HEALEY consulting

structural engineering consultants

DRAINAGE STRATEGY & FLOOD RISK STATEMENT

20539

H2 UNIT
HEYWOOD INDUSTRIAL PARK
Off Pilsworth Rd., Heywood

February 2021

Brunel House Milnrow Rochdale OL16 3NJ

t: 01706 343961 e: office@healeyconsulting.co.uk

Site Details

Site Owner - HEREF Heywood Park Property Unit Trust

The site is situated within the Heywood Distribution Park site. This is a self contained and secure site of industrial and warehousing units. Refer Appendix for Overall site plan.

The existing building comprises a large steel framed industrial unit, with integral offices and external car parking and service yard areas.

Existing Site Conditions

Refer to drawing HC-20539-(30)-001

The current site comprises the following:

Overall site area (boundary): **26,880 square metres**, broken down as follows:

Car Parking:	3,743 square metres
External Yard & entrance:	8,975 square metres
Existing building:	13,444 square metres

Remaining residual area comprise gravelled margins around building, etc

Total Existing Developed **IMPERMEABLE** Area

26,162 square metres

There are small islands of landscaping, planting etc which are naturally permeable, gravel margins etc.

Proposed Site Conditions

Refer to drawing HC-20539-(30)-002

Overall site area (boundary): **29,026 square metres**, broken down as follows:

Car Parking: 3,743 square metres
Car Parking **AREA CHANGE**: ZERO

External Yard: 8,253 square metres
Yard **AREA CHANGE:** - 722 square metres

Building: 16,286 square metres
Additional Building Area: **+ 2,842 square metres**

Total Proposed Developed **IMPERMEABLE** Area

= 16286 + 8253 + 3743

= **28,282 square metres**

Less existing imp site area: 26,162 square metres

NETT INCREASE in Site Area

2,120 square metres

Check, +2842 – 722 = 2120

Discussion

The proposed site layout involves a nett increase to useable and impermeable site area of 2120m2.

This is essentially an extension of the external service yard, with the building extension taking up part of the existing service yard area. The yard has been widened to allow for HGV turning, clear of the dock leveller.

The location of the proposed yard extension is over an area which is currently serving as an acoustic bund, separating the development from the Truck Stop part of the overall Heywood site. The bund is man-made comprising of muck shift from previous developments. The bund itself is permeable, but as its height is greater than the surrounding levels it is considered that a small percentage of rainwater over the area of the bund will inevitably find its way into the drainage network.

The whole site area of the existing H2 development currently benefits from attenuation of storm water. This is achieved in two ways, 1. Flooding of the dock and 2, below ground stormwater storage tanks.

There are currently two tanks, one located beneath the car park and the second tank, a smaller tank is situated beneath the service yard.

The car park stormwater attenuation connects directly into a pump chamber, which has a restricted flow rate of 35 litres per second. This is the maximum discharge flow rate from the site.

The service yard currently has its own flow control, operated via a Hydrobrake manhole, with a maximum discharge rate of 12.6 litres per second. This then connects into the same pump chamber as the car park.

The whole of the service yard area will need to be redeveloped to cater for the proposed building floor slab extension. The yard will need to be re-laid to different levels in order to accommodate the proposed extension.

Given the Tenancy/occupancy of the building and their operations, it is no longer acceptable to offset stormwater attenuation with flooding of the dock leveller. Therefore, all stormwater will be stored in below ground tanks.

The rate of discharge from the service yard area will be maintained at the same rate of discharge as its existing condition, ie., this will be restricted to 12.6 litres/sec.

Flood Risk Statement

The nett increase in site area of +2,120 square metres, in consideration of the overall site area of Heywood Distribution Park (approx. 822,500 square metres) represents such a small change that this is considered insignificant. Furthermore, any additional rainfall on this area of new hardstanding will not be allowed to change the run-off from site, therefore, this effectively represents zero change from the pre-existing site conditions.

For the above reason, a Full Flood Risk Assessment is considered unnecessary.

Calculations

The permitted discharge flow rate is 12.6 litres per second.

Impermeable area drained = 11,095 square metres.

1 in 30 year storage requirement volume 356 cubic metres.

1 in 100 year + 40% C/C storage requirement volume 790 cubic metres.

Therefore, below ground storage requirement is:

790 cubic metres

Refer to drawing HC-20539-(30)-002

Refer to Appendices for drawings and calculations

Notes

The Surface water drainage system is designed in accordance with CIRIA C697, C687, The National SuDS Standards March 2015.

External hardstanding surface water drainage is to be pretreated via a full retention oil and petrol separator.

Foul Drainage

There is no change to foul drainage.

APPENDIX

MSA SITE LOCATION PLAN

NOTES:

SUBJECT TO STATUTORY DESIGNATIONS

SUBJECT TO SURVEY

BASED ON THE MAP REPRODUCED BY PERMISSION OF CODE-MAP OF WESTMINSTER OFFICE OF ORDNANCE COPYRIGHT

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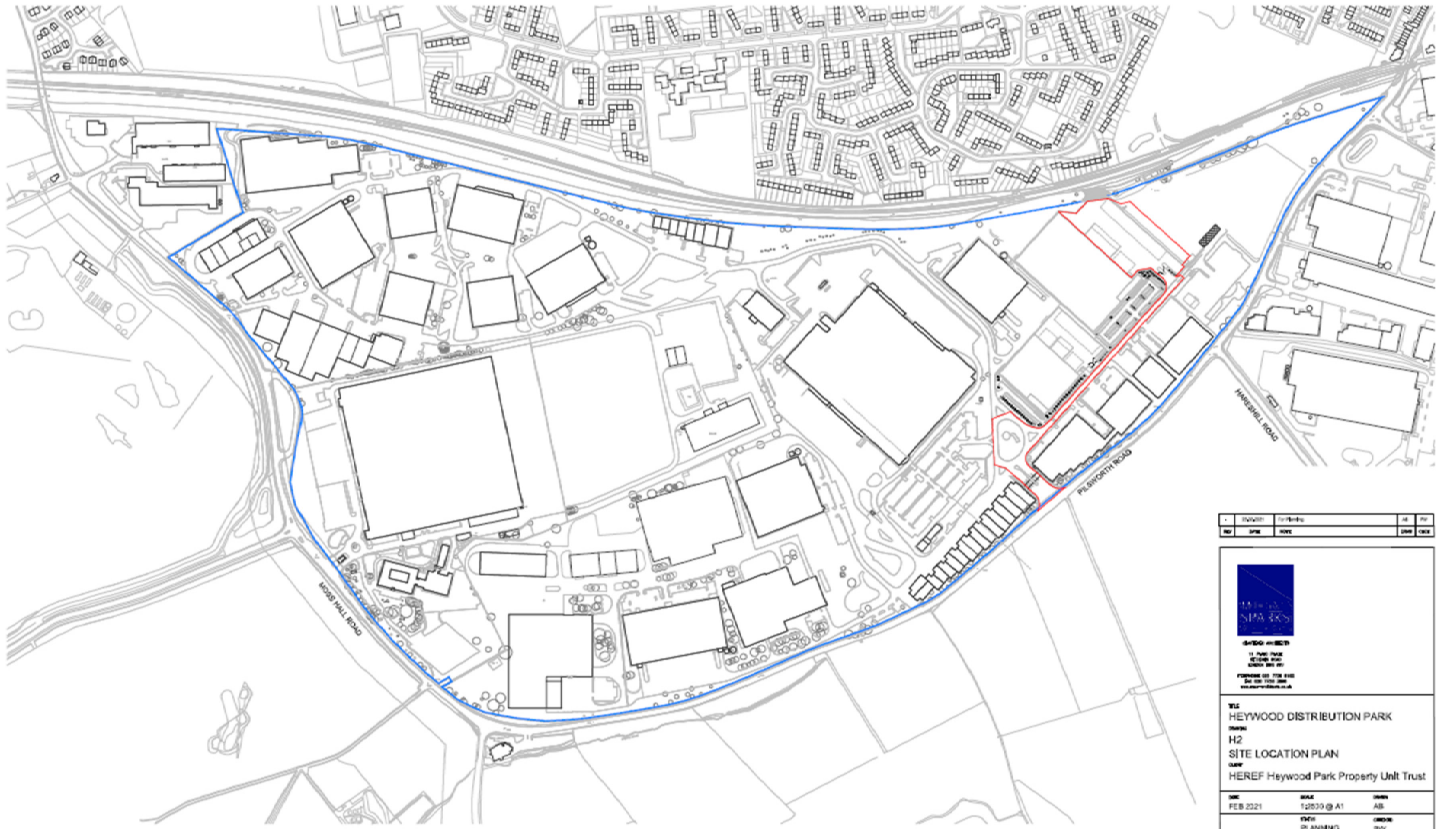


REV	DATE	NOTE	DRAW	CHECK
-	[illegible]	For Planning	AB	PW

HEYWOOD SPARKS

[illegible]

TITLE
HEYWOOD DISTRIBUTION PARK

DRAWING
H2
SITE LOCATION PLAN

CLIENT
HEREF Heywood Park Property Unit Trust

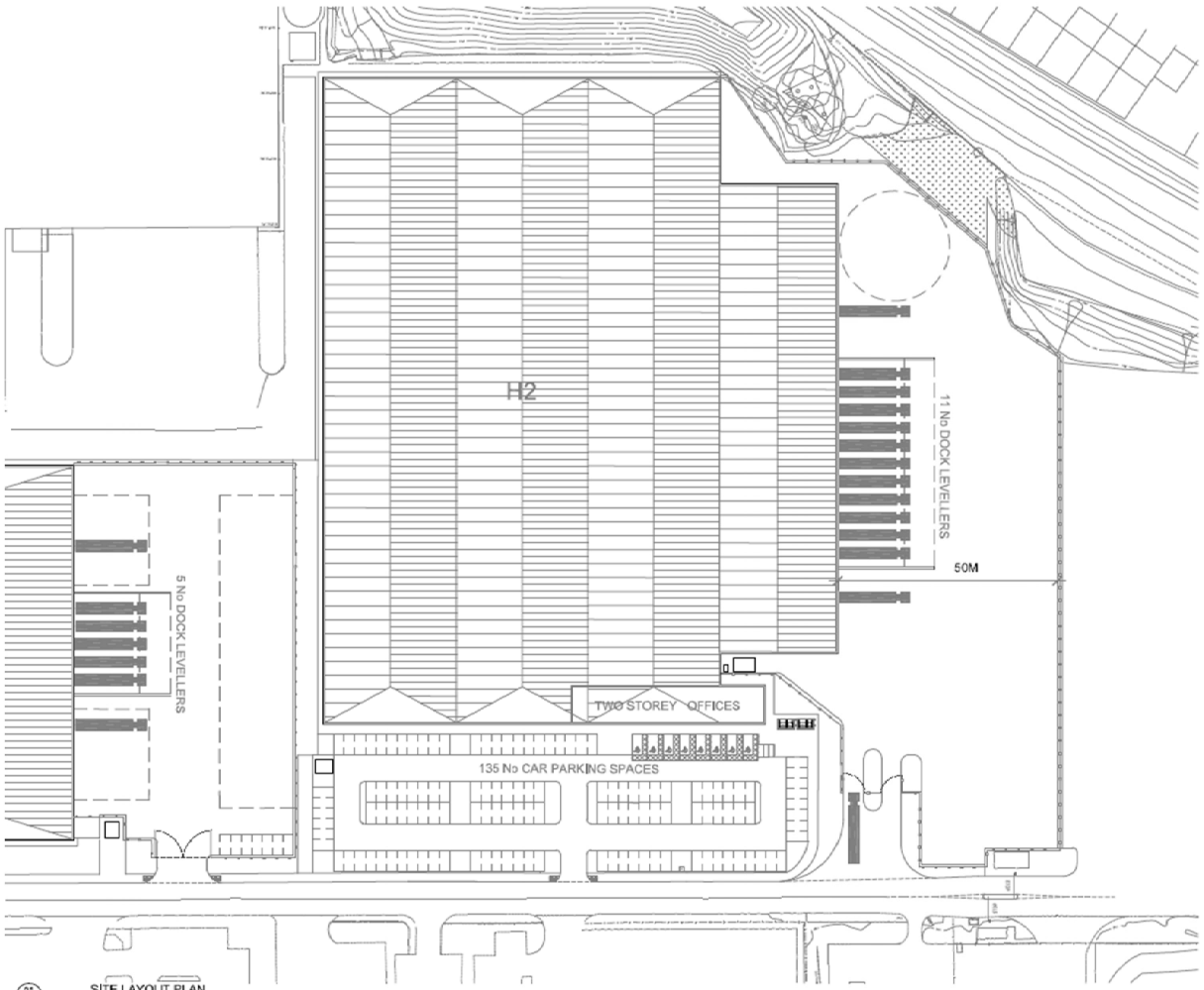
DATE	SCALE	DRAWN
FEB 2021	1:2500 @ A1	AB
	STATUS	CHECKED
	PLANNING	PW

DRAWING NUMBER
31512-PL-200

01 / 200 SITE LOCATION PLAN
1:2500

APPENDIX

MSA SITE LAYOUT



01
010
SITE LAYOUT PLAN

NOTES:

REV	DATE	NOTE	DRWN	CHKD
A	15/12/2020	[illegible]	AC	PW

MOSSAT SPARKS

TITLE
HEYWOOD DISTRIBUTION PARK

DRAWING
H2 PROPOSED SITE PLAN

CLIENT
HEREF Heywood Park Property Unit Trust

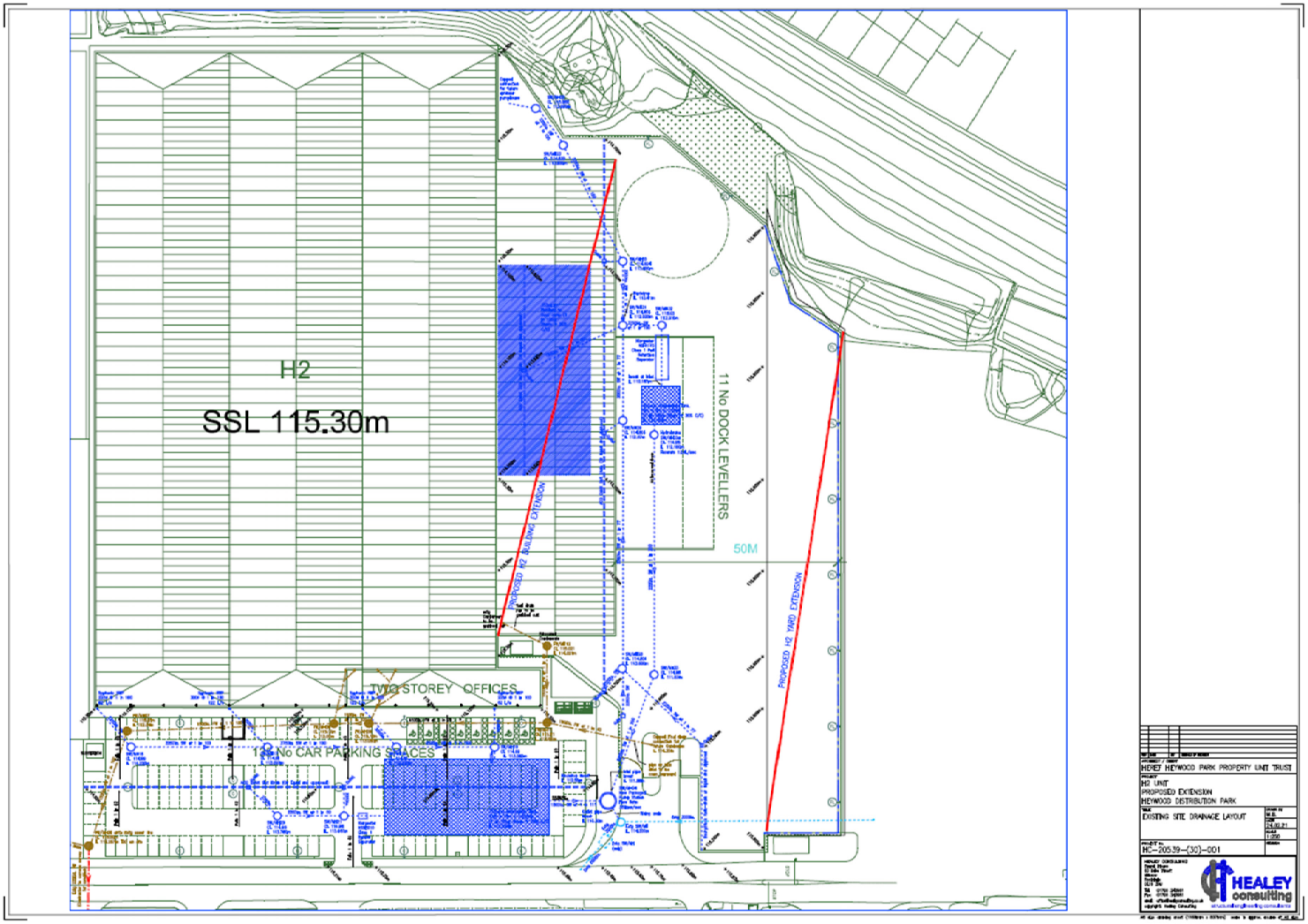
DATE	SCALE	DRAWN
OCT 2020	A1	PW

STATUS	CHECKED
FOR INFORMATION	PW

DRAWING NUMBER
30646-FE-011

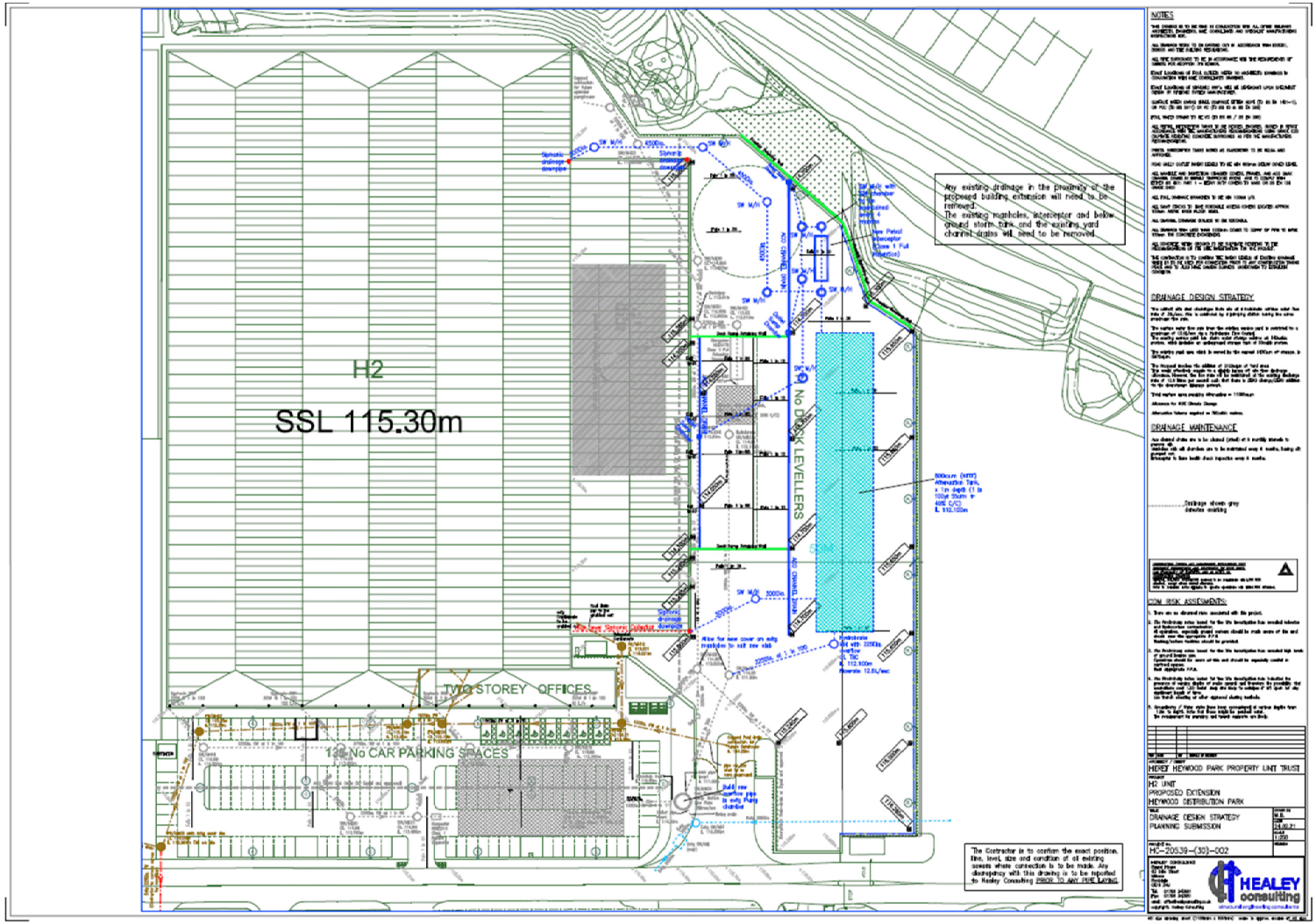
APPENDIX

HC-20539-(30)-001 EXISTING SITE DRAINAGE LAYOUT


H2
SSL 115.30m
11 No DOCK LEVELLERS
50M
PROPOSED H2 BUILDING EXTENSION
PROPOSED H2 YARD EXTENSION
TWO STOREY OFFICES
142 No CAR PARKING SPACES
HEREF HEYWOOD PARK PROPERTY UNIT TRUST
H2 UNIT
PROPOSED EXTENSION
HEYWOOD DISTRIBUTION PARK
EXISTING SITE DRAINAGE LAYOUT
HC-20539-(30)-001
HEALEY consulting

APPENDIX

HC-20539-(30)-002 PROPOSED DRAINAGE DESIGN STRATEGY


H2
SSL 115.30m
TWO STOREY OFFICES
122 No CAR PARKING SPACES
No DOCK LEVELERS
Any existing drainage in the proximity of the proposed building extension will need to be removed.
The existing manholes, interceptor and below ground storm tank, and the existing yard channel drains will need to be removed.
The Contractor is to confirm the exact position, line, level, size and condition of all existing sewers where connection is to be made. Any discrepancy with this drawing is to be reported to Healey Consulting PRIOR TO ANY PIPE LAYING.
NOTES
DRAINAGE DESIGN STRATEGY
DRAINAGE MAINTENANCE
CDM RISK ASSESSMENTS
HEALEY HEYWOOD PARK PROPERTY UNIT TRUST
H2 UNIT
PROPOSED EXTENSION
HEYWOOD DISTRIBUTION PARK
DRAINAGE DESIGN STRATEGY
PLANNING SUBMISSION
HC-20539-(30)-002
HEALEY consulting

APPENDIX

1 IN 30 YEAR ATTENUATION CALCULATION

Site: H2 Yard Extension
Date: 10.02.2021

Storage Volumes

To estimate the volume of storage required to provide attenuation of an outfall

Catchment impermeable area: [1] 11095 square metres

Maximum permitted discharge: [2] 12.6 litres/sec

Location	Heywood
r	0.25
M5-60	19.7

Climate Change 40 %

Storm Duration (mins)	Rainfall 1:30 (mm/hr)*	Inflow Volume (m3)	Outflow Volume (m3)	Storage Required (m3)
5	97.56	90	4	86
10	76.29	141	8	134
15	65.62	182	11	171
30	44.82	249	23	226
60	31.01	344	45	299
120	20.10	446	91	355
240	12.10	537	181	356
360	9.11	606	272	334
600	6.28	697	454	243
1440	3.28	873	1089	-215
2440	1.92	866	1845	-978

Required storage volume is:	**356**	**m^3**
Approx flow rate into tank is:	**138**	**l/s (1:30)**
Approx flow rate into tank is:	**173**	**l/s (1:100)**
Approx flow rate into tank is:	**242**	**l/s (1:100 + C.C.)**

APPENDIX

1 IN 100 YEAR + 40% c/c ATTENUATION CALCULATION

Site: H2 Yard Extension
Date: 10.02.2021

Storage Volumes

To estimate the volume of storage required to provide attenuation of an outfall

Catchment impermeable area: [1] 11095 square metres

Maximum permitted discharge: [2] 12.6 litres/sec

Location	Heywood
r	0.25
M5-60	19.7

Climate Change 40 %

Storm Duration (mins)	Rainfall 1:100 + C.C (mm/hr)*	Inflow Volume (m3)	Outflow Volume (m3)	Storage Required (m3)
5	168.84	156	4	152
10	132.03	244	8	237
15	115.14	319	11	308
30	78.64	436	23	414
60	54.88	609	45	564
120	35.35	784	91	694
240	21.20	941	181	759
360	15.96	1062	272	790
600	10.81	1199	454	746
1440	5.67	1510	1089	421
2440	3.26	1472	1845	-373

Required storage volume is:	**790**	**m^3**
Approx flow rate into tank is:	**138**	**l/s (1:30)**
Approx flow rate into tank is:	**173**	**l/s (1:100)**
Approx flow rate into tank is:	**242**	**l/s (1:100 + C.C.)**

End of Report