MVV Environment Services Ltd

Energy from Waste Combined Heat and Power Facility, Forties Road, Dundee

Environmental Statement Appendix
Volume One

MVV Environment

ARUP

Contents

Introduction

This Environmental Statement (ES) Appendix is part of a suite of documents submitted to Dundee City Council (DCC) in support of an application for planning permission by MVV Environment Services Limited (MVV) (the Applicant) for the construction and operation of an Energy from Waste Combined Heat and Power Facility (EfW CHP facility) (The Proposed Scheme) on land situated on Forties Road, in the north-east of Dundee (the Application Site).

The proposed EfW CHP facility would replace the existing DERL EfW facility on the neighbouring site on Forties Road.

The ES has been prepared pursuant to The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 (EIA Regulations). It comprises two volumes with supporting appendices, and a non-technical summary (NTS), namely:

a) **Volume One**: this provides a description of the existing Application Site and surroundings (Section 2), a description of the Proposed Scheme (Section 3), a description of alternatives (Section 4), a description of the EIA approach and methodology (Section 5) and a summary of the environmental assessment results (Section 6);

b) **Volume Two:** this provides assessments for the following topics:

- Acoustics (Volume 2, Section 2);
- Air Quality (Volume 2, Section 3);
- Ecology (Volume 2, Section 4);
- Ground Conditions and Contamination (Volume 2, Section 5);
- Landscape and Visual Amenity (Volume 2, Section 6)
- Socio-economics (Volume 2, Section 7);
- Traffic and Transport (Volume 2, Section 8);
- Water Resources (Volume 2, Section 9); and
- Interactive Effects[1] (Volume 2, Section 10).

c) **Volume Three**: this provides the supporting A3 figures to Volume Two;

d) **Appendix Volume One (this Appendix)**: this provides supporting figures, reports and documents to Volume One;

e) **Appendix Volume Two**: this provides supporting reports and documents to Volume Two;

f) **Non-Technical Summary**: This provides a summary description of the Proposed Scheme and environmental assessment results presented in non-technical language.

[1] It is noted that cumulative effects are assessed in the topic section (Volumes 2) of the ES.

Appendix A

EIA Scoping Letter and Plan

Please reply to:
c/o Devonport EfW CHP Facility, Creek Road, Plymouth, Devon, PL5 1FL

MVV Environment Services Limited

Name: Paul Carey
Telephone: +44 (0) 7768 842 715

Email: paul.carey@mvvuk.co.uk

Date: 18/09/2015

Dundee City Council
Planning Department
Floor 6, Dundee House,
50 North Lindsay Street,
Dundee,
DD1 1LS

Dear Sirs,

Baldovie Energy from Waste Facility (DERL), Forties Road, Dundee
Request for Scoping Opinion

MVV are one of 4 companies which have been shortlisted to take over the contract for the management of residual waste arising in Dundee and Angus. The Partner Councils of Dundee City Council and Angus County Council will require the successful bidder to manage between 70,000 tonnes and 90,000 tonnes of Contract Waste per year. The 4 plots of land which are shown on the attached drawing are available for use in the project. They are located off Forties Road and include the current DERL facility; the land occupied by the former in incinerator known as the ATS site, and 2 other adjoining plots of land, one to the west and one to the south.

We would like to submit a Screening and a Scoping Opinion for a proposal to move the waste reception and sorting operations which currently take place in the ATS building to the land to the west of Forties Road and to develop a new Energy from Waste / Combined Heat and Power facility on the ATS site. For a period of time both the DERL facility and the new facility on the ATS site would be in operation and the quantity of waste managed on site would therefore increase to include Commercial and Industrial waste of a similar nature to the residual Municipal waste. It would be mainly delivered in high capacity vehicles which would increase traffic movements to the facility but not significantly.

It is also proposed that the revised Energy from Waste facility would operate as a Combined Heat and Power plant supplying steam to the adjacent Michelin plant by means of a steam pipeline at ground level and electricity by means of an overhead cable and these connections would form part of the planning application.

The Town & Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 (HMSO 2011a) place a requirement upon developers of certain types of development to undertake an Environmental Impact Assessment (EIA) as a part of the development planning process. The proposals set out above are considered to fall within Schedule 2 development under the Schedule 1, 10 of the Regulations, as “Waste disposal installations for the incineration or chemical treatment (as defined in Annex 1 to Directive 2008/98/EC (European Parliament, 2008) under heading D9) of non-hazardous waste with a capacity exceeding 100 tonnes per day”. (36,500 tonnes per year)

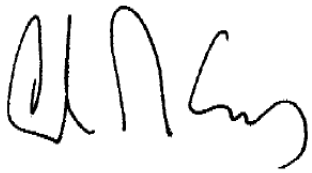
The final scale and of layout of the proposed development have not been settled upon and will in part be determined by the response to the Scoping request. As the contract with the Dundee City Council and Angus County Council would be to manage between 70,000 tonnes and 90,000 tonnes of Contract Waste per year, apart from any Commercial and Industrial waste of a similar nature which it may be decided to process at the site. It is therefore our opinion that an EIA will likely be required to support a future planning application for the combined operation of the DERL facility and the redevelopment of the ATS site together with the supply of heat and power to the adjacent Michelin site.

We have appointed Arup to advise us on planning and permitting matters. From our discussions we think that the topics which may need to be addressed in an Environmental Impact Assessment are:

Air Quality
Archaeology
Ecology
Flood Risk / SuDS
Ground Contamination
Historic Buildings
Landscape and Visual Impact
Noise
Odour
Recycling
Roads and Transport
Sustainability

I look forward to receiving your Scoping Opinion.

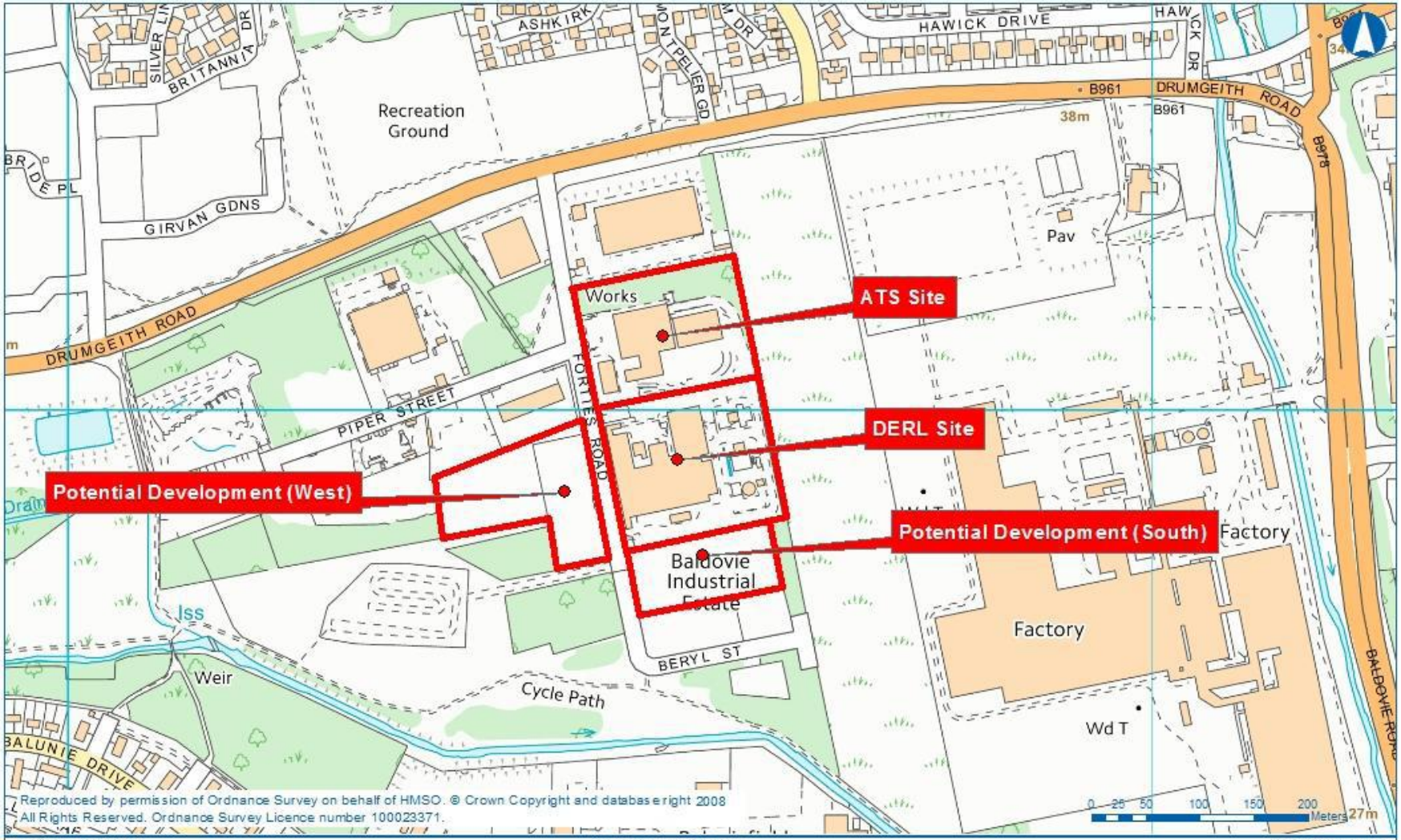
Kind regards,



Paul Carey
Managing Director

Site Location - Dundee

Dundee CHANGING FOR THE FUTURE
3 City Square
Dundee
DD1 3BA



Originator : Colin Morris | Department: Dundee City Council | Created on : 27/11/2014

Appendix B

EIA Scoping Response

Screening Opinion – Baldovie Energy from Waste Facility (DERL)

1. General Observations

The proposal to relocate the existing waste reception and sorting operations and develop a new Energy from Waste / Combined Heat and Power facility within the identified site area at Baldovie has been identified as Schedule 2 development under the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011. A screening opinion has been undertaken which concurs with your view that the development is likely to have significant effects on the environment, and it is therefore agreed that an Environmental Impact Assessment will be required to accompany a planning application.

Legislation and policy guidance from the Scottish Government (all publications) is available at the following link: http://www.gov.scot/Topics/Built-Environment/planning/publications/Publication

The development plan which covers the application site comprises the Strategic TAYplan (2012) and the Adopted Dundee Local Development Plan (2014).

The topics which you have identified for inclusion in an Environmental Statement are addressed below, together with more general comments. Agencies who have contributed to this response along with Dundee City Council are SEPA, SNH and the HSE; no comments have been received from Scottish Water.

Policy 39 (Major Waste Management Facilities) of the Adopted Dundee Local Development Plan states that new waste management facilities should be located in the first instance in General Economic Development Areas, thereby establishing the principal of development in this instance.

SEPA considers that, with respect to their interests, Environmental Impact Assessment is required for the above proposal under Schedule 2 of the Regulations and that to avoid delay and potential objection the following key issues must be addressed and information submitted in support of the application.

- Energy Efficiency / Thermal Treatment of Waste Guidelines
- Throughput & design
- Air Quality
- Air Emissions Modelling and Cumulative Impact
- Human health
- Habitats Assessment
- SUDS, Firewater and Foul Drainage
- Odour
- Noise & Vibration
- Fire
- Ground conditions

- Monitoring
- Handling of raw materials and waste residues
- Construction and Waste Minimisation
- Flood Risk
- Other issues

While all of the issues should be addressed in the Environmental Statement (ES), there may be opportunities for several of these to be scoped out of detailed consideration. The justification for this approach in relation to specific issues should be set out within the ES. SEPA would welcome the opportunity to comment on the draft ES. The intention to use district heating is noted, this is in line with SPP and SEPA therefore support this approach.

SEPA General Requirements

A full description of the proposed processes (including abatement), techniques and technology choice is required, along with an assessment of the environmental impact associated with the choice of technology on nearby receptors when operating at full capacity. Information on any potential abnormal events that could lead to uncontrolled emissions, along with the anticipated frequency, duration and likely impact, in order to demonstrate the suitability of the location should also be provided.

This proposal is likely to fall within the remit of a Pollution Prevention and Control (Scotland) Regulations 2012 – Part A permit, within Schedule 1 – sector 5.1 activities – Incineration and co-incineration of waste. Sector guidance is available as IPPC S5.01 – Guidance for the Incineration of waste and fuel manufactured from or including waste.

Where waste is being prepared for incineration at the site, this may fall under sector 5.4 – Disposal, recovery or a mix of disposal or recovery of non-hazardous waste. This will be subject to the requirements of the Zero Waste Strategy to remove the recyclable fractions for recovery, and note that no separately collected waste capable of being recycled is incinerated and non-ferrous metals or hard plastics should be excluded as far as practicable. Only residual waste should be incinerated. The means of pre-sorting the different wastes should be provided with the application, along with estimates of residual waste volumes for use in the incineration process, and of the net Calorific Value range.

If the waste contains Special Waste, this will be subject to additional information and characterisation of the waste, and may fall under Sector 5.3 activities. Specific thresholds apply to Sector 5.3 and 5.4, and the Operator should demonstrate the maximum throughput capacity of the pre-incineration processes selected, and information on the types and quantities of waste that will be handled at the site. Describe also what general housekeeping measures will be used to control vermin, fly nuisance and litter.

SEPA comments on Energy Efficiency / Thermal Treatment of Waste Guidelines

The Energy Efficiency Directive 2012/27/EU (EED) (through the PPC Regulations) requires new or substantially refurbished energy producing installations with an aggregated size greater than 20MWth to provide a Cost Benefit Analysis to assess the costs and benefits of operating the installation in such a manner as to use any waste heat generated. This should be submitted with the application.

In order to demonstrate the appropriate use of the heat and power from the proposed incineration plant, the applicant has indicated likely provision of steam to a nearby business. The requirements of our Thermal Treatment of Waste Guidelines 2014 – will need to be demonstrated at the application stage, and a heat plan as described in Annex 2 of the TTWG should be provided along with evidence of discussions and/or agreements with the potential heat user, as SEPA take account of the guidance to use energy efficiently.

Details of any back up boiler should be provided, including the thermal rating. This may be subject to specific emissions control.

SEPA comments on Human health

Human Health Impact Assessment is not required for planning purposes, although a PPC permit application will require such an assessment to be included. SEPA advises twin-tracking of planning and regulatory applications and where this is done such an assessment could be included within the ES.

Further information and advice on undertaking a Human Health Impact Assessment can be obtained directly from SEPA. The Sniffer report UKCC02 on Environmental Legislation and Human Health: Guidance for Assessing Risk may also be of use.

Sensitive receptors used in assessing the impact of emissions must be clearly identified. This should include:

- Consideration of the impact of humans living or working in any nearby tall buildings;
- The cumulative impact on local air quality in the area taking into account other significant emissions nearby;
- Emissions from traffic in the area both during the construction and operational phases of the project;
- Proposals for any new developments such as housing, industrial developments, wind turbines and agricultural developments;
- Consideration of impacts on sensitive ecological sites.

The guidance contained in the H1 methodology for PPC BAT and impact assessment indicates that an initial assessment of impacts in an area within a 15km radius of the site may be appropriate.

SEPA comments in relation to Fire

An overview of measures to mitigate fire risks should be included in the Environmental Statement, with a more detailed description of methods to be utilised for the prevention and mitigation of fire in the PPC application. Guidance documents

on prevention and control that could be utilised to design appropriate systems and procedures include:-

- Reducing Fire Risk at Waste Management Sites (WISH Waste 28) http://www.ciwm.co.uk/web/FILES/WISH/WASTE_28_Reducing_fire_risk_at_waste_management_sites_issue_1_-_Oct_2014.pdf;
- and the Environment Agency Guidance on Fire Prevention Plans at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415262/LIT_10105.pdf

Further information on Fire prevention and control may be available at the Health and Safety Executive (HSE) web pages http://www.hse.gov.uk/.

SEPA comments in relation to handling of raw materials and waste residues

The proposed methods of handling and storage of all raw materials and all waste, including waste residues and all waste effluent streams, at the site should be indicated at planning stages.

Further detailed information will be required at the Permit application stage, along with tonnages, a description, and justification for the selected destination of each waste residue/effluent for treatment or disposal.

Other SEPA issues

- At the PPC application stages, information on general management and accident control at the site should be provided in line with Sector guidance.
- Advice on nearby and adjacent land contamination issues should be sought from the local authority contaminated land specialists.
- Details of pre-planning and pre- permit application consultation with key stakeholders and the public should be provided, as this proposal will be of significant interest in the locale.
- The proposed new Incinerator will be a Specified Waste Management Activity (SWMA) and the Operator will be subject to the required Financial Provision and Technical Competency demonstrations, in addition to the requirement to have planning permission before the permit can be issued.
- If any existing plant is to be decommissioned or replaced, this should be made clear at the PPC application stages.

Health and Safety Executive

The HSE has made comment that their principal concerns are the health and safety of people at work and those affected by work activities, as Environmental Impact Assessments are concerned with projects which are likely to have significant effects on the environment; the HSE therefore has no comments to make.

2. Air Quality

Policy 44 of the Adopted Dundee Local Development Plan (2014) states that there is a general presumption against development proposals that could significantly increase air pollution or introduce people into areas of elevated pollution concentrations unless mitigation measures are adopted to reduce the impact to levels acceptable to the Council.

This is a development that has the potential to be detrimental to air quality and therefore should be accompanied by an air quality assessment of the likely impact of the development.

The development proposal is situated with the DCC Air Quality Management Area, which was declared for nitrogen dioxide (NO2) objectives (annual mean and hourly mean) and the fine particulate (PM10) objective (annual mean). An Air Quality Action Plan is in place to help improve pollutant concentrations.

The applicant should be made aware of the 'DCC LDP Supplementary Guidance: Air Quality and Land Use Planning' and the accompanying 'Air Quality and Land Use Planning SG: Technical Guide' which provides guidance on the methodologies, acceptable to DCC, that developers are required to use when characterising the impacts of their development.

In addition the following comments are provided to assist the provision of an Environmental Statement (ES) in relation to air quality. This list is not exhaustive and it may be necessary to amend the scope once more details of the application become available.

The ES should make reference to the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007; Part IV of the Environment Act 1995; the Local Air Quality Management regime; the Local Air Quality Management Policy Guidance (Scotland) 2009 (LAQM:PG(S)(09)); and the Local Air Quality Management Technical Guidance 2009 (LAQM:TG(09)).

The relevant standards and objectives also include:

- Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe;

- The Air Quality Standards (Scotland) Regulations 2010 No. 204;

- The Air Quality (Scotland) Regulations 2000 - Scottish Statutory Instrument 2000 No. 97, and

- The Air Quality (Scotland) Amendment Regulations 2002 - Scottish Statutory Instrument 2002 No. 297.

The regulations are in force in Scotland and include objectives and standards for particulate matter PM10, Benzene, and sulphur dioxide (SO2) that are more stringent than those in EU legislation.

It is possible that, more stringent emission limit values than those described in SEPA guidance may be required for certain installations, for example to comply with such local air quality standards and/or objectives.

General Comments

To facilitate comparison with the appropriate EC Directives and to provide consultees with a sense of scale, the rated thermal input of the proposal should be stated in the ES.

The ES should justify site size against the factors which influenced size and selection e.g. was site size influenced by process design or did land availability constrain process design, site selection and site layout? Will the site selected be large enough and flexible enough to incorporate room for mitigating elements which might arise as a result of environmental assessment?

The ES should demonstrate how continuity of waste/fuel supplies can be achieved during the lifetime of the plant and to discuss the environmental consequences of supply irregularities and irregularities in the mix of waste/fuel and in particular what mitigation measures will apply to ensure that emission standards are maintained.

The cumulative impact of the proposal relative to the dispersal of emissions from the adjacent prescribed processes of DERL and Michelin should be assessed in the ES.

Wind turbines have the potential to adversely affect the dispersal of stack emissions. The developer shall need to consider if the wake from the Michelin's wind turbines are likely to affect the dispersion of emissions from the Energy from Waste plant. This should be evaluated in the ES.

The ES should demonstrate how the emissions will be determined and maintained from the mix of waste/fuels burnt. The chimney stack determination should address the worst-case scenario. Emissions from any auxiliary plant necessary to start up the process should also be considered.

The ES should provide a detailed assessment of the likely quantities and quality of output ash as this will have consequences for methods of disposal (sale, recycling or landfill) and for transportation strategies. The environmental impacts (fugitive emissions) of storing and handling ash should be assessed and mitigation measures proposed as necessary.

The full likely environmental impact of the construction period should be assessed in the ES.

The ES should contain an explanation as to how agreed emissions across a range of pollutants are to be monitored and enforced after the plant is commissioned.

The ES should detail the measures envisaged to prevent, reduce and where possible offset any significant adverse effect on the air quality associated with development. Even if impacts are judged to be insignificant, consideration should still be given to application of measures, in line with current best practice. This is especially the case

for developments that increase emissions of particulate matter, as there is no safe level for exposure, and all reductions in emissions will be beneficial.

Possible Effects

The impact of emissions to air on local air quality with respect to human health may be a key issue. In addition to ensuring that the development's emissions do not exceed statutory LAQM air pollution thresholds for human health, it is also important to consider the emissions of non-threshold pollutants. PM2.5 is such a pollutant and the ES should consider the public exposure reduction target/objective for PM2.5.

The flue gases may contain other pollutants such as dioxins, heavy metals, PAHs, and furans and will depend on what material, or mixture of fuels, is being combusted. Although not under the remit of the LAQM regime, these pollutants also require to be addressed.

Housing will be a near neighbour to this development. The Council expects the ES to evaluate thoroughly all the environmental impacts* likely to be experienced by residents and also areas where residents and non residents have access surrounding the application site, e.g. the cycle path, the playing fields, football pitch at Michelin, the cycle race track , the civic amenity site. Locations and heights of identified sensitive receptors should be agreed with DCC.

(*The environmental impacts include the cumulative direct and indirect air quality impacts of the development proposal taking into account other sources of pollution in the area, such as transport sources, fugitive sources and other industry e.g. DERL and Michelin.)

Consequently the ES should not solely rely on background maps to establish baseline conditions. It will be necessary to consider local air quality monitoring and the modelling of traffic pollution contributions to establish the ambient concentrations at the façades of receptor locations.

Meteorology

Dundee experiences coastal meteorological effects such as onshore coastal breezes and also advective fogs (haar) in summer months. These effects are understood to be important for stack sources within 5km of a coastline. Some advanced dispersion models allow for the simulation of coastal effects. The modelling of coastal effects usually requires some additional meteorology data such as sea surface temperature and temperature over land near the sea.

Five years of meteorological information from RAF Leuchars monitoring station and should be sought to inform the assessment.

Building Downwash

The presence of buildings near to a chimney influence plume dispersion. Building downwash will need to be considered in the dispersion modelling of the development's chimney stack, in order to help inform the determination of the stack

height and pollutant concentrations. Assessment of the effects of this influence should also be extended to the adjacent industrial stacks of Michelin and DERL.

The ES should consider the effects of any proposed buildings, particularly if higher or wider than any existing nearby, on the pollutant emissions from the adjacent chimneys of DERL and Michelin. Any consequential increases in pollutant concentrations from existing sources at relevant receptors should be accounted for in addition to the direct effects of emissions from the Energy plant.

Modelling Resolution

The model resolution considered in the assessment should reflect the fact that relevant exposure to the short term objectives exists adjacent to the proposed site boundaries.

The justification for model selection should demonstrate that the model chosen is appropriate. The modelling report should include the input criteria and assumptions should be auditable.

Abnormal Operating Conditions

Emission products from the use of any auxiliary plant under any circumstances (e.g. during start-up or any intermittent load support) should be modelled, assessed and mitigated and in particular when it is used in combination with the Energy from Waste plant.

It is understood that it is the intention to supply heat to local users where commercially feasible. If the provision of heat will be necessary during periods of main plant down time, e.g. due to maintenance and/or mechanical failure, the emissions associated with the use of any back-up system/auxiliary plant employed to meet the heat demand should be modelled.

Assessment of Fugitive Emissions

Fugitive emissions (of PM10) may arise during the construction or operational phases. The ES should include an assessment of the impacts of any equipment used and activities undertaken in the construction phase of the development that are likely to cause fugitive PM10 emissions.

Ash handling and storage, fuel/waste stored in open stockpiles and processing of oversized materials may give rise to fugitive emissions of PM10, which will require to be assessed. Consideration should be given to the effect of plant downtime, e.g. as a result of breakdown, and the resultant need for stockpiles to be stored for lengthy periods in the open.

Assessment of Traffic Emissions

Detailed dispersion modelling in relation to the assessment of traffic emissions should be undertaken.

The Transport Statement and Environmental Statement should be compatible and inform each other on environmental impacts.

Traffic Assessment

The assessment methodology for the environmental impact of the development generated traffic should reference the Local Air Quality Management Technical Guidance 2009 (LAQM: TG (09)).

The traffic assessment should also include collection of appropriate data to inform the air quality assessment. Traffic data for the purpose of determining the air quality impact of the development should include classified AADT counts and traffic speeds.

The road network to be examined

Estimates of the numbers and types of vehicles and the routes taken which are associated with the development should include all deliveries and all waste collections during construction and operation.

It may be necessary to undertake traffic counts in areas where the chimney plume is likely to ground. The extent of this area is not yet known. For the purposes of screening assessments the LAQM: TG (09) guidance suggests an area of ten times the stack height.

SEPA comments on throughput & design

In order to provide accurate air modelling and Air Quality information to SEPA, the applicant should provide information on the calculated throughput and rated thermal input of the residual waste being incinerated. The basis of any calculations should be provided, including likely operation hours over the year, and confirm approximate annual planned downtimes for e.g. routine maintenance that may reduce the overall throughput.

A full process diagram with calculated inputs and outputs should be provided, and the applicant should describe in detail the overall design of the plant, including the abatement measures and any ash containment and handling methods. The applicant should also demonstrate that the installation will operate in accordance with Best Available Techniques (BAT), in the Environmental Statement (ES) or planning submission, with enough detail to enable SEPA to confirm if the proposed development will meet the basic requirements to potentially consent the application

SEPA comments on Air Quality

The submission should include an assessment of baseline air quality for the area, as provided in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland and the Air Quality Standards (Scotland) Regulations 2010.

It should be noted that the Dundee Air Quality Management Area (AQMA) covers the area in which this proposal falls, and therefore it will be necessary to consider the cumulative effect of the point source emissions, fugitive emissions and existing

background levels to ensure that no Air Quality Objective (AQO) or Air Quality Standard (AQS) is exceeded, or where the AQO or AQS is already exceeded, provide information that confirms that there will be no significant deterioration as a result of the proposals, during both the construction and operating phases.

The applicant has indicated that the existing incineration plant and this proposed new incineration plant will both be in operation at the same time for a period. It is therefore imperative that both operating together are taken into consideration for the purposes of modelling. (See information on Air Emissions Modelling below). It would be advantageous to ensure that, as a minimum, the emission data used is as robust as possible in order to prevent delay in consenting if for example a substantially revised or updated air quality impact assessment is required for PPC permitting purposes.

Ambient local background data should be used where relevant and available for comparison to UK or Scottish data. Air quality information can be found at http://www.scottishairquality.co.uk/ and the Defra Air Quality Archive website

SEPA comments on Air Emissions Modelling and Cumulative Impact

The proposed plant will be regulated by SEPA and it is unlikely to have a significant impact on local air quality. However, the proposal may attract public opposition, therefore we recommend that Dundee City Council refer to the Environmental Impact Assessments and Consent applications that were submitted by Forth Energy in relation to a proposal for a biomass plant in Dundee (2009/2010). http://www.forthenergy.co.uk/biomass-dundee.asp. This was a particularly thorough assessment and a good example of what we would expect to see submitted at the planning stage.

Any PPC permit granted by us will include specific conditions to ensure that the requirements of the Council Directive 2010/75/EC on industrial emissions are met, as required by Chapter IV and Annex 6 of the Industrial Emissions Directive. This includes limitations on the air emissions of certain pollutants.

The applicant should demonstrate the use of appropriate modelling for the ES, and this data may also be used for Permit application, in order to avoid duplication of effort. SEPA strongly recommends that an air modelling method statement is submitted to SEPA in advance of any modelling work being carried out. This has the advantage of agreeing the methods and input parameters in advance, and will save time and money for the applicants and SEPA. The method statement should include:

- The choice of model(s) to be used;
- Pollutants of interest and air quality standards/objectives that model results will be assessed against.
- Background concentrations to be used.
- Emission parameters, (including: stack location; stack height; stack diameter; exit temperature; efflux velocity or flow rate (actual);
- emission concentrations;
- calculated emission rate.

- Meteorology to be used (including the years to be modelled, percentage of calm periods in data and where it has been sourced from).
- Any buildings to be included in model.
- The terrain to be included in model.
- Grid domain, resolution and locations of sensitive receptors.
- Scenarios to be modelled.
- Model output formats to be presented.
- Any other special treatments which may be required to be assessed.

The applicant has indicated that the existing Incineration plant and this proposed new incineration plant will both be in operation at the same time for a period. It is therefore imperative that the output of emissions, based on a worst case scenario for both the existing and the new plant, is taken into consideration for the purposes of modelling. Additional modelling, based on real emissions data from the existing plant, may also be used to justify proposals. Cumulative impacts from other nearby PPC processes and traffic should be considered for inclusion into the modelling.

D1 is a preliminary screening tool the output of which is generally the starting point for selecting a stack height for modelling in order to meet the relevant Short-term AQ standards locally. Discussion regarding the different heights of stack considered in the modelling process and the potential effect on the concentration of pollutants should be provided, including information on process upsets.

Significant emissions using the H1 assessment methodology should be identified and more fully considered. Any unusual topographic situations should be described, and taken into account in the modelling, and all sensitive receptors identified should be described, with full details of the location and NGR. Details of locations, distance from site, direction from site etc., for any background locations used in the model should be provided, along with a justification for the selection of these locations. Other buildings in the locality may also need to be included for the purposes of modelling.

The exact location and NGR of meteorological data used in the model should be indicated, and wind rose data provided for 5 sequential years of data, (individually, for each year of data). Discussion about any main difference in surface characteristics between the meteorological station and the site location should be discussed, and any amendment to modelling as a result of any differences identified should be justified. For further information refer to Appendix E of the Horizontal guidance document H1 at: http://www.sepa.org.uk/regulations/pollution-prevention-and-control/uk-technical-guidance/uk-horizontal-guidance/

The Planning application ES should detail all measures that will be taken at the site as a whole, to mitigate cumulative effects. Modelling results should also be used to inform any Human Health and Ecological Impact Assessments.

SEPA Monitoring comments

Information regarding the proposed monitoring of all discharges and emissions from the installation should be provided, with indicative frequencies.

Emissions to air industry monitoring guidance notes QG1 to QG7 are available at http://www.sepa.org.uk/regulations/pollution-prevention-and-control/guidance/ and should be used as the basis for selection of an appropriate monitoring system.

3. Archaeology / Historic Buildings

Where any proposal could affect a site of known archaeological importance or potential, the applicant will be required to provide an assessment of the archaeological value of the site and the likely impact of the proposal on the archaeological resource. Policies 48 and 51 of the Adopted Local Plan apply.

In summary, there are no archaeological concerns regarding the development area and no credible risk for adverse physical impacts on the historic environment.

Given the pre-existing industrial character of this locale, no issues are foreseen regarding setting impacts on sub-national archaeological elements of the Historic Environment. The closest listed building is the category C listed Baldovie House which lies to the east of the site and is over 400 metres away; Claypotts Castle is located over 1,000 metres from the application site.

It is therefore concluded that there is no need to consider archaeology or the historic environment in any detail as part of the Environmental Statement.

4. Ecology

The Dighty Burn lies to the immediate south of the site (and may encroach into the development site depending upon finalised plans); this is a designated wildlife corridor and an area of open space. The application site is also within the vicinity of the Baluniefield Community Wildlife site and the Baluniefield Site of Importance for Nature Conservation. Development which could have a significant effect on locally important nature conservation is only permitted in or adjacent to wildlife corridors where an ecological or similar assessment has been carried out which details the likely impacts of the proposal on the conservation interests of the area, where any negative impacts can be mitigated and it is demonstrated that there are no other suitable sites. With regard to protected species, European Protected Species as listed in the Habitats Directive of known relevance to Dundee includes bats, which could be found anywhere across the city, and otters, associated primarily with the Dighty Burn and River Tay. Various other species are protected by the Wildlife and Countryside Act 1981 (as amended) including red squirrels, fish, birds and plant life. Development proposals which are likely to have a significant effect on a European protected species are not supported unless there is no satisfactory alternative and the development is required for imperative reasons of overriding public interest. For development affecting a species protected under the 1981 Act there must also be no other satisfactory solution. Under special circumstances a license may be obtained from Scottish Natural Heritage (SNH) enabling work to be carried out; significant effects on protected species may be avoided through sensitive layout, design and

timing of works together with appropriate mitigations measures. Policies 34, 35, 36 and 38 of the Adopted Dundee Local Development Plan (2014) refer.

The Environment Impact Assessment should:

- assess the ecological impacts of the proposed development by determining the value of the ecological features of the sites
- assess the visual and landscape impacts of the proposed development by determining the value of the existing woodland and tree resource and other landscape features e.g. the Dighty.
- access natural heritage / woodland / tree information through desk and field assessments - in particular breeding bird information for the shelterbelt on the 'ATS site' and tree / grassland (ground nesting birds) on 'development site west'
- assess the impact on European Protected Species, in particular bats and otters
- assess the impact of the development on the Dighty wildlife corridor, with respect to run off / waste water disposal etc
- consider the control of invasive species - Giant Hogweed and Himalayan Balsam in particular
- identify measures to avoid, reduce or compensate for negative ecological / landscape and visual impacts

No specific site advice has been given from SNH, however general advice can be found at:

http://www.snh.gov.uk/planning-and-development/advice-for-planners-and-developers/

SEPA guidance as regards Habitats Assessment

An Appropriate Assessment must be undertaken as required by the Conservation (Natural Habitats, etc.) Regulations 1994 (as amended).

The guidance contained in the H1 methodology for PPC BAT and impact assessment indicates that an initial assessment of impacts in an area within a 15km radius of the site may be appropriate. However, assessment of impacts on ecological sites may need to extend significantly beyond this. A detailed map should be provided indicating all designated sites within a minimum 15km radius of the site, along with a descriptor of each site indicating why it is designated.

The conclusions from the modelling should be provided to confirm if the Process Contribution may have a significant effect on any designated site with respect to nutrient nitrogen or acid deposition, and if so, further details should be provided and proposed mitigation measures indicated.

5. Flood Risk / SUDS

Policy 41 of the Adopted Local Plan addresses flood risk management; there is a general presumption against development on previously undeveloped land and in high risk areas based on a 0.5% or greater annual probability of flooding (equivalent to a 1 in 200 year flood or greater). Policy 42 requires that surface water from new development must be treated by a Sustainable Urban Drainage System (SUDS), which should be designed so that a 1 in 200 year rainstorm event, flooding will not be higher than 300mm below floor level.

The application sites identified and outlined in red are either within or very close to the Dighty functional flood plain; no development shall be permitted within the functional flood plain without a suitable compensatory flood storage scheme being agreed. A flood risk assessment should be included with any application submission to the Planning Authority, considering the flood risk to each site and demonstrating that there is no increase to flood risk elsewhere along the Dighty.

Sustainable drainage systems should be incorporated into any new development to attenuate and treat surface water flows.

SEPA's comments in relation to flood risk:

If, in the absence of a Flood Risk Assessment (FRA), we are formally consulted through the planning process on the proposed development we would object on the grounds that it may place buildings and persons at flood risk contrary to Scottish Planning Policy based on the information supplied with this consultation.

We have been asked to provide flood risk advice regarding the proposed energy from waste facility on Forties Road in Dundee.

There are four possible locations all within close proximity to each other. Review of the SEPA flood hazard maps shows that there is a significant risk of fluvial flooding to the three southerly possible sites. A flood risk assessment was submitted in support of the extension to the Michelin factory which lies to east of the site and this also shows that there is a significant risk of flooding to the site.

A significant flood occurred on the Dighty Water in October 2012 and a press article within 'The Courier' dated 13th October 2012 states that Dundee Energy Recycling Plant at Douglas was flooded by the Dighty. This event had a return period of 1 in 25 years based upon the review of the annual maximum data at our gauging station at Balmossie.

A flood risk assessment would have to be submitted in support of any application to ensure that the development complied with Scottish Planning Policy. The applicant should ensure that an appropriate FRA is carried out in line with our technical guidance on flood risk assessment
http://www.sepa.org.uk/environment/land/planning/guidance-and-advice-notes/.

There is also surface water flood risk to all of the development sites and this source of flooding should be discussed with the flood prevention officer at Dundee City Council.

SEPA comments in relation to surface water treatment philosophy

Additional Surface Water runoff should be treated by SUDS to protect water quality, however, SUDS which use infiltration techniques may not be suitable where land is contaminated and this should be given detailed consideration. Any surface water interceptors and SUDS should be sized and designed according to CIRIA document C697 'The SUDS Manual' and C698 'Site handbook for the construction of SUDS' (details can be obtained via http://www.ciria.org/) to the satisfaction of the Planning Authority.

SEPA comments in relation to firewater

The applicant should indicate general plans for containment of firewater, and in any subsequent PPC application, demonstrate that firewater volumes considered are representative of a worst case emergency response; can be contained on site; and that any pollution risk to groundwater is minimised. It may be beneficial to separate distinct operational areas into fire compartments to reduce potential firewater volumes. (SEPA's Pollution Prevention Guidance Note PPG18 and CIRIA report C736 on the Containment Systems for the Prevention of Pollution provide useful guidance at http://www.ciria.org/).

The use of SUDS that are designed for percolation to groundwaters is not recommended where there is a risk of contamination from chemicals, waste in the firewaters and this should be taken into consideration.

Although not relevant to the above discussion, it may be beneficial to consider that large PPC sites with combustibles should have 2 points of access for potential fire-fighting purposes.

SEPA comments in relation to foul water treatment

The existing interceptor discharges foul water directly to sewer and any additional foul effluent will be subject to gaining the relevant Scottish Water consent. Any other discharges may require authorisation, and the applicant should refer to the CAR Practical Guide at http://www.sepa.org.uk/regulations/water/ for further information.

Detailed advice from SEPA in terms of flood risk:

The SEPA Flood Maps have been produced following a consistent, nationally-applied methodology for catchment areas equal to or greater than 3km2 using a Digital Terrain Model (DTM) to define river corridors and low-lying coastal land. The maps are indicative and designed to be used as a strategic tool to assess flood risk at the community level and to support planning policy and flood risk management in Scotland. For further information please visit http://www.sepa.org.uk/environment/water/flooding/flood-maps/

We refer the applicant to the document entitled: "Technical Flood Risk Guidance for Stakeholders". This document provides generic requirements for undertaking Flood Risk Assessments and can be downloaded from http://www.sepa.org.uk/environment/land/planning/guidance-and-advice-notes/.

Please note that this document should be read in conjunction Policy 41 (Part 2).

Our Flood Risk Assessment checklist should be completed and attached within the front cover of any flood risk assessments issued in support of a development proposal which may be at risk of flooding. The document will take only a few minutes to complete and will assist our review process. It can be downloaded from http://www.sepa.org.uk/media/159170/flood-risk-assessment-checklist.xls.

Please note that we are reliant on the accuracy and completeness of any information supplied by the applicant in undertaking our review, and can take no responsibility for incorrect data or interpretation made by the authors.

The advice contained in this letter is supplied to you by SEPA in terms of Section 72 (1) of the Flood Risk Management (Scotland) Act 2009 on the basis of information held by SEPA as at the date hereof. It is intended as advice solely to Dundee Council as Planning Authority in terms of the said Section 72 (1). Our briefing note entitled: "Flood Risk Management (Scotland) Act 2009: Flood risk advice to planning authorities" outlines the transitional changes to the basis of our advice in line with the phases of this legislation and can be downloaded from http://www.sepa.org.uk/environment/land/planning/guidance-and-advice-notes/.

Regulatory requirements:

Details of regulatory requirements and good practice advice for the applicant can be found on the Regulations section of our website. If you are unable to find the advice you need for a specific regulatory matter, please contact a member of the SEPA Local Regulatory Team in your local SEPA office at:
62 High Street, Arbroath, DD11 1AW, Tel: 01241 874370

Or a member of the Technical Support Unit at:

Broxden Business Park, Lamberkine Drive, PERTH, PH1 1RX, Tel: 01738 627989

6. Ground Contamination

Development of potentially contaminated brownfield or statutorily identified contaminated land will be considered where a site investigation is submitted, establishing the nature and extent of any contamination, and that suitable remediation is proposed, as per Policy 45 of the Dundee Local Plan.

It's difficult to be specific about what sort of contaminated land risk assessment will be required, but it would be expected that a preliminary risk assessment (desk study) would be submitted with a planning application. Given the proximity of the application to the Dighty, and that it is over the sandstone, particular consideration will need to be given to possible impact on the water environment.

SEPA's comments in relation to ground conditions

Results from a full, intrusive site investigation will be required at the PPC Permitting stage to provide baseline information on any potential contamination prior to commencing construction and operations.

The relevant guidance can be found in the SEPA document: "SEPA site and baseline Reports guidance" (Document number IED TG 02) via the following link:- http://www.sepa.org.uk/regulations/pollution-prevention-and-control/guidance/ and the SEPA soil and groundwater monitoring technical guidance should also be used to demonstrate the proposed ongoing sampling at the development.

It may be possible to combine any site investigation work required by the Planning Authority with the requirements of this guidance.

7. Landscape and Visual Impact

Representative viewpoints to form a baseline for the Landscape and Visual Impact Assessment have been submitted as:

- Viewpoint 1 - Balunie Drive – residential and recreational receptor to the south west
- Viewpoint 2 - Dighty Water cycle route – recreational receptors to the south east
- Viewpoint 3 - Open space at Traquair Gardens – recreational and residential receptor to the north
- Viewpoint 4 - Drumsturdy Road/B961 – transport and residential receptor to the north east
- Viewpoint 5 - Middleton Farm – long distance view, residential and transport receptor to the north west
- Viewpoint 6 - Dundee Law – recreational receptor at designated viewpoint (also Listed Building, War Memorial) to the south west

These have been accepted as reasonable viewpoints, with Viewpoint 4 at Drumsturdy Road being moved slightly to account for potential views from the new cemetery, Pitkerro Grove.

8. Noise

Policy 47 of the Adopted Local Development Plan requires that all new development or an extension to an existing development that would generate noise (as well as vibration or light pollution) will be required to demonstrate that it can be accommodated without an unsatisfactory level of disturbance on the surrounding area.

In this case it is difficult to assess/advise on the likely impact that noise from the proposed operation will have on the residents of the area.

However, a Noise Impact Assessment (NIA) will be required to assess the range of activities that are to be undertaken at the site. This NIA should include assessment of all noise associated with the proposed site, for example, all deliveries and traffic movements to the site, vehicle movements during operations on the premises, loading and unloading operations, the operation of machinery, ventilation and extract systems, etc. This is not intended to be an exhaustive list of likely noise sources that require be assessed, but is instead provided as example only.

Background/base line noise levels will also need to be determined for the area and at noise sensitive receptors.

SEPA's comments with regard to noise and vibration

Information on noise and vibration from the operation of the plant should also be included within the ES or planning submission, including both day time and night time noise levels against existing.

The applicant must demonstrate that working methods proposed represent the Best Available Techniques (BAT) for control of noise and vibration from the installation.

Impact on local sensitive receptors will be a key factor in assessing the BAT justification with the overall aim being to prevent, minimise and render harmless noise and vibration emissions. Information is available in the document Guidance on the control of noise at PPC Installations.

SEPA operational experience is that in any facility where reversing vehicles, waste movements, possible pressure release valves and fan noise occurs, it is inevitable that a degree of more subjectively annoying noise will occur and as such it is appropriate to factor this into the design. It is recommended that the applicant considers vehicle routing to minimise the requirement for reversing.

Problematic noise is frequently related to 1/3 octave tonality as per BS7445 and/or narrow band. Although unlikely that this data is currently available, further assessment of noise will be made at the PPC application when detailed design information has been completed. All nearby sensitive receptors should be taken into consideration, and a location plan identifying all such receptors should be provided.

Acoustic performance of the buildings should be taken into consideration for proposed new buildings, and should be of a high standard.

9. Odour

SEPA's comments with regard to odour

The applicant should provide a justification for the inclusion or absence of odour controls at Permit application. Where any potential sources of odour are identified, a

suitable odour impact assessment may be required. SEPAs Odour Guidance 2010 can be located at http://www.sepa.org.uk/regulations/air/odour/

It is common practice to try to utilise odorous air from within processing areas into the air supply for incineration. This will be expected as a minimum. Where it is not possible to utilise all of the air from within the processing areas, alternative abatement methods should be considered, and detailed in any application.

10. Recycling

SEPA'S comments on Construction and Waste minimisation

The ES or planning submission should detail measures to be undertaken to ensure waste will be minimised at construction and operational phases. The applicant should use construction practices to minimise the use of raw materials and maximise the use of secondary aggregates and recycled or renewable materials through a Site Waste Management Plan (SWMP). Any recovery or reuse of controlled waste should be in accordance with the Waste Management Licensing (Scotland) Regulations 2011 or where part of an installation the PPC Regulations.

A Construction Environmental Management Plan (CEMP) should be agreed with the Planning Authority. This should include draft schedules of pollution mitigation, relevant environmental consents or licences required, the setting of environmental criteria with appointed contractors, and appointment of an Environmental Clerk of Works (ECoW) or Environmental Site Manager (ESM) to manage all impacts and requirements of the Plan.

It is recommended that the CEMP and SWMP are included as Suspensive conditions to be agreed with SEPA prior to construction.

11. Roads and Transport

Policy 55 of the Adopted Local Plan requires that all development proposals that generate travel should be designed to be well served by all modes of transport. Development proposals will be required to have no detrimental impact on the capacity or functioning of the existing road network, ensure that safe and adequate provision is made for road freight and waste access, loading and unloading; and comply with Dundee City Council's roads design standards Streets Ahead.

This submission should include a Transport Statement for the proposal which clearly details the traffic situation of existing situation against that proposed to assess the level of traffic which would be generated by the proposal. This should cover both peak times for the existing roads and peak times for the use of the proposed development.

12. Sustainability

Dundee's Local Development Plan considers that the quality of Dundee's local environment is a vital ingredient in the quality of life for people living, working in or visiting the city. Sustainability has been put at the heart of the Local Development Plan in recognition of our duty to protect and enhance the environment for this and succeeding generations. The policy framework of the Development Plan seeks to protect the environment by avoiding the negative effects that development can have in its construction, operation or use, and demolition life cycles. Where avoidance cannot be fully achieved it is expected that development proposals will include measures designed to mitigate any significant negative impacts. A demonstration of sustainability measures is expected throughout an Environmental Statement.

Appendix C

Site Location Plan

A3

Legend

Red line boundary

Issue	Date	By	Chkd	Appd
I1	25-10-16	CD	CE	JLS

Metres

0 245 490 980

ARUP

Scotstoun House
South Queensferry
EH30 9SE
Tel +44131 331 1999
www.arup.com

Client

MVV Environment Services Limited

Job Title

Energy from Waste Combined Heat and Power Facility, Forties Road, Dundee

Drawing Title

Site Location

Scale at A3

1:18,000

Job No	Drawing Status
245510-00	**Issue**

Drawing No	Issue
Figure C.1	**I1**

MXD Location

Appendix D

Planning Application Boundary with Internal Operational Boundaries Plan

A3

N

Legend

A — Proposed Scheme:
Energy from Waste /
Combined Heat & Power Facility (EfW CHP)

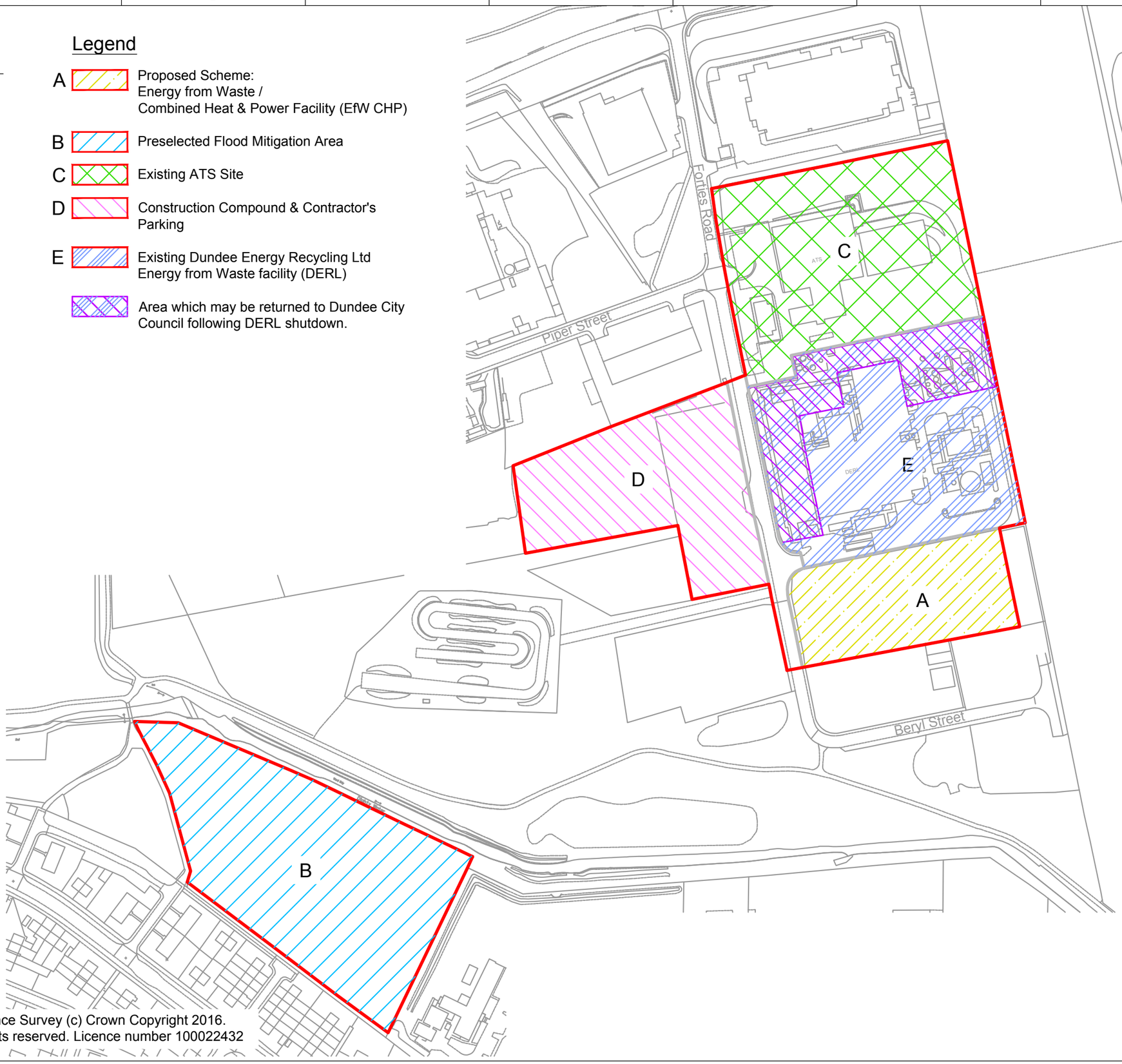
B — Preselected Flood Mitigation Area

C — Existing ATS Site

D — Construction Compound & Contractor's Parking

E — Existing Dundee Energy Recycling Ltd
Energy from Waste facility (DERL)

Area which may be returned to Dundee City Council following DERL shutdown.



Rev	Date	By	Chkd	Appd
I8	25/10/16	ML	NM	GLD

Issued for Information

ARUP
Scotstoun House, South Queensferry
West Lothian, EH30 9SE
T +44(0)131 331 1999
www.arup.com

Client
MVV Environment Services Ltd.

Project Title
Energy from Waste Combined Heat and Power Facility, Forties Road, Dundee

Drawing Title
PAN Site Location

Scale at A3 1:2500

Role Consultancy

Suitability **Issue**

Arup Job No **245510-00**

Rev **I8**

Name
PA 02
(SK-PAN-002)

Do not scale

Appendix E

Example Chemical Content of APC Residues

MARCHWOOD SCIENTIFIC SERVICES
Unit 1A.2(a) North Road
Marchwood Industrial Park
Marchwood
Southampton
SO40 4BL
02380 552788

MVV Environment Devenport
Devonport EfW CHP Facility
Creek Road
Plymouth
PL5 1FL

Sample Identifier :	MED_APCr_310816_14
Sample No:	116/7944
Order No:	PO0000001002
Sampling Date:	31/08/2016
Date of Receipt:	02/09/2016
Date of Analysis:	20/09/2016
Date of Report:	20/09/2016
Sample Condition:	Normal

Analysis of an Air Pollution Control Residue

Summary of tests required on sample

1. Dioxins and Dioxin like PCBs (results for this analysis have been reported separately)
2.Metals on solid in mg/Kg

Reported by: J Fursman
Position: Quality Manager
For/on behalf of Marchwood Scientific Services Ltd.

Test Report
Solid Sample Analysis

Analysis	Units	Results
Antimony	mg/Kg	108
Arsenic	mg/Kg	87
Cadmium	mg/Kg	174
Chromium	mg/Kg	93
Cobalt	mg/Kg	148
Copper	mg/Kg	3242
Lead	mg/Kg	2505
Manganese	mg/Kg	623
Mercury	mg/Kg	250
Nickel	mg/Kg	51
Thallium	mg/Kg	45
Vanadium	mg/Kg	132
Zinc	mg/Kg	4009
Tin	mg/Kg	<1
Selenium	mg/Kg	19

Appendix F

Construction Environmental Management Plan

Construction Environmental Management Plan

(CEMP)

Dundee & Angus Energy from Waste Combined Heat and Power Facility

Revision	Date	Status	Author	Checked
0	21.10.16	Draft for planning application.	JW	N/A

Table of Contents

1 Introduction

MVV Environment Ltd will construct and operate an Energy from Waste (EfW) facility, incorporating Combined Heat and Power (CHP) technology, on land to the south of the existing DERL Facility

This Construction Environmental Management Plan (CEMP) is applicable to the construction phase of the development, and sets out the intended methods of effectively managing potential environmental impacts arising from the construction of the EfW CHP facility.

The responsibility for implementation of the CEMP lies with the Principal Contractor and it will be implemented and controlled by the Site Manager who will work in conjunction with key personnel (Construction Director, contractors, suppliers, etc.) to ensure it is implemented. To ensure that the plan remains relevant it will be the responsibility of the Site Manager to take ownership of the CEMP and ensure its relevance to activities being undertaken on site taking account of any changes from the initial scope of the plan, this requires its regular revision and updating as necessary.

2 CEMP Overview

This CEMP identifies the project management structure roles and responsibilities regarding managing and reporting on the environmental impact of the construction phase. An Environmental Impact Assessment (EIA) was undertaken during the planning process which identified and assessed the aspects of construction that could have an environmental impact. All proposed mitigation measures described in the ES will be applied and are specifically described in the applicable sections of the CEMP.

The overall environmental objectives that will be applied to the project are:

- All practicable steps will be taken to minimise the negative environmental effects of the construction works.
- All activities will be conducted in accordance with the CEMP, relevant legislation, Codes of Practices, Guidelines, and any local environmental procedures.
- Environmental licenses, permits and consents and other statutory requirements are to be obtained prior to works commencing, and fully complied with.

- All staff (including sub-contractors) will be aware of the environmental issues relevant to the Project through the provision of site specific information on the environmental impacts of construction and the mitigation measures to be applied by means of inductions, briefings and tool box talks.
- Regularly reviewing of the environmental requirements of the project and ensuring that environmental controls remain adequate throughout the duration of the project.

3 Roles and Responsibilities

This section describes the environmental roles and responsibilities of key members of the project team and provides contact details for the relevant personnel. The principal contractor will assign individuals to each of the roles and responsibilities outlined below.

Construction Director

- To lead by example and champion all areas of environmental management.
- Ensure that appropriate resources are in place to effectively implement the CEMP and deliver all legal requirements.

Site Manager

- To lead by example and champion all areas of environmental management.
- Ensure that appropriate resources are in place to effectively implement the CEMP and deliver all legal requirements.
- Review the CEMP throughout the construction process to ensure it remains relevant and effective in identifying and managing environmental risks.
- Report to and agree in writing with the LPA any amendments to the CEMP.
- Ensure that all legal requirements are identified and met.
- Implement the use of an accurate Site Waste Management Plan (SWMP) and ensure its applicability to the site operations.
- Undertake (or nominate others) to undertake audits, as outlined in section 4.
- Monitor performance of the project against statutory requirements, objectives and targets.
- Ensure the accurate reporting of resource usage e.g. energy and water.
- Ensure that all documentation referencing environmental procedures and policy are relevant and up-to-date and included within the CEMP.

- Manage all necessary documentation to demonstrate compliance with appropriate legislation for the required period.
- Identify necessary levels of environmental competence in staff and ensure necessary training is delivered to personal.
- Manage investigation and resolution of complaints in accordance with the Complaints Handling Protocol.
- Ensure correct procedures are followed in case of an environmental incident.

Construction Supervisors

- Ensure that the CEMP and associated documents and control methods are effectively implemented on site on a day to day basis.
- Fully investigate and act on any environmental incidents and report findings to the Site Manager.
- Conduct and document weekly environmental inspections.
- Ensure that environmentally orientated briefings and "Toolbox Talks" are being delivered to the site workforce.
- Implement and maintain environmental controls on site.
- Ensure action is taken on any spills/incidents that occur on site.
- Report any activity that has potential to have an environmental effect immediately to the site manager.

Site Staff & Sub-Contractors

- Compliance with direction given in the Site Induction
- Proactively approach environmental issues whilst on site
- Site staff should ensure they are fully aware of the environmental procedures in place and if they have any questions they should be directed towards the Site Manager.
- Ensure all construction activities are carried out in line with the procedures detailed in the CEMP.
- Report any environmental incident to the Site Manager

Contact Details

During the construction works contact can be made with the construction site as follows:

- Phone: [To be advised prior to the start of main construction works]
- Email: [To be advised prior to the start of main construction works]

Contact can also be made by email with the following persons:

Role	Name	Email
Construction Director	TBA	TBA
Site Manager	TBA	TBA
Community Liaison Manager	TBA	TBA

Training

All site personnel with environmental responsibilities will be suitably trained and qualified. Where it is indicated that additional specific training requirements are needed, it is the responsibility of the site management to ensure these needs are met at the earliest possible opportunity.

The induction given to all site personnel will include a general overview of site specific environmental issues, as well as details of how these issues will be managed. All appropriate site personnel will undertake environmental awareness training and if supplementary training is needed over the course of the works it will be provided as necessary.

Detailed information will be communicated to personnel by means of regular Environmental Briefings and Toolbox Talks covering topics relating to specific site activities.

Environmental Bulletins and Newsflashes will be clearly displayed in all mess / office areas. Any actions relating to these will be implemented immediately, and all site personnel made fully aware of any changes.

4 Environmental Management

The site will implement a project specific Environmental Management System (EMS) complying with BS EN ISO 14001. The EMS will be monitored and audited by appropriate personnel throughout the duration of the works. An audit schedule will be created which includes both internal and external EMS and legal compliance audits. Any system failures will be documented and appropriate corrective actions issued and implemented.

An environmental impact assessment has been undertaken for the project during the planning process. All identified risks are addressed within this document. However, should any additional risks be identified, other than those outlined in this report, supplementary management plans will be put into place.

The construction of the facility is anticipated to take approximately 35 months and will involve a phased construction programme involving a number of main construction activities. A set of phasing diagrams will be developed which illustrate the sequence of construction and the areas of the site in which work will be carried out during the various main construction phases.

- Pre-Phase/Activity planning

During the initial planning of each phase of construction and prior to the commencement of the relevant phase the activities likely to cause environmental impacts will be identified and the most suitable mitigation measures selected from those identified generally in this CEMP for the specific activities will be incorporated within the relevant phase activity method statement.

The following subsections outline the processes and methods to be implemented on site to ensure all environmental risks are identified and sufficient mitigation measures are put in place to reduce environmental impacts associated with the works.

4.1 Overall Project Management Actions

All environmental documentation will be kept on site at all times and be available for inspection by internal and external auditors and regulators, as well as the client and management. Site personnel will be made aware immediately if any significant changes in work procedures are implemented.

Relevant documentation will include the following:

- Site Weekly Checklist
- Impacts and Aspects Matrix
- Environmental Risk Assessment
- Construction Environmental Management Plan
- Site Waste Management Plan
- Pollution Prevention Plan including emergency response
- Training and Responsibilities Matrix

Weekly environmental inspections will take place on site by the construction supervisor. The findings of these inspections and any associated actions will be appropriately documented on the Weekly Checklist.

The site management will regularly liaise with the relevant authorities and regulatory bodies with regards to all consents, exemptions and licences. Any applications will be made with consideration of appropriate timescales.

A consents schedule will be completed and held on site, detailing information from date of application. Where specific conditions are set through any licence, consent or exemption, this is to be clearly identified and regularly reviewed to ensure compliance.

The Site Emergency Response plan will be found within the Pollution Prevention Plan. Contact details will be clearly displayed on site and information explained to all site personnel. The Pollution Prevention Plan will contain a clear detailed plan of the site which indicates the location of sensitive receptors such as watercourses and drainage points. An appropriate number of spill kits will be located within these areas and will be clearly marked on the plan.

It is the responsibility of the site management to ensure all spill kits are fully stocked at all times, and an inventory of equipment within the spill kit is to be clearly displayed within.

The project will be registered with the Considerate Constructors Scheme (CCS) under registration number: [TBC].

The CCS is a non-profit-making, independent organisation founded by the construction industry to improve its image. The CCS is neither grant maintained, nor funded by the government, and is solely financed by its registrations. The CCS Code of Considerate Practice commits those sites and companies registered with the Scheme to be considerate and good neighbours, as well as respectful, environmentally conscious, responsible and accountable. Registered sites and companies must also consider their appearance and safety.

This commitment is maintained by the CCS monitoring registered sites and by the display of posters around the construction site, setting out the Code to which the sites or companies are committed. If passers-by wish to comment, the name and telephone number of the site manager or company contact are clearly displayed, alongside the freephone telephone number of the CCS's administration office.

CCS Monitors who are drawn from the senior ranks of all disciplines within the construction industry, with a fairly even division between architects, engineers, contractors and surveyors, visit the site on a regular basis. The Monitor acts as an 'informed member of the public' and is looking at how the site represents the company and the industry. During the visit, the Monitor will assess the perimeter of the site, the access to the site offices and the facilities provided for the operatives. The Monitor will also review whether the site's procedures are in accordance with the Scheme's Code of Considerate Practice.

The Monitor will write a report for the Site Manager and this will include the score achieved against each of the eight categories of the Scheme's Code of Considerate Practice. The purpose of this score is to indicate how well the site is performing against the Code.

The site will comply with the CCS Site Code of Considerate Practice and clearly display the associated posters and banners clearly displaying all relevant contact details. MVV will ensure

that all works carried out are undertaken in a manner which not only ensures best practice, but also minimal cause for complaint by the public and disruption to third parties.

➢ Training and management procedures

To ensure that mitigation methods and measures are applied, appropriate training and management procedures will be implemented in accordance with Building Research Establishment's (BRE): The Pollution Control Guide: Part 1 – Pre-project planning and effective management.

The BRE guidance makes the following recommendations: "Before the start of any project, appropriate training on how to control pollution emissions should be given to all personnel expected to be present on site. This training will include;

- The benefits of reducing pollution to health and environment,
- The benefits of minimising disruption from complaints and enforcement actions,
- Methods to minimise the generation of pollution,
- Actions plans on what should be done if emissions breach any limits that have been set for the particular site,
- Individual responsibilities and management procedures,
- The importance of effective communication between relevant personnel at all levels."

All site personnel, site operatives and sub-contractors will be made aware of the risks and mitigation methodology for any potential environmental impacts relevant to their specific activities through the Site Induction and regular briefings and toolbox talks.

➢ Consultation with the public

A Stakeholder Communications Plan will be developed to set out what engagement with the local community is required prior to work commencing on site.

In conjunction with appropriate mitigation, control of operating hours and employee training, handling public relations in an appropriate way will help to reduce the potential for air quality

complaints. BRE: The Pollution Control Guide: Part 1 – Pre-project planning and effective management makes recommendations regarding the handling of public relations. These recommendations will be implemented at the site;

Notice boards on the site perimeter fencing will display telephone and email contacts for enquiries and receipt of complaints, and the name of the persons who should be contacted.

All dust and air quality complaints, and other complaints relating to nuisance or pollution arising from the construction activities, will be investigated to:

- Identify the cause of the complaint
- Identify and implement appropriate measures to reduce emissions in a timely manner
- Record the complaint, and any measures taken, and make the complaints log available to the local authority when requested.

4.2 Dust

The site is located within a predominantly industrial area with the existing DERL site to the north, Michelin tyre factory to the east and car dismantlers' yards to the south. To the west is an area of grassland accessed by the public and leading to the Dighty Water. The boundary to the site therefore has a number of potentially sensitive receptors.

It is recognised that in periods of high winds the receptors affected by wind-blown dust could be areas further away than those mentioned above if suitable dust mitigation measures are not implemented.

The deposition of dust outside of the site boundary is a potential source of statutory nuisance and can lead to complaints being received. As well as receiving complaints dust can also have an impact on human health and local ecology. The mitigation outlined in this section will focus on removing the potential from nuisance dust emissions.

Potential dust sources during the construction phases of the development works are:

- Site clearance
- Ground excavation, piling and earthworks

- On site earth moving operations, site levelling, cut and fill etc.
- Vehicle movements over haul roads (especially unpaved)
- Vehicle movements on site during dry periods
- Re-suspension of particulates from construction vehicle movements on site,
- Wind blowing across the site during dry periods
- Stockpiling of excavated materials
- Cutting, grinding and drilling operations
- Accidental spillage and loss of load from vehicles carrying loose material
- Deep excavations
- Tipping
- Earthworks

The generation of dust nuisance requires consideration of additional factors such as:

- Prevailing wind (speed, direction)
- Prevailing climate, including rainfall
- Location of sensitive receptors (including residential and commercial properties, habitats and watercourses)

Potential impacts

The Environmental Protection Act lists the emission of dust from industrial, trade or business premises in sufficient quantity to be prejudicial to health or a nuisance as a statutory nuisance. Dust which is raised by site operations may be carried to nearby residential areas and if present in sufficient quantities has the potential to cause a nuisance by settling on clean surfaces.

There are no UK statutory or recommended levels of dust deposition that constitute a statutory nuisance; whether or not a nuisance exists is determined in the first instance by the professional judgement of the environmental health officer.

Dust contains particles in a range of sizes. The finer fraction of dust particle range is more likely to become airborne and to travel beyond the boundary of a site.

The fine particles which comprise dust can become suspended and entrained in air and, as such they can disperse from a source. They will progressively fall out of the air stream; in fact

most dust settles out close to the source. Fugitive dust is that which escapes from the immediate vicinity of the source and may affect the area surrounding the site.

Particulate dust emissions from construction works associated with the development have the potential to impact upon nearby premises, and site workers during the works. Dust which is raised by site operations may be carried to nearby residential areas, if present in sufficient quantities. Concerns have been raised by the inhalation of dust particles and the possible health effects this may have.

Where mud from a development site is allowed to spread onto local roads, it can form a secondary source of dust. The mechanical action of wheels on the road surface material will reduce the particle sizes by crushing and the potential for emission of dust from these roads can be quite high. As vehicles pass along the road, dust is re-suspended into the turbulent air stream both beneath and behind the vehicle and this can become entrained into a moving air flow. The erosive action of road traffic depends on the number and size of wheels, the vehicle speeds and the moisture content of the surface material.

Good environmental practices as described below will be used to control these dust emissions, and mitigate against any nuisance problems arising.

Monitoring programme

On-going monitoring will be undertaken by the construction supervisors on a regular basis, both on and off site for visible signs of dust emissions and deposition originating from the site to ensure the adequacy of the mitigation measures being employed.

On site daily monitoring of dust emissions will be undertaken for each construction activity which is deemed to pose a risk, with appropriate records maintained.

The monitoring programme will record:

- Date
- Activity/Location
- Weather Conditions
- Wind Direction and Speed

- Dust suppression method(s) implemented

Excessively windy conditions can increase the propagation of dust. The local weather forecast will be taken into account as part of the monitoring procedure. These conditions will be noted and the mitigation level increased for activities which have an increased risk of causing dust nuisance (e.g. excavations and earthworks) during windy conditions.

Any complaints in relation to fugitive dust will be logged and appropriate action taken by site management in accordance with the Complaints Protocol to ensure any further potential for complaint is minimised. Logs of any complaints will be made available to the relevant authorities.

Mitigation Techniques

All vehicles will switch off engines when stationary (to reduce emissions from idling vehicles).

Where possible, use of diesel of petrol powered generators will be avoided, and mains electricity or battery power equipment used where practicable.

Mitigation measures will be implemented to ensure effective control of dust emissions from the construction works. These are industry best practices. The best practices are proven, well established, techniques to mitigate nuisance dust emissions.

The mitigation measures proposed in this plan are based on guidance provided by the following documents;

- The BRE Guidance Document, controlling particles, vapour and noise pollution from construction sites.
- London Best Practice Guidance, The control of dust and emissions from construction and demolition.

General mitigation techniques for the various construction activities will include:

Activity	Mitigation measures
Construction Traffic	• All construction traffic will follow specifically designated routes • Speed limits will be put into place on site for all vehicular movements • All vehicles carrying loose material will be covered • Wheel wash facility will be used for vehicles leaving site
Highways	• Where necessary, use of road sweepers will be incorporated to ensure highways remain clear of dust and mud • Road edges and pathways will be swept by hand and damped down as necessary
Stockpiles	• To be damped down enclosed or covered as appropriate. • To be sealed or sprayed with chemical bonding agents as required • Location of stockpiles away from any sensitive receptors wherever possible
Dust Suppression	• Mobile bowsers to be deployed on site at regular intervals as necessary. • Monitoring and mitigation activity to be increased during significantly dry and windy periods • Where necessary, use of enclosures to be considered to ensure reduction in dust migration • Deliveries of significantly dusty materials to be sprayed to reduce dust potential • All cutting and grinding operations to be conducted in ways to reduce risk of dust migration (wet cutting techniques etc.)

There will be a complete prohibition on the burning of any materials on the site during construction.

Mitigation equipment will be readily available on site from the commencement of the works. These will include sheeting, and damping equipment; such as, tractor bowsers, road sweepers etc.

Where processes are intrinsically dusty and alternative processes exist which are less dusty, these will be implemented where practicable. Prefabricated components and construction will

be used wherever possible to minimise the need for on-site construction which may cause the emission of dust.

Suitable control procedures for minimising dust during the various construction phases

- Preliminary works and site establishment

The scale of the preliminary works is minor in comparison to the main construction works and provides the enabling packages to ensure the main construction works can be undertaken without logistical restrictions. These elements will incorporate small scale earthworks using small plant.
All sensitive receptors are a consideration during these works. However as a result of the scale of the operations required the nuisance potential is reduced with smaller scale plant, smaller work areas and a reduced frequency/duration of relevant activities.

- Earthworks and piling

Excavations, piling, loading and unloading of materials on-site and stockpiling of materials have the potential to be a major contributor to dust emissions. During excavation, previously stable surfaces are disrupted and exposed to the wind. As these materials are generally dry they can easily become suspended by the wind or mechanical disturbance and readily become airborne in significant quantities.

Surfaces will be disturbed as little as possible and where necessary stabilised as soon as possible after disturbance by damping down with water sprays to minimise dust emission and re-suspension.

Where the construction logistics on site allows stockpiles will be located away from areas of the site close to any sensitive receptors. All stockpiles will be treated with water sprays to prevent dusting or covered correctly with secured tarpaulins where necessary.

- Reinforced concrete structures

The fabrication and construction process will involve the construction of reinforced concrete (RC) foundations and structures. There is potential for the emission of dust in both open and enclosed areas during the RC construction stage and mitigation methods are necessary to reduce these.

Off-site fabrication and construction will be used wherever possible. If this is not possible, the fabrication processes will be undertaken away from sensitive receptor areas where practicable.

Dust suppression methods will be implemented by using fixed enclosures or equipment with water sprays, local exhaust ventilation or particle extraction/minimisation systems.

Mixing of concrete will occur off site and be directly delivered to the required area of the construction site. Large Scale on site batching will not be used. Any small scale mixing requirements will be undertaken in shielded areas away from sensitive receptors.

Dry sweeping will be avoided and damp sweeping using a fine mist will be used. Washing and damping down will be implemented as required.

- Materials handling (throughout the construction period)

A wide range of materials will be handled during the construction phases of the development and the handling of these materials has the potential to create dust emissions. Generally the use of dry or powdery material on site will be minimised. The following precautions will be implemented to minimise dust emissions arising from materials handling;

- Material drop heights will be minimised,
- Damping down will be used to reduce dust emissions. in dry, hot weather damping down frequency will be increased,
- Steep sided stockpiles or mounds or those with sharp changes in shape will be avoided, Heights of stockpiles will be restricted to mitigate airborne dust potential.
- Wherever possible stockpiled materials will be kept away from the site boundary and sensitive receptor locations and damped down, enclosed or securely sheeted as appropriate.

- Wind barriers will be used to protect stock piled loose material and skips will be enclosed or covered, Lorries will be covered and closed tankers will be used for transporting dry and fine powdery materials,
- Materials delivered to site will be left wrapped until needed,
- Methods and equipment will be in place in case of spillages. The site will be regularly inspected for spillages and wet handling methods for cleaning up spillages such as cement powder will be used.

➢ Site, Access and Public roads (throughout the construction period)

During development it will be necessary to construct access and site roads to accommodate vehicle and plant movements on the site and for delivery of required materials.

Unpaved site roads can greatly contribute to dust emissions, especially in dry or windy conditions therefore compacted hard surfaces will be used wherever possible, even if the routes are only temporary. Traffic on site roads located close to sensitive receptor locations will be kept to a minimum where construction requirements allow.

Vehicle movements and behaviour on site will be controlled by appropriate signage and compliance will be monitored by construction site supervisors. Vehicles will be restricted to a minimum commensurate with the construction requirements and speeds will be limited to 5 mph on un-surfaced roads and 10 mph on properly surfaced and maintained roads. This will contribute to the reduction in the re-suspension of dust as a result of the movement of vehicles.

Site roads will be inspected regularly and kept in a compacted condition using static sprinklers, bowsers and low emission additives and binders if necessary. The access road to the main construction site will be cleaned daily during the working week and more frequently if necessary using a mechanical road sweeper. Edges of the access road and footpaths will be cleaned with a hand broom and controlled damping.

Damping down techniques used to minimise the re-suspension of dust into the air can also cause the build-up of mud and dirt on roads which is picked up by vehicle wheels. Therefore

wheel washing techniques and rumble grids will be implemented, before vehicles enter public highways, to prevent the transportation of mud and dirt off site.

During the preliminary works simultaneous activities will be taking place in a number of locations and therefore suitable wheel wash facilities will be established in this period. Due to the short term nature of these works these facilities will take the form of a manually operated high pressure jet wash. Vehicles leaving the construction areas will be inspected at the wheelwash points and thoroughly cleaned as required.

During the main construction works a permanent wheel wash facility will be installed on the at the exit point of the main site. The wheel wash will be the same as or of a similar standard to that shown in attachment 9.

4.3 Noise

Like dust, the generation of noise beyond of the site boundary is a potential source of statutory nuisance and can lead to complaints. Such complaints, if upheld, can lead to legal action which causes resultant delays and costs to the project. The site is directly adjacent to various residential areas making construction noise a particularly sensitive issue to local residents

A basic element in the mitigation of nuisance due to noise is adherence to acceptable working hours. All works will be undertaken in compliance with the normal construction working hours indicated in Dundee City Council's guidance i.e.:

- Monday to Friday 7am - 6pm
- Saturday 8am - 1pm
- No Sunday, Bank holiday or Public holiday working

Should work be required outside of these hours, the local authority will be consulted.

Construction site noise has the potential to impact upon the current amenity of local residents.

Good relations with people living and working in the vicinity of site operations are of paramount importance. Early establishment and maintenance of these relations throughout the carrying out of site operations will contribute towards allaying people's fears. Good relations can be developed by keeping people informed of progress and by treating complaints fairly and expeditiously.

Noise can also interfere with the working efficiency of site workers by inducing stress, disturbing concentration and by increasing accident risk. Effects of noise on persons on site are similar to the effects on nearby residents, and the benefits of good control measures will apply equally on and off site.

- Noise Monitoring Programme

Noise levels will be monitored periodically at identified sensitive locations nearest to site during the main construction works. The noise monitoring programme will be undertaken by suitably trained persons. All noise level monitoring equipment used will be well maintained and calibrated in accordance with manufacturer's guidance. Logs of all noise monitoring will be kept within the site files and will be made readily available for inspection. The following will be noted at each identified sensitive receptor when noise monitoring is being undertaken.

- Time
- Weather conditions and wind direction
- Location of monitoring
- Background noise level
- LAeq dB reading over the relevant time period

Where noise levels from any activities are considered excessive and alternative or appropriate mitigation methods will be investigated and implemented.

Where any noise complaints are received, these will be thoroughly investigated by the site management in accordance with the Complaints Protocol and actions implemented to ensure repetition of the issues are avoided.

- Noise Control Measures

A number of control measures will be implemented at the site to minimise noise. These measures are developed from current best practice and the BRE Pollution Control Guide: Part 1 – Pre-project planning and effective management. In particular the following control measures will be applied;

- All construction plant and equipment will comply with EU noise emission limits.
- All vehicles and mechanical plant used for the purpose of the works will be fitted with effective exhaust silencers.
- Selection of inherently quiet plant.
- All major compressors, generators etc. will be 'sound reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools will be fitted with silencers of the type recommended by the manufacturers.
- Machines in intermittent use will be shut down in the intervening periods between works or throttled down to a minimum.
- Materials will be delivered during normal site working hours.
- All ancillary plant such as generators, compressors and pumps will be positioned so as to cause minimum noise disturbance, i.e. furthest from receptors or if necessary, behind acoustic enclosures and /or shielding. Where possible, loading and unloading will also be carried out away from such areas,
- Constant monitoring and review of operations
- Monitoring of feedback from local residents during site activities
- Site training and awareness for all site personnel with regard to behaviour on site to minimise nuisance and engender a considerate approach.
- Modification of existing plant and equipment. Noise from existing plant and equipment can often be modified at source if necessary or improved sound reduction methods can be applied,
- Maintenance: Regular and effective maintenance by trained personnel is essential and will do much to reduce noise from machinery. Increases in plant noise are often indicative of future mechanical failure. Regular maintenance will form part of an effective housekeeping management programme.
- The hours of operation of all plant and vehicles will be limited to the normal site working hours and any use of equipment outside of these hours will be avoided,
- The drop heights will be minimised as much as possible,

- No plant or machinery will be left running unnecessarily.
- Materials will be handled as carefully as possible when loading lorries and skips to minimise noise,
- Queuing of vehicles wanting to enter the site will be minimised and a policy relating to this will be clearly set out in the site rules,

Whilst reversing alarms do present audible impact their necessity is a reflection of the high risk associated with reversing vehicles. They must be distinct to ensure they are audible above background noise. Despite their need, mitigation can be introduced to prevent nuisance to residents. The site layout will introduce and maintain where practicable, one-way vehicle movements with unloading areas arranged to minimise the need for vehicles to reverse. All practicable additional measures will be taken to minimise nuisance from reversing alarms

➢ Project Specific Elements

The project will incorporate the following major elements of construction;

➢ Earthworks and Excavations

Detailed planning will identify suitable methodology to ensure noise impacts are minimised using the appropriate mitigation methods selected from those outlined above.

➢ Piling

Piling activities have the potential to create the significant noise impact. Consideration will be given to noise in the choice of piling methodology during the design stage. It is likely that rotary bored or CFA piling will be used rather than impact piling which will assist in reducing noise impact from this phase of the construction.

➢ Reinforced Concrete Construction

Detailed planning will identify suitable methodology to ensure noise impacts are minimised using the appropriate mitigation methods selected from those outlined above.

- Steelwork and Cladding Erection

Detailed planning will consider suitable methodology to ensure noise impacts minimised using the appropriate range of mitigation methods from those outlined above.

4.4 Vibration

It is not anticipated that the works will pose any significant impact in relation to vibration beyond the site boundary. However, if it becomes apparent that vibration may give rise to an environmental impact a full investigation will be undertaken by the site manager using where necessary external specialist consultants to carry out monitoring at potential receptor locations.

Best practice techniques will be utilised at all times to minimise vibration from construction activities. Speeds will be limited to 5 mph on un-surfaced site roads and 10 mph on properly surfaced and maintained site roads.

Any complaints relating to vibration disturbance will be fully investigated by the site management team in line with the Complaints Protocol.

4.5 Light Disturbance

It will be necessary particularly during darker months to light the construction site and office complex and there is the potential for poorly aimed or controlled lighting to cause nuisance.

Possible sources of nuisance are

- Light trespass – light spilling beyond the boundary of the property on which a light is located, sometimes shining into windows.

- Glare – the uncomfortable brightness of a light source when viewed against a darker background

The major mitigating factor is the project working hours. (0700-1800, Monday to Friday and 08:00 – 13:00, Saturday), this will prevent the more severe element of intrusion, i.e. sleep deprivation, being realised.

The sensitive receptors will be identified, and the location and angle of site lighting will be assessed and adjusted to ensure minimum potential for disturbance to these receptors beyond the site boundary.

The following mitigation measures and best practice will be implemented

- Lights will where practicable, be positioned facing away from neighbouring properties, however adequate lighting of working areas is an essential safety consideration and where this is not possible lighting units will be placed in such a way as to pose minimal risk of light disturbance. Unless health and safety requirements dictate otherwise, no lighting will face towards any property identified as a sensitive receptor.
- Lighting will be directed towards the site activity so as to avoid the possibility of any lights shining directly onto nearby residential properties
- Lighting will be suitable for the application
- Unnecessary lighting will be removed
- Lights will be switched off when they are not needed; this will include periods outside of normal site working hours.
- Any security lighting will be kept to a minimum at all times and powered by mains supply.
- Checks will be made each evening to ensure no lights are left on in error

Any complaints relating to light disturbance will be fully investigated by the site management team in line with the Complaints Protocol.

4.6 Heritage and Archaeology

Initial assessments do not anticipate that there are any archaeologically sensitive areas within the site boundaries. However, the following procedures will be followed in the event of such a find or discovery:

- Immediately stop works in the area of the find
- Protect the find and the area surrounding by fencing/blocking off and immediately contact the Site Manager
- Contact an archaeologist and obtain advice on how to proceed
- All significant finds must be reported to the County Archaeologist

The County Archaeologist in charge will be contacted by the site management. The contact telephone number is: [TBA]

4.7 Waste Management

The site will implement a Site Waste Management Plan (SWMP) which describes the procedures for the management of waste arising from the construction activities.

The project will utilise the BRE SMARTWaste online tool as its method of recording the movements of wastes from the site.

4.8 Water

The Dighty Water is in close proximity to the south western site boundary and it is essential that no pollutants enter this water course. It is intended that all temporary drainage from site is directed to the local surface water sewer system following any necessary pre-treatment.

Mitigation

The following mitigation measures will be employed to avoid environmental impact on the nearby watercourse:

- All necessary temporary consents will be applied for prior to commencement of works e.g. temporary discharge consent.
- Any excavations will be dewatered as necessary and all pumped water will be discharged through a series of settlement tanks before it is discharged to sewer.

- Spill kits will be made available, and site operatives trained in their use, to deal with any spillages of materials likely to lead to contamination of site drainage systems. All spill kits will be fully stocked at all times and an inventory of equipment within the container will be clearly displayed on the lid.
- Due care and attention will be given to the prevention of surface run-off. For example, stockpiling of materials within the vicinity of drainage systems will be avoided where practicable. Where this is not possible a bund will be provided to control run off and reduce pollution risks.
- The positioning of fuel storage tanks and maintenance/refuelling facilities will be on areas of hard standing with dedicated drainage systems. All fuel storage tanks will be bunded.
- Stored materials on site will be checked regularly for containment integrity (both primary and secondary), quantity stored and security of storage.

Monitoring

Monitoring will be carried out as follows:

- Regular weekly checks of site drainage arrangements will be carried out and corrective actions taken if necessary.
- In addition to this, during operations such as excavation, piling and concrete placement, the watercourse will be visually monitored for turbidity and any abnormal contamination. Plant maintenance checks will also be increased in frequency during these operations.
- In periods of heavy rainfall or excessive vehicle movements within the vicinity, monitoring will be increased to reduce risks of pollution incidents.
- Construction of concrete structures during the construction phase will be monitored to prevent associated contaminated material entering any watercourses. Washing out of concrete wagons or other equipment used in concreting operations will only be undertaken in designated contained washout areas. These will be located away from all drainage outlets

- A Foundation Works Risk Assessment will be prepared by the Contractor to confirm that the risk of contamination of the watercourse through the mobilisation of contaminants within the made ground is low.
- Where over pumping is required, the water will be put through an appropriate sized settlement tank, with the flow rate set up will allow appropriate timescales for settlement.
- Permission for any dewatering activities will be sought from the Scottish Environment Protection Agency, in advance of the dewatering activity commencing.
- All records of water and drainage system monitoring inspections will be kept on site throughout the duration of the project and be readily available for inspection by the relevant authorities.

4.9 Transportation and Traffic Management

A Construction Traffic Management Plan (CTMP) will be implemented on the site. The plan will establish timings of deliveries and the routes to be taken by construction vehicles to ensure minimal disruption to local residents and businesses.

A Travel Plan will be implemented during construction stage that supports and encourages sustainable travel (public transport, cycling, walking and car-sharing).

4.10 Ecological Management

Existing ecological features could potentially be affected by the proposed construction works. However, appropriate mitigation and enhancement activities will be undertaken to eliminate the impact or reduce it to such a level that they would not be considered significant.

General Ecological Mitigation

The following mitigation measures will be employed. Refer also attachments No 1 and 2 - Wildlife and Construction Best Practice Guidance. These posters will be prominently displayed on the site on notice boards on the site and in site cabins and offices.

- Dust minimisation methods will be employed

- Construction lighting will be directed away from retained areas of habitat wherever possible.
- Security lighting and non-essential lighting will be fitted with automatic cut-off switches where practicable.
- Pollution prevention controls will be utilised to reduce the risk of sediment pollution resettling further downstream and potentially smothering benthic habitats (see section 4.8).
- Any necessary clearance works, tree felling and scrub removal will be undertaken outside the bird nesting season
- Where any unexpected species are identified by any personnel on site, all works within that area will cease immediately. Site management will be immediately informed and they will contact the project ecologist. No further work may take place within that area until permission has been given by the project ecologist and site management.

4.11 Land contamination

Preliminary ground investigations at the site have not encountered significant contamination of either soils or groundwater and the ground has been classified as suitable for commercial and industrial use and it is intended that all excavated material will be re-used on the site.

There is a potential risk to off-site receptors from emissions of contaminated dust but the risks from contaminated dust is deemed to be low due to the lack of significant contamination within the site soils and will be further controlled with good working practices and the implementation of dust control measures during the construction works as described in Section 4.2 above.

During the site induction, all personnel will be made aware of their responsibility to be vigilant with regards to identification of potential soil contamination. Key personnel in this respect are ground workers, machine operators and their banksman. Training will be provided to supervisors to provide the necessary awareness to identify areas of contamination. They will report any suspicions of contaminated soil or groundwater to the site management.

If unforeseen contamination is encountered during site works, the specific element of work will be suspended and the area will be segregated. The result of any notification will also be reported to the relevant authorities, remediation options will be considered following assessment and identification of contaminants. Any remediation process will comply with all legislative and best practice guidance.

Should any excavated soils need to be removed from site for disposal to a landfill, the soils will undergo Waste Acceptance Criteria (WAC) testing in order to correctly classify the material in terms of waste disposal. The results of the WAC testing will be supplied to the chosen waste acceptor at an early stage of the process in order to locate a suitable landfill site.

All stockpiled material will be located away from sensitive receptors with suitable bunds and /or barriers to prevent cross contamination as a result of run-off.

4.12 Resource use

MVV will ensure where practicable, the use of recycled or sustainable materials in the construction. All wood should be obtained from a certified sustainable source.

A dedicated area will be maintained for storage of all materials and due care and appropriate handling will be undertaken at all times to reduce any risk of damages and wastage. Packaging of items should not be removed until required, to ensure maximum potential for returning of unused goods.

As much construction waste (e.g. packaging, pallets) as possible will be sent for recycling or re-use and strategies will be put in place to ensure minimal wastage on site, for example avoiding unnecessary printing. Where possible, use of local suppliers will be considered to reduce transportation costs and maintain a low carbon footprint. Waste disposal options will be investigated to ensure minimal transportation requirements.

On-site reuse of construction waste materials will be incorporated into the project wherever practicable. This will aid reduction in waste going to landfill as well as minimising vehicular movements on the local road systems.

4.13 Energy Consumption/Monitoring

"Switch it Off" schemes and other energy saving campaigns will be implemented on site to encourage all personnel to consider their carbon footprint. Use of car sharing and buses will be encouraged as outlined in the CTMP. This will also be covered within the site induction and regular toolbox talks held relating to the subject.

Where practicable power consumers such as site lighting and accommodation heating will be controlled by timers and/or daylight sensors to avoid unnecessary power consumption.

4.14 Water usage

Within site accommodation taps will be switched off when not in use and all staff will be made aware of water saving techniques. Every effort to ensure reduction in water use will be implemented where available.

4.15 Visual Amenity

The construction process will pose a potentially short term visual impact. The following mitigation measures will be deployed to minimise these impacts;

- Visual issues will be considered in deciding upon the need for lighting and its location and specification.
- Ensuring that the site boundaries and local roads are kept clean and tidy at all times,
- The site will be securely fenced and the fencing will be well maintained and kept free of attachments and non-site specific posters.
- Damaged or unsightly fencing will be repaired or replaced as soon as possible.

4.16 Vermin

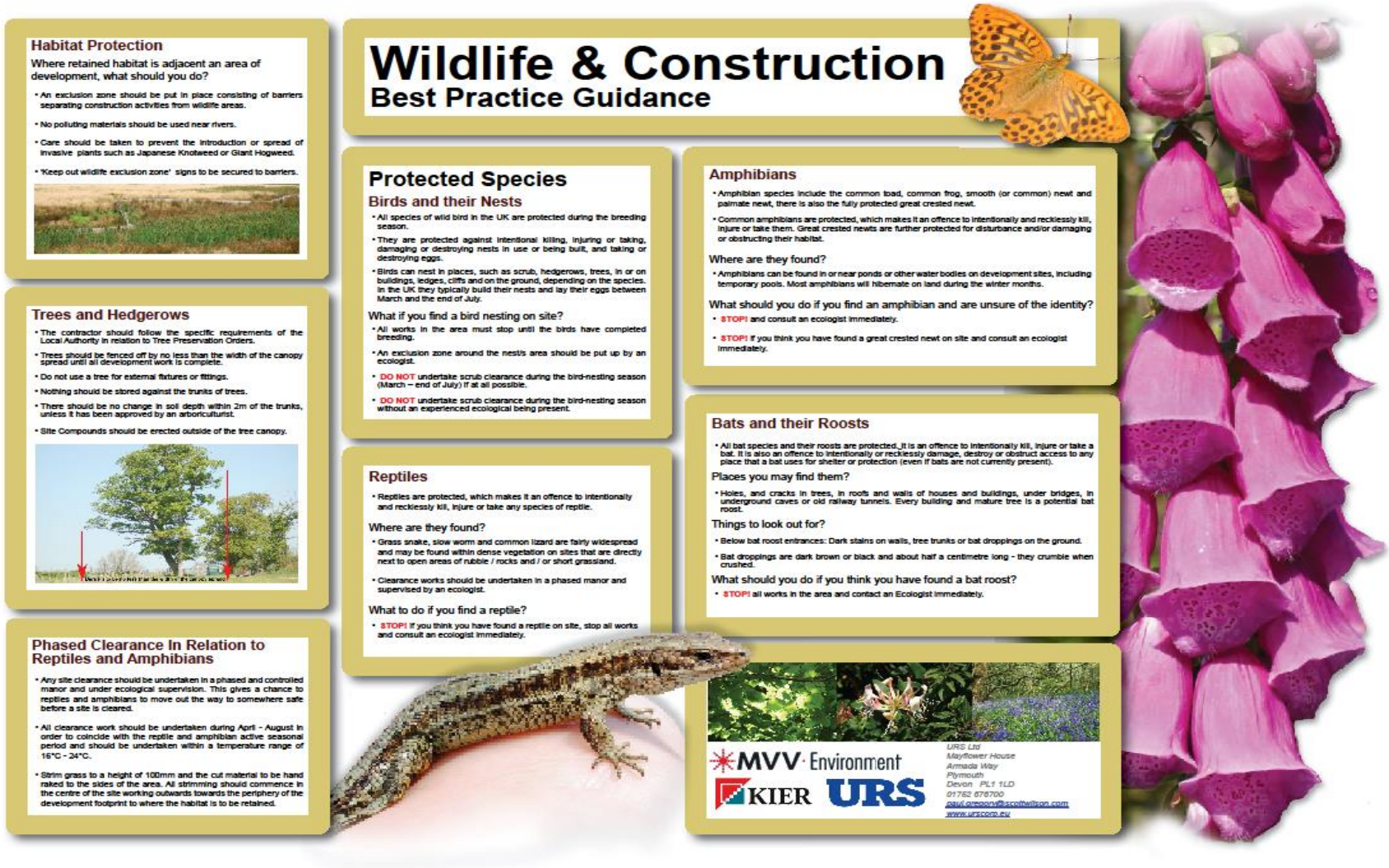
Maintenance of a clean and tidy site including vermin control is essential. Appropriate pest control measures will be adopted as necessary;

- Correct and satisfactory stopping and sealing of all disused drains and sewers where applicable

- Prevention of accumulation of refuse and putrescent materials on site
- Ensuring any on-site catering facilities pay careful attention to food delivery, handling and storage and disposal of any food waste.
- Providing ground level accommodation units with “skirting” to prevent build-up of waste and access for vermin.

Attachment 1 - Wildlife & Construction Best Practice Guidance Poster

(Typical only – a project/site specific version will be created following environmental assessment)



Attachment 2 - Wildlife & Construction Best Practice Guidance Poster

Attachment 3 – Weekly Environmental Checklist

The weekly checklist will be used to ensure that the regular environmental monitoring activities are carried out. This checklist is intended as a summary record of the site environmental conditions and monitoring activities and to record any environmental incidents.

The checklist will be developed as necessary to include any further environmental impacts that may be identified as construction progresses and individual incidents will be further documented as and when necessary to fully record all details and actions taken.

Weekly Environmental Checklist			
Project Name:			
Reporting period: Week beginning:		Main Sub Contractors on site:	
Short description of work carried out within reporting period:			
Weather conditions			
Environmental incidents in the reporting period:			
Weekly Activities: (to be completed by Environmental Manager).			
	Name	Date	Note
Watercourse/discharge monitoring Carried out according to WMP			
Spill kits checked Completeness of inventory			
Noise monitoring Carried out according to NMP			
Ecology Checked for integrity			
Site boundary Cleanliness checked according to LMP			
Fuel storage checked (containment integrity, storage quantity)			
Dust situation (Requirement for anti-dust measures)			
Vehicles (Is everybody aware of vehicle coverage needs? Wheel wash in good order?)			
Environmental toolbox talks held (indicate topics as note!)			
Lighting Check location and direction			
Environmental training requirements identified any requirements and arrange.			

Attachment 4 – Environmental Risk Assessment & Aspects and Impacts Matrix (civil construction works)

The majority of the civil construction works will take place before the process equipment installation commences. Therefore an initial risk assessment has been prepared for the potential environmental impacts of the civil works.

Additional risk assessments will be prepared for the other construction activities in due course prior to commencement of the relevant activity on site.

MVV Environment

Project Name	
Activity/Operations	All

Environmental Aspect (delete as necessary)	**Potential Environmental Impact**	**Risk**			**Total**	**Control Measures** (add/delete as necessary)	**Residual Risk**			**Total**	**Method Statement /Procedure Number**	**Associated Toolbox Talk**
		O	**+ D**	**x C**			**O**	**+D**	**x C**			
DUST Piling Activities	Damage to wildlife and ecology Contamination of water courses Legal Action by Statutory Authorities Complaints from public Damage or disruption to property Disruption on roads Damage to vehicles	3	2	8	40	Visual inspection and monitoring Dust sheeting or fencing off activity where possible	2	1	6	18	Pollution Prevention Plan Ref: CEMP: Method statements:	
Excavations		4	3	10	70	Dust sheets/fencing Visual inspection and monitoring	2	2	8	32		
Vehicular Movements On and off site.		5	3	10	80	Damping down – mobile bowsers Wetting additives Wheelwash Covered vehicles Monitoring and visual inspections Road Sweepers Speed limitations	3	2	8	40		
Stockpiles		2	3	8	40	Damping down Seeding Wetting additives if required Visual inspections and monitoring	1	2	6	18		
NOISE Onsite Vehicular	Complaints by residents Legal Action by Statutory Authorities Disruption and disturbance to wildlife	4	3	10	70	Noise monitoring No reverse beepers No idling engines Noise Mitigation Plan Training Servicing and records	2	2	10	40	Noise Mitigation Plan: Ref; Pollution Prevention Plan: Ref: CEMP	
Small Plant and machinery		4	3	10	70	Acoustic fencing around plant or machinery	2	2	10	40		

Environmental Aspect (delete as necessary)	**Potential Environmental Impact**	**Risk**			**Total**	**Control Measures** (add/delete as necessary)	**Residual Risk**			**Total**	**Method Statement /Procedure Number**	**Associated Toolbox Talk**
		O	**+ D**	**x C**			**O**	**+D**	**x C**			
	Failure to meet requirements laid out by Local Authority/S61 or planning condition.					Noise monitoring Servicing and records Switched off when not in use Supersilenced – low noised Noise Plans Training					Method statements	
Piling Operations		5	1	10	60	Acoustic barriers Timing of operations Noise Plans Training	3	1	10	40		
Excavations/large plant		5	2	10	70	No idling engines Supersilenced – low noise Acoustic barriers Noise Plans	3	1	10	40		
Deliveries		5	2	10	70	No out of hours deliveries	3	1	8	32		
Human		3	2	10	50	Toolbox talks Training Considerate Constructors Site Induction Behavioural Talks	1	1	6	12		
Lighting	See above	4	2	10	60	Careful consideration of direction of lighting away from residential areas as to minimise disruption to nearby residents. (H&S Considerations will be required) Consideration of wildlife and ecology around the site boundaries All lighting to be switched off out of	2	1	8	24	Pollution Prevention Plan Ref: Method Statements	

Environmental Aspect (delete as necessary)	Potential Environmental Impact	Risk			Total	Control Measures (add/delete as necessary)	Residual Risk			Total	Method Statement /Procedure Number	Associated Toolbox Talk
		O	+D	x C			O	+D	x C			
						working hours (security lighting to be kept at a minimum)						
WASTE	Pollution/Fly tipping/ contaminated land Failure to meet duty of care Breach of waste legislation Legal Action by Statutory Authorities	3	4	10	70	Site Waste Management Plan Environmental Monitoring Duty of Care/Transfer Notes Training Segregation of waste	2	2	8	32	BRE SMARTWaste Plan	
WATER Discharges	Contamination of groundwater/surface waters/rivers Damage/Loss of wildlife Potential harm to humans Failure to meet consents Legal Action by Statutory Authorities	3	5	10	80	Environmental Monitoring Comply appropriate licences consents Imhoff Cone – silt monitoring Washdown areas Wheelwash area Siltbuster Concrete Washwater area (RCW)	2	2	10	40	Pollution Prevention Plan ref:	
Pollution Controls	Major or minor pollution incident Surface run-off	4	4	10	80	Pollution Prevention Planning MIRP Specialist Clean Up Contractor Spill Training Compliance with oil storage regulations Testing of PPP Monitoring Appropriate location of stockpiles	2	2	10	40	Pollution Prevention Plan Ref:	

Environmental Aspect (delete as necessary)	Potential Environmental Impact	Risk			Total	Control Measures (add/delete as necessary)	Residual Risk			Total	Method Statement /Procedure Number	Associated Toolbox Talk
		O	+D	x C			O	+D	x C			
CONTAMINATED LAND	Damage/destruction to wildlife and ecology Damage to visual amenity Legal Action by Statutory Authorities Remediation costs Fugitive dust	3	3	8	48	Environmental Monitoring Site Waste Management Plan Training, maintain good standards of site housekeeping Work to Control Pollution (Oil storage) Regulations 2001	2	2	6	24	CEMP Method statements	
ECOLOGY	Loss, destruction, harm or disturbance of wildlife or habitat Reduction in endangered species Spreading of invasive plants Legal Action by Statutory Authorities	4	4	10	80	Environmental Monitoring Training/Toolbox Talks/Species Identification Information Ecological Assessment Application for appropriate licences Secure fencing off sensitive areas Liaison with ecologists	2	3	10	50	CEMP Ecology Reports	
RESOURCE USE	Generation of additional waste streams Reduction of fossil fuels Destruction of non-sustainable forests Excessive water use	4	4	6	48	Re-use of materials Prevention of over-ordering Appropriate storage of materials FSC or similar certified timbers Switch It Off Schemes Non-concussive taps Water boilers not kettles Awareness training Fuel and energy use monitoring and reporting Audit	2	3	4	20	CEMP	

MVV Environment

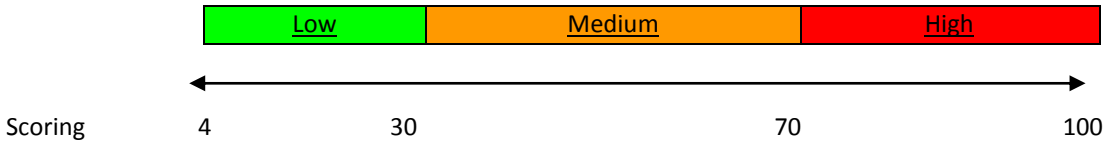
Environmental Aspect (delete as necessary)	Potential Environmental Impact	Risk			Total	Control Measures (add/delete as necessary)	Residual Risk			Total	Method Statement /Procedure Number	Associated Toolbox Talk
		O	+ D	x C			O	+D	x C			
VISUAL AMENITY	Negative impact on visual amenity Complaints by public and local authorities	4	3	10	70	Careful use of lighting Clean hoardings Good site housekeeping Boundary fencing litter sweeps Considerate constructors code of practice Contact numbers clearly displayed Planting of boundary hedging/trees	2	2	8	32		

Likelihood of Occurrence (O)		+ Likelihood of Detection (D)		X Severity of Consequence (C)	
Criteria	**Rank**	**Criteria**	**Rank**	**Criteria**	**Rank**
V High	5	V High	1	V High	10
High	4	High	2	High	8
Moderate	3	Moderate	3	Moderate	6
Low	2	Low	4	Low	4
V Low	1	V Low	5	V Low	2

Originator:

Dated:

Significance Rating



Residual Risk/Significance Rating	Remedial Action
Low	No further mitigation required/ Periodic Monitoring required
Medium	Acceptable – Continued monitoring/control and review
High	Not Acceptable – Further mitigation required

Attachment 5 – Pollution Prevention Plan

[A project/site specific plan will be prepared in due course prior to commencement of the works on site]

Attachment 6 – Training and Responsibilities Matrix

[A project/site specific matrix will be prepared in due course prior to commencement of the works on site]

Attachment 7 – Site Establishment Plan

[A project/site specific plan will be prepared in due course prior to commencement of the works on site]

Appendix G

Site Waste Management Plan

Site Waste Management Plan

(SWMP)

Dundee & Angus Energy from Waste Combined Heat and Power Facility

Revision	Date	Status	Author	Checked
0	21.10.16	Draft for planning application.	JW	N/A

Table of Contents

Introduction

MVV Environment Ltd will construct and operate an Energy from Waste (EfW) facility, incorporating Combined Heat and Power (CHP) technology, on land to the south of the existing DERL Facility.

This Site Waste Management Plan (SWMP) is for the construction phase of the development, and sets out the intended methods of effectively managing waste arising from the construction of the EfW CHP facility. Waste management is a legally complex area and it is critical that the subcontractors follow this SWMP to ensure legal compliance and avoid prosecution. Prosecution for waste offences accounts for the largest proportion of environmental prosecution in the UK.

The responsibility for implementation of the SWMP lies with the principal contractor and it will be managed and controlled by the construction site manager working in conjunction with key personnel (environmental manager, contractors, suppliers, etc.) to ensure it is implemented. To ensure that it remains relevant considering any unforeseen changes the construction site manager will take on overall ownership of the SWMP with responsibility for its implementation and regular revision and updating delegated to the environmental manager.

This SWMP is a live document which accurately reflects the movement of waste materials from a construction site. The project will use the BRE SMARTWaste Plans website to record all waste disposal, reuse or recycling and actual figures will be maintained on this system throughout the duration of the project. Once initiated, the BRE SMARTWaste Plan will be updated on a monthly basis throughout the duration of the construction project, by the environmental manager.

Please note that all necessary documentation will be retained to ensure compliance with all Waste Management Regulations including waste transfer documentation, information on disposal methods and other licencing information attained.

Waste Prevention Decisions and Actions

In the development of the SWMP the following principles will be applied:

- In accordance with the WRAP Construction Commitment: halving waste to landfill target, the waste sent to landfill will be minimised.
- Excavated material will be re-used on the site as fill wherever possible.
- Recover up to seventy per cent (70%) and at least a minimum of fifty per cent (50%) by weight of the waste arising from the civil construction and building and demolition works.
- Ensure that up to fifteen per cent (15%), and at least a minimum of ten per cent (10%) of total material value of the civil construction and building works derives from reused and recycled content in new build, select the top opportunities to exceed this figure without increasing the cost of materials, and report actual performance.
- Requests will be made to all suppliers to return all unwanted packaging for recycling and reuse.
- A designated area will be identified for waste segregation on the site.
- An environmental/waste champion will be appointed.
- All relevant consents will be obtained from appropriate regulators.
- Training will be provided to staff and sub-contractors by means of initial inductions and by toolbox talks.
- Sub-contractors will contribute as appropriate to the SWMP.
- Checks will be undertaken to verify the licenses for waste carriers and receiving facilities and all responsibilities will be discharged under the Duty of Care Regulations as described in Section 4 below.

Waste Management Approach - Subcontractors

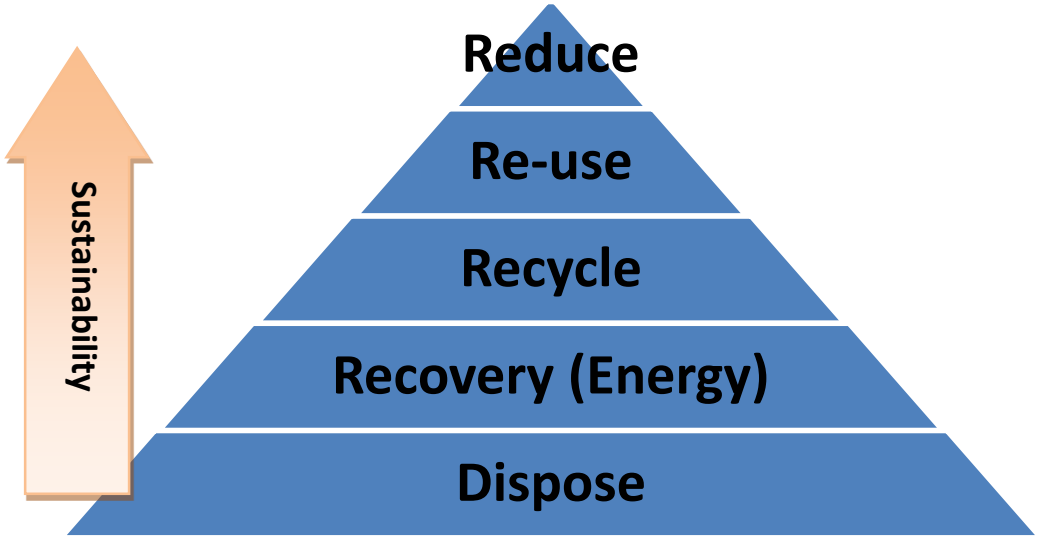
For logistics and commercial reasons, each subcontractor will be responsible for the effective and legally compliant management of their waste, and in accordance with the principles and objectives set out in this document. All contractors are required to:

- Complete the Waste Contractor Pre-Appointment Checklist (see Appendix 1) for their selected waste contractor(s) and return to the environmental manager with accompanying evidence for approval.
- Allocate an area for the safe and secure storage of waste pending collection. The area should only be accessible to the subcontractor's personnel and when access is not required the area should be locked to prevent tampering or the deposit of waste

- by other subcontractors. Lockable skips and bins are an option. Waste should not be allowed to spill over from this area, and should not attract vermin. Waste should be removed from site promptly.
- Arrange for the segregation and recycling of the majority of waste (MVV's contractual target is 70% recycling by weight). This includes the contractor's office waste.
- Complete and return to the environmental manager the form at Appendix 1 in the event of update or change.
- Complete and return to the environmental manager the form at Appendix 2 every month as a record of all waste movements off site.

General Waste Hierarchy

The project site waste management policy is committed to the general waste hierarchy:



Segregation

To ensure maximum potential for reducing waste to landfill, and encouraging re-use and recycling, waste will be segregated at source. Separate skips will be made available for key waste streams and will be emptied at regular intervals. Each skip will be fit for purpose, located in designated areas and clearly labelled. No mixing of hazardous and non-hazardous waste will take place.

Waste storage areas will be located to minimise the impact of waste disposal traffic. They will be easily reached by the lorries picking up the skips for the segregated waste.

Removal from Site

All waste skips will be carefully protected against waste being lost during transport. Appropriate measures will include cover nets, fixed covers and the use of closed lorries.

Records of all waste that is removed from site will be entered into the BRE SMARTWaste tool by the environmental manager.

All waste will be handled efficiently and will be removed from site adhering to all applicable waste legislation requirements.

Hazardous Waste

Hazardous waste will be stored and disposed of separately from non-hazardous waste.

Although limited hazardous waste arisings are expected, the site will be registered with the relevant authorities as a producer of Hazardous Waste. A site-specific code will be obtained which must be quoted on ALL Hazardous Waste Consignment Notes.

No hazardous waste will leave site without the correctly completed Consignment Note. The consignment notes will contain all necessary information including waste description and hazardous waste Premises Code and be retained for a minimum of three years. Any carriers removing hazardous waste will be required to have appropriate licences and verify that disposal sites are able to accept the specific waste being sent.

Principal Contractor Responsibility

The principal contractor must ensure that the site waste management plan is available on site. It is the responsibility of the principal contractor to ensure prior to any agreed use of hauliers or waste disposal sites, that the appropriate licences are thoroughly checked to ensure that particular waste streams can be accepted and carrier licences are valid. This will be in the form of an up-to-date list of all current waste contractors servicing the site and the destination of wastes with these contractors. This will involve receiving the appropriate documentation (Waste Carriers Licence) and making annual checks to ensure the validity of the waste licencing. In addition, spot checks will be periodically undertaken to ensure that waste which leaves the site is disposed of in its intended destination. This can be undertaken by following waste from the project to its final destination. All such actions will be recorded by the principal contractor.

Waste Transfer Note(s)

Waste transfer notes (WTN) (or copies of) that are received for all non-hazardous waste removed from site will be retained by the principal contractor. The principal contractor will check that transfer notes are completed as necessary and meet requirements of the waste carriers' licence(s) as applicable. WTNs should include as a minimum:

- The name of the waste carrier.
- The operating addresses and contact details of the waste carrier.
- Details of the vehicle and driver transporting the waste.
- Details of the waste being removed, including the volume or quantity.
- Waste carrier's license number.
- Destination of the waste.
- A unique European Waste Catalogue identifying code for the type of waste, e.g. 17 01 01 concrete, 17 01 02 bricks, 17 01 03 tiles and ceramics.

Note: It is possible to have annual WTNs which will have less detailed information.

Copies of all necessary licences and WTN must be retained on site at all times for not less than two years and will be reviewed regularly to ensure validity.

Reviews

Reviews of the site waste procedures and the Site Waste Management Plan will be undertaken at 3-6 month intervals by the principal contractor. Whenever major changes of the arising waste streams are identified, this interval will be shortened or an immediate review will be done.

Nominated site personnel will be trained in the use of the SMARTWaste Tool. Reviewing of the waste management plan includes:

- Review of existing plan.
- Recording of type and quantity of wastes produced.
- Recording of waste and quantities being reused, recycled, sent to recovery, sent to landfill or otherwise disposed of.
- Updating of the Site Waste Management Plan to reflect any changes in waste materials.

Reporting

The principal contractor is also responsible for completion of a waste report three months after completion of the project which must include:

- Confirmation that the plan has been monitored throughout the project and updated regularly in accordance with regulations.
- Explanation of any deviation from the initial waste management plan.
- Identification of any cost savings achieved by completing/implementing the plan, e.g. savings from reusing material.
- Information on disposal, reuse and recycling figures.

The principal contractor will also ensure that all contractors are aware of their responsibilities regarding the management of waste in line with legal requirements.

SWMP Table

The table below provides an indication of the information that will be uploaded into the BRE SMARTWaste tool. It will be completed before the start of construction the predicted waste types and classifications as per European waste codes. The waste quantities are to be entered to SMARTWaste as estimates of the waste that will be produced over the course of the project.

The SMARTWaste tool will be used throughout the construction period to record the actual types and quantities generated by each contractor, as well as the method of disposal and any deviation from the predicted levels.

Project Name :
Date :

WASTE TYPE	EWC CODE	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	TOTAL VOLUME (m3)
Cardboard packaging	15 01 01 (mixed is 15 01 06)						
Plastic packaging	15 01 02						
Polythene packaging	15 01 02						
Metal packaging	15 01 04						
Wooden packaging (chipboard or plywood)	15 01 03						
Textile packaging	15 01 09						
Paper	20 01 01 (office paper and cardboard)						
Copper	17 04 01 (17 04 07 mixed metals)						
Bronze	17 04 01						
Lead	17 04 03						
Tin	17 04 06						
Zinc	17 04 04						

WASTE TYPE	EWC CODE	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	TOTAL VOLUME (m3)
Brass	17 04 01						
Iron & steel	17 04 05	Any steel scrap will be reused / recovery aim of 95 % to be achieved					
Aluminium	17 04 02	Any aluminium scrap will be reused / recovery aim of 95 % to be achieved					
Cables containing dangerous substances (for example oil)	17 04 10*						
Cables not containing dangerous substances	17 04 11						

WASTE TYPE	EWC CODE	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	TOTAL VOLUME (m3)
Plasterboard	17 08 02						
Wood	17 02 01						
Plywood/chipboard	03 01 04* (containing dangerous substances) or 03 01 05 or 20 01 37* wood containing dangerous substances						
Oils	tbc depending on type						
Plastic or rubber	17 02 03						
Insulating materials containing dangerous substances	17 06 03*						

WASTE TYPE	EWC CODE	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	TOTAL VOLUME (m3)
Insulating materials not containing dangerous substances	17 06 04	Insulating materials used in small packages to reduce waste. Residuals will be collected by sub-contractor & recovered					
Paint in metal tins or aerosol spray containers (metallic packaging containing dangerous substances or residues)	15 01 10*						
Paint in plastic containers	15 01 10*						
Light bulbs: fluorescent/non-fluorescent/both?	fluor 20 01 21* non-fluor 20 01 36						

WASTE TYPE	EWC CODE	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	TOTAL VOLUME (m3)
Glass	17 02 02						
Bricks	17 01 02						
Bottled gases (for example from welding)	16 05 04* (including halons; containing dangerous substances) 16 05 05 others	Empty welding gas bottles are exchanged by filled bottles and re-filled, no waste produced					
Ceramic tiles	17 01 03						
Plastics (for example off cuts from pipes)	17 02 03						
Adhesive	20 01 27* (containing dangerous substances) 20 01 28 not containing dangerous substances)						
Solvents	20 01 13*						

WASTE TYPE	EWC CODE	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	Contractor Name VOLUME (m3)	TOTAL VOLUME (m3)
Batteries	20 01 33* NiCd, mercury, lead batteries. 20 01 34 batteries not in 20 01 33*						
Oil contaminated rags & absorbents	15 02 02*						

Appendix 1 - Waste Contractor – Pre-Appointment Checklist

Waste Carrier Name	Waste Carriers Licence Number	Date of Expiry of Waste Carriers Licence	Waste Destination address	Waste Destination Environmental Permit Number	Is the Waste Destination Licensed to accept the type of waste you are producing? How have you confirmed this?

Appendix 2 - Monthly Waste Return

INSTRUCTIONS: COMPLETE ONE TABLE FOR EACH CONTAINER OF WASTE.

Date	
Waste Carrier	
Destination	
Waste Transfer Note Number	
Container type and size	
Number of containers	
Overall tonnage (if known)	
Did the waste get reused/recycled/recovered/ landfilled/recovered for energy?	
Was the waste segregated?	
EWC Code and written description of waste (i.e. 17 02 01 wood)	
If the container had mixed waste, list % of waste types	
Notes	

ATTACH COPIES OF WASTE TRANSFER NOTES

Appendix H

Summary of Engagement Undertaken by the Applicant

MVV Meetings with SEPA and DCC

Date	Organisations Attended	Aim of Meeting	Summary of Meeting Outcomes / Decisions
14-Jul-15	DCC		Siting and Design of Building, Planning Policy, and Timetable
23-Sep-15	SEPA	Introductory Meeting	Discussion around permit application and format
22-Oct-15	DCC		Update on MVV proposals
20-Nov-15	DCC		Content of PASS and ES folowing receipt of Scoping Opinion
12-Jan-16	DCC	Preliminary MVV discussion with Flood Prevention Officer, Ron Wilson	response given to a list of questions provided by Miguel Piedra, Arup
14-Jan-16	SEPA	update meeting	update and confirmation that DERL and MVV will operate under two permits
19-Jan-16	DCC	Flooding Meeting	Licensing for ATS site
19-Jan-16	SEPA		Licensing for ATS site
21.06.2016	DCC	LVIA	to agree amendment of viewpoints
13-Apr-16	DCC		Progress on PASS and ES
13-Jul-16	SEPA	update meeting	update of project, programme, permitting and planning schedules/content
17-Oct-16	DCC	- To inform DCC Planning of exclusion of steam pipe and no dual operation as changes to the planning application - To agree format and scope of the planning submission	Michelin steam pipe not included in the planning application - will form part of a separate application. Introductory meeting with EHO Specialists and Flooding Specialist and sicussion around content of application.
25-Oct-16	SEPA		

MVV Meetings with other stakeholders

Date	Meeting Name		Summary of Meeting Outcomes / Decisions
	Scottish Natural Heritage (SNH)		
28.06.2016	DERL Good Neighbour Group		
10-Aug-16	Tayside Friends of the Earth	Introductory meeting following submission of PAN	verbal discussion around the project description and consenting process
12-Oct-16	Whitfield Development Group		
12.11.2015	Dundee University		Intorudctory Meeting to introduce the project and investigate collaborative ppoortunities
xx.11.2015	Abertay University		Intorudctory Meeting to introduce the project and investigate collaborative ppoortunities
13.11.2015	Dundee & Angus College		Intorudctory Meeting to introduce the project and investigate collaborative ppoortunities

Appendix I

Archaeology and Cultural Heritage Technical Note

File Note

ARUP

Scotstoun House
South Queensferry
Edinburgh EH30 9SE
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www.arup.com

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Project title	Energy from Waste Combined Heat and Power Facility, Forties Road, Dundee	Job number	245510-00
cc	Bruce Braithwaite (MVV)	File reference	ARUP-REP-ES
Prepared by	Kathryn Hall	Date	14 October 2016
Subject	Archaeology Scoping		

1 Introduction

This document provides an overview of the existing archaeological baseline for the proposed Energy from Waste site, and in line with the recommendations received from Dundee City Council provides the justification for scoping this topic out of the ES.

2 Baseline

The proposed site is in an industrial area, bounded by the B961 to the north and west, the B978 to the east and the Douglas and Angus estate, and A92 to the south.

There are five Listed Buildings within 1km of the proposed site and two Scheduled Ancient Monuments within 2km. These are listed in Table 1 and Table 2 respectively and are displayed in Figure 1.

Table 1: Listed buildings within 1km of the proposed development site.

Grade	Reference	Name	Distance
A	LB25894	Pitkerro Lodge, Pitkerro Lodge including gatepiers and gates.	880m
B	LB25735	Baldovie, Baldovie Toll House	680m
B	LB25736	Baldovie, road bridge over Fithie Burn	580m
C	LB25734	Baldovie, Baldovie House including boundary wall	450m
C	LB25898	Pitkerro, Kellas Road, Pitkerro Mill	820m

Table 2: Scheduled Ancient Monuments within 2km of the proposed development site.

Reference	Name	Distance
SM90075	Claypotts Castle	1,200m
SM6527	North Gates, mortuary enclosure and circular enclosure	1,900m

There are an additional 83 Listed Buildings within the wider 2km area, however these are predominantly in excess of 1.5km from the proposed site.

3 Potential Effects

As the nearest archaeological receptors are in excess of 450m from the proposed site, no direct impacts on these receptors are anticipated as a result of the construction and operation of the proposed development. The potential interactive effects between archaeological receptors and impacts relating to other topics have been considered, and are listed as follows:

Air Quality

Any changes to air quality as a result of the proposed development will not have a significant impact on archaeological receptors in the wider area.

Contaminated Land

Impacts relating to contaminated land at the site will not have a significant impact on archaeological receptors in the wider area.

Ecology

Changes in ecology at the proposed development site will not have a significant impact on archaeological receptors in the wider area.

Flood Risk

Mitigation measures will be taken to address any additional flood risk within the site. Mitigation measures adopted will also not increase the risk of flooding outwith the site, therefore there will be no adverse effects to archaeological receptors.

Hydrogeology

The hydrogeology at the proposed site is unlikely to have a significant effect on the local archaeological receptors due to their distance from the proposed site.

Hydrology

The hydrology at the proposed site is unlikely to have a significant effect on the local archaeological receptors due to their distance from the proposed site.

Landscape

The proposed site is located in an industrial setting, therefore no issues are foreseen regarding setting impacts on archaeological receptors.

Noise and Vibration

Noise and vibration arising from the proposed development will not have a significant impact on archaeological receptors due to their distance from the proposed site.

Traffic and Transport

File Note

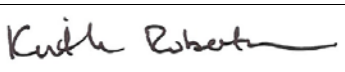
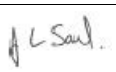
245510-00 14 October 2016

The proposed site is not expected to generate a significant increase in traffic, therefore there will not be any adverse impacts to archaeological receptors relating to traffic and transport.

4 Summary

After consultation with topic specialists and Dundee City Council, it has been agreed that no significant impacts are foreseen relating to the setting of archaeological receptors, or interactive effects resulting from the construction or operation of the proposed development. In summary, there are no archaeological concerns regarding the development area and no credible risk for adverse physical impacts on the historic environment, particularly due to the distance of the settings of archaeological receptors from the proposed site. Therefore the decision has been made to scope out Archaeology from the ES.

DOCUMENT CHECKING (not mandatory for File Note)

	Prepared by	Checked by	Approved by
Name	Kathryn Hall	Keith Robertson	Jane Saul
Signature			

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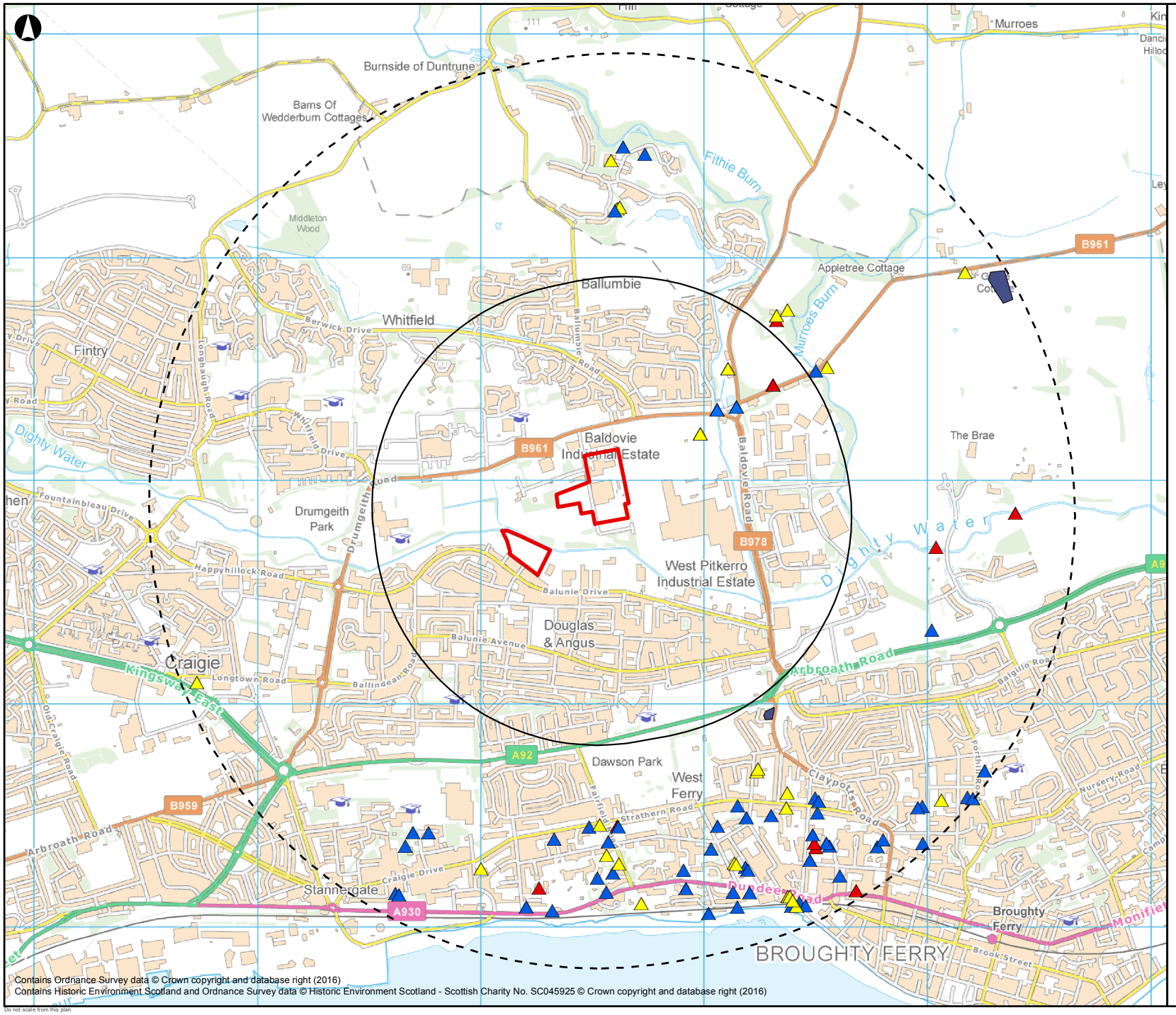

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Do not scale from this plan

Legend

- Red Line Boundary
- 1000m Buffer
- 2000m Buffer
- Scheduled Monuments

Listed Buildings

Grade

- A
- B
- C

P1	27-10-2016	KH	JAB	JS

Issue	Date	By	Chkd	Appd

Metres
0 285 570 1,140

ARUP

Scotstoun House
South Queensferry, EH30 9SE
Tel +44 131 1999
www.arup.com

Client
MVV Environment Services Ltd

Job Title
Energy from Waste Combined Heat and Power Facility, Forties Road, Dundee

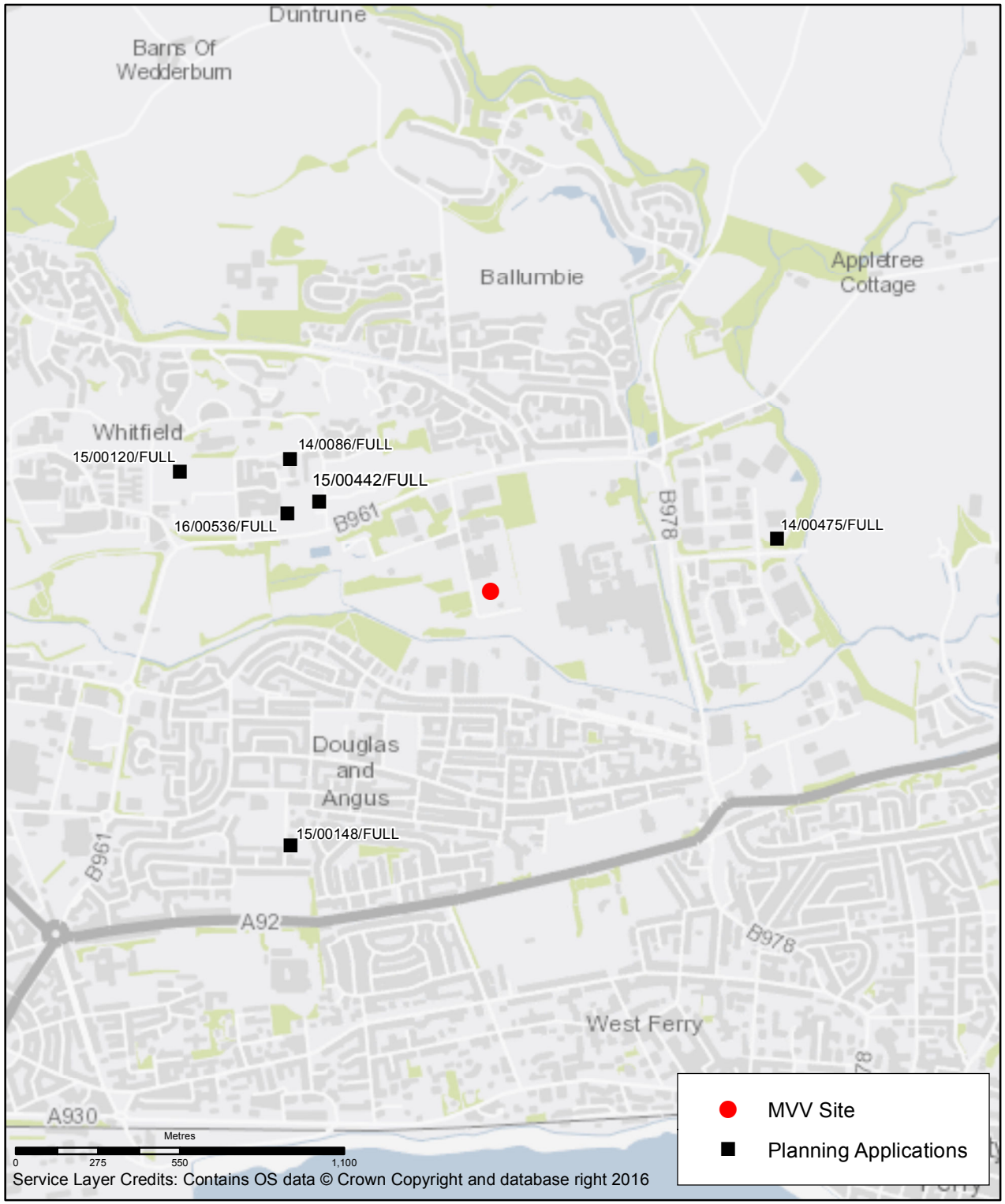
Scale **1:24,000**

Job No	Drawing Status
245510-00	**Issue**

Drawing Title	Issue
Archaeology Scoping	**P1**

Appendix J

Committed Developments



Application Ref	Address	Proposal Description	Status
14/00475/FULL	Land To North Of Barlow Avenue And East Of Fowler Road West Pitkerro Industrial Estate Dundee DD5 3RU	Erection of industrial building and formation of secure yard for commercial vehicle parking.	Approved subject to conditions. Development to begin by 18/9/2017
15/00120/FULL	Land To North Of Whitfield Terrace And East of Whitfield Loan Dundee DD4 0BE	Erection of 30No two storey detached houses (re-application)	Approved subject to conditions. Development to begin by 01/5/2018
15/00148/FULL	St Pius Rc Primary School Banchory Road Dundee DD4 7TQ	New Nursery Unit	Approved subject to conditions. Development to begin by 23/4/2018
14/00086/FULL	Land To North Of Drumgeith Road And West Of Summerfield Avenue Dundee (Phase 1)	Erection of 49 dwelling units, access roads, landscaping and associated drainage facilities.	Under construction
15/00442/FULL	Phase 2 Land To North Of Drumgeith Road And West Of Summerfield Avenue Dundee	Phase 2 - 12 domestic dwellings, including associated landscaping and car parking. | Phase 2 Land To North Of Drumgeith Road And West Of Summerfield Avenue Dundee	Construction not started – Development to begin by 7/8/2018
16/00536/FULL	Phase 3 Land To North Of Drumgeith Road And West Of Summerfield Avenue Dundee	Erection of 28 Houses and associated access roads, car parking and landscaping	Approved subject to conditions. Development to begin by 31/8/2019

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Scale at A3 **1:20,000**

Job No **245510-00**

Drawing Status **Issue**

Drawing No **Figure 13.5**

Issue **I1**

Client
MVV Environment Services Limited

Job Title
Energy from Waste Combined Heat and Power Facility, Forties Road, Dundee

Drawing Title
Committed Developments