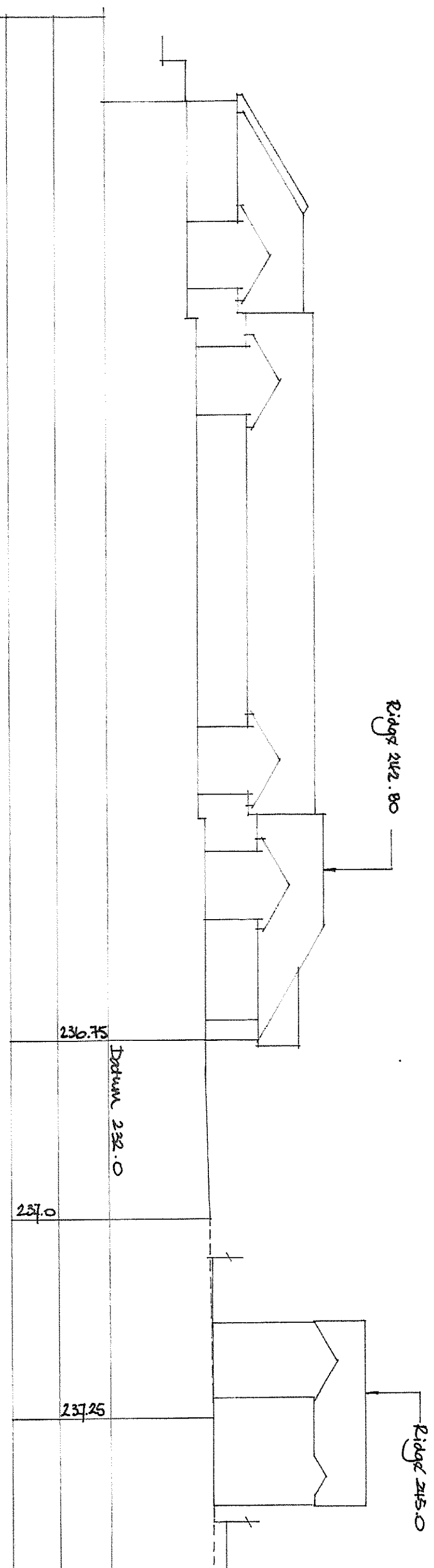




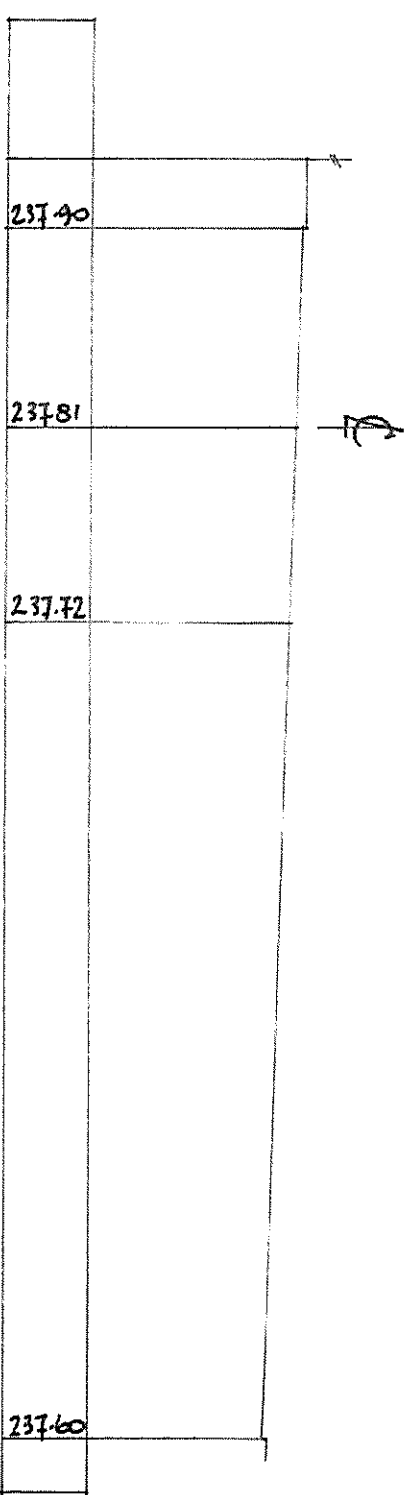
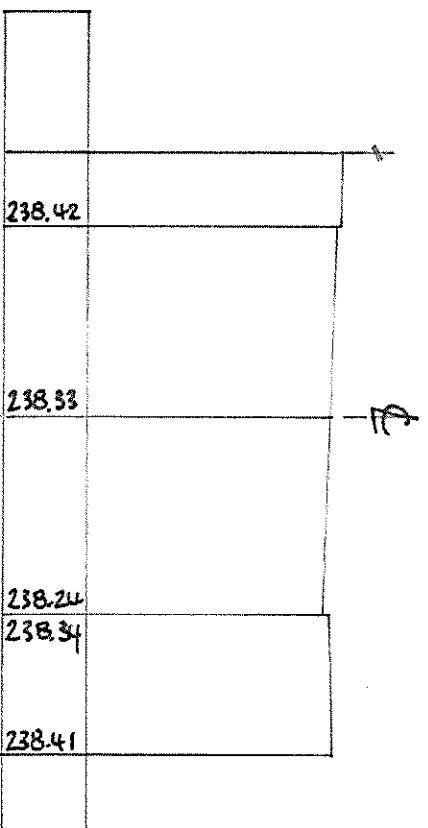
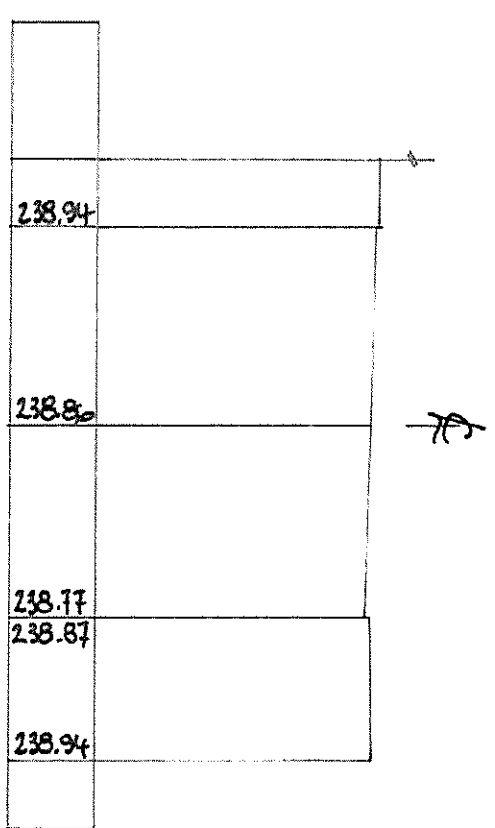
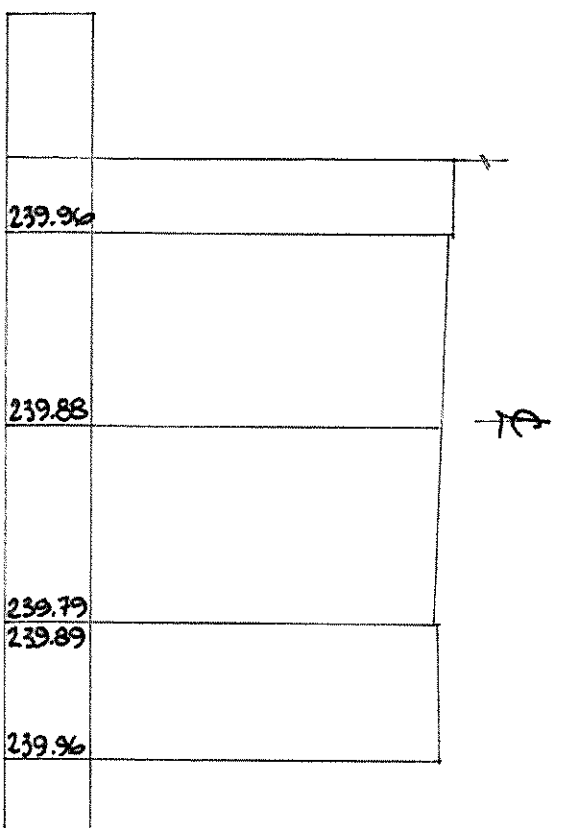
New Tŷ Maes Marchog Residential Care Home

Plot 4

Continuation of Section G-G

Longitudinal Section (1/200 Nat)

Drawing N° TMM/DC/09A



Datum Level 235.0m

Scale 1/100 Nat.

Highway Cross Sections

Drg No TMM/DC/14

Acer campestre 'Streetwise' Heavy Standard Rootballed
 Fagus sylvatica 60 / 80 Bareroot
 BSH Amenity grass mix 80g/sqm

Main Road

2

6

1

1 Ground preparation: Planting areas. Remove loose material. Quality of plants: Plants will be from a nursery/supplier producing good quality stock to BS3936-1 Nursery stock. Specification for trees and shrubs. Plants will conform to

1 **Ground preparation: Planting areas.** Remove loose material

Quality of plants: Plants will be from a nursery/supplier producing good quality stock to BS3336-1 Nursery stock - Specification for trees and shrubs. Plants will conform to

Trees/shrubs:

- Condition: Materially undamaged, sturdy, healthy and vigorous
- Appearance: Of good shape and without elongated shoots
- Hardiness: Grown in a suitable environment and hardened off
- Health: Free from pests, diseases, discoloration, weeds and physiological disorders
- Root system and condition: Balanced with branch system
- Standard: The National Plant Specification
- Species: True to name
- Origin: Provenance: British grown

- **Origin/ Provenance:** British grown

Time of planting: Planting will take place using the following

- Deciduous trees and shrubs: Late October to late March.
- Container-grown plants: At any time if ground and weather conditions are favourable.
- Grass seed to be sown between May and September, otherwise turf to be used.

Planting will be carried out in the first dormant season following the discharge of conditions

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Planting: Plants will be stored and handled to prevent damage before planting. Specific

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Bare root stock

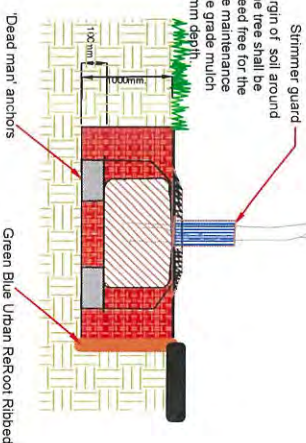
- Now quads prior to planting to make operation easier.
- Ensure quads remain covered until planting.
- For each plant remove a turf two times width of spade square.
- Cut A trench and open up by moving spade back and forth.
- Slide root system down the side of the spade whilst removing it from hole.
- Gently pull transparent up to correct depth.
- Close slit with pressure from foot, taking care not to tread on plant.
- Mind on rabbit guard, ensuring that it's wound in correct direction.
- Insert bamboo cane into quad and push into ground.

Standard trees:

Excavate hole to allow space around the root system. Tree pits for standards to be 1000 x 1000

- Deglaze tops of hole with a fork and break up bottom to a depth of 150mm
- Ensure tree sits at the correct depth and orientate tree for best effect.
- Install dead men and timber frame
- Cut any circling roots with a sharp knife
- Backfill in 100mm layers firming soil with heel of boot at each stage.
- Tighten Platapus underground guying system
- Add more soil if required to obtain correct level and leave a finish surface
- Water in.

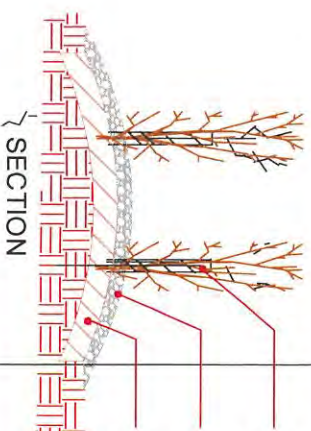
Mulching: Trees and shrubs will be mulched with a composted woodchip to a depth of 75mm



300mm length, 38mm diameter clear plastic spiral guards secured with 500mm length bamboo canes to all hedge plants

Medium grade bark mulch to be laid to 75mm depth to entire length of hedgerow to a width of 1m

Planting area to mounded up in the centre from edges of bed



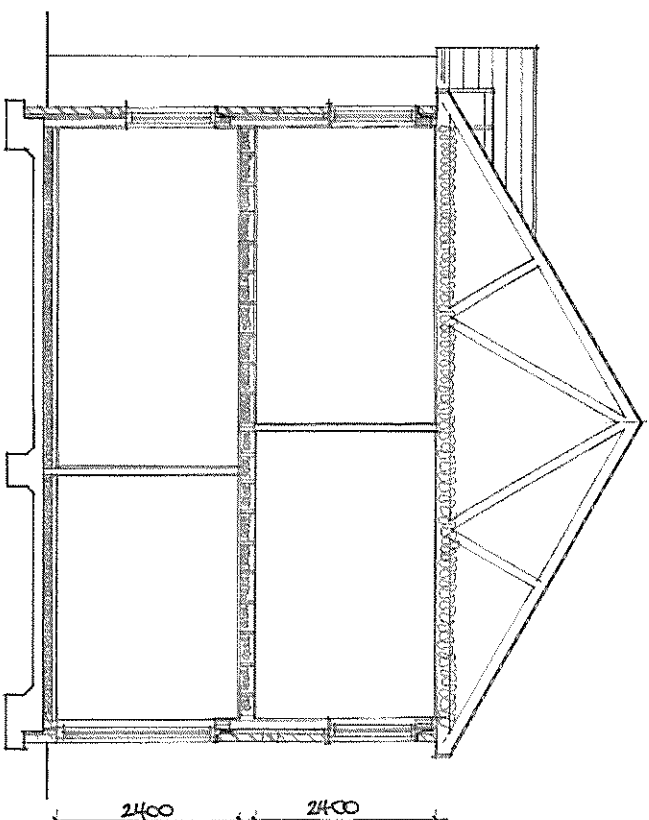
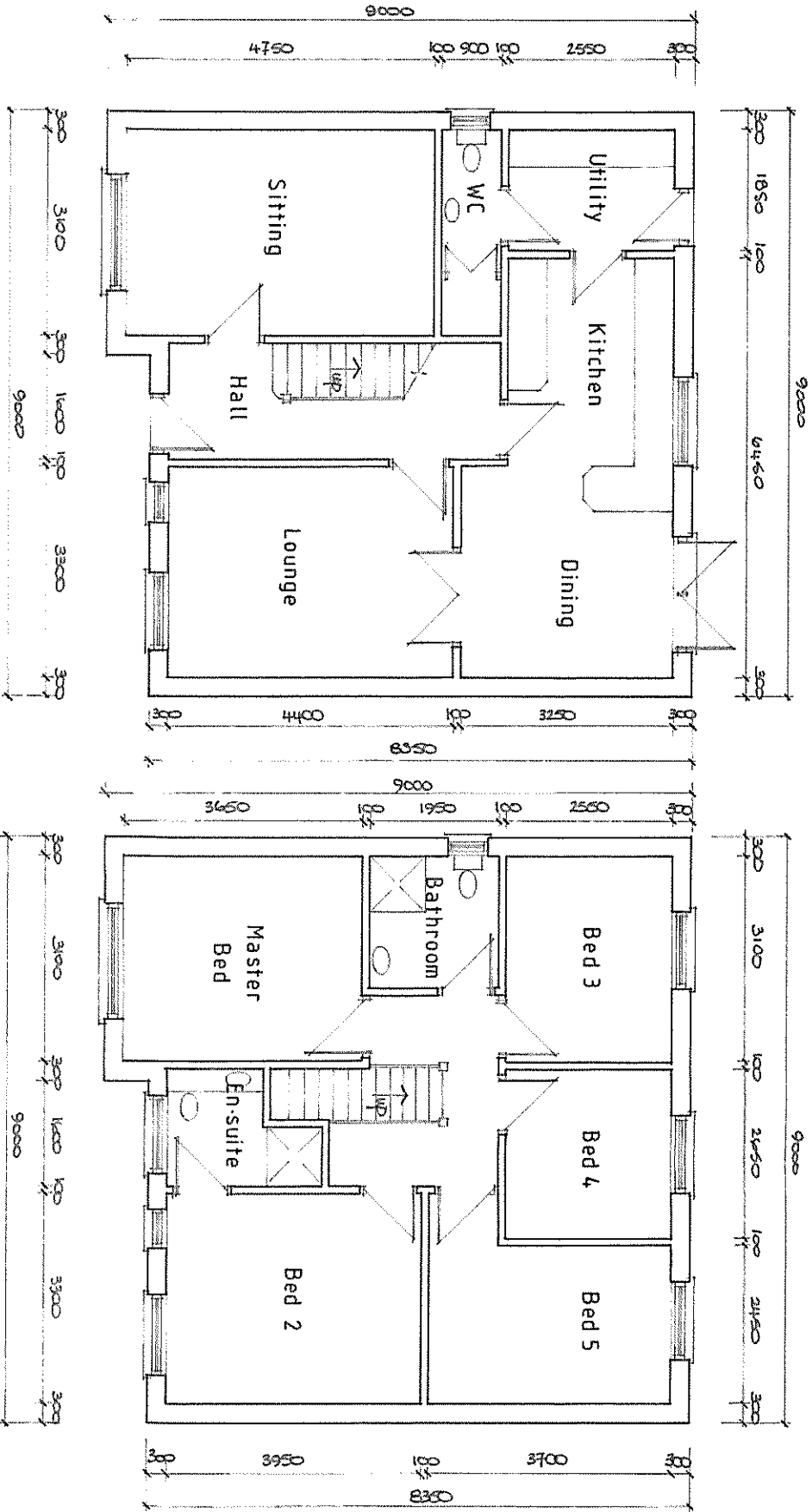
Tree Pit Specification

The pit to be a min. of 2m x 2m x 1m deep. All excavated material to be reused elsewhere on site. Import good quality water retentive soil to fill the pit. Plant generally as section 15.9 of the standard specification incorporating 150L (2No.) bags of TFMc Greenmix tree and shrub planting compost, 200g of Stimulated Bonemeal in the backfill and 20 No 15g Serra Yellow controlled release fertiliser tablets around the rooting zone of the tree at the time of planting.

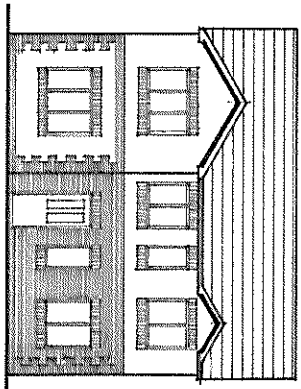
planting.

NOTES: The method of gutting shall be adequate to ensure that the tree remains vertical. (Plants and/or system or similar apparatus). Typically the gutting should take the form of a 100 x 50mm triangular rammed wooden frame above the rootball with 3 no 50mm pre drilled angle iron stakes of adequate length driven down the side of the rootball into the underlying ground. Suitable 5 strand galvanised cable shall be used to secure between the tops of the pre drilled angle iron, across the top of the wooden frame (above the rootball) and shall be secured to an adjustable galvanised ratchet tensioner at the top of the rootball, but below the finish soil surface.

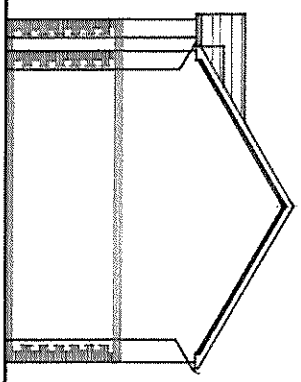
A 150mm margin of soil around the base of the tree shall be maintained weed free for the duration of the maintenance period.



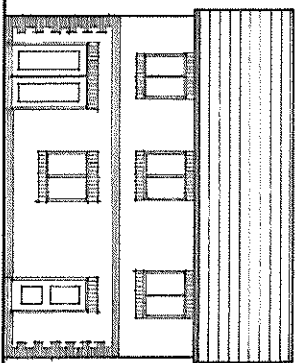
Sectional View



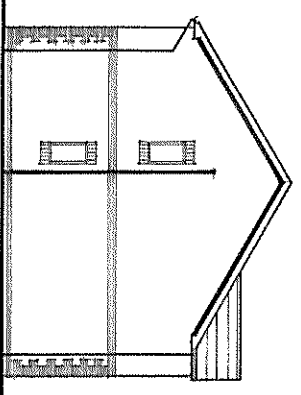
Elevation to North



Elevation to West



Elevation to South



Elevation to East

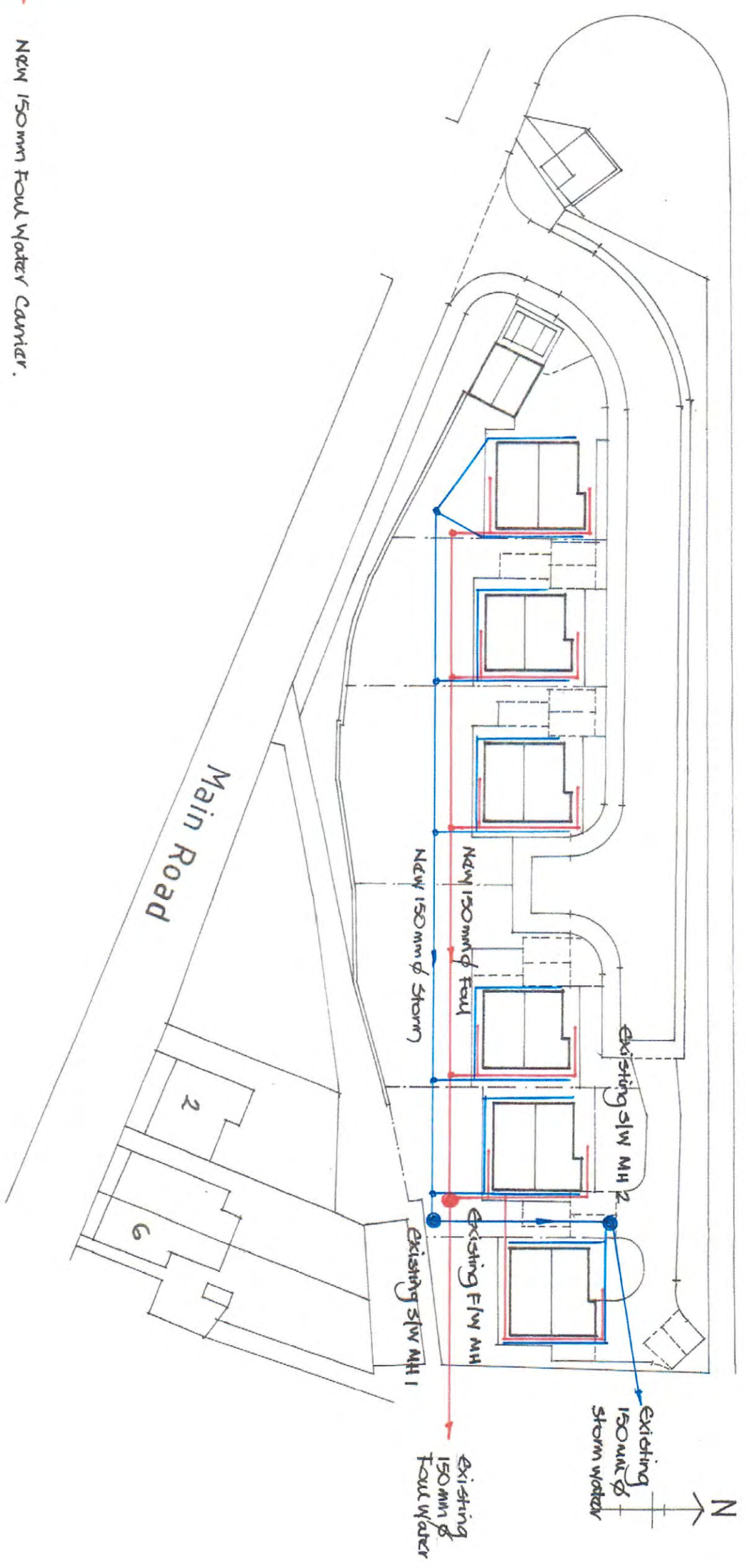
Specification for House Spanning Toward
wooden (or weathered) northbox with three
also divisions to support three rafting poles.
to be placed under the eaves of raftings.
Guttering boxes 32 mm diameter.
Dimensions 11,800 x W 370 x D 185 mm.

Swire Nest Box Specification
with box with small side shaped entrance box.
Must be placed under or close to roof,
at least 500 mm from the ground.
Dimensions 11,800 x W 370 x D 185 mm.

Drawing: Proposed Residential Development	
Title: Former site of Tŷ Maes Marchog, Dyffryn Cellwen, Neath. House Type 1 Plots 1,5,6.	
Design: TMM/DC/01	Date: Jan 2020
Scale: 1/50 ; 1/100	Client: Mr.J.Carroll

Rev A: Clarification of East/West Elevations

A 4109



- New 150mm Foul Water Carrier.
- Individual Plot 100mm connections.
- New 150mm Storm Water Carrier.
- Individual Plot 100mm connections.

Foul and Storm Water Drainage

Drawing No. TMM/DC/10 A

Construction of 6 Dwellings and Associated Works

Land at Main Road, Dyffryn Cellwen

Lighting Scheme to satisfy Planning Condition 14

of

Planning Permission 2017/0025

August 2020

(Amended October 2020)

1.0 Introduction

- 1.1 Planning condition 14 of the above consent requires the following:
- 1.2 *“Prior to occupation of any dwelling hereby approved, a lighting scheme for the site which shall incorporate best practice guidance to ensure the adjacent bat roost and commuting routes are not lit shall be submitted to and approved in writing by the local planning authority. The scheme shall be implemented as may be approved prior to occupation of the dwellings.”*

2.0 Rationale and Methodology

- 2.1 Inevitably, wherever human habitation spreads, so does artificial lighting. This increase in lighting has been shown to have an adverse effect on our native wildlife, particularly on those species such as bats that have evolved to be active during the hours of darkness. As a result of this, development needs to carefully consider what lighting is necessary and where possible reduce any unnecessary lighting. This short report therefore assesses how lighting at the proposed development site can be minimised, incorporating best practice guidelines to ensure that any adjacent bat roosts and commuting routes are not lit.
- 2.2 Much of the content of the report is based on the guidance given in the ILP Publication *Guidance Note 8 – Bats and Artificial Lighting* published in October 2018.
- 2.3 The detrimental effect of artificial lighting can be most clearly seen in bats. The UK’s resident bat species have all suffered dramatic reductions in their numbers in the past century. Light falling on a bat roost exit point, regardless of species, will at least delay bats from emerging, which shortens the amount of time available to them for foraging. As the main peak of nocturnal insect abundance occurs at and soon after dusk, a delay in emergence means this vital time for feeding is missed. At worst, the bats may feel compelled to abandon the roost. Bats are faithful to their roosts over many years and disturbance of this sort can have a significant effect on the future of the colony. It is likely to be deemed a breach of the national and European legislation that protects British bats and their roosts.
- 2.4 In addition to causing disturbance to bats at the roost, artificial lighting can also affect the feeding behaviour of bats and their use of commuting routes. There are two aspects to this: one is the attraction that short wave length light (UV and blue light) has to a range of insects; the other is the presence of lit conditions. Many night-flying species of insect are attracted to lamps that emit short

wavelength component. Studies have shown that, although noctules, serotines, pipistrelle and Leisler's bats, take advantage of the concentration of insects around white street lights as a source of prey, this behaviour is not true for all bat species. The slower flying, broad-winged species, such as long-eared bats, barbastelle, greater and lesser horseshoe bats and the Myotis species (which include Brandt's, whiskered, Daubenton's, Natterer's and Bechstein's bats) generally avoid external lights.

- 2.5 Artificial lighting is known to be particularly harmful if it illuminates important foraging habitats such as river corridors, woodland edges and hedgerows used by bats. Studies have also shown that lighting along roads creates barriers which some bat species cannot cross. It is also known that insects are attracted to lit areas from further afield. This could result in adjacent habitats supporting reduced numbers of insects, causing a further impact on the ability of light-avoiding bats to feed.

3.0 Design Principles and Technical Considerations

- 3.1 Therefore, when determining what mitigating measures can be adopted in this scheme the following Design Principles need to be considered:

- Minimising the amount of lighting
- Avoiding light ecologically sensitive areas
- Avoiding the use of reflective materials under lights
- Minimising light spread
- Minimising the height of any lighting
- Avoiding lighting wherever possible
- Limiting the period of illumination from the light sources

- 3.2 The following Technical Considerations will significantly mitigate any detrimental effect on the adjacent bat roost and bat commuting routes:

- Using narrow spectrum light sources to lower the range of species affected by lighting.
- Using light sources that emit minimal ultra-violet light
- Using lights that have a wavelength of no higher than 550 nm
- Avoiding white and blue wavelengths of the light spectrum

4.0 Lighting Specification

Taking the above considerations into account it would seem reasonable to specify the use of the following generic lighting types in order to mitigate any detrimental effect on the adjacent bat roost and bat commuting routes.

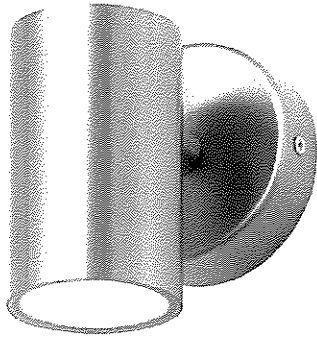
- 4.1 Highway – it is proposed that the development will be served by an unadopted highway and therefore there is no requirement for street lighting.
- 4.2 Access points to individual dwellings (front and rear doors) - LED down lighters operated by a PIR with a maximum 5 min run-on. Lights to be located between 1.8 and 2.0m above outside ground level (see Appendix for photographic detail).

Huw Jenkins I.Eng. FIHE

August 2020

Appendix - Photographs

LED down lighters



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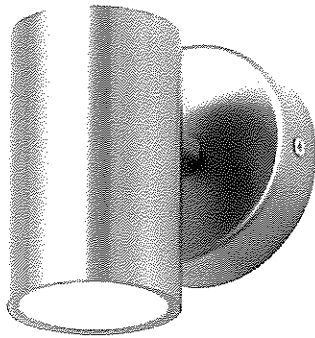
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Appendix - Photographs

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Construction of 6 Dwellings and Associated Works

Land at Main Road, Dyffryn Cellwen

Amended Report on Scheme

for

Proposed foul and surface water drainage

and

Surface Water Run-Off Management during
Construction Phase

October 2020

1.0 Introduction

The Site is approximately 0.88 acres in size and was once occupied by Tŷ Maes Marchog, a now demolished residential care home.

There are still extensive foul and surface water drainage systems on the site as a legacy of its former use.

This document details how the proposed discharge of both foul and surface water from both individual plots and surface water from the highway will be achieved and also how drainage will be managed during the Construction Phase.

Please note that this Report supersedes the original drainage report issued July 2020.

2.0 Foul and Surface Water Proposals

2.1 GPT Environmental Management Services Drainage Survey

In February 2020, GPT Environmental Management Services (Geo Pollution Technologies (UK) Ltd.) were commissioned to undertake a comprehensive survey of the site to establish the current condition of the existing drainage systems and whether there was any possibility that they could be utilised for the proposed new use of the site.

The survey findings are reproduced in report format in the Appendices at the end of this report.

The survey and report established the existence of two storm water chambers on site (MHS1 and MHS2) and presumed that all surface water (yard and roof) from the former residential home previously discharged to MHS6 (an assumed Dŵr Cymru Welsh Water (DCWW) storm water sewer located to the north east corner of the site).

Further site investigation by the Developer and the Author of this report established another (buried) storm water chamber located in the north east corner of the site to which MHS1 and MHS2 connected before exiting the site towards MHS6. This chamber would have been the terminal MH before water discharged from the former Care Home site. It is referenced as SWMH2 on Drawing Number TMM/DC/10A.

The survey and report also identified MHF9 as the discharge point for all foul water from the former Care Home.

2.2 Consultation with Developer Services Section of Dŵr Cymru Welsh Water (DCWW)

Following the publishing of the GPT report, discussions took place between the Developer's Agent (Jeremy John) and Rhodri Perry of Developer Services Section of Dŵr Cymru Welsh Water (DCWW) in respect of discharging all proposed surface and foul water to DCWW sewer.

The principal objective is to restrict the surface water run-off to within the construction area, and if necessary, treat all surface water run-off flows prior to discharging to the ground.

The methods to be adopted shall include, but not be limited to the following:

- a. Site walk-over during wet conditions to identify the presence of all potential 'temporary' water courses.
- b. Implement a regime of isolating upstream clean surface water (ground water runoff) from the proposed working areas. This will be achieved via bunds or cut-off trenches with clean water temporarily diverted around the works. Upstream 'clean' water shall always be kept separate from 'contaminated' water generated from within the working area.
- c. The area of topsoil strip and plot development is to be minimized to that area required for the progression of the immediate works only. The stripped topsoil and excavated material is to be used to form a bund to protect the working area from surface run-off from the unstripped area of the development.
- d. Implement a regime of isolating contaminated water (contaminated by soil sediment within the working zone) from any potential downstream 'temporary' watercourses. This will be achieved by providing temporary bunding and soil & silt traps.
- e. Any stored water will be pumped to a point where it can discharge to the ground, with the outflow treated with silt buster units, or a system of catchpits allowing natural soakaway to ground.
- f. Although there are no permanent watercourses on or adjacent to the site if deemed necessary during periods of very wet weather which may create issues with increased runoff, silt fences or other filtration systems shall be introduced where there is a potential surface route to any site boundary, watercourse, or point of discharge to ground.
- g. Filtration systems include:
 - (i). Discharge over matured grassland, provided that no run-off occurs at the site boundary, and that no direct links to watercourses exist.
 - (ii). Silt fences.
 - (iii). Silt buster units.
 - (iv). Catch pits.
 - (v). Straw bales.
- h. Temporary bunds are to be shaped and covered/seeded to minimise contamination of run-off with suspended solids.
- i. Any site offices, cabins & canteen areas will be provided with sealed chemical toilets which are periodically emptied and tinkered away to a licensed Dŵr Cymru Welsh Water (DCWW) treatment plant.

The measures listed above will be developed by the contractor ahead of the relevant section of the works. The management of the surface water run-off will be adapted as required to accommodate changes in site conditions and any unexpected issues that may arise throughout the duration of the development.

Construction of 6 Dwellings and Associated Works

Land at Main Road, Dyffryn Cellwen

Amended Report on Scheme

for

Proposed foul and surface water drainage

and

Surface Water Run-Off Management during
Construction Phase

October 2020

Contents

- 1.0 Introduction
- 2.0 Foul and Surface Water Proposals
 - 2.1 Proposed GPT Environmental Management Services Drainage Survey
 - 2.2 Consultation with Developer Services Section of Dŵr Cymru Welsh Water (DCWW)
 - 2.3 Residential Storm Water Proposals
 - 2.4 Highway Drainage Proposals
 - 2.5 Residential Foul Water Proposals
 - 2.6 Conclusion
- 3.0 Surface Water Run-Off Management during Construction Phase
- 4.0 Appendices

1.0 Introduction

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Following the publishing of the GPT report, discussions took place between the Developer's Agent (Jeremy John) and Rhodri Perry of Developer Services Section of Dŵr Cymru Welsh Water (DCWW) in respect of discharging all proposed surface and foul water to DCWW sewer.

It was initially agreed that in principle all storm and foul water could be taken to DCWW's combined sewer.

However, following further discussions between the Author and Sion Jones of DCWW it became clear that storm and foul water needed to be kept separate before discharge off site.

Therefore, further site investigations (as detailed above) were carried out and the new proposals as detailed below arrived at.

2.3 Residential Storm Water Proposals

As can be seen from Drawing Number TMM/DC/10A, it is proposed to connect roof and yard water from the dwellings to a 150mm ϕ carrier drain with discharge to SWMH1 and SWMH2. These were the former discharge points for all storm water from the former Care Home.

2.4 Highway Drainage Proposals

As can be seen from Drawing Number TMM/DC/11A, it is proposed to discharge highway drainage to SWMH2.

2.5 Residential Foul Water Proposals

As can be seen from Drawing Number TMM/DC/10A, it is proposed to connect foul water from each dwelling to a new 150mm ϕ carrier sewer with discharge to the existing foul water chamber (referenced MHF9 in 2.1 above). This was the former discharge point for all foul water from the former Care Home.

2.6 Conclusion

As detailed above, there was an initial approval in principle from DCWW to discharge to their combined sewer.

However, further detailed investigative work on site has established the existence of chambers on live sewers which it is considered reasonable to connect new storm (including highway drainage) and foul water to.

The proposed Residential Foul and Surface Water Layout is shown on Drawing Number TMM/DC/10A and the proposed Highway Drainage Layout on Drawing Number TMM/DC/11A.

3.0 Surface Water Run-Off Management during Construction Phase

The developer will employ a number of standard techniques for managing the surface water run-off from the development.

The principal objective is to restrict the surface water run-off to within the construction area, and if necessary, treat all surface water run-off flows prior to discharging to the ground.

The methods to be adopted shall include, but not be limited to the following:

- a. Site walk-over during wet conditions to identify the presence of all potential 'temporary' water courses.
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4.0 Appendices

These were previously submitted with the original report, and remain as read.

4.1 GPT Environmental Management Services Drainage Survey

4.2 Emails between Developer and DCWW

Superseded

Construction of 6 Dwellings and Associated Works

Land at Main Road, Dyffryn Cellwen

Report on Scheme

for

Proposed foul and surface water drainage

and

Surface Water Run-Off Management during
Construction Phase

July 2020

Superseded

Contents

- 1.0 Introduction
 - 2.0 Foul and Surface Water Proposals
 - 2.1 Proposed GPT Environmental Management Services Drainage Survey
 - 2.2 Consultation with Developer Services Section of Dŵr Cymru Welsh Water (DCWW)
 - 2.3 Conclusion
 - 3.0 Surface Water Run-Off Management during Construction Phase
 - 4.0 Appendices
-

Superseded

1.0 Introduction

The Site is approximately 0.88 acres in size and was once occupied by Tŷ Maes Marchog, a now demolished residential care home.

There are still extensive foul and surface water drainage systems on the site as a legacy of its former use.

This document details how the proposed discharge of both foul and surface water from both individual plots and surface water from the highway will be achieved and also how drainage will be managed during the Construction Phase.

2.0 Foul and Surface Water Proposals

2.1 GPT Environmental Management Services Drainage Survey

In February 2020, GPT Environmental Management Services (Geo Pollution Technologies (UK) Ltd.) were commissioned to undertake a comprehensive survey of the site to establish the current condition of the existing drainage systems and whether there was any possibility that they could be utilised for the proposed new use of the site.

The survey findings are reproduced in report format in the Appendices at the end of this report.

The survey and report established that all surface water (yard and roof) and foul water from the former residential home previously discharged to the Dŵr Cymru Welsh Water (DCWW) sewer in the south eastern corner of the site.

2.2 Consultation with Developer Services Section of Dŵr Cymru Welsh Water (DCWW)

Following the publishing of the GPT report, discussions took place between the Developer's Agent (Jeremy John) and Developer Services Section of Dŵr Cymru Welsh Water (DCWW) in respect of discharging all proposed surface and foul water to the same sewer as identified above.

The Developer in conjunction with his consulting engineers (GPT) were requested by DCWW to establish flow figures which proved that the new development would not create any additional flow to that generated by the original residential care home.

The email trail between the Jeremy John Developer's Agent), Kristian Tracy (Geo Pollution Technologies (UK) Ltd.) and Rhodri Perry (DCWW) detailing how flows from the proposed development are less than the original discharge flows, and subsequent permission from DCWW to discharge to their sewer is reproduced in the Appendices at the end of this report.

2.3 Conclusion

As can be seen from the email exchange reproduced in the Appendices at the end of this report, the Developer Services Section of Dŵr Cymru Welsh Water (DCWW) granted permission for

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the Developer to discharge all storm and foul water from the new development without the need for any attenuation.

The proposed Residential Foul and Surface Water Layout is shown on Drawing Number TMM/DC/10 and the proposed Highway Drainage Layout on Drawing Number TMM/DC/11.

3.0 Surface Water Run-Off Management during Construction Phase

The developer will employ a number of standard techniques for managing the surface water run-off from the development.

The principal objective is to restrict the surface water run-off to within the construction area, and if necessary, treat all surface water run-off flows prior to discharging to the ground.

The methods to be adopted shall include, but not be limited to the following:

- a. Site walk-over during wet conditions to identify the presence of all potential 'temporary' water courses.
- b. Implement a regime of isolating upstream clean surface water (ground water runoff) from the proposed working areas. This will be achieved via bunds or cut-off trenches with clean water temporarily diverted around the works. Upstream 'clean' water shall always be kept separate from 'contaminated' water generated from within the working area.
- c. The area of topsoil strip and plot development is to be minimized to that area required for the progression of the immediate works only. The stripped topsoil and excavated material is to be used to form a bund to protect the working area from surface run-off from the unstripped area of the development.
- d. Implement a regime of isolating contaminated water (contaminated by soil sediment within the working zone) from any potential downstream 'temporary' watercourses. This will be achieved by providing temporary bunding and soil & silt traps.
- e. Any stored water will be pumped to a point where it can discharge to the ground, with the outflow treated with silt buster units, or a system of catchpits allowing natural soakaway to ground.
- f. Although there are no permanent watercourses on or adjacent to the site if deemed necessary during periods of very wet weather which may create issues with increased runoff, silt fences or other filtration systems shall be introduced where there is a potential surface route to any site boundary, watercourse, or point of discharge to ground.
- g. Filtration systems include:
 - (i). Discharge over matured grassland, provided that no run-off occurs at the site boundary, and that no direct links to watercourses exist.
 - (ii). Silt fences.
 - (iii). Silt buster units.
 - (iv). Catch pits.
 - (v). Straw bales.
- h. Temporary bunds are to be shaped and covered/seeded to minimise contamination of run-off with suspended solids.

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i. Any site offices, cabins & canteen areas will be provided with sealed chemical toilets which are periodically emptied and tinkered away to a licensed Dŵr Cymru Welsh Water (DCWW) treatment plant.

The measures listed above will be developed by the contractor ahead of the relevant section of the works. The management of the surface water run-off will be adapted as required to accommodate changes in site conditions and any unexpected issues that may arise throughout the duration of the development.

Superseded

4.0 Appendices

4.1 GPT Environmental Management Services Drainage Survey

4.2 Emails between Developer and DCWW

Superseded



Environmental
Management
Services

CLIENT: THJ Construction

SITE ADDRESS: Main Road,
Dyffryn Cellwen,
Neath,
SA10 9HR.

REPORT TITLE: Drainage Survey

STRICTLY CONFIDENTIAL

REPORT NO.	DATE	TYPE
THJ/DS	12/02/2020	Issue 01 - DRAFT

Superseded

GEO POLLUTION TECHNOLOGIES (UK) LTD,
4 VILLAGE COURT,
VILLAGE FARM INDUSTRIAL ESTATE,
PYLE, BRIDGEND,
SOUTH WALES,
CF33 6BX.

Tel: +44 (0) 1656 741 799

Fax: +44 (0) 1656 740 814

E-mail: sales@gptenvironmental.co.uk

Web: <http://www.gptenvironmental.co.uk>

Company Registration No.: 4689357



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DISCLAIMER

The contents of this report are strictly confidential and intended for the client, as printed on the front cover. Interpretations within this report are based on the available data which is assumed to be correct if not collected by GPT employees. The comments and opinions expressed assume that ground conditions do not vary beyond the range revealed by the investigation. There may however, be conditions at or adjacent to the site, which have not been disclosed by the investigation and which, therefore, have not been considered in this report. Due care has been taken during analysis of the data; however GPT does not take responsibility for damages and/or loss arising directly or indirectly from the use of data or information within this report. The contents within this report are limited to the scope of works as agreed with the client(s) prior to commencement of the project(s).

Superseded

REPORTING DETAILS AND QUALITY ASSURANCE

Client Name:	THJ Construction
Client Contact:	Jeremy John
Report Title:	Drainage Survey
Reference Number:	THJ/DS
Author(s):	Benjamin Taylor MSc. (Hons) <i>Environmental Consultant</i>
Signature:	
Date:	17/02/2020
Approved By:	James Marshallsea BSc. (Hons) <i>Environmental Consultant</i>
Signature:	
Date:	17/02/2020

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1 Introduction

GPT were commissioned by THJ Construction to undertake a drainage survey at the property located at the following address: Main Road, Dyffryn Cellwen, Neath, SA10 9HR. The specification of the survey was detailed in quotation Q7436, provided to and agreed upon by the client before the commencement of the works.

The drainage details of a site are an important feature as almost all premises produce contaminated water which could cause pollution if it enters rivers, streams, ditches or groundwater. Foul water originates from kitchens, toilets, vehicle washing and rainwater run-off from 'dirty' areas and liquid wastes or trade effluents from business activities.

As stored liquid materials such as chemicals, fuels and oils can spill, leak or release their contents, it is important that drainage features are properly mapped with outfalls and drainage types are detailed. Incorrect or poorly designed and maintained drainage infrastructure is a common pathway for spills and leaks to enter the environment and cause pollution¹.

There are typically three types of drainage systems:

- Foul sewers carrying contaminated water (sewage and/or trade effluent, for example vehicle wash water) to a sewage treatment works; the works may either be private or run by your local sewage treatment provider.
- Storm/Surface water drains carrying uncontaminated clean water (such as rainwater from road gullies) from Site.
- Combined sewers carrying both foul and storm water.

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2 Drainage Survey

The drainage survey was conducted on the 12th of February 2020.

2.1 Client Instructions and Survey Particulars

Comprehensive drainage survey of the vacant site in Dyffryn Cellwen which included:

- Identifying, locating, detailing and confirming the routing (where possible) of all surface water and foul drainage on site. This will include all minor lines and gullies.
- Detailing all invert levels and approximate pipe diameters.
- Identifying any interceptors or other environmental controls.
- Providing an updated colour coded computer aided design (AutoCAD) plan with all accessible gulley and drain manholes identified.
- Providing recommendations where the routing of the drainage cannot be confirmed due to damaged/ blocked pipework and/ or not being able to remove access manhole covers due to disrepair.

2.2 Limitations

The relationship between any general buildings works requiring repair and the responsibility for the same, under covenants and statutes contained in agreements between the client and present owners, or current statutory instruments are not considered within the scope of this report. This report considers only the surface water, foul water and combined water systems referred to.

This report is for the use of the client and professional advisors acting on behalf of the client. This report should not be relied upon by third parties for any use without the written authority of the reports author. The present owners or any third party other than the client are excluded from any contractual arrangements made between the client and the report provider.

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2.4 Site Description

The Site is situated just off of the A4109 through Dyffryn Cellwen. The Site is approximately 0.88 acres in size and was once occupied by a now demolished care home. Only two small garages remain after the demolition activity in 2013. The site now consists of hard standing and made ground.

The Site is centred on Ordnance Survey grid reference: SN 85070 10182.

2.3 Survey Methodology

Identification of surface water and foul drainage routes were established through the removal of inspection covers and visual examination of drainage pathways contained within manhole chambers. Drain invert levels were measured from the cover level at the manhole surface and recorded. The number of inlets and their diameters, along with the main run diameter were also recorded. If required, connectivity was established through the application of drain dye.

A digital copy of the site was obtained, enabling details from the drainage survey to be plotted. A topographic survey, conducted by Azimuth Land Surveys Ltd in November 2012, and a Welsh Water asset map, issued in November 2013, of the site were used for reference. These drainage maps are visible in the Appendix.

Superseded

3 Site Drainage

Two distinct drainage systems occupy the Site; Storm and Foul.

As a result of the demolition activity that occurred in 2013 GPT were only able to locate 18 manholes where once, according to Azimuth Land Surveys Ltd pre-demolition survey, there were once approximately 28 manholes.

3.1 Storm Drainage

GPT identified two storm water manholes (MHS1 & MHS2) onsite that appeared to flow towards the north eastern corner of the site.

The Azimuth Land Surveys Ltd also confirmed the presence of these manholes and also the downstream manhole in the north east corner of the Site which appeared to discharge towards the Site's eastern boundary. GPT were unable to locate the ultimate storm water discharge point onsite.

This presumed storm water discharge point would appear to connect or would have connected to or upstream of MHS6, which is connected to the storm water pipe flowing through the Site via MHS3 to MHS5.

The storm water line flowing through the Site via MHS3 to MHS5 appears to be a Welsh Water asset however it does not appear on Welsh Water's asset map of the site issued in November 2013

3.2 Foul Drainage

GPT were only able to locate the northern and eastern sections of the foul drainage system however the plans produced by GPT, Azimuth Land Surveys Ltd and Welsh Water all confirm the Site's foul water discharge point being in the south east corner under GPT manhole reference number MHF9.

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The foul water system then discharges from Site in an easterly direction through 3 additional offsite manholes along a pedestrian footpath to the rear of an apartment complex located adjacent to Site and before heading towards the corner of Cross Roads and Moorlands.

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4 Survey Recommendations

Please find below a list of recommended actions founded in best practice guidance:

- Confirm with Welsh Water;
 - If the storm water pipe flowing through the Site via MHS3 to MHS5 is owned by Welsh Water; and
 - The type of drainage (storm, foul or combined) that flows through the pipe.

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APPENDIX

What every reasonable person has been taken to expect is that the use of a product of DCW assets, there is a possibility that in the event of a fire, the product will not perform as intended. The fact that the product is made of DCW assets does not make it safe. The fact that the product is made of DCW assets does not make it safe. The fact that the product is made of DCW assets does not make it safe.

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Superseded

03/07/2020

Fw: Fw: Drain survey Report Revision

From: jeremy john <jeremy.a.john@hotmail.com>
To: huwjenkins1@btinternet.com <huwjenkins1@btinternet.com>
Date: Mar 16, 2020 9:28:37 AM
Subject: Fw: Fw: Drain survey Report Revision
Attachments: A4 Network Landscape.pdf

From: Perry Rhodri <Rhodri.Perry@dwrcymru.com>
Sent: 13 March 2020 15:57
To: jeremy john <jeremy.a.john@hotmail.com>
Subject: RE: Fw: Drain survey Report Revision

Hi Jeremy,

Please see attached sewer plan, we would want connection to be downstream of manhole chamber reference SN85100102. If there are going to be issues in connecting to this asset please let me know. If the existing connection goes into this chamber and it is in good condition then this would be reused.

Thank you,

Rhodri

Rhodri Perry
Development Control Officer | Developer Services
Dŵr Cymru Welsh Water

W: dwrcymru.com
E: developer.services@dwrcymru.com
T: 0800 917 2652
A: PO Box 3146, Cardiff, CF30 0EH



If we've gone the extra mile to provide you with excellent service, let us know. You can nominate an individual or team for a Diolch award through our [website](#)

From: Perry Rhodri
Sent: 13 March 2020 12:38
To: 'jeremy john' <jeremy.a.john@hotmail.com>
Subject: RE: Fw: Drain survey Report Revision

<https://ux.btmail.bt.com/cp/index-rui.jsp?v=2.10.3#app/mail>

Superseded

03/07/2020

Fw: Fw: Drain survey Report Revision

Hi Jeremy,

Thank you call this morning,

I can confirm that we will accept proposed discharge figures without requirement for site attenuation or a flow control device.

I am just reviewing the proposed connection point and will confirm this later on today.

Kind regards,

Rhodri

Rhodri Perry
Development Control Officer | Developer Services
Dŵr Cymru Welsh Water

W: dwrcymru.com

E: developer.services@dwrcymru.com

T: 0800 917 2652

A: PO Box 3146, Cardiff, CF30 0EH



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From: jeremy john <jeremy.a.john@hotmail.com>
Sent: 12 March 2020 10:27
To: Perry Rhodri <Rhodri.Perry@dwrcymru.com>
Subject: Fw: Fw: Drain survey Report Revision

***** External Mail *****

Superseded

03/07/2020

Fw: Fw: Drain survey Report Revision

Sent from my Huawei Mobile

----- Original Message -----

Subject: RE: Fw: Drain survey Report Revision

From: Kristian Tracy

To: jeremy john

CC:

Morning Jeremy,

From the drain survey of the site there were no flow control devices or attenuation systems identified as being installed previously.

Your proposed development will be creating a smaller volume to discharge to Welsh Water than the previous site usage.

Therefore, as long as Welsh Water are happy for you to proceed, there isn't need for such systems on your site.

The only variable that I can think of is that if there has been an increase in volume being discharged to Welsh Water's system in the area from other neighbouring developments then they may ask you to install flow control systems.

Best Regards,

Kris

Kristian Tracy BSc. (Hons.)

Technical Sales Manager

Geo Pollution Technologies (UK) Ltd.

Address: No's. 2-4 Village Court, Village Farm Industrial Estate, Pyle, Bridgend, South Wales, CF33 6BX

Mobile: 07980 638 683

E-mail: kris.tracy@GPTenvironmental.co.uk

Office: 01656 741 799

Fax: 01656 740 814

[Twitter](#) [Facebook](#)

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03/07/2020

Fw: Fw: Drain survey Report Revision

✪ Consider the environment: do you really need to print this e-mail?

From: jeremy john [<mailto:jeremy.a.john@hotmail.com>]
Sent: 12 March 2020 09:01
To: Kristian Tracy
Subject: Fw: Fw: Drain survey Report Revision

Sent from my Huawei Mobile

----- Original Message -----

Subject: RE: Fw: Drain survey Report Revision
From: Perry Rhodri
To: jeremy john
CC:

Hi Jeremy,

Thank you for clarifying this, we will accept below discharge figures. To achieve discharge will there be requirement for attenuation and flow control device?

I will confirm suitable connection location tomorrow.

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03/07/2020

Fw: Fw: Drain survey Report Revision

Thank you,

Rhodri

Rhodri Perry

Development Control Officer | Developer Services

Dŵr Cymru Welsh Water

W: dwrcymru.com

E: developer.services@dwrcymru.com

T: 0800 917 2652

A: PO Box 3146, Cardiff, CF30 0EH



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From: jeremy john <jeremy.a.john@hotmail.com>

Sent: 09 March 2020 09:11

To: Perry Rhodri <Rhodri.Perry@dwrcymru.com>

Subject: Fw: Fw: Drain survey Report Revision

***** External Mail *****

Sent from my Huawei Mobile

----- Original Message -----

Subject: RE: Fw: Drain survey Report Revision

From: Kristian Tracy

To: jeremy john

CC:

Good morning Jeremy,

I've spoken to Rhodri and he has advised those are annual figures of what the catchment areas would generate from published rainfall data

Superseded

03/07/2020

Fw: Fw: Drain survey Report Revision

Best Regards,

Kris

Kristian Tracy BSc. (Hons.)

Technical Sales Manager

Geo Pollution Technologies (UK) Ltd.

Address: No's 2-4 Village Court, Village Farm Industrial Estate, Pyle, Bridgend, South Wales, CF33 6BX

Mobile: 07980 638 683

E-mail: kris.tracy@GPTenvironmental.co.uk

Office: 01656 741 799

Fax: 01656 740 814

[Twitter](#) [Facebook](#)

 Consider the environment: do you really need to print this e-mail?

From: jeremy john [<mailto:jeremy.a.john@hotmail.com>]

Sent: 06 March 2020 08:34

To: Kristian Tracy

Subject: Fw: Fw: Drain survey Report Revision

Superseded

03/07/2020

Fw: Fw: Drain survey Report Revision

Sent from my Huawei Mobile

----- Original Message -----

Subject: RE: Fw: Drain survey Report Revision

From: Perry Rhodri

To: jeremy john

CC:

Hi Jeremy,

Thank you for below email and call this morning,

I just wanted to check in regards to the m3 figures below, over what time period are they based?

Kind regards,

Rhodri

Rhodri Perry

Development Control Officer | Developer Services

Dŵr Cymru Welsh Water

W: dwrcymru.com

E: developer.services@dwrcymru.com

T: 0800 917 2652

A: PO Box 3146, Cardiff, CF30 0EH



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