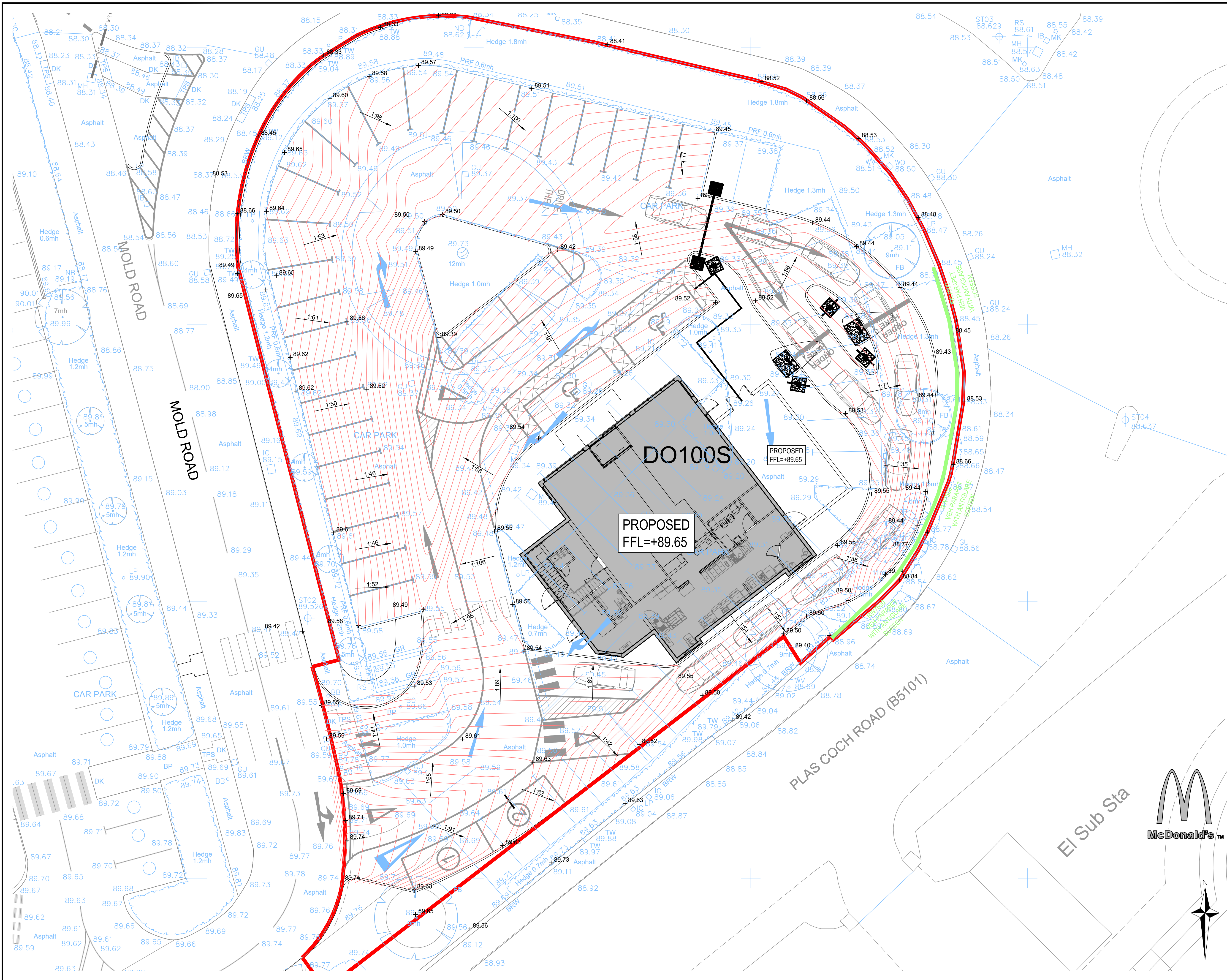




- NOTES
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS, DOCUMENTS AND SPECIFICATIONS. ANY DISCREPANCIES BETWEEN INFORMATION SHOWN ON THIS AND ANY OTHER DRAWING SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
 2. DO NOT SCALE FROM THIS DRAWING. WORK TO FIGURED DIMENSIONS ONLY.
 3. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SPECIFICALLY STATED AS 'FOR CONSTRUCTION' IN THE DRAWING STATUS.
 4. ALL DRAWING INFORMATION MUST BE READ FROM HARD COPY / PDF FILES ONLY. MARKED CHECKED. BEFORE PROCEEDING PLEASE ENSURE THE ISSUE STATUS IS APPROPRIATE FOR THE INTENDED USE. ALL INFORMATION EXTRACTED DIRECTLY FROM DRAWING FILES (E.G. DWG'S) IS DONE SO ENTIRELY AT THE USERS RISK.
 5. INTERNAL DRAINAGE POINTS ASSUMED

- KEY
- SITE BOUNDARY
 - EXISTING SURVEY
 - PROPOSED SITE LAYOUT
 - PROPOSED VEHICULAR BARRIER WITH ANTIGLARE SCREEN
 - PROPOSED 0.010m CONTOUR
 - LEVEL
 - PROPOSED FALL DIRECTION

FIGURE 3

11	FIRST ISSUE	03/06/19 SK	FG
Rev.	Description	Date	Chkd



Glanville
3 Grovelands Business Centre
Boundary Way
Hemel Hempstead, Herts. HP2 7TE
Tel: (01442) 835999 Fax: (01442) 258924
postbox@glanvillegroup.com
www.glanvillegroup.com

Client :



Project : **McDONALD'S RESTAURANT
WREXHAM, PLAS COCH ROAD
STORE 8104**

Title :

PROPOSED LEVELS PLAN

Project Engineer :	FG	Scale :	1:125 @ A1
Project Director :	HBG	Date :	MAY 2019
Status :	INFORMATION		

Drawing No.	4190200-SK05	Rev	11
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This drawing should not be scaled. For construction purposes work to figured dimensions only

0mm 40mm 80mm

ORIGINAL SHEET
SIZE A1

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS, DOCUMENTS AND SPECIFICATIONS. ANY DISCREPANCIES BETWEEN INFORMATION SHOWN ON THIS AND ANY OTHER DRAWING SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
2. DO NOT SCALE FROM THIS DRAWING. WORK TO FIGURED DIMENSIONS ONLY.
3. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SPECIFICALLY STATED AS FOR CONSTRUCTION IN THE DRAWING STATUS.
4. ALL DRAWING INFORMATION MUST BE READ FROM HARD COPY / PDF FILES ONLY, MARKED CHECKED. BEFORE PROCEEDING PLEASE ENSURE THE ISSUE STATUS IS APPROPRIATE FOR THE INTENDED USE. ALL INFORMATION EXTRACTED DIRECTLY FROM DRAWING FILES (E.G. DWG'S) IS DONE SO ENTIRELY AT THE USER'S RISK.
5. THE EXISTING IMPERMEABLE AREA IS 1776sqm, THEREFORE AN ADDITIONAL 84 sqm of IMPERMEABLE AREA IS PROPOSED.

KEY

— SITE BOUNDARY

IMPERMEABLE AREA = 1860sqm

EXISTING SURVEY

EXISTING IMPERMEABLE AREA = 1776sqm

FIGURE 4

11	FIRST ISSUE	05.06.19	HBG
		SK	

Rev.	Description	Date	Chkd
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3 Grovelands Business Centre
Boundary Way
Hemel Hempstead, Herts. HP2 7TE
Tel: (01442) 835999 Fax: (01442) 258924
postbox@glanvillegroup.com www.glanvillegroup.com

Client : 

Project : **McDONALD'S RESTAURANT
WREXHAM, PLAS COCH ROAD
STORE 8104**

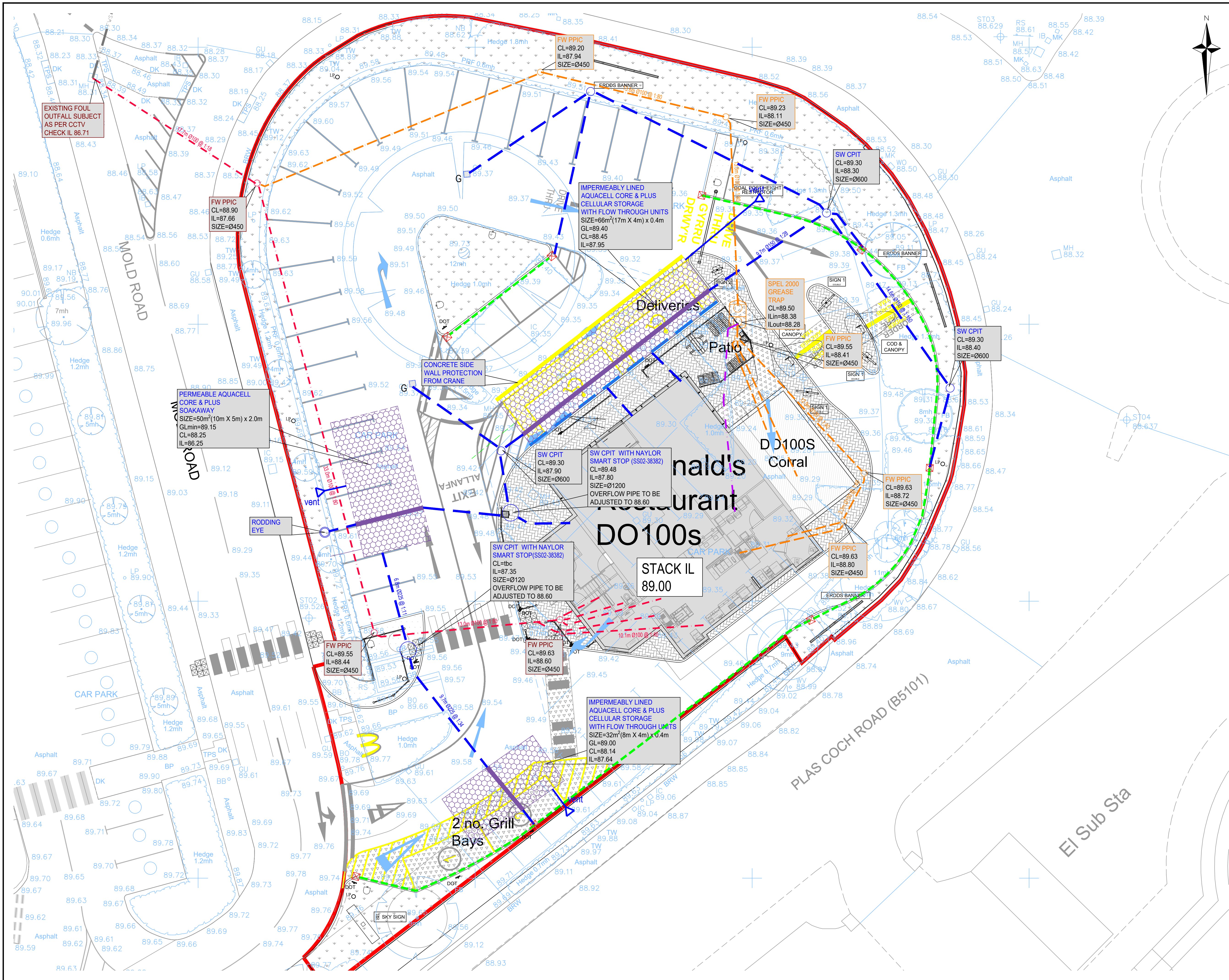
Title : **IMPERMEABLE AREAS**

Project Engineer : HBG Scale : AS SHOWN @ A1

Project Director : HBG Date : JUNE 2019

Status : INFORMATION

Drawing No. 4190200-SK06	Rev 11
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11	FIRST ISSUE	05/06/19 SK	FG
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Rev.	Description	Date	Chkd



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 Tel: (01442) 835999 Fax: (01442) 258924
 postbox@glanvillegroup.com www.glanvillegroup.com

Client: 

Project: **McDONALD'S RESTAURANT
WREXHAM, PLAS COCH ROAD
STORE 8104**

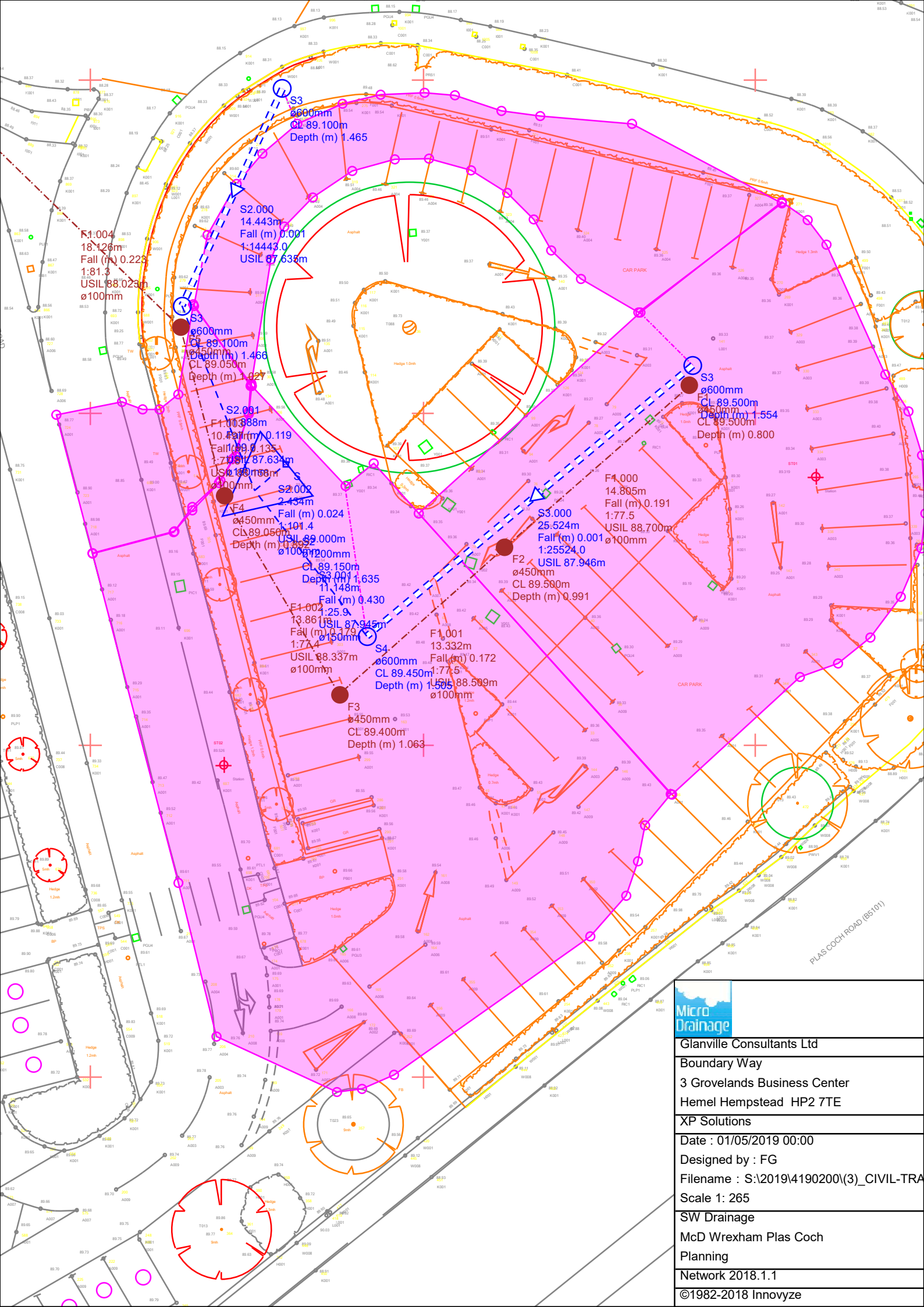
Title: **SCHEMATIC DRAINAGE DESIGN**

Project Engineer :	FG	Scale :	1:125 @ A1
Project Director :	NP	Date :	MAY 2019
Status :	INFORMATION		

Drawing No.	4190200-SK07	Rev	11
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Appendices

Appendix A:
Drainage Calculations



Glanville Consultants Ltd

Boundary Way

3 Grovelands Business Center

Hemel Hempstead HP2 7TE

XP Solutions

Date : 01/05/2019 00:00

Designed by : FG

Filename : S:\2019\4190200\3_CIVIL-TRA

Scale 1: 265

SW Drainage

McD Wrexham Plas Coch

Planning

Network 2018.1.1

©1982-2018 Innovyz

Glanville Consultants Ltd		Page 1
Boundary Way 3 Grovelands Business Center Hemel Hempstead HP2 7TE	SW Drainage McD Wrexham Plas Coch Planning	
Date 01/05/2019 File PLANNING ISSUE.MDX	Designed by FG Checked by	
XP Solutions	Network 2018.1.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	2
FEH Rainfall Version	2013
Site Location GB 332750 351450 SJ 32750 51450	
Data Type	Catchment
Maximum Rainfall (mm/hr)	50
Maximum Time of Concentration (mins)	30
Foul Sewage (l/s/ha)	0.000
Volumetric Runoff Coeff.	0.750
PIMP (%)	100
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.200
Maximum Backdrop Height (m)	1.500
Min Design Depth for Optimisation (m)	1.200
Min Vel for Auto Design only (m/s)	1.00
Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.090	4-8	0.016	8-12	0.016	12-16	0.048	16-20	0.005

Total Area Contributing (ha) = 0.176

Total Pipe Volume (m³) = 37.713

Network Design Table for Storm

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S2.000	14.443	0.001	14443.0	0.022	5.00	0.0		0.050	→[1]		Cellular Storage	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S2.000	42.52	9.88	87.635	0.022	0.0	0.0	0.0	0.05	41.5	2.5

Glanville Consultants Ltd		Page 3
Boundary Way 3 Grovelands Business Center Hemel Hempstead HP2 7TE	SW Drainage McD Wrexham Plas Coch Planning	
Date 01/05/2019 File PLANNING ISSUE.MDX	Designed by FG Checked by	
XP Solutions Network 2018.1.1		
Synthetic Rainfall Details Winter Storms Yes Cv (Summer) 0.750 Cv (Winter) 0.840 Storm Duration (mins) 30		
©1982-2018 Innovyze		

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Boundary Way 3 Grovelands Business Center Hemel Hempstead HP2 7TE	SW Drainage McD Wrexham Plas Coch Planning	
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XP Solutions	Network 2018.1.1	

Storage Structures for Storm

Cellular Storage Pipe: S2.000

Manning's N 0.050 Infiltration Coefficient Side (m/hr) 0.00000
Invert Level (m) 87.635 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	32.0	32.0	0.401	0.0	41.1
0.400	32.0	41.1			

Cellular Storage Pipe: S3.000

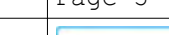
Manning's N 0.050 Infiltration Coefficient Side (m/hr) 0.00000
Invert Level (m) 87.946 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	66.0	66.0	0.401	0.0	79.0
0.400	66.0	79.0			

Cellular Storage Manhole: S2, DS/PN: S2.002

Invert Level (m) 86.250 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.03600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.03600

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	50.0	50.0	2.010	0.0	106.7
2.000	50.0	106.6			

Glanville Consultants Ltd		Page 5
Boundary Way 3 Grovelands Business Center Hemel Hempstead HP2 7TE	SW Drainage McD Wrexham Plas Coch Planning	
Date 01/05/2019 File PLANNING ISSUE.MDX	Designed by FG Checked by	
XP Solutions	Network 2018.1.1	

2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Volumetric Runoff Coeff	0.750	Foul Sewage per hectare (l/s)	0.000
Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coefficient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000

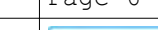
Number of Input Hydrographs	0	Number of Storage Structures	3
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

```
Margin for Flood Risk Warning (mm) 450.0      DVD Status OFF
      Analysis Timestep  Fine Inertia Status OFF
      DTS Status      ON
```

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2, 100
Climate Change (%)	0, 40

PN	US/MH		Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.
	Name	Storm						
S2.000	S3	30 Winter	2	+0%	100/240 Winter	100/240 Winter		
S2.001	S3	30 Winter	2	+0%	100/60 Summer	100/240 Winter		
S3.000	S3	30 Winter	2	+0%				
S3.001	S4	30 Winter	2	+0%	100/15 Winter			
S2.002	S2	960 Winter	2	+0%				

PN	US/MH Name	Water	Surcharged	Flooded	Pipe		Status	Level Exceeded
		Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)		
S2.000	S3	87.668	-0.368	0.000	0.01		1.5	OK
S2.001	S3	87.667	-0.117	0.000	0.11		1.8	OK
S3.000	S3	87.995	-0.352	0.000	0.03		3.5	OK
S3.001	S4	87.994	-0.101	0.000	0.24		7.5	OK
S2.002	S2	87.016	-2.084	0.000	0.00		0.0	OK

Glanville Consultants Ltd		Page 6
Boundary Way 3 Grovelands Business Center Hemel Hempstead HP2 7TE	SW Drainage McD Wrexham Plas Coch Planning	
Date 01/05/2019 File PLANNING ISSUE.MDX	Designed by FG Checked by	
XP Solutions	Network 2018.1.1	

100 year Return Period Summary of Critical Results by Maximum Level (Rank
1) for Storm

Simulation Criteria

Volumetric Runoff Coeff	0.750	Foul Sewage per hectare (l/s)	0.000
Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coefficient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000

Number of Input Hydrographs	0	Number of Storage Structures	3
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Margin for Flood Risk Warning (mm)	450.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2, 100
Climate Change (%)	0, 40

PN	US/MH		Return Period	Climate Change	First (X)	First (Y)	First (Z)	Overflow Act.
	Name	Storm			Surcharge	Flood	Overflow	
S2.000	S3	960 Winter	100	+40%	100/240 Winter	100/240 Winter		
S2.001	S3	960 Winter	100	+40%	100/60 Summer	100/240 Winter		
S3.000	S3	960 Winter	100	+40%				
S3.001	S4	960 Winter	100	+40%	100/15 Winter			
S2.002	S2	960 Winter	100	+40%				

PN	US/MH Name	Water	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Pipe	Status	Level
		Level (m)	Depth (m)	Volume (m³)			Flow (l/s)		Exceeded
S2.000	S3	88.212	0.176	0.000	0.01		0.9	SURCHARGED	
S2.001	S3	88.212	0.428	0.000	0.08		1.3	SURCHARGED	
S3.000	S3	88.213	-0.134	0.000	0.02		2.8		OK
S3.001	S4	88.213	0.118	0.000	0.21		6.8	SURCHARGED	
S2.002	S2	88.212	-0.888	0.000	0.00		0.0		OK

Appendix B:
Welsh Water Search Data

Debbie Wigston

From: wwutilities@safedigs.co.uk
Sent: 09 January 2019 17:42
To: Debbie Wigston
Subject: Plant Enquiry Ref Job No. 14560577
Attachments: WWU LP Assets Affected Letter.pdf; 14560577_WWU.pdf; general_condns_wwu (1).pdf; can-you-dig-it-dial-before-you-dig.pdf

09/01/2019

LinesearchbeforeUdig ref: 14560577

Your ref: 8190110

Dear Sir/Madam,

Thank you for contacting us

Please find enclosed a copy of the requested plan, covering letter and our general conditions, for your reference.

Our records show those pipes owned by Wales & West Utilities (WWU) in its role as a Licensed Gas Transporter (GT). On some occasions, blank maps may be sent to you. This is due to your proposed work being in a no gas area, but within our operational boundaries. Service pipes, valves, syphons, stub connections, etc. may not be shown, but their presence should be anticipated. No warranties are therefore given in respect of it.

They also provide indications of gas pipes owned by other GTs, or otherwise privately owned, which may be present in this area. This information is not information of WWU and WWU is unable to verify this information or to confirm whether it is accurate or complete.

The plan must be printed in the size requested (A3/A4) and will also need to be produced in colour. If this is not possible, we can send you a hard copy if requested. Please let us know if you require any further assistance.

Contact Us

Gas Emergency Number:

In an emergency call 0800 111 999, 24 hours a day.

Mapping Enquiries:

If you have an enquiry relating to this letter or the attached map plan, please contact us using the following information:

Telephone: 02920 278912

Email: dig@wwutilities.co.uk

General Enquiries:

If you have a general enquiry, please call us on the following number:

All areas: 0800 912 29 99

LinesearchbeforeUdig:

If you have an enquiry relating to the use of the LinesearchbeforeUdig website please contact:

Telephone: 0845 437 7365

Email: enquiries@linesearchbeforeudig.co.uk

Website: www.linesearchbeforeudig.co.uk

Regards



**Company Address**

Wales and West Utilities Ltd,
Wales and West House,
Spooner Close, Celtic,
Springs, Coedkernew,
Newport, NP10 8FZ

Our Ref: 14560577 8190110

Wednesday, 09 January 2019

Debbie Wigston
Cornerstone House 62 Foxhall Road
Didcot
Oxfordshire
OX11 7AD

Dear Debbie Wigston

Thank you for contacting us regarding Wales & West Utilities equipment at the above site.

I enclose an extract from our mains records of the area covered by your proposals together with a comprehensive list of General Conditions for your guidance. This information is given as a general guide and its accuracy cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc., are not shown but their presence should be anticipated.

No liability of any kind whatsoever is accepted by Wales and West Utilities (WWU), its agents or servants for any error or omission. Please note that all WWU equipment on site should be assumed to be LIVE until proven otherwise.

Safe digging practices, in accordance with HS(G)47, Avoiding Danger from underground services must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. Safe working procedures should be defined and practiced.

WWU reserves its position completely to enforce the terms of any existing easement against the landowner, even if this results in any planning permission granted not being able to be fully implemented.

You must not build over any of our plant or enclose our apparatus.

Wales & West Utilities have no planning objections to these proposals, although it should be noted that Wales & West's apparatus is held pursuant to easements and it has other private law rights in relation to the use of the land in the vicinity of its apparatus. Wales & West's private law land rights are not material planning considerations and therefore no comment is made in relation to those rights and they have no impact on whether or not planning permission should be granted, or whether, if permission is granted, it can lawfully be implemented. It should also be noted that Wales & West's apparatus may be at risk during construction works and should the planning application be approved, then we require the promoter of these works to contact us directly to discuss our requirements in detail. Should diversion works be required these will be fully chargeable.

Where diversions to WWU apparatus are needed to allow change to occur on site, the cost of these alterations may be charged to the persons responsible for the works.

If you have requested a new connection the WWU connections team will where necessary prepare detailed proposals and provide a quotation for any necessary alterations and/or development of our equipment on the site.

If you require advice in connection with your proposals please contact the relevant number below.

Yours sincerely,

**Company Address**

Wales and West Utilities Ltd,
Wales and West House,
Spooner Close, Celtic,
Springs, Coedkernew,
Newport, NP10 8FZ

WWU Dig Team

Gas Emergency Number:

In an emergency call 0800 111 999, 24 hours a day.

Mapping Enquiries:

If you have an enquiry relating to this letter or the attached map plan, please contact us using the following information:

Telephone 02920 278912
Email dig@wwutilities.co.uk

General Enquiries:

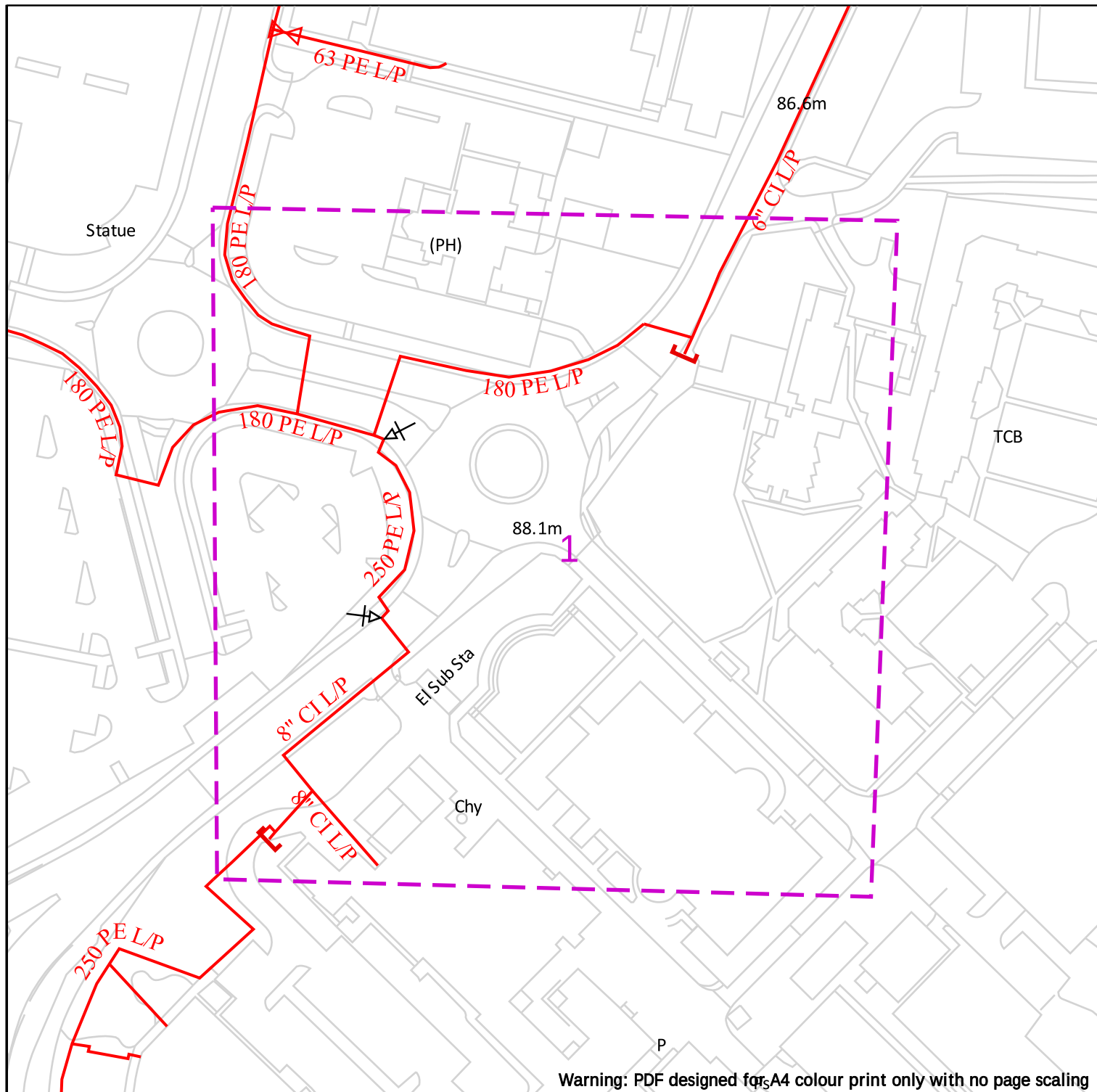
If you have a general enquiry, please call us on the following number

All areas 0800 912 29 99

LinesearchbeforeUdig:

If you have an enquiry relating to the use of the LinesearchbeforeUdig website please contact LinesearchbeforeUdig using the following information:

Telephone 0845 437 7365
Email enquiries@linesearchbeforeudig.co.uk
Website www.linesearchbeforeudig.co.uk



Warning: PDF designed for A4 colour print only with no page scaling



Contact Us

Mapping Enquiries:

All areas 02920 278 912

General Enquiries:

All areas 0800 912 2999

Dig Sites

Area:

Line:



Low Pressure (LP) 21mbar – 75mbar



Medium Pressure (MP) 350mbar – 2bar



Intermediate Pressure (IP) 2bar – 7bar



High Pressure (HP) >7bar



Change of Diameter



End Cap



Depth of cover



Line/Fire Valve



Governor Station

IMPORTANT NOTICES

- This information is given as a guide only and its accuracy cannot be guaranteed
- The plan only shows those pipes owned by Wales & West Utilities (Wwu) as its role as a licensed Gas Transporter
- Service pipes, valves, syphons, stub connections etc. may not be shown but their presence should be anticipated
- You must use safe digging practices in accordance with HS(G)47 to establish the actual position of mains, services and other apparatus before any mechanical excavation is used
- It is your responsibility to ensure this information is provided to all persons working near our plant
- If in doubt call the Wwu dig team on 02920 27891

Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
0800 111 999

Date Requested: 09/01/2019
Job Reference: 14560577
Site Location: 332475 351215
Requested by: Ms Debbie Wigston
Your Scheme/Reference: 8190110

Scale: 1:1250 (When plotted at A4)

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Smell gas?
Call the Gas Emergency Service on
0800 111 999.

Dial
before
you dig

We need
10 days'
notice

Dial
Call **029 2027 8912**
before you start work.

Investigate
Before you dig, make sure
you know what's below.

Go ahead
Done your research?
Now you can dig safely.

Plas Coch Road



LEGEND(Representative of most common features)

Water network:	Full chamber	Surf
Surface water	Surface water	Lateral
Conduit	Conduit	Storm Overflow
Conduit sewer	Conduit sewer	Waste main
Special purpose	Special purpose	Service main
Treatment works	Treatment works	Private sewer
Pumping station	Pumping station	Private sewer subject to Sect 128 agreement
Private sewer	Private sewer	Private Sewer Transducer
Lateral	Lateral	Lateral
Inspection Chamber	Inspection Chamber	Inspection Chamber

Notes:

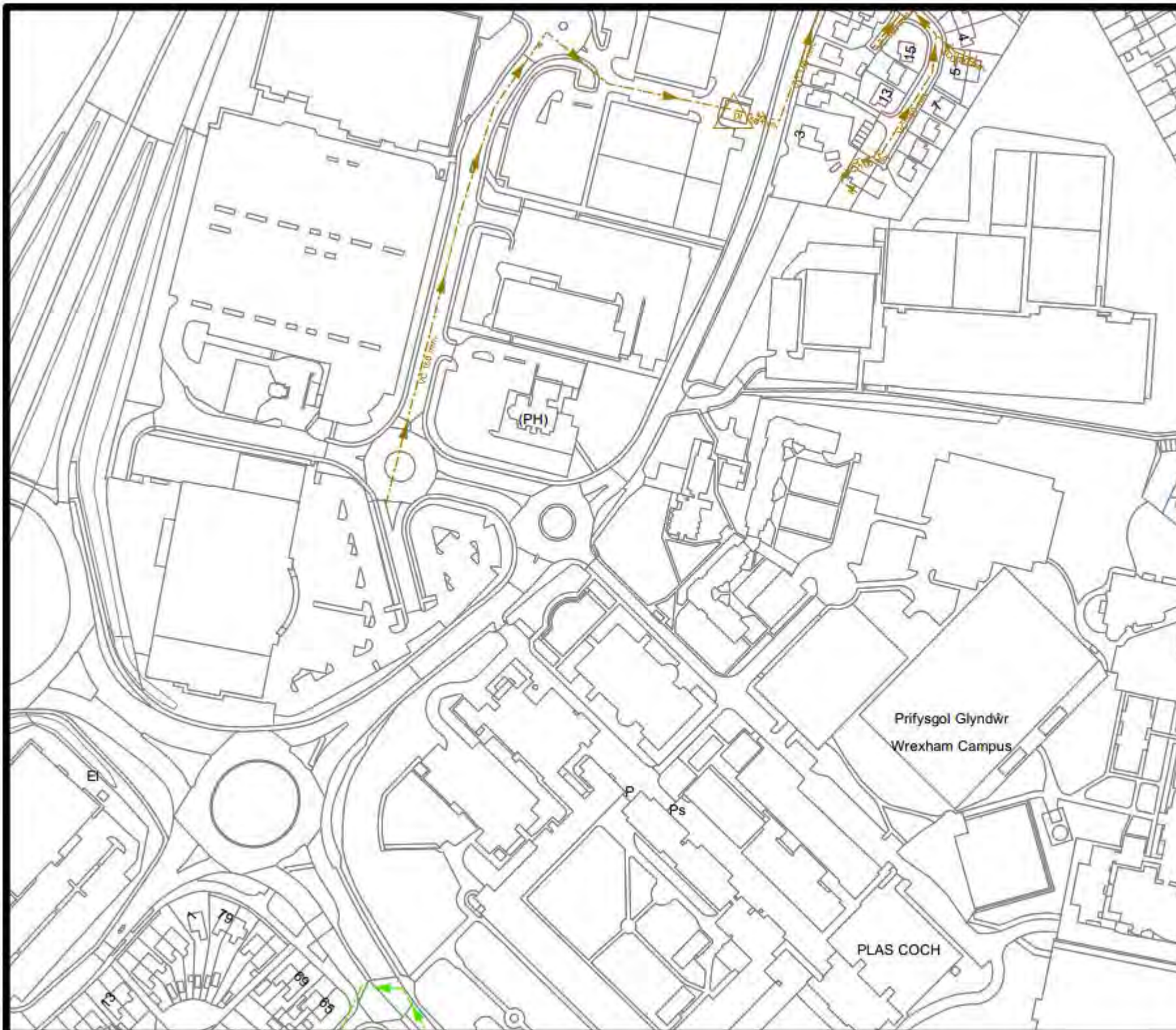
Whilst every reasonable effort has been taken to correctly represent the plan information of DCCW assets, there is a possibility that in some cases plan material (either from a previous version or from a different source) may be shown for the site. It is therefore advised that the plan material shown is for information only and should not be used as a basis for any design or construction work.

Whilst every reasonable effort has been taken to correctly represent the plan information of DCCW assets, there is a possibility that in some cases plan material (either from a previous version or from a different source) may be shown for the site. It is therefore advised that the plan material shown is for information only and should not be used as a basis for any design or construction work.

EXACT LOCATIONS OF ALL APPARATUS
TO BE DETERMINED ON SITE.

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Map Ref: 332637,351352
Map scale: 1:2500
Printed by: Powell Kelly-Ann
Printed on: 28 Jan 2019





Hafren Dyfrdwy
GISmapping Team
PO Box 5344
Coventry
CV3 9FT
Tel 0330 678 1492
Fax 02477 715 862

Our Ref: 14560577 Your Ref: 8190110

Thursday, 10 January 2019

Debbie Wigston
Cornerstone House 62 Foxhall Road
Didcot
Oxfordshire
OX11 7AD

Dear Debbie Wigston

Apparatus Location Enquiry

Please find a copy of the plans showing the approximate locations of Hafren Dyfrdwy's **water mains and/or public sewers** situated in the vicinity of the land/property which is the subject of your enquiry.

Our plans only show the location of the Company's underground water mains/sewers. Other service pipes and drains are the responsibility of the property owner and should be anticipated during any excavation.

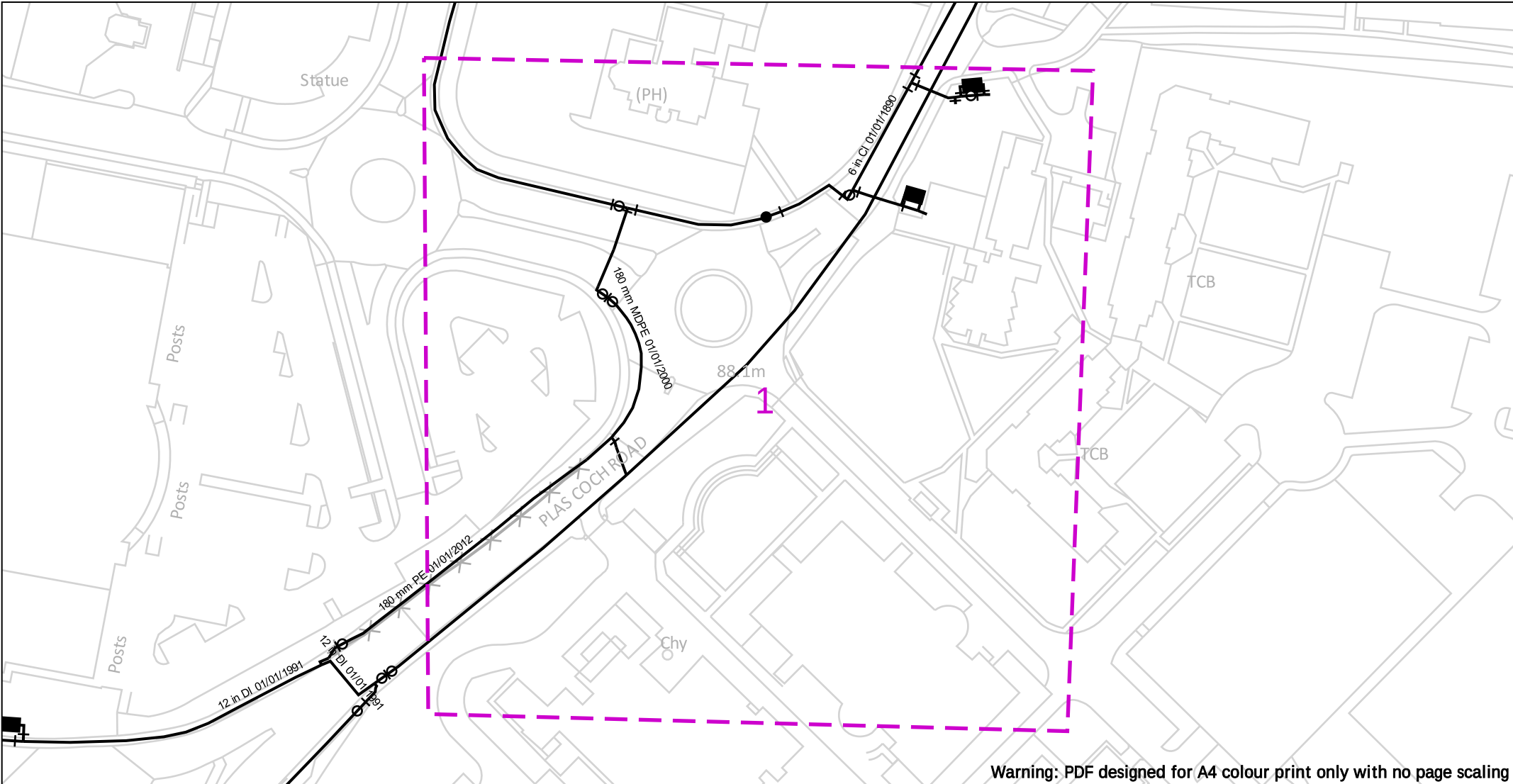
In addition, we wish to inform you that although most private lateral drains and sewers were transferred to Hafren Dyfrdwy's ownership on 1st October 2011, the Company does not possess complete records of these assets and therefore they may not be shown on these maps.

Please also find enclosed a copy of Hafren Dyfrdwy's General Conditions and Precautions for your information. And a copy of Health & Safety Executive guidance HS(G)47, Avoiding danger from underground services is also attached.

VAT receipts (where appropriate) are attached herewith together with your enquiry documentation. Please forward VAT receipt to your finance department.

Kind Regards

GISmapping Team



0 50m

Dig Sites

Area:

Line:

Discharge

Duct

Valve

Fire Hydrant

Washout Hydrant

Abandoned Pipe

Trunk Main

Fire Main

Water Main

Materials

AC

ALKATHENE

AK

CONCRETE

C

CAST IRON

CU

COPPER

DI

DUCTILE IRON

GF

GLASS FIBRE

GRC

GLASS REINFORCED CONCRETE

GRP

GLASS REINFORCED PLASTIC

HDPE

HIGH DENSITY POLY

HPPE

HIGH PERFORMANCE POLY

LDPE

LOW DENSITY POLY

LEAD

LEAD

MDPE

MEDIUM DENSITY POLY

O

OTHER

PC

PRE-STRESSED CONCRETE

PF

PITCH FIBRE

PP

POLY PROPYLENE

PSC

PLASTIC STEEL COMPOSITE

PVC

POLY VINYL CHLORIDE

RPM

REINFORCED PLASTIC MATRIX

SI

SPUN IRON

SST

STAINLESS STEEL

ST

STEEL

UPVC

UNPLASTICISED PVC

Date Requested: 10/01/2019

Job Reference: 14560577

Site Location: 332475 351215

Requested by:
Ms Debbie Wigston

Your Scheme/Reference:
8190110

Scale: 1:1250 (When plotted at A4)

Hafren Dyfrdwy

GISmapping Team

PO Box 5344

Coventry

CV3 9FT

Tel: 0330 678 1492

Fax: 02477 715862

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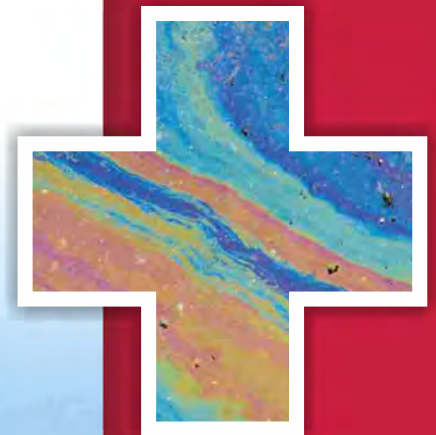
Appendix C:
Product Details

NAYLOR
ENVIRONMENTAL

**SMART⁺
sponge[®]**

**Oil Filtration & Pathogen
Reduction Products**

**Solutions
for Water
Framework
Directive
Compliance**



**The smarter
solution to deal
with hydrocarbon
pollution and
comply with the
Water Framework
Directive**

- Treats stormwater & urban run-off
- Removes hydrocarbons
- Destroys bacteria
- Filters heavy metals
- Allows solid waste recycling
- Complies with the Water Framework Directive
- Complies with Bathing Water Directive

email: environmental@naylor.co.uk web: www.naylor.co.uk



Winners -
Growing Business



The MANUFACTURING
EXCELLENCE Awards
Winner - Best SME



Tel 01226 794135

Fax 01226 791531

The Smart Sponge® Family

Smart Filter®, Smart Brake® & Smart Stop® Range

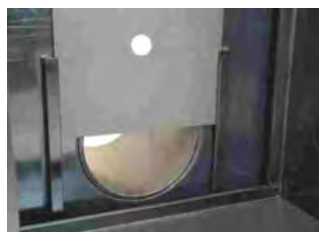
The Smart Filter®:

Specifically designed for end of pipe applications and installations through which contaminated or polluted water flows. The unique design allows the Smart Filter® to either sit inside or outside the pipe connection and will absorb hydrocarbons that pass through the system during normal conditions. The Smart Filter® is available in 2 different standard sizes and will accommodate standard pipe sizes.

Flow rates are catered for through the design of the Smart Filter®, sized to take the first flush effect plus a safety factor of 2x with any excess passing through the bypass facility.



Smart Filter®



Orifice Plate

The Smart Brake®:

Is a collaboration of design from the Smart Filter® and houses the Smart Paks within a more confined area which allows normal flow through the system. The Smart Brake's® unique design works during an event and slows the flow rate whilst absorbing any hydrocarbons present, allowing the final outfall flow to disperse reducing flooding, resulting in the contaminated flow from travelling further along a water course. The Smart Brake® will also absorb any hydrocarbons present within a normal flow, effectively acting as a Smart Filter®.



Unit showing overflow connection

The Smart Stop®:

Uses the basic principles of the Smart Filter® but houses the Smart Paks within a more confined area which allows normal flow through the system. The Smart Stop's® unique design works during an event where more hydrocarbons are present within the resulting flow and the volume of hydrocarbons are quickly absorbed within the Smart Paks which swell into the defined cage and seal the outfall pipe providing the contaminated flow from travelling further along a water course. The contaminated water is then stopped at source enabling the hydrocarbon clean up to be targeted in one area reducing the impact to the environment. The Smart Brake® will also absorb any hydrocarbons present within a normal flow, effectively acting as a Smart Filter®.

N.B. A suitable silt trap device is recommended prior to the Smart Filter® chamber to prolong the life of the Smart Sponge®. If this is impractical a silt sump is recommended within the Smart Filter® chamber.

Smart Filter® Standard Range

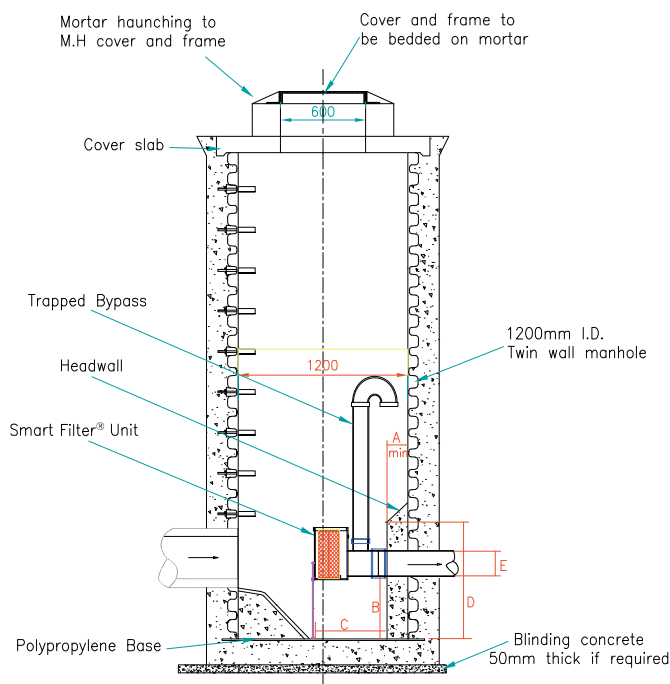
Prod No.	Description	Dims (mm)	Qty
SF01-30302	Smart Filter® c/w 2 No. 305 x 305 Std Smart Paks. 150 dia outlet for flow up to 14 l/s	360 x 330 x 330	1
SF02-38382	Smart Filter® c/w 2 No. 380 x 380 Std Smart Paks. 150 dia outlet for flow up to 22 l/s	400 x 400 x 400	1
SF01-30302P	Smart Filter® c/w 2 No. 305 x 305 Plus Smart Paks. 150 dia outlet for flow up to 14 l/s	360 x 330 x 330	1
SF02-38382P	Smart Filter® c/w 2 No. 380 x 380 Plus Smart Paks. 150 dia outlet for flow up to 22 l/s	400 x 400 x 400	1

Smart Brake® Range

Prod No.	Description	Dims (mm)	Qty
SB01-30302	Smart Brake® c/w 2 No. 305 x 305 Std Smart Paks. Specify orifice size for desired flow	360 x 330 x 330	1
SB02-38382	Smart Brake® c/w 2 No. 380 x 380 Std Smart Paks. Specify orifice size for desired flow	400 x 400 x 400	1

Smart Stop® Range

Prod No.	Description	Dims (mm)	Qty
SS01-30302	Smart Stop® c/w 2 No. 305 x 305 Std Smart Paks. 150 dia outlet for flow up to 14 l/s	360 x 330 x 330	1
SS02-38382	Smart Stop® c/w 2 No. 380 x 380 Std Smart Paks. 150 dia outlet for flow up to 22 l/s	400 x 400 x 400	1



Typical Installation showing overflow connection and silt trap.