

Proposed Care Home
Coventry Road Hinkley
LE10 0JR



Flood Risk Assessment and
Drainage Strategy

MA12204/FRA/R01

March 2025



REVISION

Reference	Revision	Author	Approved	Date
MA12204-FRA-R01	Initial Issue	JMcK	JMcK	March 2025

CONTENTS

1.	INTRODUCTION.....	4
2	THE SITE AND PROPOSED DEVELOPMENT	5
3	FLOOD RISK	6
4	SEQUENTIAL AND EXCEPTION TESTS	10
5	DRAINAGE STRATEGY	12
6	MITIGATION MEASURES	13
7	CONCLUSIONS.....	14

APPENDICIES

Appendix A – Drawings

Landscaping Site Plan

MA12204-200 Drainage Strategy Plan

Appendix B – Consultations

Environment Agency Flood Map for Planning

Appendix C – Calculations

Preliminary Microdrainage Calculations for surface water.

1. INTRODUCTION

- 1.1 Millward have been appointed to undertake a Flood Risk Assessment (FRA) for a proposed care home development situated on Brownfield land adjacent to Coventry Road, Hinkley LE10 0JR.
- 1.2 The site proposals consist of redevelopment of an existing site (demolished) which is classed as Brownfield. The site layout is shown on the landscaping drawing contained within Appendix A.
- 1.3 This FRA discusses and provides both a qualitative assessment and quantitative assessment for the development in terms of flood risk, future flood risk over the anticipated lifetime of the development and reference to the sequential and exception test using a precautionary and risk based approach.

2 THE SITE AND PROPOSED DEVELOPMENT

2.1 Existing Situation

2.1.1 The site is located to the western side of Coventry Road in Hinkley as shown on the location plan below.



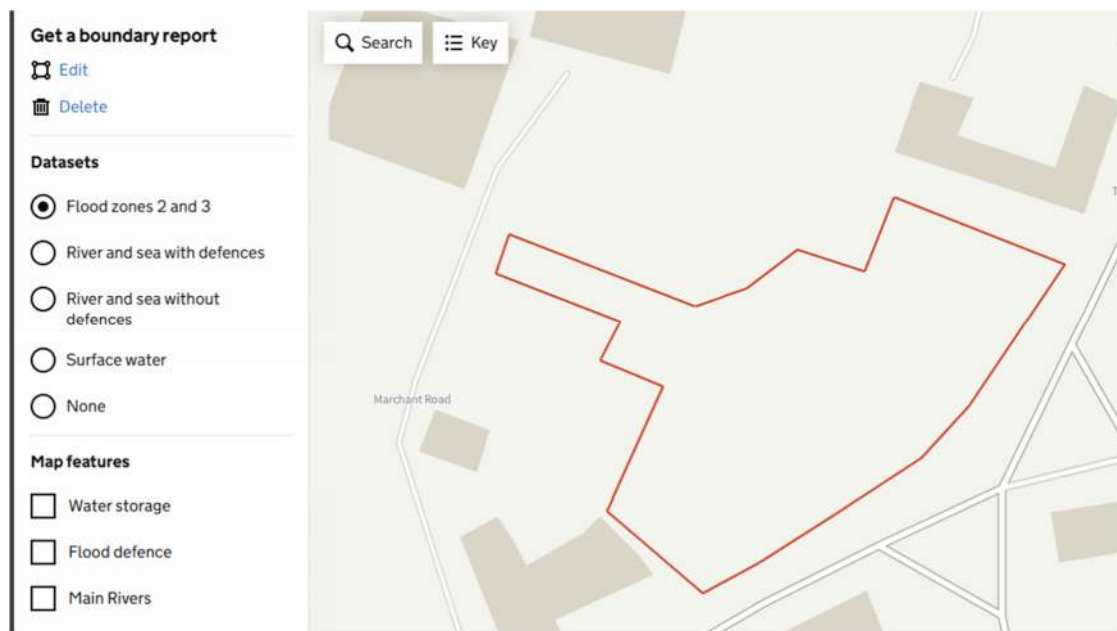
2.1.2 The site was previously a leisure centre which has now been demolished. To the north of the site is the Trinity Vicarage Road car park. To the west is Marchant Road where vehicular access to the site is proposed.

2.1.3 The red line area of the site equates to 4620m² (0.46Ha). Existing site levels vary between 116.50m AOD at the proposed site entrance off of Marchant Road.

3 FLOOD RISK

3.1 Flooding from Watercourses

- 3.1.1 The site is not at risk of flooding from watercourses as can be seen from the latest Environment Agency flood map below. The site is contained within Flood Zone 1 which is the lowest designated flood zone.

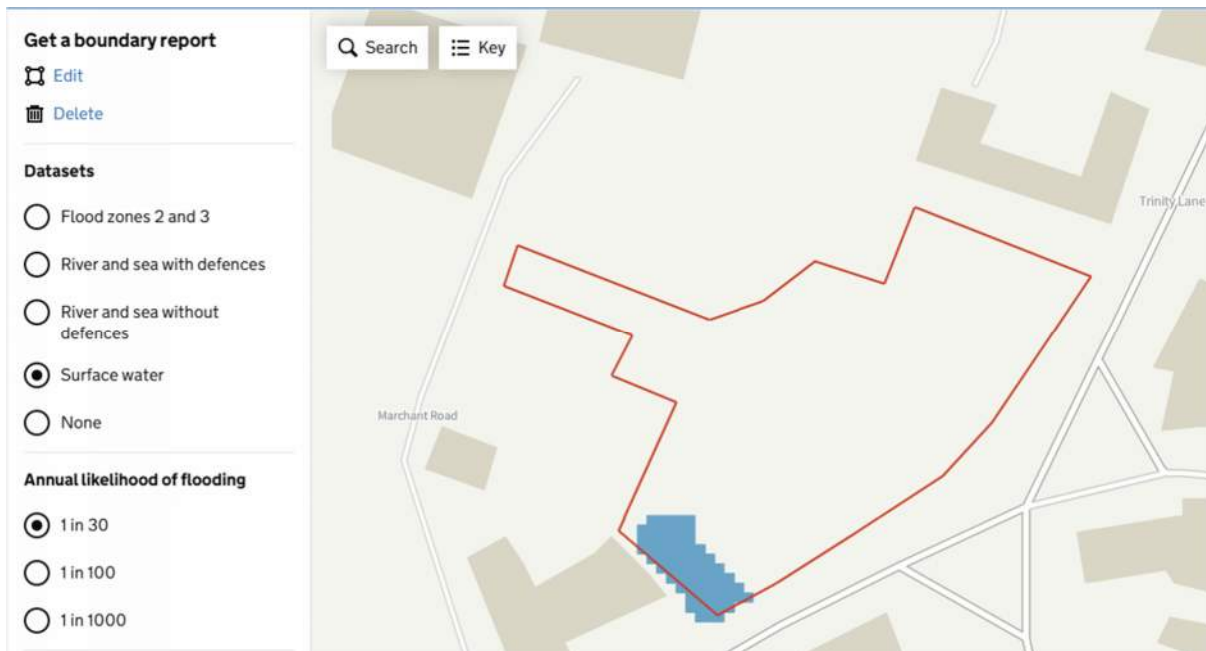


- 3.1.2 This means that the site has less than a 1 in 1000 chance of flooding in any one year.

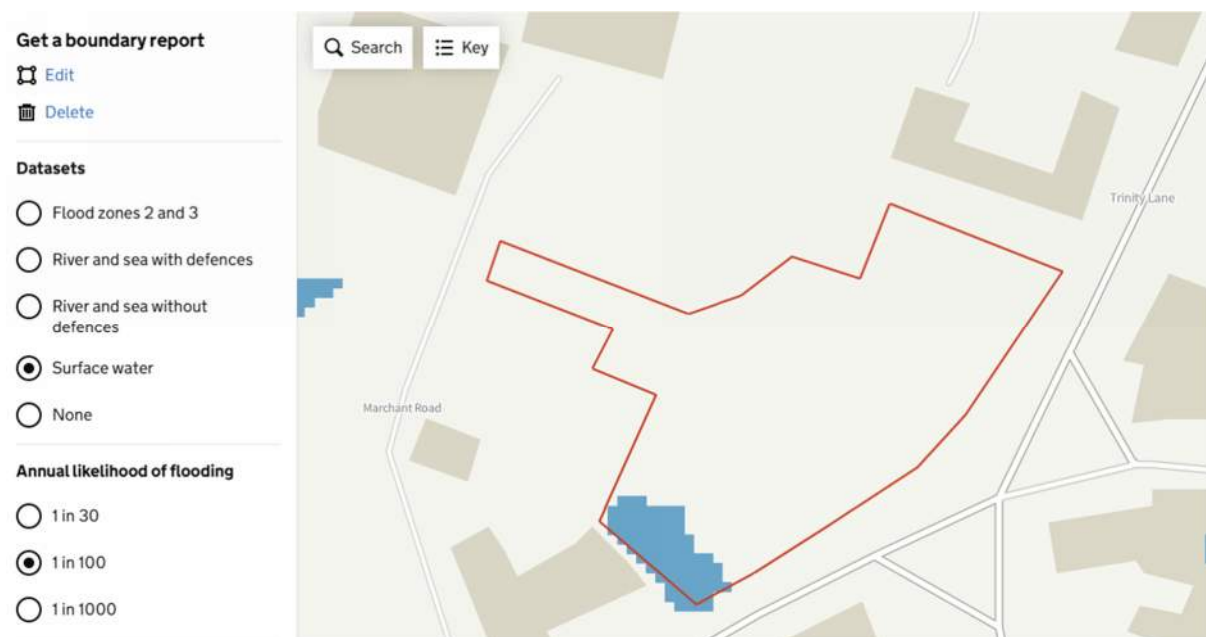
- 3.1.3 The risk of flooding from this source is **LOW**.

3.2 Flooding from Surface Water

- 3.2.1 The latest EA flood maps show risk of flooding from surface water at the 1 in 30, 1 in 100 and 1 in 1000 year storm events.
- 3.2.2 There is an area to the southern portion of the site which is at risk of flooding n the red line boundary at all three events which the extents increasing as the storm event increases.
- 3.2.3 The area of anticipated flooding, whilst within the red line planning boundary it is contained within the proposed landscaping area and not within the proposed footprint of the building.



1 in 30 event flood limits – Surface Water



1 in 100 event limits – Surface water



1 in 1000 event limits - Surface water

3.2.4 The proposed care home building development is outside of these limits as shown on drawing MA12204-200 contained within Appendix A.

3.2.5 Sequentially, the building area is outside any areas seen at risk of flooding from surface water, therefore the residual risk of flooding of the building from this source is considered **LOW**.

3.3 Flooding From Groundwater and Reservoirs

3.3.1 The site is not within an areas deemed at risk of flooding from Groundwater or reservoirs.

Other flood risks [More about groundwater and reservoirs](#)

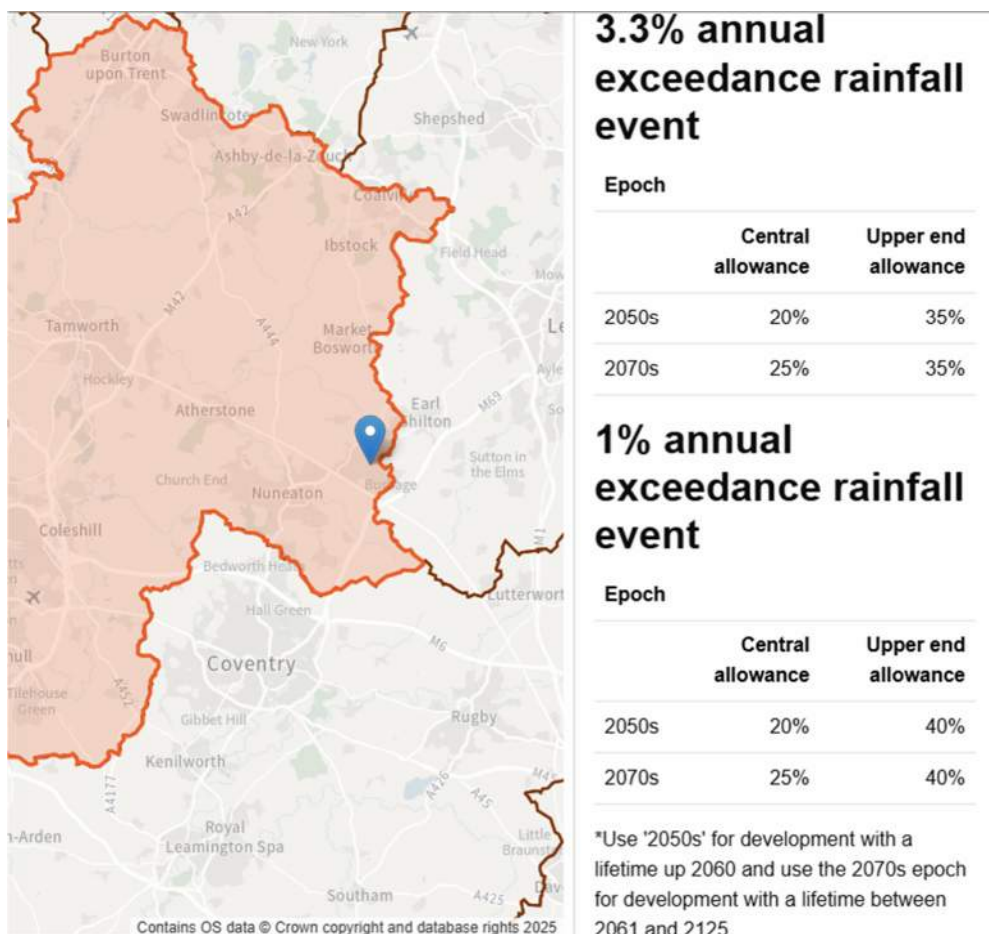
Groundwater
Flooding from groundwater is unlikely in this area.

Reservoirs
Flooding from reservoirs is unlikely in this area.

3.3.2 Therefore, the risk of flooding from these sources is **VERY LOW**.

3.4 Flooding From Climate Change

- 3.4.1 Climate change can potentially have an impact on all sources of flood risk to a development site. The site is situated within the current Flood Zone 1 area.
- 3.4.2 An assessment of the required climate change allowance has been undertaken in line with the latest Government Guidance for peak river flow allowances. The peak rainfall allowances map shows the site to be within the Tame Anker and Mease Management Catchment.



- 3.4.3 For new development we have used the 2070's epoch upper end allowance for the 3.3% (30 year) and 1% (100 year) events of 35% and 40% respectively.
- 3.4.4 Overall, the risk of flooding from the effects of climate change is considered to be **LOW**.

4 SEQUENTIAL AND EXCEPTION TESTS

4.1 Sequential Test

- 4.1.1 The site is located in Flood Zone 1 which is classed as having a low annual probability of flooding and the vulnerability classification in accordance with Table 3 (Annex 3) of the Government Guidance is 'More Vulnerable

More vulnerable

- Hospitals
- Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.
- Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels.
- Non-residential uses for health services, nurseries and educational establishments.
- Landfill* and sites used for waste management facilities for hazardous waste.
- Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

- 4.1.2 In accordance with Table 2 a less vulnerable use in flood zone 1 is not classed as incompatible and an exception test is not required. Table 2 does not however take into account application of the Sequential Test.

Table 2: Flood risk vulnerability and flood zone 'incompatibility'

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	X	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	X	X	X	✓ *

Key:

✓ Exception test is not required

X Development should not be permitted

- 4.1.3 The sequential approach is designed to steer proposed development into areas of lowest flood risk in preference to areas at higher risk.
- 4.1.4 The sequential test should take into account the risk of flooding from all sources. Whilst there is a risk of flooding from surface water within the red line boundary, the limits of the flood risk are not within the built area of the site, just within landscaping to the south,
- 4.1.5 Sequentially, the developable part of the site is at low risk of flooding from all sources and therefore the sequential test is passed.
- 4.1.6 The exception test does not need to be applied in accordance with Table 2 of the Government Guidance Flood Risk and Coastal Change.

5 DRAINAGE STRATEGY

5.1 Surface Water Drainage

- 5.1.1 The surface water drainage strategy for the site is shown on drawing MA12204-200 contained within Appendix A.
- 5.1.2 The development within the red line decreases the footprint development of the site. The site has a planning approval to which a drainage strategy was approved with a discharge rate from the wider site area of 1.167ha at 64.9 l/s.
- 5.1.3 The red line boundary of this development is 0.46ha which is 39% of the overall site area previously approved at planning. Therefore, the proposed discharge rate for this development is reduced to 39% of the approved discharge rate which equates to 25.3 l/s.
- 5.1.4 There is a car park area to the west of the proposed building which will be permeable paving and will have attenuation storage beneath to accommodate the 1 in 100 year storm event run off from the site impermeable areas plus 40% allowance for climate change.
- 5.1.5 Future development outside this red line boundary will be required to have separate flow controls attenuation and outfall locations should they progress.
- 5.1.6 The outfall location is the south of the site into the existing Severn Trent Water sewers as previously approved in Coventry Road. Previous applications have confirmed that infiltration testing did not yield positive results such that infiltration was not a viable option for the development.
- 5.1.7 Suds Maintenance will be undertaken by the occupier via an agreed suds maintenance plan for the permeable paving, manholes, pipework, flow control and cellular storage attenuation tank.

6 MITIGATION MEASURES

- 6.1.1 The development site is at low risk of flooding from all sources.
- 6.1.2 Mitigation measures for this development are essentially for the finished flood level of the ground floor of the building to be 150mm higher than the surrounding land levels to reduce the risk of and overland flow entering the building.
- 6.1.3 The proposed surface water drainage will be designed to accommodate the 1 in 100 year event including 40% climate change allowance storm event without flooding.

7 CONCLUSIONS

- 7.1 This Flood Risk Assessment serves to review, assess and quantify (where applicable) the sources, or any potential flooding, the pathways of this flooding and potential receptors within the vicinity of the site.
- 7.2 The assessment of flood risk in Section 4 of this assessment confirms a **LOW** risk of flooding from all sources.
- 7.3 This assessment concludes that the development is suitable for development for care home use in terms of Flood Risk.

Appendix A – Drawings

Landscaping Site Plan

MA12204-200 Drainage Strategy Plan

KEY TO LANDSCAPE PROPOSALS

Existing Site

- Existing Trees to be Retained
- Existing trees on site to be retained and protected from damage during construction. Refer to Tree Survey Report for details
- Existing Trees to be Removed (11 no.)
- Existing trees on site to be removed to enable construction of the new development. Refer to Tree Survey Report for details

- Existing Woodland & Vegetation to be Retained and Enhanced (311m²)
- Areas of existing vegetation to be retained and enhanced as per Ecologist Recommendations (see separate report for details). Enhancements to include planting of additional understorey shrub species to increase diversity including hawthorn, hazel, holly and rowan, improve ground flora by planting of other additional woodland ground cover species

- Application Boundary (4,603m²)
- Site Area for Biodiversity Net Gain Assessment

Proposed Planting Details

All areas of new landscaping to have the existing topsoil and subsoil decompacted by hand digging or rotorvator. If any imported topsoil is required it should be placed to a depth of 450mm minimum in shrub beds and be free of weeds or any detritus/stones larger than 50mm.

Planting should take place during the dormant planting season ie 1st October to 28th February. Tree planting shall be implemented as per British Standard 8545 (Trees: from nursery to independence in the landscape - Recommendations).

Grass Verges & Meadow

Areas of grassland to be established in landscaped verges around the site. Cultivate and grade soil, bring top 150mm to a fine tilth, rake and bring to given levels, remove all stones and debris over 50mm, lay turf in stretcher bond, firm turves using wooden turf beater.

- Species Rich Turf (305m²)
- New areas of grass verge to be established using Species Rich Turf supplied by wilflowerurf.co.uk (or similar). To be mown like a regular lawn and to maintain a mown edge surrounding the building.
- Proposed Meadow Grassland (958m²)
- Proposed meadow created with EM3 General Purpose Meadow Mixture supplied by Emorsgate Seeds. (or similar approved). Subject to a reduced mowing regime with a more frequently mown margin along side footpaths and seating areas.

Ornamental Shrub & Herbaceous Planting

Areas of shrub planting for ecological enhancement to be planted in groups around the perimeter of the site. Cultivate and grade soil, bring top 150mm to a fine tilth prior to planting.

- Shrubs & Herbaceous Planting - Mix 1 (70m²)
- Shrubs to be pit planted 4 per m². Planted to provide colourful, groundcover with ecological value. All plants to be 5 litre pot grown stock, planted in random groups of 5, 7 or 9 plants of same species throughout the planting bed. 240 plants in total
- Shrubs & Herbaceous Planting - Mix 2 (80m²)
- Shrubs to be pit planted 4 per m². Planted to provide colourful, groundcover with ecological value. All plants to be 5 litre pot grown stock, planted in random groups of 5, 7 or 9 plants of same species throughout the planting bed. 320 plants in total
- Native Mixed Scrub Planting
- Native trees and shrubs to be planted to create a buffer of mixed scrub along the southern and western boundary to provide an increase in biodiversity.
- Native Mixed Scrub Planting (405m²)
- All plants to be bareroot Whips, 125-150cm in height (except Ilex aquifolium to be 2 litre container, 40-60cm) protected with spiral rabbit guard secured with a cane. Planted randomly in the following mix across the whole area as individuals and groups of 3 of the same species. 100 plants in total.
- Native Mixed Scrub Planting (405m²)
- All plants to be bareroot Whips, 125-150cm in height (except Ilex aquifolium to be 2 litre container, 40-60cm) protected with spiral rabbit guard secured with a cane. Planted randomly in the following mix across the whole area as individuals and groups of 3 of the same species. 100 plants in total.
- Native Mixed Scrub Planting (405m²)
- All plants to be bareroot Whips, 125-150cm in height (except Ilex aquifolium to be 2 litre container, 40-60cm) protected with spiral rabbit guard secured with a cane. Planted randomly in the following mix across the whole area as individuals and groups of 3 of the same species. 100 plants in total.

Native Mixed Scrub Planting

Native trees and shrubs to be planted to create a buffer of mixed scrub along the southern and western boundary to provide an increase in biodiversity.

Excavate planting pit 300mm x 300mm x 400mm deep (or larger to suit root ball), backfill with topsoil mixed with peat free compost and secure trees in an upright position with a single timber stake and rubber tie and spacer.

- Native Mixed Scrub Planting (405m²)
- All plants to be bareroot Whips, 125-150cm in height (except Ilex aquifolium to be 2 litre container, 40-60cm) protected with spiral rabbit guard secured with a cane. Planted randomly in the following mix across the whole area as individuals and groups of 3 of the same species. 100 plants in total.
- Native Mixed Scrub Planting (405m²)
- All plants to be bareroot Whips, 125-150cm in height (except Ilex aquifolium to be 2 litre container, 40-60cm) protected with spiral rabbit guard secured with a cane. Planted randomly in the following mix across the whole area as individuals and groups of 3 of the same species. 100 plants in total.
- Native Mixed Scrub Planting (405m²)
- All plants to be bareroot Whips, 125-150cm in height (except Ilex aquifolium to be 2 litre container, 40-60cm) protected with spiral rabbit guard secured with a cane. Planted randomly in the following mix across the whole area as individuals and groups of 3 of the same species. 100 plants in total.



Specimen Tree Planting

Heavy Standard specimen trees planted in locations indicated as per the following specification:

- Specimen Tree Planting (20 no.)
- Excavate tree pit 900mm x 900mm x 900mm deep (or larger to suit root ball), backfill topsoil mixed with 80 litres of peat free compost and secure tree in an upright position with a single timber stake and rubber tie and spacer.
- Specimen Tree Planting (20 no.)
- Excavate tree pit 900mm x 900mm x 900mm deep (or larger to suit root ball), backfill topsoil mixed with 80 litres of peat free compost and secure tree in an upright position with a single timber stake and rubber tie and spacer.
- Specimen Tree Planting (20 no.)
- Excavate tree pit 900mm x 900mm x 900mm deep (or larger to suit root ball), backfill topsoil mixed with 80 litres of peat free compost and secure tree in an upright position with a single timber stake and rubber tie and spacer.
- Specimen Tree Planting (20 no.)
- Excavate tree pit 900mm x 900mm x 900mm deep (or larger to suit root ball), backfill topsoil mixed with 80 litres of peat free compost and secure tree in an upright position with a single timber stake and rubber tie and spacer.

Native Linear Tree Planting

Heavy Standard specimen trees planted in locations indicated as per the above specification:

- Native Linear Tree Planting (15 no.)
- Excavate tree pit 900mm x 900mm x 900mm deep (or larger to suit root ball), backfill topsoil mixed with 80 litres of peat free compost and secure tree in an upright position with a single timber stake and rubber tie and spacer.
- Native Linear Tree Planting (15 no.)
- Excavate tree pit 900mm x 900mm x 900mm deep (or larger to suit root ball), backfill topsoil mixed with 80 litres of peat free compost and secure tree in an upright position with a single timber stake and rubber tie and spacer.
- Native Linear Tree Planting (15 no.)
- Excavate tree pit 900mm x 900mm x 900mm deep (or larger to suit root ball), backfill topsoil mixed with 80 litres of peat free compost and secure tree in an upright position with a single timber stake and rubber tie and spacer.

Tree Pits & Support

Diameter and depth of tree pit to be dependant on the size of the rootball. Minimum size 900 x 900 x 900 deep

- Tree Pits & Support
- Excavate tree pit 900mm x 900mm x 900mm deep (or larger to suit root ball), backfill topsoil mixed with 80 litres of peat free compost and secure tree in an upright position with a single timber stake and rubber tie and spacer.
- Tree Pits & Support
- Excavate tree pit 900mm x 900mm x 900mm deep (or larger to suit root ball), backfill topsoil mixed with 80 litres of peat free compost and secure tree in an upright position with a single timber stake and rubber tie and spacer.
- Tree Pits & Support
- Excavate tree pit 900mm x 900mm x 900mm deep (or larger to suit root ball), backfill topsoil mixed with 80 litres of peat free compost and secure tree in an upright position with a single timber stake and rubber tie and spacer.

Native Hedge Planting

A new native hedgerow to be established and maintained at 1.5m high. Native species selected to provide ecological enhancement and seasonal interest.

- Native Hedge Planting
- A new native hedgerow to be established and maintained at 1.5m high. Native species selected to provide ecological enhancement and seasonal interest.
- Native Hedge Planting
- A new native hedgerow to be established and maintained at 1.5m high. Native species selected to provide ecological enhancement and seasonal interest.
- Native Hedge Planting
- A new native hedgerow to be established and maintained at 1.5m high. Native species selected to provide ecological enhancement and seasonal interest.

Proposed Surfacing

Refer to Architects drawing for full details of all new surfacing

- Access Road
- New tarmacadam surfaced access road
- Car Park
- New tarmacadam surfaced car park
- Pedestrian Circulation
- New block paving surfaced footways
- Patios
- New paving slab surfaced patios

© Encon Associates - DISCLAIMER:

This drawing is copyright and shall not be reproduced nor used for any other purpose without the written permission of Encon Associates. This drawing must be read in conjunction with all other related drawings and documentation. It is the contractors responsibility to ensure full compliance with the relevant Regulations. Until technical approval has been obtained from the relevant Authorities it should be understood that all drawings issued are PRELIMINARY and NOT for Construction. Should the contractor start site work prior to approval been given, it is entirely at his own risk. Do not scale from this drawing, use figured dimensions only. It is the contractors responsibility to check and verify all dimensions on site. Any discrepancies to be reported to Encon Associates immediately. All survey information is provided by the surveying company and Encon Associates cannot accept any liability for any discrepancies there in. All survey information to be verified on site by Contractor. For our Standard Terms and Conditions, please visit www.enconassociates.co.uk/terms. Alternatively, a hard copy can be posted to you

Notes:

- Topographical survey by CLB Surveys, 1104-1C dated April 2010
- 250318 G40003 A002 Proposed Site Ground Floor Plan by Green 4 Architects, March 2025
- Site visit by Encon Associates, 24.02.25

B	26.03.25	External seating area adjusted	MJB	GM
A	25.03.25	Updated in line with comments	MJB	GM
Rev	Date	Description	Drawn	Checked

Client
Tanglewood Care Homes

Project
Tanglewood
Coventry Road
Hinckley

Title
Landscaping Scheme &
Biodiversity Enhancement

Drawing Status
FOR PLANNING APPROVAL

Drawn	MJB	Checked	LB
-------	-----	---------	----

Date	24.02.25	Scale (A1)	1:250
------	----------	------------	-------



Environmental Consultants to the Construction Industry
- BREEAM - Code for Sustainable Homes Assessors - Landscape Architecture - Transportation - Life Cycle Costing - Energy Assessment - SAP - EPC - SBEM - Daylight Calculations

Job Number	Drawing Number	Rev
A7099	04	B



C753 SUDS TREATMENT STAGES SIMPLE INDEX APPROACH

ROOF DRAINAGE (APARTMENTS RESIDENTIAL) POLLUTION HAZARD LEVEL - VERY LOW
ROOF DRAINAGE TO PASS THROUGH SILT TRAPS IMMEDIATELY DOWNSTREAM OF THE CONNECTION POINTS FOR THE APARTMENT AREAS

ROOF DRAINAGE (DWELLINGS - RESIDENTIAL) POLLUTION HAZARD LEVEL - VERY LOW
ROOF DRAINAGE TO PASS THROUGH SILT TRAPS IMMEDIATELY DOWNSTREAM OF THE DOWNPIPE CONNECTION POINTS BEFORE OUTFALL INTO THE PERMEABLE SUB BASE MATERIAL IN THE DRIVEWAYS.

CAR PARKING AREAS (RESIDENTIAL CAR PARKING) POLLUTION HAZARD LEVEL - LOW
BYPASS SEPARATORS ARE PROPOSED TO INTERCEPT THE CAR PARK SURFACE WATER RUN OFF BEFORE FLOW INTO THE MAIN DRAINAGE SYSTEM FOR THE DEVELOPMENT

CAR PARKING AREA TO THE NORTHERN SIDE OF THE DEVELOPMENT - POLLUTION HAZARD LEVEL MEDIUM
TRAPPED GULLIES TO COLLECT SILTS
BYPASS INTERCEPTOR PROVIDED TO INTERCEPT OILS BEFORE OUTFALL INTO THE MAIN SYSTEM

LOW TRAFFIC ROAD - POLLUTION HAZARD LEVEL - LOW
TRAPPED GULLIES TO COLLECT SILTS.

SURFACE WATER MANAGEMENT DURING CONSTRUCTION

CONSTRUCTION MANAGEMENT PLAN TO BE PROVIDED BY THE CONTRACTOR ONCE THE PHASING OF CONSTRUCTION IS AGREED AS PART OF THEIR PROGRAMME OF WORKS TO INCLUDE TEMPORARY ATTENUATION ADDITIONAL TREATMENT , CONTROLS, MAINTENANCE AND PROTECTION TO MEET THE REQUIREMENTS OF THE PHASES OF CONSTRUCTION.

Surface water management on site should form part of the Construction stage Management Plan produced by the contractor. To control surface water run off at the construction stage, the drainage infrastructure should be constructed from the outfall and construction progress upstream into the development site.

The flow control should be installed as soon as possible to protect the downstream connecting network and a temporary open pond area in the location of the cellular storage could be undertaken to collect any temporary water run off as the development site progresses and impermeable areas are created by the construction

Temporary silt traps upstream of the flow control manhole and also temporary trash screens to be installed in the manholes immediately upstream of the existing drainage network to protect the downstream systems from construction materials accidentally entering the existing adopted drainage systems.

Notes

REV DATE BY DETAILS

OWD

AMENDMENTS

Client



Project
Proposed Care Home
Coventry Road Hinkley LE10 0JR

Title
Proposed Drainage Strategy

Project - Originator - System - Location - Type - Discipline - Dig No. Revision
MA12204-200

Drawn JMCK	Engineer JMCK	Date 27.03.25	Milward Project Code MA12204
Checked JMCK	Approved JMCK	Scale @ A0 1:200	Status PLANNING



Appendix B – Consultations

Environment Agency Flood Map for Planning

Flood map for planning

Your reference
MA12204

Location (easting/northing)
442356/293772

Created
28 March 2025 06:55

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following**:

- bigger than 1 hectare (ha)
- in an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2025 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference

MA12204

Location (easting/northing)

442356/293772

Scale

1:2,500

Created

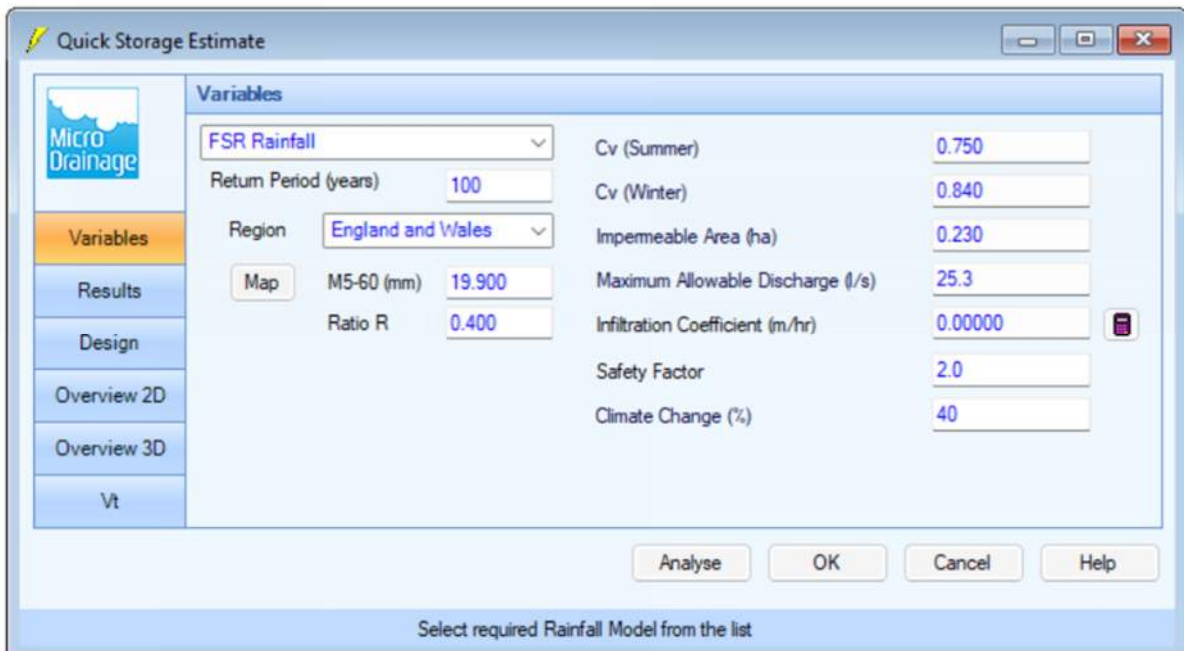
28 Mar 2025 06:55

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area


0 20 40 60m

Appendix C – Calculations

Preliminary Microdrainage Calculations for surface water.



Quick Storage Estimate

Micro Drainage

Variables

FSR Rainfall

Return Period (years)

Region

Map

Ratio R

Cv (Summer)

Cv (Winter)

Impermeable Area (ha)

Maximum Allowable Discharge (l/s)

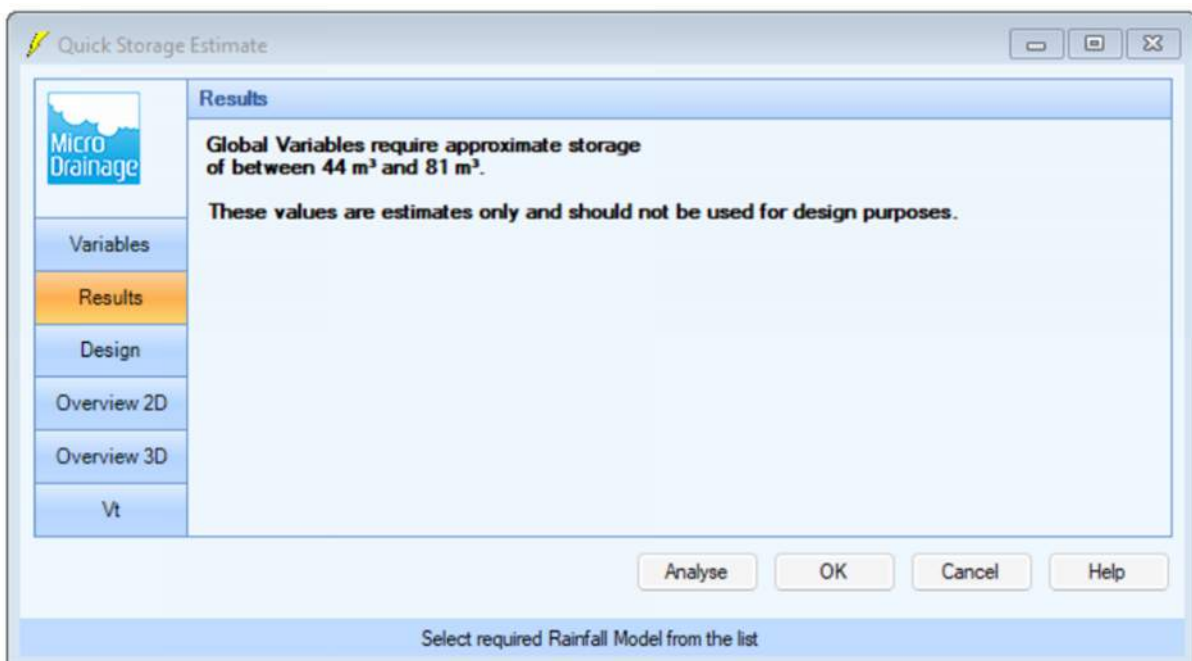
Infiltration Coefficient (m/hr)

Safety Factor

Climate Change (%)

Analyse OK Cancel Help

Select required Rainfall Model from the list



Quick Storage Estimate

Micro Drainage

Results

Global Variables require approximate storage of between 44 m³ and 81 m³.

These values are estimates only and should not be used for design purposes.

Analyse OK Cancel Help

Select required Rainfall Model from the list