

Flood Risk Assessment & Surface Water Drainage Strategy

**Proposed extension to existing Packhouse
for the packing & distribution of berries at
Heathlands Farm, Honey Hill, Wokingham
RG40 3BG**

On behalf of: Hall Hunter (Farming) Partnership



Bellamy Roberts

Document Control Sheet



Hall Hunter (Farming) Partnership
Heathlands Farm
Honey Hill
Wokingham
RG40 3BG



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1 Introduction

- 1.1** The proposed development is to increase the existing Packhouse capacity by adding an additional building, connected to the existing Packhouse and utilising the existing access from Heathlands Road. Parts of the new building will be constructed on what is currently concrete yard with the bulk of the new building being constructed over what is currently soft ground comprising an earth bund with landscaping on top of it, and an earth road beyond that. The drainage calculations take this into account.

2 Flood Risk Assessment

- 2.1** The Environment Agency (EA) Map for Planning shows that the proposed building is located in Flood Zone 1. A copy of the EA map extract is attached at **Appendix 1**. The area of land to be built on is less than 1ha and therefore the FRA requirement threshold is not exceeded. The map extract shows that there is no risk of river or sea flooding.
- 2.2** A check for surface water flooding, as indicated on the EA map extract at **Appendix 2** shows that the existing delivery yard has a current risk of surface water flooding (1-30 years). This is incorrect. Whilst the levels show a low area in the delivery yard, the whole of that yard is positively drained by means of a channel drain which runs across the yard at the low point. This can be seen on our drainage strategy plan attached at **Appendix 3** and is also evident on the Google Earth aerial view attached at **Appendix 4**. The drain runs across the yard under the front of the parked HGVs.
- 2.3** This drain is connected into a collection tank under the yard, from which the water is pumped up to one of the farm's irrigation reservoirs, from where it is used for watering the berry crops.

- 2.4** Accordingly, whilst it is the case that the delivery yard would be at risk of flooding if not positively drained, the fact that it is positively drained means that this risk does not exist.
- 2.5** Furthermore, the ground to the east, the south, and the west of the new building is at a higher level than the building and there are exits from the building on all of those elevations. Given that the use of the building is for employment purposes, and in connection with agriculture, the occupants are categorised as being “less vulnerable” in the NPPF appendix. Ready escape routes to higher (and rising) ground are available, so any flooding which did occur in the yard would not be a safety risk.

3 Drainage Strategy

- 3.1** Part of the area to be built on is existing concrete yard which is connected to the existing Packhouse building. Surface water run-off from those parts of the new development which will abut the existing Packhouse building will be connected into the existing roof drainage for that building, which in turn connects with the collection tank under the delivery yard.
- 3.2** The largest part of the new building is to be built on the soft ground to the south of the yard which can be seen from our drainage strategy plan at [Appendix 3](#). The increase in impermeable area is 2440sqm (0.244ha).
- 3.3** The strategy is to collect the roof run-off by gutters and downpipes and to discharge that water to a new gully and a manhole close to the western end of the building. That will then discharge into an underground attenuation tank comprising crates which will be located under the delivery yard for the new building. That in turn will discharge at the QBar rate of 0.8ltr per second via a hydrobrake into the existing yard collector tank, from where the water will be pumped to the reservoir for subsequent use as irrigation of the berry crops. This is a highly sustainable strategy because it re-uses the rainfall run-off for agricultural purposes.



3.4 This strategy is shown on our drawing at [Appendix 3](#) as previously indicated. **Appendix 5** contains the calculations which show that the required capacity of the attenuation tank is 170.6m³ in order to cater for the worst case of a 1-100 year storm plus 45% allowance for climate change.

APPENDICES

APPENDIX 1

EA Map Extract Flood Zone 1

Flood map for planning

Your reference
Unspecified

Location (easting/northing)
482893/166380

Created
7 May 2025 15:35

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

Unspecified

Location (easting/northing)
482893/166380

Scale
1:2,500

Created
7 May 2025 15:35

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



0 20 40 60m

APPENDIX 2

EA Map Extract Surface Water Flooding

Get a boundary report

[Edit](#)

[Delete](#)

Datasets

- ☐ Flood zones 2 and 3
- ☐ River and sea with defences
- ☐ River and sea without defences
- ☒ Surface water
- ☐ None

Annual likelihood of flooding

- ☒ 1 in 30
- ☐ 1 in 100
- ☐ 1 in 1000

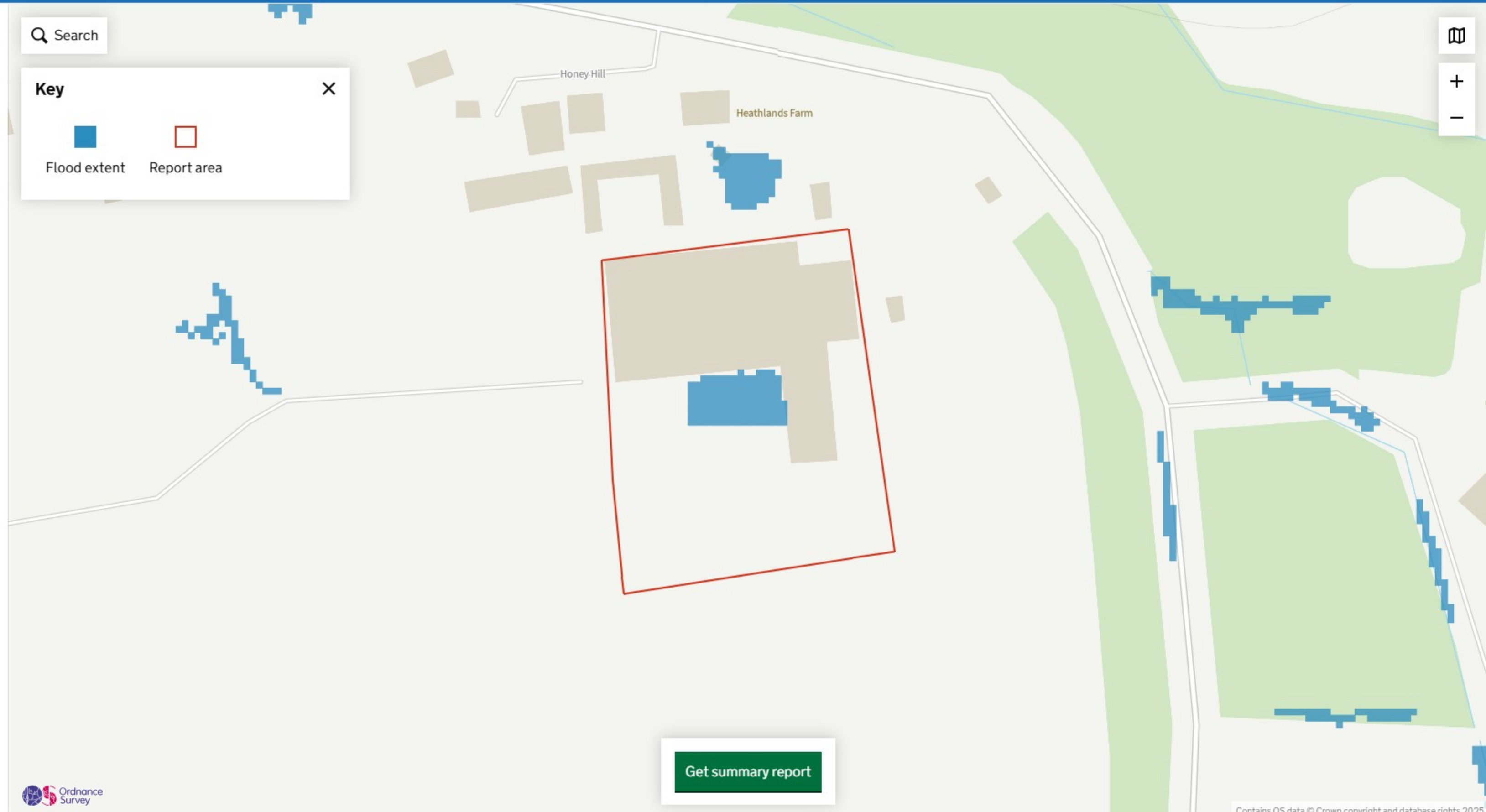
Map features

- ☐ Water storage
- ☐ Flood defence
- ☐ Main Rivers

Search

Key

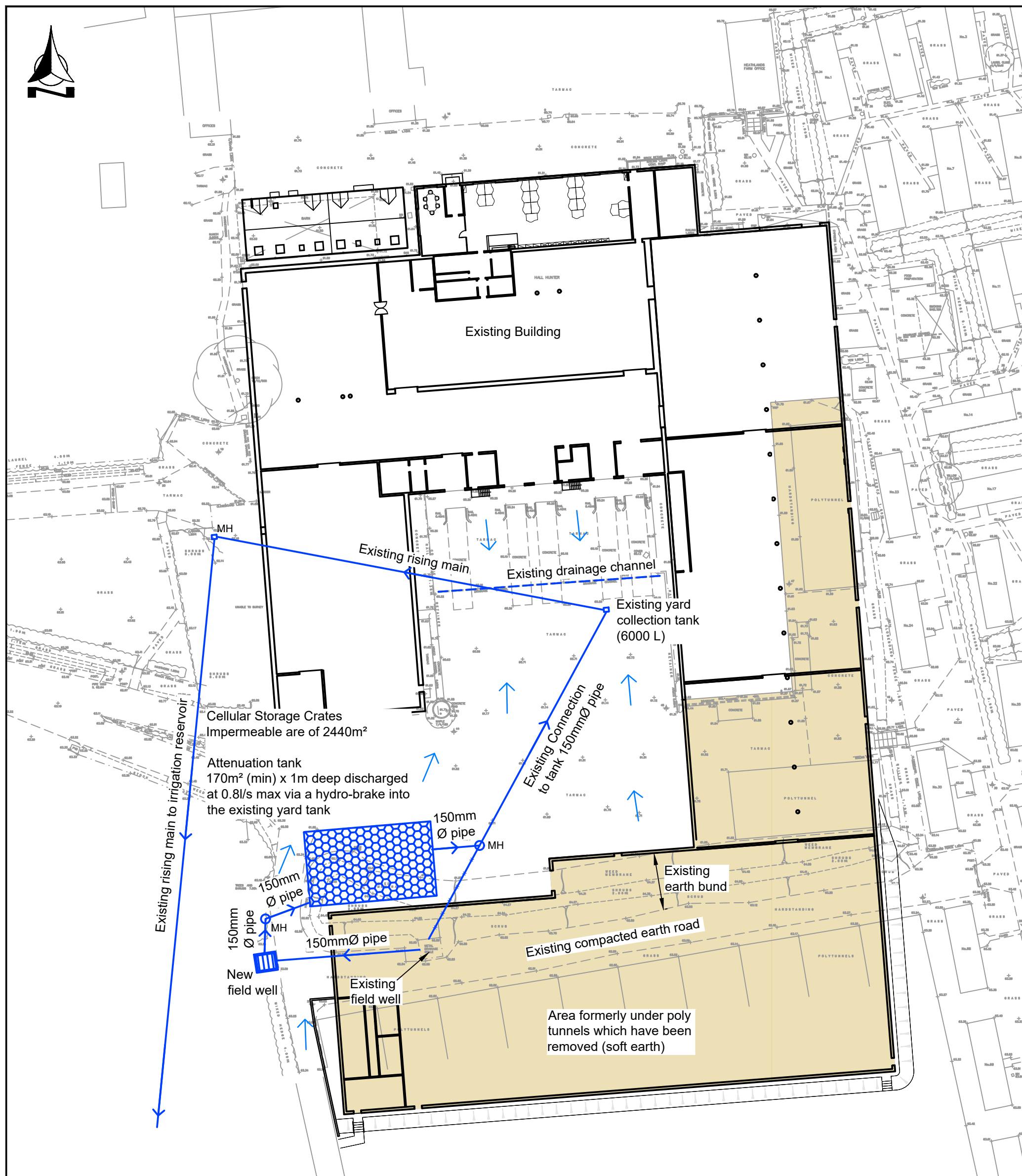
- Flood extent
- Report area



Get summary report

APPENDIX 3

Drainage Strategy Plan



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APPENDIX 4

Google Earth View of Site



Hall Hunter Partnership - Premium Berry Growers



APPENDIX 5

Run-off Calculations

Project: Heathlands Farm Surface Water Attenuation Ref: 6178		Date: 06/05/2025			
		Designed by: JCB	Checked by: GDB		Approved By: GDB
Report Details: Type: Stormwater Controls Storm Phase: Phase		Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU			



Cellular Storage

Type : Cellular Storage

Dimensions

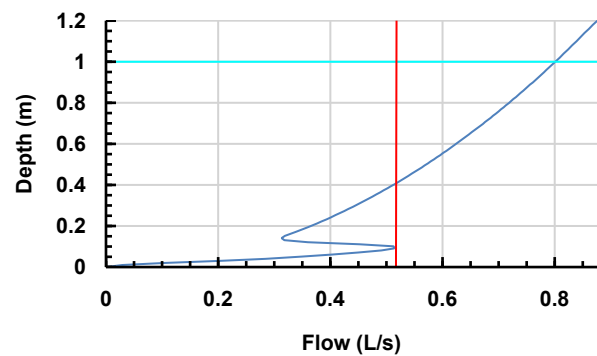
Exceedance Level (m)	61.600
Depth (m)	1.000
Base Level (m)	60.000
Number of Crates Long	17
Number of Crates Wide	10
Number of Crates High	2
Porosity (%)	100
Crate Length (m)	1
Crate Width (m)	1
Crate Height (m)	0.5
Total Volume (m³)	170.600

Outlets

Outlet

Outgoing Connection	(None)
Outlet Type	Hydro-Brake®
Invert Level (m)	60.000
Design Depth (m)	1.000
Design Flow (L/s)	0.8
Objective	Minimise Upstream Storage Requirements
Application	Surface Water Only
Sump Available	☐

Unit Reference	CHE-0041-8000-1000-8000
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Project: Heathlands Farm Surface Water Attenuation Ref: 6178		Date: 06/05/2025			
		Designed by: JCB	Checked by: GDB		Approved By: GDB
Report Details: Type: Inflow Summary Storm Phase: Phase		Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU			

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	Cellular Storage		Time of Concentration	0.244	100	0	100	0.244
TOTAL		0.0		0.244				0.244

Project: Heathlands Farm Surface Water Attenuation Ref: 6178	Date: 06/05/2025		
	Designed by: JCB	Checked by: GDB	Approved By: GDB
Report Title: Rainfall Analysis Criteria	Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU		



Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Project: Heathlands Farm Surface Water Attenuation Ref: 6178	Date: 06/05/2025			
Report Title: UK and Ireland Rural Runoff Calculator	Designed by: JCB	Checked by: GDB	Approved By: GDB	
	Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU			

ICP SUDS / IH 124

Details

Method	ICP SUDS
Area (ha)	0.222
SAAR (mm)	700.0
Soil	0.4
Region	Region 7
Urban	0
Return Period (years)	0

Results

Region	QBAR Rural (L/s)	QBAR Urban (L/s)	Q 1 (years) (L/s)	Q 30 (years) (L/s)	Q 100 (years) (L/s)
Region 7	0.8	0.8	0.6	1.7	2.4

Project: Heathlands Farm Surface Water Attenuation Ref: 6178		Date: 06/05/2025			
		Designed by: JCB	Checked by: GDB		Approved By: GDB
Report Details: Type: Inflows Summary Storm Phase: Phase		Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU			



FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 1 years: +0 %: 15 mins: Summer	0.24	29.5	13.297

Project: Heathlands Farm Surface Water Attenuation Ref: 6178		Date: 06/05/2025			
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: JCB	Checked by: GDB		Approved By: GDB
		Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU			



FSR: 30 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 30 years: +35 %: 15 mins: Summer	0.24	97.6	43.992

Project: Heathlands Farm Surface Water Attenuation Ref: 6178		Date: 06/05/2025			
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: JCB	Checked by: GDB		Approved By: GDB
		Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU			



FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 100 years: +45 %: 15 mins: Summer	0.24	135.7	61.187

Project: Heathlands Farm Surface Water Attenuation Ref: 6178		Date: 06/05/2025			
		Designed by: JCB	Checked by: GDB		Approved By: GDB
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU			



FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Status
Cellular Storage	FSR: 1 years: +0 %: 960 mins: Summer	60.198	60.198	0.198	0.198	3.3	33.684	0.000	0.000	0.5	37.369	572	OK

Project: Heathlands Farm Surface Water Attenuation Ref: 6178		Date: 06/05/2025			
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Designed by: JCB	Checked by: GDB		Approved By: GDB
		Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU			



**FSR: 30 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By:
Max. Avg. Depth**

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Status
Cellular Storage	FSR: 30 years: +35 %: 960 mins: Winter	60.670	60.670	0.670	0.670	6.2	113.837	0.000	0.000	0.7	61.416	1683	OK

Project: Heathlands Farm Surface Water Attenuation Ref: 6178		Date: 06/05/2025			
		Designed by: JCB	Checked by: GDB		Approved By: GDB
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU			



FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By:
Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Status
Cellular Storage	FSR: 100 years: +45 %: 1440 mins: Winter	60.960	60.960	0.960	0.960	6.1	163.227	0.000	0.000	0.8	107.961	2055	OK

Project: Heathlands Farm Surface Water Attenuation Ref: 6178		Date: 06/05/2025			
Report Details: Type: Phase Management Storm Phase: Phase		Designed by: JCB	Checked by: GDB		Approved By: GDB
		Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU			



Phase
FSR: 1 years: Increase Rainfall (%): +0: 30 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
Cellular Storage			0.5	1.351
TOTAL	20.0	17.282	0.5	1.351

Project: Heathlands Farm Surface Water Attenuation Ref: 6178	Date: 06/05/2025		
	Designed by: JCB	Checked by: GDB	Approved By: GDB
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU		



Phase
FSR: 30 years: Increase Rainfall (%): +35: 960 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
Cellular Storage			0.7	61.416
TOTAL	6.1	139.974	0.7	61.416

Project: Heathlands Farm Surface Water Attenuation Ref: 6178	Date: 06/05/2025		
	Designed by: JCB	Checked by: GDB	Approved By: GDB
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Bellamy Roberts Clover House, Western Lane Odiham, Hampshire, RG29 1TU		



Phase
FSR: 100 years: Increase Rainfall (%): +45: 1440 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
Cellular Storage			0.8	107.961
TOTAL	6.1	209.232	0.8	107.961



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