

Supplementary Drainage Statement dated 20 June 2019

Foul Drainage

The exiting site is not connected to the public foul sewer in Barn Close maintained by Southern Water Services Ltd but the applicant developer intends to exercise the statutory right to connect the proposed development to that sewer with any connecting sewer pipe required between the site entrance and the agreed connection point being offered for adoption and future maintenance by SWS Ltd. Any connections or pipe work required within the site and the public sewer will be provided by way of a private drainage system designed and constructed in accordance with Document H of the Building Regulations and privately maintained by the future occupiers of the houses thereafter.

Surface water Drainage

Surface water runoff drainage from the proposed houses, driveways and internal access road will be addressed by way of soakaways designed and provided in accordance with Document H of the Building Regulations as guided by BRE 365 soakaway designs and privately maintained by the future occupiers of the houses thereafter.

The attached information provided confirms that this is an appropriate solution for the drainage of surface water at this site.



18th June 2019

MJH Developments Ltd
MJH House
Unit S4, Rudford Estate
Ford Road
Arundel
West Sussex
BN18 0BF

Dear Maurice

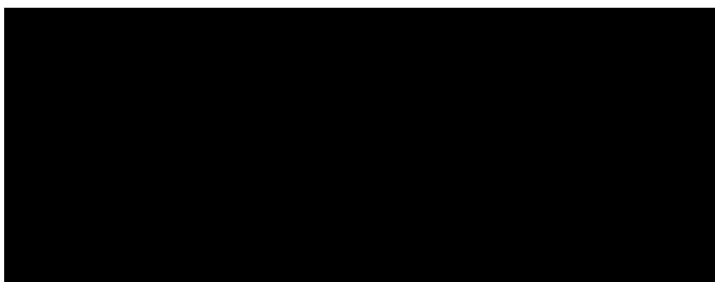
Proposed development – Inglecroft Nursery, Littlehampton

Further to your letter dates 6th June 2019 I attach the soakaway calculations for the above scheme along with the supporting documents.

We have reviewed the BRE365 infiltration testing you provided, along with the winter groundwater monitoring and borehole logs and can confirm that soakaways appear to be the appropriate solution for drainage of surface water at this site.

I trust the information provided is sufficient but please let me know if you require anything further.

Yours sincerely



Chris Hendry
For and on behalf of Arch Associates Limited

The Town House, St George's Square, Bishops Waltham, Southampton, Hampshire, SO32 1AF



Director: Chris Hendry MSc, CEng, MIStructE
Associates: Daniel Waddup BEng (Hons), CEng, MIStructE, Jason Bentley
Arch Associates Limited. Registered in England: 3532290



Soakaway Design

for

Inglecroft Nursery
Littlehampton



ARCH ASSOCIATES
CONSULTING CIVIL AND STRUCTURAL ENGINEERS

Soakaway Calculations

for

Inglecroft Nursery Littlehampton

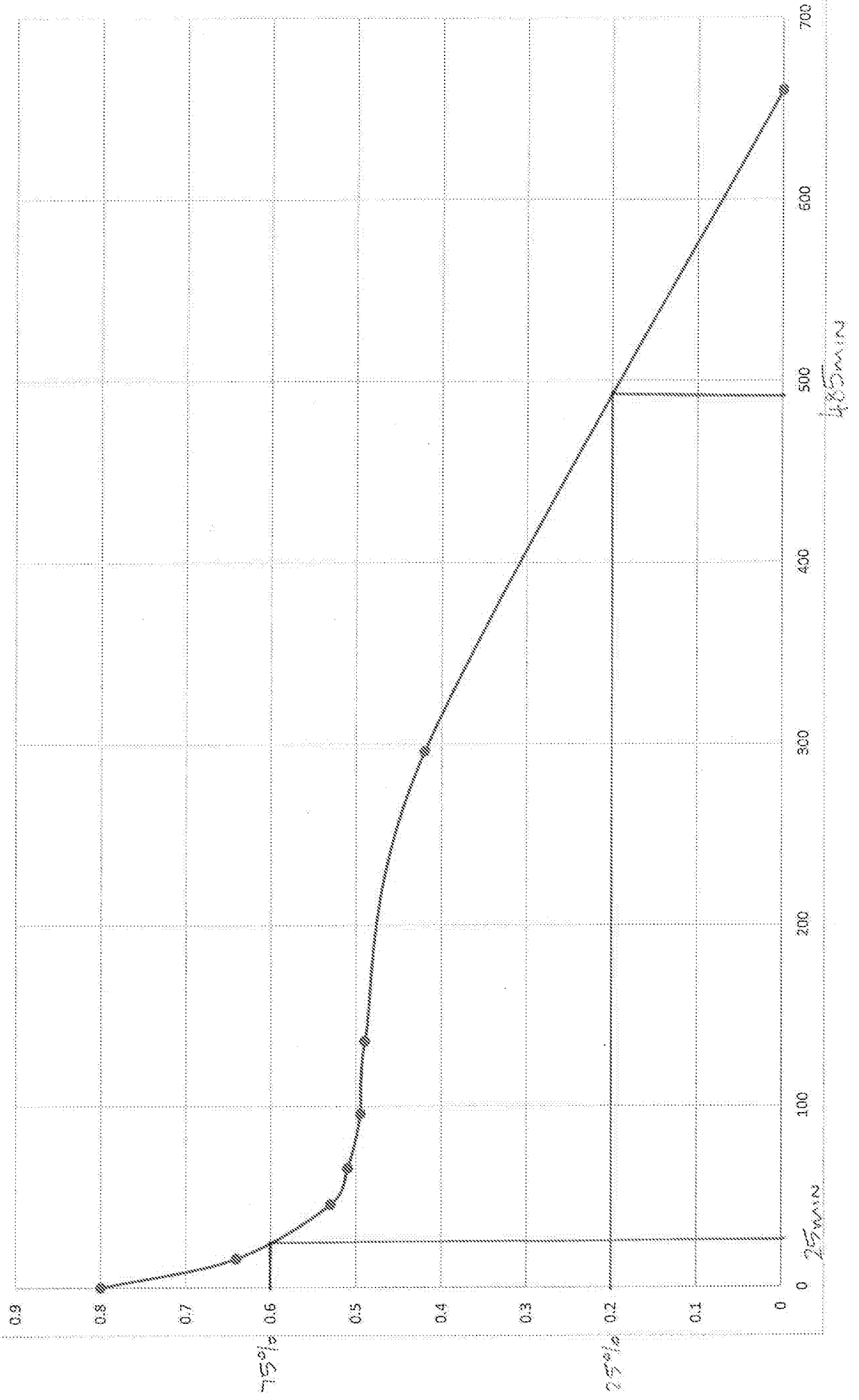
Client:

MJH Property Developments Limited

ISSUE		A	B
Issued By	C Hendry		
Date	June 2019		
Purpose	Information		
Approved By	CH		

The Town House, St George's Square, Bishops Waltham, Southampton, Hampshire, SO32 1AF

Soakage Test Results



	Project Barn Close, Littlehampton				Job no.	
	Calcs for House Soakaways				Start page no./Revision 1	
	Calcs by CH	Calcs date 18/06/2019	Checked by	Checked date	Approved by	Approved date

SOAKAWAY DESIGN

In accordance with BRE Digest 365 - Soakaway design

Tedds calculation version 2.0.03

Design rainfall intensity

Location of catchment area	Brighton
Impermeable area drained to the system	A = 96.0 m ²
Return period	Period = 100 yr
Ratio 60 min to 2 day rainfall of 5 yr return period	r = 0.350
5-year return period rainfall of 60 minutes duration	M5_60min = 20.0 mm
Increase of rainfall intensity due to global warming	p _{climate} = 40 %

Soakaway / infiltration trench details

Soakaway type	Rectangular
Minimum depth of pit (below incoming invert)	d = 1600 mm
Width of pit	w = 3000 mm
Length of pit	l = 2500 mm
Percentage free volume	V _{free} = 95 %

Soil infiltration rate (BRE digest 365)

Length of trial pit	l _{trial} = 2100 mm
Width of trial pit	b _{trial} = 650 mm
Depth of trial pit (below invert)	d _{trial} = 800 mm
Free volume (if fill used)	V _{trial} = 100 %
75% depth of pit	d ₇₅ = (d _{trial} × 0.75) = 600.00 mm
50% depth of pit	d ₅₀ = (d _{trial} × 0.50) = 400.00 mm
25% depth of pit	d ₂₅ = (d _{trial} × 0.25) = 200.00 mm
Test 1 - time to fall from 75% depth to 25% depth	T1 = 460 min
Test 2 - time to fall from 75% depth to 25% depth	T2 = 460 min
Test 3 - time to fall from 75% depth to 25% depth	T3 = 460 min
Longest time to fall from 75% depth to 25% depth	t _{lg} = max(T1, T2, T3) = 460 min
Storage volume from 75% to 25% depth	V _{p75_25} = (l _{trial} × b _{trial} × (d ₇₅ - d ₂₅)) × V _{trial} = 0.55 m ³
Internal surface area to 50% depth	a _{p50} = ((l _{trial} × b _{trial}) + (l _{trial} + b _{trial}) × 2 × d ₅₀) = 3.57 m ²
Surface area of soakaway to 50% storage depth	A _{s50} = 2 × (l _{trial} + b _{trial}) × d _{trial} / 2 = 2.200 m ²
Soil infiltration rate	f = V _{p75_25} / (a _{p50} × t _{lg}) = 5.55×10⁻⁶ m/s
Wetted area of pit 50% full	a _{s50} = l × d + w × d = 8800000 mm ²

Table equations

Inflow (cl.3.3.1)	I = M100 × A
Outflow (cl.3.3.2)	O = a _{s50} × f × D
Storage (cl.3.3.3)	S = I - O

Duration, D (min)	Growth factor Z1	M5 rainfalls (mm)	Growth factor Z2	100 year rainfall, M100 (mm)	Inflow (m ³)	Outflow (m ³)	Storage required (m ³)
5	0.36;	10.0;	1.91;	19.1;	1.83;	0.01;	1.82
10	0.51;	14.2;	1.98;	28.0;	2.69;	0.03;	2.66
15	0.62;	17.3;	2.01;	34.7;	3.33;	0.04;	3.28

 ARCH ASSOCIATES CONSULTING CIVIL AND STRUCTURAL ENGINEERS	Project				Job no.	
	Barn Close, Littlehampton				Start page no./Revision	
	Calcs for				2	
Calcs by		Calcs date	Checked by	Checked date	Approved by	Approved date
CH		18/06/2019				

Duration, D (min)	Growth factor Z1	M5 rainfalls (mm)	Growth factor Z2	100 year rainfall, M100 (mm)	Inflow (m³)	Outflow (m³)	Storage required (m³)
30	0.79;	22.0;	2.02;	44.5;	4.28;	0.09;	4.19
60	1.00;	28.0;	1.99;	55.6;	5.34;	0.18;	5.16
120	1.22;	34.3;	1.94;	66.3;	6.37;	0.35;	6.01
240	1.50;	41.9;	1.87;	78.6;	7.54;	0.70;	6.84
360	1.69;	47.3;	1.83;	86.7;	8.32;	1.05;	7.26
600	1.95;	54.5;	1.78;	97.0;	9.31;	1.76;	7.55
1440	2.48;	69.4;	1.68;	116.5;	11.18;	4.22;	6.97

Required storage volume

$$S_{\text{req}} = 7.55 \text{ m}^3$$

Soakaway storage volume

$$S_{\text{act}} = l \times d \times w \times V_{\text{free}} = 11.40 \text{ m}^3$$

PASS - Soakaway storage volume

Time for emptying soakaway to half volume

$$t_{s50} = S_{\text{req}} \times 0.5 / (a_{s50} \times f) = 21 \text{ hr } 28 \text{ min } 26 \text{ s}$$

PASS - Soakaway discharge time less than or equal to 24 hours

	Project Barn Close, Littlehampton				Job no.	
	Calcs for Road Soakaway				Start page no./Revision 1	
	Calcs by CH	Calcs date 18/06/2019	Checked by	Checked date	Approved by	Approved date

SOAKAWAY DESIGN

In accordance with BRE Digest 365 - Soakaway design

Tedds calculation version 2.0.03

Design rainfall intensity

Location of catchment area	Brighton
Impermeable area drained to the system	A = 160.0 m ²
Return period	Period = 100 yr
Ratio 60 min to 2 day rainfall of 5 yr return period	r = 0.350
5-year return period rainfall of 60 minutes duration	M5_60min = 20.0 mm
Increase of rainfall intensity due to global warming	p _{climate} = 40 %

Soakaway / infiltration trench details

Soakaway type	Rectangular
Minimum depth of pit (below incoming invert)	d = 1600 mm
Width of pit	w = 4500 mm
Length of pit	l = 4000 mm
Percentage free volume	V _{free} = 95 %

Soil infiltration rate (BRE digest 365)

Length of trial pit	l _{trial} = 2100 mm
Width of trial pit	b _{trial} = 650 mm
Depth of trial pit (below invert)	d _{trial} = 800 mm
Free volume (if fill used)	V _{trial} = 100 %
75% depth of pit	d ₇₅ = (d _{trial} × 0.75) = 600.00 mm
50% depth of pit	d ₅₀ = (d _{trial} × 0.50) = 400.00 mm
25% depth of pit	d ₂₅ = (d _{trial} × 0.25) = 200.00 mm
Test 1 - time to fall from 75% depth to 25% depth	T1 = 460 min
Test 2 - time to fall from 75% depth to 25% depth	T2 = 460 min
Test 3 - time to fall from 75% depth to 25% depth	T3 = 460 min
Longest time to fall from 75% depth to 25% depth	t _{lg} = max(T1, T2, T3) = 460 min
Storage volume from 75% to 25% depth	V _{p75_25} = (l _{trial} × b _{trial} × (d ₇₅ - d ₂₅)) × V _{trial} = 0.55 m ³
Internal surface area to 50% depth	a _{p50} = ((l _{trial} × b _{trial}) + (l _{trial} + b _{trial}) × 2 × d ₅₀) = 3.57 m ²
Surface area of soakaway to 50% storage depth	A _{s50} = 2 × (l _{trial} + b _{trial}) × d _{trial} / 2 = 2.200 m ²
Soil infiltration rate	f = V _{p75_25} / (a _{p50} × t _{lg}) = 5.55×10⁻⁶ m/s
Wetted area of pit 50% full	a _{s50} = l × d + w × d = 13600000 mm ²

Table equations

Inflow (cl.3.3.1)	I = M100 × A
Outflow (cl.3.3.2)	O = a _{s50} × f × D
Storage (cl.3.3.3)	S = I - O

Duration, D (min)	Growth factor Z1	M5 rainfalls (mm)	Growth factor Z2	100 year rainfall, M100 (mm)	Inflow (m ³)	Outflow (m ³)	Storage required (m ³)
5	0.36;	10.0;	1.91;	19.1;	3.05;	0.02;	3.03
10	0.51;	14.2;	1.98;	28.0;	4.49;	0.05;	4.44
15	0.62;	17.3;	2.01;	34.7;	5.55;	0.07;	5.48

 ARCH ASSOCIATES CONSULTING CIVIL AND STRUCTURAL ENGINEERS	Project				Job no.	
	Barn Close, Littlehampton					
	Calcs for				Start page no./Revision	
Road Soakaway				2		
Calcs by	Calcs date	Checked by	Checked date	Approved by	Approved date	
CH	18/06/2019					

Duration, D (min)	Growth factor Z1	M5 rainfalls (mm)	Growth factor Z2	100 year rainfall, M100 (mm)	Inflow (m³)	Outflow (m³)	Storage required (m³)
30	0.79;	22.0;	2.02;	44.5;	7.13;	0.14;	6.99
60	1.00;	28.0;	1.99;	55.6;	8.90;	0.27;	8.63
120	1.22;	34.3;	1.94;	66.3;	10.61;	0.54;	10.07
240	1.50;	41.9;	1.87;	78.6;	12.57;	1.09;	11.48
360	1.69;	47.3;	1.83;	86.7;	13.87;	1.63;	12.24
600	1.95;	54.5;	1.78;	97.0;	15.52;	2.72;	12.80
1440	2.48;	69.4;	1.68;	116.5;	18.64;	6.52;	12.12

Required storage volume

$$S_{\text{req}} = 12.80 \text{ m}^3$$

Soakaway storage volume

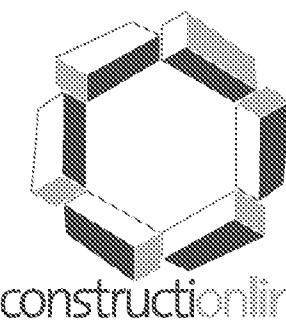
$$S_{\text{act}} = l \times d \times w \times V_{\text{free}} = 27.36 \text{ m}^3$$

PASS - Soakaway storage volume

Time for emptying soakaway to half volume

$$t_{s50} = S_{\text{req}} \times 0.5 / (a_{s50} \times f) = 23\text{hr } 33\text{min } 25\text{s}$$

PASS - Soakaway discharge time less than or equal to 24 hours



NOTES AND LEGEND

- 100mm DIAMETER FOULWATER RUN
- 100mm DIAMETER SURFACE WATER DRAIN RUN
- RODDING ACCESS
- FW.06
C.L. = 7.??
FOWL WATER INSPECTION CHAMBER
- SW.06
C.L. = 7.??
SURFACE WATER INSPECTION CHAMBER
- SP
SOIL PIPE CONNECTION
- RWP CONNECTION WITH RODDING ACCESS
- S.L. 29.98
PROPOSED LEVELS
- NEW SOAKAWAY TO ENGINEERS DESIGN

BELOW GROUND DRAINAGE

NEW DRAIN RUNS TO BE 100mm VITRIFIED CLAYWARE OR PVCu PIPES WITH FLEXIBLE JOINTS LAID IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND APPROVED DOCUMENT H RUNS TO BE LAID IN A GRANULAR BED AND SURROUND OR ENCASED IN CONCRETE BENEATH STRUCTURE. RUNS PASSING THROUGH STRUCTURAL WALLS TO BE BRIDGED WITH CONCRETE LINTOLS AND HAVE JOINTS WITHIN 150mm OF WALL ON EITHER SIDE. DRAINS LAID TO FALL NOT LESS THAN 1:80.

NEW MANHOLES TO COMPRISE ONE OF THE FOLLOWING:
1/ CONCRETE BASE WITH ENGINEERING BRICKWORK SIDES
2/ CONCRETE BASE WITH PRECAST CONCRETE RINGS
3/ PROPRIETARY PREFORMED PLASTIC UNITS.
CHANNELS FOR TYPES 1/ AND 2/ TO BE CLAYWARE HALF ROUND CHANNELS BEDDED AND BENCHED IN CEMENT MORTAR.

MANHOLE COVERS TO BE METAL SINGLE SEAL COVERS.
COVER GRADE TO BE LIGHTWEIGHT (PEDESTRIAN AREAS) OR MEDIUM (VEHICULAR AREAS).

SLAB, COVER AND INVERT LEVELS ARE PROPOSED
DOWNPIPES TO BE PROVIDED WITH RODDING ACCESS AT BASE AND BE CONNECTED TO EXISTING SURFACE WATER DRAIN IN NEW BARN LANE.

ALL PATHS / PATIOS ARE TO BE BUILT FROM IMPERMEABLE MATERIALS

COMPLETED INSTALLATION TO BE TESTED TO THE SATISFACTION OF THE LOCAL AUTHORITY

ABOVE GROUND DRAINAGE

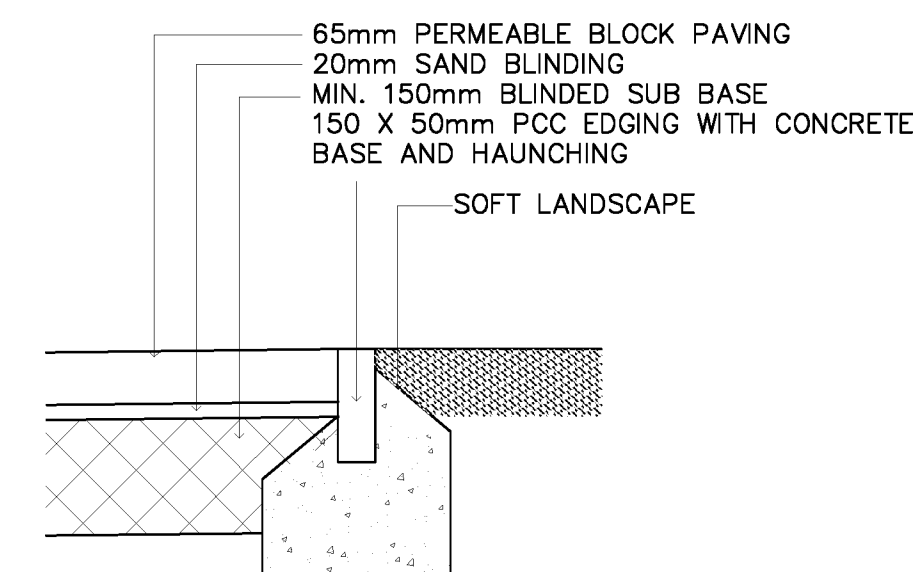
FOUL DRAINAGE PIPEWORK TO BE PVCu TO BS 4514 WITH INSTALLATION IN ACCORDANCE WITH BS 5572.
MINIMUM SIZES FOR DRAINAGE CONNECTIONS TO BE:-
WC/SOIL PIPES - 110mm NOMINAL
SINK/BATH/SHOWER - 40mm NOMINAL
BASIN - 32mm NOMINAL
OVERFLOW - 19mm NOMINAL

VP TO BE TAKEN THROUGH ROOF TO AN APPROVED RIDGE OUTLET

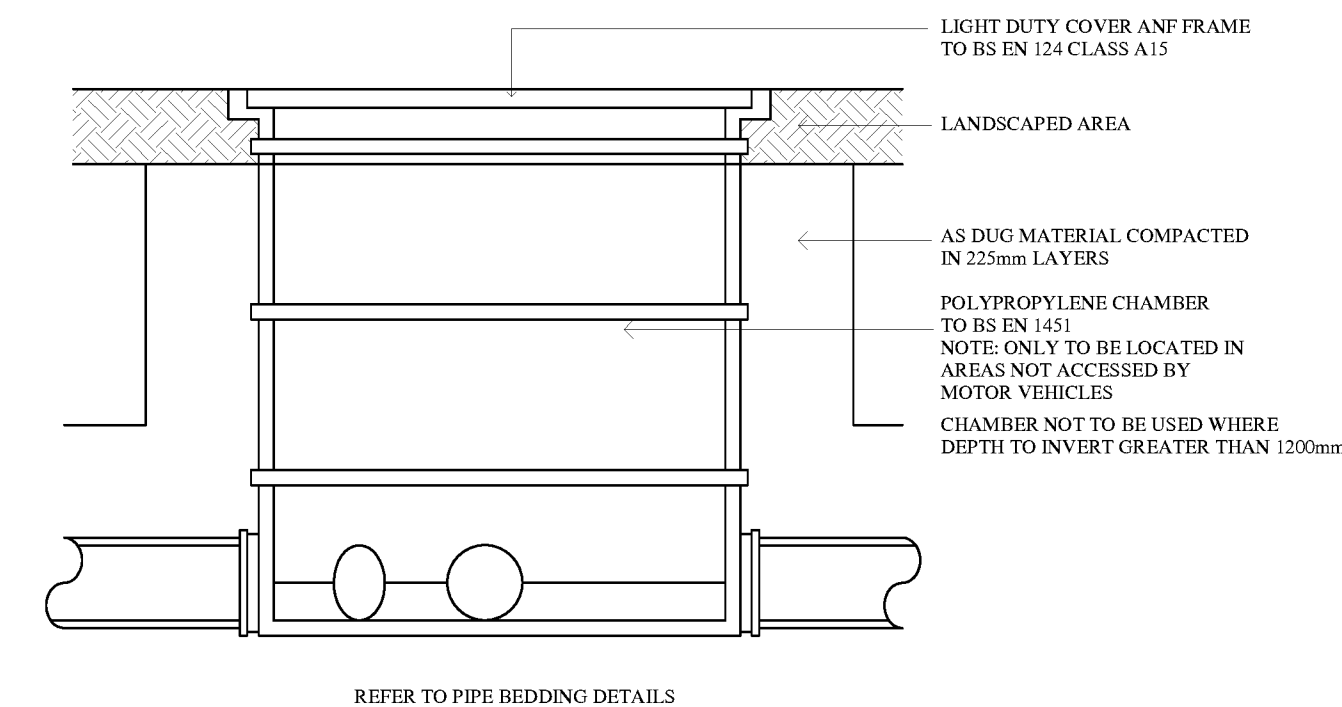
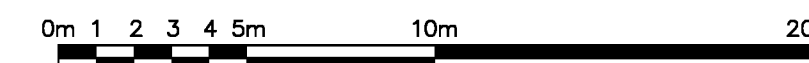
STUB STACKS TO BE PROVIDED WITH AN APPROVED AIR ADMITTANCE VALVE ABOVE CISTERN LEVEL.

SOIL PIPES TO BE WRAPPED IN MINERAL WOOL AND CASED IN 2 LAYERS 12.5mm PLASTERBOARD.

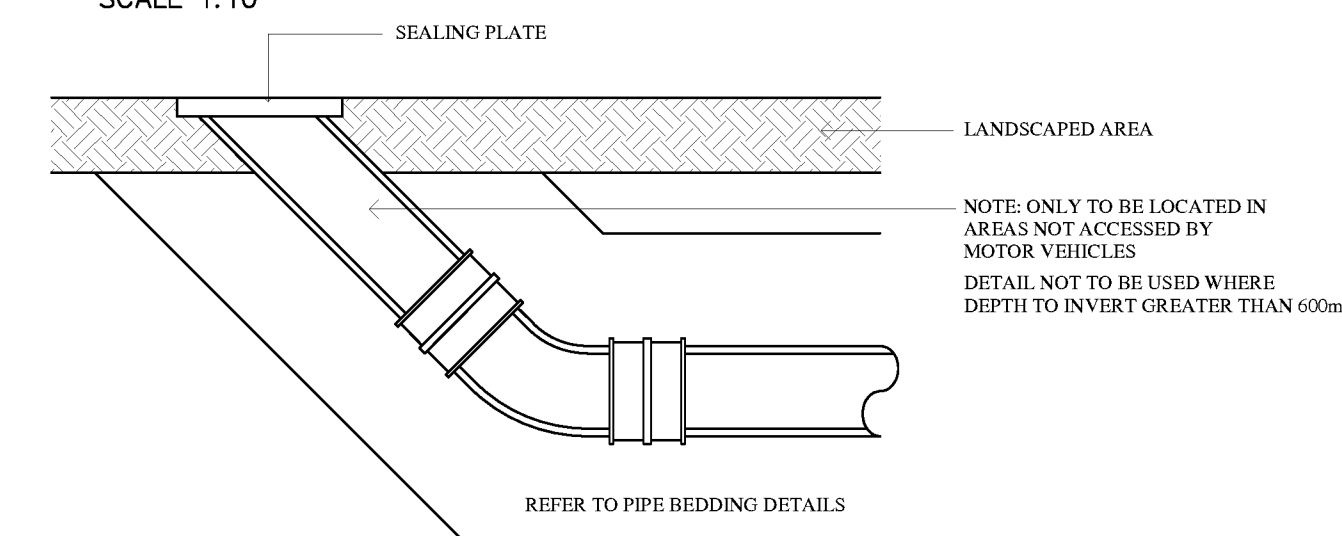
SYSTEM TO BE PROVIDED WITH ACCESS PANELS TO ENABLE ENTIRE SYSTEM TO BE RODDED.



DRIVE DETAIL
SCALE 1:10



INSPECTION CHAMBER
SCALE 1:10



RODDING EYE DETAIL
SCALE 1:10

Project

PROPOSED RESIDENTIAL REDEVELOPMENT
INGLECROFT NURSERY
BARN CLOSE, WICK
LITTLEHAMPTON, WEST SUSSEX

Drawing

INDICATIVE DRAINAGE LAYOUT & TYPICAL
SITE SITE SETUP FOR CONSTRUCTION

Architects & Planning Consultants
associates
Clock Tower House, Lewes Road
Lindfield, West Sussex. RH16 2LH
Telephone 01444 - 484711

Client

M.J.H PROPERTY DEVELOPMENTS LTD

Drawing no.	date	scale	drawn
0519.PL04	03/19	1:200 @ A1	GRM
revisions			

©THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE.
NO DIMENSIONS TO BE SCALED FROM DRAWINGS.
IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLIANCE WITH BUILDING REGULATIONS.

ARMED DISTRICT COUNCIL LUTHER

WINTER GROUND WATER MONITORING REPORT



GROUND INVESTIGATION ' GROUNDWATER LEVELS
LAND OFF BARN CLOSE, LITTLEHAMPTON, WEST SUSSEX,
BN17 6JU

Introduction

The report has been prepared generally following the guidelines and principles established in the British Standards, BS 5930:1999+ A2:2010, BS 10175:2011, entitled 'Investigation of Potentially Contaminated Sites ' Code of Practice' and the DEFRA/EA Contaminated Land Reports CLR7 and CLR8.

This report highlights the details monitored by a Factual Ground Investigation which was carried out in winter 2017/2018 on behalf of the former land owners by Paddock Geo Engineering & was in carried out at the above site in relation to the installation of groundwater monitoring wells and monitoring of groundwater levels.

The site is located at the end of Barn Close, Littlehampton and comprises an open grass field used formerly as a plant nursery.

Objectives

This assessment has been carried out to a scope of works agreed prior to commencement with the Client. The assessment has been designed as a cost effective method to assess the groundwater conditions beneath the site.

Scope of Works

The works comprised the forming of 2 no. percussion liner sampler boreholes to a targeted of 7.00m below ground level (bgl) in positions agreed with the Client's Engineer and the logging of the arising's and installation of full depth monitoring wells by a PGE Engineer to allow an assessment of the groundwater conditions beneath the site.

Terms of Reference

The assessment has been carried out generally in accordance with the following guidance Code of Practice for Site Investigations, British Standards Institution BS 5930: 1999+ A2:2010

Proposed Development

The proposals include the construction of a number of residential dwellings. A development plan & indicative drainage layout are presented in LMA Drawings 0519.PL04 & PL05A

Sitework

The siteworks were carried out on 25th October 2017 and comprised the assessment, arising's logging, testing and sampling of two boreholes. The borehole positions were agreed with the Client's Engineer prior to the site works and are indicated on the enclosed Borehole Plan presented in LMA Drawing S P01

The borehole arising's were logged by a Geotechnical Engineer generally in accordance with BS 5930:1999+ A2:2010. Samples were not recovered from the arising's and in-situ strength testing was not carried out.

The boreholes were both terminated at 6.00m depth due to unstable strata backfilling the borehole.

The borehole WS 1 was installed to a total depth of 5.00m bgl due to borehole collapse and the borehole WS 2 was installed to 6.00m bgl. Both boreholes were installed with 50mm internal diameter HDPE well pipe with a 1.0m length of plain pipe at the top. The well pipe was installed in a 3-6mm gravel pack and the top 1.0m of plain pipe was installed with a pelleted bentonite seal. The wells were finished at surface with a round metal flush cover.

Encountered Strata

The Borehole arising's were logged by a Geotechnical Engineer generally in accordance with BS 5930:1999+ A2:2010. A log of the Boreholes and a Borehole Location Plan showing the positions investigated are presented in Appendix A and B respectively.

The strata encountered within the Boreholes is summarised in the table below. Also listed are the maximum depths at which roots or rootlets were identified. These details are also included on the

Borehole Logs produced by Paddock Geo Engineering.

Strata	Borehole and Basal Depth (m bgl)	
	WS 1	WS 2
TOPS OIL Dark brown slightly sandy slightly gravelly CLAY	0.20	0.30
RIVER TERRACE DEPOSITS (Fine Grained) Soft and firm orange brown silty sandy gravelly CLAY	3.70	1.80
RIVER TERRACE DEPOSITS (Coarse Grained) Medium dense orange brown and light grey clayey very flint gravelly SAND	6.00	2.10

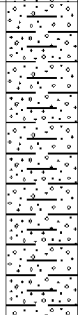
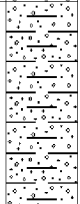
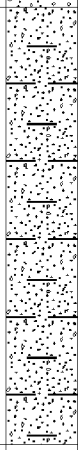
NEW PIT CHALK FORMATION Structureless CHALK	-	6.00
Borehole Depth (m bgl)	6.00	6.00

Groundwater Details

Groundwater strikes were noted within each borehole during the drilling works at a depth of 4.90m bgl in WS 1 and 5.50m bgl in WS 2. Subsequent monitoring of the groundwater was carried out and is detailed below. The groundwater levels are summarised in the table below. This table will be updated as further monitoring is undertaken.

Borehole	Date and Depth (m bgl)					
	25/10/17	24/11/18	21/12/18	24/01/18	26/02/18	27/03/18
WS 1	4.76	4.85	4.57	3.90	4.19	4.30
WS 2	4.90	4.84	4.77	4.20	4.30	4.40

(Note: Contents of this report have been produced using details of a report undertaken by Paddock GeoEngineering & can be found in Report Ref P17-076GW)

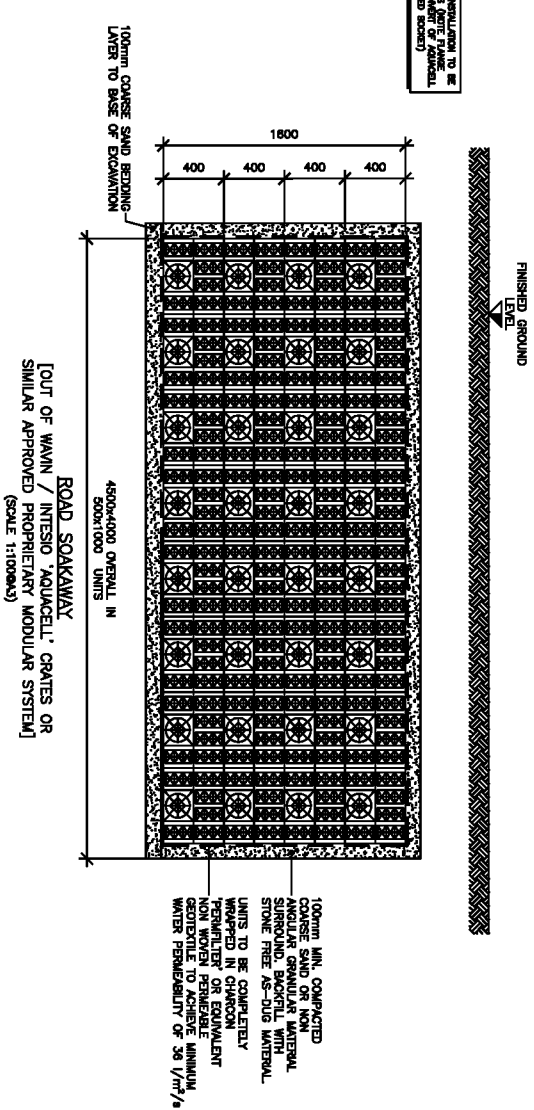
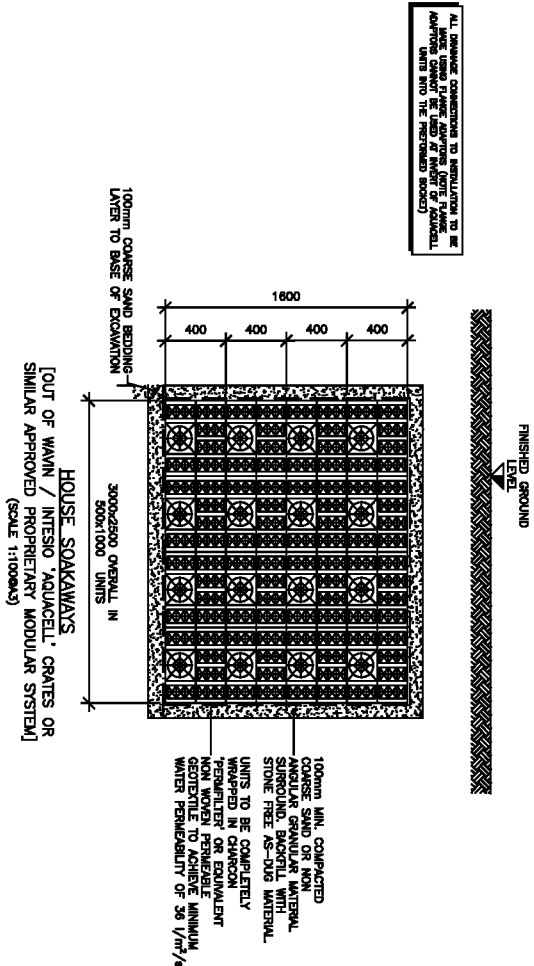
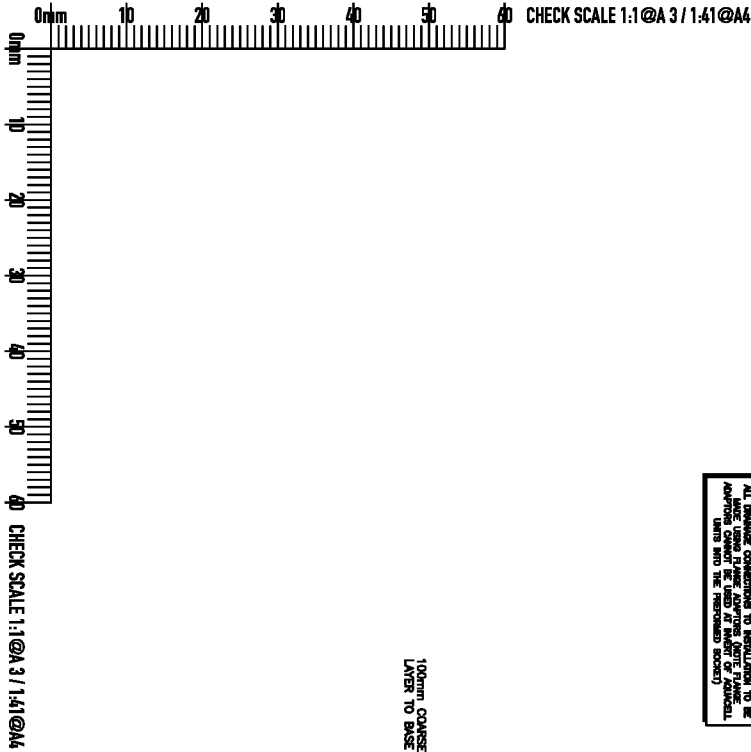
						Site Land at Barn Close, Littlehampton, West Sussex, BN17 6JU		Number WS1	
Excavation Method Drive-in Windowless Sampler		Dimensions 101mm to 2.00m 86mm to 4.00m 76mm to 6.00m		Ground Level (mOD)		Client Larkwood Design Limited		Job Number P17-076	
		Location		Dates 18-10-2017		Project Contractor GSS		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.20) 0.20 (0.40) 0.60 (0.35) 0.95 (1.65) 2.60 (1.10) 3.70 (2.30) 6.00	Dark brown silty loamy CLAY (TOPSOIL) Firm orange brown and brown silty sandy CLAY with many roots and rootlets (RIVER TERRACE DEPOSITS) Firm orange brown and brown silty sandy gravelly CLAY with many roots and rootlets (RIVER TERRACE DEPOSITS) Firm dark brown mottled grey silty sandy flint gravelly CLAY with many roots and rootlets (RIVER TERRACE DEPOSITS) Soft orange brown sandy flint gravelly CLAY with rare rootlets (RIVER TERRACE DEPOSITS) Medium dense orange brown and light grey clayey very flint and chalk gravelly SAND (RIVER TERRACE DEPOSITS) Complete at 6.00m	     		
Remarks Borehole unstable below 5.00m depth. Borehole terminated at 6.00m depth due to instability. Installed to 5.00m depth with 50mm monitoring well and flush cover							Scale (approx) 1:40	Logged By MPS	
							Figure No. P17-076.WS1		

NOTES

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GENERAL NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND DETAILS.
2. ALL FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.
3. ANY DISCREPANCIES BETWEEN THIS DRAWING AND OTHER INFORMATION IS TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF THE WORKS ON SITE.
4. THE MAIN CONTRACTOR SHALL BE RESPONSIBLE FOR THE SETTING OUT AND ACCURACY OF ALL DIMENSIONS.
5. THE CONTRACTOR IS TO ENSURE THE STABILITY AND STRUCTURAL INTEGRITY OF THE EXISTING PROPERTY AT ALL TIMES DURING WORKS AND IS TO BE RESPONSIBLE FOR ALL PROPPING AND SHORING AS REQUIRED.
6. MAIN CONTRACTOR TO PROVIDE AND FIX SUITABLE BRACING AND PROPPING FOR ALL ELEMENTS IN THE TEMPORARY CONDITION DURING CONSTRUCTION STAGE, SUCH AS TO ENSURE STRUCTURE STABILITY AT ALL TIMES. IT IS THE CONTRACTORS SOLE RESPONSIBILITY FOR ASCERTAINING SAFE DISPOSAL OF ANY OFF-SITE EXCAVATED SPOIL. NO CLAIM RESULTING FROM ABNORMAL TIP REQUIREMENTS WILL BE ENTERTAINED.
- 7.



P1	18.06.19	PRELIMINARY ISSUE FOR COMMENT	PJM
Revision	Date	Description	By
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