bounded by the railway line to the north, the railway line to the east, the railway line to the south, and the railway line to the west.



PLAYSPACE AREA

APPENDIX G
LOCAL AUTHORITY CORRESPONDENCE

Darren Linklater

From: Kilner , Steve [SteveKilner@barnsley.gov.uk]
Sent: 06 February 2009 07:58
To: 'Darren Linklater'
Cc: Atkins , Wayne
Subject: RE: Proposed development at Leslie Road, Kendray

Darren, my apologies for the late response, I would comment on your queries as follows.

- (1) I have no records or knowledge of past flooding incidents on this site.
- (2) I have no records or knowledge of watercourses either crossing or adjacent to the site.
- (3) I am not aware of any suitable watercourses available for the disposal of surface water from the site. The nearest watercourse I am aware of is a minor watercourse of limited capacity some 210 metres to the north off Hoyle Mill Road. Connection would involve crossing the main Barnsley to Sheffield railway line and the A635 Doncaster Road. Due to it's limited capacity I would resist connection by recommending a Planning condition.
- (4) Information with respect to the public sewerage system should be sought from:-

Yorkshire Water Services Ltd,
Environmental Business Unit
New Development Team
Blackburn Meadows WWTW
Alsing Road
Sheffield
S9 1HX

Regards

Steve Kilner

Principal Engineer
Policy and Programming, Planning, Drainage and Highways

Development Directorate,
Highways and Engineering

Tel: 01226 772116 Fax: 01226 772196
email: stevekilner@barnsley.gov.uk

From: Darren Linklater [mailto:darren.linklater@enciagroup.co.uk]
Sent: 27 January 2009 13:13
To: Kilner , Steve
Subject: Proposed development at Leslie Road, Kendray

Hi Steve,

Encia have been asked to produce a FRA/DIA for the above site, which is to be redeveloped.

The site was formerly residential dwellings, which have recently been demolished.

I would be very grateful if you could assist with our report by providing the following information:

1. Is the council aware of any records of the site flooding in the past – if yes, are you aware of the extent and cause?
2. Are there any known watercourses within or adjacent to the site?
3. Are there any suitable watercourses/culverts nearby to discharge surface water? (Soakaway testing has been undertaken and the site is not suitable)
4. Has there been any reported problems with the local sewer network?

25/03/2009

Many thanks for your time. If you have any queries, please do not hesitate to call me.

Darren Linklater

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*** Barnsley MBC Disclaimer:

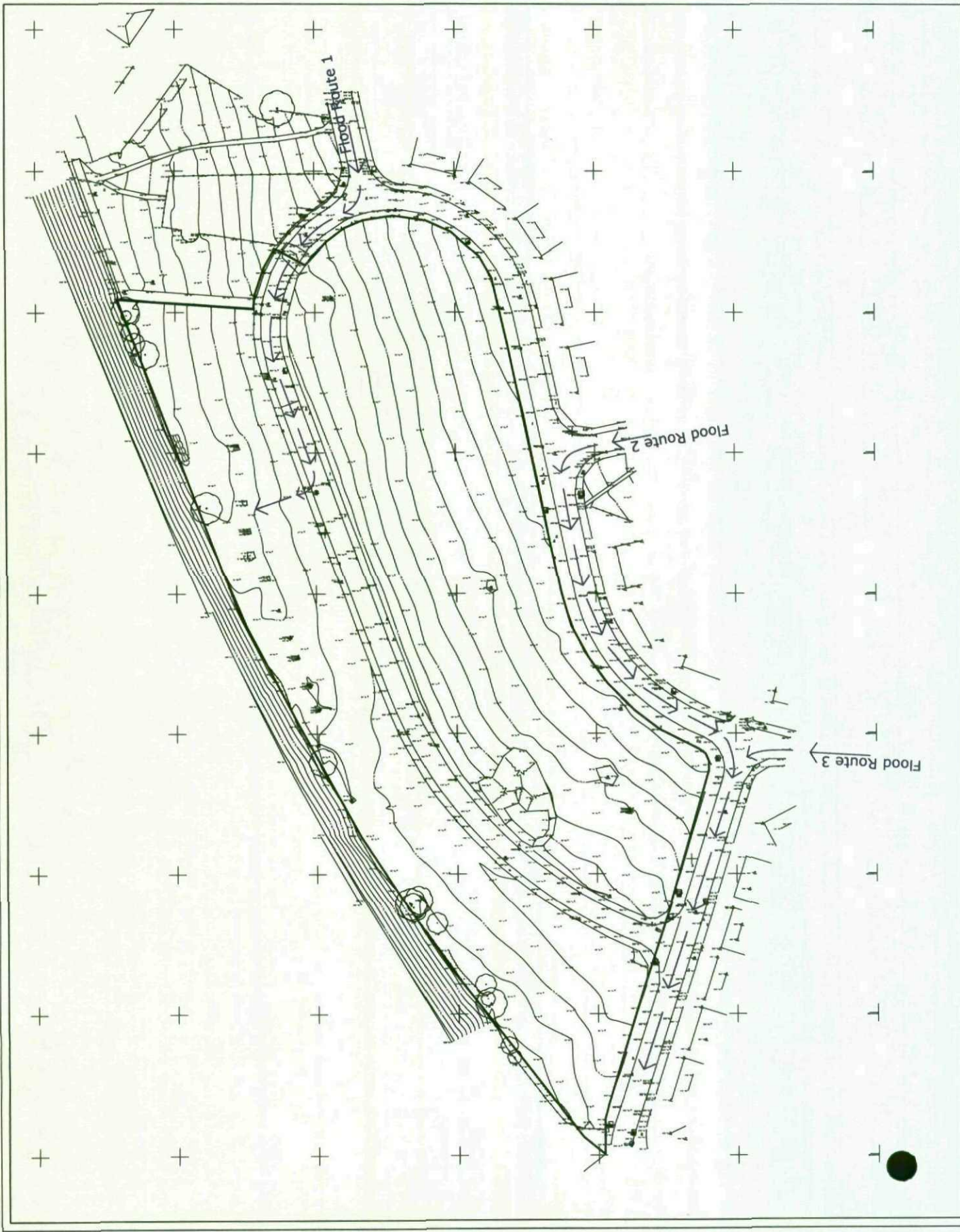
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APPENDIX H
POTENTIAL OVERLAND FLOOD ROUTES



APPENDIX D
TOPOGRAPHICAL SURVEY AND EXISTING CATCHMENT PLAN

APPENDIX E
SEWER RECORD PLAN AND WATER AUTHORITY CORRESPONDENCE



YorkshireWater

Encia Group Limited
7 Eggleston Court
Riverside Park
MIDDLESBROUGH
TS2 1RU

For the attention of Darren Linklater

Your Ref:
Our Ref: K000561

9507

Design
correspondence

Yorkshire Water
New Development Team Sewerage
Western House
Halifax Road
PO Box 500
Bradford
BD6 2LZ

Tel: (0845)1242424
Fax: (01274) 372 834

Email:
Planning.Sewerage@yorkshirewater.co.uk

For telephone enquiries ring:

Kashif Khan on (0845)1242424

30th January 2009

Dear Sir,

Leslie Road, Kendray, Barnsley - Pre-Planning Sewerage Enquiry - Residential

Thank you for your enquiry of 27th January 2009. Our charge of £70.00 (plus VAT) will be added to your account with us, reference AIG025. You will receive an invoice for your account in due course.

Please find enclosed a complimentary extract from the Statutory Sewer Map. This indicates the recorded position of the public sewers. The following comments reflect our view, with regard to the public sewer network only, based on a 'desk top' study of the site:

There are 150 mm diameter public combined and 225 mm diameter public surface water sewers recorded crossing the site. No buildings are to be erected within 3 (three) metres, nor trees planted within 5 (five) metres of these public sewers. It may not be acceptable to raise or lower ground levels over the sewers, nor to restrict access to the manholes on the sewers. If you wish to have these sewers diverted under Section 185 of the Water Industry Act 1991 an application should be made in writing. To discuss this matter, please telephone 0845 124 24 24.

Development of the site should take place with separate systems for foul and surface water drainage. The separate system should extend to the public sewer.

Foul water should discharge to the 150 mm diameter public combined sewer recorded crossing/within the site.

From the information supplied, it is not possible to determine if the site is low-lying relative to the location of the public sewer network. If the ground level of a site or the level of any basement is below the ground level of the point of connection to a public sewer, the developer may have to take precautions to prevent the risk of flooding of the site from surcharge of the public sewer network. Such precautions may include raising the level of the site, having pumped discharges from the site and/or the installation of anti-flooding valves.

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.

Where appropriate, soakaways, swales and infiltration trenches (SUDS) may be adopted as part of the public sewer network. For general conditions for the adoption of SUDS please see the attached sheet. Further information may be seen in the DEFRA publication 'Interim Code of Practice for Sustainable Drainage Systems' (ISBN 0-86017-904-4). If the developer is considering adoption of SUDS he should contact our New Development Team at Sheffield on 0845 124 24 24.

The local public sewer network does not have capacity to accept any additional discharge of surface water from the proposal site. The developer is advised to contact the Environment Agency/local Land Drainage Authority with a view to establishing a suitable watercourse (if any nearby) for discharge.

Surface water should discharge to the 225 mm diameter public surface water sewer recorded crossing/within the site.

Surface water discharges to the public sewer will be restricted to the level of run-off - i.e. same rate of discharge - to that from the existing use of the site. To maintain the "status quo" in the public sewer network, any discharge of surface water from the site should take place with similar rates of flow and/or measured areas discharging to similar points of connection to that of the existing use of the site. You will need to demonstrate positive drainage to the public sewer to Yorkshire Water by means of investigation and calculation carried out at your expense.

To do this, Yorkshire Water requires to see existing drainage layouts with pipe sizes, gradients and connection points, proposed drainage layouts with pipe sizes, gradients and connection points, measured impermeable areas of the present use of site and the proposed use of site, along with the calculations that show the existing discharge rate from the site to the public sewer and the proposed discharge rate from the site to the public sewer.

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.

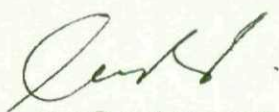
Prospectively adoptable sewers must be designed and constructed in accordance with the WRC publication "Sewers for Adoption - a design and construction guide for developers" 6th Edition as supplemented by Yorkshire Water's requirements, pursuant to an agreement under Section 104 of the Water Industry 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 New Development Team at Sheffield (telephone 0845 124 24 24) 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. Land drainage will not be allowed into a public sewer. Highway drainage, however, may be accepted under certain circumstances; for instance, if SUDS are not a viable option and there is no highway drain available and if capacity is available within the public sewer network. In this event, the developer will be required to enter into a formal agreement with Yorkshire Water Services under Section 115 Water Industry Act 1991 to discharge non-domestic flows into the public sewer network.

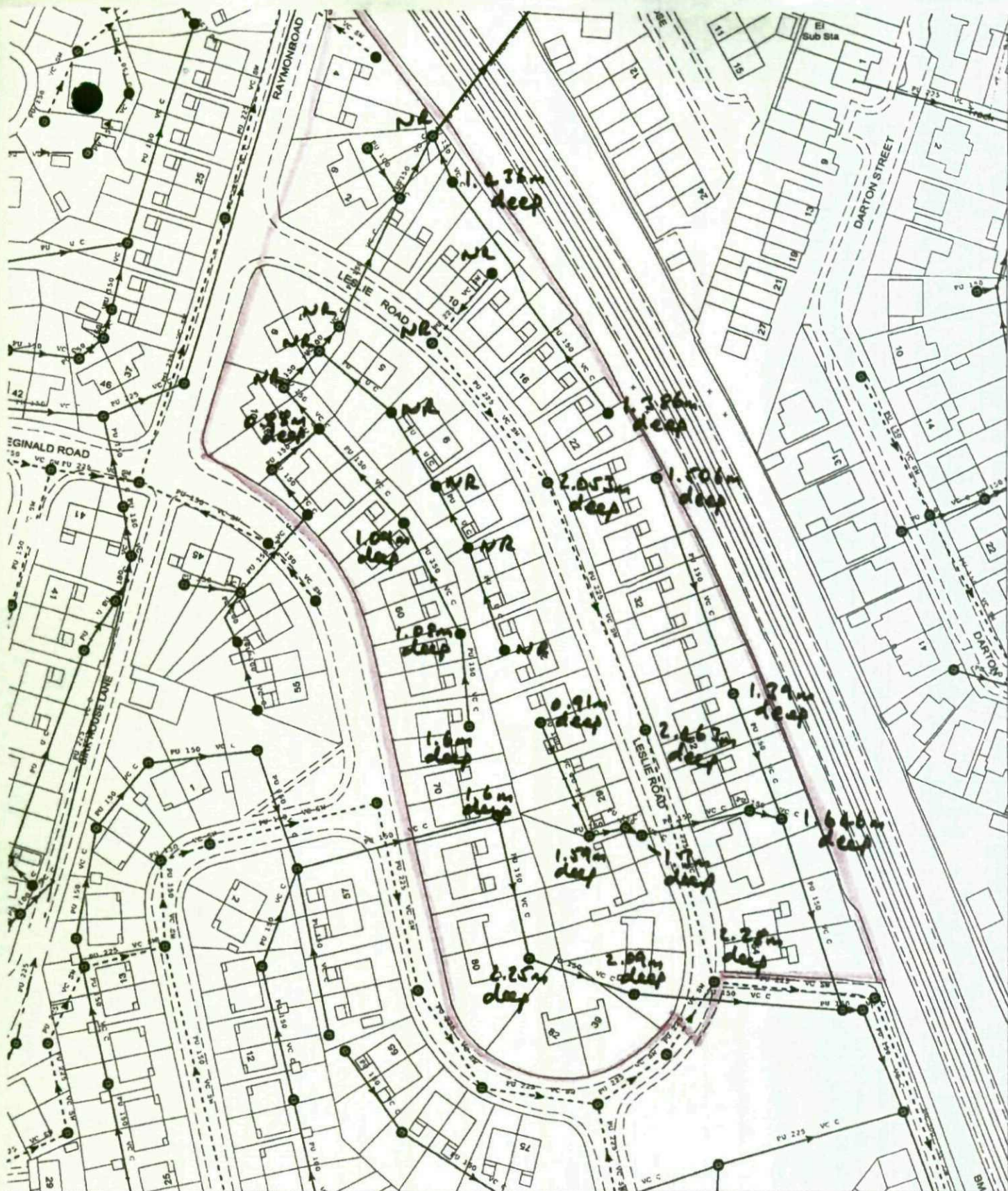
Any new connection to an existing public sewer will require the approval of Yorkshire Water. You may obtain an application form by telephoning 0845 124 24 24.

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

A handwritten signature in black ink, appearing to be 'J. Smith' or similar, written in a cursive style.

New Development Team



436608 : 405325

Map Name : SE3605SE

Title

Notes

NR : No recorded depth.

Partial Key

Foul Sewer = F

Combined Sewer = C

Surface Water Sewer = SW

Trade Sewer = TD

Partially Separate = PS

Date Req : 30/01/2009, 12:00:36

Date Gen : 30/01/2009, 12:00

Source : Sewer Network Enquiry

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.



YorkshireWater

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

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UPN Undefined

Originator: K KHAN, New Development - Waste Water,