

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

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Landscaping Site Plan

MA12204-200 Drainage Strategy Plan

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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.



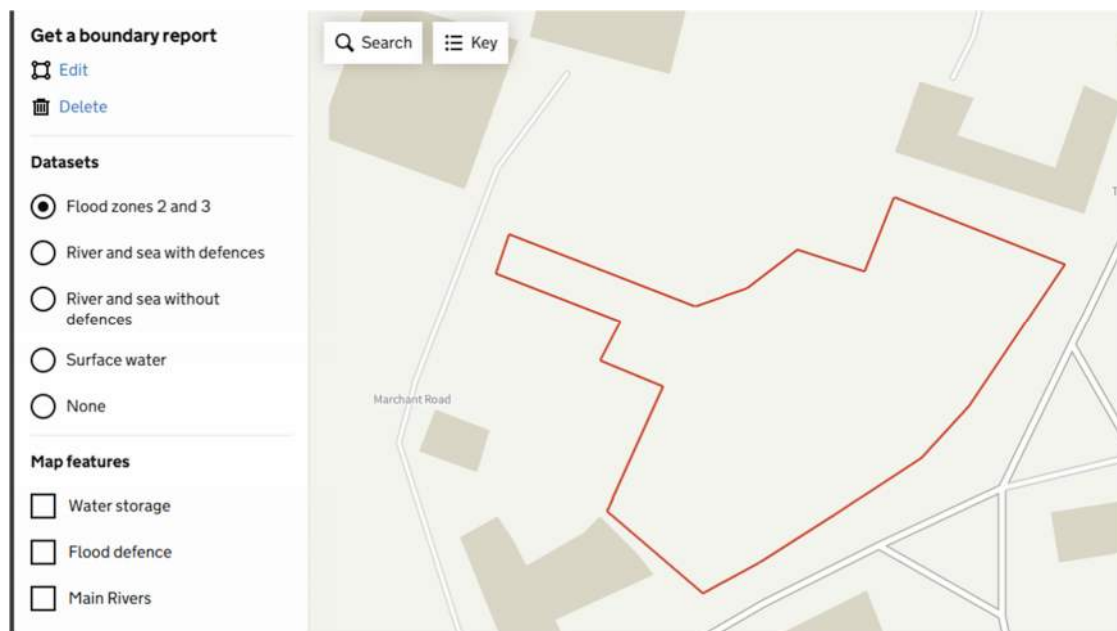
2.1.2 The site was previously a leisure centre which has now been demolished. To the north of the site is the Trinity Vicarage Road car park. To the west is Marchant Road where vehicular access to the site is proposed.

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.

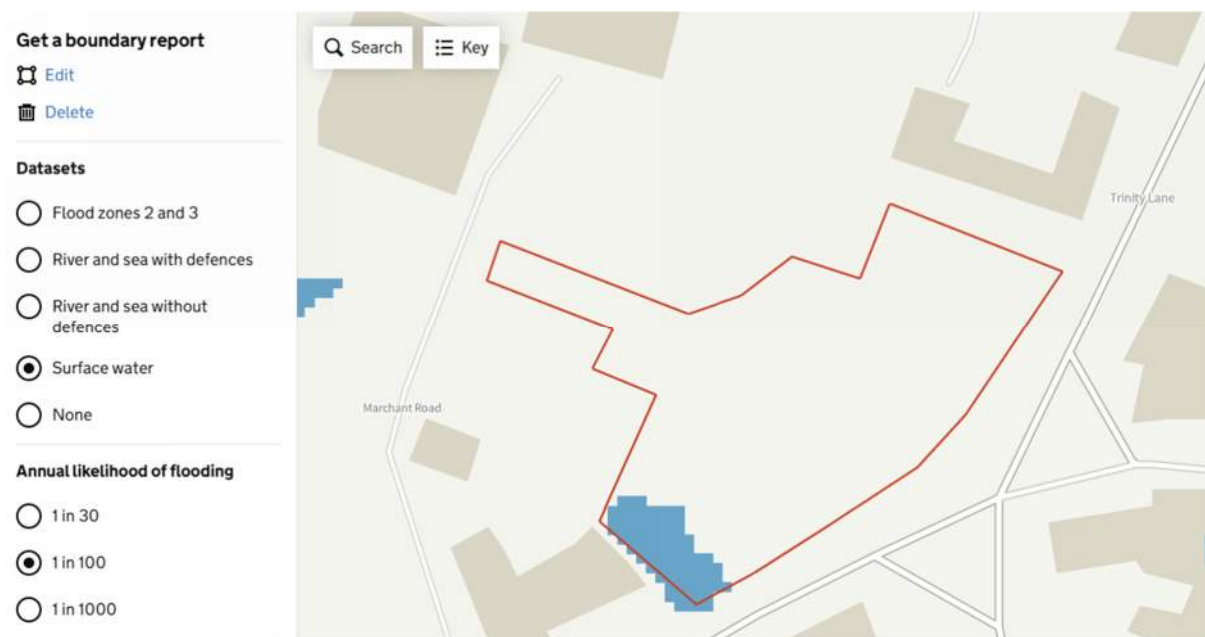
- 3.1.3 The risk of flooding from this source is **LOW**.

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 in 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](#)

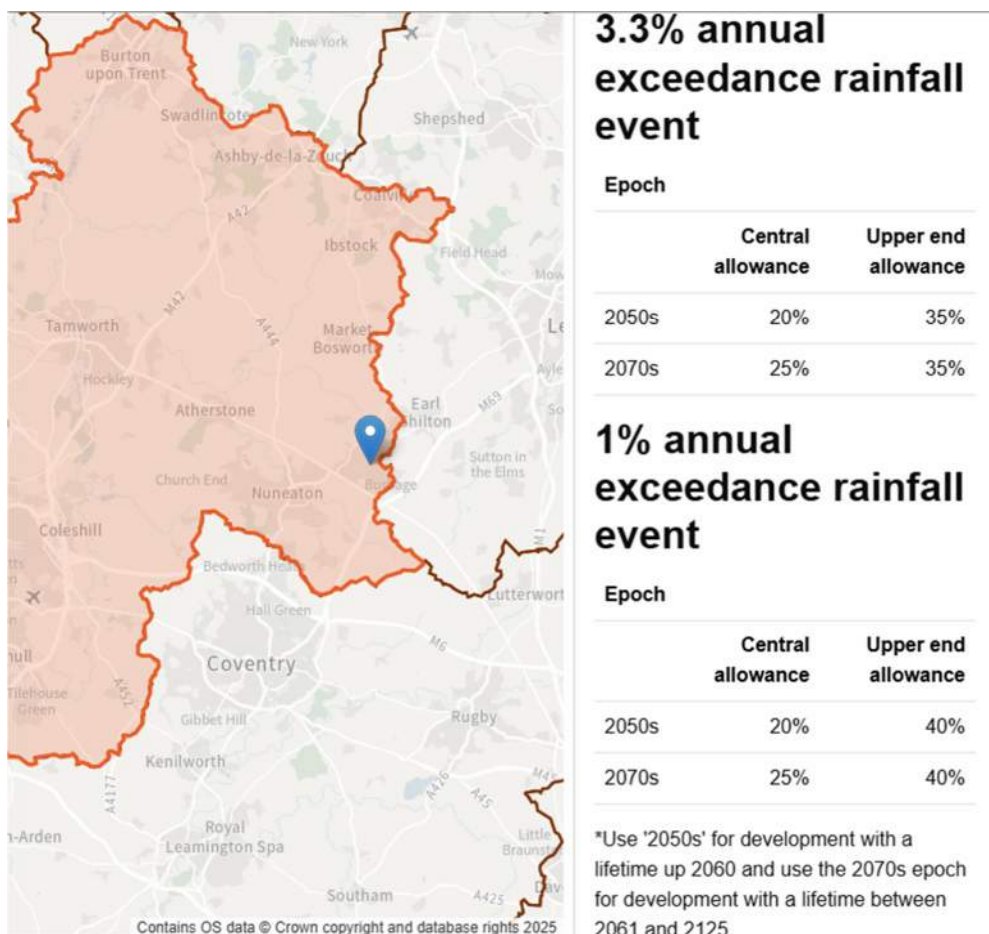
Groundwater
Flooding from groundwater is unlikely in this area.

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



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 - Dwg No. Revision
MA12204-200

Drawn JMCK	Engineer JMCK	Date 27.03.25	Millward 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

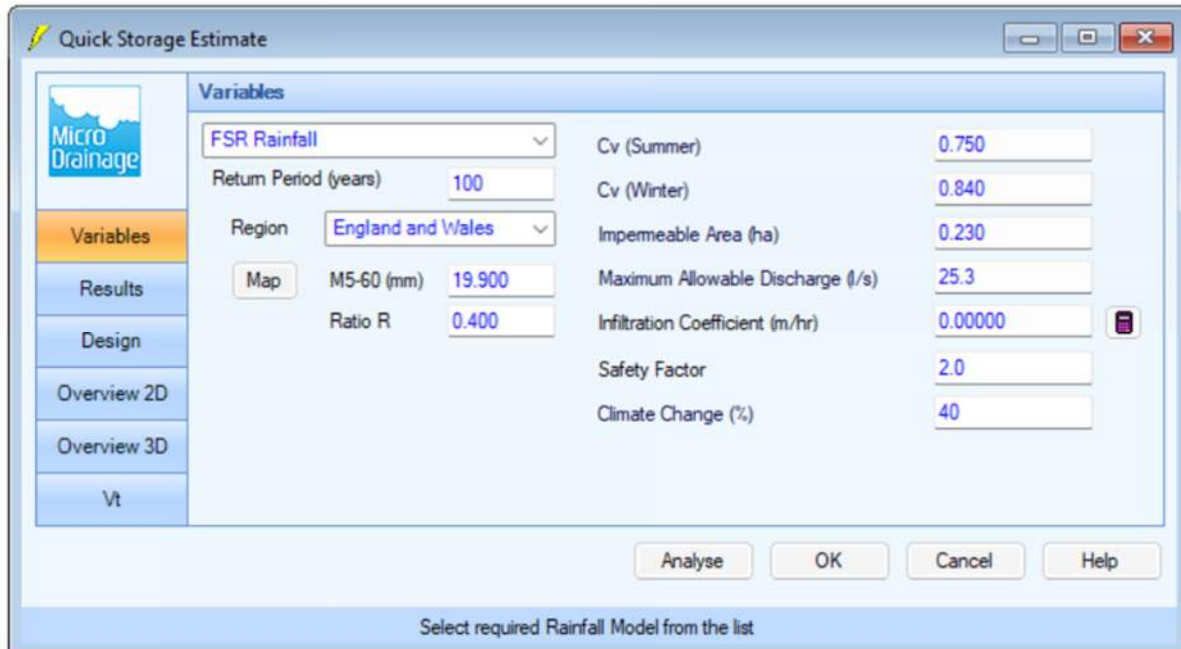
28 Mar 2025 06:55

-  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) **100**

Region **England and Wales**

Map M5-60 (mm) **19.900**

Ratio R **0.400**

Cv (Summer) **0.750**

Cv (Winter) **0.840**

Impermeable Area (ha) **0.230**

Maximum Allowable Discharge (l/s) **25.3**

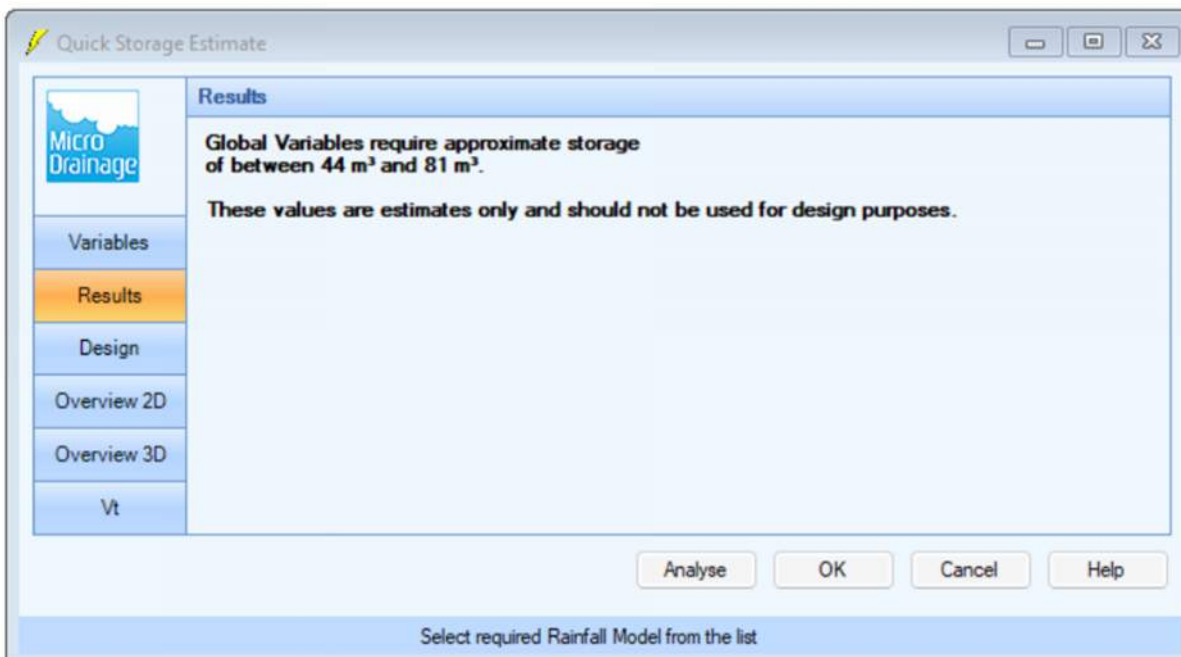
Infiltration Coefficient (m/hr) **0.00000**

Safety Factor **2.0**

Climate Change (%) **40**

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