

REPORT 1

USE OF WASTE IN CONSTRUCTION AT HERBERT ROAD, NEWPORT

Waste Recovery Plan

Report Number 1472r1v1d0515

Commissioned by
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1 INTRODUCTION

1.1 Background

Riversee Limited (Riversee), formerly Greenhill Construction Limited (Greenhill), is developing land off Herbert Road in Newport (see Figure 1). The development will comprise flats and houses on a site measuring approximately 4.5 ha (see Figure 2). As part of the construction development, site levels need to be raised by up to 2m as the site is on the floodplain of the River Usk. In order to raise the site to desired levels, an estimated 9500m³ of material is to be imported. On top of the engineering fill, 600mm of clean capping material made up of subsoil and topsoil will be placed. Newport County Council has confirmed that the works are required and has issued a licence detailing the Permitted Works. A copy of the Licence is provided in Appendix 1 alongside planning application for the development.

As part of these works, Riversee proposes using suitable waste from other development sites rather than primary aggregates from quarry sources. On this basis, Riversee wishes to secure a Permit to enable waste to be used as part of the construction of the development. In support of the Permit Application and as required by NRW, this Waste Recovery Plan aims to demonstrate that the proposed activity is waste recovery rather than waste disposal.

1.2 Objectives of Waste Recovery Plan

NRW strongly supports genuine waste recovery and encourages recovery of waste rather than its disposal. As part of this process NRW also recognises that it is important to clearly distinguish between recovery and disposal operations to ensure they are properly permitted and subject to the correct legal and environmental controls.

According to NRW guidance:

“Waste recovery is about using waste to replace other non-waste materials to achieve a beneficial outcome in an environmentally sound manner. The clearest indicator of waste recovery is when it can be shown that the waste used is a suitable replacement for non-waste materials that would otherwise have to be used to achieve the end benefit. The European court has said that “the essential characteristic of a waste recovery operation is that its principal objective is that the waste serves a useful purpose in replacing other materials which would have had to be used for that purpose, thereby conserving natural resources.””

The current NRW position is based upon a legal test derived from the Waste Framework Directive and European case law. NRW believes that this test is best carried out by answering a series of questions which are set out in the guidance.

In support of the Use of Waste application, this report is intended to justify that the use of waste in the construction of the site is a waste recovery operation. This report, therefore, sets out the responses to the questions set out in the guidance. Each question is answered in Section 4 following a review of the proposals in Sections 2 and 3.

2 PROPOSED USE OF WASTE

The development is to comprise resident development. A significant component of the development will be affordable housing.

Ahead of the development, the site has been investigated for Greenhill by Terra Firma (Wales) Limited. The details of the investigation were reported in March 2013 (Geo-environmental and Geotechnical Report No. 12032). Terra Firma (Wales) Limited subsequently prepared a Remediation Strategy, a copy of which is included in Appendix 2.

Based on the site investigative works Terra Firma proposed to raise site levels by 2m above flood plain. The raising of levels would also reduce the likelihood of future site users coming into contact with current ground conditions. As part of the development, protection against ground gas and vapours is to be installed as well as new water supply pipes. The proposed layout and cross-sections of the site are provided in Appendix 3.

3 ENSURING WASTE IS SUITABLE FOR USE

Waste that is being considered for use at this site has to be demonstrably 'Fit for Purpose'. This test can be divided into two parts

Fitness: Fitness can be sub-divided into two parts; geotechnical suitability and chemical suitability. A material that is geotechnically suitable will display characteristics that can be tested to demonstrate it is capable of performing its engineering function. A material that is chemically suitable will not represent an environmental risk to ground and surface water, human health or local amenity.

Purpose: clearly there is a defined purpose, both in terms of use and quantity and therefore the selection of waste will depend upon **Fitness** for the purpose.

Candidate waste for use must pass the 'Fit for Purpose' test and to ensure that this is a transparent mechanism, the following section describes the procedures that will be adopted for evaluating waste materials. Further information is also provided in the Remediation Strategy (see Appendix 2) and Management Systems (Report 3 of this Permit application).

3.1 Technical Competence

Riversee recognises that to operate under a Permit, trained and competent staff are required. On this basis, Riversee has appointed Mr Garry Curtin, who holds an Environmental Permitting Operators Certificate (EPOC), as the Technically Competent Person (TCP). The TCP will coordinate compliance with the Permit and implementation of the management system. An email confirming the registration of the TCP on the EPOC course is provided in Appendix 4.

3.2 Geotechnical Characteristics

The use of waste is as fill to provide higher ground levels and for the establishment of the correct profiles and falls. A wide range of classes of material can perform these functions and therefore prior to the importation of any materials to the site, they shall be classified in accordance with the Specification for Highway Works (SHW).

The class of each material shall be determined by laboratory testing on a sample prior to source approval. The class of material shall be appropriate for the purpose to which it is to be used. Following source approval, materials being delivered to site will be monitored to confirm the classification of the material.

Unfit materials will include any materials having a U classification, as defined by SHW, as well as any materials not conforming to the requirements of the particular class under SHW. Riversee plans on using just soil and stone but other naturally occurring geological materials or robust anthropogenic construction materials, particularly listed inert wastes, including tiles, ceramics, concrete and brick could also be used. The materials shall be free of unacceptable chemical contamination and invasive weeds. The proportion of "contraries", which is the collective term for undesirable foreign matter such as the wood, plastic and metal shall be 1% of the total mass.

Where chemical contamination is suspected, the chemical testing scheduled in Section 3.3 shall be undertaken and the data evaluated against the target criteria.

3.3 Chemical Characteristics

The materials to be used will need to be durable, compactable and non-biodegradable as they will principally be providing a stable platform for construction and flood protection. Materials to be considered for use will primarily be sourced from other Riversee developments and will comprise soil and stone. To demonstrate that the materials are suitable for use and do not pose either a risk to human health or controlled waters, the history of each source will be investigated and a minimum testing regime developed by Terra Firma will be carried out. Full details are provided in the Remediation Strategy in Appendix 2 and a summary of the testing and evaluation criteria is provided in Table 3-1 and Table 3-2. Additional determinants may need to be tested depending upon the contamination potential of the source.

To ensure the River Usk is protected, the testing schedule includes single stage leachate analysis using test BS:EN:12457 (often referred to as the WAC test) at 2:1 (liquid/solid) for selected substances.

As the Permit allows a wide range of other wastes to be used, the testing regime will also be applied where there is suspicion of contamination. In some cases, however, where the waste is listed as an inert waste and known to be free from contamination based on a review of its source, testing may not be undertaken e.g. clean concrete, glass, certified topsoil.

Table 3-1 Target Quality of Fill and Soil (Part 1)

CHEMICAL REQUIREMENTS	Eluates (mg/l) BS EN 12457-2 one stage	Engineering Fill (mg/kg)	Topsoil (mg/kg)
Frequency of Testing	1 every 250m ³		4 representative samples should be screened for volumes between 20m ³ and 250m ³ . For volumes exceeding 250m ³ , 4 samples per 250m ³ should be analysed.
pH (unitless)			
Phenol	0.0077	420	420
TOC			
Asbestos		Non detect	Non detect
Arsenic	0.025	32	32
Beryllium		51	
Boron		291	291
Cadmium	0.0002	10	10
Chromium (III)	0.0006	627	627
Chromium (VI)		4.3	4.3
Copper	0.005	2330	2330
Lead	0.0072	450	450
Mercury (Inorganic)	0.0005	170	170
Nickel	0.02	130	130
Manganese			
Molybdenum			
Zinc	0.04	3750	3750
Selenium	0.01	350	350
Cyanide	0.001	8	8
Fluoride	0.5		
Benzene	0.008		
Toluene	0.04		
Xylene (o, m & p)	0.03		
Anthracene	0.0001		
Benzo(a)pyrene	0.00005		
Benzo(b)fluoranthene	0.00003		
Benzo(k)fluoranthene	0.00003		
Benzo(ghi)perylene	0.000002		
Fluoranthene	0.0001		
Indeno(123cd)pyrene	0.00002		
Naphthalene	0.0012		

Table 3-2 Target Quality of Fill and Soil (Part 2)

	Engineering Fill			Top Soil		
	1 % SOM	2.5 % SOM	6 % SOM	1 % SOM	2.5 % SOM	6 % SOM
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Acenaphthene	210	480	1000	210	480	1000
Acenaphthylene	170	400	850	170	400	850
Anthracene	2300	4900	9200	2300	4900	9200
Benz(a)anthracene	3.1	4.7	5.9	3.1	4.7	5.9
Benzo(a)pyrene	0.83	0.94	1	0.83	0.94	1
Benzo(b)fluoranthene	5.6	6.5	7	5.6	6.5	7
Benzo(ghi)perylene	44	46	47	44	46	47
Benzo(k)fluoranthene	8.5	9.6	10	8.5	9.6	10
Chrysene	6	8	9.3	6	8	9.3
Dibenzo(ah)anthracene	0.76	0.86	0.9	0.76	0.86	0.9
Fluoranthene	260	460	670	260	460	670
Fluorene	160	380	780	160	380	780
Indeno(123cd)pyrene	3.2	3.9	4.2	3.2	3.9	4.2
Naphthalene	1.5	3.7	8.7	1.5	3.7	8.7
Phenanthrene	92	200	380	92	200	380
Pyrene	560	1000	1600	560	1000	1600
Aliphatics >C5-C6	30	55	110			
Aliphatics >C6-C8	73	160	370			
Aliphatics >C8-C10	19	46	110			
Aliphatics >C10-C12	93	230	540			
Aliphatics >C12-C16	740	1700	3000			
Aliphatics >C16-35	45000	64000	76000			
Aliphatics >C35-C44	45000	64000	76000			
Benzene			0.33			
Toluene			610			
Aromatics >C8-C10	27	65	151			
Aromatics >C10-C12	69	160	346			
Aromatics >C12-C16	140	310	593			
Aromatics >C16-C21	250	480	770			
Aromatics >C21-C35	890	1100	1230			
Aromatics >C35-C44	890	1100	1230			

The results of all the testing shall be provided to the Engineer prior to the delivery of any soils. Where the criteria are breached, Riversee will consult with its specialist advisers and NRW. Such a review will evaluate the statistical spread of the available data, the source of the material, the confidence in the data and material source and the risks to the environment and human health. Following such consultation the material may still be accepted.

4 DEMONSTRATION OF RECOVERY

The EA guidance describes the differences between waste recovery and disposal and sets out a number of questions that need to be addressed to help in deciding into which category a particular activity falls. To help in understanding how to address these questions, a number of examples of what the EA consider to be typical activities that can be classed as waste recovery are provided in the guidance. The examples also give an indication of the information that the EA would expect to see in support of a particular recovery scheme.

The proposal to use waste in the engineering preparation of the site meets one of the examples provided by the EA in the guidance.

4.1 Planning Permission

Newport County Council has issued a licence detailing the Permitted Works at the site, including the raising of ground levels. Riversee has applied for planning permission for the development which was registered with the Planning Department on 12 December 2013 (Planning Ref 13/1279). A copy of the application form is included in Appendix 1.

4.2 Use of Material Compliant with Specifications

Only wastes that meet the Specifications detailed in Section 3 will be used. This will ensure that the development comprises fill with suitable engineering properties and does not pose a risk to human health and the environment.

4.3 Is there a clear benefit from the activity?

Published guidance states that for an activity to be considered waste recovery, there must be a clear benefit. Waste deposited with no resulting benefit is disposal. In order to help establish whether there is a clear benefit from activities, the guidance indicates factors that should be considered when determining whether a scheme has a clear benefit. The guidance states that it is not sufficient to show (for example) that the construction of a track would give rise to a benefit; it should be shown that the track was needed at that particular location and that it would be used when completed.

The proposed development on brownfield land at Herbert Road, Newport comprises residential affordable housing, which is in high demand within the city of Newport. The site would bring a brownfield site back into use, provide low cost housing to the area and also provide additional demand for local businesses. There is clearly a wide range of benefits that will arise from the development.

4.4 Is the recovered waste material suitable for its intended use?

Waste used in the scheme must be suitable for its intended purpose. The type of waste and its engineering and chemical characteristics must be suitable: the type of waste is limited by the conditions of the Permit and the engineering requirements of the development.

The testing regime outlined in Section 3 and discussed further in the attached Remedial Strategy, will ensure that only acceptable wastes are placed to create a serviceable and

stable development platform that will enable the site to be developed, whilst not posing a risk to the environment or human health.

4.5 Is the minimum amount of waste being used to achieve the intended benefit?

The guidance requires that no more waste than is absolutely necessary to achieve the benefit is used.

Given the location of the site on the floodplain of the River Usk, a Flood Consequence Assessment has been completed. This requires ground levels to be raised by up to 2m.

4.6 Is the waste being used as a substitute for a non-waste material?

This part of the test considers whether, in the absence of waste materials, the scheme would have a likelihood of being carried out. If this was to be the case, then the use of waste has displaced the need for non-waste materials, thereby preserving natural resources. This would be a strong indicator that the activity was waste recovery.

Riversee is committed to the development of affordable homes and has spent significant time and resources investigating the site and developing the scheme. Newport County Council is aware that ground levels need to be raised and has issued a licence to allow the site to be filled. Given the volumes required to raise the ground levels, Riversee would prefer to use acceptable and characterised waste that meets a Specification as a direct substitute for primary aggregates, as this fits with their commitment to construct sustainable developments.

If the operation was not to be carried out using waste material, the fill and soil would be imported from a facility which would have to excavate the material specifically for this purpose. By using the waste soils from other construction sites Riversee would reduce the need to import clean soils that would have to be excavated from another source. Using the waste soils from other construction sites not only avoids the soils being sent to landfill but also reduces the need for new soils to be imported from non-waste sources. This is an indicator that this is a recovery operation.

4.7 Will the proposal be completed to an appropriate standard?

It is essential that schemes involving the use of waste have been well thought through and have been designed to give an effective and lasting benefit.

There is clear information in the design of the site that the re-profiling works will enable the construction of a lasting residential development. Riversee will ensure that material which only meets the specification is used and that its placement is monitored to ensure that the use of waste materials satisfies the engineering requirements. Underpinning this approach is a methodology for placing the materials, a copy of which is provided in Appendix 5. The methodology will ensure that the use of waste is supervised by a qualified engineer and involves the following steps:

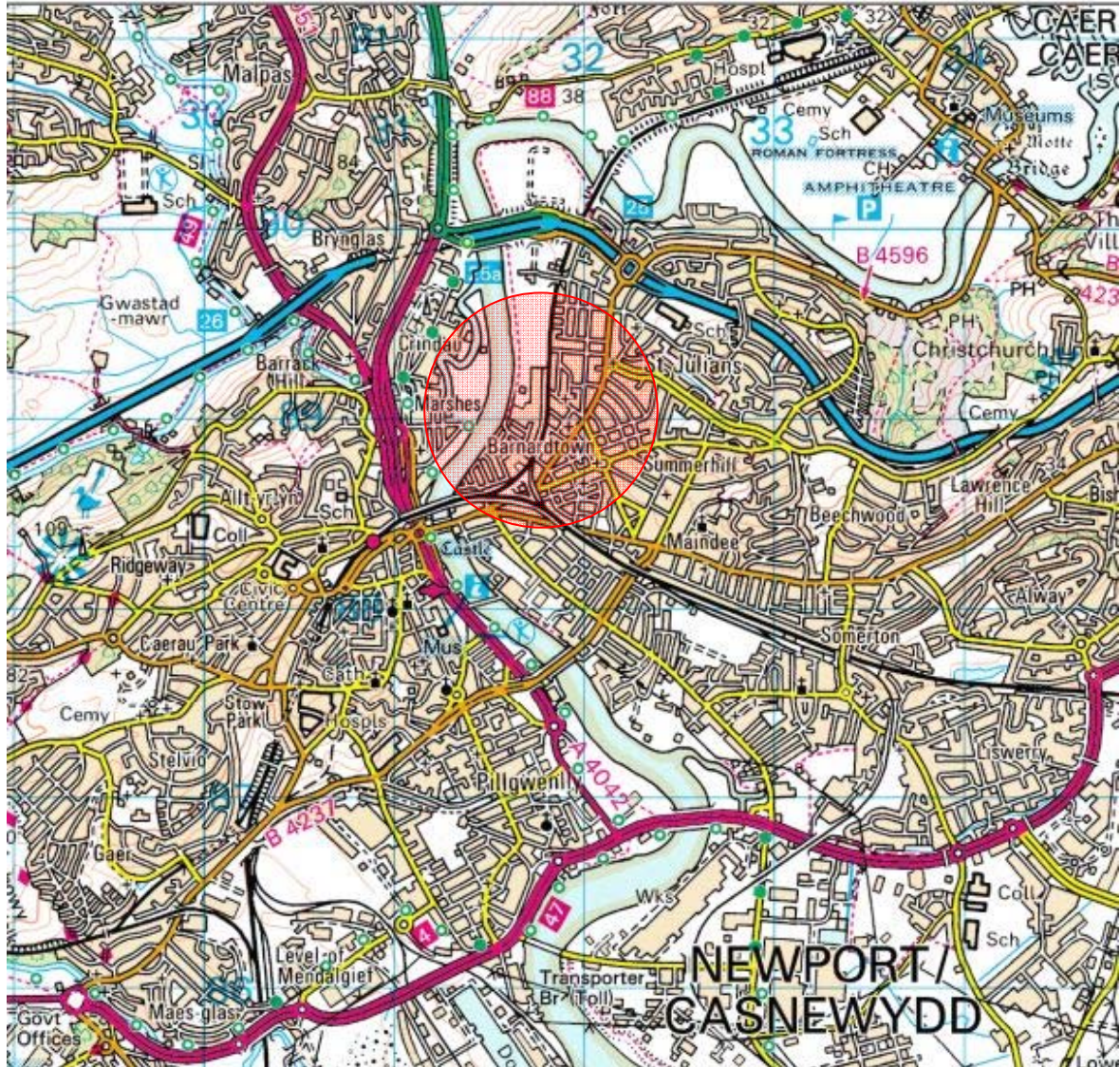
- 1) Setting out – Prior to any commencement of physical works, a suitably qualified engineer shall be appointed to carry out demarcation works and establish bench

-
- marks on site. Upon obtaining all the necessary survey data, a joint survey to check existing ground levels shall be carried out with the consulting engineers.
- 2) Preparation of Site – Site fencing will be established. Following on from this a site haul road will be established along with wheel wash station. (See Figure 3)
 - 3) Import Soil – All acceptable waste shall be stockpiled on site in a designated area ready for use in the fill operation. (See Figure 3)
 - 4) Fill – In areas of fill, after removal of top soil, the surface of the ground shall be graded and compacted. All earthworks material placed in or below formation level shall be deposited and compacted as soon as practicable after excavation, in layers, as recommended by site engineer. Fill shall be spread so as to produce uniform distribution and gradation throughout. Clusters of rock, which would interfere with proper compaction, will not be permitted. The earth fill shall be placed in continuous horizontal layers over the site.

All works will be documented and details compiled in a Validation Report. This will be submitted to NRW and Newport Council. The Validation Report will include:

1. Details of each source of imported material including imported stone/aggregate
2. Waste Transfer Notes
3. Chemical certificates for tested fill imported for engineering purposes
4. Chemical certificates for imported garden soils
5. Chemical tests results for garden soils once tested on site

Figure 1 Site Location Plan



Reproduced from the Ordnance Survey Land Ranger Map
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Figure 2 Site Development Boundary

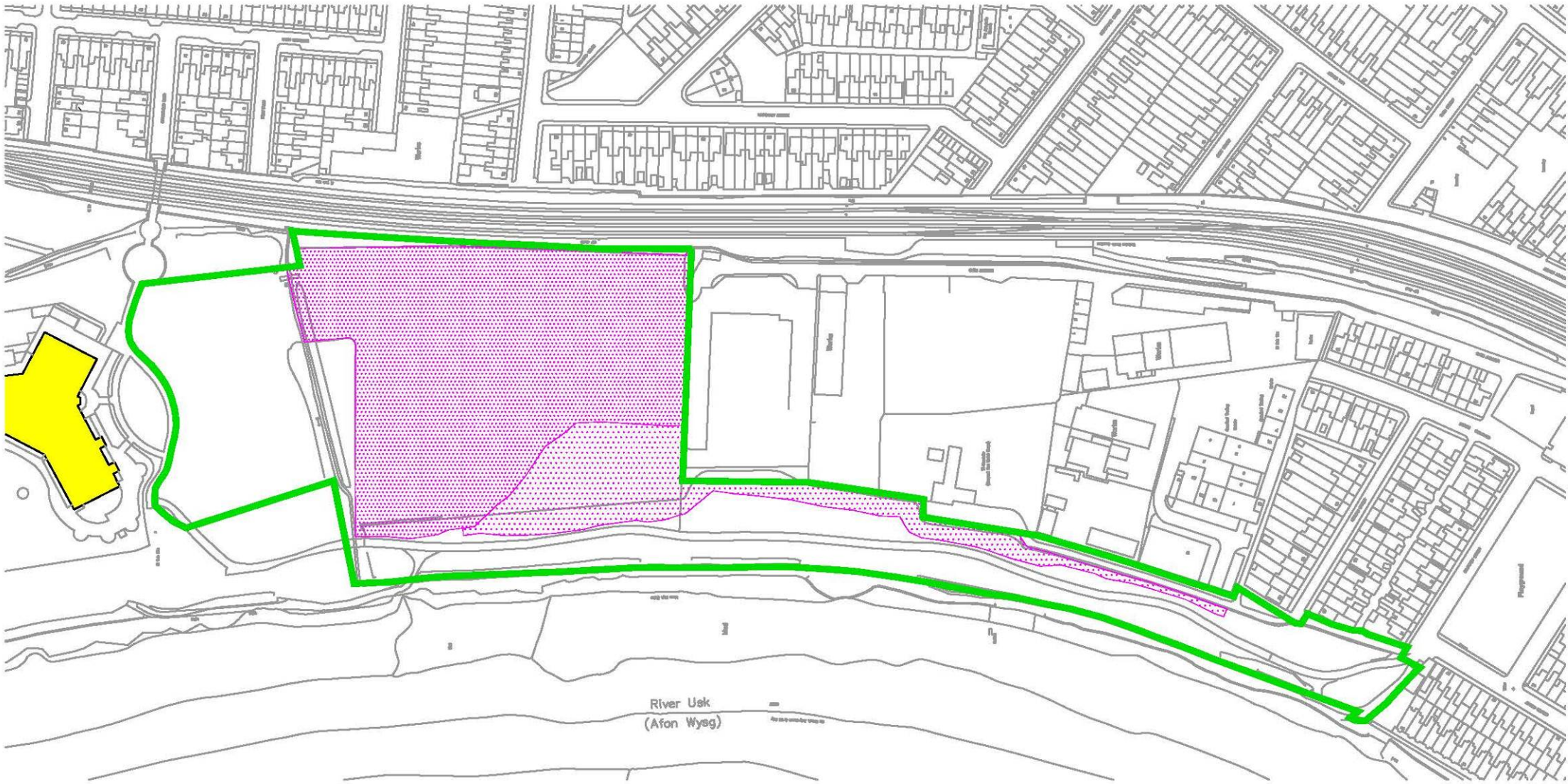
KEY:

DENOTES SITE BOUNDARY

AREA OF FILL TO 7.800 (600MM BELOW FFL)_7.300 AS EXISTING

AREA OF FILL TO 8.400 (600MM BELOW FFL)_7.900 AS EXISTING

LOCAL LANDMARK - GLAN USK PRIMARY SCHOOL /
YSGOL GYNRADD GLAN WYSG



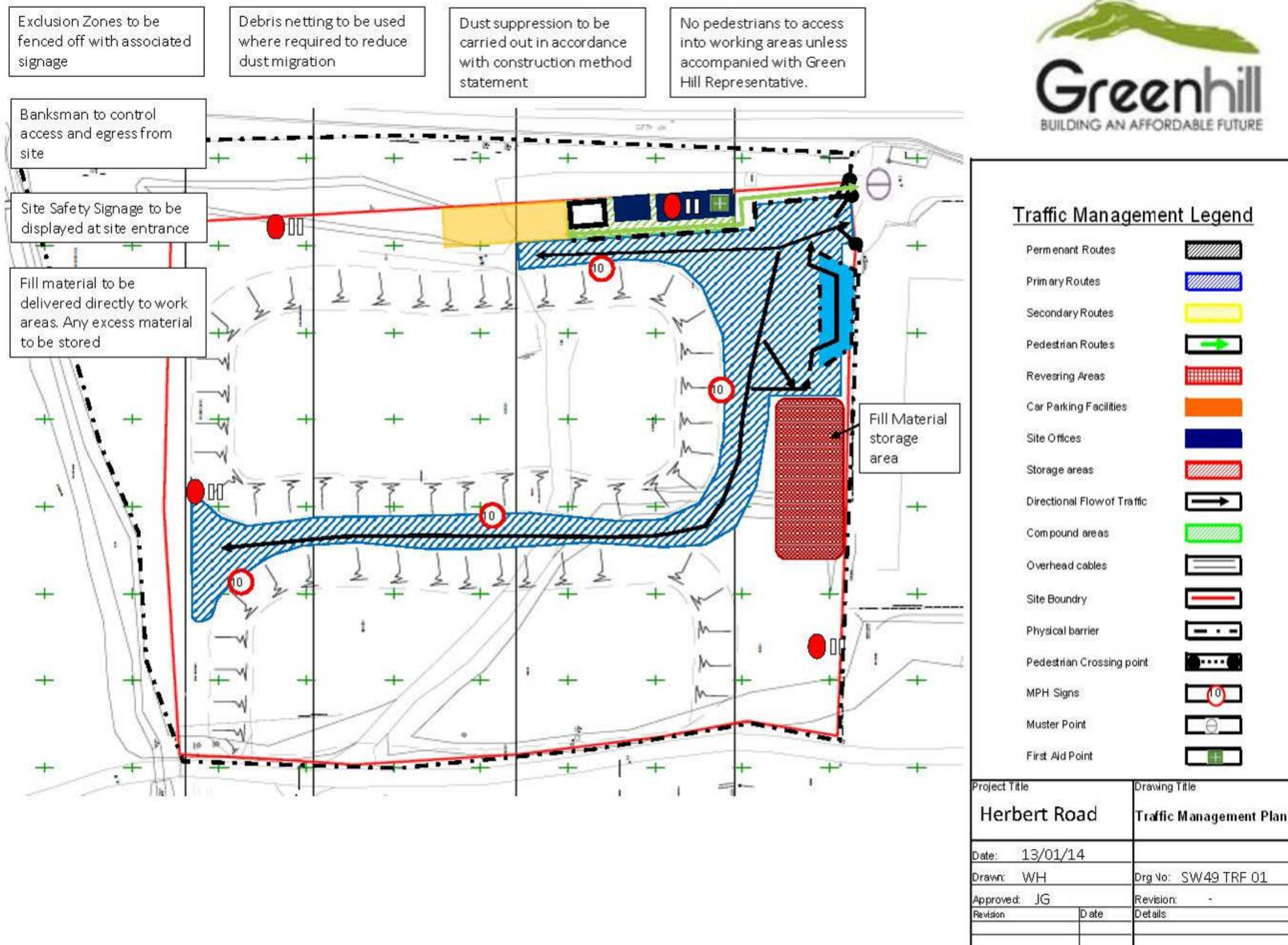
Client	
Contract	
Herbert Road	
NEWPORT	
Description	
Natural Resources Wales Permit	
Scale	Date
1:2500 @ A3	Sept' 13
Dwg No.	Revision
sw49 (00) 100	




Greenhill
BUILDING AN AFFORDABLE FUTURE

The Greenhouse
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Figure 3 Proposed Traffic Management System



REPORT 1

USE OF WASTE IN CONSTRUCTION AT HERBERT ROAD, NEWPORT

Waste Recovery Plan

Appendix 1 Planning Consent and Permitted Works

Report Number 1472r1v1d0515



Herbert Road, Newport

Method Statement for Fill Operation

3rd September 2013

Prepared by WH

1) INTRODUCTION

The proposed development at Herbert Road, Newport consist of the build of a new residential development. To carry out the proposed development the current levels of the site need to be raised. This is to be done via a “fill” operation. This method statement is a description of the works involved in carrying out this “fill” operation.

2) Site plan

In Appendix A of this report is a site plan which indicates the area of land to be filled, along with traffic management routes and management plan.

3) Earth Works Strategy

The following earthworks operations will be undertaken on site:

- Importation and stockpiling of fill material
- Placement of fill material to areas indicted on site plan in Appendix A

4) Soil Validation Works

Prior to any fill material being imported on to site it will undergo testing for validation purposes. Chemical analysis shall be undertaken to assess the suitability of imported materials prior to acceptance on site.

5) Filling Operation

The purpose of this methodology is to define the procedures for carrying out the fill operation in Herbert Road, Newport.

Equipment

- Excavator
- Dump Truck
- Shovel
- Roller
- Grader
-
-

Manpower

- Supervising Engineer
- Foreman
- Operator
- Driver
- Skilled Workers
- Surveyor
- Safety Officer

PPE – Personnel Protective Equipment

- Safety Helmet (EN 39730 Type 1, Class B)
- Hi-Vis Vest (EN471:2003)
- Safety boots
- Dust masks (EN149 2001)
- Ear Defenders
- Safety Glasses
- Safety Gloves

Safety, Health & Environmental

All staff involved with the operation shall be inducted on the safety, health and environmental issues associated with the site and specific operations by Green Hill Site Management.

Only trained personnel with relevant CPCS training and certification shall be allowed to operate plant / machinery.

Appropriate Safety Signboards, barriers and lighting shall be provided as required by Green Hill Construction. All operations must be carried out in accordance with the safety requirements.

Methodology

- 1) Setting out – Prior to any commencement of physical works, a suitably qualified engineer shall be appointed to carry out demarcation works and establish bench marks on site. Upon obtaining all the necessary survey data, a joint survey to check existing ground levels shall be carried out with the consulting engineers.
- 2) Preparation of Site – Site fencing will be established as per fencing method statement. This will be followed by general clearing and grubbing of work areas. Following on from this Site haul road will be established along with wheel wash station as shown in Appendix A.
- 3) Import Soil - All import soil shall be stockpiled on site in a designated area ready for use in the fill operation.
- 4) Fill – In areas of fill, where after removal of top soil, the surface of the ground shall be graded and compacted.
 - All earthworks material placed in or below formation level shall be deposited and compacted as soon as practicable after excavation in layers as recommended by our consulting engineers.

- Earth fill shall be spread so as to produce uniform distribution and gradation of the earth fill throughout.
 - Clusters of rock, which would interfere with proper compaction, will not be permitted. The earth fill shall be placed in continuous, approximately horizontal layers over the site
 - Material which has been compacted to a dry density less than required or at a moisture content outside the agreed range shall be removed or reworked and re-compacted until the required properties are achieved.
 - Holes formed for sampling purposes shall be filled, consolidated and compacted in homogeneity with surrounding fill.
- 5) During the works all vehicles leaving site will report to the Wheel Wash zone indicated on the plan in Appendix A. When required, road brushing operations will be carried out on Herbert Road.

Upon completion of the works, all excess materials shall be removed from site and plant removed from site until such time that construction works can recommence.

Acknowledgement Sheet

Site: Herbert Road, Newport

Date: 3rd September 2013

We the undersigned would confirm that we have read and understood the Method of Works and Risk Assessments, relating to the above. If it is deemed necessary to change the method of working, then the CDM Co-ordinator and Contracts Manager must be notified and the changes agreed. The Method Statement can then be amended if it is deemed necessary.

[illegible]

Application for Planning Permission. Town and Country Planning Act 1990

Publication of applications on planning authority websites

Please note that the information provided on this application form and in supporting documents may be published on the Authority's website.
If you require any further clarification, please contact the Authority's planning department.

1. Applicant Name, Address and Contact Details

Title:	Mr	First name:	N/A	Surname:	N/A		
Company name:	Greenhill Construction Ltd.						
Street address:	N/A			Country Code	National Number	Extension Number	
	N/A			Telephone number:	N/A		
	N/A			Mobile number:	N/A		
Town/City:	N/A			Fax number:	N/A		
County:	N/A			Email address:			
Country:	N/A						
Postcode:	N/A						
Are you an agent acting on behalf of the applicant? ☒ Yes ☐ No							

2. Agent Name, Address and Contact Details

Title:	Miss	First Name:	Lowri	Surname:	Hughson-Smith		
Company name:	Asbri Planning Ltd.						
Street address:	1st Floor Westview House			Country Code	National Number	Extension Number	
	Oak Tree Court			Telephone number:		029 2073 2652	
	Cardiff Gate Business Park			Mobile number:		07443 983821	
Town/City:	Cardiff			Fax number:			
County:	Glamorgan			Email address:			
Country:	United Kingdom						
Postcode:	CF23 8RS						
					lowri@asbriplanning.co.uk		

3. Description of the Proposal

Please describe the proposed development including any change of use:

Development of 248no. dwellings and associated works

Has the building, work or change of use already started? ☐ Yes ☒ No

4. Site Address Details

Full postal address of the site (including full postcode where available)

House:		Suffix:	
House name:	Land South of Glan Usk Primary School		
Street address:	Herbert Road		
	N/A		
Town/City:	Newport		
County:	N/A		
Postcode:	NP19 7BH		

Description of location or a grid reference
(must be completed if postcode is not known):

Easting:	331734
Northing:	189338

Description:

N/A

5. Pre-application Advice

Has assistance or prior advice been sought from the local authority about this application? ☒ Yes ☐ No

If Yes, please complete the following information about the advice you were given (this will help the authority to deal with this application more efficiently):

Officer name:

Title:	Miss	First name:	Jo	Surname:	Davidson
--------	-----------------------------------	-------------	---------------------------------	----------	---------------------------------------

Reference:

Date:

Details of the pre-application advice received:

6. Pedestrian and Vehicle Access, Roads and Rights of Way

Is a new or altered vehicle access proposed to or from the public highway? ☒ Yes ☐ No

Is a new or altered pedestrian access proposed to or from the public highway? ☒ Yes ☐ No

Are there any new public roads to be provided within the site? ☒ Yes ☐ No

Are there any new public rights of way to be provided within or adjacent to the site? ☐ Yes ☒ No

Do the proposals require any diversions/extinguishments and/or creation of rights of way? ☒ Yes ☐ No

If you answered Yes to any of the above questions, please show details on your plans/drawings and state the reference of the plan(s)/drawings(s)

7. Waste Storage and Collection

Do the plans incorporate areas to store and aid the collection of waste? ☒ Yes ☐ No

If Yes, please provide details:

Have arrangements been made for the separate storage and collection of recyclable waste? ☐ Yes ☒ No

8. Neighbour and Community Consultation

Have you consulted your neighbours or the local community about the proposal? ☒ Yes ☐ No

If Yes, please provide details:

9. Authority Employee/Member

With respect to the Authority, I am:

- (a) a member of staff
- (b) an elected member
- (c) related to a member of staff
- (d) related to an elected member

Do any of these statements apply to you? ☐ Yes ☒ No

10. Materials

Please state what materials (including type, colour and name) are to be used externally (if applicable):

Walls - description:

Description of existing materials and finishes:

N/A

Description of proposed materials and finishes:

Smooth cream/off white through colour render, multi dark red brickwork and brick band course.

Roof - description:

Description of existing materials and finishes:

N/A

Description of proposed materials and finishes:

Grey/red concrete roof tiles.

Windows - description:

Description of existing materials and finishes:

N/A

Description of proposed materials and finishes:

White UPVC windows.

Doors - description:

Description of existing materials and finishes:

N/A

Description of proposed materials and finishes:

TBC

Are you supplying additional information on submitted plan(s)/drawing(s)/design and access statement? ☒ Yes ☐ No

If Yes, please state references for the plan(s)/drawing(s)/design and access statement:

Design and Access Statement,

11. Vehicle Parking

Please provide information on the existing and proposed number of on-site parking spaces:

Type of vehicle	Existing number of spaces	Total proposed (including spaces retained)	Difference in spaces
Cars	0	348	348
Light goods vehicles/public carrier vehicles	0	0	0
Motorcycles	0	0	0
Disability spaces	0	0	0
Cycle spaces	0	0	0
Other (e.g. Bus)	0	0	0
Short description of Other			

12. Foul Sewage

Please state how foul sewage is to be disposed of:

Mains sewer ☒ Package treatment plant ☐ Unknown ☐
Septic tank ☐ Cess pit ☐

Other

Are you proposing to connect to the existing drainage system? ☒ Yes ☐ No ☐ Unknown

If Yes, please include the details of the existing system on the application drawings and state references for the plan(s)/drawing(s):

Please refer to Drainage Layout Plan.

13. Assessment of Flood Risk

Is the site within an area at risk of flooding? (Refer to the Environment Agency's Flood Map showing flood zones 2 and 3 and consult Environment Agency standing advice and your local planning authority requirements for information as necessary.) ☒ Yes ☐ No

If Yes, you will need to submit an appropriate flood risk assessment to consider the risk to the proposed site.

Is your proposal within 20 metres of a watercourse (e.g. river, stream or beck)? ☒ Yes ☐ No

Will the proposal increase the flood risk elsewhere? ☒ Yes ☐ No

How will surface water be disposed of?

☐ Sustainable drainage system ☐ Main sewer ☐ Pond/lake
☒ Soakaway ☒ Existing watercourse

14. Biodiversity and Geological Conservation

To assist in answering the following questions refer to the guidance notes on the Planning Portal website (see “Local level requirements and additional documentation”). The notes provide further information on when there is a reasonable likelihood that any important biodiversity or geological conservation features may be present or nearby and whether they are likely to be affected by your proposals.

Having referred to the guidance notes, is there a reasonable likelihood of the following being affected adversely or conserved and enhanced within the application site, or on land adjacent to or near the application site?

a) Protected and priority species:

☒ Yes, on the development site ☐ Yes, on land adjacent to or near the proposed development ☐ No

b) Designated sites, important habitats or other biodiversity features:

☒ Yes, on the development site ☐ Yes, on land adjacent to or near the proposed development ☐ No

c) Features of geological conservation importance:

☐ Yes, on the development site ☐ Yes, on land adjacent to or near the proposed development ☒ No

Supporting Information Requirements

Where a development proposal is likely to affect features of biodiversity or geological conservation interest, you will need to submit, with the application, sufficient information and assessments to allow the local planning authority to determine the proposal.

Failure to submit all information required will result in your application being deemed invalid. It will not be considered valid until all information required by the Local Planning Authority has been submitted.

Your Local Planning Authority will be able to advise on the content of any assessments that may be required.

15. Existing Use

Please describe the current use of the site:

Vacant land

Is the site currently vacant? ☒ Yes ☐ No

If Yes, please describe the last use of the site:

Industrial

When did this use end (if known) (DD/MM/YYYY)? 01/01/2000

Does the proposal involve any of the following:

Land which is known to be contaminated? ☒ Yes ☐ No

Land where contamination is suspected for all or part of the site? ☒ Yes ☐ No

A proposed use that would be particularly vulnerable to the presence of contamination? ☒ Yes ☐ No

Application advice

If you have said Yes to any of the above, you will need to submit an appropriate contamination assessment.

16. Trees and Hedges

Are there trees or hedges on the proposed development site? ☐ Yes ☒ No

And/or: Are there trees or hedges on land adjacent to the proposed development site that could influence the development or might be important as part of the local landscape character? ☐ Yes ☒ No

If Yes to either or both of the above, you may need to provide a full Tree Survey, at the discretion of your local planning authority. If a Tree Survey is required, this and the accompanying plan should be submitted alongside your application. Your local planning authority should make clear on its website what the survey should contain, in accordance with the current 'BS5837: Trees in relation to design, demolition and construction - Recommendations'.

17. Trade Effluent

Does the proposal involve the need to dispose of trade effluents or waste? ☐ Yes ☒ No

18. Residential Units

Does your proposal include the gain or loss of residential units? ☒ Yes ☐ No

18. Residential Units (continued)

Market Housing - Proposed

	Number of bedrooms				
	1	2	3	4+	Unknown
Houses		30	86		
Flats/Maisonettes	7	77			
Live-Work units					
Cluster flats					
Sheltered housing					
Bedsit/Studios					
Unknown					

Proposed Market Housing Total200

Social Rented Housing - Proposed

	Number of bedrooms				
	1	2	3	4+	Unknown
Houses		10	14		
Flats/Maisonettes	6	18			
Live-Work units					
Cluster flats					
Sheltered housing					
Bedsit/Studios					
Unknown					

Proposed Social Rented Housing Total48

Overall Residential Unit Totals

Total proposed residential units	248
Total existing residential units	0

Market Housing - Existing

	Number of bedrooms				
	1	2	3	4+	Unknown
Houses					
Flats/Maisonettes					
Live-Work units					
Cluster flats					
Sheltered housing					
Bedsit/Studios					
Unknown					

Existing Market Housing Total0

Social Rented Housing - Existing

	Number of bedrooms				
	1	2	3	4+	Unknown
Houses					
Flats/Maisonettes					
Live-Work units					
Cluster flats					
Sheltered housing					
Bedsit/Studios					
Unknown					

Existing Social Rented Housing Total0

19. All Types of Development: Non-residential Floorspace

Does your proposal involve the loss, gain or change of use of non-residential floorspace?

☐ Yes

☒ No

20. Employment

If known, please complete the following information regarding employees:

	Full-time	Part-time	Equivalent number of full-time
Existing employees	0	0	0
Proposed employees	0	0	0

21. Hours of Opening

If known, please state the hours of opening for each non-residential use proposed:

Use	Monday to Friday		Saturday		Sunday and Bank Holidays		Not Known
	Start Time	End Time	Start Time	End Time	Start Time	End Time	
B1C							☐
B2							☐
B8							☐
C1							☐
C2							☐
D1							☐
D2							☐
Other							☐

22. Site Area

What is the site area?

05.83

hectares

23. Industrial or Commercial Processes and Machinery

Please describe the activities and processes which would be carried out on the site and the end products including plant, ventilation or air conditioning. Please include the type of machinery which may be installed on site:

N/A

Is the proposal for a waste management development?

☐ Yes ☒ No

24. Hazardous Substances

Is any hazardous waste involved in the proposal?

☐ Yes ☒ No

25. Site Visit

Can the site be seen from a public road, public footpath, bridleway or other public land?

☒ Yes ☐ No

If the planning authority needs to make an appointment to carry out a site visit, whom should they contact? (Please select only one)

☒ The agent ☐ The applicant ☐ Other person

26. Certificates (Certificate B)

Certificate of Ownership – Certificate B

Town and Country Planning (Development Management Procedure) (Wales) Order 2012

I certify/The applicant certifies that I have/the applicant has given the requisite notice to everyone else (as listed below) who, on the day 21 days before the date of this application, was the owner (*owner is a person with a freehold interest or leasehold interest with at least 7 years left to run*) of any part of the land or building to which this application relates.

Notice recipient		Date notice served
Name	Newport City Council Estates Dept	12/12/2013
Number:	Suffix:	
Street:	Civic Centre	
Locality:	Godfrey Road	
Town:	Newport	
Postcode:	NP20 4UR	
Title: Miss First name: Lowri Surname: Hughson-Smith		
Person role:	Agent	Declaration date: 12/12/2013 ☒ Declaration made

26. Certificates (Agricultural Holdings Certificate)

Agricultural Holding Certificate

Town and Country Planning (Development Management Procedure) (Wales) Order 2012

Agricultural Land Declaration - You Must Select Either A or B

(A) None of the land to which the application relates is, or is part of an agricultural holding. ☒

(B) I have/The applicant has given the requisite notice to every person other than myself/the applicant who, on the day 21 days before the date of this application, was a tenant of an agricultural holding on all or part of the land to which this application relates, as listed below: ☐

Title:	Miss	First Name:	Lowri	Surname:	Hughson-Smith
Person role:	Agent	Declaration date:	12/12/2013	☒ Declaration Made	

27. Declaration

I/we hereby apply for planning permission/consent as described in this form and the accompanying plans/drawings and additional information. ☒

Date 12/12/2013

REPORT 1

USE OF WASTE IN CONSTRUCTION AT HERBERT ROAD, NEWPORT

Waste Recovery Plan

Appendix 2 Remediation Strategy

Report Number 1472r1v1d0515

REMEDIATION STRATEGY
PROPOSED RESIDENTIAL
DEVELOPMENT
HERBERT ROAD
NEWPORT

Prepared for:
Greenhill Construction Limited

November 2013

Job No: 12032/RS

REPORT TITLE : **Remediation Strategy : Proposed**
Residential Development, Herbert Road,
Newport

REPORT STATUS : **Final**

JOB NUMBER : **12032/RS**

DATE : **November 2013**

PREPARED BY :
(R. Howells/D.Emanuel)

REVIEWED BY :
(D.Emanuel)

APPROVED BY :
(Dr. G. C. Lake)

Executive Summary

Greenhill Construction Limited is proposing the development of land off Herbert Road in Newport. The development is to comprise 127 flats in 10 blocks, and 140 houses.

Investigation of the site was undertaken by Terra Firma (Wales) Limited. The details of the investigation were reported on in March 2013 (Geo-environmental and Geo-technical Report No. 12032).

Terra Firma (Wales) Limited has subsequently been commissioned to prepare a Remediation Strategy for the site.

Based on the investigative works carried out the proposed remediation measures for the site are:

1. Cover of site with up to 2m of imported fill (intended to raise site above flood plain).

In order to raise the site to desired levels an estimated 9500m³ of material is to be imported. The majority of fill material is intended to comprise 'recovered' soils sourced from other Greenhill construction sites, but quarry stone will also be used in some locations.

Fill importation will need to take into account the location of the site adjacent to the River Usk and within a SSSI. The material to be used is classified under permit 170504.

In order to assess the suitability of waste soils from the intended source sites the materials will need to undergo appropriate screening at source. It is essential that any material brought on to site will not have an impact on the underlying ground and River Usk, and that it will not present an unacceptable risk to the human health of future site end users.

2. Cover is to include subsoil and topsoil material in garden and landscaped areas.

All garden and landscaped areas will be finished with both imported subsoil and topsoil upon development.

For all imported soils appropriate certification should be provided by the supplier as well as details of the soil source.

All imported material should be chemically screened to ensure its suitability for use in accordance with the Welsh Land Contamination Working Group 'Requirements for the Chemical Testing of Imported Materials for Various End Uses and Validation of Cover Systems'.

3. Installation of a 2000 gauge membrane suitable for the protection against ground gas, radon gas and PCB vapours.

4. New water supply pipes to be chosen in accordance with UKWIR Report Ref No 10/WM/03/21 'Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites'.

All site works involving the removal of made ground should be documented and recorded, and reported to National Resources Wales in the form of a Validation Report.

Details of the proposed radon/gas/vapour barrier and the proposed drinking water supply pipe materials should be supplied to National Resources Wales for approval prior to development.

Any unexpected ground conditions or contamination identified during site development should be inspected and appropriately investigated by a geo-environmental engineer. This may include suspension of site works until the details and severity of any contamination has been established and the potential risks to human health assessed.

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SECTION 1 Introduction and Proposed Development

Greenhill Construction Limited is proposing the development of land off Herbert Road in Newport.

The development is to comprise 127 flats in 10 blocks, and 140 houses.

Investigation of the site was undertaken by Terra Firma (Wales) Limited. The details of the investigation were reported on in March 2013 (Geo-environmental and Geo-technical Report No. 12032).

Terra Firma (Wales) Limited has subsequently been commissioned to prepare a Remediation Strategy for the site.

The objective of the Remediation Strategy is to address any human health risks and any risks to the aquatic environment previously identified, using the best practicable option.

1.1 Limitations and Exceptions

Greenhill Construction Limited has requested that a Remediation Strategy be prepared.

This report has been prepared for the sole internal reliance of Greenhill Construction Limited. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Terra Firma (Wales) Limited. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

The report represents the findings and opinions of experienced geo-environmental and geo-technical consultants. Terra Firma (Wales) Limited does not provide legal advice and the advice of lawyers may also be required.

It is not within the scope of Terra Firma (Wales) Limited to:

- Provide Method Statements and Risk Assessments for the site preparation and development.
- Design, install and validate the pipes for potable water supply beneath the site.

SECTION 2 Summary of Terra Firma (Wales) Limited Geotechnical and Geo-environmental Report

2.1 Site Works

A site investigation was carried out between the 31st of October and the 8th of November 2012 comprising 19 trial pits and six cable percussive boreholes and three mini percussive boreholes.

2.2 Ground Conditions

The ground conditions encountered beneath the site can in general be summarised as shown in **Table 2.1**.

Table 2.1 Summary of Ground Conditions		
Depth (m)	Thickness (m)	Stratum
GL - 0.20/3.30	0.20/3.30	MADE GROUND
0.30 - 3.90/10.30	2.20/8.40	Soft grey and brown mottled CLAY
3.90/7.1 - 4.10/8.60	0.60/2.30	PEAT
4.10/8.60 - 5.90/9.70	0.00/1.80	SAND & GRAVEL (intermittent)
5.90/10.30 - 10.00/12.70	0.50/4.10	Firm becoming very stiff red brown gravelly CLAY
10.00/12.70 - >12.90	-	MUDSTONE

The basal Sand & Gravel layer was not encountered in BH1, BH2, BH4 and BH5.

Very loose red brown silty SAND and very soft red sandy SILT was encountered between 6.20m and 7.00m and 7.00m and 8.80m respectively.

Soft grey sandy SILT was encountered between 6.20m and 9.10m.

2.3 Foundation Solution

Construction of shallow traditional foundations upon soft clay bands beneath the site would lead to high total and differential settlements.

Precast concrete driven piles founded within the underlying very weak red brown and grey mudstone with a suspended floor slab were therefore recommended.

2.4 Contamination Screening

During the intrusive investigation, small disturbed soil samples were collected for contamination screening. Groundwater wells were installed and groundwater samples were also retrieved for testing. Samples from the drainage reed that crosses the site were taken and analysed in June 2013.

Testing of soil and water samples for a standard suite of metals, inorganics and organics was undertaken as well as for asbestos, polycyclic aromatic hydrocarbons (PAH), petroleum hydrocarbons and polychlorinated biphenyls (PCBs)

A number of substances tested for were found to be above their respective threshold levels in soil. These exceedances are summarised in Table 2.2 below.

Table 2.2 Summary of Contaminants of Concern in Soil			
Hole and depth (m bgl)	Chemical	Guideline (mg/kg)	Exceedance (mg/kg)
TP5 1.30m	Arsenic	32	40
TP2 0.90m	Cyanide	8	10
TP8 0.50m	Benzo(a)anthracene	3.1	13
	Benzo(a)pyrene	0.83	11
	Benzo(b)fluoranthene	5.6	9
	Chrysene	6	13
	Dibenzo(a,h)anthracene	0.76	1.6
	Indeno(1,2,3-c,d)pyrene	3.2	7.5
TP4 0.70m	Benzo(a)pyrene	0.83	0.90
TP6 0.60m	PCB	0.01	0.15
	2,3',4,4',5-Pentachlorobiphenyl	0.01	0.02
	2,2',4,4',5,5'Hexachlorobiphenyl	0.01	0.02
	2,2',3,4,4',5'Hexachlorobiphenyl	0.01	0.05
	2,2',3,4,4',5,5'Heptachlorobiphenyl	0.01	0.04
TP6 1.80m	Chrysotile – Loose Bundles	-	-
TP7 0.20m	Benzo(a)pyrene	0.83	1.90
	Chrysotile – Loose Bundles	-	-
TP9 1.00m	Benzo(a)pyrene	0.83	1.30
TP10 0.80m	Benzo(a)pyrene	0.83	1.50
TP13 0.60m	PCB	0.01	0.16
	2,4,4'-Trichlorobiphenyl	0.01	0.12
	2,2',5,5'-Tetrachlorobiphenyl	0.01	0.05

2.4 Contamination Screening (Continued)

Substances found to be elevated in groundwater and ree water are summarised in Table 2.2 below.

Table 2.3 Summary of Contaminants of Concern in Groundwater			
Borehole	Chemical	Threshold (mg/l)	Exceedance (mg/l)
BH1 (08/01/2013)	Aliphatic C16-C21	0.01	0.11
	Aliphatic C21-C35	0.01	0.14
BH2 (08/01/2013)	Aliphatic C16-C21	0.01	0.037
	Aliphatic C21-C35	0.01	0.19
BH3 (08/01/2013)	Aliphatic C12-C16	0.01	0.017
	Aliphatic C16-C21	0.01	0.031
	Aliphatic C21-C35	0.01	0.42
	Aromatic C12-C16	0.01	0.014
BH6 (08/012013)	Aliphatic C16-C21	0.001	0.03
	Aliphatic C21-C35	0.001	0.011
Reen (Upstream)	Aliphatic C16 - C21	0.01 0.0001	0.021
	Aliphatic C21 - C35		0.17
	Aromatic C10 - C12		0.018
	Aromatic C21 - C35		0.062
	Fluoranthene		0.00013

2.5 Gas monitoring

Nine gas monitoring wells were installed and a programme of gas monitoring for the presence of methane, carbon dioxide and oxygen has been undertaken at the above site.

Due to recorded high methane and carbon dioxide values it was recommended that the site should be characterised as Characteristic Situation 3.

2.6 Human Health and Environmental Risk Assessment

2.6.1 Human Health

It was concluded that future site users are potentially at risk from contamination in site soils through the following pathways:

- Dermal contact with soil and soil dust
- Ingestion of soil and soil dust
- Inhalation of soil dust
- Consumption of site grown vegetables/fruit
- Ingestion of groundwater
- Permeation of drinking water pipes

The site is currently deemed to be at risk from flooding from the adjacent River Usk. As part of a flood prevention scheme the site is to be raised by an average thickness of 1.5m prior to development. This will be achieved by the importation of suitable fill materials.

2.6.1 Human Health (Continued)

The fill layer will effectively form a barrier between the made ground on site and site end users, acting to sever the contamination to receptor pathway.

Prior to the placement of water supply pipes an assessment should be made, by the water provider, of soil along the route of the pipe with reference made to the material selection criteria quoted in UKWIR Report Ref No 10/WM/03/21 'Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites'..

There are also considered to be potential risks from:

- Inhalation of ground gas/landfill gas
- Inhalation of radon gas
- Inhalation of vapours

Basic radon protection measures should be incorporated into all new buildings on site.

Gas protection measures as follows should be installed in the new development:

- For a 2000 g DPM/reinforced gas membrane and under-floor venting
- All joints and penetrations must be sealed with propriety gas resistant membrane and passively ventilated or positively pressurised under-floor sub-space.

The radon/gas barrier should also be effective as a barrier to PCB vapours.

2.6.2 Aquatic Environment

The River Usk flows along the western edge of the site and is considered as the most vulnerable environmental receptor.

The petroleum hydrocarbons identified during the first groundwater monitoring round were attributed to contamination that occurred from the drilling process. Following purging of the boreholes on the second round of water sampling all hydrocarbons were below guideline values.

The hydrocarbons noted at the reed were identified up-stream but not down-stream and it was concluded that all of the determinants exiting the site and entering the River Usk from the reed were below threshold values.

The River Usk and hydrological environment are not therefore considered to be at risk.

SECTION 3 Proposed Site Remediation

3.1 Remediation Summary

Based on the site investigative works the following is proposed to protect the future site end users:

1. Cover of site with up to 2m of imported fill (intended to raise site above flood plain).
2. Cover is to include subsoil and topsoil material in garden and landscaped areas.
3. Installation of a 2000 gauge membrane suitable for protection against ground gas, radon gas and PCB vapours.
4. New water supply pipes to be chosen in accordance with UKWIR Report Ref No 10/WM/03/21 'Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites'.

Any unexpected ground conditions or contamination identified during site development should be inspected and appropriately investigated by a geo-environmental engineer. This may include suspension of site works until the details and severity of any contamination has been established and the potential risks to human health assessed.

3.2 Importation of Fill for Engineering Purposes

In order to raise the site to desired levels an estimated 9500m³ of material is to be imported.

This majority of fill material is intended to comprise 'recovered' soils sourced from other Greenhill construction sites, but quarry stone will also be used in some locations.

Fill importation will need to take into account the location of the site adjacent to the River Usk and within a SSSI. Appropriate permits will therefore need to be in place.

The material to be used is classified under permit 170504 – Soil and Stones in accordance with Environment Agency Regulatory Guidance Series No. EPR 13 'Defining Waste Recover: Permanent Deposit of Waste on Land'.

In order to assess the suitability of recovered soils from the intended source sites the materials will need to undergo appropriate screening at source.

It is essential that any material brought on to site will not have an impact on the underlying ground and River Usk, and that it will not present an unacceptable risk to the human health of future site end users.

All fill should as a minimum be screened for the substances listed in **Table 3.1**.

3.2 Importation of Fill for Engineering Purposes (Continued)

The Human Health Guidelines are based on CLEA Guidelines published by the Environment Agency, or in their absence Generic Assessment Criteria (GAC) for a residential setting, published by the Chartered Institute of Environmental Health (CIEH).

Table 3.1 Soil Determinants and Guideline Values Imported Engineered Fill Material				
Determinant	Comparable Guideline Value (mg/kg)			Source
Arsenic	32			CLEA
Beryllium	51			CIEH
Boron	291			CIEH
Cadmium	10			CLEA
Chromium III	3000			CIEH
Chromium VI	4.3			CIEH
Copper	1330			CIEH
Lead	450			CLEA
Mercury	170			CLEA
Manganese	-			-
Molybdenum	-			-
Nickel	130			CLEA
Selenium	350			CLEA
Zinc	3750			CIEH
Cyanide	8			CLEA
Antimony	-			-
Phenol	420			CLEA
pH (acidity)	-			-
Asbestos	Non detectable			-
Speciated PAH				
	≤ 1% SOM	≤ 2.5% SOM	≤ 6% SOM	
Napthalene	1.5	3.7	8.7	CIEH
Acenaphthylene	170	400	850	CIEH
Acenaphthene	210	480	1000	CIEH
Fluorene	160	380	780	CIEH
Phenanthrene	92	200	380	CIEH
Anthracene	2300	4900	9200	CIEH
Fluoranthene	260	460	670	CIEH
Pyrene	560	1000	1600	CIEH
Benzo(a)anthracene	3.1	4.7	5.9	CIEH
Chrysene	6.0	8	9.3	CIEH
Benzo(b)fluoranthene	5.6	6.5	7.0	CIEH
Benzo(k)fluoranthene	8.5	9.6	10	CIEH
Benzo(a)pyrene	0.83	0.94	1.0	CIEH
Dibenzo(ah)anthracene	0.76	0.86	0.9	CIEH
Benzo(ghi)perylene	44	46	47	CIEH
Indeno(123cd)pyrene	3.2	3.9	4.2	CIEH

3.2 Importation of Fill for Engineering Purposes (Continued)

Table 3.1 (Continued) Soil Determinants and Guideline Values Imported Engineered Fill Material				
Determinant	Comparable Guideline Value (mg/kg)			Source
Petroleum Hydrocarbons				
	≤ 1% SOM	≤ 2.5% SOM	≤ 6% SOM	
Aliphatic EC >5-6	30	55	110	CIEH
Aliphatic EC >6-8	73	160	370	CIEH
Aliphatic EC >8-10	19	46	110	CIEH
Aliphatic EC >10-12	93	230	540	CIEH
Aliphatic EC >12-16	740	1700	3000	CIEH
Aliphatic EC >16-35	45000	64000	76000	CIEH
Aliphatic EC >35-44	45000	64000	76000	CIEH
Aromatic EC >5-7 (benzene)	-	-	0.33	CLEA
Aromatic EC >7-8 (toluene)	-	-	610	CLEA
Aromatic EC >8-10	27	65	151	CIEH
Aromatic EC >10-12	69	160	346	CIEH
Aromatic EC >12-16	140	310	593	CIEH
Aromatic EC >16-21	250	480	770	CIEH
Aromatic EC >21-35	890	1100	1230	CIEH
Aromatic EC >35-44	890	1100	1230	CIEH

Table Notes

- CLEA - Soil Guideline Values for residential development
- CIEH - Generic Assessment Criteria for a residential setting
- SOM – Soil Organic Matter

The tables list a general test suite of general determinants for soils although additional determinants may be recommended for situations where the donor site is known to have a former industrial land use.

It should be noted that soils with concentrations of certain substances conforming to commercial/industrial but not residential thresholds may be at greater risk of producing unacceptable leachate concentrations and creating a risk to groundwater and the River Usk.

3.2 Importation of Fill for Engineering Purposes (Continued)

In respect to groundwater risk it is proposed that all materials will undergo 2:1 soil leachate analysis **in accordance with BS:EN:12457** for the substances listed in **Table 3.2**. Results should be compared to the Environment Agency Guidelines.

Table 3.2 Leachate Assessment Criteria		
Determinant	Comparable Threshold (mg/l)	Source
Arsenic	0.025	WFD
Cadmium	0.0002	WFD
Chromium *	0.00026	WFD
Copper	0.005	WFD
Lead	0.0072	WFD
Mercury	0.0005	WFD
Nickel	0.02	WFD
Selenium	0.01	WHO
Zinc	0.04	WFD
Cyanide	0.001	WFD
Phenol	0.0077	WFD
Chloride	N/A	-
Fluoride	0.5	DSD
Speciated PAH		
Napthalene	0.0012	WFD
Acenaphthylene	-	-
Acenaphthene	-	-
Fluorene	-	-
Phenanthrene	-	-
Anthracene	0.0001	WFD
Fluoranthene	0.0001	WFD
Pyrene	-	-
Benzo(a)anthracene	-	-
Chrysene	-	-
Benzo(b)fluoranthene	0.00003	WFD
Benzo(k)fluoranthene	0.00003	WFD
Benzo(a)pyrene	0.00005	WFD
Dibenzo(ah)anthracene	-	-
Benzo(ghi)perylene	0.000002	WFD
Indeno(123cd)pyrene	0.00002	WFD

3.2 Importation of Fill for Engineering Purposes (Continued)

Table 3.2 (Continued) Leachate Assessment Criteria		
Determinant	Comparable Threshold (mg/l)	Source
Petroleum Hydrocarbons		
Aliphatic EC >5-6	-	-
Aliphatic EC >6-8	-	-
Aliphatic EC >8-10	-	-
Aliphatic EC >10-12	-	-
Aliphatic EC >12-16	-	-
Aliphatic EC >16-35	-	-
Aliphatic EC >35-44	-	-
Aromatic EC >5-7 (benzene)	0.008	WFD
Aromatic EC >7-8 (toluene)	0.04	WFD
Aromatic EC >8-10 (xylene)	0.03	WFD
Aromatic EC >10-12	-	-
Aromatic EC >12-16	-	-
Aromatic EC >16-21	-	-
Aromatic EC >21-35	-	-
Aromatic EC >35-44	-	-

Table Notes

- WFD – Water Framework Directive threshold for coastal and transitional waters/other waters (annual average)
- World Health Organisation threshold for drinking water (in absence of WFD threshold)
- DSD – Dangerous Substances Directive saltwater annual average (in absence of WFD threshold)
- *Threshold for Chromium VI
- - No guideline available

The number of representative samples of the fill that will require analysis will depend on the volume and number of sources.

For a total volume of 9500m³ to test according to 'Requirements for the Chemical Testing of Imported Materials for Various End Uses and Validation of Cover Systems' would have huge cost implications.

We therefore propose that for each 250m³ (or part of) that 1 representative sample be taken for screening (although the final number will also be dependent on the number of sources).

3.3 Importation of Soils for Gardens and Landscaped Areas

All garden and landscaped areas will be finished with both imported subsoil and topsoil upon development.

For all imported soils appropriate certification should be provided by the supplier as well as details of the soil source.

All imported material should be chemically screened to ensure its suitability for use in accordance with the Welsh Land Contamination Working Group 'Requirements for the Chemical Testing of Imported Materials for Various End Uses and Validation of Cover Systems'.

Ideally imported soils should be stockpiled upon site for sampling. Any stockpiled soils should not be dispersed on site until test results have been received and soil suitability confirmed.

Typically, per source, 4 representative samples should be screened for a volume between 20m³ and 250m³. For volumes exceeding 250m³, 4 samples per 250m³ should be analysed.

Should the imported soils already have been put down in garden and landscaped areas before sampling the number of samples required should be calculated according to the volume imported.

Test results should be compared with residential Soil Guideline Values (SGVs) sourced from The Environment Agency Contaminated Land Exposure Assessment (CLEA). Where SGV values are not available reference should be made to Generic Assessment Criteria (GAC) for a residential setting provided by Land Quality Management Limited and the Chartered Institute of Environmental Health (CIEH).

The required testing is detailed in **Table 3.3** below.

Table 3.3 Soil Determinants and Guideline Values Imported Soils		
Determinant	Comparable Guideline Value (mg/kg)	Source
Arsenic	32	CLEA
Boron	291	CIEH
Cadmium	10	CLEA
Chromium III	3000	CIEH
Chromium VI	4.3	CIEH
Copper	2330	CIEH
Lead	450	CLEA
Mercury	170	CLEA
Nickel	130	CLEA
Selenium	350	CLEA
Zinc	3750	CIEH
Cyanide	8	CLEA
Phenol	420	CLEA
pH (acidity)	-	-
Asbestos	Non detectable	-

3.3 Importation of Soils for Gardens and Landscaped Areas (Continued)

Table 3.3 (Continued) Soil Determinants and Guideline Values Imported Soils				
Determinant	Comparable Guideline Value (mg/kg)			Source
	≤ 1% SOM	≤ 2.5% SOM	≤ 6% SOM	
Napthalene	1.5	3.7	8.7	CIEH
Acenaphthylene	170	400	850	CIEH
Acenaphthene	210	480	1000	CIEH
Fluorene	160	380	780	CIEH
Phenanthrene	92	200	380	CIEH
Anthracene	2300	4900	9200	CIEH
Fluoranthene	260	460	670	CIEH
Pyrene	560	1000	1600	CIEH
Benzo(a)anthracene	3.1	4.7	5.9	CIEH
Chrysene	6.0	8	9.3	CIEH
Benzo(b)fluoranthene	5.6	6.5	7.0	CIEH
Benzo(k)fluoranthene	8.5	9.6	10	CIEH
Benzo(a)pyrene	0.83	0.94	1.0	CIEH
Dibenzo(ah)anthracene	0.76	0.86	0.9	CIEH
Benzo(ghi)perylene	44	46	47	CIEH
Indeno(123cd)pyrene	3.2	3.9	4.2	CIEH

Table Notes

- CLEA - Soil Guideline Values for a residential development
- CIEH - Generic Assessment Criteria for a residential setting, developed as Land Quality Management by the Chartered Institute of Environmental Health
- SOM – Soil Organic Matter

3.4 Gas and Vapour Protection

A ground gas/radon/vapour protective membrane should be installed into all new buildings on site.

Specialist advice should be sought for the most appropriate membrane and details of the proposed protection measures should be supplied to National Resources Wales for approval prior to development.

3.5 Potable Water Supply

Details of the proposed drinking water supply pipes should be supplied to Newport City Council for approval prior to development.

The UKWIR Report Ref No 10/WM/03/21 'Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites'. should be consulted.

SECTION 2 Validation Report

All remedial works should be documented and details compiled in the form of a Validation Report. This should be submitted to National Resources Wales for review.

The Validation Report should include, but not limited to, the following:

1. Details of source of imported material including imported stone/aggregate
2. A record of the number of soil sources and their respective volumes
3. Chemical certificates for tested fill imported for engineering purposes
4. Chemical certificate for imported garden soils where available from the provider
5. Chemical tests results for garden soils once tested on site

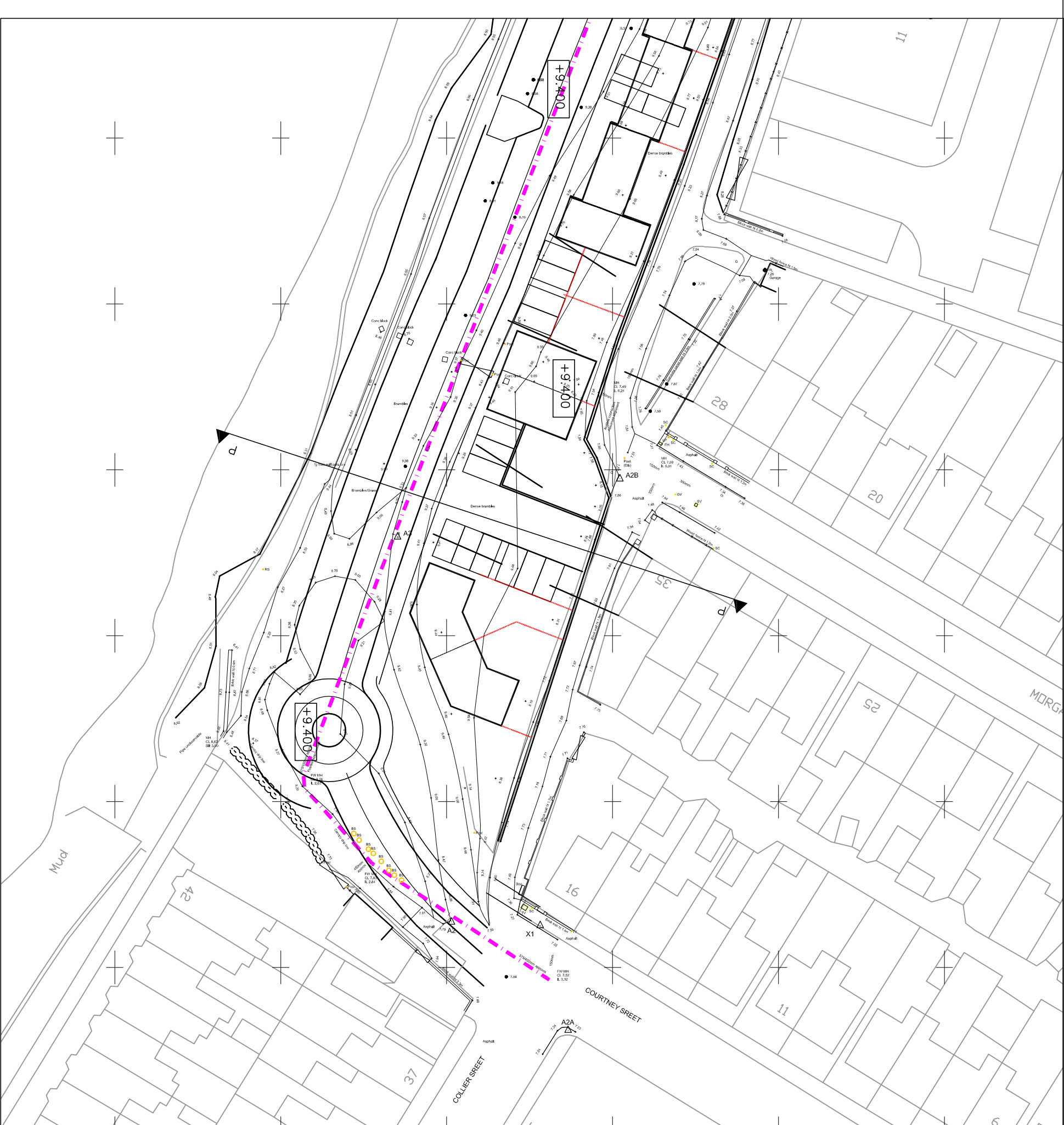
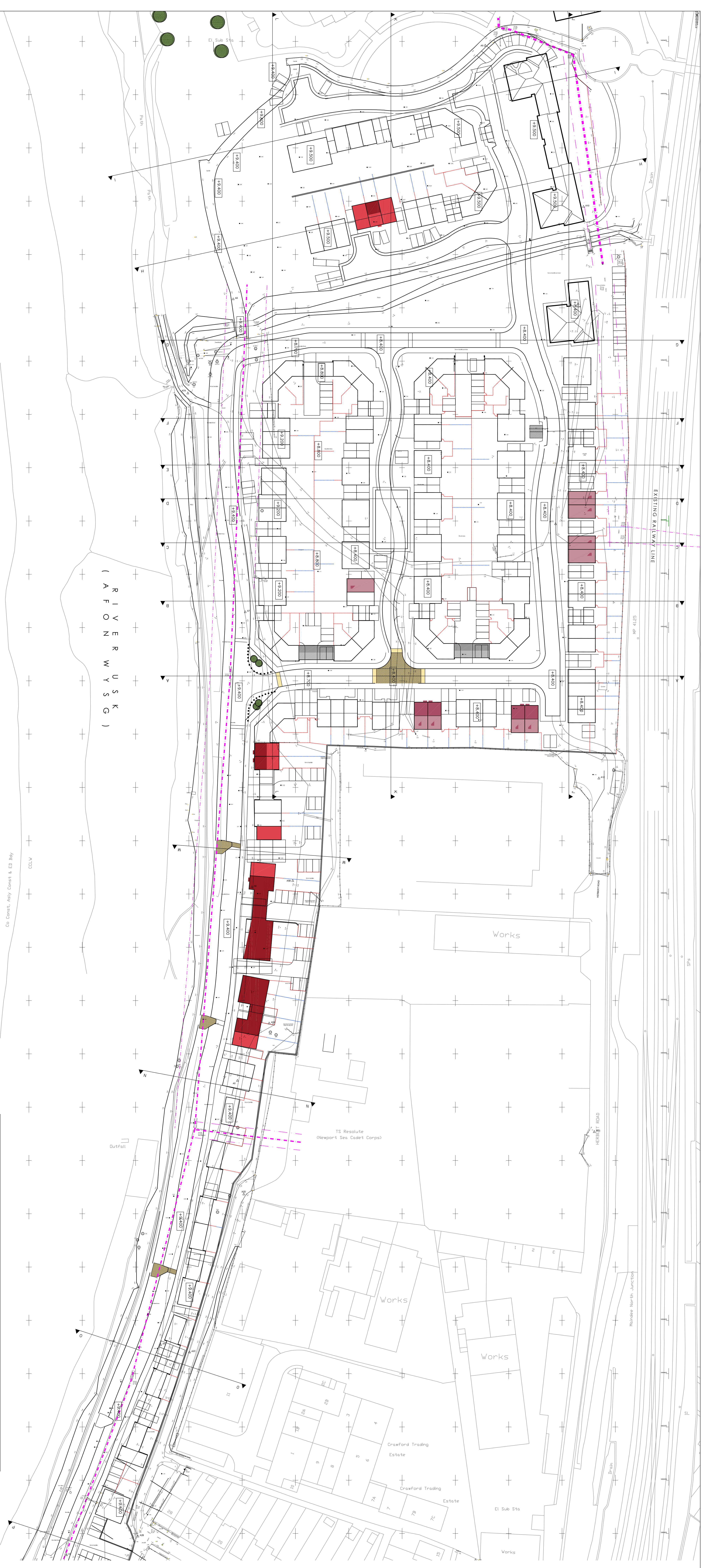
REPORT 1

USE OF WASTE IN CONSTRUCTION AT HERBERT ROAD, NEWPORT

Waste Recovery Plan

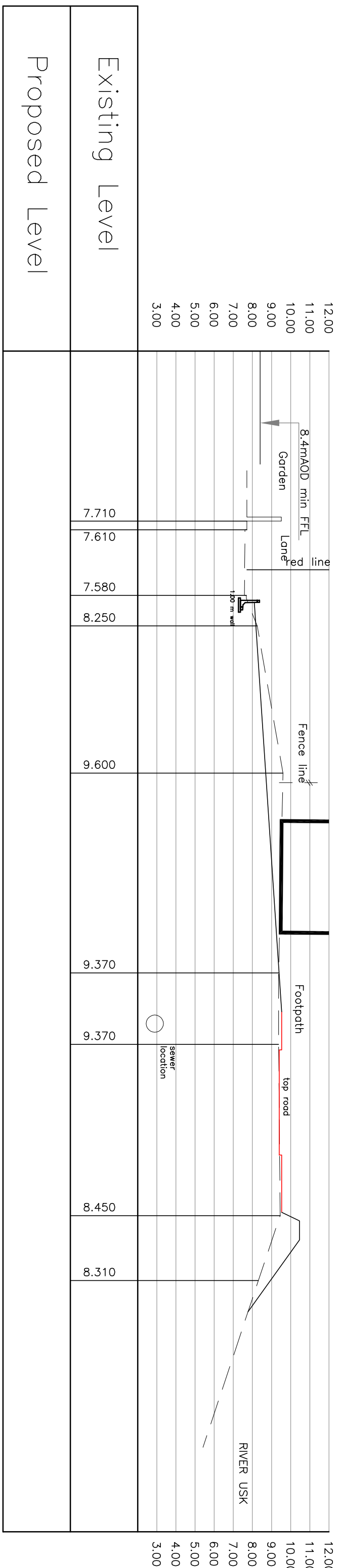
Appendix 3 Development Plan and Sections

Report Number 1472r1v1d0515

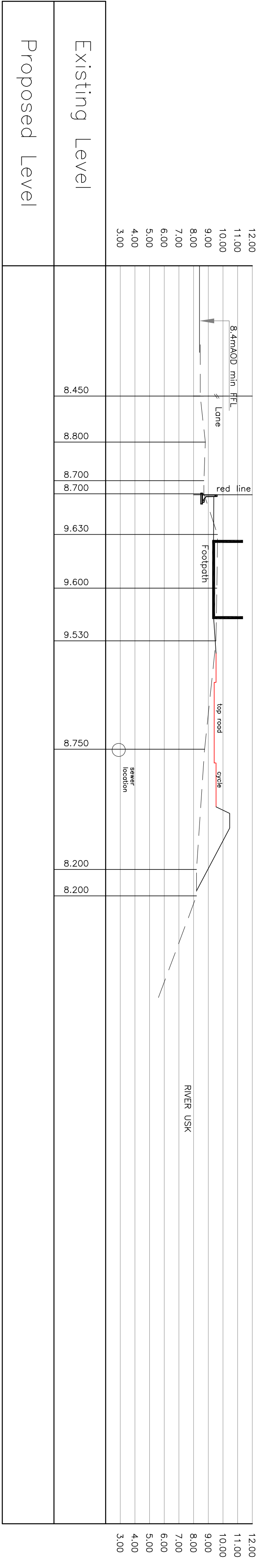
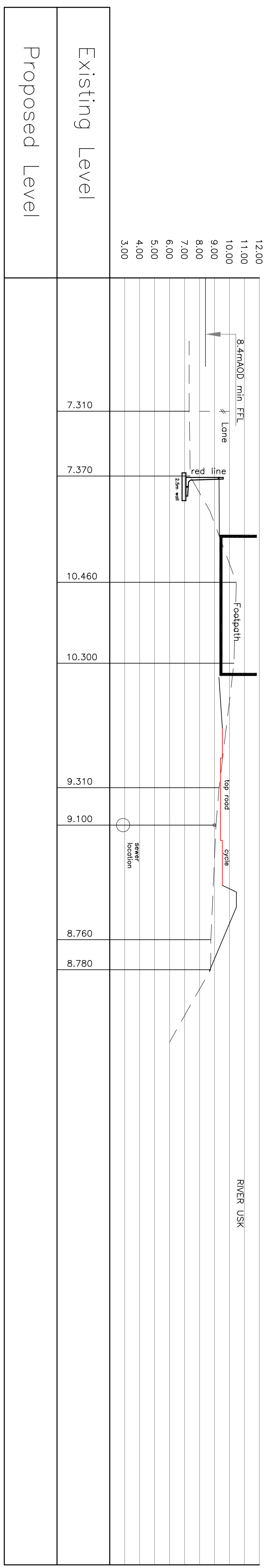


Client
Contractor
Contracted Residential
Development at
Herbert Road
NEWPORT

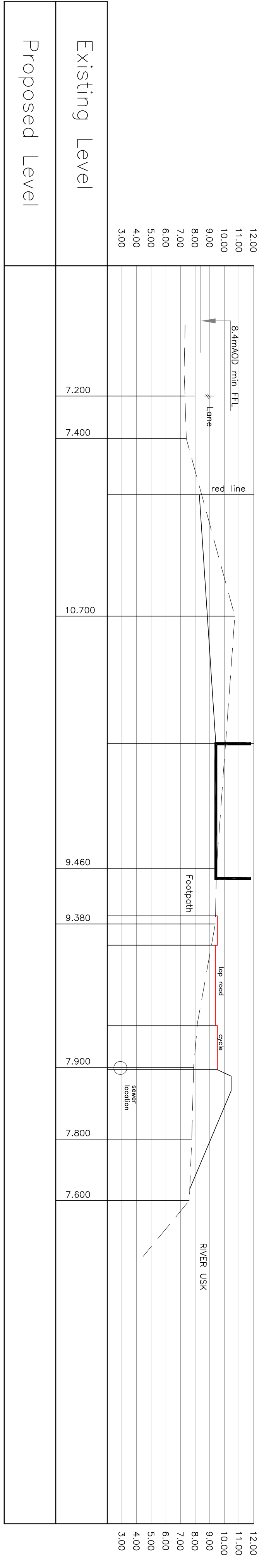
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Date
Mar 13



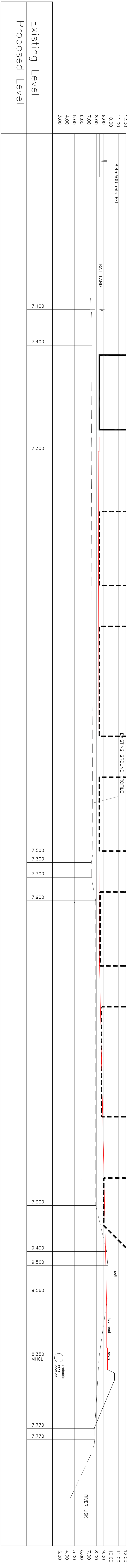
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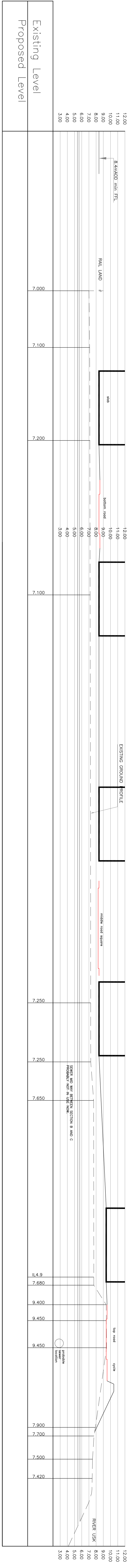
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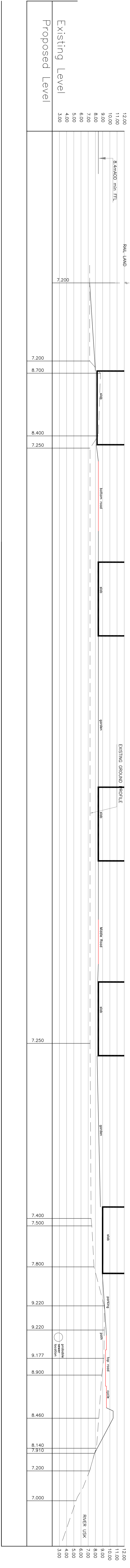
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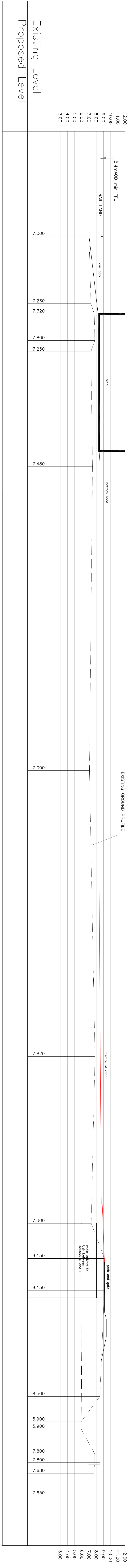
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CROSS SECTION E – E
Scale 1:200 H & V



CROSS SECTION G – G
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REPORT 1

USE OF WASTE IN CONSTRUCTION AT HERBERT ROAD, NEWPORT

Waste Recovery Plan

Appendix 4 Confirmation of Operator Competence Training Registration

Report Number 1472r1v1d0515

Ben Rees

From: Victoria <victoria@green-hill.co.uk>
Sent: 20 December 2013 11:01
To: Gary Curtin; William Hamilton; Jamie Graham
Subject: FW: Booking confirmation - EPOC January 2014

Sent from my Windows Phone

From: [Debbie McHarrie](#)
Sent: 20/12/2013 10:37
To: [Victoria](#)
Subject: Booking confirmation - EPOC January 2014

Dear Gary

I am pleased to confirm we have booked your place on the following course:-

Course Name:- EPOC
Date 14 - 15 January 2014
Location:- Northampton

Joining instructions will be emailed to you approximately two weeks before the course.

In the mean time if you have any questions please do not hesitate to contact the events & training team on 01604 823338

Kind regards

Debbie McHarrie
Administrator

From:
IWM Business Services Ltd
Registered Office:
9 Saxon Court,
St Peter's Gardens,
Northampton
NN1 1SX
United Kingdom

Tel No : +44 (0) 1604 620426
Fax No : +44 (0) 1604 604467
Web Address : <http://www.ciwm.co.uk>

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Appendix 5 Methodology for Placing Materials at Herbert Road

Report Number 1472r1v1d0515



Herbert Road, Newport

Method Statement for Fill Operation

3rd September 2013

Prepared by WH

1) INTRODUCTION

The proposed development at Herbert Road, Newport consist of the build of a new residential development. To carry out the proposed development the current levels of the site need to be raised. This is to be done via a “fill” operation. This method statement is a description of the works involved in carrying out this “fill” operation.

2) Site plan

In Appendix A of this report is a site plan which indicates the area of land to be filled, along with traffic management routes and management plan.

3) Earth Works Strategy

The following earthworks operations will be undertaken on site:

- Importation and stockpiling of fill material
- Placement of fill material to areas indicted on site plan in Appendix A

4) Soil Validation Works

Prior to any fill material being imported on to site it will undergo testing for validation purposes. Chemical analysis shall be undertaken to assess the suitability of imported materials prior to acceptance on site.

5) Filling Operation

The purpose of this methodology is to define the procedures for carrying out the fill operation in Herbert Road, Newport.

Equipment

- Excavator
- Dump Truck
- Shovel
- Roller
- Grader
-
-

Manpower

- Supervising Engineer
- Foreman
- Operator
- Driver
- Skilled Workers
- Surveyor
- Safety Officer

PPE – Personnel Protective Equipment

- Safety Helmet (EN 39730 Type 1, Class B)
- Hi-Vis Vest (EN471:2003)
- Safety boots
- Dust masks (EN149 2001)
- Ear Defenders
- Safety Glasses
- Safety Gloves

Safety, Health & Environmental

All staff involved with the operation shall be inducted on the safety, health and environmental issues associated with the site and specific operations by Green Hill Site Management.

Only trained personnel with relevant CPCS training and certification shall be allowed to operate plant / machinery.

Appropriate Safety Signboards, barriers and lighting shall be provided as required by Green Hill Construction. All operations must be carried out in accordance with the safety requirements.

Methodology

- 1) Setting out – Prior to any commencement of physical works, a suitably qualified engineer shall be appointed to carry out demarcation works and establish bench marks on site. Upon obtaining all the necessary survey data, a joint survey to check existing ground levels shall be carried out with the consulting engineers.
- 2) Preparation of Site – Site fencing will be established as per fencing method statement. This will be followed by general clearing and grubbing of work areas. Following on from this Site haul road will be established along with wheel wash station as shown in Appendix A.
- 3) Import Soil - All import soil shall be stockpiled on site in a designated area ready for use in the fill operation.
- 4) Fill – In areas of fill, where after removal of top soil, the surface of the ground shall be graded and compacted.
 - All earthworks material placed in or below formation level shall be deposited and compacted as soon as practicable after excavation in layers as recommended by our consulting engineers.

- Earth fill shall be spread so as to produce uniform distribution and gradation of the earth fill throughout.
 - Clusters of rock, which would interfere with proper compaction, will not be permitted. The earth fill shall be placed in continuous, approximately horizontal layers over the site
 - Material which has been compacted to a dry density less than required or at a moisture content outside the agreed range shall be removed or reworked and re-compacted until the required properties are achieved.
 - Holes formed for sampling purposes shall be filled, consolidated and compacted in homogeneity with surrounding fill.
- 5) During the works all vehicles leaving site will report to the Wheel Wash zone indicated on the plan in Appendix A. When required, road brushing operations will be carried out on Herbert Road.

Upon completion of the works, all excess materials shall be removed from site and plant removed from site until such time that construction works can recommence.

Acknowledgement Sheet

Site: Herbert Road, Newport

Date: 3rd September 2013

We the undersigned would confirm that we have read and understood the Method of Works and Risk Assessments, relating to the above. If it is deemed necessary to change the method of working, then the CDM Co-ordinator and Contracts Manager must be notified and the changes agreed. The Method Statement can then be amended if it is deemed necessary.

[illegible]

