CHAPTER 17: WASTE

Introduction

17.1 This chapter assesses the impact of the proposed development in terms of waste generation. In particular, it considers the potential effects of waste generation resulting from the construction phases and from occupation of the site once developed.

17.2 The chapter describes the methods used to assess the impacts, the baseline conditions currently existing at the site and surroundings, the potential direct and indirect impacts of the development arising from local waste generation during construction and operation. However local facilities exist or are being built that will be able to manage this addition. It has been written by Ynys Resources.

Planning Policy Context

National Planning Policy

The Revised Waste Framework Directive (2008/98/EC) - I

17.3 The Directive came into force in 2008 and has the following objectives:

- Apply the waste hierarchy in waste management legislation and policy.
- Promote high quality recycling.
- Separate collection for paper, metal, plastic and glass by 2015 (for all sectors).
- Preparation for reuse and recycling of paper, metal, plastic and glass from households ≥ 50% by weight by 2020.
- Preparation for reuse, recycling and other material recovery of non-hazardous construction and demolition waste increased to ≥ 70% by weight by 2020.
- Establish integrated and adequate network of waste disposal installations and installations for the recovery of mixed household waste.
- Waste management carried out without endangering human health and without harming the environment.
- Establish waste management plans.
- Waste Prevention Programmes describe existing prevention measures, evaluating usefulness of other measures and determine benchmarks for measurement of adopted prevention measures.

Waste (England and Wales) Regulations 2011

17.4 The new Waste (England and Wales) Regulations 2011 came into force on 29 March 2011. They update some aspects of waste controls. The need for waste permits and authorisations for certain activities therefore does not change.

17.5 In summary, the regulations implement the revised Waste Framework Directive under the Duty of Care Regulations 1991 and require businesses to confirm that they have:

- applied the waste management hierarchy when transferring waste and to include a declaration on their waste transfer note or consignment note;
- require a new permit waste hierarchy permit condition and where appropriate a condition relating to mixing of hazardous waste;

- introduce a two-tier system for waste carrier and broker registration, which includes those who carry their own waste, and introduces a new concept of a waste dealer;
- make amendments to hazardous waste controls and definition;
- exclude some categories of waste from waste controls, notably animal by-products whilst include a small number of radioactive waste materials.

TAN 21: Waste

17.6 This guidance note provides advice about how the land use planning system should contribute to sustainable waste resource management. The Wales Waste Strategy will deal with matters beyond the scope of this guidance in providing a framework within which Wales can reduce the amount of waste it produces and deal with waste which has been produced in a more sustainable manner. This document has been prepared in parallel with the Wales Waste Strategy in the full knowledge of the likely issues emerging in the Strategy. Waste is a vitally important issue in a society striving for sustainability. With its commitments to sustainable development, the Welsh Government has a desire to address waste issues and develop sustainable methods of waste resource management.

Environmental Permitting Regulations 2010*;*

17.7 This is a single environmental permitting and compliance system that simplifies and combines pollution prevention and control (PPC) permitting and waste management licensing (WML). All other regulatory permitting regimes such as discharge consenting, water abstraction, radioactive substance regulation, remain in force.

Hazardous Waste Regulations 2005;

17.8 Implementation of the revised Waste Framework Directive has brought some changes to the Hazardous Waste Regulations. These changes have been brought in by the Waste (England and Wales) Regulations 2011 and the Waste (Miscellaneous Provisions) (Wales) 2011 Regulations. The major changes to the way hazardous waste is managed are listed below and came into effect on 29 March 2011**:**

- Mixing of hazardous waste can only be carried out if you hold an appropriate permit allowing you to do this and the activity must comply with Best Available Techniques (BAT).
- A new hazardous property (H13 sensitizing) has been introduced and will need to be used when assessing hazardous waste.
- There are changes to the record keeping requirements, in particular for brokers.

17.9 The following changes came in on 28 September 2011:

- The consignment note has been amended and the multiple consignment procedure has been simplified.
- The waste hierarchy must be considered and applied in a priority order when hazardous waste is transferred.
- For waste received on or after this date there are revised procedures to be followed for consignee returns.

Hazardous Waste (Wales) (Amendment) Regulations 2009 SI 2861

17.10 Amends 2005/1806 by increasing the maximum limit of hazardous waste that can be produced in any year without registering with the regulator from 200kg to 500kg, and clarifies other aspects.

17.11 The main drivers for policy in Wales are:

The Sustainable Development Scheme

17.12 Sustainable development is a statutory duty in Wales and is the central organising principle for the Welsh Government. The policies are outlined in the document One Wales: One Planet The sustainable Development Scheme for the Welsh Government. The main aims in relation to resource management are:

- Within the lifetime of a generation, to see Wales using only its fair share of the earth's resources – One Planet Living.
- To achieve this goal we will need to reduce by at least two thirds the total resources we currently use to sustain our lifestyles.
- Indicator is 'Ecological Footprint' which measures both carbon footprint and resource use.

"Programme for Government"

17.13 The Programme for Government is the Welsh Government plan of action. The main action relevant to high efficiency Energy from Waste (EFW) is: "continuing investment and procurement support for food waste and residual waste treatment, including energy from waste."

Waste Policy in Wales - Towards Zero Waste

17.14 Wales has sustainability built into the constitution. This means enhancing the economic social and environmental wellbeing of people and communities, achieving a better quality of life for our own and future generations.

17.15 The Waste Strategy 'Towards Zero Waste' is an overarching document which is implemented by Sector plans which outline in further detail how to deliver the Waste strategy objectives. The implementation of this Strategy will be aided by the development of key Sector Plans. The plans will show who is doing what, by when and with whom.

17.16 "These plans will be customer facing delivery plan documents, which describe the role of the sector in delivering the strategy, lay out specific targets and policies, set out who will do what (by the sector, by others and by the Welsh Government) and be developed with sector representatives to make sure it can be achieved."

2025 Towards Zero Waste

- Recycling rate of at least 70% across all sectors;
- AD food waste and 'closed loop recycling' systems;
- 30% cap on residual waste to high efficiency energy from waste plants and
- as close to zero landfill as possible

2050 Achieving Zero Waste

- Reduce our share of Wales' ecological footprint to 'one planet' levels. This means a 75% reduction in waste – about 1.5% a year from now to 2050.

- Produce no residual waste.
- Any waste that is produced is all re-used/ recycled.

Collection, Infrastructure and Markets Sector Plan

- Covers management of all wastes in Wales
- Seeks to ensure that high volumes of clean source segregated recyclate are collected and delivered to reprocessors, and that closed loop end markets are developed for the recyclate where possible
- Evidence suggests significant amounts of recyclable material still being sent to landfill from all sectors
- Development of infrastructure to collect and use this material are key to achieving the aims set out under 'Towards Zero Waste'

Construction and Demolition Sector Plan

17.17 The aim of the construction sector plan is to present a longer term perspective and vision for improving resource use and waste management, in line with government objectives set out in the Wales waste strategy.

17.18 The Sector plan will establish how the construction sector will manage resources used and the prevention of waste materials from the construction, refurbishment and demolition of buildings in Wales.

17.19 Key to the Sector plan is that it is directed at all organisations involved in the built environment. Consequently, the development of the plan has included input from key industry stakeholders.

17.20 BRASS, Welsh Government and Constructing Excellence in Wales (CEW) are currently developing the waste sector plan for the construction and demolition industry. The Construction and Demolition Waste Sector Plan consultation paper was published in January 2011 and the final Sector Plan will be available later in 2012.

17.21 The current 2010 strategy target for Commercial and Industrial (C&I) waste is 85%, as set out by Wise about Waste, the initial waste strategy. There is also a general reduction target of waste produced of 1.4% year on year for the sector as a whole.

Municipal Waste Sector Plan

17.22 The Municipal Sector Plan only covers waste collected by Welsh Local Authorities or that is collected by private or third (voluntary) sector waste management companies for Local Authorities. Waste not collected in this way will be covered in other sector plans.

The Food Manufacture, Service and Retail Sector Plan (currently out for consultation)

17.23 The Food Manufacture, Service and Retail Sector Plan seeks to address issues in three key areas, focussing on food and packaging:

Waste prevention

- Reducing waste arisings directly produced by the sectors covered in the plan (focusing on food and packaging in the mixed waste stream produced by SMEs, and food arisings in large food manufacturing companies).

- Greening the supply chain, including ecodesign to make packaging generate less waste.

Recycling

- Businesses source segregating food and packaging materials that are currently arising in the mixed waste stream, and thus increasing recycling rates on site.
- Provision of a universal separate collection service for packaging and food waste.
- Recyclate to be recycled closed loop or 'up-cycled', ideally in Wales.
- Food waste to be sent to anaerobic digestion plants (where reuse, e.g. as animal feed, is not possible).
- Increasing the recyclability of packaging.
- Increasing the recycled content of packaging.

Treatment and disposal

17.24 To deliver sustainable treatment and disposal of this commercial and industrial waste in a cost effective way and work towards the targets set in Towards Zero Waste, including those that limit energy from waste and seek to reduce landfill to zero.

Local Planning Policy

17.25 Due to the similarities in the character and profile of Anglesey and Gwynedd and the efficiency savings available it has been decided to establish a Joint Planning Policy Unit (JPPU) to prepare a Joint Local Development Plan (JLDP) for both Authorities. The Unit will comprise of officers from both Authorities. Gwynedd will host the Joint Unit. This will replace the current development plan framework which involves the Stopped Unitary Development Plan (2001), Gwynedd Structure Plan (1993) and the IOACC Local Plan (1996).

17.26 The UDP and Local Plan both advocate the adoption of the policies laid out in the Wales Waste Strategy.

17.27 General Policy GP2: Design of the Stopped UDP states that the Council will look for the application of sustainable principles in design including waste water usage within the site, minimisation of waste and energy management".

Approach

Assessment Methodology

17.28 Existing documents, such as policy documents and information published by the Council, have been reviewed. From this analysis the typical waste arisings, waste management practices and recycling rates have been established.

17.29 The typical types of waste arising during the construction phase of the project have been estimated using knowledge of the development and experience of similar schemes. Applying industry best practice guidance, consideration has been given to the reduction and re-use of waste produced during the construction phase.

17.30 Waste management during the operational phase of the development has been calculated through reference to BS5906 and waste data published by IOACC and considered in relation to existing waste services provided in the region.

17.31 In order to evaluate the volumes of wastes generated at Kingsland, the average volume of waste generated per household has been used based upon the current data available on average households in Anglesey from Wastedata Flow.

17.32 The volumes of waste anticipated from the operational leisure village development have also been estimated. For Cae Glas, this includes analysis of the operation of the nuclear workers village and the leisure village.

17.33 A strategy for the developments has been developed using WRAP guidance and templates to consider impacts during construction and demolition and then impacts once the developments are operational.

Significance Criteria

17.34 No industry standard significance criteria existing for the assessment of waste. The following significance criteria have been adopted for the impact assessment:

Major Beneficial	A substantial reduction in waste generation or exceeding, by a considerable amount, the Council's landfill diversion, and recycling and composting targets.
Moderate Beneficial	A moderate reduction in waste generation or moderately exceeding the Council's landfill diversion, recycling and composting targets.
Minor Beneficial	A minor reduction in waste generation or slightly exceeding the Council's landfill diversion, recycling and composting targets.
Negligible	No significant change in waste generation or potential for re-use, recycling or composting.
Minor Adverse	A minor increase in waste generation and potential for minor reduction in existing recycling, re-use or composting rate.
Moderate Adverse	A moderate increase in waste generation and limited potential for increased recycling, re-use or composting.
Major Adverse	A substantial increase in waste generation, and no re-use, recycling or composting undertaken.

Baseline Conditions

Existing Site Waste Generation

17.35 The sites currently consist of primarily undeveloped agricultural land and woodland as well as a coastal park under the ownership of AAM and buildings associated with the Penrhos Estate and Farm. As such the sites currently generate little or no waste.

17.36 The Welsh reduction and statutory recycling targets for municipal, construction and commercial wastes are ambitious. Anglesey is one of the best performing counties in Wales with a recycling rate of 56% and rising. The national target will

be 52% recycling by 2012 and will be between this and 70% once the different schemes are built.

Waste Arisings

17.37 In 2010/11, the total municipal waste arisings of Anglesey amounted to 43,820 tonnes. Of this Anglesey recycled and composted 56% (24,457 tonnes) of its municipal waste. This is the one of the highest rate of recycling of any Local Authorities in Wales.

Waste Collections and Facilities

17.38 The collection of municipal solid waste is managed by IOACC.

Kerbside Collections

17.39 Kerbside collections include:

- The collection of general 'black bag' refuse and green garden waste takes place on alternate weeks.
- Dry recycling material is collected on a weekly basis
- Food waste is collected on a weekly basis.

17.40 Each householder is entitled to the following containers free of charge to store their waste:

- 1 x 240 litre black wheeled bin for general 'black bag' refuse. Only waste produced by a householder on a normal day to day basis that cannot be recycled should be placed in this wheeled bin (i.e. it should not contain non standard items such as bulky waste, one-off items, difficult or commercial waste).
- 1 x 55 litre blue recycling box (for plastic bottles, mixed cans and mixed glass).
- 1 x 38 litre red recycling box (for paper, cardboard and textiles).
- 1 x 240 litre green wheeled bin for green garden waste.
- 1 x 23 litre brown mini food waste bin and 1 x 7 litre brown kitchen caddy (the Council also currently provides free compostable liners to householders for the storage of food waste).

Bulky Household Waste Collection

17.41 The Council provides two bulky waste collection services for householders:
Bulky Waste Collection A – Householders will be given two free collections per financial year of up to four items per collection. Further collections of up to four items can be arranged within the same financial year - this is a chargeable service, the cost of which will be as noted in the Council's Fees & Charges which are produced every year.

Bulky Waste Collection B – This is a chargeable service which is volume restrictive. A householder can choose from two options based on collecting circa ½ tonne or 1 ½ tonnes of bulky material per collection (each option carries a different charge). The cost for each of these services will be as noted in the Council's Fees & Charges which are produced every year.

Waste Management Facilities

17.42 There are two Household Waste Recycling Centres (HWRC) located in Anglesey which are open seven days a week for the entire year with the exception of Christmas Day. The HWRCs are managed by IOACC.

HWRCs in Anglesey collect the following:

- Paper
- Glass
- Textiles/clothing/shoes
- Engine oil
- Scrap metal
- Cans - steel and aluminium
- Plastic bottles
- Green garden waste
- Batteries - both car and household batteries
- Wood
- Rubble
- Small and large domestic appliances
- Fridges and freezers
- Televisions and computer monitors
- Fluorescent tubes and energy saving bulbs
- Bric-a-brac (general reusable items).
- Tetrapak
- Tyres (4 max)
- Paint

17.43 The nearest HWRC to the site is the Gwalchmai facility located on 9miles south on the A5.

17.44 Anglesey currently sends its residual municipal waste to Penhesgyn transfer station where it is bulked up and sent to Llanddulas landfill. Anglesey is part of the North Wales Waste Partnership and the residual waste will ultimately be sent to high efficiency EFW once a plant has been built.

17.45 There are two inert landfills on Anglesey, and a three private transfer stations/recycling facilities which process commercial and construction wastes, the closest to the site being located at Porthdafarch Road, Holyhead. Commercial residual waste currently goes to the either Llanddulas or Ruabon Landfill.

Potential Impacts

Construction Waste

Demolition and Construction

17.46 Construction waste will vary in composition over the building period. Therefore, it is appropriate to target the predominant streams as they arise. For example, earlier stage construction and civil engineering works produce mainly soils and aggregates which can easily be incorporated and reused back into the works. Later stages will have higher levels of wood, plastics, card and glass. These will be more likely to be taken off site and recycled. The Waste Strategy should reflect these various stages to maximise efficiency and reduce waste being produced.

Construction

17.47 In a typical construction site 15-20% of new materials brought on to that site become waste without having been used. This wastage can be due to a number of factors including the following:

a) Packaging	b) Materials damaged on arrival
c) Damage due to methods of work	d) Vandalism
e) Unused off-cuts	f) Rework due to own errors
g) Site office waste	h) Design information problems
i) Excess materials	j) Inappropriate equipment
k) Inappropriate storage location	l) Move to new work areas
m) Decayed materials	n) Adverse weather conditions

17.48 Waste volumes arising from construction of the development have been calculated using the areas proposed for each type of development and typical construction waste volumes[1] and composition[2] from the BRE's SmartWaste benchmark data.

17.49 Using the SmartWaste benchmark data the construction waste volumes estimated for the building uses in the proposed Penrhos, Kingsland and Cae Glas development are summarised in Table 17.1.

Table 17.1: Estimated Waste Arisings from Construction of the Building Development

Construction of:	Number of Units	Area (m^2)	Average Waste (m^3/ 100m^2)	Estimated Waste vol (m^3)
Residential	350	10,4342	19.7	20,555
Leisure		5,672	19	1,078
Hotel		3,000	19.7	591
Total				**22,224**

17.50 Table 17.1 shows that the total waste from construction of the various developments is estimated to be 2,224m^3 using the BRE's SmartWaste benchmark data. This figure does not include material waste from the lodges as they will be fabricated off-site. This also does not include material waste from infrastructure development and assumes that all soil materials will be managed and kept on site.

17.51 No detailed bill of quantities for building materials has been drawn up for the proposed development at this stage. Assumptions have therefore been made based on development areas and BRE's benchmark data, drawn from similar developments to those proposed. A breakdown of construction waste volumes and weights by material for the development is given in Table 17.2.

Table 17.2: Estimated Construction Waste Composition from the Development

Kingsland, Penrhos & Cae Glas			
Material	**Typical Composition (%)[6]**	**Volume (m^3)**	**Weight (tonnes)[1]**
Timber	19	4,223	2,112
Concrete	6	1,333	2,932
Inert	11	2,445	4,699
Ceramic	3	667	1,069
Insulation	3	667	20
Plastic	13	2,889	3,470

[1] Conversion Factors taken from BS648-1

Kingsland, Penrhos & Cae Glas			
Material	**Typical Composition (%)[6]**	**Volume (m^3)**	**Weight (tonnes)[1]**
Packaging	25	5,556	4,725
Metal	3	667	3,502
Plaster and Cement	3	667	600
Miscellaneous	14	3,112	2,645
TOTAL	**100**	**159,143**	**25,774**

17.52 Table 17.2 estimates that approximately 25,774 tonnes of waste will arise from construction. It is important to recognise that these construction waste arisings will be over the build duration. It should also be noted that, of these waste streams, all of the fractions can be recycled, and in accordance with the Construction sector plan 85% of these arisings will be reused or recycled. In addition the design of the buildings will seek to minimise waste and a reduction of 50% is likely to be achieved. This is therefore considered a 'worst case' scenario.

17.53 The above scenario would result in all demolition material being disposed of to landfill and all construction materials (such as aggregate) being sourced from non recycled sources off site.

17.54 Using this approach would result in a significant impact on landfill capacity and the natural environment at local level. An indirect impact from the unnecessary disposal of reusable / recyclable waste to landfill is the increased vehicle traffic associated with moving large waste volumes and the associated nuisance issues from managing high volume waste streams. Adopting this approach would also have financial implications on the project, as disposal of materials that have a direct value will have an impact on the projects profit margin.

17.55 The effects on the main receptor, the waste management infrastructure and the environment, will be dependent on the waste management options employed and also the classification of the waste. If waste is recycled or recovered on site the impacts will be site specific. Recovery/reuse on site during the construction phase is the best environmental option with the least environmental impact. If waste is non-hazardous or inert and managed off-site the effects may be limited to the regional waste management infrastructure. Arisings of construction waste requiring off-site management will have an immediate but temporary and direct effect on the waste management infrastructure over a short duration.

17.56 The construction phase therefore presents a **moderate adverse** effect in light of the magnitude of waste materials produced and regional sensitivity.

17.57 Key actions for the C&I sector plan which is about to be published by the Welsh Government and which will be relevant to this development.

- 85% recycling by weight
- Reusing and recycling packaging
- Reduction in biodegradable wastes
- Priority materials

Completed Development

Potential Arisings

Penrhos

17.58 The proposals for Penrhos include up to 500 lodges:

Table 17.3: Penrhos Waste Arisings

Dwellings	Tonnes of Wastes Arising per annum[1]	Tonnes Recyclables at 70%	Residual
Lodges (500)	142	99.4	42.6
Leisure Complex	124	86.8	37.2
Boathouse & Bathhouse	15.1	10.57	4.53
TOTAL	**281.1**	**196.77**	**84.33**

Cae Glas

17.59 The proposals at Cae Glas include up to 315 lodges and a 75-bed hotel. During workers accommodation lodges will be divided into 8 person units.

Table 17.4: Cae Glas Nuclear Workers Waste Arisings

Dwellings	Tonnes of Wastes Arising per annum[1]	Tonnes Recyclables at 70%	Residual
315 Lodges	178.92	125.27	53.69
75-bed Hotel	67.3	47	20
TOTAL	**251.54**	**172.27**	**73.69**

17.60 Once the nuclear workers have left the site, the lodges will be converted into holiday accommodation.

Table 17.5: Cae Glas Leisure Village Waste Arisings

Dwellings	Tonnes of Wastes Arising per annum[1]	Tonnes Recyclables at 70%	Residual
315 Lodges	89.46	62.58	26.88
75-bed Hotel	67.3	47	20
TOTAL	**156.76**	**109.6**	**46.88**

17.61 Based on the current baseline of 136,938 tonnes C&I waste produced per annum in Anglesey, the maximum tonnage of 408 tonnes from both Penrhos and Cae Glas would represent a potential increase of 0.29%.

17.62 Without any mitigation measures considered, the development would have a **minor adverse** impact in the long term.

Kingsland

17.63 Municipal Solid Waste (MSW) arisings from Kingsland have been based upon current average arisings on Anglesey of 71kg/person.

Table 17.6: Kingsland Residential Waste Arisings

Dwellings	Tonnes of Wastes Arising	Tonnes Recyclables at 70%	Residual
360	25.56 -102.24	17.89 – 71.93	7.67-30.31

17.64 Based on the current baseline of 43,820 tonnes produced per annum in Anglesey, the maximum tonnage of 102.24 tonnes generated across the three sites per year would represent a potential increase of 0.23%. Without any mitigation measures considered, the development would have a **Minor Adverse** impact in the long term.

Mitigation Measures

Demolition and Construction

17.65 There are two main influences on how waste will need to be managed on the project; those required by BREEAM and those required by the Waste Strategy and the delivery mechanisms via the relevant Sector Plans.

17.66 How construction waste is managed during the development phase of the complex will be determined by the Site Waste Management Plan (SWMP). The SWMP is a requirement of achieving BREEAM and will outline targets for recycling and reuse as a total and potentially for material streams. SWMP are not yet statutory in Wales but it is envisaged that there will be some legislation relating to this by the time this development is being built.

17.67 The best practice option is closed loop recycling where aggregates dug up or produced on site are reprocessed and reused on site in line with the aggregates quality protocol, into products that can be used in construction.

17.68 The targets will include values for materials:

- Re-used on site
- Recycled on site
- Reused off site
- Recycled on site
- Energy from Waste (if available) Landfill

17.69 Land & Lakes and their Design team have worked closely from the pre design stage to ensure that the design now incorporates the maximum levels of minimisation, reduction reuse and recycling possible.

17.70 To minimise waste- for any demolition works a pre-demolition audit is being carried out to:

- Identify materials that can be salvaged and reused.
- Identify any hazardous materials that need to be removed and appropriately disposed of.
- Identify the materials within the building so that as much as possible can be crushed and screen to as high a specification as possible and re-used onsite.

17.71 The construction of the new building has been designed to use methods and materials all in accordance with achieving BREEAM Excellent.

Eliminating Waste

17.72 The demolition waste will crushed and screened and made into new product, this activity will take place on site where possible or and a local facility when space is an issue. This will ensure that all the waste material processed in accordance with the WRAP/EA quality protocol and cease to become a waste.

17.73 The material produced will be re-used on site where possible and where there is a surplus on other local schemes.

17.74 All timber retrieved from the site will be reused or recycled.

17.75 All metals retrieved though the demolition will be separated recycled.

Material specification

17.76 Examples of measures being taken to design out waste:

Cae Glas and Penrhos Sites

- Use of prefabricated units for construction of lodges allowing off-site pre-production to known quantities, these will be assembled on site to minimise transportation.
- Cae Glas hub building will be assembled on site minimising waste produced.
- Service areas will be built using designing out waste principles.
- Old buildings will be refurbished using sustainable construction techniques.

Kingsland

- Adaptability will be built into housing design, thereby minimising waste throughout the lifetime of the housing.
- New build components to have high recycled content and be recyclable.

Construction Activities

17.77 The Site Waste Management plan (SWMP) will ensure that all waste reduction and recycling targets are met. This will be designed to ensure that the recycling onsite is relevant to the stage of construction maximising the use of the small space available. Maximum BREEAM credits for recycling and reuse are being sought.

Tonnage of demolition materials

17.78 The results of the Pre-demolition audit will highlight the tonnages of material that will be produced. These will then be used to produce the targets to be reused and recycled by the Contractor and will form the basis of the SWMP.

Waste Audit

17.79 Monitoring of waste will be continuously carried out by the Contractor on-site. Losses, recycling and waste will be documented as standard procedure. Targets will be monitored for progress and procedures reviewed as necessary. This will be part of the requirement of the SWMP

Waste Separation

17.80 All waste materials will be separated manually on site during the demolition process. These will be reprocessed on or off-site and re-used in the construction process. Any other materials will be recycled at local facilities.

Reuse of Waste Material

17.81 Reuse of materials and the production of recycled products will be carried out as highlighted previous section.

Handling of Hazardous Waste

17.82 An asbestos survey and removal will carried out prior to development commencing.

17.83 In the event of contaminated products being discovered on the site, procedures will be in place and they be dealt with in accordance with HSE and specialist licensed contractors would be instructed to remove and dispose of the material accordingly.

Completed Development

Cae Glas and Penrhos Sites

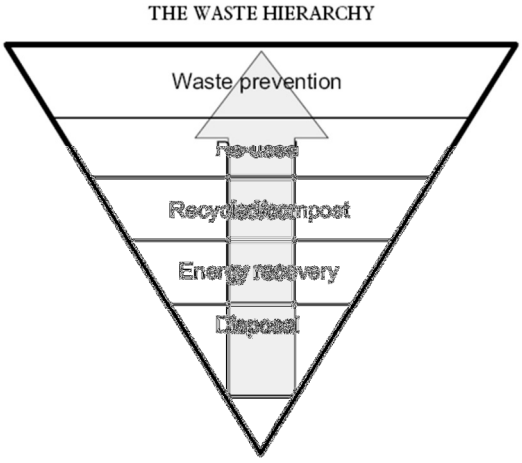
17.84 These are commercial development and therefore be subject to the requirements of the various Sector plans applicable these include:

- Collection, Infrastructure and Markets Sector Plan
- Food Manufacture, Service and Retail Plan
- Industrial and Commercial Sector Plan

17.85 The design of the development will incorporate the need to be able to comply with these policies, and provide the space and facilities need to achieve the reduction, reuse and recycling targets required by the Waste Strategy Towards Zero Waste by 2025:

- Recycling rate of at least 70% across all sectors
- AD food waste and 'closed loop recycling' systems
- 30% cap on residual waste to high efficiency energy from waste plants and as close to zero landfill as possible
- 1.5% reduction in total waste arisings year on year.

17.86 In order to do so the principles of the Waste Hierarchy will be applied.



The Food Manufacture, Service and Retail Sector Plan (currently out for consultation)

17.87 The Food Manufacture, Service and Retail Sector Plan seeks to address issues in three key areas, focussing on food and packaging:

Waste prevention

- Reducing waste arisings directly produced by the sectors covered in the plan (focusing on food and packaging in the mixed waste stream produced by SMEs, and food arisings in large food manufacturing companies).
- Greening the supply chain, including ecodesign to make packaging generate less waste.

Recycling

- Businesses source segregating food and packaging materials that are currently arising in the mixed waste stream, and thus increasing recycling rates on site.
- Provision of a universal separate collection service for packaging and food waste.
- Recyclate to be recycled closed loop or 'up-cycled', ideally in Wales.
- Food waste to be sent to anaerobic digestion plants (where reuse, e.g. as animal feed, is not possible).
- Increasing the recyclability of packaging.
- Increasing the recycled content of packaging.

Treatment and disposal

17.88 To deliver sustainable treatment and disposal of this commercial and industrial waste in a cost effective way and work towards the targets set in Towards Zero Waste, including those that limit energy from waste and seek to reduce landfill to zero.

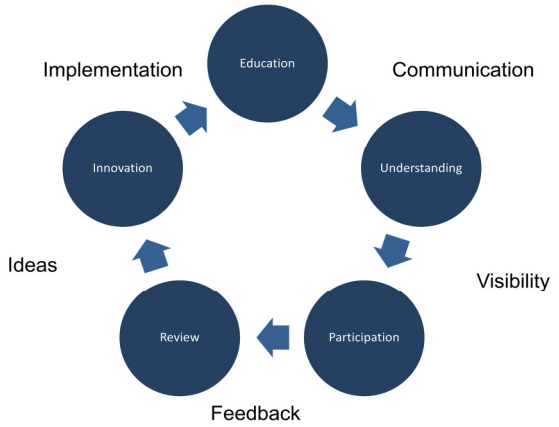
Collection, Infrastructure and Markets Sector Plan

17.89 Land and Lakes have taken note of the contents of this plan, as although they are not collectors themselves, it is important that the infrastructure within the developments is designed to be able to deliver the likely requirements.

17.90 The key elements noted that will potentially be included are:

- The need to collect separately paper, metal plastic and glass by 1st Jan 2015.
- A requirement for waste producers to keep recyclable materials separate at source
- Extending the Waste Framework Directive to provide the additional food and card separate collections
- Introduction of landfill/EFW bans on specific materials such as food and card

17.91 The following principles will be applied to maximise the efficacy of minimising the impact of waste arisings.



17.92 Appropriate infrastructure will be available both in the dwellings and central areas to maximise efficiency.

17.93 Where possible Land and Lakes will work with local expertise, WRAP, Constructing Excellence and other support agencies to ensure best practice is being adopted.

Kingsland

17.94 Kingsland is a residential development and therefore be subject to the waste management policies of IOACC, which will be based on the requirements of the Municipal Sector Plan.

17.95 The design of the development will incorporate the need to be able to comply with these policies, and provide the space and facilities need to achieve the reduction, reuse and recycling targets required.

17.96 Current collection methods consist of a domestic waste and recycling service. All households on Anglesey are entitled to a 240 litre black wheeled bin, a 55 litre blue recycling box, a 38 litre red recycling box, a 23 litre brown mini food waste bin with a 7 litre brown kitchen caddy and a 240 litre green wheeled bin.

17.97 The black bin will be collected on the same day every fortnight alternate to the green bin. The blue & red recycling boxes and the brown mini food waste bin will be collected on the same day on a weekly basis.

17.98 The Waste Management Section can arrange an 'assisted collection' service for disabled residents or those who are having difficulty wheeling their bins to the collection point.

17.99 The Municipal Sector Plan supports 'Towards Zero Waste', the overarching waste strategy for Wales. It does this by detailing outcomes, policies and delivery actions for this sector.

17.100 These actions will deliver the sustainable development outcomes identified in:

- the Sustainable Development Scheme 'One Wales, One Planet'; and
- Towards Zero Waste.

17.101 Part 1 of the Municipal Sector Plan takes forward four key areas:

- waste prevention;
- preparing for reuse;
- recycling collection service delivery improvements; and

- sustainable treatment and disposal.

17.102 The main targets for Municipal Waste are:

- a minimum of 70% of waste being reused, recycled or composted by 2024/25;
- a maximum of 30% energy being created from waste by 2024/25;
- a maximum of 5% of waste being landfilled; and
- Wales to achieve zero waste by 2050.

Residual Impacts

Demolition and Construction

17.103 In adopting the mitigation measures above the impact should reduce to **Minor Adverse.** Potentially by demonstrating best practice the impact could be **Negligible.**

Completed Development

17.104 In adopting the mitigation measures above the impact should reduce to **Negligible.** Potentially by demonstrating best practice the impact could be **Minor Beneficial.**

Conclusions

17.105 The proposed development will result in the generation of waste material during the construction phases. When completed the development will consist of commercial & domestic properties from which typical domestic waste will arise.

17.106 The applicants will be directly responsible for the delivery of the development and are aware of the legislative requirements when managing waste arising on site. By adopting industry best practice it is expected that the amount of waste produced will be minimised. Furthermore by adopting a SWMP, waste that is produced on site will be carefully monitored and treated to maximise its re-use and recycling potential.

17.107 Each of the properties will be provided with sufficient space to store recycling and residual waste containers to comply with the requirements of the Code for Sustainable Homes, BS5096 and IOCC kerbside collection service. Residents will be advised by the Council on the materials that can be recycled in their kerbside schemes and at other waste and recycling services in the vicinity.

[1] SMARTWaste (2011) BRE Waste Benchmark Summary. [online] available at: https://www.smartwaste.co.uk/filelibrary/benchmarks%20data/Waste_Benchmarks_for_new_build_projects_by_project_type_31_May_2011.pdf

[2] Hurley J. and McGrath C. (2001) Deconstruction and reuse of construction materials. BRE.