Bank to only allow water in at 63.95m with non return value to allow flood water to drain back into watercourse at 63.50m

Outlet at Greenfield rate of 4 litres per second. Non-return valves to prevent flood water entering swale

Outlet at Greenfield rate of 4 litres per second. Non-return valves to prevent flood water entering swale

64.150 Contour 1%AEP (+35%)

63.950 Contour

PUBLIC LANDSCAPED GREEN ZONE
LEVELS TO BE RE-GRADED TO REDUCE RISK. PUBLIC ACCESS VIA FOOTPATHS ALL CONSTRUCTED AT 63.95m.

WILDLIFE WETLAND ZONE
LEVELS TO BE RE-GRADED FOR INCREASED SW RUN OFF. ADDITIONAL LANDSCAPING TO BE CARRIED OUT FOR BENEFIT OF WILDLIFE. NO PUBLIC ACCESS. GATES PROVIDED FOR MAINTENANCE & EMERGENCY ACCESS ONLY

Swale

Swale

Circa 63.55

Unit 1 65.00m

Unit 2 65.00m

Unit 3 65.00m

First Floor Offices

Circa 63.55

Circa 63.55

Attenuation Swale @Circa 63.20

64.75m Unit 13

64.75m Unit 12

65.00m Unit 6

FCZ

63.95

level as extg

path level 63.95

Unit 11 64.75m

Unit 10 64.75m

64.75m Unit 4

64.75m Unit 5

64.75m Unit 8

64.75m Unit 9

65.00m Unit 7

Circa 63.75

Circa 63.75

Circa 63.75

Circa 63.75

level as extg

level as extg

Attenuation Swale @Circa 63.20

Pond

Bank to only allow water in at 63.95m with non return value to allow flood water to drain back into watercourse at 63.50m

Circa 63.60

63.35

63.45

63.55

63.65

63.75

FLOOD COMPENSATION ZONE

Circa 63.75

Circa 63.40

Circa 63.50

Existing Watercourse

Langford Brook

63.950 Contour

64.150 Contour 1%AEP (+35%)

Outlet at Greenfield rate of 12 litres per second. Non-return valves to prevent flood water entering swale

New Hedgerow ditch to be constructed to potentially link to existing culvert on adjacent site

Existing Watercourse

Pond

Drain

ED & Ward Bdy

Proposed Flood Mitigation Plan 1:1000

PRELIMINARY

Rev	Date	Revision Description
A	31.07.19	Flood compensation zone shown

Revision Schedule

Catalyst Bicester
Wendlebury Road, Bicester

Client:

Albion Land Plc.

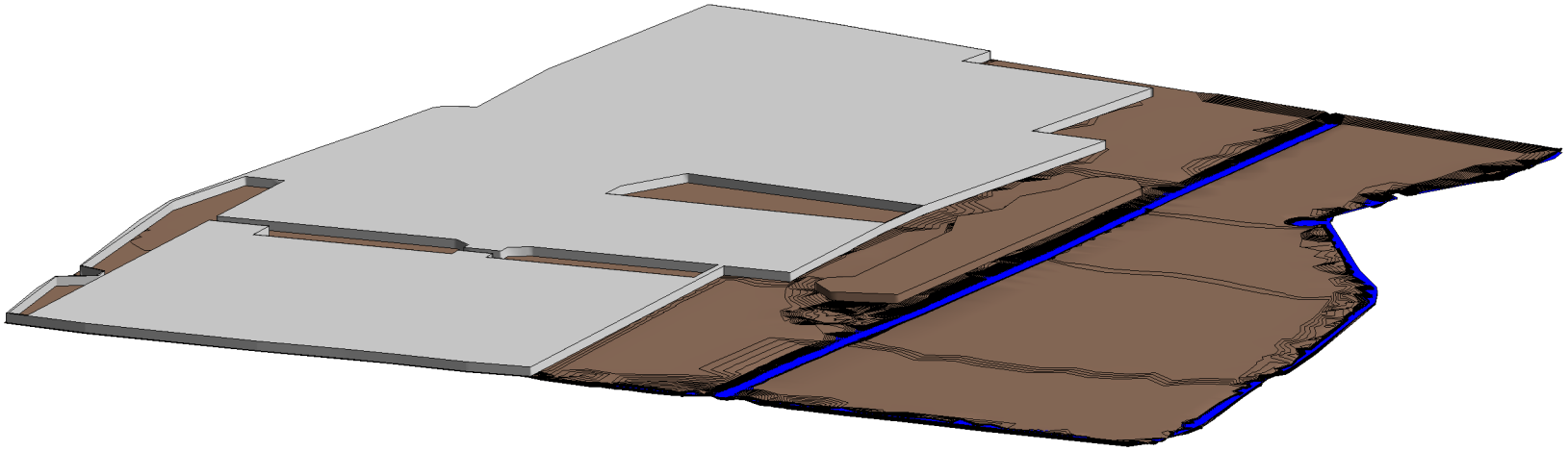
TECH SCHEME OPTION 8
FLOOD COMPENSATION SCHEME 1
IN-DIRECT COMPENSATION

BAILEY JOHNSON HAYES
Consulting Engineers
ST.ALBANS: Suite 4, Phoenix House, 63 Campfield Rd, ST.ALBANS, Herts AL1 5FL
MANCHESTER: Grange House, John Dalton Street, MANCHESTER, M2 6FW

Scale	1:1000 @A1
Date	01.03.19
Drawn	JNG

S1358–Ext–35A

Flood Level	Expected Flood Level (m)
1 in 5 year (20% AEP)	63.650
1 in 20 year (5% AEP)	63.940
1 in 100 year (1% AEP)	64.050
1 in 100 year + 35% CC (1% AEP + 35% CC)	64.150
1 in 1000 Year (0.1% AEP)	64.200



3D 63.150m - 63.350m

Rev	Date	Revision Description
		Revision Schedule

Promised Land Farm
Bicester

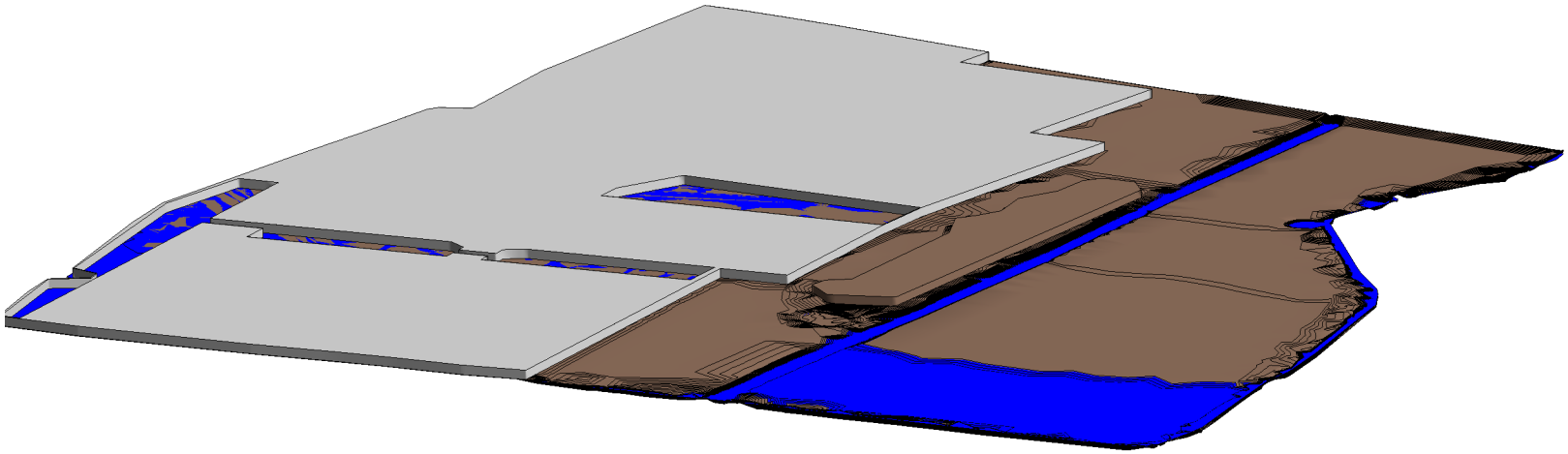
Client:-
Albion Land PLC

Flood Compensation - Slice
63.150m-63.350m

BAILEY JOHNSON HAYES
Consulting Engineers
MANCHESTER : Grange House, John Dalton Street Tel 0161 279 7777 Fax 0161 236 3552
ST ALBANS : Phoenix House, 63 Campfield Road. Tel 01727 841172 Fax 01727 841085

Scale	1 : 1 @A1	Project Ref.	Drawing No.	Rev.
Date	06/21/19	S1358	3D-010	
Drn BJH	Chkd BJH			

Flood Level	Expected Flood Level (m)
1 in 5 year (20% AEP)	63.650
1 in 20 year (5% AEP)	63.940
1 in 100 year (1% AEP)	64.050
1 in 100 year + 35% CC (1% AEP + 35% CC)	64.150
1 in 1000 Year (0.1% AEP)	64.200



3D 63.350m - 63.550m

Rev	Date	Revision Description
		Revision Schedule

Promised Land Farm
Bicester

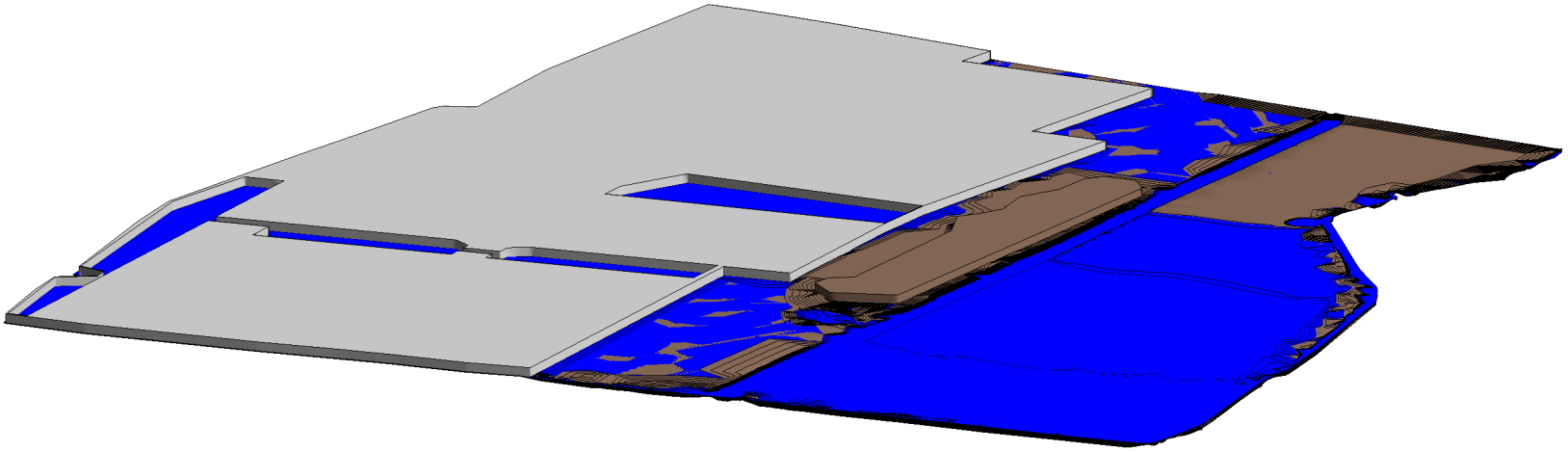
Client:-
Albion Land PLC

Flood Compensation - Slice
63.250m-63.550m

BAILEY JOHNSON HAYES
Consulting Engineers
MANCHESTER : Grange House, John Dalton Street Tel 0161 279 7777 Fax 0161 236 3552
ST ALBANS : Phoenix House, 63 Campfield Road. Tel 01727 841172 Fax 01727 841085

Scale	1 : 1 @A1	Project Ref.	Drawing No.	Rev.
Date	06/21/19	S1358	3D-011	
Drn BJH	Chkd BJH			

Flood Level	Expected Flood Level (m)
1 in 5 year (20% AEP)	63.650
1 in 20 year (5% AEP)	63.940
1 in 100 year (1% AEP)	64.050
1 in 100 year + 35% CC (1% AEP + 35% CC)	64.150
1 in 1000 Year (0.1% AEP)	64.200



3D 63.550m - 63.750m

Rev	Date	Revision Description
		Revision Schedule

Promised Land Farm
Bicester

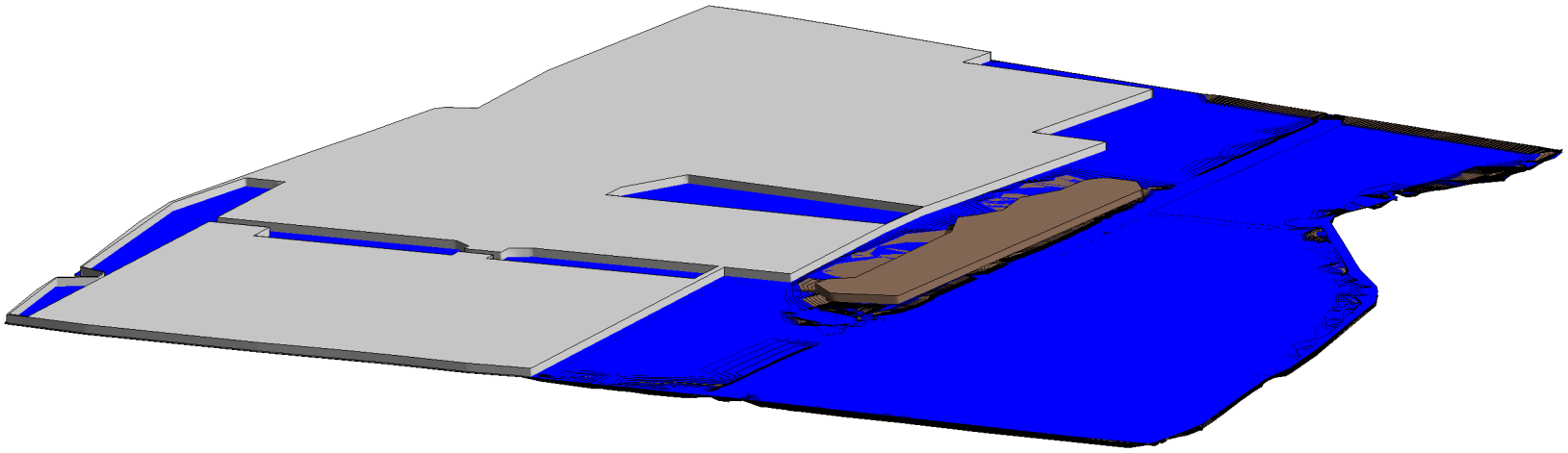
Client:-
Albion Land PLC

Flood Compensation - Slice
63.550m-63.750m

BAILEY JOHNSON HAYES
Consulting Engineers
MANCHESTER : Grange House, John Dalton Street Tel 0161 279 7777 Fax 0161 236 3552
ST ALBANS : Phoenix House, 63 Campfield Road. Tel 01727 841172 Fax 01727 841085

Scale	1 : 1 @A1	Project Ref.	Drawing No.	Rev.
Date	06/21/19	S1358	3D-012	
Drn BJH	Chkd BJH			

Flood Level	Expected Flood Level (m)
1 in 5 year (20% AEP)	63.650
1 in 20 year (5% AEP)	63.940
1 in 100 year (1% AEP)	64.050
1 in 100 year + 35% CC (1% AEP + 35% CC)	64.150
1 in 1000 Year (0.1% AEP)	64.200



3D 63.750m - 63.950m

Rev	Date	Revision Description
		Revision Schedule

Promised Land Farm
Bicester

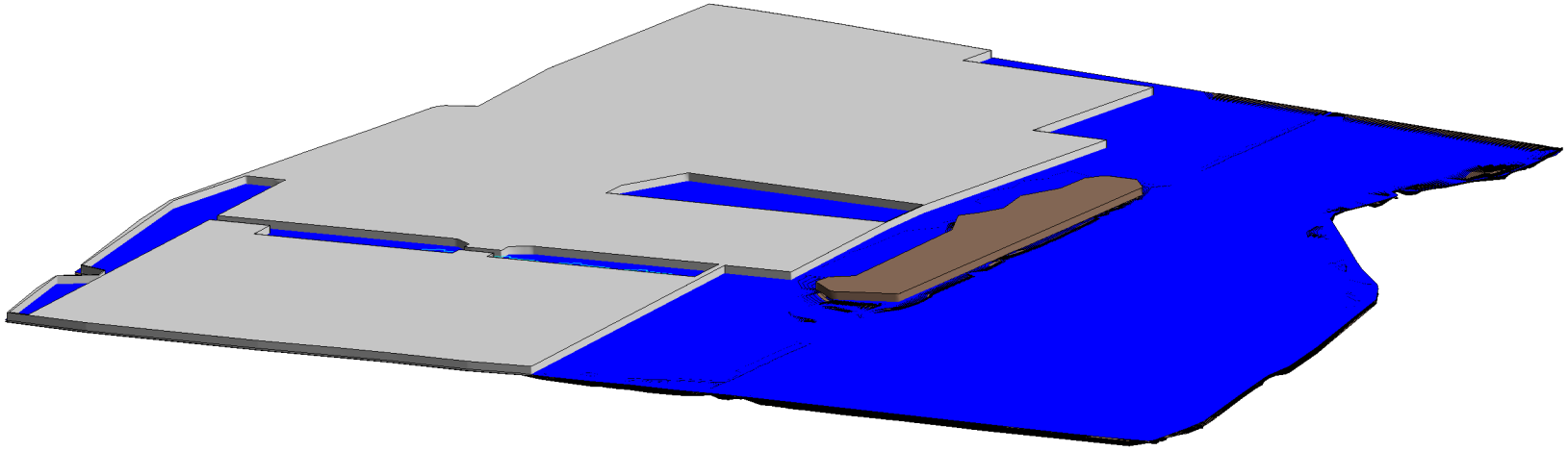
Client:-
Albion Land PLC

Flood Compensation - Slice
63.750m-63.950m

BAILEY JOHNSON HAYES
Consulting Engineers
MANCHESTER : Grange House, John Dalton Street Tel 0161 279 7777 Fax 0161 236 3552
ST ALBANS : Phoenix House, 63 Campfield Road. Tel 01727 841172 Fax 01727 841085

Scale	1 : 1 @A1	Project Ref.	Drawing No.	Rev.
Date	06/21/19	S1358	3D-013	
Drn BJH	Chkd BJH			

Flood Level	Expected Flood Level (m)
1 in 5 year (20% AEP)	63.650
1 in 20 year (5% AEP)	63.940
1 in 100 year (1% AEP)	64.050
1 in 100 year + 35% CC (1% AEP + 35% CC)	64.150
1 in 1000 Year (0.1% AEP)	64.200



3D 63.950m - 64.150m

Rev	Date	Revision Description
		Revision Schedule

Promised Land Farm
Bicester

Client:-
Albion Land PLC

Flood Compensation - Slice
63.950m-64.150m

BAILEY JOHNSON HAYES
Consulting Engineers
MANCHESTER : Grange House, John Dalton Street Tel 0161 279 7777 Fax 0161 236 3552
ST ALBANS : Phoenix House, 63 Campfield Road. Tel 01727 841172 Fax 01727 841085

Scale	1 : 1 @A1	Project Ref.	Drawing No.	Rev.
Date	06/21/19	S1358	3D-014	
Drn BJH	Chkd BJH			

Slice	Existing Slice Capacity M³		New Site Slice Capacity M³		Difference (Gain) M³
63.150-63.350	322		760		438
63.350-63.550	1205		1831		626
63.550-63.750	6475		7023		548
63.750-63.950	13779		14099		320
63.950-64.150	21151		21470		319

Option 8

Level	Existing Capcity			New Level Capacity	Difference
63.150	514.000			776.000	-262.000
63.350	836.000			1536.000	-700.000
63.550	2041.000			4367.000	-2326.000
63.750	8516.000			11390.000	-2874.000
63.950	22295.000			25489.000	-3194.000
64.150	43446.000			46959.000	-3513.000

APPENDIX H

BAILEY JOHNSON HAYES SURFACE WATER DRAINAGE SCHEME & CALCULATIONS

BAILEY JOHNSON HAYES
CONSULTING ENGINEERS
Bailey Johnson Hayes
Grange House, John Dalton Street
Manchester. M2 6FW
Tel: 0161 279 7777 Fax: 0161 236 3552
Web: www.bjh.co.uk

Project	Project No.	Sheet No.
Catalyst Bicester, Wendlebury Rd, Bicester. for Albion Land.	S1358	D1
	Drawing No.	Rev. 2
Section: Surface Water Drainage Design	By: P.A.B.	Date: Jul 2019
	Checked	Date

Calculations

PROPOSED DEVELOPMENT

CATALYST BICESTER

WENDLEBURY ROAD, BICESTER

FOR

ALBION LAND

SURFACE WATER DRAINAGE DESIGN

1.0 INTRODUCTION

The following calculations are prepared to justify the principles for design of below-ground surface water drainage systems for the above development.

The development plot has an area of 9.7 ha and exhibits a gentle gradient from west to east. With the exception of a chicken farm in the southwestern corner, the site is presently undeveloped and comprises of open fields used as arable land. The proposed scheme is to develop the site with new roads, buildings and external yard hardstanding areas for B1(c), B2, and B8 use classes, and a Leisure Club.

The site presently drains naturally in an easterly direction towards Langford Brook which forms the eastern site boundary. Ground levels within the site boundary shall be adjusted by local raising levels in the northern sector to create a plateau for building development, with associated lowering of levels within the western and southern sectors to provide flood compensation. Details of the flood compensation scheme are appended to the BJH site-specific flood risk assessment.

The surface water drainage strategy for the developed site is to maintain the existing outfall arrangements and limit flows to existing greenfield values by utilising substantial retention swales and/or below-ground

Bailey Johnson Hayes
Grange House, John Dalton Street
Manchester. M2 6FW
Tel: 0161 279 7777 Fax: 0161 236 3552
Web: www.bjh.co.uk

Calculations

attenuation storage, and incorporating flow control devices to the drainage network. The design for the site drainage shall include an allowance for climate change.

2.0 GROUND CONDITIONS

The published BGS geology map indicates Alluvium across the majority of the site. The Alluvium is absent in the northwest and the southwest of the site, where River Terrace deposits are shown. Solid geology of the Kellaways Formation is anticipated below, comprising interbedded sandstone and siltstone of the Kellaways Sand Member, underlain by mudstone interbedded with siltstone and sandstone of the Kellaways Clay Member. Kellaways Sand is shown to be absent in the north of the site. The Kellaways Formation is anticipated to be underlain by limestone of the Cornbrash Formation.

A series of 18 trial pits have been excavated by Applied Geology on behalf of Albion Land Ltd. Topsoil and subsoil was encountered at surface across the site and was underlain by Superficial Deposits comprising Alluvium and River Terrace Deposits, which in turn was underlain by the Kellaways Formation, predominantly comprising clay, with initial horizons of sand in the southeast of the site. This is broadly consistent with the published geological records. Groundwater was recorded as seepages in all trial pits, with the exception of TP12 (no River Terrace Deposits present) within the River Terrace Deposits at depths of between 0.5m and 1.3m bgl.

3.0 DESIGN

3.1 Greenfield Runoff Estimate

Greenfield runoff estimation is undertaken using the UK SuDS Tools Website using the Institute of Hydrology Report 124 methodology. Based upon soils information for the development site obtained from the Cranfield Soil and AgriFood Institute Soilscapes Viewer

Calculations

and the ground conditions established during the trial pitting exercise undertaken by Applied Geology, the SOIL is conservatively considered to be type 3 for the purpose of greenfield runoff estimation. The default value of SOIL type 1 (sandy highly permeable material), allocated by the UK SuDS Tools Website for the subject site, is considered inappropriate and is therefore edited within the input data.

Greenfield runoff is calculated using the Institute of Hydrology Report 124 methodology; the appended calculation sheet confirms the 1:1 greenfield runoff rate = **20.43 litres/sec**

3.2 Quick Storage Estimate

For the purpose of initial sizing of flood storage requirements it shall be assumed that the outflow from the whole site shall be restricted to 20.4 l/sec for all rainfall events up to and including the 1 in 100 year event inclusive of an allowance of 40% for climate change in accordance with government guidance.

Drainage design is undertaken using the Source Control module of Microdrainage Windes software. The surface water drainage shall be split into two systems; Units 10-13 shall drain into Swale 1, and Units 1-9 shall drain into Swale 2. Both swales shall discharge to existing field ditches which in turn outfall to Langford Brook to the east. The total permissible outflow rates are apportioned at 8 l/sec from Swale 1, and 12 l/sec from Swale 2. Input data and results of Quick Storage Estimates are presented on the following sheets nos 1 and 39. For 1 in 100 year +40% storm events (using FEH design rainfall) the software predicts storage volumes between 1869 m^3 and 2553 m^3 will be required for Swale 1, and between 5179 m^3 and 6702 m^3 will be required for Swale 1.

3.3 Drainage Layouts

The attached BJH drawings M1358-DD01, DD02 & DD03 illustrate the hard surfaced drained site areas, pipe design references and lengths, and the layout of principal below-ground drainage runs respectively. The Leisure Centre plot has dedicated surface water attenuation provisions by virtue of private below-ground storage and an hydrobrake flow control to restrict flows to 60 l/sec at the outfall manhole connecting to the shared system constructed through the industrial plot. This information is input to the Windes software and modelled in the Simulation module.

3.4 Units 10-13 – Swale 1

In order to establish the critical storm event a simple model is created within the Source Control module of Windes using a Swale fitted with an Hydrobrake flow control device to restrict outflows to 8 l/sec. Microdrainage pages 2-4 indicate that the critical storm is a 1440 minute winter event.
Swale 1 dimensions are shown on the attached BJH drawing M1358-DD04.

3.4.1 Simulation 100yr+40%CC Winter Storms

Design storms from 2160minute duration to 15min duration are modelled in Simulation, to include the critical 1440 minute design storm.

BAILEY JOHNSON HAYES
CONSULTING ENGINEERS
Bailey Johnson Hayes
Grange House, John Dalton Street
Manchester. M2 6FW
Tel: 0161 279 7777 Fax: 0161 236 3552
Web: www.bjh.co.uk

Project	Project No.	Sheet No.
Catalyst Bicester, Wendlebury Rd, Bicester. for Albion Land.	S1358	D4
	Drawing No.	Rev. 2
Section Surface Water Drainage Design	By P.A.B.	Date Jul 2019
	Checked	Date

Calculations

Microdrainage pages 5-14 include complete details of the network i.e. online controls and storage provisions for a 2160 minute winter design storm. The water level in Swale 1 is 63.995; discharge to outfall is 8 l/sec.

Microdrainage pages 15-16 include simulation criteria and results for a 1440 minute winter design storm. The water level in Swale 1 is 64.004; discharge to outfall is 8 l/sec.

Microdrainage pages 17-18 include simulation criteria and results for a 960 minute winter design storm. The water level in Swale 1 is 63.995; discharge to outfall is 8 l/sec.

Microdrainage pages 19-20 include simulation criteria and results for a 720 minute winter design storm. The water level in Swale 1 is 63.980; discharge to outfall is 8 l/sec.

Microdrainage pages 21-22 include simulation criteria and results for a 600 minute winter design storm. The water level in Swale 1 is 63.967; discharge to outfall is 8 l/sec.

Microdrainage pages 23-24 include simulation criteria and results for a 480 minute winter design storm. The water level in Swale 1 is 63.947; discharge to outfall is 8 l/sec.

Microdrainage pages 25-26 include simulation criteria and results for a 360 minute winter design storm. The water level in Swale 1 is 63.918; discharge to outfall is 8 l/sec.

Microdrainage pages 27-28 include simulation criteria and results for a 240 minute winter design storm. The water level in Swale 1 is 63.871; discharge to outfall is 8 l/sec.

Microdrainage pages 29-30 include simulation criteria and results for a 180 minute winter design storm. The water level in Swale 1 is 63.839; discharge to outfall is 8 l/sec.

Microdrainage pages 31-32 include simulation criteria and results for a 120 minute winter design storm. The water level in Swale 1 is 63.795; discharge to outfall is 8 l/sec.

Microdrainage pages 33-34 include simulation criteria and results for a 60 minute winter design storm. The water level in Swale 1 is 63.722; discharge to outfall is 8 l/sec.

Microdrainage pages 35-36 include simulation criteria and results for a 30 minute winter design storm. The water level in Swale 1 is 63.657; discharge to outfall is 8 l/sec.

Microdrainage pages 37-38 include simulation criteria and results for a 15 minute winter design storm. The water level in Swale 1 is 63.599; discharge to outfall is 8 l/sec. In this extreme design case isolated surface flooding up to 2m3 is predicted to occur within the service yard between Units 10 and 12, and the access road between Units 10 and 11; the water not threaten the buildings and will be temporarily held as ponding on the pavement surface until the storm abates.

BAILEY JOHNSON HAYES
CONSULTING ENGINEERS
Bailey Johnson Hayes
Grange House, John Dalton Street
Manchester. M2 6FW
Tel: 0161 279 7777 Fax: 0161 236 3552
Web: www.bjh.co.uk

Project	Project No.	Sheet No.
Catalyst Bicester, Wendlebury Rd, Bicester. for Albion Land.	S1358	D5
	Drawing No.	Rev. 2
Section: Surface Water Drainage Design	By: P.A.B.	Date: Jul 2019
	Checked	Date

Calculations

For 100yr+40%CC design storms the peak water level in Swale 1 is 64.004 (depth 0.804m) for an outflow restriction of 8 l/sec.

3.5 Units 1-9 – Swale 2

3.5.1 Simulation 100yr+40%CC Winter Storms

The detailed calculations for the drainage network serving Units 1-9 -Swale 2 confirm that the 2880 minute winter storm is the critical design case. Design storms from 4320minute duration to 15min duration are modelled in Simulation, to include the critical 2880 minute design storm.

Microdrainage pages 40-54 include complete details of the network i.e. online controls and storage provisions for a 4320 minute winter design storm. The water level in Swale 2 is 63.862; discharge to outfall is 12 l/sec.

Microdrainage pages 55-57 include simulation criteria and results for a 2880 minute winter design storm. The water level in Swale 2 is 63.904; discharge to outfall is 12 l/sec.

Microdrainage pages 58-60 include simulation criteria and results for a 2160 minute winter design storm. The water level in Swale 2 is 63.896; discharge to outfall is 12 l/sec.

Microdrainage pages 61-63 include simulation criteria and results for a 1440 minute winter design storm. The water level in Swale 2 is 63.867; discharge to outfall is 12 l/sec.

Microdrainage pages 64-66 include simulation criteria and results for a 960 minute winter design storm. The water level in Swale 2 is 63.822; discharge to outfall is 12 l/sec.

Microdrainage pages 67-69 include simulation criteria and results for a 720 minute winter design storm. The water level in Swale 2 is 63.783; discharge to outfall is 12 l/sec.

Microdrainage pages 70-72 include simulation criteria and results for a 600 minute winter design storm. The water level in Swale 2 is 63.756; discharge to outfall is 12 l/sec.

Microdrainage pages 73-75 include simulation criteria and results for a 480 minute winter design storm. The water level in Swale 2 is 63.723; discharge to outfall is 12 l/sec.

Microdrainage pages 76-78 include simulation criteria and results for a 360 minute winter design storm. The water level in Swale 2 is 63.681; discharge to outfall is 12 l/sec.

Microdrainage pages 79-81 include simulation criteria and results for a 240 minute winter design storm. The water level in Swale 2 is 63.623; discharge to outfall is 12 l/sec.

Microdrainage pages 82-84 include simulation criteria and results for a 180 minute winter design storm. The water level in Swale 2 is 63.576; discharge to outfall is 12 l/sec.

BAILEY JOHNSON HAYES
CONSULTING ENGINEERS
Bailey Johnson Hayes
Grange House, John Dalton Street
Manchester. M2 6FW
Tel: 0161 279 7777 Fax: 0161 236 3552
Web: www.bjh.co.uk

Project	Project No.	Sheet No.
Catalyst Bicester, Wendlebury Rd, Bicester. for Albion Land.	S1358	D6
	Drawing No.	Rev. 2
Section: Surface Water Drainage Design	By: P.A.B.	Date: Jul 2019
	Checked	Date

Calculations

Microdrainage pages 85-87 include simulation criteria and results for a 120 minute winter design storm. The water level in Swale 2 is 63.502; discharge to outfall is 12 l/sec.
Microdrainage pages 88-90 include simulation criteria and results for a 60 minute winter design storm. The water level in Swale 2 is 63.380; discharge to outfall is 12 l/sec.

Microdrainage pages 91-93 include simulation criteria and results for a 30 minute winter design storm. The water level in Swale 2 is 63.286; discharge to outfall is 12 l/sec.

Microdrainage pages 94-96 include simulation criteria and results for a 15 minute winter design storm. The water level in Swale 2 is 63.238; discharge to outfall is 8 l/sec. In this extreme design case isolated surface flooding up to 7.5m3 is predicted to occur within the service yard between Units 6 and 8; the water not threaten the buildings and will be temporarily held as ponding on the pavement surface until the storm abates.

For 100yr+40%CC design storms the peak water level in Swale 2 is 63.904 (depth 1.004m) for an outflow restriction of 12 l/sec.

4.0 EXCEEDANCE EVENTS

Site levels will arranged to ensure that overland flow routes are created to encourage any build-up of surface water to flow in an easterly direction towards Langford Brook. Similarly the bunding to the Swale will be constructed to ensure that there is facility for overspill to occur in an easterly direction away from the development land.

APPENDIX A

GREENFIELD RUNOFF ESTIMATE

HR Wallingford
Working with water

Greenfield runoff estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	peter brooks
Site name:	Promised Land Farm
Site location:	Bicester

This is an estimation of the greenfield runoff rate limits that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the SuDS Manual, C753 (Ciria, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site coordinates

Latitude:	51.88559° N
Longitude:	1.16552° W

Reference:	6484523
Date:	2018-10-25T08:25:55

Methodology	IH124

Site characteristics

Total site area (ha)	9.7

Methodology

Qbar estimation method	Calculate from SPR and SAAR
SPR estimation method	Calculate from SOIL type

	Default	Edited
SOIL type	1	3
HOST class	---	---
SPR/SPRHOST	0.1	0.37

Hydrological characteristics

	Default	Edited
SAAR (mm)	617	617
Hydrological region	6	6
Growth curve factor: 1 year	0.85	0.85
Growth curve factor: 30 year	2.3	2.3
Growth curve factor: 100 year	3.19	3.19

Notes:

(1) Is Q_{BAR} < 2.0 l/s/ha?

Normally limiting discharge rates which are less than 2.0 l/s/ha are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consents are usually set at 5.0l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set in which case blockage work must be addressed by using appropriate drainage elements

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite may be a requirement for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Qbar (l/s)	1.41	24.04
1 in 1 year (l/s)	1.19	20.43
1 in 30 years (l/s)	3.23	55.29
1 in 100 years (l/s)	4.48	76.69

APPENDIX B

BAILEY JOHNSON HAYES DRAWINGS

S1358-DD01A – Drained Areas

S1358-DD02A – SW drainage design refs

S1358-DD03A – Proposed SW Drainage

S1358-DD04A – Proposed Swales

Wendlebury Road

10m 0 10m 20m 30m 40m 50m

1:500 @ A0

Unit 1 65.00m

Unit 2 65.00m

Unit 3 65.00m

64.75m Unit 13

64.75m Unit 12

Unit 11 64.75m

Unit 10 64.75m

64.75m Unit 4

64.75m Unit 5

65.00m Unit 6

64.75m Unit 8

64.75m Unit 9

Tennis Court 65.50m

Leisure Center 65.20m

Dome 65.20m

65.00m Unit 7

First Floor Offices

DAVID LLOYD TO CONFIRM DRAINAGE REQUIREMENTS

Hydrobrake 5 litres/s Overflow IL 64.100

Hydrobrake 8 litres/s Overflow IL 64.150

Hydrobrake 5 litres/s Overflow IL 64.500

Hydrobrake 60 litres/s

Hydrobrake 12 litres/s Overflow IL 64.150

SWALE 1 IL 63.200

SWALE 2 IL 62.900

SPEL CLASS 1 OIL INTERCEPTOR ??? C1/SC FITTED WITH ALARM IL 63.300

SPEL CLASS 1 OIL INTERCEPTOR 318 C1/SC FITTED WITH ALARM IL 63.200

SPEL CLASS 1 OIL INTERCEPTOR 210 C1/SC FITTED WITH ALARM IL 63.350

SPEL CLASS 1 OIL INTERCEPTOR 325 C1/SC FITTED WITH ALARM IL 63.200

LINE DRAIN

KERB DRAIN

CHICKEN SHED

KEY:

- Gravel Sub-grade Attenuation Blanket
- Petrol Interceptor
- SW Manhole
- SW Pipes (Size Varies)
- FW Manhole
- FW Pipes (Size Varies)
- Linear Drainage
- New SW Gully
- RWP Rain Water Pipe

Proposed External Works Plan 1:500

PRELIMINARY

Rev	Date	Revision Description
A	07.2019	Redrawn

Revision Schedule

Catalyst Bicester
Wendlebury Road, Bicester

Client:
Albion Land Plc.

Tech Scheme Option 8
Drained Areas

BAILEY JOHNSON HAYES
Consulting Engineers
ST.ALBANS: Suite 4, Phoenix House, 63 Campfield Rd, ST.ALBANS, Herts AL1 5FL
MANCHESTER: Grange House, John Dalton Street, MANCHESTER, M2 6FW

Scale 1:500 @A0
Date 07.19
Drawn PAB

A
S1358-DD01