transport, treatment and disposal are subject to waste management legislation, which includes:
•Duty of Care Regulations 1991
•Hazardous Waste (England and Wales) Regulations 2005
•Environmental Permitting (England and Wales) Regulations 2010
•The Waste (England and Wales) Regulations 2011
Developers should ensure that all contaminated materials are adequately characterised both chemically and physically in line with British Standard BS EN 14899:2005 'Characterization of Waste - Sampling of Waste Materials - Framework for the Preparation and Application of a Sampling Plan' and that the permitting status of any proposed treatment or disposal activity is clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.
If the total quantity of waste material to be produced at or taken off site is hazardous waste and is 500kg or greater in any 12 month period the developer will need to register with us as a hazardous waste producer. Refer to the Hazardous Waste pages on GOV.UK for more information.

Waste on Site
The CLAIRE Definition of Waste: Development Industry Code of Practice (version 2) provides operators with a framework for determining whether or not excavated material arising from site during remediation and/or land development works are waste or have ceased to be waste. Under the Code of Practice:
•excavated materials that are recovered via a treatment operation can be re-used on-site providing they are treated to a standard such that they fit for purpose and unlikely to cause pollution
•treated materials can be transferred between sites as part of a hub and cluster project
•some naturally occurring clean material can be transferred directly between sites.
Developers should ensure that all contaminated materials are adequately characterised both chemically and physically, and that the permitting status of any proposed on site operations are clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.
The Environment Agency recommends that developers should refer to:
•the Position statement on the Definition of Waste: Development Industry Code of Practice and;
•The Environmental regulations page on GOV.UK

The proposed development is located on or within 250m of a landfill site that is potentially producing landfill gas.

Landfill gas consists of methane and carbon dioxide. It is produced as the waste in the landfill site degrades. Methane can present a risk of fire and explosion. Carbon dioxide can present a risk of asphyxiation or suffocation. The trace constituents of landfill gas can be toxic and can give rise to long and short term health risks as well as odour nuisance.

The risks associated with landfill gas will depend on the controls in place to prevent uncontrolled release of landfill gas from the landfill site. Older landfill sites may have poorer controls in place and the level of risk may be higher or uncertain due to a lack of historical records of waste inputs or control measures.

Under the conditions of the environmental permit for the landfill, the operator is required to monitor for sub-surface migration of landfill gas from the site. An examination of our records of this monitoring show that there is no previous evidence of landfill gas migration from the site that could affect the proposed development. This environmental

monitoring data from the site is available on our public register.
Development on top of or within 50m of any permitted landfill site that accepted hazardous or non-hazardous waste should be considered very carefully, as even with appropriate building control measures in place, landfill gas can accumulate in confined spaces in gardens (e.g. sheds, small extensions) and can gain access to service pipes and drains where it can accumulate or migrate away from the site.

The following publications provide further advice on the risks from landfill gas and ways of managing these:

- Waste Management Paper No 27
- Environment Agency LFTGN03 ‘Guidance on the Management of Landfill Gas’
- Building Research Establishment guidance – BR 414 ‘Protective Measures for Housing on Gas-contaminated Land’ 2001
- Building Research Establishment guidance – BR 212 ‘Construction of new buildings on gas-contaminated land’ 1991
- CIRIA Guidance – C665 ‘Assessing risks posed by hazardous ground gases to buildings’ 2007

There is also a historic landfill located on the site of the proposed development. This was licensed to receive inert waste and the permit surrendered in 1992.

Severn Trent Water should be consulted by the Local Planning Authority and be requested to demonstrate that the sewerage and sewage disposal systems serving the development have sufficient capacity to accommodate the additional flows, generated as a result of the development, without causing pollution.

In accordance with the Planning Practice Guidance (Reference ID: 7-043-20140306), please notify us by email within 2 weeks of a decision being made or application withdrawn. Please provide us with a URL of the decision notice, or an electronic copy of the decision notice or outcome.

Yours sincerely

Ms Lydia Bond
Planning Advisor

Direct dial 0208 4745166
Direct e-mail lydia.bond@environment-agency.gov.uk

End

Land Contamination Proof of Evidence

Appendix C: CLO correspondence to ADC. Dated 21/01/24.

Seb Newell

Subject: FW: [EXTERNAL]:Planning Application V/2022/0629:300 Dwellings at Newark Road

From: Sarah.Gray
Sent: Sunday, January 21, 2024 11:08 PM
To: Planning.Admin <Planning.Admin@ashfield.gov.uk>
Cc: Richard.Sunter <Richard.Sunter@ashfield.gov.uk>
Subject: v/2022/0629 - Land at Junction of Newark Road and Coxmoor Road
Importance: Low

Thank you for consulting me on this application.

Part of this site is occupied by an EA licenced landfill site.

I have reviewed the following report submitted with this application:

Phase 1 GeoEnvironmental Desk Study – Low Moor Road, Sutton in Ashfield for Hallam Land Management by RLRE Ref: P22-070 dated 8th February, 2022.

I would recommend the following condition:

Land Contamination

1.

a) No works shall take place (save for above ground demolition works and site preparation works) until a remediation scheme to deal with the potential ground contamination of the site has been submitted to and approved in writing by the local planning authority.

The scheme shall include:

i. A site investigation scheme, to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site;

ii. The results of the site investigation and detailed risk assessment referred to in (i) and based on these, an options appraisal and remediation strategy giving full details of the remediation and mitigation measures required and how they are to be undertaken;

iii. A verification plan setting out the details of the data that will be collected to demonstrate that the works set out in the remediation strategy in (ii) are complete to a satisfactory standard; and

iv. The contamination remediation works shall be carried out in accordance with the approved details and completed prior to the first occupation of any area identified by the report.

v. If required, a monitoring and maintenance plan, setting out provisions for long-term monitoring of pollutant linkages, maintenance and arrangements for contingency action. The provisions of the monitoring and maintenance plan shall be in force from the first occupation of the development and retained for its lifetime.

b) If during the works any additional suspected contamination is encountered, all works in the relevant part of the site shall cease immediately and not resume until either:

i. The potential contamination has been assessed and a remediation scheme has been submitted to and approved in writing by the Local Planning Authority.

or

ii. Timescales for submission of a remediation scheme and details of works which may be carried out in the interim have been agreed in writing by the Local Planning Authority.

Any additional land contamination shall be fully remediated prior to the first occupation of any area identified by the report.

Reason: To protect future occupiers of the development *from unacceptable land contamination risk in accordance with NPPF, paragraphs 183 & 184.*

2. The development shall not be occupied until a post completion verification report, including results of sampling and monitoring carried out, has first been submitted to and approved in writing by the local planning authority demonstrating that the site remediation criteria have been met.

Reason: To protect future occupiers of the development *from unacceptable land contamination risk in accordance with NPPF, paragraphs 183 & 184.*

Kind regards.

Sarah Gray
Contaminated Land Officer
Commercial and Environmental Protection
Place and Communities

PLEASE NOTE: I WORK PART-TIME AND CAN BE CONTACTED 10AM-12.00 MONDAYS, WEDNESDAYS AND FRIDAYS

Ashfield District Council
Urban Road
Kirkby-in-Ashfield
Nottinghamshire
NG17 8DA

Tel: 01623 439725

email: sarah.gray@ashfield.gov.uk

Land Contamination Proof of Evidence

Appendix D: Letter from RLL to Pegasus, passed on to ADC. Dated 18/09/24.

16 Sep 2024

Clare Clarke,
Director Planning,
Pegasus Group,
4 The Courtyard,
Lockington
Derby DE74 2SL

Dear Clare

RE: Planning Application V/2022/0629:300 Dwellings at Newark Road, Sutton-in-Ashfield,

Further to recent correspondence, we write to provide confirmation that drainage proposals shall not pose an unacceptable risk from potential contamination.

A Masterplan layout for the site together with Drainage Strategy Proposals are provided on RL Drawing 16530-RLL-17-XX-DR-C-201 rev E dated 20th June 2022. This shows a series of proposed land parcels for residential development sub-divided by roads and landscaping, with several attenuation ponds situated adjacent to the western boundaries. The attenuation basins are designed for storage of surface water runoff before discharge to the public sewer at agreed discharge rates. No infiltration is proposed.

Rodgers Leask provided the following report in relation to the site:

- Phase 1 Geo-environmental Desk study, Low Moor Road, Sutton-in-Ashfield for Hallam Land management dated 8th February 2022.

The above report made reference to previous reports and investigations which included an earlier Phase 1 desk study which covered a wider larger area; an infiltration testing report and two phases of gas monitoring.

This note provides a commentary on the potential risk from contamination associated with the construction and use of the proposed attenuation ponds for surface water drainage.

Historically, the majority of the Site has mostly comprised greenfield land, with the exception of an area in the north of the site and a smaller area in the eastern corner. Earliest OS mapping shows sand pits in the north and easternmost corner of the site which

Rodgers Leask Limited
01332 285000 • rlladmin@rodgersleask.co.uk • rodgersleask.co.uk
Derby • Birmingham • Bristol • Nottingham

gradually expanded in size in the early to mid 1900's, until it was shown as a playing field on mapping between 1959-1960. The smaller pit in the south-eastern portion of the site remained on mapping up until 1991 and may not have been infilled. Greenfield Farmhouse was present adjacent to the northern site boundary and smaller outbuildings in the north-eastern site corner, demolished between 1967 and 1974.

In relation to geological mapping, infilled ground is shown in the northern part of the site coinciding with the former sand pits. Two lobes of superficial strata are shown encroaching the south-eastern site boundary, comprising Glaciofluvial Deposits - Sand and Gravel, and Head deposits - Sand and Silt. The majority of the site is not shown to be underlain by superficial deposits. The bedrock geology is the Lenton Sandstone Formation, typified by red/brown with buff mottled fine to medium sandstone.

No surface water features are recorded on site. The River Maun is located 139m to the southwest of the site.

The infilled land adjacent to Newark Road in the north of the site is recorded as a Historic Landfill ref 4/80/100/55NW and was issued with a Waste License on 19th March 1980 to allow deposition of inert waste only. The last recorded deposition of waste was 28th November 1983 and the license was surrendered on 22nd October 1992.

The desk study report recognised that this landfill presents a low risk of contamination being present, with potential contaminants including heavy metals, sulphate, polyaromatic hydrocarbons, and asbestos. Inert waste should be non-reactive and typically comprises builders' materials and demolition materials and thus typically presents a low risk of contamination.

Ground conditions identified beneath the site based on the previous ground investigations comprised up to ~8.6m of made ground comprising a mixture of gravel, sand and clay, consistent with the inert nature of waste expected, overlying dense gravelly sand of the Lenton Sandston Formation within the northern area of the site coinciding within the historical landfill. No visual or olfactory evidence of contamination was encountered during the investigation works. Elsewhere, ground conditions comprised topsoil over weathered sandstone, which generally comprised silty gravelly sand or firm to stiff sandy clay. No groundwater was encountered during the previous investigation.

Although no contamination testing was undertaken as part of the previous investigations, the risk to controlled waters from the landfill materials was considered low to moderate based on the absence of visual and olfactory evidence of contamination.

The risk presented by the construction and use of the attenuation ponds is considered very low based on the following:

- The attenuation features shall be lined to prevent infiltration.
- The waste materials are recorded as inert and have been found to be consistent with this description with no visual or olfactory evidence of contamination in soils observed.
- No evidence of groundwater or leachate was encountered.

Further chemical testing will be required on the inert landfill materials, together with risk assessment and the formulation of a detailed Remediation Strategy to set out any mitigation measures required. This is typically controlled by the imposition of Planning Conditions. The circumstances here are relatively normal and the means of addressing any concerns about contamination of water from the site would comprise tried and tested methods.

Yours sincerely,

Stewart Friel MSc BSc (Hons) MIEnvSc
Director
Email: stewart.friel@rodgersleask.co.uk

Land Contamination Proof of Evidence

Appendix E: CLO correspondence to ADC. Dated 29/09/24.

Seb Newell

Subject: FW: [EXTERNAL]:Planning Application V/2022/0629:300 Dwellings at Newark Road

From: Sarah.Gray <Sarah.Gray@ashfield.gov.uk>
Sent: 29 September 2024 23:34
To: Richard.Sunter <Richard.Sunter@ashfield.gov.uk>
Subject: RE: [EXTERNAL]:Planning Application V/2022/0629:300 Dwellings at Newark Road

Thank you for sending me this additional information.

There has been historic landfilling on this site for inert waste. As such, testing for asbestos should be carried out and I could not find a statement describing this in the Richard Leaske letter report.

Therefore, a full contaminated condition should be appended to any permit issued for this development as stated in my email dated 21/01/2024:

From: Sarah.Gray
Sent: Sunday, January 21, 2024 11:08 PM
To: Planning.Admin <Planning.Admin@ashfield.gov.uk>
Cc: Richard.Sunter <Richard.Sunter@ashfield.gov.uk>
Subject: v/2022/0629 - Land at Junction of Newark Road and Coxmoor Road
Importance: Low

Thank you for consulting me on this application.

Part of this site is occupied by an EA licenced landfill site.

I have reviewed the following report submitted with this application:

Phase 1 GeoEnvironmental Desk Study – Low Moor Road, Sutton in Ashfield for Hallam Land Management by RLRE Ref: P22-070 dated 8th February, 2022.

I would recommend the following condition:

Land Contamination

1.

a) No works shall take place (save for above ground demolition works and site preparation works) until a remediation scheme to deal with the potential ground contamination of the site has been submitted to and approved in writing by the local planning authority.

The scheme shall include:

i. A site investigation scheme, to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site;

ii. The results of the site investigation and detailed risk assessment referred to in (i) and based on these, an options appraisal and remediation strategy giving full details of the remediation and mitigation measures required and how they are to be undertaken;

iii. A verification plan setting out the details of the data that will be collected to demonstrate that the works set out in the remediation strategy in (ii) are complete to a satisfactory standard; and

iv. The contamination remediation works shall be carried out in accordance with the approved details and completed prior to the first occupation of any area identified by the report.

v. If required, a monitoring and maintenance plan, setting out provisions for long-term monitoring of pollutant linkages, maintenance and arrangements for contingency action. The provisions of the monitoring and maintenance plan shall be in force from the first occupation of the development and retained for its lifetime.

b) If during the works any additional suspected contamination is encountered, all works in the relevant part of the site shall cease immediately and not resume until either:

i. The potential contamination has been assessed and a remediation scheme has been submitted to and approved in writing by the Local Planning Authority.
or

ii. Timescales for submission of a remediation scheme and details of works which may be carried out in the interim have been agreed in writing by the Local Planning Authority.

Any additional land contamination shall be fully remediated prior to the first occupation of any area identified by the report.

Reason: To protect future occupiers of the development *from unacceptable land contamination risk in accordance with NPPF, paragraphs 183 & 184.*

2. The development shall not be occupied until a post completion verification report, including results of sampling and monitoring carried out, has first been submitted to and approved in writing by the local planning authority demonstrating that the site remediation criteria have been met.

Reason: To protect future occupiers of the development *from unacceptable land contamination risk in accordance with NPPF, paragraphs 183 & 184.*

Kind regards.

Sarah Gray
Contaminated Land Officer
Commercial and Environmental Protection
Place and Communities

PLEASE NOTE: I WORK PART-TIME AND CAN BE CONTACTED 10AM-12.00 MONDAYS, WEDNESDAYS AND FRIDAYS

Ashfield District Council
Urban Road
Kirkby-in-Ashfield
Nottinghamshire
NG17 8DA

Tel: 01623 439725

email: sarah.gray@ashfield.gov.uk

Land Contamination Proof of Evidence

Appendix F: CLO correspondence to ADC. Dated 29/11/24.

[redacted]

Sent: 29 November 2024 12:16

[redacted]

Subject: v/2022/0629 - Newark Road, Sutton-in-Ashfield

Hello Mick

Thank you for consulting me on this application.

My comments were based on information submitted in the first place in 2022. This was the Phase 1 Geo-Environmental Desk Study – Low Moor Road, Sutton-in-Ashfield for Hallam Land Management Ltd by RLRE (Rodgers Leask Environmental), Ref P22-070 dated 8th February 2022.

I was then made aware after concerns were made by members that a Phase 2 scheme was essential before a decision was made.

The application was deferred by Members who requested further information. As no information was submitted and an Appeal lodged, I was asked to look at my comments in light of Members concerns. I found comments made by the EA on file of which I was not previously aware and this raised issues in respect of whether a Phase I report addressing controlled waters as well as contaminated land was sufficient and if a Phase II intrusive survey should be carried out in accordance with the Members' request. I was in the process of requesting the submission of an intrusive site investigation prior to a decision being made on this application but events overtook my actions.

The phase 2 survey was then submitted by the Appellants earlier this month and having reviewed this report: "Geotechnical and Geo-environmental Site Investigation – Newark Road, Sutton-in-Ashfield for Harron Homes Ltd (Issue 2) by Eastwood Consulting Engineers Ref 46924-002 dated

24th May, 2022", I consider that the development could be carried out subject to the appropriate mitigation measures.

On reviewing the following reports now submitted following the refusal of the application:

Geotechnical and Geo-environmental Site Investigation – Newark Road, Sutton-in-Ashfield for Harron Homes Ltd (Issue 2) by Eastwood Consulting Engineers Ref 46924-002 dated 24th May, 2022.
Letter Report – Hydrological Review and Piling Assessment – Newark Road, Sutton-in-Ashfield for Harron Homes Ltd by Eastwood Consulting Engineers Ltd Ref: KE/DN/46924-004 dated 29th July, 2022.

I am now happy that the development may go ahead subject to the installation of satisfactory mitigation measures as outlined in Section 9 of the Geotechnical and Geo-environmental report, above. However, the EA may also have their own comments, especially regarding information in the Hydrological Review and Piling Assessment.

I suggest the application should be conditioned as follows:

Land Contamination

1.

a) No works shall take place (save for above ground demolition works and site preparation works) until a remediation scheme to deal with the potential ground contamination of the site has been submitted to and approved in writing by the local planning authority.

The scheme shall include:

i. A preliminary risk assessment which identifies:

- All previous uses;
- Potential contaminants associated with those uses;
- A conceptual model of the site indicating sources, pathways and receptors; and
- Potentially unacceptable risks arising from contamination at the Site.

ii. A site investigation scheme, based on (i) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site;

iii. The results of the site investigation and detailed risk assessment referred to in (ii) and based on these, an options appraisal and remediation strategy giving full details of the remediation and mitigation measures required and how they are to be undertaken;

iv. A verification plan setting out the details of the data that will be collected to demonstrate that the works set out in the remediation strategy in (iii) are complete to a satisfactory standard; and

v. If required, a monitoring and maintenance plan, setting out provisions for long-term monitoring of pollutant linkages, maintenance and arrangements for contingency action. The provisions of the monitoring and maintenance plan shall be in force from the first occupation of the development and retained for its lifetime.

vi. The contamination remediation works shall be carried out in accordance with the approved details and completed prior to the first occupation of any area identified by the report.

b) If during the works any additional suspected contamination is encountered, all works in the relevant part of the site shall cease immediately and not resume until either:

i. The potential contamination has been assessed and a remediation scheme has been submitted to and approved in writing by the Local Planning Authority.

Or

ii. Timescales for submission of a remediation scheme and details of works which may be carried out in the interim

c) Any additional land contamination shall be fully remediated prior to the first occupation of any area identified by the report.

Reason: To protect future occupiers of the development *from unacceptable land contamination risk in accordance with NPPF, paragraphs 180, 189 and 190. This condition is necessary as a pre-commencement condition because in the absence of a robust remediation plan the development process could result in the spread of contamination and a risk to public health.*

2. The development shall not be occupied until a post completion verification report demonstrating that the site remediation criteria have been met, has first been submitted to, and approved in writing, by the local planning authority.

Reason: To protect future occupiers of the development *from unacceptable land contamination risk in accordance with NPPF, paragraphs 180,189 and 190.*

Kind regards.

Sarah Gray
Contaminated Land Officer
Commercial and Environmental Protection
Place and Communities

PLEASE NOTE: I WORK PART-TIME AND CAN BE CONTACTED 10AM-12.00 MONDAYS, WEDNESDAYS AND FRIDAYS

Ashfield District Council
Urban Road
Kirkby-in-Ashfield
Nottinghamshire
NG17 8DA

[redacted]

[redacted]

Land Contamination Proof of Evidence

Appendix G: RLL Drainage Statement. Dated 16/12/24

Land at Newark Road, Sutton-in-Ashfield

Appeal Reference: APP/W3005/W/24/3350529

Drainage

Statement of Evidence

Produced on behalf of Hallam Land

December 2024

P16-530

16530-RLL-24-XX-RP-C-002

Document History

Prepared by	:	Matthew Leask
Position	:	Associate
Date	:	December 2024
Authorised by	:	Kriston Harvey
Position	:	Director
Date	:	December 2024
Document Status	:	Final

Revision	Date	Comment	Editor	Checked by
P01	17.12.24	Final issue.	ML	KAH

Contents

Appendices

Appendix A – Site Topography Plan

Appendix B – Drainage Strategy Technical Note

Appendix C – Drainage Strategy Drawing

Appendix D – Drainage Calculations

DECLARATION

'The evidence which I have prepared and provided for this appeal is true and has been prepared and is given in accordance with guidance of my professional institution and I confirm that the opinions expressed are my true and professional opinions.'

1 Introduction

1.1 Credentials

1.1.1 My name is Matthew Leask, I have a master's degree (MSc) in Civil Engineering from Heriot-Watt University, Edinburgh and I'm employed as an Associate with Rodgers Leask Limited based in Derby.

1.1.2 I am professionally registered as a Chartered Engineer (CEng) with the Engineering Council and I am a Member of the Institution of Civil Engineers (MICE).

1.1.3 I have day to day responsibility for a team of engineers within the Civil Engineering Department.

1.1.4 I have over 18 years' experience in a consultancy role in dealing with Civil Engineering including Flood Risk, Surface Water Drainage (including SuDS) and Foul Water Drainage.

1.1.5 I have worked on a wide range of development projects including residential developments, mixed use schemes, large SUE developments, employment and business park sites, industrial and logistics developments, education and leisure.

1.1.6 I confirm that I have inspected the site and locality and that I'm familiar with the application site area.

2 Planning Policy and Technical Guidance

2.1 National Planning Policy

2.1.1 The National Planning Policy Framework (NPPF) was first published in March 2012, and most recently updated on 12th December 2024. The NPPF sets out the government's planning policies for England and how these should be applied, guiding LPAs in determining planning applications.

2.1.2 At paragraph 164, the NPPF stipulates new development be planned for in ways that, *"avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through incorporating green infrastructure and sustainable drainage systems".*

2.1.3 At paragraph 182, the NPPF states that*, "Applications which could affect drainage on or around the site should incorporate sustainable drainage systems to control flow rates and reduce volumes of runoff, and which are proportionate to the nature and scale of the proposal. These should provide multifunctional benefits wherever possible, through facilitating improvements in water quality and biodiversity, as well as benefits for amenity. Sustainable drainage systems provided as part of proposals for major development should:*

a) take account of advice from the Lead Local Flood Authority;

b) have appropriate proposed minimum operational standards; and

c) have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development."

2.1.4 The National Planning Practice Guidance (PPG) 'Flood Risk and Coastal Change' was published in March 2014 and last updated in August 2022.

2.1.5 Paragraph 055 covers the benefits of Sustainable Drainage Systems (SuDS) and states that they, *"provide benefits for water quantity, water quality, biodiversity and amenity". It goes on to state that SuDS can, "(contribute) to reducing the causes and impacts of flooding".*

2.1.6 The preferred drainage route is set out in paragraph 056, *"according to the following hierarchy of drainage options:*

1. *'into the ground (infiltration);*
2. *to a surface water body;*
3. *to a surface water sewer, highway drain, or another drainage system;*

4. *to a combined sewer."*

2.1.7 At paragraph 058, the guidance states that when considering a development that includes a SuDS system, the local planning authority, *"should be satisfied that the proposed minimum standards of operation for the proposed sustainable drainage system are appropriate, and that there are clear maintenance and adoption arrangements in place for the lifetime of the development."*

2.1.8 Paragraph 059 identifies that applicants, *"need to submit a sustainable drainage strategy containing proportionate information on the proposed sustainable drainage system as part of their planning application".* It goes on to state *that "supporting information will need to describe the existing and proposed surface water management arrangements to ensure there is no increase in flood risk to others off-site".*

2.1.9 Further to this, paragraph 060 covers the requirement for long-term maintenance arrangements to be considered within the proposals and notes that, *"possible arrangements could include (but are not limited to) adoption by:*

- *A water and sewerage company*
- *The local authority*
- *The lead local flood authority*
- *A community trust*
- *A private management company"*

2.2 Local Planning Policy

2.2.1 The 2002 Ashfield Local Plan states at section 3.94 that, *"wherever practical, developers will be encouraged to provide Sustainable Urban Drainage Systems (SUDS) as part of future developments"* and that, "*SUDS are effective for reducing the impact of surface water discharge and is considered to be significant in the process of delivering sustainable urban development."*

2.3 Technical Guidance

2.3.1 The Construction Industry Research and Information Association (CIRIA) published 'The SuDS Manual (C753)' in November 2015.

2.3.2 C753 provides guidance on the design and maintenance of Sustainable Drainage Systems and elements.

2.3.3 The guidance covers the forming of drainage strategies and the design and use of SuDS to deal with water quantity and quality.

2.3.4 The 'Design and Construction Guidance for foul and surface water sewers offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England ("the Code")' was published on 10 March 2020. The guidance is often abbreviated to 'DCG'.

2.3.5 The guidance is for use by developers when planning, designing and constructing foul and surface water drainage systems.

3 Drainage Strategy

3.1 Introduction

3.1.1 In this section I will summarise how the Site currently drains as well as the proposed drainage strategy for the development.

3.1.2 I will also detail the work which has been undertaken to date, to support the proposed development relating to site drainage. This includes mitigation measures and how this addresses planning policy and technical guidance.

3.2 Site Location

3.2.1 The site ("the Site") is located south of Newark Road, southeast of Searby Road and west of Coxmoor Road. The Site is bounded by agricultural fields to the south and is a reversed 'L' shape.

3.2.2 The Site comprises 21.4 hectares (ha) most of which is private agricultural fields, set to arable use.

3.3 Topography

3.3.1 The Site generally slopes from east to west. The highest point is within the south eastern corner, and reaches a level of 177.23mAOD. The lowest point is along the western boundary, and reaches a level of 144.34mAOD. A topographical survey plan, confirming the direction of fall, is included at Appendix A.

3.4 Ground Conditions

3.4.1 The site currently comprises agricultural fields.

3.4.2 The British Geological Survey (BGS) 'Geology of Britain viewer' identifies that the site is underlain by bedrock geology of the Lenton Sandstone formation, comprising sandstone.

3.4.3 BGS digital mapping indicates that there is a record of in-filled ground comprising artificial deposits within the northern portion of the site.

3.4.4 An intrusive site investigation, which was carried out by Rodgers Leask in April 2017, confirmed the ground conditions to comprise made ground within the northern portion of the Site, and sands and clays of the Lenton Sandstone Formation across the rest of the site.

3.4.5 An intrusive site investigation (CD13.2) was undertaken by Eastwood Consulting Engineers (ECE) in 2022, that confirmed the ground conditions encountered by Rodgers Leask, to be present across the Site.

3.4.6 Refer to the Land Contamination Proof for a detailed summary of the ground conditions at the Site.

3.5 Hydrology

3.5.1 The Site is within the catchment of the River Maun which is located approximately 645m north of the Site.

3.5.2 There is a shallow ditch located along the western boundary of the Site, adjacent to the rear gardens of properties on Searby Road. A ground penetrating radar (GPR) survey was undertaken in August 2017 which demonstrated connectivity between the ditch and the public surface water sewer within Searby Road.

3.5.3 There is a natural shallow valley that runs from the southern boundary of the Site to the ditch that runs along the western boundary of the Site. The GPR survey indicated that a land drain or culvert pipe follows the line of the valley, although there was no evidence of direct connectivity between these features at surface level. Part of the pipe was exposed during the ECE intrusive site investigation, and was found to be a 150mm diameter clay pipe, at 0.6m deep below ground level (bgl), and filled with silt. I believe this is an open-jointed land drain, installed in the past to aid the flow of surface water though the valley and direct it towards the ditch. The land drain will likely be removed by the development, as its purpose will be superseded by the proposed land drainage arrangement.

3.5.4 The features have been observed and recorded through a combination of visual survey and a drainage survey. However none of the features described above are identified on Ordnance Survey mapping. A plan of the features is shown at Figure 1.

3.5.5 Refer to the Land Contamination Proof for a detailed summary of hydrogeology at the Site.

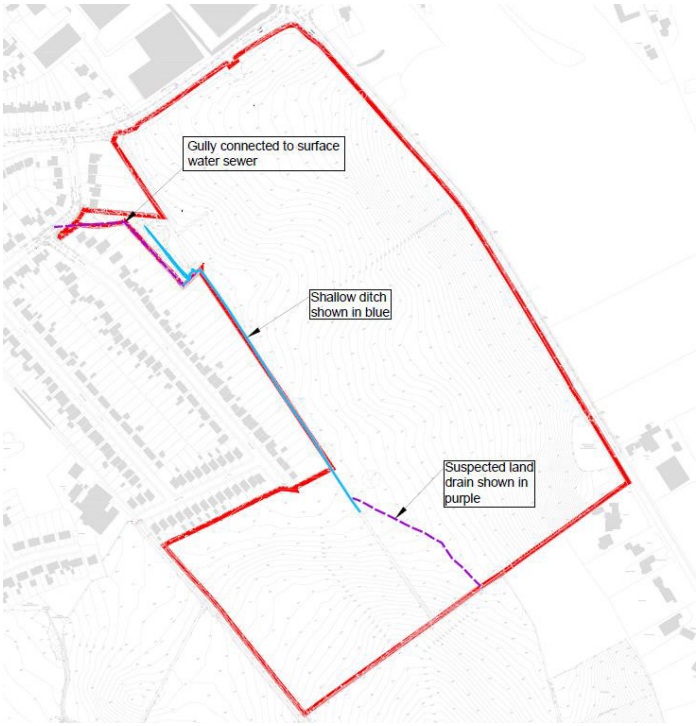

Figure 1: Site Hydrology Features

3.6 Existing surface water drainage

3.6.1 In June 2017 a site-specific Flood Risk Assessment (FRA) report (CD1.40), which complies with the requirements of the NPPF, was produced by Rodgers Leask Ltd (reference: 16530-RLL-22-XX-RP-C-001). The report has been revised several times, with the latest revision (P03) undertaken in June 2022.

3.6.2 The report covers the surface water drainage strategy for the Site including the provision of sustainable drainage systems (SuDS).

3.6.3 The Site drains predominantly by overland flow, with some limited infiltration. The Site generally slopes from east to west, and towards the ditch that runs along the western boundary of the Site. Refer to Figure 2, taken from the Site Topography Plan at Appendix A. The ditch overtops into a gully (refer to Figure 3) that was confirmed by a drainage survey, to have direct connectivity with the public surface water sewer located within Searby Road. The northern edge of the Site drains towards Newark Road.

3.6.4 The southwest portion of the Site, slopes on average from southwest to northeast, and towards Searby Road.

3.6.5 The Site is separated to the land to the south west, by a public Right of Way (PROW) that runs north between Searby Road and Barnhill Gardens. The topography within this portion of the Site falls away from the PROW, and the land to the west of the PROW, which is outside of the Site boundary, falls to the west towards a watercourse. The watercourse runs from south to north, towards the rear gardens of houses along Searby Road.

Figure 2: Site Topography

3.6.6 The ECE site investigation confirms that the ground conditions typically comprise made ground within the northern portion of the Site, and natural strata elsewhere, comprising of sands and gravels of the Lenton Sandstone Formation. Made ground was encountered at depths of between 0.8m bgl and 13m bgl, typically comprising of silty sandy gravel or gravelly sand, with waste materials such as metal, brick, plastic, wood, concrete, glass, and ceramics. The made ground is associated with a historic landfill site. Refer to the Land Contamination Proof for a detailed description of the former landfill site.