

Client:



Client Designer:



Local Designer:



Local Designer:



PROJECT: 119003 WEPA UK BRIDGEND

CLIENT: WEPA UK, Bridgend

SUBJECT: GC - REQUEST FOR PROPOSAL

DOCUMENT: GC_06.01.03_Remediation_Strategy_Report

REVISION: A

Content:

- Remediation Strategy Report_Rev_A;
- Attachment 1: NRW Letter 03/12/2019 – PAC process;
- Attachment 2: Reply to NRW letter – PAC process;
- Attachment 3: Shared Regulatory Services letter – Final Planning Application process.

WEPA UK Limited

BRIDGEND PAPER MILL, MAESTEG

Remediation Strategy Report

12495/RB/19/RS/RevA

CLIENT: WEPA UK Limited

PROJECT: Bridgend Paper Mill, Maesteg

TITLE: Remediation Strategy Report

JOB NO: 12495

DOCUMENT REF: 12495/RB/19/RS/RevA

Revision	Purpose Description	Originated	Reviewed	Authorised	Date
0	Final	RB	TD	HP	Sept '19
A	Revision	RB	TD	HP	Jan '20

Geotechnical Engineers:

Intégral Géotechnique (Wales) Limited
Integral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX

Tel: 029 2080 7991

CONTENTS

1.0 INTRODUCTION

- 1.1 General
- 1.2 Proposed Development

2.0 BACKGROUND

- 2.1 Site Location and Description
- 2.2 Available Site Investigation Data
- 2.3 Site History
- 2.4 Summary Ground Conditions
- 2.5 Identified Contamination
- 2.6 Conceptual Site Model
- 2.7 Detailed Site Specific Risk Assessment

3.0 REMEDIATION STRATEGY

4.0 REMEDIATION IMPLEMENTATION

- 4.1 Objectives
- 4.2 Methodology
- 4.3 Operations

5.0 REMEDIATION VERIFICATION

- 5.1 Objectives
- 5.2 Remediation Verification Methodology and Data Gathering Requirements

6.0 FINAL REMEDIATION VALIDATION

FIGURES

- Figure 1 Site Location
- Figure 2 Site Plan

1.0 INTRODUCTION

1.1 GENERAL

Intégral Géotechnique (Wales) Limited (IG) have been appointed as Geotechnical and Geoenvironmental Consultants by WEPA UK to prepare a remediation strategy for the redevelopment of the site to a standard suitable for proposed commercial end use.

The proposed development comprises a number of extensions to the existing factory.

A Site Investigation Report Ref.12495/GNS/19/SI dated September 2019 was produced by Intégral Géotechnique. This report has been used as part of this remediation strategy, and should be read in conjunction.

The purpose of this report is to provide a remediation strategy for the delivery of the site to a standard suitable for the proposed commercial/industrial end use and details how the remediation works will be supervised and validated.

This report (including all appendices to it and any subsequent addendums or correspondence) has been prepared for the sole benefit, use and information of WEPA UK Limited and no third party is entitled or permitted to rely on it. This report may not be used, reproduced or circulated (in whole or part) for any purpose without the written consent of Intégral Géotechnique (Wales) Limited. Intégral Géotechnique (Wales) Limited shall not be liable to any third party who does not have such express written permission to rely on the report for any losses they may suffer.

1.2 PROPOSED DEVELOPMENT

The site is located to the northwest of Bridgend, see Figure 1. The proposed development comprises a number of extensions to the existing site buildings and the layout is presented on Figure 2, which details the areas of the site in which new development is proposed relative to the existing site layout.

The proposed development will consist of the construction of the following:

- Pulp Storage and Bale Handling (canopy, partial exterior wall), located in the southeast part of the site (referred to as 'Soweto'),
- New shipping areas and loading bays located in the southwest part of the site, adjacent to the existing Warehouse A and Converting Hall 3,
- Paper Machine Building (multiple levels), located within the southeast part of the site adjacent to the Jupiter M/C House,

1.2 PROPOSED DEVELOPMENT (CONTINUED)

- High Bay Warehouse (incl. Shipping) and Converting building (incl. annex building and optional extension), located in the northern part of the site.

Further several technical bridges (pipe bridge, pallet conveyor bridges) and auxiliary building ports (exterior tank foundations, canopies) are part of the project.

The existing paved areas, parking lots and underground services have to be adapted to the defined project. Considering the different terrain levels, appropriate slope protection measures (pile walls, retaining walls etc) must be provided upfront for the new buildings in order to create the platforms for the building foundations.

2.0 BACKGROUND

2.1 SITE LOCATION AND DESCRIPTION

General

The site is located at Bridgend Paper Mills to the northwest of Bridgend at a National Grid Reference of 287780, 187160, see Figure 1.

The site is irregular in shape and occupies an area of approximately 20 hectares. The boundaries of the site are defined by the A4063 road to the south, generally undeveloped fields to the north, and existing access road to the east and the railway line to the northeast, see Figure 2.

The site generally falls to the southeast and east from a maximum elevation of approximately 100m AOD to a minimum elevation of approximately 77m AOD. The Lynfi River flows along the base of the Lynfi Valley beyond the railway line approximately 40m to the northeast.

The site comprises an existing paper mill, and includes a number of warehouse buildings, storage areas, processing plant, paper mill, offices, etc. A number of extensions are proposed to the existing buildings, and a description of each area of the site to be developed is provided below.

New High Bay Warehouse/Converting Building Area and Car parking

This development area is located within the north-western area of the WEPA UK site and comprises an existing car park, three derelict bungalows complete with access road and soft landscaped gardens and an extensive area laid to tall grass, Himalayan Balsam and other vegetation including brambles, small trees and shrubs.

Generally, this area of the site falls gradually to the south.

132kv electricity pylons are identifiable within this area of the site running broadly west to east. Suitable easements were adopted when working within the vicinity of these live overhead cables.

Given its various uses it is laid to a mixture of materials including asphalt, concrete and soft landscaping and grass. Reference should be made to Figure 2 to gain a detailed understanding of this area of the site

2.1 SITE LOCATION AND DESCRIPTION

Shipping Areas

The proposed shipping areas are located in the southwest of the site adjacent to existing buildings (Warehouse A and Converting Building 3). The western most shipping area is located within the vicinity of the existing guard house and lawned area to the frontage of the WEPA UK site but also incorporates part of the concrete access road and yard area located along the western and southern boundaries of the finished goods store (MB1) and the converting toilet hall (MB4).

New PM Building

This proposed building is located within service yard EA3 opposite the existing Jupiter House (MB10). The majority of this area is predominantly laid to concrete and relatively level. The northeast area of this part of the site is at a lower level than the rest of the area. At the time of the fieldworks the southern part of this site area was occupied by stockpiles of unprocessed paper.

New Bale Handling and Pulp Storage (Soweto)

The area of the site referred to as 'Soweto' is located within the southeast corner of the site and accessed via a graded soil ramp which extends up from the existing yard area to the west. The area is partly used for the storage of materials and skips and is densely vegetated, particularly in the north and west with immature trees and shrubs.

This area of the site is elevated by some 3m to 4m relative to the surrounding land to the west and north, with this change in level achieved by slopes falling down to the west and north. Due to the densely vegetated nature of the slopes, it was not possible to undertake a detailed observation of the condition of the existing slopes.

2.2 AVAILABLE SITE INVESTIGATION DATA

Previous site investigation reports have been completed by this practice and others within the area of the existing factory.

Not all of this information will be relevant to the proposed development areas detailed on Figure 2.

The most recent site investigation report produced by Intégral Géotechnique (Site Investigation Report Ref.12495/GNS/19/SI dated September 2019) has been used as the basis for this remediation strategy report. When compiling the site investigation report, reference was also made to the following reports:

2.2 AVAILABLE SITE INVESTIGATION DATA (CONTINUED)

- Geotechnical Report reference 7261/C dated November 1997 completed for Quorum Associates Limited and entitled "Proposed New Warehouse, Jamont UK Limited, Llangynwyd, near Bridgend".
- Site Investigation Factual Report reference 7741/C dated December 1999 completed for Fort James UK Limited and entitled "Proposed Expansion of Bridgend Paper Mills, Llangynwyd, Bridgend".
- Geotechnical Report reference 8670/PB/03 dated July 2003 completed for Quorum Associates Limited and entitled "Proposed New Warehouse and Paper Mill, Bridgend Paper Mills".

Additional reports have been completed by other parties, which were also referenced and include the following:

- Golder Associates (UK) Limited Consulting Engineers report reference 9253009 dated April 1992 completed for James and Nicholas entitled "Ground Investigation at British Tissues, Maesteg".
- Ground Investigation Geotechnical and Contaminated Land Consultants report reference p-w.0960-01.letter.doc dated February 2012 completed for Georgia-Pacific UK Limited entitled "Bridgend Paper Mill".

The above reports should be reviewed in conjunction with this report to gain a detailed appraisal of the site and the works completed to date.

The Site Investigation report produced by Intégral Géotechnique (Site Investigation Report Ref.12495/GNS/19/SI dated September 2019) provides the information on which this Remediation Strategy report is based.

2.3 SITE HISTORY

The history of the site was assessed with the aid of historical maps included within the Envirocheck Report presented within the site investigation report (Site Investigation Report Ref.12495/GNS/19/SI dated September 2019).

The earliest edition of the map dated 1877 indicated the site to be undeveloped fields with a number of field boundaries passing through the site. Trees and vegetation were indicated through the central area of the site, approximately along the banks of an existing surface water feature, on a west-east orientation. The Great Western Railway line formed the northeast boundary of the site and an existing road ran along the southern boundary of the site.

2.3 SITE HISTORY (CONTINUED)

The nearest developments at this time were two farms to the north of the site known as Brynllwarch-fach and Brynllwarch-fawr.

The site remained relatively unchanged until the editions of the maps dated 1918-1921. The central area of the site was still crossed by a surface water feature but was indicated to be less heavily vegetated. Two old levels were indicated within the western area of the site. There was also evidence of disturbed ground within the area and a small pond feature which could have been a third coal level. All the levels are orientated in a northerly direction into the site. An old tramway was indicated to the south of the site and old quarries and an air shaft was indicated to the southwest.

The map dated 1947-1953 indicated development to have commenced within the site. At this stage a small access road was constructed across the northern area of the site on an east-west orientation. Some small buildings were also constructed off the road and some general earthworks were evident in the vicinity of the road.

The 1964 edition of the map indicated the area of the site to the north of the surface water feature, known as Nant Gwyn, to have been developed by a large "Mill" building. The access roads had also been upgraded with access into site from the west. Three bungalows known as Glan Nant, Cae Glas and Tir-iarll were constructed to the north of the access road within the northwest area of the site. A car parking area had also been constructed to the south of the bungalows with the construction of a fill embankment.

A new road had also been constructed along the southeast boundary of the site by the 1960's to access the nearby power station on the other side of the railway line. The road was constructed on a large embankment which extended into the site. A large pond feature was now evident within the southeast area of the site to the south of Nant Gwyn, with two large settling tanks to the east of the pond. The southern area of the site remained undeveloped and covered with vegetation.

By the 1960's there was no longer any indication of the old coal levels.

During the 1980's the mill continued to expand to the south and east of the original building and became known as Bridgend Paper Mills. The large pond feature was infilled to accommodate the expansion and Nant Gwyn had been culverted along parts of its course. Overhead electricity lines were indicated to cross the northern area of the site on an east-west orientation.

2.3 SITE HISTORY (CONTINUED)

The Paper Mill continued to expand during the 1990's and 2000's and was indicated to be the approximate layout, as it is today, by circa 2003. It is understood that the southeast corner of the site was covered with pulverised fuel ash (PFA) spoil from the nearby power station, which is understood to have been shut down in the 1970's. In later years the Nant Gwyn was completely culverted.

One of the most recent developments within the site was a new security lodge and weighbridge within the north-western area, adjacent to the main access road. It is understood that drilling and grouting works were carried out in order to stabilise underlying shallow mine workings beneath this area including the adjacent stretch of the main access road. It is also understood that drilling and grouting stabilisation works were undertaken beneath the westernmost of the three bungalows to the north of the access road.

2.4 SUMMARY GROUND CONDITIONS

The main features of the geological environment are a cover of Made Ground over Glacial Till and/or Alluvium, underlain by the Brithdir Member Sandstone and Mudstone and the Hughes Member Sandstone, all of Carboniferous age.

The ground conditions encountered beneath the site are variable and have therefore been zoned and summarised for each of the proposed buildings/development areas. The ground conditions within each area can be summarised as follows:

New High Bay Warehouse (including Shipping Area) and New Converting Building

The shallow ground conditions, encountered by the trial pits, generally comprised topsoil, approximately 0.3m to 0.5m in thickness, overlying superficial deposits which typically comprised medium dense to dense light to medium brown slightly silty slightly sandy gravel and cobbles of sub-angular and tabular sandstone with depth with boulders, making excavation difficult. Trial pit TP03 encountered medium dense orange brown clayey silty slightly gravelly sand overlying firm to stiff grey, dark grey, orange brown and brown slightly sandy slightly gravelly clay with frequent cobbles above the gravels and cobbles as described above. Trial pit TP01 encountered a layer of disturbed ground beneath the topsoil to 0.7m depth comprising seemingly reworked natural materials. The trial pits TP01 and TP02 were terminated at 2.5m and 3.0m depth as the rate of excavation was very slow owing to the presence of considerable boulders at the base of the pit.

The deeper ground conditions within the cable percussive boreholes were found to comprise layers of cohesive in-situ material, as found within the trial pits, with the layers typically becoming stiffer with depth.

2.4 SUMMARY GROUND CONDITIONS (CONTINUED)

Extremely weak to very weak grey mottled orange brown thinly laminated highly weathered silty mudstone (recovered as fine to coarse silty gravel and small cobbles of platy and tabular mudstone) was encountered at 10.3m depth within borehole BH01 at 8.0m depth within boreholes BH02 and BH03.

No groundwater was encountered within the trial pits or the cable percussive boreholes.

The rotary cored boreholes were dynamic sampled to the top of the bedrock at between 7.5m and 8.5m depths and then cored for a further 15m. Upon completion of the coring the borehole was then advanced using open hole drilling to 30m depth. The rock cores generally comprised extremely weak to weak and in layers very weak moderately to highly weathered mudstone with layers of firm and stiff grey very gravelly clay and layers of coal. Discontinuities are closely and very closely in layers medium spaced sub horizontal planar, stepped, rough, smooth and tight. In layers the core was non intact and recovered as angular mudstone gravel. Rotary cored borehole RC03 encountered weak to medium strong becoming medium strong moderately weathered siltstone interbedded with sandstone below 15m depth. The discontinuities were closely spaced sub horizontal planar and irregular, rough and stepped. In layers the core was also non intact and recovered as fine to coarse gravel.

Shipping Areas (Adjacent to Warehouse A and Converting Hall 3)

The ground conditions within this area, encountered by the cable percussive boreholes, comprised made ground which was typically firm and/or soft to firm brown, dark brown, and grey silty sandy gravelly clay with cobbles and with variable concrete, brick, ash, clinker, coal, sandstone and limestone down to depths of between 1.3m and 3.2m depth. Locally the made ground was deeper in the windowless sample boreholes and extended to some 4.2m depth. Buried topsoil was locally recorded beneath the made ground. Variable in-situ superficial materials were then encountered comprising firm to stiff and stiff grey and brown slightly sandy slightly gravelly clay with occasional cobbles and boulders and with layers of medium dense brown slightly clayey sandy gravel with frequent cobbles. Directly beneath the superficial deposits, extremely weak to very weak grey moderately silty mudstone was encountered within borehole BH04 at 10.1m depth and within borehole BH06 at 9.4m depth and extremely weak grey sandstone was encountered within borehole BH05 at 6.6m depth.

Perched groundwater was encountered within borehole BH04 at 0.8m depth and within borehole BH05 at 1.3m depth. Groundwater was encountered within the superficial deposits at 8.5m depth within borehole BH04 and at 6.0m depth within borehole BH06.

2.4 SUMMARY GROUND CONDITIONS (CONTINUED)

New PM Building (Adjacent to Jupiter M/C House)

This area is currently covered with concrete hardstanding. The boreholes drilled within the area encountered made ground beneath the hardstanding to depths of between approximately 0.7m and 1.5m depth comprising firm brown silty, slightly sandy, gravelly clay with frequent cobbles of sandstone in areas with ash, clinker and brick. The made ground was underlain by superficial deposits comprising layers of medium dense brown slightly clayey silty sandy gravel with cobbles and occasional boulders and firm to stiff in layers stiff grey brown gravelly clay with frequent cobbles and occasional boulders. Rotary borehole RC04 encountered a layer of peat between 1.4m and 2.3m depth and RC05 encountered peat between 1.5m and 1.75m depth. The windowless sample borehole was continually collapsing at shallow depths and therefore the borehole was terminated.

Bedrock was encountered at depths of between 7.0m and 12.0m depth and was subsequently cored for a further 15m. The rock cores generally comprised extremely weak to weak and in layers very weak moderately to highly weathered mudstone/siltstone with layers coal. Discontinuities are closely and very closely in layers medium spaced sub horizontal planar, stepped, rough, smooth and tight. In layers the core was non intact and recovered as angular mudstone gravel. Rotary borehole RC05 encountered layers of weak to medium strong slightly weathered siltstone and moderately weathered well cemented sandstone. Discontinuities are closely to medium spaced sub horizontal planar and smooth, rough and irregular and open.

Perched groundwater was encountered within the boreholes at 1.1m and 2.9m depth and at 5.9m depth within the in-situ gravels. The rotary cored borehole RC05 encountered groundwater at 18.0m and 19.5m depth. The groundwater at 19.5m rapidly rose under artesian water pressure and broke the site surface.

New Bale Handling and Pulp Storage ("Soweto")

The shallow ground conditions within this area of the site generally comprised made ground underlain by in-situ superficial deposits. The full thickness of the made ground was not proven within some of the trial pits or windowless sample boreholes as it extended beyond their maximum depth. The made ground was thinnest to the north of the proposed building with a recorded minimum thickness of 2.0m. The made ground was present in two different forms within the development area. Generally, to the north of the proposed building the made ground comprised variable loose to medium dense silty sandy gravel or soft to firm and firm silty sandy gravelly clay with some cobbles and brick, concrete, slag, ash, timber metal and coal. Significantly thicker made ground was encountered within the area of the proposed building where the made ground was generally made up from PFA and typically comprised loose locally medium dense, silty, slightly gravelly fine sand.

2.4 SUMMARY GROUND CONDITIONS (CONTINUED)

The thickness of the PFA was not proven within the trial pits or windowless sample boreholes. Where the made ground was proven it was underlain by variable superficial deposits comprising layers of firm to stiff grey and brown silty sandy gravelly clay and/or medium dense grey and brown clayey gravelly sand.

The deeper cable percussive boreholes indicated the PFA made ground extended down to 4.6m to 5.9m depth and was underlain by in-situ superficial deposits as described above. Borehole BH09 encountered a layer of peat/buried topsoil beneath the made ground between 4.6m and 4.7m depth. Extremely weak to very weak grey moderately silty mudstone was encountered beneath the superficial deposits at 9.0m depth within BH09. Borehole BH10 encountered loose to medium dense dark grey shale/coal recovered as angular fine to coarse gravels at 10.8m depth which graded into a very stiff gravelly clay at 12.5m depth and then into extremely weak to very weak mudstone at 14.0m depth.

Groundwater was not encountered at shallow depths within the trial pits apart from a minor seepage at the base of the made ground within trial pit TP04. Groundwater was encountered at 5.0m depth at the base of windowless sample borehole WS07. Groundwater was encountered at 4.0m depth with the made ground in borehole BH09 and within the superficial deposits at 9.4m depth within borehole BH10.

Entrance Lawn and Guard House Area

The windowless sample boreholes drilled in this part of the site encountered topsoil overlying made ground to depths of between 1.8m and 4.2m. The made ground was variable in nature but typically comprised stiff, firm to stiff, firm and/or soft to firm brown, grey, yellow brown and/or orange brown silty sandy gravelly clay in areas with varying fragments of ash, clinker, slag, brick, concrete and coal. A layer of compact grey angular limestone gravel was encountered within windowless sample borehole WS01 and a layer of compact grey and brown silty sandy gravel with occasional cobbles and fragments of ash, clinker, slag, brick, concrete and coal was encountered within windowless sample WS02. Windowless sample boreholes WS01 and WS04 encountered a layer of buried topsoil at the base of the made ground.

The superficial deposits comprised a mixture of stiff and firm to stiff, layered soft or soft to firm yellow brown, brown and grey silty sandy gravelly clay occasional cobbles. There were also layers of medium dense grey and brown, silty, sandy, gravel in some of the windowless sample boreholes. Fibrous peat inclusion and decayed roots were also noted locally within some of the soft clays.

Groundwater was not encountered within the windowless sample boreholes.

2.5 IDENTIFIED CONTAMINATION

During the recent site investigation works undertaken by Intégral Géotechnique representative samples of made ground were taken from across the site and tested for a range of chemical elements/compounds.

The suite of geo-environmental laboratory testing undertaken on the 15 samples of made ground was based on the guidelines provided in the Environment Agency CLR publications as part of the CLEA Model, and other contaminants typical on brownfield sites. The testing suite typically comprised:

- Arsenic, boron, beryllium, cadmium, total chromium, chromium VI, copper, lead, mercury, nickel, selenium, vanadium, zinc, Total cyanide, pH value, total polyaromatic hydrocarbons (PAH), phenols, asbestos screen and organic content.

A number of samples were also tested for petroleum hydrocarbons.

All of the tested elements/compounds were below trigger levels for a commercial end use. Asbestos was identified within three samples of made ground from the southeast area of the site, at between <0.001% and 0.02% asbestos by weight.

Whilst a significant thickness of made ground has been encountered within the southeast part of the site, elsewhere, made ground was absent or much thinner. No visual or olfactory evidence of contamination was observed during the site works, and no obvious point sources of contamination (tanks, hydrocarbons, electrical substations, etc.) were encountered within the areas of the proposed development works.

Ground gas monitoring carried out to date has not identified any elevated concentrations of methane but has identified elevated carbon dioxide concentrations within one location.

2.6 CONCEPTUAL SITE MODEL

Based on the findings and observations, a conceptual site model has been defined for the site. This includes consideration to the residual structures within the ground and the identified made ground.

The potential active pathways by which future end users and the wider environment could be affected by the contaminant sources identified are listed below:

1. Outdoor/indoor inhalation of fugitive dust;
2. Indoor inhalation of ground gas;

2.6 CONCEPTUAL SITE MODEL (CONTINUED)

3. Migration of contaminants in ground to drinking water supply pipes

The remediation works to be carried out at the site have been designed to address the identified potentially active contaminant pathways listed above.

2.7 DETAILED SITE SPECIFIC RISK ASSESSMENT

The contamination test results and investigation observations have not identified any contaminants above commercial screening values.

However, asbestos fibres were identified in the made ground local to WS7 and WS9, within the south-eastern area of the site. Given the presence of asbestos within the south-eastern site area and within the made ground it is considered that a potential risk to human health may exist via the following relevant pollutant linkages:

- Inhalation of soil bourn dust.

The general approach for assessing the potential risk to a receptor is by a combination of qualitative and quantitative risk assessment. A quantitative risk assessment would involve selecting and deriving generic assessment criterion to compare low risk substances, based on the fate, transport and toxicological properties and the exposure scenario being considered.

There are no published screening criteria values for asbestos, and neither are there any in preparation. As discussed in CIRIA Report C733 *Asbestos in Soil and Made Ground: a Guide to Understanding and Managing Risks*, agreement has yet to be reached in the UK on an appropriate toxicological criterion on which a screening value for asbestos could be based. It also states that 'based on current knowledge, it is believed that that a scientifically defensible UK GAC (generic acceptance criteria) for asbestos in soil cannot be developed or imported.'

It is therefore considered that a more qualitative assessment of the potential risk is appropriate, as asbestos is determined to be a non-threshold substance.

CIRIA Report C733 states that asbestos (asbestos containing materials and asbestos containing soils) only present a risk to health if airborne fibres are released into the atmosphere. The report goes on to state that the number of fibres released into the air from asbestos containing soils is likely to be influenced by a number of site-specific factors, as listed below.

2.7 DETAILED SITE SPECIFIC RISK ASSESSMENT (CONTINUED)

- Characteristics of the asbestos (concentration, degree of heterogeneity, depth in relation to final ground level, volume/area, type, condition, extent of bonding, weathering, fraction of free fibres, shape of fibres);
- Characteristics of the soil (type, moisture content, surface vegetation, presence of hard standing)
- Weather (humidity, precipitation, temperature, ground freezing, wind speed and direction);
- Land use/soil disturbing activities (behaviour of receptors, distance between receptor and source, types of activity, duration/frequency of activity, dust mitigation measures).

The depth below ground level of the asbestos containing soils is imperative to the potential risk posed. CIRIA Report C733 states that in the absence of significant physical disturbance, exposure to airborne asbestos fibres from soil will be from friable materials or asbestos fibres present at, or very close to, the soil surface (the soil – air interface). Materials that have been buried, or are below the soil surface, will pose a lower, or less immediate, risk as these materials are unable to release airborne fibres unless brought to the soil surface by physical activity/disturbance.

Based on the proposed commercial/industrial end use of the site, and the nature of the proposed development within the area of the site where asbestos was identified, which comprises predominantly hardstanding, the potential risk to end users is considered to be low.

The southeast part of the site proposed for a pulp storage area, bale handling and access will comprise a building and a concrete slab which will prevent the existing made ground from being exposed to the air and forming dust, thereby breaking the potential exposure pathway between the soil and end users.

Within any soft landscaped areas, it is recommended that a capping layer, of a minimum thickness of 300mm, of clean imported subsoil and topsoil complete with a hi-vis geotextile separation membrane/alert membrane at the base, is placed on top of any exposed residual made ground. The thickness of this capping layer will need to be agreed with the regulators.

The potential risk to controlled waters is considered to be low. The development proposals indicate that the majority of the site will be covered with buildings and hardstanding with the inclusion of capping soils in any landscaped areas, the potential generation of leachate will be reduced from the current status quo.

2.7 DETAILED SITE SPECIFIC RISK ASSESSMENT (CONTINUED)

A controlled drainage system should be designed to by-pass the made ground.

The results of the gas monitoring programme to date indicated a maximum methane concentration of 0.1% and a maximum carbon dioxide concentration of 16.9%. A maximum gas flow rate of <0.3l/hr was measured during the gas monitoring programme.

In accordance with CIRIA Report C665 a Gas Screening Value (GSV) of 0.0492l/hour has been calculated for carbon dioxide. This GSV corresponds to gas characteristic situation 1 which does not require any special gas protective measures.

However, it should be noted that a carbon dioxide level of 16.9% has been recorded on site. When deliberating this level, and in accordance with CIRIA document C665, consideration should be given to upgrading ground gas precautionary measures to Characteristic Situation 2 where levels of carbon dioxide exceed 5.0%.

For a commercial/industrial development, Characteristic Situation 2 requires as a minimum the construction of a cast in-situ reinforced concrete floor slab and a 1200 gauge DPM.

Water supply pipes will need to be protected from any contamination present within the ground. In particular, the presence of organic contaminants (such as PAH and petroleum hydrocarbons) should be addressed when selecting pipe materials. Measures to protect the pipes will include clean backfill to trenches and possibly alternative material selection. The final design and selection of the pipe and associated backfill should be agreed with the appropriate Regulator prior to installation.

3.0 REMEDIATION STRATEGY

A remediation strategy is proposed such that the site is prepared to a standard suitable for the proposed commercial/industrial end use.

Although no elevated chemical concentrations have been identified within the made ground, asbestos has been identified in three samples of made ground in the south east part of the site.

The development proposals comprise extensions to the existing factory buildings, and include warehouses, shipping areas, bale handling area, etc., and as such comprise buildings and/or areas of hardstanding. Where buildings and areas of hardstanding are present, the potential exposure pathways are broken and the risk to end users mitigated. Should any areas of soft landscaping be proposed as part of the development works, it will be necessary to place a 300mm thick clean capping layer of suitable imported subsoil and topsoil, complete with a geotextile separation/alert membrane at the base.

Any residual obstructions encountered as part of the redevelopment/extension works, such as foundations, floor slabs, redundant services and walls, etc., should be broken out and removed if encountered.

A system should be established for identifying and dealing with any unforeseen contamination, including asbestos containing materials (ACM). During exposure of soils, the exposed surface should be inspected by asbestos awareness trained contractors and the surface should be handpicked to remove any residual asbestos containing materials, if they are identified.

This remediation process will ensure the delivery of a suitably remediated site for development and is of critical importance to the robustness of the remediation strategy.

The following remediation strategy is proposed:

1. Remnant floor slabs, foundations, pits, basements, etc., if encountered should be broken out and removed. These works should be monitored for evidence of any unforeseen contamination. The acceptable and suitable excavated materials/arising are to be processed and crushed to a suitable grade and stockpiled on site for testing and future re-use as granular fill.

3.0 REMEDIATION STRATEGY (CONTINUED)

2. In soft landscaped areas, if any are proposed, where made ground is to remain in-situ there will be the potential for the made ground to contain asbestos fibres. To sever the link between any asbestos impacted made ground, it is recommended that a clean capping/cover system be incorporated into any proposed soft landscaped areas, thereby breaking the link between site end-users and any residual contaminants. This capping system will take the form of a minimum 300mm of clean topsoil and subsoil placed on a hi-vis separation/alert membrane.

3. Gas protection measures to be incorporated within the buildings comprise the inclusion of a minimum cast in-situ reinforced concrete floor slab and a 1200 gauge DPM. The final gas protection requirements are to be advised upon completion of the ground gas monitoring works.

4. If proposed, any drinking water supply pipe specification is to be agreed between WEPA UK Limited and DCWW.

4.0 REMEDIATION IMPLEMENTATION

4.1 OBJECTIVES

The main objective of the proposed remediation works is to render the site suitable for commercial/industrial end use. The remediation activities required in order to achieve this objective are as follows:

- Removal of any obstructions, including hardstanding and any remnant walls, foundations, etc., from below proposed buildings;
- Inspection of exposed formations and hand picking of any encountered ACM;
- Break any potential pathway between proposed site end users and contaminated soils.

4.2 METHODOLOGY

The remediation works required in order to meet the objectives defined above will be undertaken as follows:

- The removal of any residual obstructions from below proposed buildings such as foundations, floor slabs, pits, walls, etc, if encountered.
- Materials excavated from the site will be subject to screening and processing to remove any unacceptable materials such as concrete, timber, etc. Granular materials will be subject to crushing to a suitable grade (6F5) prior to materials being approved for re-use at the site. All surplus deleterious and in-situ soft materials will be removed off-site. All acceptable excavated materials for re-use will be stockpiled on site. The processing, sorting, crushing and removal of unacceptable materials will result in a uniform/more consistent material suitable for re-engineering.
- Stockpiled suitable materials will be placed in layers and well compacted in accordance with Department of Transport (DTp) Specification for Highway Works.
- Exposed formation to be inspected by asbestos awareness trained contractors and the surface should be handpicked to remove any residual asbestos containing materials, if they are identified.
- Any soft landscaped areas underlain by made ground are to be capped with a minimum 300mm of clean sub-soil and topsoil placed over a high-vis separation/alert membrane.
- Adoption of DCWW agreed drinking water supply pipe.
- Installation of ground gas protection measures, comprising a cast in-situ reinforced floor slab and 1200 gauge DPM. Final gas protective measures subject to change following completion of the gas monitoring programme.

4.2 METHODOLOGY (CONTINUED)

During site preparation and construction works, the soils should be dampened down to minimise the potential for soils to dust and subsequent release of any asbestos fibres.

During exposure of soils, the exposed surface should be inspected by asbestos awareness trained contractors and the surface should be handpicked to remove any residual asbestos containing materials, if they are identified.

These works should be carried out under an appropriate risk assessment and managed in accordance with the Control of Asbestos Regulations 2012 (CAR 2012).

The handpicked asbestos containing materials should be disposed off-site at a suitable licensed facility as hazardous waste. These works should be carried out by appropriately licensed contractors.

The resultant made ground should be encapsulated beneath proposed hard standing areas or the main buildings. The presence of this made ground and the potential to contain concentrations of asbestos should be entered into the CDM Health and Safety File for the site and provided to designers and contractors prior to work commencing on site.

It is recommended that backfilling works to proposed drainage and service runs are undertaken using inert fill materials not sourced from the site.

With future site development works involving the excavation and removal of the made ground, there would be a risk to workers from contaminants (including asbestos) in the soils. Appropriate measures are therefore recommended for works involving the made ground materials which are known to be present beneath the site.

The following practical measures are required while excavating/re-using made ground:

All works to be carried out in accordance with an appropriate risk assessment and managed in accordance with the requirements of the Control of Asbestos Relations 2012.

- Excavations will need to be regularly damped down to prevent any dust that may contain asbestos becoming airborne;
- Any excavated materials should be quarantined and regularly dampened down to prevent any dust may contain asbestos becoming airborne;
- Appropriate PPE/RPE to be worn by all workers;
- Asbestos/dust/air monitoring may be required during early site establishment;

4.2 METHODOLOGY (CONTINUED)

Site preparation and operational constraints will be covered in the contractor's method statements. These should include the contractor's proposals for controls and monitoring of dust, noise, vibrations and odour. In addition, the procedure for the disposal of any unsuitable materials should be evaluated by the Contractor in accordance with appropriate relevant guidance and regulations.

Site procedures for managing the remedial works in a manner that will not cause pollution to controlled waters will be covered in the contractor's method statements which will be submitted in discharge of the Conditions of Planning.

All site operatives are to be suitably asbestos awareness trained. Routine visual checks should be made for the presence of any asbestos containing materials (ACM). Any handpicked ACM should be disposed off-site at a suitable licensed facility as hazardous waste.

All excavations should be regularly checked for safe atmospheres, including oxygen levels and guidance sought should oxygen level be identified in excavations/ confined spaces.

Normal good hygiene practices should be adequate to protect the health and safety of redevelopment workers, and should include:

- Minimum handling of materials;
- Washing of hands prior to all meal breaks, which should be taken in a designated clean area;
- The use of standard protective clothing such as boots and overalls and gloves, where considered relevant.

In dry weather, inhalation of dust and gases should be avoided preferably by the use of dust suppression techniques to minimise fugitive emissions and minimisation of exposed materials at any particular time.

During excavation, in order to prevent cross contamination of materials, the made ground arisings should be segregated from any underlying natural soils.

Additionally, a system should be established by which any 'unusual' materials that may be encountered are reported rapidly to the site management, so that the appropriate action may be taken, following specialist advice if necessary. An unusual material may be identified on site by colour, odour or physical nature.

4.2 METHODOLOGY (CONTINUED)

All of the above works should be carried out under an appropriate risk assessment and managed in accordance with the Control of Asbestos Regulations 2012.

Daily records and waste transfer notes should be kept in order to document the identification and subsequent removal of any asbestos containing materials (ACM).

These records and waste transfer notes should be made available for review as they will be required for potential remediation verification.

Reference should be made to the Health and Safety Executive document "Protection of Workers and the General Public during the development of contaminated land" for detailed guidance on these matters.

The site will be deemed remediated by the following active remedial measures:

- Breaking out and removal of redundant foundations, floor slabs, walls, etc. if encountered in the area of the proposed buildings.
- Incorporation of areas of hardstanding and/or a robust clean 300mm thick capping layer within soft landscaped areas where made ground is present, with a hi-vis separation/alert geotextile membrane at the base of the capping soils.
- Provision of ground gas protection measures, comprising a cast in-situ reinforced floor slab and 1200 gauge DPM. Final gas protective measures subject to change following completion of the gas monitoring programme.
- Provision of DCWW agreed drinking water supply pipe, if required within the development areas.

Review of the methodologies will be a continuing process and subject to findings of the proposed validation works, and if necessary further quantitative and qualitative risk assessments.

4.3 OPERATIONS

The works are to be undertaken by a specialist contractor experienced in brownfield reclamation/remediation.

Site preparation and operational constraints will be covered in the contractor's method statements. These should include the contractor's proposals for controls and monitoring of dust, noise, vibrations and odour.

4.3 OPERATIONS (CONTINUED)

Site procedures for managing the remedial works in a manner that will not cause pollution to controlled waters will be covered in the contractor's method statements which will be submitted in discharge of the Conditions of Planning.

The proposed remediation works will be controlled by the appropriate mobile treatment license/standard rules SR2008 No.27 to be held by the remediation contractor, if such works become necessary. The conditions imposed under the planning process will be considered adequate to control the works.

Additionally, a system should be established by which any 'unusual' materials that may be encountered are reported rapidly to the site management, so that the appropriate action may be taken, following specialist advice if necessary. An unusual material may be identified on site by colour, odour or physical nature.

5.0 REMEDIATION VERIFICATION

5.1 OBJECTIVES

A remediation verification report is required in order to record the data gathering necessary to demonstrate that the works have been carried out in accordance with the agreed strategy, confirm that the works satisfy the site remediation criteria and that the site is suitable for the proposed development.

5.2 REMEDIATION VERIFICATION METHODOLOGY AND DATA GATHERING REQUIREMENTS

The site reclamation/remediation will be verified by the following measures:

- Validation of the chemistry and thickness of the proposed 300mm thick capping layer to be placed within any landscaped areas, if any are proposed.
- Validation of the hi-vis separation/alert membrane at the base of the capping soils.
- Notification in the CDM file of residual risks associated with the remediated site.
- Certification by WEPA UK Limited of installation of ground gas protection measures in accordance with the recommendations made within the site investigation report and upon completion of the ground gas monitoring works
- Certification by WEPA UK Limited of installation of DCWW agreed drinking water supply pipe, if any is installed.

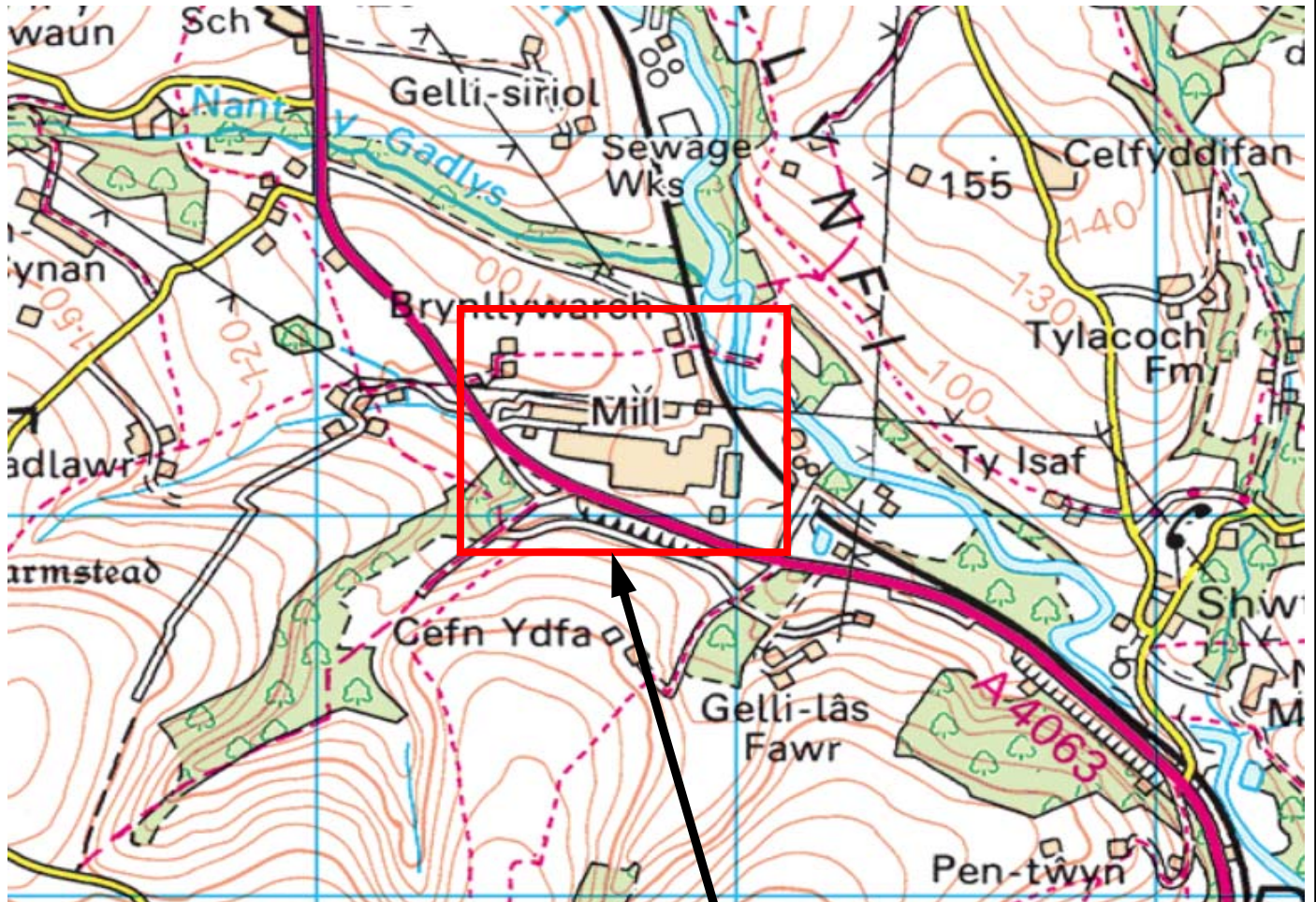
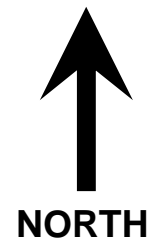
6.0 FINAL REMEDIATION VALIDATION

The development will not be complete, in accordance with the remediation strategy for the site, until confirmation that within the development areas of the site, there is no residual made ground exposed at the ground surface that could dust and present a potential risk to site end users. Mitigation measures will comprise construction of hardstanding areas and/or placement of the final 300mm (minimum thickness) of clean imported capping soils over a hi-vis separation/alert membrane to any soft finished areas.

In order to validate these works the finished site should be inspected and within any soft landscaped areas, a series of hand dug pits will be excavated to confirm an adequate thickness of inert soils are in place. A photographic record will be kept. The capping system is to comprise imported clean inert materials conforming to the Requirements for the Chemical Testing of Imported Materials for Various End Uses and Validation of Cover Systems prepared by Welsh Land Contamination Working Group and satisfy appropriate soil guideline values for commercial development. Samples of topsoil and subsoil will be taken for laboratory analysis, at a rate of 4 per 250m³.

Placement of the required final 300mm capping layer and separation/alert membrane will be the responsibility of the developer/land owner and is usually undertaken late in the development programme, as areas are completed.

FIGURES



The Site

FIGURE 1 - Site Location Plan

WEPA UK, Bridgend Paper Mill

Intégral
Géotechnique

Intégral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX
Tel: 029 2080 7991
Fax: 029 2086 2176



Figure 2: Proposed Development Areas

Project: WEPA UK, Bridgend Paper Mill

Client: WEPA UK

Job No.: 12495

Scale: 1:2,500 at A3

Intégral
Géotechnique

Integral House,
7 Beddau Way,
Castlegate Business Park,
Caerphilly,
CF83 2AX.
Tel: 029 2080 7991

ATTACHMENT 1

NRW Letter 03/12/2019 – PAC process

Tom Phipps
WEPA Bridgend Consultation
Meeting Place Communications
Tower House,
Fairfax Street,
BristolSwansea,
BS1 3BN

03/12/2019

Annwyl / Dear Mr Phipps,

**STATUTORY PRE-APPLICATION CONSULTATION - TOWN AND COUNTRY PLANNING
(DEVELOPMENT MANAGEMENT PROCEDURE) (WALES) ORDER 2012 AS AMENDED.**

BWRIAD / PROPOSAL: Expansion of the current operation, including an extension for a new paper machine and stock preparation area, new converting and warehousing facilities and various ancillary buildings, all within the existing site boundary.

LLEOLIAD / LOCATION: WEPA UK Ltd, Bridgend Paper Mills, LLangynwyd, Bridgend, CF34 9RS

Thank you for providing a requisite notice to us under Article 2D of the above Order. We received a copy of your proposed application on 05 November 2019

Based on the information provided, we have significant concerns with the proposed development. To overcome these concerns, we would recommend to the planning authority that they should only grant permission if the condition(s) listed below are attached to the permission.

Condition(s):
Condition

No development, shall commence until the following components of a scheme to deal with the risks associated with contamination at the site, has been submitted to and approved in writing by the Local Planning Authority.

1. A preliminary risk assessment which has identified:

- all previous uses
- potential contaminants associated with those uses
- a conceptual model of the site indicating sources, pathways and receptors
- potentially unacceptable risks arising from contamination at the site

2. A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.

3. The results of the site investigation and the detailed risk assessment referred to in (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.

4. A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

The remediation strategy and its relevant components shall be carried out in accordance with the approved details.

Justification:

To ensure the risks associated with contamination at the site have been fully considered prior to commencement of development as controlled waters are of high environmental sensitivity; and where necessary remediation measures and long-term monitoring are implemented to prevent unacceptable risks from contamination.

Condition

Prior to the operation of the development a verification report demonstrating completion of works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to and approved in writing by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met. It shall also include a long-term monitoring and maintenance plan for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification plan. The long-term monitoring and maintenance plan shall be carried out in accordance with the approved details.

Justification:

To ensure the methods identified in the verification plan have been implemented and completed and the risk associated with the contamination at the site has been remediated prior to occupation or operation, to prevent both future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors.

Condition

Prior to the operation of the development, a long term monitoring plan for water quality and land contamination shall be submitted and approved in writing by the Local Planning Authority. The long term monitoring plan should include:

- Details of the methods and triggers for action to be undertaken
- Timescales for the long term monitoring and curtailment mechanisms e.g. a scheme of monitoring for 3 years unless the monitoring reports indicate that subsequent monitoring is or is not required (for x years)
- Timescales for submission of monitoring reports to the LPA e.g. annually
- Details of any necessary contingency and remedial actions and timescales for actions
- Details confirming that the contingency and remedial actions have been carried out>

The monitoring plan shall be carried out in accordance with the approved details, within the agreed timescales.

Justification:

A water quality and land contamination long term monitoring plan should be submitted prior to occupation or operation, to ensure necessary monitoring measures are approved to manage any potential adverse impacts as a result of development on water quality and groundwater quality.

Condition

No infiltration of surface water drainage into the ground is permitted other than with the express written consent of the local planning authority, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to controlled waters. The development shall be carried out in accordance with the approval details.

Justification:

To prevent both new and existing development from contributing to or being put at unacceptable risk from or being adversely affected by unacceptable levels of water pollution.

Condition

No development shall commence until details of piling or any other foundation designs using penetrative methods sufficient to demonstrate that there is no unacceptable risk to groundwater have been submitted to and approved in writing by the Local Planning Authority. The piling/foundation designs shall be implemented in accordance with the approved details.

Justification:

Piling/foundation details should be submitted to ensure there is no unacceptable risk to groundwater during construction and methods/design are agreed prior to the commencement of development or phase of development.

Contaminated land:

We have reviewed the Site Investigation by Integral Geotechnique dated Sept 19 (draft), which included elements of a Preliminary Risk Assessment; and the Site Remediation Strategy.

With regards to the Site Investigation we note that for 4 new areas for redevelopment. There has been no description of any chemicals that might have been stored within these areas, and It is unclear from the historical maps, which areas of the papermill are of the highest risk with regards to previous contaminative uses.

For example, in the New High Bay Warehouses, there are 3 derelict bungalows. There is no detail on how were these building historically/ currently heated. Was heating oil ever present on this part of the site?

The New Bale Handling and Pulp Storage area is currently used for waste and other material storage. There is no explanation as to what these materials are and whether any of these could be contaminants of concern.

No groundwater samples have been taken for the site and there is limited sampling in some locations due to slopes. The maps are difficult to read as to where specific sample points are, and it is unclear what soil samples have been taken at multiple depths. There are no leaching samples as a substitute for groundwater samples.

We also note that some areas for redevelopment are to have the concrete flooring broken out, reintroducing a pathway. In the areas where pulverised fuel ash (PFA) is within the made ground, we have concerns about the impact of a the pH with regards to the wider made ground.

Site Remediation Strategy.

We cannot comment on this until we fully understand the characterisation of the site.

We also draw the applicant attention to the changes in the Water Resources Act with regards to the licensing of groundwater abstractions. Please see, <https://naturalresources.wales/permits-and-permissions/water-abstraction-and-impoundment/?lang=en>

Protected Species

We note that the bat report submitted in support of the above application (WEPA Paper Mill, Bridgend. Ecological Appraisal, Interim Report, dated October 2019, prepared by Acer Ecology) has identified that bats are present at the application site.

On the basis of the above report, we do not consider that the development is likely to be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range.

Therefore, we do not object to the proposal but in line with the 'Dear CPO' letter issued by Welsh Government on 1st March 2018, we request that the following informative is attached to any planning permission granted by Bridgend Local Authority:

Warning: An European protected species (EPS) Licence is required for this development.

Planning permission does not provide consent to undertake works that require an EPS licence. It is an offence to deliberately capture, kill or disturb EPS or to damage or destroy their breeding sites or resting places. If found guilty of any offences, you could be sent to prison for up to 6 months and/or receive an unlimited fine.

To undertake the works within the law, you can obtain further information on the need for a licence from Natural Resources Wales on 0300 065 3000 or at <https://naturalresources.wales/permits-and-permissions/protected-species-licensing/european-protected-species-licensing/information-on-european-protected-species-licensing/?lang=en>.

Development should not be commenced until a licence has been granted by Natural Resources Wales pursuant to Regulation 55 of the Conservation of Habitats and Species Regulations (2017) authorizing the specified activity/development to go ahead.

Please note that any changes to plans between planning consent and the licence application may affect the outcome of a licence application.

We advise recipients of planning consent who are unsure about the need for a licence to submit a licence application to us.

Legislative Advice

Bats and their breeding sites and resting places are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). Where bats are present and a development proposal is likely to contravene the legal protection they are afforded, the development may only proceed under licence issued by Natural Resources Wales, having satisfied the three requirements set out in the legislation. A licence may only be authorised if:

- i. the development works to be authorised are for the purpose of preserving public health or safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.
- ii. There is no satisfactory alternative and
- iii. The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range.

Environmental Permit

The applicant currently holds a permit under the Environmental Permitting Regulations, permit number: EP3738NG. We would advise the applicant that a variation to this existing permit would be required for the proposed development. We advise that they contact our Industry Regulation Team at the earliest opportunity to discuss the matter further.

Flood Risk

We are satisfied that the proposed development is outside the current flood risk area.

Other Matters

Please note, if further information is prepared to support an application, it may be necessary for us to change our advice in line with the new information.

Our comments above only relate specifically to matters included on our checklist, *Development Planning Advisory Service: Consultation Topics* (September 2018), which is published on our [website](#). We have not considered potential effects on other matters and do not rule out the potential for the proposed development to affect other interests, including environmental interests of local importance.

In addition to planning permission, you are advised to ensure all other permits/consents/licences relevant to the development are secured. Please refer to our [website](#) for further details.

Further advice on the above matters could be provided prior to your planning application being submitted, however there would be a charge for this service. Additional details are available on our [website](#).

If you have any queries on the above, please do not hesitate to contact us.

Yn gywir / Yours faithfully

Rhian Isaac

Cynghorydd - Cynllunio Datblygu / Advisor - Development Planning
Cyfoeth Naturiol Cymru / Natural Resources Wales

ATTACHMENT 2

Reply to NRW letter – PAC process

22nd January 2019

Rhian Isaac
National Resources Wales,
Maes Newydd,
Llandarcy,
Neath Port Talbot,
SA10 6JQ

Dear Ms Isaac

BWRIAD / PROPOSAL: Expansion of the current operation, including an extension for a new paper machine and stock preparation area, new converting and warehousing facilities and various ancillary buildings, all within the existing site boundary.

LLEOLIAD / LOCATION: WEPA UK Ltd, Bridgend Paper Mills, Llangynwyd, Bridgend, CF34 9RS

We thank NRW for their response to the Pre-Application Consultation.

Please find the response attached tabulated and submitted on behalf of the applicant.

The applicant has also provided details of historic groundwater monitoring which can be downloaded from the below link:

https://quorumassociates-my.sharepoint.com/:f/g/personal/joel_saunders_qapm_com/EgtloRxMKtJCnGUhq0hxW30BlvOYxwEzTmGPF-UOVKmvkQ?e=3ZcAUS

Yours Sincerely,

Joel Saunders
MSc BEng CEng MICE
Managing Director

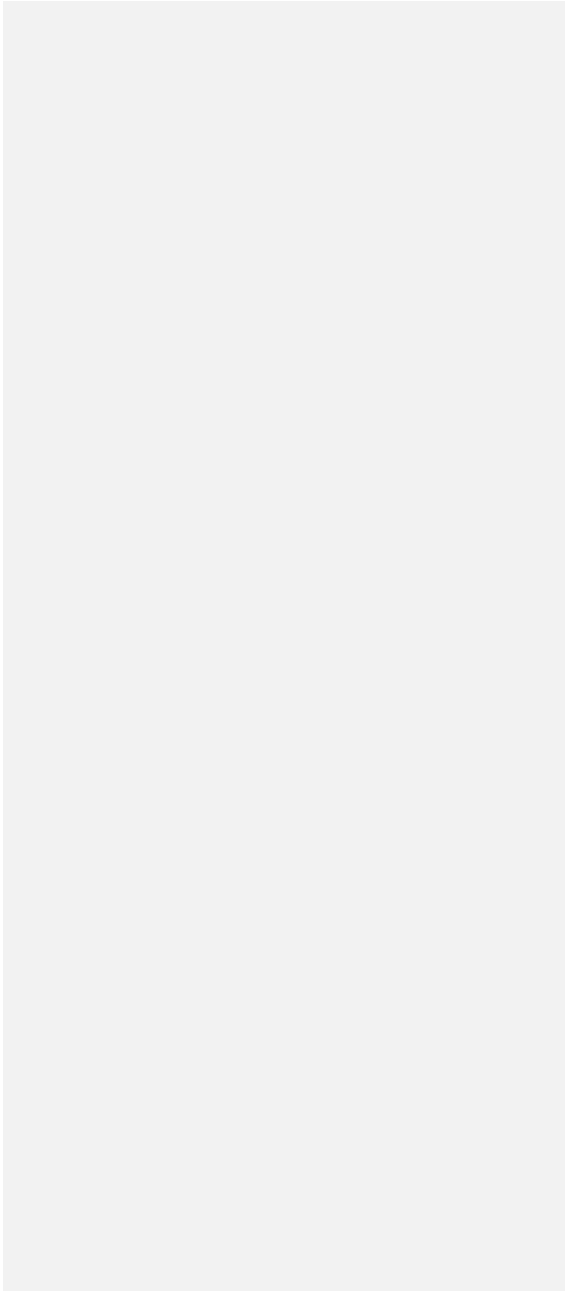
For and on behalf of Quorum Consulting Engineers

NRW Comment	Consultant Response
<p>Proposed Condition:</p> <p>No development, shall commence until the following components of a scheme to deal with the risks associated with contamination at the site, has been submitted to and approved in writing by the Local Planning Authority.</p> <p>1. A preliminary risk assessment which has identified:</p> <ul style="list-style-type: none"> • all previous uses • potential contaminants associated with those uses • a conceptual model of the site indicating sources, pathways and receptors • potentially unacceptable risks arising from contamination at the site <p>2. A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.</p> <p>3. The results of the site investigation and the detailed risk assessment referred to in (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.</p> <p>4. A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.</p> <p>The remediation strategy and its relevant components shall be carried out in accordance with the approved details.</p>	<p>We consider that the site investigation document (ref 57200-159 dated Sept 2019) prepared by Integral Geotechnique addresses comments made in points 1, 2, and 3 of this proposed condition.</p> <p>In particular, the reader is directed to a general review of historic site uses summarised within section 3.0 and the 'Envirocheck' report within the appendices. Section 4.7 provides further commentary on this subject.</p> <p>Furthermore the author has undertaken a thorough review of previously undertaken site investigation reports for the subject site.</p> <p>A preliminary conceptual site model is presented and thoroughly discussed within section 5.0 of the document.</p> <p>We note that a remediation strategy has been prepared to support this application, and should satisfy point number 3.</p> <p>In terms of contamination, the area to the south east of the site where significant deposits of pulverised fuel ash and made ground has been identified shall receive further investigation once the dense vegetation and trees have been cleared and the area is more accessible. However we note that samples collected from intrusive investigation currently indicates that the chemical contamination profile is below the threshold for commercial end use.</p> <p>It is noted that significant levels of contamination have not been identified elsewhere on site during this investigation or within previous investigations completed at this site.</p> <p>It is accepted that a verification plan and report will be produced. Integral Geotechnique will prepare a verification plan to accompany the application documentation.</p>

Kommentiert [RB1]: Has the IG report reference been altered?

NRW Comment	Consultant Response
<p>Prior to the operation of the development a verification report demonstrating completion of works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to and approved in writing by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met. It shall also include a long-term monitoring and maintenance plan for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification plan. The long-term monitoring and maintenance plan shall be carried out in accordance with the approved details.</p>	<p>It is accepted that a verification plan and report will be produced. The verification report will follow completion of the said ground works. It is noted that the area of the site where notable made ground was identified is confined to the area in the south east of the site and the applicant respectfully requests that any condition imposed relates solely to this area/phase.</p> <p>Integral Geotechnique propose groundwater monitoring within the southeast part of the site following site clearance works , results of which can be included within the verification reports.</p> <p>Long term monitoring of groundwater quality is already in place for the current site operations, and the client would be pleased to extend monitoring as recommended.</p>
<p>Prior to the operation of the development, a long term monitoring plan for water quality and land contamination shall be submitted and approved in writing by the Local Planning Authority. The long term monitoring plan should include:</p> <ul style="list-style-type: none"> • Details of the methods and triggers for action to be undertaken • Timescales for the long term monitoring and curtailment mechanisms e.g. a scheme of monitoring for 3 years unless the monitoring reports indicate that subsequent monitoring is or is not required (for x years) <ul style="list-style-type: none"> • Timescales for submission of monitoring reports to the LPA e.g. annually • Details of any necessary contingency and remedial actions and timescales for actions • Details confirming that the contingency and remedial actions have been carried out 	<p>It is noted that the area where notable made ground was identified is confined to the area in the south east of the site and the applicant respectfully requests that any condition imposed relates solely to this area/phase.</p> <p>It should be noted that the results of the soil testing and risk assessments undertaken to date, in conjunction with the predominantly hard finished and impermeable nature of the proposed developments, does not indicate a potential risk to groundwater quality or a requirement for long term monitoring of groundwater. It should also be noted that long term monitoring of groundwater quality is already in place for the current site operations, and the client would be pleased to extend monitoring as recommended.</p> <p>Integral Geotechnique propose groundwater monitoring to the southeast area of the site during construction works, results of which can be included within the verification reports.</p>

	<p>The requirement for a long term monitoring plan beyond the construction period would depend on the results of the groundwater testing Please note that WEPA already carry out on going monitoring of water quality at the site and related reports and results will be shared with NRW.</p>
--	--



NRW Comment	Consultant Response
<p>No infiltration of surface water drainage into the ground is permitted other than with the express written consent of the local planning authority, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to controlled waters. The development shall be carried out in accordance with the approval details.</p>	<p>Generally surface water will be attenuated and discharged to the existing watercourse (subject to agreement with NRW & BCBC); please refer to application document 57200-162. The exception to this is the car parking areas to the north west of the site which will receive permeable paving. The boreholes and chemical analysis in this area report minimal made ground and excavations are expected generally into inert natural material. We expect that any mine workings in this area to be at sufficient depths to not be affected by these proposals. Any adits located will be excavated out and backfilled with inert material.</p>
<p>No development shall commence until details of piling or any other foundation designs using penetrative methods sufficient to demonstrate that there is no unacceptable risk to groundwater have been submitted to and approved in writing by the Local Planning Authority. The piling/foundation designs shall be implemented in accordance with the approved details.</p>	<p>It is noted that the area where notably thicknesses of made ground were identified is confined to the area in the south east of the site. Piling would normally be required to overcome the characteristics of the loosely compacted PFA. However, the substrate to the hardstanding will be subject to stabilisation techniques allowing piling to be minimised. We propose that a piling risk assessment will be produced for instances where the design team considers piling unavoidable, for the south east corner only.</p> <p>Elsewhere on site (new Neptune Building, High Bay Warehouse), contaminated land is not expected and therefore we do not consider further risk assessment is required.</p> <p>Other buildings are expected to be founded on conventional shallow strip/pad mass concrete foundations and therefore we do not consider further risk assessment is required.</p>

NRW Comment	Consultant Response
<p>We have reviewed the Site Investigation by Integral Geotechnique dated Sept 19 (draft), which included elements of a Preliminary Risk Assessment; and the Site Remediation Strategy.</p> <p>With regards to the Site Investigation we note that for 4 new areas for redevelopment. There has been no description of any chemicals that might have been stored within these areas, and It is unclear from the historical maps, which areas of the papermill are of the highest risk with regards to previous contaminative uses.</p> <p>For example, in the New High Bay Warehouses, there are 3 derelict bungalows. There is no detail on how were these building historically/ currently heated. Was heating oil ever present on this part of the site?</p> <p>The New Bale Handling and Pulp Storage area is currently used for waste and other material storage. There is no explanation as to what these materials are and whether any of these could be contaminants of concern.</p> <p>No groundwater samples have been taken for the site and there is limited sampling in some locations due to slopes. The maps are difficult to read as to where specific sample points are, and it is unclear what soil samples have been taken at multiple depths. There are no leaching samples as a substitute for groundwater samples.</p> <p>We also note that some areas for redevelopment are to have the concrete flooring broken out, reintroducing a pathway. In the areas where pulverised fuel ash (PFA) is within the made ground, we have concerns about the impact of a the pH with regards to the wider made ground.</p>	<p>We note the terminology ‘elements of a preliminary risk assessment’ and would comment that we believe the current level of risk assessment to be entirely appropriate for the subject project. Please advise should you require any further specific information.</p> <p>We consider that the study of historic uses of the site within the site investigation to be sufficient and therefore confirm that we believe the extent of site investigation and chemical analysis to be sufficient to identify previous contaminative uses and any potential point sources. It should be noted that many of the areas investigated were either undeveloped areas, derelict areas (such as the northern bungalows and the southeast corner of the site) or external areas comprising concrete slabs. No chemicals are believed to have been stored in any of these areas.</p> <p>The three bungalows in the area of the High Bay Warehouse are in a poor state of structural repair, therefore a detailed inspection has not been possible. Following the careful demolition of the bungalows, a further review of this area will be undertaken and if appropriate further boreholes and chemical testing shall be commissioned.</p> <p>It should be noted that no materials are stored within the Bale Handling and Pulp Storage area; this area is currently formed of woodland and dense undergrowth. Integral Géotechnique have identified made ground conditions in this area and further testing will be proposed when the area is cleared. At this time leachate testing can be completed.</p> <p>Borehole locations are clearly indicated on the plan and sample location reference and depths are noted in the summary tables presented within the appendices of the report.</p> <p>In areas where concrete floors are being broken out, we do not expect to encounter significant contamination, if any. The concrete floors are</p>

	<p>currently circulation or warehousing areas. Any 'open ground' will be temporary as levels will be reduced and a concrete slab reintroduced. The made ground/PFA is located in the south east corner which currently has little or no impermeable covering). It should be noted that once complete, the developments will be hard finished and largely impermeable.</p>
NRW Comment	Consultant Response
	<p>The pH analysis of the PFA identified in the made ground in the southeast corner of the site was recorded at between 7.6 to 8.2 and is therefore not considered significantly elevated. Following groundworks, this area will be impermeable due to introduction of new concrete slabs and hard finished access roads. It is therefore considered that the pH of the PFA will have no impact on groundwater quality.</p>
<p>Site Remediation. We cannot comment on this until we fully understand the characterisation of the site.</p> <p>We also draw the applicant attention to the changes in the Water Resources Act with regards to the licensing of groundwater abstractions.</p>	<p>We do not expect that significant remediation will be required to this site since contaminant levels are below the guideline values for the proposed end use. In addition, the proposed development will comprise hard finished surfaces and will be essentially non permeable, and therefore the potential risk to groundwater quality is considered to be low. Low levels of asbestos fibres within the made ground appear to cause the most concern, in terms of contaminated land. Asbestos fibres inherently are not a cause of concern with regard to pollution of groundwater. We confirm our view that both the site investigation and remediation strategy adequately characterise the site and deal with the contamination hazards therein. We have proposed further groundwater testing, intrusive investigation and reporting within the body of this response. The applicant has been made aware of the changes within the WRA, however this site currently does not abstract groundwater.</p>
Protected Species:	We welcome NRW comments that the development will not be

<p>On the basis of the above report, we do not consider that the development is likely to be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range.</p>	<p>detrimental to protected species.</p>
<p>Environmental Permit: The applicant currently holds a permit under the Environmental Permitting Regulations, permit number: EP3738NG. We would advise the applicant that a variation to this existing permit would be required for the proposed development. We advise that they contact our Industry Regulation Team at the earliest opportunity to discuss the matter further.</p>	<p>The applicant has been made aware of the need to contact the industry regulation team.</p>

ATTACHMENT 3

Shared Regulatory Services letter – Final Planning Application process

COFNOD / MEMORANDUM

I / To:	Rhodri Davies	Oddi Wrth / From:	D Margetson
Adran / Dept:	Planning Department	Ein cyf / Our ref:	SRS/E/DMM /P/20/119/FUL
Dyddiad / Date:	24th February 2020	Ffôn / Tel:	03001236696
Eich Cyf / Your Ref:	P/20/119/FUL	Ebost / Email:	EnvPlan-SRSWales@valeofglamorgan.gov.uk

SUBJECT: PLANNING APPLICATION NO: P/20/119/FUL: BRIDGEND PAPER MILLS (WEPA) A4063 LLANGYNWYD CF34 9RS; EXPANSION OF CURRENT OPERATION INCLUDING AN EXTENSION FOR A NEW PAPER MACHINE AND STOCK PREPARATION AREA, NEW COVERING AND WAREHOUSE FACILITIES AND ANCILLARY BUILDINGS

Further to receipt of the above accepted planning applications, I would like to provide comments in relation to potential contamination issues on behalf of SRS: Environment Team:-

The following information was submitted as part of the above application:

Intégral Géotechnique (Wales) Limited, January 2020; WEPA UK Limited BRIDGEND PAPER MILL, MAESTEG, Site Investigation Report 12495/GNS/19/SI/RevC

The above information includes an assessment of the risk to human health and the environment from contamination and ground gas.

In relation to contamination, the report indicates that there are no significant chemical contaminants for the proposed development, but asbestos containing materials within the soils have been identified which pose a risk to human health during the construction phase and to future site users.

In relation to ground gas, elevated carbon dioxide levels have been identified which identify the ground gas regime as 'Characteristic Situation 2'. Basic ground gas protection measures are required in relation to this.

Appropriate mitigation and remediation measures to deal with the risks from ground gas and asbestos containing materials have been included in Section 10 of the above report. The completion of these measures will need to be validated and submitted for approval to the local authority as a detailed remediation validation report, in line with current guidance.

Should there be any importation of soils to develop the landscaped areas of the development, or any site won recycled material, or materials imported as part of the construction of the development, then it must be demonstrated that they are suitable for the end use. This is to prevent the introduction or recycling of materials containing chemical or other potential contaminants which may give rise to potential risks to

COFNOD / MEMORANDUM

human health and the environment for the proposed end use. Consequently, the inclusion of conditions to ensure the use of suitable materials is requested.

Shared Regulatory Services requests the inclusion of the following conditions and informative statement in accordance with CIEH best practice and to ensure that the safety of future occupiers is not prejudiced in accordance with policy ENV7 of the Bridgend County Borough Council Local Development Plan:

CONDITIONS

PC14C. CONTAMINATED LAND MEASURES - REMEDIATION & VERIFICATION

The submitted remediation scheme must be fully undertaken in accordance with its terms prior to the occupation of any part of the development unless otherwise agreed in writing by the Local Planning Authority. The Local Planning Authority must be given two weeks written notification of commencement of the remediation scheme works.

Within 6 months of the completion of the measures identified in the approved remediation scheme, a verification report that demonstrates the effectiveness of the remediation carried out must be submitted to and approved in writing by the Local Planning Authority.

All work and submissions carried out for the purposes of this condition must be conducted in accordance with DEFRA and the Environment Agency's 'Model procedures for the Management of Land Contamination, CLR 11' (September 2004) and the WLGA / WG / NRW guidance document 'Land Contamination: A guide for Developers' (2017),, unless the Local Planning Authority agrees to any variation.

Reason : To ensure that any unacceptable risks from land contamination to the future users of the land , neighbouring land, controlled waters, property and ecological systems are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors.

PC14D. CONTAMINATED LAND MEASURES – UNFORESEEN CONTAMINATION

In the event that contamination is found at any time when carrying out the approved development that was not previously identified it must be reported in writing within 2 days to the Local Planning Authority, all associated works must stop, and no further development shall take place unless otherwise agreed in writing until a scheme to deal with the contamination found has been approved. An investigation and risk assessment must be undertaken and where remediation is necessary a remediation scheme and verification plan must be prepared and submitted to and approved in writing by the Local Planning Authority. Following completion of measures identified in the approved remediation scheme a verification report must be submitted to and approved in writing by the Local Planning Authority. The timescale for the

COFNOD / MEMORANDUM

above actions shall be agreed with the LPA within 2 weeks of the discovery of any unsuspected contamination.

Reason: To ensure that any unacceptable risks from land contamination to the future users of the land, neighbouring land, controlled waters, property and ecological systems are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors.

PC15A IMPORTED SOIL

Any topsoil [natural or manufactured], or subsoil, to be imported shall be assessed for chemical or other potential contaminants in accordance with a scheme of investigation which shall be submitted to and approved in writing by the Local Planning Authority in advance of its importation. Only material approved by the Local Planning Authority shall be imported. All measures specified in the approved scheme shall be undertaken in accordance with the relevant Code of Practice and Guidance Notes.

Subject to approval of the above, sampling of the material received at the development site to verify that the imported soil is free from contamination shall be undertaken in accordance with a scheme and timescale to be agreed in writing by the LPA.

Reason: To ensure that the safety of future occupiers is not prejudiced.

PC15B IMPORTED AGGREGATES

Any aggregate (other than virgin quarry stone) or recycled aggregate material to be imported shall be assessed for chemical or other potential contaminants in accordance with a scheme of investigation which shall be submitted to and approved in writing by the Local Planning Authority in advance of its importation. Only material approved by the Local Planning Authority shall be imported. All measures specified in the approved scheme shall be undertaken in accordance with the relevant Code of Practice and Guidance Notes.

Subject to approval of the above, sampling of the material received at the development site to verify that the imported material is free from contamination shall be undertaken in accordance with a scheme and timescale to be agreed in writing by the LPA.

Reason: To ensure that the safety of future occupiers is not prejudiced.

PC15C USE OF SITE WON MATERIALS

Any site won material including soils, aggregates, recycled materials shall be assessed for chemical or other potential contaminants in accordance with a sampling scheme which shall be submitted to and

COFNOD / MEMORANDUM

approved in writing by the Local Planning Authority in advance of the reuse of site won materials. Only material which meets site specific target values approved by the Local Planning Authority shall be reused.

Reason: To ensure that the safety of future occupiers is not prejudiced.

ADVISORY/INFORMATIVE

R4 CONTAMINATION AND UNSTABLE LAND ADVISORY NOTICE

The contamination assessments and the affects of unstable land are considered on the basis of the best information available to the Planning Authority and are not necessarily exhaustive. The Authority takes due diligence when assessing these impacts, however you are minded that the responsibility for

- (i) determining the extent and effects of such constraints;
- (ii) ensuring that any imported materials (including, topsoils, subsoils, aggregates and recycled or manufactured aggregates/ soils) are chemically suitable for the proposed end use. Under no circumstances should controlled waste be imported. It is an offence under Section 33 of the Environmental Protection Act 1990 to deposit controlled waste on a site which does not benefit from an appropriate waste management license. The following must not be imported to a development site;
 - Unprocessed / unsorted demolition wastes.
 - Any materials originating from a site confirmed as being contaminated or potentially contaminated by chemical or radioactive substances.
 - Japanese Knotweed stems, leaves and rhizome infested soils. In addition to section 33 above, it is also an offence under the Wildlife and Countryside Act 1981 to spread this invasive weed; and
- (iii) the safe development and secure occupancy of the site rests with the developer.

Proposals for areas of possible land instability should take due account of the physical and chemical constraints and may include action on land reclamation or other remedial action to enable beneficial use of unstable land.

The Local Planning Authority has determined the application on the basis of the information available to it, but this does not mean that the land can be considered free from contamination.

Environment Team
Shared Regulatory Services
Bridgend, Cardiff & the Vale of Glamorgan