

**Ardley Waste Management Facility, Ardley, Oxfordshire**

**Sustainability Appraisal**



**March 2010**  
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## **DRAWINGS**

No Drawings included

## **1.0 INTRODUCTION**

### **1.1 Background**

The Applicant, in respect of the proposed development at Ardley Waste Management Facility, is committed to ensuring that the proposed scheme accords with the general principals of sustainability during the design process, the facility's construction and throughout its operational life.

This report represents an assessment of generic sustainability indicator criteria set out in relevant national, regional and local policy.

As part of the planning submission Oxfordshire have identified that a sustainability assessment is required for this type of development:

All applications should be supported by a statement which sets out, amongst other things:

- the energy efficiency of the proposed development, covering both;
- operational energy and CO2 issues and consideration of options for renewable energy;
- the environmental implications of the use of the building materials (and use of recycled materials) proposed in the development;
- use of sustainable drainage systems and water efficiency; and
- use of previously developed sites/existing waste management facilities.

Where appropriate a BREEAM (Building Research Establishment Environmental Assessment Method) rating should also be provided for the built aspect of the development.

### **1.2 What is sustainable development?**

One of the key aims of this project is the promotion of sustainability development, which is defined as:

“...development that meets the needs of the present without compromising the ability of future generations to meet their own needs”<sup>1</sup>

One of the key principles of Sustainable Development is the reduction of use of fossil fuels for energy and the replacement of these non-renewable resources with renewable sources of energy in order to reduce the effects of climate change in the future. Fossil Fuels are a finite resource and as such cannot be considered sustainable; the burning of fossil fuels for energy also releases carbon dioxide a “greenhouse gas”, into the atmosphere, changing the gaseous makeup of the atmosphere and leading to climate change. The Carbon Footprint of the Energy from Waste facility has been assessed through a WRATE analysis.

Another related issue of significance is that of embodied energy, the energy which is encapsulated within a building or development, through its design, materials transportation and construction. As well as relating to energy, the concept of sustainability in construction also relates to the use of materials in construction, promoting the wise-use and conservation

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<sup>1</sup> 1987 Brundtland

of finite materials such as mined materials minerals and the conservation of renewable materials such as timber.

Effective waste management can slow the depletion of finite resources through aggregate recycling and other initiatives and ensure the indefinite sustainability of renewable resources through forestry management.

Reduction of waste is another principle of sustainable development. The primary focus is the National Waste Strategy, which sets the context for consideration of waste management through the development plan framework. The hierarchy of waste management technique is:

- reduction of waste at source;
- reuse;
- recovery (including recycling, composting and energy recovery); and
- environmentally sensitive disposal.

For sustainable development to be increasingly successful, waste management should move increasingly up the list towards the first option.

Pollution is also an issue which is encapsulated within sustainable development, from the local scaled pollution caused by toxics materials used for construction, which can have a negative impact on human health, to the global scale issues of ozone depletion in the atmosphere due to the release of certain chemicals into the atmosphere. As is already widely documented, this depletion of the ozone layer poses significant risks to human health.

The efficient use of land to meet the demand of modern society with minimal impact on the natural environment; for example by situating employment within walking distance of residential areas to minimise car use or by situating waste management facilities close to the waste source to minimise transport emissions; is also a key objective of sustainable development.

Biodiversity is a term used to describe the variety of life present within an area, and is key to the conservation of the natural environment. The retention of the delicate balance of flora and fauna is promoted by sustainable development in recognition of the role that ecological systems play in the “life support” systems. An example of this is the management of the atmosphere oxygen-carbon dioxide balance of plant life. Biodiversity also important aesthetic, economic and social value in society today.

Social and Economic concerns are also implicit within the concept of sustainable development, these include the provision of essential services , the promotion of social inclusion and the justification of development through conformity with social, cultural and economic needs, while ensuring that ecological objectives are not compromised.

### **1.3 Structure of Sustainability Appraisal**

- The Applicant – The sustainability credentials of the principal developer are considered in respect of management systems and operational record. This sets the background against which the likelihood of compliance with sustainability indicators and criteria can be assessed;
- Policy – consideration is given to the legislative and planning content within which the SA is undertaken;

- The Proposal – full details of the scheme are included in the planning application and associated documentation. Within this report, a synopsis of the scheme is provided as it relates to sustainability issues;
- BREEAM Review – A provisional BREEAM: Industrial assessment/office assessment was undertaken and is submitted in Appendices D and E of the Environmental Statement. A review is hereby included in relation to the key sustainability indicators;
- Sustainability Indicators – Sustainability Criteria have been used for comparison in order to examine the proposed development.

## 2.0 THE APPLICANT

The consideration of sustainability in any development is heavily dependant on the key operating company. The manner in which the design, construction and operation of a major scheme is undertaken, implemented and managed sets the standards by which environmental issues are taken into account.

In respect of the Ardley redevelopment proposals, responsibility for the plant ultimately falls to Viridor Waste Management Limited. Viridor Waste Management assembled a team that has incorporated sustainability indicators and targets as a fundamental and integral part of the design process.

### 2.1 Environmental Management

Viridor's company website states<sup>2</sup>:

*“Viridor has two primary environmental aims. The first is to maximise efficient use of resources through re-use, recycling and recovery where economically and environmentally beneficial. The second is to safely and efficiently dispose of the wastes produced by householders and businesses in our society in a manner that protects the environment and human health.”*

The importance of continuous monitoring and improvement in assessing and minimising negative environmental impacts and maximising positive ones is recognised by Viridor. The company have been instrumental in developing the performance indicators of the waste industry as proposed by the Green Alliance, and report their performance against these annually, in addition to their own formal Environmental Management System. Viridor's sites are registered to EN ISO 14001, the highest international standard for environmental management, this ensures that the company is working to best practice standards in environmental management and is also implementing a programme of continual improvement in environmental performance, providing assurance to customers and communities alike.

The Pennon Group, Viridor's parent company also produces an annual report detailing its impacts, both positive and negative, on the natural and social environment. The 2007 report provides information both on Pennon group as a whole, as well as Viridor's performance in the areas of corporate responsibility in social and environmental issues.

Viridor is fully supportive of the Government's aim to move towards more sustainable waste management through waste minimisation, reuse, recycling and energy recovery. It is also committed to the concept of corporate environmental and social responsibility. Specifically, Viridor's aims are as follows:

- regularly monitor and review performance and set clear objectives and targets to ensure continuous improvement in health and safety, environmental and welfare performance and quality service provision;
- reduce negative impacts on the environment and augment positive impacts whilst taking all necessary steps to prevent pollution;

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<sup>2</sup> [www.viridor-waste.co.uk](http://www.viridor-waste.co.uk)

- identify and implement health and safety, environmental and welfare service quality improvement schemes to the benefit of employees, customers and stakeholders wherever possible;
- use energy and natural resources more efficiently and encouraging the development and use of alternative fuels and recycled products;
- promote and encourage waste awareness and prevention, re-use, recycling and good practice;
- all operating units will have appropriate arrangements and resources in place to implement an Integrated Management System (IMS) with clear management responsibilities and documented procedures;
- Identify and comply with all applicable legislation, including environmental, health and safety and other requirements including recognised industry best practice;
- require all employees to be aware of their responsibilities for health and safety, environmental and quality issues;
- proactive consultation and dialogue with the public, stakeholders and employees on the company's environmental, health and safety performance, and service quality;
- continue to support and serve the wider community in which the company operates and the socio-economic groups from which it employs. This includes supporting employees in parish, local or regional government; trusteeships or governorships of local and regional bodies, trusts and institutions; charitable or voluntary work and supporting the armed services (territorial or reservists); and
- effectively communicating this policy to all employees, external resources, members of the public and other stakeholders. This Policy Statement and IMS are periodically reviewed in order to ensure continued suitability and to identify and fulfil opportunities for improving its effectiveness.

Through these specific objectives, Viridor works closely with its public and private sector partners to help achieve the government's targets in respect of waste management and sustainability targets as set out in local policies.

### **3.0 POLICY**

The relevant policies which have been taken into consideration are:

#### **3.1 International Policies**

The following international policies provide the overarching European framework for waste applicable to the United Kingdom.

- European Community (EC) Landfill Directive 1999/31/EC; and
- EC Framework Directive for Waste 75/442/EEC as amended by 91/156/EEC.

#### **3.2 National Policies**

The period from 2005 onwards has been an important time for the development of Government policy on sustainable waste management and energy and key statements of Government policy were published during this time changing the national policy framework for the consideration of energy from waste development proposals. These documents are as follows:

PPS Consultation on Planning for a Low Carbon Future in a Changing Climate, March 2010;  
NPS Consultation on Energy Infrastructure, December 2009;  
PPS Eco-towns – a supplement to PPS1, July 2009;  
Waste Strategy 2007;  
Meeting The Energy Challenge 2007;  
Planning Policy Statement: Planning and Climate Change (supplement to PPS 1) (2007);  
PPS 10 – Planning for Sustainable Waste Management (2005);

In addition the following national planning policy documents have been considered with regards to the proposal:

PPS 1 Delivering Sustainable Development (2005);  
PPS 7 Sustainable Development in Rural Areas (2004);  
PPS9 - Biodiversity and Geological Conservation (2005);  
PPS22 – Renewable Energy (2004);  
PPS23 - Planning and Pollution Control (2004); and  
PPS 25 - Flooding (2004).

#### **3.3 Regional Policies**

- The South East Plan.

#### **3.4 Local Policies**

- Oxfordshire Minerals and Waste Local Plan 1996 (saved policies);
- Oxfordshire Minerals and Waste Development Framework;

- The Oxfordshire Joint Municipal Waste Management Strategy 2006; and
- Interim Report on Site Selection for Strategic Waste Management Facilities 2007;
- Cherwell Local Plan 1996; and
- Non Statutory Cherwell Local Plan 2011.

## **4.0 PROPOSAL**

Viridor proposes to develop Energy from Waste (EfW) facility at Ardley Landfill located between the villages of Ardley and Middleton Stoney, approximately 5km north west of Bicester adjacent to the M40 motorway. In parallel with the EfW facility, improvements to the existing HWRC/gas utilisation plant and a new phased landfill restoration plan.

### **4.1 Sustainable Development in Design**

The concept of sustainable development is intended to bring into consideration the relationship between environmental, social and economic systems. It is a philosophy of approach and many of the principles and approaches inherent in sustainable development are already adopted in the design of the proposed Facility at Ardley.

Careful Incorporation of design measures which increase the sustainability of the development can therefore improve the environmental and socio-economic performance of the development, and thus increase the quality of life for the surrounding communities.

This sustainability appraisal explains how the proposed Energy from Waste facility meets the recommended guidance regarding sustainable development, how the changes to the HWRC will improve the existing recycling facility and how the development will continue to recover energy from landfill gas. This compliance is the result of the integration of sustainable principles into the design of the facility from the inception of the project along with ongoing adjustments and modifications resulting from consultation between Viridor and the environmental assessment and design teams. Suggestions and comments have been fed into the design, with the aim of improving its performance against these published criteria.

### **4.2 Site Selection**

The site selection process began with an initial site search, which identified 8 sites within the administrative boundaries of Oxfordshire which were considered possible sites for a facility of this type. The sites considered for review have been previously selected by a complex regime of testing and suitability studies carried out by ERM on behalf of Oxfordshire County Council. The ERM work identified 8 potential sites which were considered to offer potential for a strategic waste management facility.

- site 1 - Gosford Grain Silos;
- site 2 - Former Quarry, Shipton-On-Cherwell;
- site 3 - West of M40 Banbury;
- site 4 - Culham Science Centre;
- site 5 - Land at Banbury Cross Business Park, Banbury;
- site 6 - Sutton Courtney Landfill;
- site 7 – Ardley Landfill;
- site 8 – land at Palmer Avenue

SLR has considered the ERM shortlist further and the identified the three best performing sites to be Site 6 – Sutton Courtney Landfill, Site 7 Ardley Landfill and Site 8 – land at Palmer Avenue using the additional criteria set out below:

- Proximity to housing;
- Accessibility;
- Distance from Oxford;
- Site size;
- Deliverability;
- Existing land use;
- Distance from international conservation sites;
- Green Belt;
- Proximity to landscape designations;
- Flood risk;
- Proximity to heritage designations; and
- CHP potential.

The site selection process (see Technical Appendices – Appendix 2 VOLUME 4) carried out by SLR concluded that the site at Ardley was the most suitable for the development of the proposed facility. The decision was made based on the requirements of current legislation and planning guidance, best practice recommendations and overall potential environmental impact, as well as the potential for an effective power scheme to be realised.

The proposed development at the chosen location is subject to a statutory Environmental Impact Assessment.

### **4.3 Site Description**

The site is a former quarry, now being landfilled with non-hazardous waste. A Household Waste Recycling Centre (HWRC) is located in the far north of the site adjacent to the site offices and landfill gas management compound. The total area of the Ardley Waste Management site is 95 hectares yet the proposed EfW facility would occupy only a small part of the site in the south east corner.

The site is an established waste management facility, to the immediate west of the M40 Motorway. The Banbury – High Wycombe main railway line and the Gaggle Brook, which flows southwards, form the northern and eastern boundaries of the site respectively. The site is bound to the west by the B430, and arable land to the south, which has consent for mineral extraction and is due to commence in 2008/9.

The nearest residential properties to the site include Ashgrove Farm (separated from the site by the B430) and cottages to the North West, Neville's Farm to the North East and Trow Pool Spinery to the South.

Further a field there are settlements which surround the site including Bucknell in the East, Middleton Stoney in the South, Heyford in the West and Fewcott in the North.

There are no specific planning policies identified for this site and no landscape designations either. It should be noted that the site is located within the landscape character area of the Cotswolds.

#### **4.3.1 Access**

The site has dedicated access from the B340, which leads north to J10 of the M40 and south to the A34 towards Oxford. The existing site access serves the landfill and Household Waste Recycling Centre with no unacceptable impacts on the local highway network. A new

junction and access road off of the B430 will be provided with a new gatehouse and weighbridge to serve the proposed EfW facility and Landfill.

#### **4.4 Project Description**

##### **4.4.1 Facility Layout and Infrastructure**

The proposed EfW facility will be totally enclosed within a purpose-built new building that has been appropriately designed for its surroundings. The facility will comprise the following:

- A dedicated internal site access road network with weighbridge and weighbridge office;
- A waste reception area including a tipping hall and bunkers;
- Storage silos;
- Two boilers and grates;
- A flue gas treatment system;
- Two stacks;
- Turbines and generators;
- Air cooled condensers;
- Electrical connections to the National Grid;
- Offices and ancillary areas;
- A Visitors Centre;
- Car-parking;

The proposed Energy from Waste (EfW) facility will be designed to accept some 300,000 tonnes per year of residual waste. This is defined as waste that is left over once all material that can be practicably re-used, recycled and composted has been removed, either by source separation at the hands of the consumer, or by pre-treatment in the form of mechanical sorting or autoclaving.

All waste accepted at the plant would be non-hazardous material arising from households, commerce and industry within Oxfordshire. This material would be delivered to the facility by road in refuse collection vehicles of 20 tonne bulk vehicles.

The accommodation of the EfW facility and ancillary developments, will require amendments to the approved restoration scheme around the periphery of the EfW facility. The proposed development presents the chance to improve on the permitted restoration scheme and integrate the EfW facility into the landscape to a much greater degree than would otherwise be possible.

The main aim of the amended restoration scheme is the creation of a landform and land uses which maintain and enhance the landscape character and ecological value of the site, whilst mitigating the visual impact of the EfW facility.

The existing Household Waste Recycling Centre (HWRC) operates a split level site with five skip bays at the lower operational area of the site and nine parking spaces on the upper public area. As a result of the space to be created by re-locating the landfill offices and weighbridge to the new southern access, it is proposed to extend the HWRC to provide a further four skip bays and six additional public parking spaces

The proposed works are shown on DWG 3/13 (See Planning Drawings VOLUME 2) and will involve:

- construction of new reinforced concrete retaining walls to tie into existing;
- relocation of site offices;
- removal of the site weighbridges and foundations;
- construction of new concrete hardstanding;
- additional site drainage, fencing and bollards; and
- new site signage and road markings.

## **5.0 PROVISIONAL BREEAM ASSESSMENTS**

### **5.1.1 Background**

To ensure compliance with best practice and Viridor's own corporate responsibility procedures, the company intends that the design, construction and commissioning of the EfW facility will be as environmentally sustainable as is practically possible. To this end Viridor have elected to implement the Building Research Establishment's Assessment Method for Industrial Buildings (BREEAM: Industrial) to guide the design, ensure appropriate construction techniques are employed and to provide a quantitative assessment of the finished building's performance with regard to environmental sustainability.

The BREEAM: Industrial rating assesses the environmental sustainability of a development in eight key technical areas:

- management of the development;
- health and well-being of the occupants;
- energy efficiency;
- transport considerations;
- efficiency of water consumption;
- selection of appropriate construction materials and their responsible sourcing;
- land-use and ecological concerns; and
- the minimisation of pollution.

An initial report was undertaken by SLR Consulting based upon the Building Research Establishment's (BRE) pre-assessment estimate template and is designed to give an estimate of a development's potential BREEAM: Industrial and Office rating. Both assessments have been conducted during the preliminary stages of the design process and will demonstrate areas in which the current design scores highly and highlight those where it may be possible to make further improvements. This will allow elements of the design to be guided or modified in order to improve environmental sustainability and thereby maximise the rating achieved by the development.

### **5.1.2 Summary of Industrial Pre Assessment potential BREEAM Rating**

The report conducted constitutes an assessment of the probable outcome of the BREEAM: Industrial assessment and is based upon such knowledge of the current design proposals as is available. The report does not constitute a formal assessment and, whilst likely to be an accurate estimate, the final score is liable to change.

BREEAM: Industrial assesses the environmental sustainability of a development in nine key technical areas: management of the development; health and well being of the occupants; energy efficiency; transport considerations; efficiency of water consumption; selection of appropriate construction materials and their responsible sourcing; waste management; land-use and ecological concerns; and the minimisation of pollution.

### 5.1.3 Scoring and Summary of results

The BREEAM: Industrial assessment awards ratings to developments in six bands, Unclassified, Pass, Good, Very Good, Excellent or Outstanding, according to their points score, as follows.

<b>Rating</b>	<b>Score</b>
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45
Pass	≥ 30
Unclassified	<30

The table below shows the results of the appraisal of the Ardley Waste Management Facility:

<b>Technical Area</b>	<b>Points Achieved</b>
Management	9.6
Health and Wellbeing	5
Energy	6.63
Transport	2.91
Water	3
Materials	4.8
Waste	3.21
Land Use and Ecology	6
Pollution	6.39
Innovation Credits	0
Total	47.54

### 5.1.4 Conclusions

The score of 47.54 translates into a BREEAM: Industrial rating of GOOD. Should the finalised development design brief be an accurate representation of the current design proposals the estimate should represent the final rating. It is the nature of development projects that the score usually slightly upon assessment, as a result of unavoidable changes to the development brief and stochastic events. However, the development has scored well, well with the score of 47.54 points providing an anticipated buffer of 2.54 points above the threshold of a Good rating. Therefore it is anticipated that the final rating for the development will indeed remain as Good (See Appendix D of this Report for detailed Ardley Industrial BREEAM Pre-estimate Report).

### 5.1.5 Summary of Offices Pre Assessment potential BREEAM Rating

The report conducted constitutes an assessment of the probable outcome of the BREEAM: Office pre-assessment and is based upon such knowledge of the current design proposals as is available. The report does not constitute a formal assessment and, whilst likely to be an accurate estimate, the final score is liable to change.

BREEAM: Offices Pre-assessment assesses the environmental sustainability of a development in nine key technical areas: management of the development; health and well being of the occupants; energy efficiency; transport considerations; efficiency of water consumption; selection of appropriate construction materials and their responsible sourcing; waste management; land-use and ecological concerns; and the minimisation of pollution.

### 5.1.6 Scoring and Summary of results

The BREEAM: Offices assessment awards ratings to developments in six brands, Unclassified, Pass, Good, Very Good, Excellent or Outstanding, according to their points score, as follows.

Rating	Score
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45
Pass	≥ 30
Unclassified	<30

The table below shows the results of the appraisal of the Ardley Waste Management Facility:

<b>Technical Area</b>	<b>Points Achieved</b>
Management	9.6
Health and Wellbeing	10.39
Energy	9.85
Transport	2.4
Water	3
Materials	4.8
Waste	4.28
Land Use and Ecology	5
Pollution	6.16
Innovation Credits	0
<b>Total</b>	<b>55.48</b>

### **5.1.7 Conclusions**

The score of 55.48 translates into a BREEAM: Offices rating of Very Good. Should the finalised development design brief be an accurate representation of the current design proposals the estimate should represent the final rating. It is the nature of development projects that the score usually decreases slightly upon formal assessment, as a result of unavoidable changes to the development brief and stochastic events. However, the development has scored well, with the score of 55.48 which translates to a Very Good rating (See Appendix E of this Report for detailed Ardley Offices BREEAM Pre-estimate Report)

## **6.0 NATIONAL SUSTAINABILITY CONTEXT**

### **6.1 Project approach and methodology**

#### **6.1.1 *Sustainability Guidelines and Indicators***

Sustainability criteria have been used for comparison in order to examine the proposed development in terms of its sustainability. These indicators have been sourced from:

- National indicators for sustainable development as stated in One Future – Different Paths;
- UK Government sustainable development strategy, Securing the Future

The indicators found in the national guidance above are not site-specific, and provide a broad synthesis of the government guidelines currently in place. The indicators that have been identified in these documents are integral to the communication of sustainable development, they help to review progress through comparison with baseline figures, highlighting where the challenges are, as well as helping people to understand what sustainable development means globally, nationally, locally in their communities and for themselves as individuals.

In the policy above, the proposed development was compared against the guidelines and its compliance with the principles within each of these was reported. The results of this assessment are presented in tabular form in the remainder of this report.

#### **6.1.2 *Scope of the Report***

The remainder of this report details the compliance of the proposed development against the sustainability indicators put forward on a national, regional and local level through the development plans detailed earlier. The sustainability has been assessed based on consultations with Viridor along with information published by the Applicant through their environmental management system, as well as information sourced from the results of technical assessments carried out as part of the Environmental Impact Assessment (EIA) reported in various chapters of the Environmental Statement.

Where specific measures are proposed by Viridor in order to promote sustainable development at the proposed site, and these relate to indicators in policy documents, reference to these measures is made. Where specific information is not available, information on the existing operations of the Applicant is provided to show the envisaged compliance to indicators. Where the development is deemed not to have any impact on the promotion of a specific indicator, this is also mentioned.

This appraisal aims to demonstrate how sustainability principles have been incorporated into all aspects of the proposed facility, including design, specification, construction and operation.

### **6.2 Considering Planning Policy Statement 1 (PPS 1)**

PPS1 outlines that planning shapes the places where people live and work. It also sets out that sustainable development is the core principle underpinning planning.

The approach to sustainable development contained within PPS 1 is set out below:

- promoting national, regional, sub-regional and local economies;

- promoting urban and rural regeneration;
- promoting communities which are inclusive, healthy, safe and crime free;
- bringing forward sufficient land of a suitable quality in appropriate locations to meet the needs for housing;
- industrial development, retail, commercial and leisure and recreational development;
- providing improved access for all to jobs, health, education, shops, leisure and community facilities, open space, sport and recreation;
- focusing developments that attract a large number of people in existing centres;
- reducing the need to travel and encouraging sustainable patterns of transport development promoting efficient use of land;
- enhancing and protecting biodiversity, natural habitats, the historic environment and landscape and townscape character;
- addressing the impacts of climate change, managing pollution and the safeguarding of natural resources

In the context of the above, PPS1 states that planning authorities should demonstrate how their plans integrate the various elements of sustainable development to achieve outcomes which enable social, environmental and economic objectives to be delivered together..

## **6.3 UK National Indicators for Sustainable Development**

### **6.3.1 *Securing the Future (2005)***

The UK Government sustainable development strategy, *Securing the Future (2005)*, outlined a set of national indicators, which are crucial for the monitoring of the success of the policy, and the progress that is being made towards the targets set. These indicators can be used for monitoring specific issues such as greenhouse gas emissions and unemployment figures, as well as creating overviews of progress for broad priority areas.

The Government strategy identifies 68 national indicators covering a wide range of issues, ranging from those of everyday concern such as health, housing, jobs, crime, education and the local environment, to issues on a more global scale such as climate change and energy, sustainable consumption and production, protecting our natural resources and enhancing the environment and creating sustainable communities and a fairer world.

Twenty of these indicators are grouped into a subset branded “UK Framework Indicators” shared by UK Government and the devolved administrations in Scotland, Wales and Northern Ireland.

The Twenty Indicators are:

- Greenhouse gas emissions;

- Resource use;
- Waste;
- Bird populations;
- Fish stocks;
- Ecological impacts of air pollution;
- River quality
- Economic output;
- Active community participation;
- Crime;
- Employment;
- Workless households;
- Childhood poverty;
- Pensioner poverty;
- Education;
- Health inequality;
- Mobility;
- Social justice;
- Environmental equality;
- Well being

Securing the Future also supports the development and effective use of renewable energy where they are demonstrated to be economically attractive and environmentally acceptable; this includes Energy from Waste. The document also identifies the need for the planning system to take account of new waste management technologies, including energy recovery from waste.

#### **6.4 Strategic Environmental Assessment**

Strategic Environmental Assessment (SEA) is a key component of sustainable development, it aims to assess the effect that a plan or programme is likely to have on the environment prior to its implementation. SEA establishes important new methods for protecting the environment and extending opportunities for participation in public body decision-making.

## **7.0 REGIONAL SUSTAINABLE CONTEXT**

Regional versions of the UK Government's indicators of sustainable development were first published on 13<sup>th</sup> December 2005 to help provide a perspective of sustainable development in each region.

To support the new UK Government Sustainable Development Strategy "Securing the Future" (2005), there is a suite of 68 national sustainable development indicators.

Oxford falls within the South East region of the United Kingdom.

### **7.1 The South East Plan**

'The South East Plan', is the new Regional Spatial Strategy for the South East of England and as such will be a key component of the statutory development plan for Cherwell. 'The South East Plan' will set out the strategic planning policy framework to which the policies contained in the Cherwell LDF must conform.

The document sets out the regional policy framework for sustainable development in Policy CC1. This states that the objective of the South East Plan shall be to achieve and maintain sustainable development in the region and promotes measures that contribute to the 5 objectives of sustainable development, as set out in 'Securing the Future'.

### **7.2 South East summary**

#### **7.2.1 Waste arising**

The total amount of waste arising from construction and demolition, industrial and commercial and municipal waste was the highest out of all of the regions.

In 2004-2005 around 27.8 million tonnes of waste (arising from construction and demolition, industrial and commercial and the municipal sector which includes household waste) were produced in the South East; 15% of the England total and the highest amount produced by any of the regions.

51 per cent was produced by construction and demolition (48 per cent, England average) and 32 per cent came from industry and commerce (36 per cent England average) whilst the remaining 17 per cent was municipal waste (16 per cent, England average)

46 per cent of waste was disposed of by landfill (42 per cent, England average) and 50 per cent was recycled (53 per cent, England average)

### **7.3 The Regional Sustainability Framework (RSF)**

The South East Regional Sustainability Framework (RSF) sets a common vision, two goals and 24 Objectives for Sustainable Development that will help guide action in the region. It sets the overarching framework within which all regional strategies and policies should be formulated and implemented.

The proposed Ardley Energy from Waste development has taken the 24 Objectives for Sustainable Development into account and the results are set out in Appendix 2 of this report.

## **7.4 The South East's Regional Goals for Sustainable Development**

Two Regional Goals have been created in the South East:

### **7.4.1 Key Regional Goal 1**

Achieving a strong healthy and just society within the South East

Target

'To close the gap between the Index of Sustainable Economic Well Being (ISEW) and Gross Value Added (GVA) within the region.'

### **7.4.2 Key Regional Goal 2**

A South East that lives within environmental limits

Target

'To stabilise the South East's ecological footprint by 2016, and reduce it thereafter.'

## **8.0 LOCAL SUSTAINABLE DEVELOPMENT CONTEXT**

Cognisance must be had to the statutory development plan for the District, the Cherwell Local Plan adopted in 1996. This established the development pattern and associated constraints for the District. The Plan contains a suite of policies to accommodate housing, recreation, retail and employment requirements and associated infrastructure provision, while at the same time seeking to protect the built and natural environment.

The principles of sustainable development are integral to the Cherwell Local Plan and its policies have provided a basis upon which to prepare the Spatial Objectives for the LDF.

### **8.1.1 Cherwell Community Plan**

The preparation of the LDF must have regard to the Cherwell Community Plan (although not a planning policy document), especially as it sets out the aspirations of the Cherwell community in respect of sustainable development.

Key spatial objectives have been formulated by Cherwell District Council to be successfully integrated within Oxfordshire's core strategy and ultimately to try and ensure a high quality of sustainable development can be reached. These are set out below:

- improve the quality of the built environment and increase the use of previously developed land through regeneration of vacant and underused land;
- protect and enhance open space, sport and recreation facilities of value and address the qualitative and quantitative deficiencies in provision;
- provide a high quality, locally distinctiveness and well designed environment which provides a safe and attractive District in which to live and work;
- incorporate the principles of sustainable development in managing climate change including minimising environmental pollution, promoting renewable energy were appropriate and ensuring that the risk of flooding is not increased;
- conserve and enhance the countryside, built environment, archaeological and biological resource of the District;
- maintain the Oxford Green Belt in accordance with the requirements of the Oxfordshire Structure Plan and the Regional Spatial Strategy for the South East of England;
- promote and sustain a diverse, high quality sustainable economy to 'recession proof' Cherwell;
- create and maintain the business infrastructure required to support a sustainable economy;

- sustain high levels of employment and economic activity in Cherwell including supporting the changing role of the rural economy;
- encourage sustainable tourism development to raise the profile of North Oxfordshire;
- deliver the housing requirements of the Oxfordshire Structure Plan 2016 and, subsequently, the South East Regional Plan, so that the needs of the whole community are met in a sustainable manner;
- provide more affordable and key worker housing across a range of sizes, types and tenures in a way that creates sustainable balanced communities;
- provide good quality homes for all;
- secure a sustainable, functional network of settlements to encourage vibrant and thriving communities;
- maintain and enhance the vitality and viability of the main urban centres and associated infrastructure to create vibrant retailing environments;
- establish and develop a clear framework for the future growth of the main centres that builds on the distinctiveness and strengths of each centre; and
- provide an effective range of accessible quality services and facilities within district's urban and rural centres

## **9.0 CONCLUSIONS**

The development at Ardley has been assessed thoroughly against sustainability principles at a national, regional and local level, this assessment has found that the development is able to comply with the principles and objectives of sustainable development, and contribute towards them in many ways. The planning and design of the facility have incorporated key principles of sustainability from the outset, and best practice and guidance have been used to aid aspects of the facility's design.

To ensure that the construction and operation of the facility takes place in as sound a manner as possible, the development will be continuously monitored from the outset of construction and throughout its operational life to ensure that the principles and objectives of sustainability are adhered to and that the environmental performance of the facility is maximised.

### **9.1 The Nature of the Facility**

The facility is designed as a Waste Management facility, by its nature it contributes to sustainability principles in a number of ways. Firstly, the unsustainable practice of landfilling waste, particularly biodegradable waste, will be significantly reduced or halted, reducing greenhouse gas emissions significantly through avoiding methane release from landfill.

The development will reduce the dependence on landfill whilst ensuring that adequate landfill capacity is maintained and that energy in the form of landfill gas, is recovered and utilised.

Secondly, the production of electricity from waste will reduce demand for non-renewable fossil fuels in the area, reducing releases of greenhouse gases further as a result of the extremely high efficiency of the Energy from Waste Facility.

Waste produced by Oxford is currently disposed of mostly by landfill would also be moved up the "waste hierarchy", representing an increase in sustainability from "environmentally sensitive disposal" in landfill to "energy recovery" by using the combustion of the residual waste from the local area to produce electricity.

The facility will provide a service that is needed by Oxford and will divert significant quantities of waste from landfill, which is recognised as unsustainable and has issues of lack of capacity in the region as identified by the South East Plan.

The proposed development also has excellent potential to supply combined heat and power to the proposed NW Bicester eco-town.

### **9.2 Site Design**

The facility has been designed with sustainability principles at the forefront of the design process, where possible, sustainably sourced, recycled and recyclable materials have been specified, and principles such as waste minimisation and local sourcing of materials will also be adhered to. These will be done in an effort to reduce the "embodied energy" of the development, the energy associated with the sourcing, manufacture and construction of a facility. Where specialist materials are required, such as insulants and re Fridgerants, these will be manufactured using materials with minimal environmental impact.

The site has been designed such that it does not affect the surrounding area adversely, with measures such as a Sustainable Urban Drainage System (SUDS) incorporated into the design to avoid runoff from the site into nearby surface and ground water.

The overall design is to provide a final landform that is appropriate to the local landscape character and maximises the efficiency of the EfW development.

### **9.3 Environmental Management**

Environmental management of the construction and operational period of the development will be conducted in line with highest international standards and best practice guidelines, in accordance with the company policy and existing operations of Viridor Waste Management and the Pennon Group. The management scheme employed will include a number of schemes including the highest recognised international standard, ISO 14001, the Considerate Employers Scheme as well as other individual policies adopted by the contractors responsible for construction and other aspects of the facility.

Waste minimisation principles will be used during construction, as well as the recycling of materials left over following construction. Pollution from the facility to air, water and land will be avoided through good practice on site, and by accordance with mitigation and risk avoidance recommendations laid out in the Environmental Statement. Any waste resulting from the construction of the development that is not re-useable or recyclable will be treated and disposed of according to guidance and best practice methodologies. The site will be managed such that levels of noise, traffic and other potential annoyances will be kept within limits prescribed by relevant guidance and legislation at the nearest sensitive receptors. Biodiversity in the area will be ensured not to be affected by the development, and due to sensitive landscaping, is hoped to be improved on the site. All aspects of the environmental impact of the development, both in construction and operation, have been assessed as part of the Environmental Impact Assessment, the results of which are documented in their relevant chapters of the Environmental Statement.

**Appendix A – Compliance of proposed development with national sustainability indicators**

Aim	Indicator	Compliance of proposed development with Indicator
Contributing to Sustainable Development at a global level	Greenhouse gas emissions;	The EfW will divert waste from landfill and provide a source of low carbon/renewable energy;  Landfill gas will be recovered and used to generate electricity.
A diverse competitive , high added value economy	Resource Use;	The facility will cause a reduction in non-renewable resource use, through providing electricity, offsetting traditional fossil-fuel fired means of generating power;  Improved HWRC will improve recycling facilities;  Recycling bottom ash from the EfW will also reduce the speed of depletion of limited mineral reserves.
Action on Our Environment	Waste	The EfW facility at Ardley will provide a much more sustainable means of residual waste management than the current landfill-led strategy which is in place. The issue of diminishing landfill capacity in the area will be addressed as well as the problems associated with greenhouse gas release from landfilled biodegradable matter. The facility will help Oxfordshire achieve landfill diversion targets and avoid an increase in Landfill Tax.

Aim	Indicator	Compliance of proposed development with Indicator
Action on Our Environment	Bird Populations	The site is already permitted for landfill and the proposed restoration will provide long term habitat replacement;
	Fish Stocks	A thorough Ecological study has been undertaken as part of the Environmental Impact Assessment, the results of which are included in the Environmental Statement.
Action on our Environment	Ecological impacts of air pollution, air quality	A full assessment of the potential impacts of air pollution from the facility has been undertaken. The emissions to the air from a facility such as the EfW proposed are highly regulated by the <i>European Waste Incineration Directive</i> , and as such, through effective emissions scrubbing technology, the polluting emissions from the facility will be significantly lower than those from nearby industry. It is predicted therefore that the effect of the facility on air quality and ecology will not be significant.
Action on our Environment	River Quality	A full assessment of the current condition of and potential effects to the ground and surface water on the site has been carried out, and effective mitigation measures to prevent contamination have been proposed. As a result of this it is predicted that the development will have no effect on the quality of nearby water resources.

Aim	Indicator	Compliance of proposed development with Indicator
A diverse, competitive, high added value economy	Economic Output	The Proposed development will improve the economy of the area, by both providing a number of jobs for the area and as an electricity supplier. Also Council-Tax payers money will be redirected to more beneficial purposes through the reduction in landfill tax costs faced due to the facility.
Action on social justice that tackles poverty	Active Community Participation	A public exhibition was for the previous application. The aim of the exhibition was to present the proposed development to the public and involve the community on the decision making process before submission of the planning application.
Action on Social Justice that tackles poverty	Crime	No effect is predicted

Aim	Indicator	Compliance of proposed development with Indicator
Action on Social Justice that tackles poverty	Employment	New jobs will be created during the construction and operation of the EfW, these would be both directly in the facility or indirectly through contractors, suppliers and other involved parties, as well as through increased expenditure in the locality.
Action on social justice that tackles poverty	Childhood poverty / Pensioner Poverty/ Social Justice	No effect on this indicator is predicted, other than the effect of a slightly improved economy due to the development.
A Place which values its children and where young people want to live	Education	Viridor is committed to providing education to local communities on the nature of its activities, within the proposed facility; there will be a visitor centre which will provide an educational experience with regard to sustainable waste management. An element of the Visitor Centre will also explore paleontology in relation to the dinosaur footprints which have been found nearby the site.

Aim	Indicator	Compliance of proposed development with Indicator
Supporting people to live healthy and independent lives	Health Inequality	The Human Health Impact Assessment conducted has revealed that no effect on this indicator is predicted, other than the effect of a slightly improved economy due to the development.
Action on our Environment	Mobility	No effect is predicted
Contributing to Sustainable Deelopment at a Global level	Environmental Quality	<p>A high quality design and choice of materials;</p> <p>Revisions to landfill landform to ascertain high quality final landscape;</p> <p>Improvements to HWRC to assist recycling;</p> <p>Source of low carbon/renewable energy; and</p> <p>Landfill gas utilisation to generate electricity;</p>

Aim	Indicator	Compliance of proposed development with Indicator
Supporting people to live healthy and independent lives	Well being	No effect on this indicator is predicted, other than the effect of a slightly improved economy due to the development. This is supported by the Human Health Impact assessment which was undertaken (see Appendix 11 VOLUME 4)

**Appendix B – Compliance of Proposed development with Regional Sustainability Indicators**

Objective	Compliance of proposed development
To ensure that everyone has the opportunity to live in a decent, sustainably constructed and affordable home	N/A (no houses proposed)
To improve the health and well-being of the population and reduce inequalities in health	<p>A human health risk assessment has been prepared Results from generic quantitative risk assessment indicate that indirect, long-term exposure to all persistent contaminants emitted from the proposed EfW facility and subsequently deposited to soil does not pose a health risk to downwind receptors. This conclusion is deemed to be robust as it is based on a worst case scenario and there is a large margin of safety (&gt;10,000) between the highest predicted soil concentrations and soil assessment criteria that are protective of the most sensitive human receptors.</p>
To reduce poverty and social exclusion and close the gap between the most deprived areas in the South East and the rest of the region	<p>Existing employment maintained at the site; and</p> <p>New jobs will be created during the construction and operation of the EfW, these would be both directly in the facility or indirectly through contractors, suppliers and other involved parties, as well as through increased expenditure in the locality.</p>
To raise educational achievement levels across the region and develop the opportunities for everyone to acquire the skills needed to find and remain in work.	<p>Viridor is committed to providing education to local communities on the nature of its activities, within the proposed facility; there will be a visitor centre which will provide an educational experience with regard to sustainable waste management. An element of the Visitor Centre will also explore paleontology in relation to the dinosaur footprints which have been found nearby the site.</p>
To reduce crime and the fear of crime	N/A
To create and sustain vibrant communities which recognise the needs and contributions of all individuals	<p>A public exhibition was held at Ardley Village Hall on September 4<sup>th</sup> and September 5<sup>th</sup>. Invites were sent out to the local community. The aim of the exhibition was to present the</p>

Objective	Compliance of proposed development
	EfW facility to the public and involve the community on the decision making process before submission of the planning application.
To improve accessibility to all services and facilities including the countryside and the historic environment	Careful consideration has been given to the new access proposed off of the B430, final landform and landscaping - further information regarding this is shown in Chapter 6 and 7 of the Environmental Statement;
To encourage increased engagement in cultural activity across all sections of the community in the South East	N/A
To ensure high and stable levels of employment so everyone can benefit from the economic growth of the region.	New jobs will be created during the construction and operation of the EfW, these would be both directly in the facility or indirectly through contractors, suppliers and other involved parties, as well as through increased expenditure in the locality.
To sustain economic growth and competitiveness across the region	There will be a positive net effect economically throughout the region with the proposed investment at Ardley landfill.
To sustain economic revival in deprived areas	As above
To develop a dynamic, diverse and knowledge-based economy that excels in innovation with higher value, lower impact activities	The EfW will provide state of the art proven technology which will help boost Oxfordshire's economy.
To develop and maintain a skilled workforce to support long-term competitiveness of the region	New jobs will be created during the construction and operation of the EfW, these would be both directly in the facility or indirectly through contractors, suppliers and other involved parties, as well as through increased expenditure in the locality.
To improve efficiency in land use through the re-use of previously developed land and existing materials from buildings, and encourage urban renaissance	Co-location of development at an existing waste management facility.
To reduce the risk of flooding and the resulting detriment to public well-being, the	Appropriate surface water attenuation measures have been incorporated into the

<b>Objective</b>	<b>Compliance of proposed development</b>
economy and the environment	overall design of the development.
To reduce air pollution and ensure air quality continues to improve	A full Air Quality Assessment (see Chapter 5 of Es Chapters) has been undertaken assessing the impact of the development.
To address the causes of climate change through reducing emissions of greenhouse gases and ensure that the South East is prepared for its impacts	Chapter 15 of the Environmental Statement considers the possible climate change impacts derived from the construction and operation of the proposed development.  A review of alternative technologies concluded that EfW technology is not likely to have a significant impact on climate change and performs better than landfill and alternative waste treatment facilities such as Mechanical Biological Treatment (MBT).
To conserve and enhance the region's biodiversity	Chapter 10 Nature Conservation of the ES has identified biodiversity at the site and ways of mitigating the potential loss of any species.  The landscape proposals associated with the proposed development would provide biodiversity gains especially in the long term.
To protect, enhance the Region's countryside and historic environment	Chapter 12 has assessed the potential impact on the cultural heritage resource of the EfW facility and landfill restoration in the proposed development site.  The historic landscape within the study area contains elements from several different periods of time, and has no particular focus in one period. There would be no direct impact on any cultural heritage elements from these proposals due to the former quarrying of the site.
To improve the efficiency of transport networks by reducing congestion; and to enhance the proportion of travel by sustainable modes through facilitating modal	A thorough transport assessment has been undertaken (see Chapter 6 of ES Chapter) which has carefully assessed the impact the proposal would have on the surrounding

<b>Objective</b>	<b>Compliance of proposed development</b>
shifts	transport network.
To increase the level of resource efficiency within the region	HWRC will improve recycling; EfW + landfill gas will generate energy
To reduce waste generation and disposal, and achieve the sustainable management of waste	EfW will divert waste currently going to landfill and move it up the waste hierarchy; The existing landfill will ensure adequate capacity is maintained; HWRC will continue recycling.
To maintain and improve the water quality of the region's rivers, ground waters and coasts, and to achieve sustainable water resource management	Careful consideration has been given to surface water runoff at the site and especially the sites relationship it has with the Gagle Brook Existing controls for landfill and HWRC will be maintained and additional
To increase energy efficiency, and the proportion of energy generated from renewable sources in the region	The EfW would be linked up to the national grid via an electrical substation at the nearby settlement of Bicester and would also offer the potential for heat to nearby facilities; and Landfill gas utilisation will continue

**Appendix C – Compliance of proposed development with Local Sustainable Indicators**

<b>Objective</b>	<b>Compliance of proposed development</b>
<p>Improve the quality of the built environment and increase the use of previously developed land through vacant and underused land</p>	<p>The site currently has planning permission to be landfilled and is a former quarry. Development of the EfW facility will improve the final restoration of the site through an extensive phasing programme which will eventually create a highly sustainable landscape setting.</p>
<p>Protect and enhance open space, sport and recreation facilities of value and address the qualitative and quantitative deficiencies in provision</p>	<p>N/A</p>
<p>Provide a high quality, locally distinctiveness and well designed environment which provides a safe and attractive District in which to live and work</p>	<p>New jobs will be created during the construction and operation of the EfW, these would be both directly in the facility or indirectly through contractors, suppliers and other involved parties, as well as through increased expenditure in the locality.  Existing employment at landfill and HWRC maintained</p>
<p>Incorporate the principles of sustainable development in managing climate change including minimising environmental pollution, promoting renewable energy where appropriate and ensuring that the risk of flooding is not increased</p>	<p>A full Environmental Impact Assessment has been undertaken which has addressed the current conditions of and potential effects to the ground and surface water on the site as well as consideration of climate change. As a result it is predicted that the facility will have no significant effect on these.</p>
<p>Conserve and enhance the countryside, built environment, archaeological and biological resource of the District</p>	<p>The EfW is a high quality sustainable design. An archaeological desk top study revealed that there would be no detrimental impact on the site and its surroundings given that the former quarry has permission to be landfilled.</p>
<p>Maintain the Oxford Green Belt in accordance with the requirements of the Oxfordshire Structure Plan and the Regional Spatial Strategy for the</p>	<p>The EfW is located outside of the Greenbelt</p>

<b>Objective</b>	<b>Compliance of proposed development</b>
South East	
Promote and sustain a diverse, high quality sustainable economy to “recession proof” Cherwell	The proposed development will improve the economy of the area, by both providing a number of jobs for the area and as an electricity supplier and potential heat supplier.
Create and maintain the business infrastructure required to support a sustainable economy	As above
Sustain high levels of employment and economic activity in Cherwell including supporting the changing role of the rural economy	Jobs will be created in the construction and operation phase; and  Existing employment maintained.
Encourage sustainable tourism development to raise the profile of North Oxfordshire	A state of the art Visitor Centre is proposed to help the general public understand the principles of sustainable waste management.
Deliver the housing requirements of the Oxfordshire Structure Plan 2016 and, subsequently, the South East Regional Plan, so that the needs of the whole community are met in a sustainable manner	N/A
Provide more affordable and key worker housing across a range of sizes, types and tenures in a way that creates sustainable balanced communities	N/A
Provide good quality homes for all	N/A
Secure a sustainable, functional network of settlements to encourage vibrant and thriving communities	The EfW has the potential to generate electricity and heat to nearby properties
Maintain and enhance the vitality and viability of the main urban centres associated infrastructure to create vibrant environments	The future management of Oxfordshire’s waste will be secured
Establish and develop a clear framework for the future growth of the main centres that builds on the distinctiveness and strengths of each	N/A

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Objective	Compliance of proposed development
centre	
Provide an effective range of accessible quality services and facilities within district's urban and rural centres	As part of the application improvements to the existing HWRC will enhance the recycling service Viridor provide for people within the area.

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## **Appendix D**

Ardley BREEAM: Industrial Assessment

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**Ardley Energy From Waste Facility  
Bicester**

**BREEAM: Industrial Pre-assessment Credit Estimate**

**Viridor Waste Management**

**breeam:industrial**

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**September 2008  
SLR Ref: 409.0036.00349**

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## 1.0 INTRODUCTION

Viridor Waste Management Limited (Viridor) is proposing to construct an energy from waste facility at Ardley, Bicester, Oxfordshire. To ensure compliance with best practice and Viridor's own corporate responsibility procedures, the company intends that the design, construction and commissioning of the energy from waste facility be as environmentally sustainable as is practically possible. To this end Viridor have elected to implement the *Building Research Establishment's Assessment Method for Industrial Buildings* (BREEAM: Industrial) to guide the design, ensure appropriate construction techniques are employed and to provide a quantitative assessment of the finished building's performance with regard to environmental sustainability.

BREEAM: Industrial assesses the environmental sustainability of a development in nine key technical areas: management of the development; health and well-being of the occupants; energy efficiency; transport considerations; efficiency of water consumption; selection of appropriate construction materials and their responsible sourcing; waste management; land-use and ecological concerns; and the minimisation of pollution.

Viridor have requested SLR Consulting Limited (SLR) to conduct the BREEAM: Industrial assessment and to provide advice on maximising the sustainability of the facility, which incorporates an energy-from-waste facility and associated office space which is been assessed seperately. The following report is based upon the Building Research Establishment's (BRE) pre-assessment estimate template<sup>1</sup> and is designed to give an estimate of a development's potential BREEAM: Industrial rating. It has been conducted during the preliminary stages of the design process and will demonstrate areas in which the current design scores highly and highlight those where it may be possible to make further improvements. This will allow elements of the design to be guided or modified in order to improve environmental sustainability and thereby maximise the rating achieved by the development.

In addition to providing an assessment of the development design's predicted environmental sustainability, the report provides information on achieving further credit where this is considered possible. The report also indicates the evidence that will be required in order to prove compliance with the BREEAM: Industrial credit criteria. Unless specifically stated it should be assumed that all articles of evidence described in the tables below will be required.

Please note that this report constitutes an assessment of the probable outcome of the BREEAM: Industrial assessment and is based upon such knowledge of the current design proposals as is available. The report does not constitute a formal assessment and, whilst likely to be an accurate estimate, the final score is liable to change.

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## 2.0 BREEAM: INDUSTRIAL ASSESSMENT ESTIMATES

MANAGEMENT					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
Man1	Where evidence provided demonstrates that an appropriate project team member has been appointed to monitor commissioning on behalf of the client to ensure commissioning will be carried out in line with current Building Regulations and (where applicable), best practice.	1.2	2.4	Viridor indicated that: <ol style="list-style-type: none"> <li>1.) an appropriate, named, team member will be appointed to monitor commissioning;</li> <li>2.) commissioning will be conducted according to Building Regulations and BSRIA and CIBSE guidelines, where appropriate;</li> <li>3.) a specialist agent will be appointed to commission complex systems such as: air conditioning; mechanical, displacement or complex passive ventilation; building management systems and renewable energy sources, where present.</li> <li>4.) seasonal commissioning will be conducted during the first 12 months of occupation, post construction.</li> </ol>	Copies of the letter of appointment specifically mentioning the responsibility for commissioning and listing the relevant systems for which commissioning is required. The letters should specify that all commissioning is to be in line with current best practice building guidelines, building regulations and BSRIA and CIBSE guidelines.  The development specification document should include confirmation that all relevant building services are covered, including heating. The services included should be listed. The development design specification should also state that all commissioning is to be in line with current best practice building guidelines, building regulations and BSRIA and CIBSE guidelines.  Copies of the letters of appointment for the seasonal commissioning should also be provided (this can be additional wording included in the appointment letters above)
	<b>Where in addition</b> to the above evidence provided demonstrates that seasonal commissioning will be carried out during the first year of occupation, post construction (or post fit out).  <b>NOTE:</b> These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.	2.4			

<b>MANAGEMENT</b>					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
<b>Man2</b>	<p>Where evidence provided demonstrates that there is a commitment to comply with best practice site management principles. <b>OR</b> Where evidence provided demonstrates that there is a commitment to go significantly beyond best practice site management principles.</p> <p><b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b></p> <p>An <b>Innovation Credit</b> is available where:- - Post construction, a CCS certificate can be provided demonstrating that the site has achieved CCS <i>Code of Considerate Practice</i> with a score of at least 36; or - Where post construction, the site has complied in full with the alternative, independently assessed scheme, and the alternative scheme addresses all the mandatory and optional items in Checklist A2.</p>	1.2	1.2	Viridor intend that the construction company selected to build the development will be accredited under either the Considerate Constructors Scheme (CCS).	<p>A copy of a contractual commitment from or on the construction company to achieve a minimum of 24 points under the CCS, with at least 3 points being scored in every section.</p> <p>Sufficient information to enable the completion of BREEAM Checklist A1 (Appendix 1), for example an awarded CCS certificate.</p>
	2.4				

<b>MANAGEMENT</b>					
<b>Credit Reference</b>		<b>Points Available</b>	<b>Points Achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
<b>Man3</b>	Where evidence provided demonstrates that				
	<ul style="list-style-type: none"> <li>2 or more of items a-g, listed below are achieved.</li> </ul>	1.2	2.4	Viridor has indicated the intention to achieve items b, d, f and g.	Documentary evidence must be provided that the requirements of BREEAM Checklist A3 (Appendix 1) are met. This must include details such as the name of the individual who will have responsibility for monitoring compliance of each item. If compliance with the items is to be made a contractual obligation on the construction company, and not directly implemented by Viridor themselves, then the relevant clauses of the construction company's contract must be provided (or the tender documentation if the construction company is not appointed at the time of assessment).
	<p><b>OR</b></p> <ul style="list-style-type: none"> <li>4 or more of items a-g, listed below are achieved.</li> </ul>	2.4			
	<p><b>OR</b></p> <ul style="list-style-type: none"> <li>6 or more of items a-g, listed below are achieved.</li> </ul>	3.6			
<ul style="list-style-type: none"> <li>a) Monitor and report CO<sub>2</sub> or energy arising from site activities.</li> <li>b) Monitor and report on water consumption from site activities.</li> <li>c) Monitor and report transport</li> </ul>					

<b>MANAGEMENT</b>					
<b>Credit Reference</b>		<b>Points Available</b>	<b>Points Achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
	<p>to and from site to enable CO<sub>2</sub> emissions arising from transport to be calculated.</p> <p>d) Monitor construction waste on site.</p> <p>e) Sort and recycle construction waste on site.</p> <p>f) Adopt best practice policies in respect to air (dust) pollution.</p> <p>g) Adopt best practice policies in respect to water (ground and surface) pollution.</p>				
	<p>Where temporary timber is used on site during construction, this is from a sustainably responsible source OR is re-used or recycled.</p>	1.2	1.2	<p>Viridor has expressed the intent that all temporary timber will be from a sustainable source, or re-used.</p>	<p>For the design stage assessment, specific wording must be provided in the development brief documentation, stating that all temporary timber will be from a certified source, recycled or re-used.</p>

<b>MANAGEMENT</b>					
<b>Credit Reference</b>		<b>Points Available</b>	<b>Points Achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
<b>Man4</b>	Where evidence provided demonstrates the provision of a simple guide that covers information relevant to the tenant/occupants and non-technical building manager on the operation and environmental performance of the building.	1.2	1.2	Viridor has indicated that a building user guide to meet the BREEAM requirements and suitable for the non-technical user will be produced.	<p>Either a copy of the user guide or written confirmation that one will be produced to meet the required BREEAM standard including statement of the contents list.</p> <p>The guide must be a separate section of the O&amp;M manual, the presence of an O&amp;M manual does not satisfy the requirements. The guide must include information on the following content headings:</p> <ol style="list-style-type: none"> <li>1. building services information;</li> <li>2. emergency information;</li> <li>3. energy and environmental strategy;</li> <li>4. water use;</li> <li>5. transport facilities;</li> <li>6. materials and waste policy;</li> <li>7. re-fit/re-arrangement considerations;</li> <li>8. reporting provision;</li> <li>9. training;</li> <li>10. links and references; and</li> <li>11. general information.</li> </ol>

<b>MANAGEMENT</b>					
<b>Credit Reference</b>		<b>Points Available</b>	<b>Points Achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
<b>Man8</b>	Where evidence provided demonstrates that an <i>Architectural Liaison Officer (ALO)</i> or <i>Crime Prevention Design Advisor (CPDA)</i> from the local police force has been consulted at design stage and their recommendations incorporated into the design of the building and its parking facilities (if relevant).	1.2	1.2	<p>Viridor have indicated their intent to consult an <i>Architectural Liaison Officer (ALO)</i> or <i>Crime Prevention Design Advisor (CPDA)</i> and their recommendations incorporated into the design of the building for security reasons.</p> <p>Consultation must occur during or prior to the <i>Outline Proposals</i> stage or equivalent.</p>	<p>A copy of the report/feedback from the ALO / CPDA confirming:-</p> <ul style="list-style-type: none"> <li>- The scope of their advise/involvement</li> <li>- The stage of design in which their advise was sought</li> <li>- The summary of recommendations.</li> </ul> <p>A marked-up copy of the site/design plan(s) highlighting examples of:-</p> <ul style="list-style-type: none"> <li>- The development conforming to ALO/CPDA recommendations and SBD principles and guidance.</li> </ul>
<b>Total Points achieved to carry forward</b>		<b>12</b>	<b>9.6</b>		

<b>HEALTH &amp; WELLBEING</b>					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
<b>Hea1</b>	<p>Where at least 80% of net let-able office floor area is adequately daylight.</p> <p>An <b>Innovation Credit</b> is available where:-</p> <ul style="list-style-type: none"> <li>- At least 80% of the floor area has an average daylight factor of 3% in multi-storey buildings and 4% in single storey buildings; and</li> <li>- The requirements concerning uniformity ratio, view of the sky or room depth criterion are met. As a minimum:                             <ul style="list-style-type: none"> <li>a) Multi-storey: A uniformity ratio of a least 0.4 or a minimum point of daylight factor of at least 1.2%</li> <li>b) Single storey: A uniformity ratio of a least 0.7 or a minimum point of daylight factor of at least 1.6%</li> </ul> </li> </ul>	1	0	Viridor has confirmed that they will not be able to achieve this credit.	Comprehensive calculations must be provided to demonstrate that the daylighting criteria are met in at least 80% of the operational and ancillary areas (excluding sanitary facilities).
<b>Hea2</b>	Where evidence is provided that all relevant building areas (for example workstations/benches or desks) have an adequate view out.	1	0	Viridor has confirmed that they will not be able to achieve this credit.	Drawings showing the layout of workstations. These may be notional where no final layout is possible, however the assessor should be able to evaluate the credit from this information. If the rooms are less than 7m in depth, the layout is not required.

HEALTH & WELLBEING					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
Hea3	Where evidence provided demonstrates that an occupant controlled glare control system is fitted (e.g. internal or external blinds) in relevant building areas.	1	0	Viridor have confirmed that no occupant controlled blinds will be fitted and hence this credit will not be achievable.	Confirmation from the design team of the extent and details of any glare control provision including information as to how this is to be controlled by the occupants.  Marked up drawings showing the location of blinds.
Hea4	Where evidence provided demonstrates that high frequency ballasts are installed on all fluorescent and compact fluorescent lamps.	1	1	Viridor has indicated that high frequency ballasts will be fitted to all fluorescent and compact fluorescent lamps.	Specific wording should be included with the development design specification confirming that high frequency ballasts will be employed.
Hea5	Where evidence provided demonstrates that all internal and external lighting, where relevant, is specified in accordance with the appropriate maintained illuminance levels (in lux) recommended by CIBSE. <b>External Lighting</b> - Lux levels must be specified in accordance with CIBSE Lighting Guide 6, ' <i>The outdoor environment</i> '. External areas that must comply include (where applicable): <ul style="list-style-type: none"> <li>covered and open pavement areas</li> <li>external circulation areas and entrances</li> </ul>	1	1	Viridor has indicated that that all internal and external lighting must meet the required specification.	Specific wording in the development design specification must state that the appropriate guidelines for lighting in both the external and internal areas will meet the requirements of the pertinent guidelines.  Confirmation of the maintained lux levels in <b>both the production and ancillary areas</b> must be provided.

HEALTH & WELLBEING					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
	<ul style="list-style-type: none"> <li>• surface car parks (i.e. uncovered car parks)</li> <li>• access roads (following the recommendations in BS5489 Part 1) [4]</li> <li>• direction signs &amp; notice boards</li> <li>• outdoor work and storage areas</li> <li>• bicycle racks</li> <li>• delivery, refuse and rubbish areas</li> <li>• subways, stairways and foot bridges</li> <li>• Roadways, general movement (following the recommendations in BS5489 Part 1)</li> <li>• Walkways, perimeter zones, security:</li> </ul> <p>Internal Lighting - Lux levels must be specified in accordance with part two of the 2002 Code for Lighting<sup>[1]</sup> and its 2004 Addendum.</p>				
Hea6	<p>Where evidence provided demonstrates that lighting in all occupied areas is zoned to allow separate control and occupant controllable.</p> <p>Separate zones should be provided for (as a minimum): office and circulation space; office zones of no more than four</p>	1	1	Viridor has confirmed that the lighting will be zoned in compliance with the BREEAM: Offices criteria.	Confirmation of the control systems specified, including details of the installation and its zoning. In cases where there is no confirmed furniture layout available, a notional layout should be sought based on one workplace per 10m <sup>2</sup> .

<b>HEALTH &amp; WELLBEING</b>					
<b>Credit Reference</b>		<b>Points Available</b>	<b>Points Achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
	workspaces in office areas; and workstations adjacent to windows, atria and other such areas.				
<b>Hea7</b>	Where evidence provided demonstrates that fresh air is capable of being delivered to the occupied spaces of the building via a natural ventilation strategy, and their sufficient user-control of the supply of fresh air.	1	0	Viridor has confirmed that not all external façade windows will be openable by the occupants.	Specific wording in the development design brief must state that all external windows within occupied areas are openable and in line with CIBSE AM10.
<b>Hea8</b>	Where air intakes serving occupied areas avoid major sources of external air pollution and recirculation of exhaust air.  For air-conditioned and mixed-mode buildings, the air intakes and outlets must be over 10m apart to minimise recirculation, and intakes must be over 20m from sources of external pollution.	1	0	Due to site constraints it will be impossible to site air inlets more than 20m from possible sources of external air pollution (e.g. access roads or car parks).	
<b>Hea9</b>	Where evidence provided demonstrates that the emissions of VOCs and other substances from key internal finishes and fittings comply with best practice levels.	1	1	Viridor has indicated that the emissions of VOCs and other substances from key internal finishes and fittings comply with best practice levels.	For each relevant product, a copy of the manufacturers literature confirming: <ul style="list-style-type: none"> <li>- The standards against which the product is tested.</li> <li>- The VOC emissions achieved</li> <li>- The VOC emissions meet the</li> </ul>

HEALTH & WELLBEING					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
					required level.
Hea10	Where evidence provided demonstrates that thermal comfort levels in occupied spaces of the building are assessed at design stage, this is used to evaluate appropriate servicing options, and appropriate thermal comfort levels are achieved ( <i>i.e.</i> in accordance with CIBSE Guide A).	1	0	Viridor has indicated that appropriate thermal comfort levels will not be achieved.	Feasibility studies aimed at optimising thermal comfort.  Confirmation from the design team indicating that a thermal comfort assessment has been undertaken.
Hea11	Where evidence provided demonstrates that local control is available for temperature adjustment in each area to reflect differing load requirements.  The heating/cooling system is designed to allow independent occupant thermal control in all separate rooms/areas within the building; zoning allows separate occupant control of each perimeter area ( <i>i.e.</i> within 7m of each external wall) and the central zone; and where long-lad systems are specified these are designed to service the base load only and secondary responsive heating is provided which is zoned as above.	1	0	Viridor has confirmed that local temperature control will not be provided in each area in accordance with the BREEAM: Offices criteria.	Details of the thermal zoning and the method of control to be employed.

<b>HEALTH &amp; WELLBEING</b>					
<b>Credit Reference</b>		<b>Points Available</b>	<b>Points Achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
<b>Hea12</b>	Where evidence provided demonstrates that the risk of waterborne and airborne legionella contamination has been minimised.	1	1	Viridor has indicated that the development design brief will meet the required design requirements,	Written confirmation from the design team that the water systems will meet the requirements of ACoP L8 or CIBSE TM13.  Written confirmation of all types of water system present within the development.
<b>Hea13</b>	Where the building design can be shown to achieve ambient internal noise levels as specified below: <ul style="list-style-type: none"> <li>• ≤40 dB L<sub>AeqT</sub> in single occupancy, cellular offices.</li> <li>• 40-50 dB L<sub>AeqT</sub> in medium sized, multi-occupancy offices</li> <li>• ≤40 dB L<sub>AeqT</sub> in general spaces (Staffrooms and restrooms)</li> <li>• ≤35 dB L<sub>AeqT</sub> in spaces designed for speech e.g. seminar/lecture rooms.</li> <li>• ≤50 dB L<sub>AeqT</sub> in informal café/canteen areas.</li> </ul>	1	0	Viridor has confirmed that BREEAM's ambient internal noise levels will not be achieved.	Calculations demonstrating that the indoor ambient noise levels for each type of space are in compliance with the compliance criteria outlined in this credit. In refurbishment situations compliance can be demonstrated where a suitably qualified acoustic consultant provides noise level measurements taken within the building.

HEALTH & WELLBEING					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
Hea14	Where information provided demonstrates that office space within the development that is less than 500m <sup>2</sup> achieves best practice in terms of occupant comfort and control.	1	0	This credit is not assessed as the offices are being assessed separately.	
	An <b>Innovation Credit</b> can be awarded where all the measures detailed above have been achieved for at least 80% of the development's office space floor area.	2			
Points Achieved to Carry Forward		15	5		

Credit Reference	ENERGY		Comments	Evidence Required
	Points Available	Points achieved		
Ene1	Where the building demonstrates a percentage improvement above the requirement for CO <sub>2</sub> emissions as set out in the Building Regulations.			
		0.66	Whilst SBEM calculations have not yet been conducted, as all of the facility's electricity and heat will be provided from the renewable source energy-from-waste plant, it is considered that a high number of credits will be awarded.	Should an attempt be made to achieve credits under this section, a copy of the report produced by the approved calculation tool must be provided. This report must include:  1. The predicted building carbon dioxide emission rate, the target emission rate from the notional building in kgCO <sub>2</sub> /m <sup>2</sup> . 2. The percentage improvement over Buildings Regulations 2002, obtained from the method used to show Building regulations 2006 compliance. 3. Percentage improvement over Buildings Regulations 2002 for 2006 Regulations compliance. 4. The name of the approved software used to carry out the modelling. 5. Confirmation of the expertise and experience of the individual carrying out the modelling.
	• +1%	1.31		
	• +2%	1.98		
	• +4%	2.64		
	• +6%	3.31		
	• +8%	3.98		
	• +10%	4.64		
	• +12%	5.31		
	• +14%	5.98		
	• +18%	6.64		
	• +22%	7.31		
	• +30%	7.98		
	• +40%	8.64		
• +50%	9.31			
• +60%				
• ≥70%	9.98			
An <b>Innovation Credit</b> is available where evidence provided demonstrates that the building is designed to be a <i>carbon neutral</i> building as defined by the NCM as follows:- a) A new building achieves a CO <sub>2</sub> index <b>less than 0</b> on the benchmark scale b) A refurbished building achieves a CO <sub>2</sub>		5.31		

ENERGY					
Credit Reference		Points Available	Points achieved	Comments	Evidence Required
	<p>index <b>equal to or less than 0</b> on the benchmark scale.</p> <p>Two additional innovation credits can be awarded where evidence provided demonstrates the building is designed to be a <i>True zero carbon building</i>.</p>				
Ene2	<p>Where evidence provided demonstrates direct sub-metering of substantive energy uses is installed within each unit. This should cover the following as a minimum:</p> <ul style="list-style-type: none"> <li>• Space heating</li> <li>• Computer room</li> <li>• Humidification plant</li> <li>• Cooling plant</li> <li>• Fans (major)</li> <li>• Lighting</li> <li>• Small power (lighting and small power can be on the same sub-meter where supplies are taken at each floor/department)</li> <li>• Other major energy consuming items where appropriate.</li> </ul>	0.66	0	Viridor has confirmed that direct sub-metering will not be incorporated in accordance with the credit criteria.	<p>Specific wording in the development design brief stating the energy uses that will be monitored separately.</p> <p>A drawing indicating the location and function of the sub-meters.</p>

Credit Reference	ENERGY				
	Points Available	Points achieved	Comments	Evidence Required	
Ene3	Where evidence provided demonstrates sub-metering of energy use by tenancy/areas is installed within the building.	0.66	0.66	Viridor has confirmed that sub-metering of energy use will be installed in accordance with the credit criteria.	Drawings or specific wording in the development design brief indicating the location and function of sub-meters. Where building management systems are employed, details should be provided of how this will provide a breakdown of each tenancy area.
Ene4	Where energy efficient external luminaires are specified and all light fittings are controlled for daylight. <ul style="list-style-type: none"> <li>All external lighting for the building, access ways and pathways to be a minimum of 50 <u>lamp</u> lumens/circuit watt.</li> <li>All lighting to car parking areas and associated roads, where provided, to have a minimum of 70 <u>lamp</u> lumens/circuit watt.</li> <li>All flood lighting and sign lighting, where provided, to have a minimum of 70 <u>lamp</u> lumens/circuit watt.</li> </ul>	0.66	0.66	Viridor has specified that all external luminaires will be in compliance with the credit criteria.	Confirmation of the daylight or timer controls that have been fitted to the lights and either confirmation of the efficiency of the lights or specific wording in the development design documentation confirming that all lights will meet the required efficiency standards.

Credit Reference	ENERGY			
	Points Available	Points achieved	Comments	Evidence Required
Ene5	Where evidence provided demonstrates that a feasibility study considering local (on-site and/or near site) low or zero carbon (LZC) technologies has been carried out and the results implemented.	0.66	Viridor has confirmed that this will not be achieved.	<p>A copy of the feasibility study considering local LZC technologies.</p> <p>A copy of the report produced by the approved energy modelling software illustrating:-</p> <ul style="list-style-type: none"> <li>- The name of the approved software used to carry out the modelling.</li> <li>- Confirmation of the expertise and experience of the individual carrying out the modelling.</li> <li>- Total CO2 emissions for the assessed building (without LZC energy technology).</li> <li>- Calculations showing the total carbon savings as a result of the installed LZC technology.</li> </ul>
	Where evidence provided demonstrates that the first credit has been achieved and there is a 10% reduction in the buildings CO2 emissions as a result of the installation of a feasible local LZC technology.	1.31		
	Where evidence provided demonstrates that the first credit has been achieved and there is a 10% reduction in the buildings CO2 emissions as a result of the installation of a feasible local LZC technology.	1.98		

ENERGY				
Credit Reference	Points Available	Points achieved	Comments	Evidence Required
		0		
	0.66			

Credit Reference	ENERGY		Comments	Evidence Required	
	Points Available	Points achieved			
Ene6	Where evidence provided demonstrates that appropriate design and as built performance measures are taken to minimise heat loss and air infiltration through the building fabric.	0.66	0	Viridor confirmed that it will not be possible to achieve this credit.	<p>A copy of the relevant clause of the specification confirming each of the relevant measures incorporated into the design.</p> <p>Confirmation that:-</p> <ul style="list-style-type: none"> <li>a) A thermographic study has been conducted.</li> <li>b) The standards/method to which the survey will be carried out.</li> <li>c) A requirement to rectify any defects and re-inspect to confirm performance.</li> </ul>
Ene 7	Where evidence provided demonstrates that the cold storage refrigeration plant components are on the ECA Energy Technology Product List.	0.66	0	Viridor confirmed that it will not be possible to achieve this credit.	<p>A copy of the relevant clause of the specification requiring the specific undertaking and confirming the cold storage plant and enclosure requirements.</p> <p>Or</p> <p>A letter from the manufacturer/supplier confirming the specific components are on the ECA list or compliant with ECA eligibility criteria.</p>
	Where evidence provided demonstrates that the cold food storage plant is designed to minimise energy consumption in operation.	0.66			

<b>ENERGY</b>					
<b>Credit Reference</b>		<b>Points Available</b>	<b>Points achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
	Where evidence provided demonstrates that opportunities for heat recovery, free cooling or thermal storage are identified and taken advantage of.	0.66			Or A print out of the ETPL listing the specific products.  A letter from the manufacturer confirming compliance.
<b>Ene 8</b>	Up to two credits are available where evidence provided demonstrates the installation of energy-efficient lift(s).	0.66	0	Viridor has confirmed that an analysis of transport demand will not be conducted and energy-efficient lifts will be installed.	A copy of the report/documentation detailing the analysis undertaken and findings/recommendations.  A copy of the lift specification.  Formal letter from the lift manufacturer/supplier confirming that the lift to be installed on the project meets the relevant requirement for the number of credits sought.
		1.31			
<b>Ene 9</b>	Where evidence provided demonstrates that escalators reduce unnecessary operation where there is no passenger demand.	0.66	0	This credit is not applicable as there are no escalators to be installed.	
<b>Total points achieved to carry forward</b>		<b>19</b>	<b>6.63</b>		

Credit Reference	TRANSPORT				
		Points Available	Points achieved	Comments	Evidence Required
Tra1	The number of credits awarded is based on the proximity of the development to a public transport node with a good service frequency for:	0.73	0	The site is located in a rural location and hence this credit can not be achieved.	<p>Details of the location of the bus stop and distance from the main entrance to the building.</p> <p>The routes served by the public transport node.</p> <p>Frequency of the service at peak times.</p> <p>Details of the local urban centres that are served (e.g. connections with other transport modes, services provided etc.)</p>
	commuting	0.73			
	and/or				
	business travel.	0.73			
	<b>NOTE: These point scores are cumulative.</b>				
Tra2	Where evidence is provided to demonstrate that the building is located within 500m of accessible local amenities appropriate to the building type and its users.	0.73	0	<p>The site is located in a rural location and hence the requirements of this credit will not be met unless Viridor provide within the building:-</p> <ul style="list-style-type: none"> <li>o A grocery shop / food outlet;</li> <li>o A postal Box and;</li> <li>o A cash machine.</li> </ul>	<p>A scaled site plan/map outlining:-</p> <ul style="list-style-type: none"> <li>- the location of the assessed building,</li> <li>- the location and type of amenities.</li> </ul>

TRANSPORT					
Credit Reference		Points Available	Points achieved	Comments	Evidence Required
		Tra3	<p>Where evidence is provided to demonstrate that there is adequate provision of covered, secure and well lit cycle racks and showers. Compliant cycle storage facilities must be provided for a percentage of building occupants in accordance with the following figures:</p> <ul style="list-style-type: none"> <li>10% of building occupants up to 500 <b>PLUS</b></li> <li>7% for building occupants in the range of 501 – 1000 <b>PLUS</b></li> <li>5% for building occupants over 1000</li> </ul> <p><b>Where in addition</b> to the above, information is provided to demonstrate that there is adequate provision of changing facilities and lockers for clothes or a dedicated drying space for wet clothes.</p> <p><b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b></p>		
		1.45			

TRANSPORT					
Credit Reference		Points Available	Points achieved	Comments	
				Evidence Required	
Tra 4	Where evidence is provided to demonstrate that the site layout has been designed in accordance with best practice to ensure safe and adequate pedestrian and cycle access.	0.73	0.73	Viridor confirmed the site layout has been designed in accordance with best practice to ensure safe and adequate pedestrian and cycle access.	<p>A copy of specifications or a scaled site plan confirming compliance in accordance with best practice (including the external lighting design).</p> <p>A signed a dated copy of the NCN Design and Construction Checklist from the design/project team.</p>
Tra5	<p>Where evidence is provided to demonstrate that a travel plan has been developed and tailored to the specific needs of the users of the assessed development. The plan must include policies that address constraints, opportunities, targets and actions for the following:</p> <ul style="list-style-type: none"> <li>• walking;</li> <li>• cycling;</li> <li>• public transport;</li> <li>• use of the private car for travel to work;</li> <li>• mopeds/motorcycles;</li> <li>• reducing the need to travel;</li> <li>• visitors/customers;</li> <li>• deliveries.</li> </ul>	0.73	0	Viridor has confirmed that a travel plan will not be produced to tailored the specific needs of Tra5.	<p>Either a copy of the produced plan or, if not yet written, a firm written commitment to produce such a plan. The evidence should state the contents of the travel plan.</p>

Credit Reference	TRANSPORT				
	Points Available	Points achieved	Comments	Evidence Required	
<b>Tra6</b>	Where evidence is provided to demonstrate that the number of parking spaces provided for the building has been limited.	0.73	0	As the site is located in a rural setting Viridor have confirmed that they will not achieve this credit.	A plan or specification showing that no more than one parking space is provided for every three building users.  Or a plan or specification showing that no more than one parking space is provided for every four building users.
<b>Tra8</b>	Where evidence provided demonstrates that vehicle access areas have been designed to ensure adequate space for manoeuvring delivery vehicles and provide space away from manoeuvring area for storage or refuse skips and pallets.	0.73	0.73	Viridor has confirmed that vehicle access areas have been designed to ensure adequate space for manoeuvring delivery vehicles and provide space away from manoeuvring area for storage or refuse skips and pallets.	Site Plan clearly showing the manoeuvring area, delivery vehicle waiting area and designated area for skips/pallets.  Documentation from the design team confirming the likely vehicle type that will access the development and the predicted frequency of deliveries.
<b>Total points achieved to carry forward</b>		<b>8</b>	<b>2.91</b>		

Credit Reference	WATER			
	Points available	Points achieved	Comments	Evidence Required
Wat1				
	1	2	Viridor has specified that all fittings will be low water use. Viridor have also indicated their intension to conduct rainwater harvesting.	Documentation specifying the type of water fitments (WCs, urinals, showers and taps) to be used, including details of the rate of water flow.  Details of the rainwater storage capacity and amount/proportion to be used for sanitation purposes.
	2			
3				
<p><b>NOTE: These point scores are not cumulative.</b></p>				

Credit Reference	WATER				
		Points available	Points achieved	Comments	Evidence Required
<b>Wat2</b>	<p>Where evidence is provided to demonstrate that a water meter with a pulsed output will be installed on the mains supply to each unit.</p> <p>An <b>Innovation Credit</b> is available where:-</p> <ol style="list-style-type: none"> <li>1) Sub meters are fitted to allow individual water-consuming plant or building areas to be monitored.</li> <li>2) Each sub meter has a pulsed output to enable connection to a BMS for the monitoring of water consumption.</li> </ol>	1	1	Viridor has specified that this will be incorporated into their design specification.	Confirmation of the building's water meter arrangement from the project team and confirmation that the meter(s) have a pulsed output.
<b>Wat3</b>	Where evidence is provided to demonstrate that a leak detection system is specified or installed to each unit.	1	0	Viridor has indicated that this will not be included within the development specification.	Confirmation that leak detection systems are to be specified on all water supplies to the building. This should include leak detection for the water supplies within the building and between the building and the site boundary. Provision of appropriate technical details to demonstrate compliance with the above should be made.

Credit Reference	WATER				
		Points available	Points achieved	Comments	Evidence Required
<b>Wat4</b>	Where proximity detection shut off is provided to the water supply for all urinals and WC's.	1	0	Viridor has specified that a proximity shut-off control systems will not be provided to the water suppliers to all urinals and WC's.	Specific wording in the design documentation should detail the specification of the proximity shut-off system to be installed, or if the system has already been installed, evidence should be supplied detailing the system's specification.
<b>Total points achieved to carry forward</b>		<b>6</b>	<b>3</b>		

Credit Reference	MATERIALS			
	Points Available	Points Achieved	Comments	Evidence Required
<b>Mat1</b> Where evidence provided demonstrates that the major building elements specified have an 'A rating', as defined in the <i>Green Guide to Specification</i> . In a formal BREEAM assessment the number of credits will be calculated using the BREEAM materials calculator, but as a guide the following can be used as a rough estimate of the likely number of credits achieved. Where 80% of the following achieve an 'A'-rating: <ul style="list-style-type: none"> <li>• Upper floor slab</li> <li>• External walls</li> <li>• Roof</li> <li>• Windows</li> </ul> NOTE: These point scores are cumulative.  An <b>Innovation Credit</b> is available where:- <ol style="list-style-type: none"> <li>a) Where assessing four or more applicable building elements, the building achieves at least two points additional to the total points required to achieve maximum</li> </ol>				
	0.96	1.92	Viridor has indicated that external wall and roof specifications will achieve an 'A' rating.	Evidence from the design team which confirms the materials' specifications and the appropriate Green Guide Rating.
	0.96			
	0.96			
0.96				

Credit Reference	MATERIALS				Comments	Evidence Required
	Points Available	Points Achieved				
	credits under the standard BREEAM requirements. b) Where assessing fewer than four applicable building elements, the building achieves at least one point additional to the total points required to achieve maximum credits under the standard BREEAM requirements.					
<b>Mat2</b>	Where evidence provided demonstrates that at least 80% of the combined area of external hard landscaping and boundary protection specifications achieve an A or A+ rating, as defined by the <i>Green Guide to Specification</i> .	0.96	0	Viridor have confirmed that at least 80% of the combined area of external hard landscaping and boundary protection specifications will not achieve an A or A+ rating.	Specification confirming a detailed description of each applicable element and its constituent materials.  Design drawings or specification detailing the location and area (m <sup>2</sup> ) of each applicable element.	
<b>Mat3</b>	Where at least 50% of the new building's total façade (by area) comprises re-used façade and at least 80% by mass of the reused façade comprises in-situ re-used material.	0.96	0	As the project is a complete new build, it will not be possible to achieve this credit.		

Credit Reference	MATERIALS		Comments	Evidence Required	
	Points Available	Points Achieved			
<b>Mat4</b>	Where evidence provided demonstrates that a design reuses at least 80% of an existing primary structure and for part refurbishment and part new build, the volume of the reused structure comprises at least 50% of the final structure's volume.	0.96	0	As the project is a complete new build, it will not be possible to achieve this credit.	
<b>Mat5</b>	Where 80% of the materials used in structural and non-structural elements are responsibly sourced.	0.96	1.92	Viridor have confirmed that they will select suppliers with such certification.	If suppliers are unknown, a letter of intent to use suppliers who can provide an EMAS certificate or equivalent for the process and extraction stages of the product.  If suppliers are known then either an appropriate EMAS or ISO 140001 certificate or a signed and dated letter outlining the EMAS accreditation information, name of the certifying body, certificate approval date, expiry date and certificate approval number.
	100% of any timber must be legally sourced.	1.92			
	An <b>Innovation Credit</b> is available where in addition to the above requirements, 95% of the applicable materials, comprised within the applicable building elements, have been responsibly sourced.	2.88			
<b>Mat6</b>	Where evidence provided demonstrates that thermal insulation products used in the building have a low embodied impact relative to their thermal properties, determined by the <i>Green Guide to</i>	0.96	0	Viridor could not confirm at this stage that thermal insulation products used in the building have a low embodied impact relative to their thermal properties.	Design plans/elevations and/or a copy of the specification confirming:- <ul style="list-style-type: none"> <li>- The location of insulating materials</li> <li>- The area (m<sup>2</sup>) and thickness (m)</li> </ul>

Credit Reference	MATERIALS		Comments	Evidence Required
	Points Available	Points Achieved		
	<p><i>Specification ratings.</i></p> <p>Where evidence provided demonstrates that thermal insulation products used in the building have been responsibly sourced.</p>	0	Viridor has not committed at this stage of the development to make sure that all thermal insulation products will be responsibly sourced.	<p>or volume (m<sup>3</sup>) of insulation specified.</p> <p>Manufacturer's technical details confirming the thickness and thermal conductivity of the insulating materials specified.</p> <p>Evidence confirming compliance.</p>
<b>Mat7</b>	Where protection is given to vulnerable parts of the building such as areas exposed to high pedestrian traffic, vehicular and trolley movements.	0.96	Viridor has confirmed that protection is given to vulnerable parts of the building such as areas exposed to high pedestrian traffic, vehicular and trolley movements.	<p>Design drawings marked up to illustrate vulnerable areas/parts of the building.</p> <p>Design drawings and/or specifications confirming the durability measures specified.</p>
<b>Total points achieved to carry forward</b>		<b>12.5</b>	<b>4.8</b>	

<b>WASTE</b>					
<b>Credit Reference</b>		<b>Points available</b>	<b>Points achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
<b>Wst1</b>	Where evidence provided demonstrates that the amount of non-hazardous construction waste (m <sup>3</sup> /100m <sup>2</sup> or tonnes/100m <sup>2</sup> ) generated on site by the development is the same as or better than good or best practice levels.	1.07	2.14	Viridor have confirmed that amount of non-hazardous construction waste generated on site by the development is as per best practice levels.	A copy of the compliant Site Waste Management Plan containing the appropriate benchmarks, commitments and procedures.  A copy of the specification clause that:- - Requires principal contractor to produce a SWMP in line with the requirements - Contains the detailed requirements with respect to resource efficiency benchmarks and target(s) and procedures to be included in the SWMP.
		2.14		Viridor have also confirmed that a significant majority of non-hazardous construction waste generated on site by the development will be diverted from landfill and reused or recycled.	
		3.21			

Credit Reference	WASTE			
	Points available	Points achieved	Comments	Evidence Required
	1.07	0		

Credit Reference	WASTE		Comments	Evidence Required
	Points available	Points achieved		
<b>Wst2</b>	Where evidence provided demonstrates the significant use of recycled or secondary aggregates in 'high-grade' building aggregates uses.	1.07	0	<p>Viridor has confirmed that there will not be significant use of recycled or secondary aggregates in 'high-grade' building aggregates uses.</p> <p>Structural engineer's calculations demonstrating that the amount of recycled or secondary aggregates specified is over 25% (by weight or volume) of the total high-grade aggregates uses for the building.</p> <p>A copy of the relevant specification or contract confirming recycled and secondary aggregate use requirements for the project.</p> <p>A letter from the aggregates supplier confirming that the aggregate supplied was from a recycled/secondary source.</p>

<b>WASTE</b>					
Credit Reference		Points available	Points achieved	Comments	Evidence Required
<b>Wst3</b>	<p>Where a central, dedicated storage space is provided for materials that can be recycled. This can be either within the building itself, or on site using skips, (provided there is good access for collections, clearly labelled and it is within easy reach of the building).</p> <p>For fully fitted out units:            The space provided should allow an external hardstanding area that is adequate to enable the occupier to recycle materials from the operational area(s) effectively PLUS at least 2m<sup>2</sup> per 1000m<sup>2</sup> of office floor area (up to a maximum of 10m<sup>2</sup>).</p>	1.07	1.07	<p>Viridor has confirmed that this will be included within the development design specification.</p>	<p>A plan showing the size and location of the storage area. Evidence that the area will be labelled for the storage of recyclable materials, will not be used for other purposes and is of sufficient size to accommodate the predicted waste stream.</p>
<b>Wst4</b>	<p>Where evidence provided demonstrates that either an industrial waste compactor or baler is installed for compacting/baling waste materials generated on site and a water outlet is provided for cleaning.</p> <p>The development must also achieve the BREEAM credit for storage of recyclable waste (Wst3).</p>	1.07	0	<p>Viridor have confirmed that an industrial waste compactor or baler will not be installed for compacting/baling waste materials generated on site.</p> <p>Hence this credit will not be achievable.</p>	
<b>Total points achieved to carry forward</b>		<b>7.5</b>	<b>3.21</b>		

<b>LAND USE &amp; ECOLOGY</b>					
<b>Credit Reference</b>		<b>Points available</b>	<b>Points achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
<b>LE1</b>	Where the site has been previously built upon or used for industrial purposes within the preceding 50 years.	1	1	The site has been previously developed.	Plans of the site both pre and post development clearly demonstrating that at least 75% of the new development's construction footprint (including all land used temporarily during the construction process) lies on land previously developed.
<b>LE2</b>	Where land used for the new development has, prior to development, been defined as contaminated, and where adequate remedial steps have been taken to decontaminate the site prior to construction.	1	0	The land has not been confirmed as contaminated.	A copy of the report defining the site as contaminated; and  Contract documents or letters of appointment detailing the requirement/commitment to implement the necessary remedial steps identified within the report. These should include steps taken to decontaminate or contain contamination prior to development.
<b>LE3</b>	Where evidence is provided to demonstrate that the construction zone is defined as land of low ecological value and all existing features of ecological value will be fully protected from damage during site preparation and construction works.	1	0	An ecological survey has been conducted of the site, and the whole development footprint has unfortunately not been confirmed as being of low ecological value.	Report from a suitably qualified ecologist stating that the site is of low ecological value and all ecological features within the development site are adequately protected.

Credit Reference	LAND USE & ECOLOGY			
	Points available	Points achieved	Comments	Evidence Required
LE4				
	1	1	Awaiting information from ecologist for confirmation. It is estimated that the site will score 1 credit.	Details of vegetation plot types and their areas prior to development (including plans).
	2			Details of vegetation plot types and their areas post development (including plans).

LAND USE & ECOLOGY					
Credit Reference		Points available	Points achieved	Comments	Evidence Required
	<p>refurbishment, or it is on contaminated land or Brownfield land that has been derelict/unoccupied for less than one year.</p> <p><b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b></p>				
LE5	Where evidence is provided to demonstrate that the design team (or client) has	1	2	An ecologist has been appointed to advise and report on enhancing and protecting the ecological value of the site. The recommendations produced will be implemented.	<p>Demonstrable evidence that an appropriately qualified ecologist has been appointed to report on enhancing and protecting the ecology of the site.</p> <p>A copy of the ecologist's report, to include appropriate recommendations for the protection and enhancement of site ecology</p> <p>Written commitment from the design team that the recommendations of the ecology report have been/will be implemented.</p>
	i) appointed a professional to advise and report on enhancing and protecting the ecological value of the site; AND	2			
	ii) implemented the professional's recommendations for general enhancement and protection for site ecology.	3			
	<b>OR</b> Where, <b>in addition to the above</b> , evidence is provided to demonstrate a positive increase in the ecological value of the site of up to (but not including) 6 species.				
<b>OR</b> Where, <b>in addition to the above</b> , evidence is provided to demonstrate a positive increase in the ecological value of the site of 6 species or greater.					

<b>LAND USE &amp; ECOLOGY</b>				
<b>Credit Reference</b>	<b>Points available</b>	<b>Points achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
	<b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b>			

LAND USE & ECOLOGY					
Credit Reference		Points available	Points achieved	Comments	Evidence Required
LE6	<p>Where evidence is provided to demonstrate that the client has committed to achieving the mandatory requirements listed below and:</p> <p>At least two of the additional requirements.  <b>OR</b>            At least four of the additional requirements.</p> <p><b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b></p> <p><b>Mandatory Requirements</b>            A suitably qualified ecologist must confirm in writing that:</p> <ul style="list-style-type: none"> <li>All relevant UK and EU legislation relating to protection and enhancement of ecology has been, or will be, complied with during the design and construction process.</li> <li>An appropriate management plan is produced covering at least the first 5 years after project completion.</li> </ul>				

LAND USE & ECOLOGY					
Credit Reference		Points available	Points achieved	Comments	Evidence Required
				1	2
	<p>This should include details of the scope of the management plan.</p> <ul style="list-style-type: none"> <li>Key responsibilities, and with whom these responsibilities lie, e.g. owner, landlord, occupier, FM, other.</li> </ul> <p><b>Additional Requirements</b></p> <ul style="list-style-type: none"> <li>A 'Biodiversity Champion' has been nominated</li> <li>The relevant site work-force has been trained on how to protect site ecology during the project.</li> <li>Record and monitor actions taken to protect biodiversity throughout key stages of construction</li> <li>The client requires that a new ecologically valuable habitat, appropriate to the local area, be created.</li> <li>The client requires the contractor to programme site works to minimise disturbance to wildlife.</li> <li>The client requires actions to be taken to protect/enhance biodiversity</li> <li>A Biodiversity Champion must have sufficient authority and time on site to influence activities and ensure that they have minimal detrimental</li> </ul>	2			

LAND USE & ECOLOGY					
Credit Reference		Points available	Points achieved	Comments	Evidence Required
	impact on biodiversity <ul style="list-style-type: none"> <li>Local biodiversity expertise should be sought at, or before, the design stage</li> <li>Where a site is deemed to have no ecological value</li> </ul> <p>The refurbishment of a listed building may be exempt from the credit requirements if they conflict with the need to maintain the building's listed features</p>				
<b>Total points achieved to carry forward</b>		<b>10</b>	<b>6</b>		

Credit Reference	POLLUTION		Points available	Points achieved	Comments	Evidence required
<b>Pol1</b>	<p>Where evidence provided demonstrates the use of refrigerants with a global warming potential (GWP) of less than 5 <b>OR</b> where there are no refrigerants specified for use in building services.</p> <p>For fitted out buildings with integral cold storage areas, the following must also be achieved: Where evidence provided demonstrates that all refrigerant types used in cold storage systems have a global warming potential (GWP) of below 5.</p>	0.71	0.71	<p>Viridor has confirmed that the use of refrigerants with a GWP of less than 5 will be implemented.</p> <p>This credit is also available where there are no refrigerants specified for use in building services.</p>	<p>Specific wording in the design specification stating that no refrigerants are to be used for building services or that the total refrigerant charge is less than 5kg.</p>	
<b>Pol2</b>	<p>Where evidence provided demonstrates that refrigerant leaks can be detected or where there are no refrigerants specified for use within the development.</p> <p>Where refrigerants are used, evidence is provided of the provision of an automated refrigerant pump down system with isolation valves.</p> <p>Please note that these scores are cumulative.</p>	0.71	1.43	<p>Viridor has confirmed that a refrigerant leaks detected system will be in place.</p> <p>This credit is also available where there are no refrigerants specified for use within the development.</p>	<p>Details of the refrigerant leak detection system.</p> <p>Details of the refrigerant recovery equipment installed and confirmation from the design team of the following: details of the enclosure/plant room where the refrigeration plant is installed and the threshold of the alarm system.</p>	

Credit Reference	POLLUTION	Points available	Points achieved	Comments	Evidence required
<b>PoI3</b>	Where evidence provided demonstrates the use of refrigerants within cold storage systems with a global warming potential (GWP) of less than 5.	0.71	0	Viridor could not confirm this at this stage.	Design Plan highlighting the cold storage areas/plant in the building.  A copy of the specification clause confirming the types of refrigerant to be used.  Manufacturer's information confirming GWP of each refrigerant.
<b>PoI4</b>	Where evidence provided demonstrates that the maximum dry NO <sub>x</sub> emissions from delivered space heating energy are: <ul style="list-style-type: none"> <li>• ≤100 mg/kWh (at 0% excess O<sub>2</sub>).</li> <li>• ≤70 mg/kWh (at 0% excess O<sub>2</sub>).</li> <li>• ≤40 mg/kWh (at 0% excess O<sub>2</sub>).</li> </ul> Please note that these scores are not cumulative.	0.71	1.43	Viridor has stipulated the intent that the space heating system will produce a maximum of 70mg/kWh (at 0% excess O <sub>2</sub> ).	Specification clauses detailing the heating system to be installed.  Manufacturer's details for the type(s) of boilers to be installed and their dry NO <sub>x</sub> emission rates in mg/kWh.
	1.43				
	2.14				

Credit Reference	POLLUTION	Points available	Points achieved	Comments	Evidence required
Pol5	Where evidence provided demonstrates that the assessed development is located in a zone defined as having a low annual probability of flooding.	1.43	0	Viridor have confirmed that this credit will not be achieved.	Written confirmation from the design team of the flood zone or annual probability of flooding at the site. The information must state from where this information was sourced ( <i>i.e.</i> from the local authority, Environment Agency, <i>etc.</i> ).
	<b>OR</b> Where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium annual probability of flooding and the ground level of the building, car parking and access is above the design flood level for the site's location.	0.71			
	Where evidence provided demonstrates that surface water run-off attenuation measures are specified to minimise the risk of localised flooding, resulting from a loss of flood storage on site due to development.	0.71	0.71		
<p><b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b></p>					

Credit Reference	POLLUTION	Points available	Points achieved	Comments	Evidence required
<b>Po16</b>	Where evidence provided demonstrates that effective on site treatment such as Sustainable Drainage Systems (SUDs) or oil separators have been specified in areas that are or could be a source of watercourse pollution.	0.71	0.71	Viridor has indicated that effective on site treatment such SUDs or oil separators have been specified in areas that are or could be a source of watercourse pollution.	<p>Site Plan highlighting low and high risk areas on the site.</p> <p>A copy of the specification or design plan confirming the type of pollution control systems specified.</p> <p>A letter from the design team confirming all waste pollution prevention systems designed in accordance with PPG3 and the SUDs manual (where appropriate. , outlining examples of compliance.</p> <p>A copy of the drainage plan.</p>
<b>Po17</b>	Where evidence provided demonstrates that the external lighting design is in compliance with the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005.	0.71	0.71	Viridor has specified that the development design will comply with the credit criteria.	<p>Appropriate wording in the design specification demonstrating that the lighting in each of the external areas complies with the requirements.</p> <p>Confirmation from the design team that the external lighting design is in compliance with the relevant ILE guidance notes.</p>

Credit Reference	POLLUTION	Points available	Points achieved	Comments	Evidence required
Pol8	Where evidence provided demonstrates that new sources of noise from the development do not give rise to the likelihood of complaints from existing noise sensitive premises and amenity or wildlife areas that are within the locality of the site.	0.71	0.71	Viridor have confirmed that the new sources of noise from the development will not give rise to the likelihood of complaints from existing noise sensitive premises and amenity or wildlife areas that are within the locality of the site.	<p>Site Plan highlighting:-</p> <ul style="list-style-type: none"> <li>- All existing and proposed noise sensitive buildings local to, and within the sit boundary.</li> <li>- Proposed sources of noise from the new development.</li> <li>- Distance (m) from these buildings to the assessed development.</li> </ul> <p>A copy of the acoustician's report including details of the acoustician's qualifications and professional status.</p> <p>A letter confirming that the assessment is in compliance with BS 4142:1997.</p>
<b>Total points achieved to carry forward</b>		<b>10</b>	<b>6.39</b>		

### 3.0 SCORING AND SUMMARY

The BREEAM: Industrial assessment awards ratings to developments in six bands, Unclassified, Pass, Good, Very Good, Excellent or Outstanding, according to their points score, as follows:

<b>RATING</b>	<b>SCORE</b>
OUTSTANDING	≥85
EXCELLENT	≥70
VERY GOOD	≥55
GOOD	≥45
PASS	≥30
UNCLASSIFIED	<30

The table below shows the results of the appraisal of the Ardley Energy from Waste Facility:

<b>Technical area</b>	<b>Points achieved</b>
Management	9.6
Health and Wellbeing	5
Energy	6.63
Transport	2.91
Water	3
Materials	4.8
Waste	3.21
Land Use and Ecology	6
Pollution	6.39
<b>Innovation Credits</b>	<b>0</b>
<b>Total:</b>	<b>47.54</b>

The score of 47.54 translates into a BREEAM: Industrial rating of **GOOD**. Should the finalised development design brief be an accurate representation of the current design proposals the estimate should represent the final rating. It is the nature of development projects that the score usually decreases slightly upon formal assessment, as a result of unavoidable changes to the development brief and stochastic events. The score of 47.54 points only provides an anticipated buffer of 2.54 points above the threshold of a Good rating. Therefore it is anticipated that the

final rating for the development will indeed remain as GOOD provided all commitments above are met.

It should be noted that to achieve a BREEAM rating of GOOD, the minimum percentage score must be achieved and the minimum standards as per the below table. I can confirm that all minimum standards below have been met.

BREEAM issue	Minimum No of Credits				
	Pass	Good	Very Good	Excellent	Outstanding
Man 1 – Commissioning	1	1	1	1	2
Man 2 – Considerate Constructors				1	2
Man 4 – Building user guide				1	1
Man 9 – Publication of building information (BREEAM Education only)					1
Man 10 – Development as a learning resource (BREEAM Education only)					1
Hea 4 – High frequency lighting	1	1	1	1	1
Hea 12 – Microbial contamination	1	1	1	1	1
Ene 1 – Reduction of CO2 emissions				6	10
Ene 2 – Sub-metering of substantial energy uses			1	1	1
Ene 5 – Low or zero carbon technologies				1	1
Wat 1 – Water consumption		1	1	1	2
Wat 2 – Water meter		1	1	1	1
Wst 3 – Storage of recyclable waste				1	1
LE4 – Mitigating ecological impact			1	1	1

**Final Rating: GOOD**

## **Appendix E**

Ardley BREEAM: Office Assessment



**Ardley Energy from Waste Facility  
Bicester**

**BREEAM: Offices Pre-assessment Credit Estimate**

**Viridor Waste Services Limited**

**breeam:offices**

**September 2008**

**SLR Ref: 409-0036-00349**



solutions for today's environment

## 1.0 INTRODUCTION

Viridor Waste Services Limited (Viridor) are proposing to incorporate an office unit within a new energy from waste facility at Ardley, Bicester, Oxfordshire. To ensure compliance with best practice and Viridor's own corporate responsibility procedures, the company intends that the design, construction and commissioning of the office building be as environmentally sustainable as is practically possible. To this end they have elected to implement the Building Research Establishment's assessment method for office buildings (BREEAM: Offices) to guide the design, ensure appropriate construction techniques are employed and to provide a quantitative assessment of the finished building's performance against proven sustainability criteria.

BREEAM: Offices assesses the environmental sustainability of a development in nine key technical areas: management of the development; health and well-being of the occupants; energy efficiency; transport considerations; efficiency of water consumption; selection of appropriate construction materials and their responsible sourcing; waste management; land-use and ecological concerns; and the minimisation of pollution.

Viridor has retained SLR Consulting Limited (SLR) to conduct a BREEAM: Offices pre-assessment exercise and to provide advice on maximising the sustainability of the energy from waste facility offices. The following report is based upon the Building Research Establishment's (BRE) pre-assessment estimate template<sup>1</sup> and is designed to give an indication of a development's potential BREEAM: Offices rating. It has been conducted during the preliminary stages of the design process and will demonstrate areas in which the current design scores highly and highlight those where it may be possible to make further improvements. This will allow elements of the design to be guided or modified in order to improve environmental sustainability and thereby maximise the rating achieved by the development.

Viridor have already held meetings with an experienced BREEAM consultant in order to maximise the rating achieved. This report therefore presents an assessment of a design plan that has already been amended to improve the environmental sustainability of the finished development. Naturally, this limits the opportunities for further improvements that can be attained without incurring unreasonable costs or impractical restrictions. Where further achievement is considered potentially possible this is noted within the text.

In addition to providing an assessment of the development design's predicted environmental sustainability, the report also indicates the evidence that will be required in order to prove compliance with the BREEAM: Offices credit criteria. Unless specifically stated it should be assumed that all articles of evidence described in the tables below will be required.

Please note that this report constitutes an assessment of the probable outcome of the formal BREEAM assessment and is based upon such knowledge of the current design proposals as is available. The report does not constitute a formal assessment and, whilst likely to be an accurate estimate, the final score is liable to change.

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<sup>1</sup> © Copyright BRE 2008. The BREEAM name and logo are registered trade marks of BRE. BRE cannot accept responsibility for any inaccuracies or for consequential loss incurred as a result of the use of the checklist.

## 2.0 BREEAM: OFFICES ASSESSMENT ESTIMATES

MANAGEMENT					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
Man1	Where evidence provided demonstrates that an appropriate project team member has been appointed to monitor commissioning on behalf of the client to ensure commissioning will be carried out in line with current Building Regulations and (where applicable), best practice.	1.2	2.4	Viridor indicated that: <ol style="list-style-type: none"> <li>1.) an appropriate, named, team member will be appointed to monitor commissioning;</li> <li>2.) commissioning will be conducted according to Building Regulations and BSRIA and CIBSE guidelines, where appropriate;</li> <li>3.) a specialist agent will be appointed to commission complex systems such as: air conditioning; mechanical, displacement or complex passive ventilation; building management systems and renewable energy sources, where present.</li> <li>4.) seasonal commissioning will be conducted during the first 12 months of occupation, post construction.</li> </ol>	Copies of the letter of appointment specifically mentioning the responsibility for commissioning and listing the relevant systems for which commissioning is required. The letters should specify that all commissioning is to be in line with current best practice building guidelines, building regulations and BSRIA and CIBSE guidelines.  The development specification document should include confirmation that all relevant building services are covered, including heating. The services included should be listed. The development design specification should also state that all commissioning is to be in line with current best practice building guidelines, building regulations and BSRIA and CIBSE guidelines.  Copies of the letters of appointment for the seasonal commissioning should also be provided (this can be additional wording included in the appointment letters above)
	Where in addition to the above evidence provided demonstrates that seasonal commissioning will be carried out during the first year of occupation, post construction (or post fit out).  <b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b>	2.4			

<b>MANAGEMENT</b>					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
<b>Man2</b>	<p>Where evidence provided demonstrates that there is a commitment to comply with best practice site management principles.</p> <p><b>OR</b></p> <p>Where evidence provided demonstrates that there is a commitment to go significantly beyond best practice site management principles.</p>	1.2	1.2	<p>Viridor intend that the construction company selected to build the development will be accredited under either the Considerate Constructors Scheme (CCS).</p>	<p>A copy of a contractual commitment from or on the construction company to achieve a minimum of 24 points under the CCS, with at least 3 points being scored in every section.</p> <p>Sufficient information to enable the completion of BREEAM Checklist A1 (Appendix 1), for example an awarded CCS certificate.</p>
	<p><b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b></p> <p>An <b>Innovation Credit</b> is available where:-</p> <ul style="list-style-type: none"> <li>- Post construction, a CCS certificate can be provided demonstrating that the site has achieved CCS <i>Code of Considerate Practice</i> with a score of at least 36; or</li> <li>- Where post construction, the site has complied in full with the alternative, independently assessed scheme, and the alternative scheme addresses all the mandatory and optional items in Checklist A2.</li> </ul>	2.4			

<b>MANAGEMENT</b>					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
<b>Man3</b>	Where evidence provided demonstrates that				
	<ul style="list-style-type: none"> <li>• 2 or more of items a-g, listed below are achieved.</li> </ul>	1.2	2.4	Viridor has indicated the intention to achieve items b, d, f and g.	Documentary evidence must be provided that the requirements of BREEAM Checklist A3 (Appendix 1) are met. This must include details such as the name of the individual who will have responsibility for monitoring compliance of each item. If compliance with the items is to be made a contractual obligation on the construction company, and not directly implemented by Viridor themselves, then the relevant clauses of the construction company's contract must be provided (or the tender documentation if the construction company is not appointed at the time of assessment).
	<b>OR</b>				
	<ul style="list-style-type: none"> <li>• 4 or more of items a-g, listed below are achieved.</li> </ul>	2.4			
<b>OR</b>		3.6			
	<ul style="list-style-type: none"> <li>a) Monitor and report CO<sub>2</sub> or energy arising from site activities.</li> <li>b) Monitor and report on water consumption from site activities.</li> <li>c) Monitor and report transport</li> </ul>				

MANAGEMENT					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
	<p>to and from site to enable CO<sub>2</sub> emissions arising from transport to be calculated.</p> <p>d) Monitor construction waste on site.</p> <p>e) Sort and recycle construction waste on site.</p> <p>f) Adopt best practice policies in respect to air (dust) pollution.</p> <p>g) Adopt best practice policies in respect to water (ground and surface) pollution.</p>				
	<p>Where temporary timber is used on site during construction, this is from a sustainably responsible source OR is re-used or recycled.</p>	1.2	1.2	<p>Viridor has expressed the intent that all temporary timber will be from a sustainable source, or re-used.</p>	<p>For the design stage assessment, specific wording must be provided in the development brief documentation, stating that all temporary timber will be from a certified source, recycled or re-used.</p>

<b>MANAGEMENT</b>					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
<b>Man4</b>	Where evidence provided demonstrates the provision of a simple guide that covers information relevant to the tenant/occupants and non-technical building manager on the operation and environmental performance of the building.	1.2	1.2	Viridor has indicated that a building user guide to meet the BREEAM requirements and suitable for the non-technical user will be produced.	<p>Either a copy of the user guide or written confirmation that one will be produced to meet the required BREEAM standard including statement of the contents list.</p> <p>The guide must be a separate section of the O&amp;M manual, the presence of an O&amp;M manual does not satisfy the requirements. The guide must include information on the following content headings:</p> <ol style="list-style-type: none"> <li>1. building services information;</li> <li>2. emergency information;</li> <li>3. energy and environmental strategy;</li> <li>4. water use;</li> <li>5. transport facilities;</li> <li>6. materials and waste policy;</li> <li>7. re-fit/re-arrangement considerations;</li> <li>8. reporting provision;</li> <li>9. training;</li> <li>10. links and references; and</li> <li>11. general information.</li> </ol>

<b>MANAGEMENT</b>					
<b>Credit Reference</b>		<b>Points Available</b>	<b>Points Achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
<b>Man8</b>	Where evidence provided demonstrates that an <i>Architectural Liaison Officer (ALO)</i> or <i>Crime Prevention Design Advisor (CPDA)</i> from the local police force has been consulted at design stage and their recommendations incorporated into the design of the building and its parking facilities (if relevant).	1.2	1.2	<p>Viridor have indicated their intent to consult an <i>Architectural Liaison Officer (ALO)</i> or <i>Crime Prevention Design Advisor (CPDA)</i> and their recommendations incorporated into the design of the building for security reasons.</p> <p>Consultation must occur during or prior to the <i>Outline Proposals</i> stage or equivalent.</p>	<p>A copy of the report/feedback from the ALO / CPDA confirming:-</p> <ul style="list-style-type: none"> <li>- The scope of their advise/involvement</li> <li>- The stage of design in which their advise was sought</li> <li>- The summary of recommendations.</li> </ul> <p>A marked-up copy of the site/design plan(s) highlighting examples of:-</p> <ul style="list-style-type: none"> <li>- The development conforming to ALO/CPDA recommendations and SBD principles and guidance.</li> </ul>
<b>Total Points achieved to carry forward</b>		<b>12</b>	<b>9.6</b>		

HEALTH & WELLBEING					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
Hea1	<p>Where at least 80% of net let-able office floor area is adequately daylight.</p> <p>An <b>Innovation Credit</b> is available where:-</p> <ul style="list-style-type: none"> <li>- At least 80% of the floor area has an average daylight factor of 3% in multi-storey buildings and 4% in single storey buildings; and</li> <li>- The requirements concerning uniformity ratio, view of the sky or room depth criterion are met. As a minimum:                             <ul style="list-style-type: none"> <li>a) Multi-storey: A uniformity ratio of a least 0.4 or a minimum point of daylight factor of at least 1.2%</li> <li>b) Single storey: A uniformity ratio of a least 0.7 or a minimum point of daylight factor of at least 1.6%</li> </ul> </li> </ul>	1.154	0	Viridor has confirmed that they will not designed the offices to provide a superior level of daylighting to met the requirement of at least 80% of the net let-able office floor area.	Comprehensive calculations must be provided to demonstrate that the daylighting criteria are met in at least 80% of the operational and ancillary areas (excluding sanitary facilities).
Hea2	Where evidence is provided that all relevant building areas (for example workstations/benches or desks) have an adequate view out.	1.154	1.154	Viridor has confirmed that the office layout plan will be re-worked to ensure that all relevant building areas will be within a 7m radius of a wall with a window or permanent opening.	Drawings showing the layout of workstations. These may be notional where no final layout is possible, however the assessor should be able to evaluate the credit from this information. If the rooms are less than 7m in depth, the layout is not required.

HEALTH & WELLBEING					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
Hea3	Where evidence provided demonstrates that an occupant controlled glare control system is fitted (e.g. internal or external blinds) in relevant building areas.	1.154	1.154	Viridor have confirmed that occupant controlled blinds will be fitted, as well as external solar shielding.	Confirmation from the design team of the extent and details of any glare control provision including information as to how this is to be controlled by the occupants.  Marked up drawings showing the location of blinds.
Hea4	Where evidence provided demonstrates that high frequency ballasts are installed on all fluorescent and compact fluorescent lamps.	1.154	1.154	Viridor has indicated that high frequency ballasts will be fitted to all fluorescent and compact fluorescent lamps.	Specific wording should be included with the development design specification confirming that high frequency ballasts will be employed.
Hea5	Where evidence provided demonstrates that all internal and external lighting, where relevant, is specified in accordance with the appropriate maintained illuminance levels (in lux) recommended by CIBSE. <b>External Lighting</b> - Lux levels must be specified in accordance with CIBSE Lighting Guide 6, ' <i>The outdoor environment</i> '. External areas that must comply include (where applicable): <ul style="list-style-type: none"> <li>covered and open pavement areas</li> <li>external circulation areas and entrances</li> </ul>	1.154	1.154	Viridor has indicated that that all internal and external lighting must meet the required specification.	Specific wording in the development design specification must state that the appropriate guidelines for lighting in both the external and internal areas will meet the requirements of the pertinent guidelines.  Confirmation of the maintained lux levels in <b>both the production and ancillary areas</b> must be provided.

HEALTH & WELLBEING					
Credit Reference		Points Available	Points Achieved	Comments	Evidence Required
	<ul style="list-style-type: none"> <li>• surface car parks (i.e. uncovered car parks)</li> <li>• access roads (following the recommendations in BS5489 Part 1) [4]</li> <li>• direction signs &amp; notice boards</li> <li>• outdoor work and storage areas</li> <li>• bicycle racks</li> <li>• delivery, refuse and rubbish areas</li> <li>• subways, stairways and foot bridges</li> <li>• Roadways, general movement (following the recommendations in BS5489 Part 1)</li> <li>• Walkways, perimeter zones, security:</li> </ul> <p>Internal Lighting - Lux levels must be specified in accordance with part two of the 2002 Code for Lighting<sup>[1]</sup> and its 2004 Addendum.</p>				
Hea6	<p>Where evidence provided demonstrates that lighting in all occupied areas is zoned to allow separate control and occupant controllable.</p> <p>Separate zones should be provided for (as a minimum): office and circulation space; office zones of no more than four</p>	1.154	1.154	Viridor has confirmed that the lighting will be zoned in compliance with the BREEAM: Offices criteria.	Confirmation of the control systems specified, including details of the installation and its zoning. In cases where there is no confirmed furniture layout available, a notional layout should be sought based on one workplace per 10m <sup>2</sup> .

<b>HEALTH &amp; WELLBEING</b>					
<b>Credit Reference</b>		<b>Points Available</b>	<b>Points Achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
	workspaces in office areas; and workstations adjacent to windows, atria and other such areas.				
<b>Hea7</b>	Where evidence provided demonstrates that fresh air is capable of being delivered to the occupied spaces of the building via a natural ventilation strategy, and their sufficient user-control of the supply of fresh air.	1.154	1.154	Viridor has confirmed that all external façade windows will be open-able by the occupants.	Specific wording in the development design brief must state that all external windows within occupied areas are openable and in line with CIBSE AM10.
<b>Hea8</b>	Where air intakes serving occupied areas avoid major sources of external air pollution and recirculation of exhaust air.  For air-conditioned and mixed-mode buildings, the air intakes and outlets must be over 10m apart to minimise recirculation, and intakes must be over 20m from sources of external pollution.	1.154	0	Due to site constraints it will be impossible to site air inlets more than 20m from possible sources of external air pollution (e.g. access roads or car parks).	
<b>Hea9</b>	Where evidence provided demonstrates that the emissions of VOCs and other substances from key internal finishes and fittings comply with best practice levels.	1.154	1.154	Viridor has indicated that the emissions of VOCs and other substances from key internal finishes and fittings comply with best practice levels.	For each relevant product, a copy of the manufacturers literature confirming: - The standards against which the product is tested. - The VOC emissions achieved - The VOC emissions meet the

<b>HEALTH &amp; WELLBEING</b>					
<b>Credit Reference</b>		<b>Points Available</b>	<b>Points Achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
					required level.
<b>Hea10</b>	Where evidence provided demonstrates that thermal comfort levels in occupied spaces of the building are assessed at design stage, this is used to evaluate appropriate servicing options, and appropriate thermal comfort levels are achieved ( <i>i.e.</i> in accordance with CIBSE Guide A).	1.154	1.154	Viridor has indicated that appropriate thermal comfort levels will be achieved.	Feasibility studies aimed at optimising thermal comfort.  Confirmation from the design team indicating that a thermal comfort assessment has been undertaken.
<b>Hea11</b>	Where evidence provided demonstrates that local control is available for temperature adjustment in each area to reflect differing load requirements.  The heating/cooling system is designed to allow independent occupant thermal control in all separate rooms/areas within the building; zoning allows separate occupant control of each perimeter area ( <i>i.e.</i> within 7m of each external wall) and the central zone; and where long-lad systems are specified these are designed to service the base load only and secondary responsive heating is provided which is zoned as above.	1.154	0	Viridor has confirmed that local temperature control will not be provided in each area in accordance with the BREEAM: Offices criteria.	Details of the thermal zoning and the method of control to be employed.

<b>HEALTH &amp; WELLBEING</b>					
<b>Credit Reference</b>		<b>Points Available</b>	<b>Points Achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
<b>Hea12</b>	Where evidence provided demonstrates that the risk of waterborne and airborne legionella contamination has been minimised.	1.154	1.1.54	Viridor has indicated that the development design brief will meet the required design requirements,	Written confirmation from the design team that the water systems will meet the requirements of ACoP L8 or CIBSE TM13.  Written confirmation of all types of water system present within the development.
<b>Hea13</b>	Where the building design can be shown to achieve ambient internal noise levels as specified below: <ul style="list-style-type: none"> <li>• ≤40 dB L<sub>AeqT</sub> in single occupancy, cellular offices.</li> <li>• 40-50 dB L<sub>AeqT</sub> in medium sized, multi-occupancy offices</li> <li>• ≤40 dB L<sub>AeqT</sub> in general spaces (Staffrooms and restrooms)</li> <li>• ≤35 dB L<sub>AeqT</sub> in spaces designed for speech e.g. seminar/lecture rooms.</li> <li>• ≤50 dB L<sub>AeqT</sub> in informal café/canteen areas.</li> </ul>	1.154	0	Viridor has confirmed that BREEAM's ambient internal noise levels will not be achieved.	Calculations demonstrating that the indoor ambient noise levels for each type of space are in compliance with the compliance criteria outlined in this credit. In refurbishment situations compliance can be demonstrated where a suitably qualified acoustic consultant provides noise level measurements taken within the building.
<b>Points Achieved to Carry Forward</b>		<b>15</b>	<b>10.39</b>		

Credit Reference	ENERGY		Points Available	Points achieved	Comments	Evidence Required
Ene1	Where the building demonstrates a percentage improvement above the requirement for CO <sub>2</sub> emissions as set out in the Building Regulations.		0.76	5.30	Whilst SBEM calculations have not yet been conducted, as all of the facility's electricity and heat will be provided from the renewable source energy-from-waste plant, it is considered that a high number of credits will be awarded.	Should an attempt be made to achieve credits under this section, a copy of the report produced by the approved calculation tool must be provided. This report must include:  1. The predicted building carbon dioxide emission rate, the target emission rate from the notional building in kgCO <sub>2</sub> /m <sup>2</sup> . 2. The percentage improvement over Buildings Regulations 2002, obtained from the method used to show Building regulations 2006 compliance. 3. Percentage improvement over Buildings Regulations 2002 for 2006 Regulations compliance. 4. The name of the approved software used to carry out the modelling. 5. Confirmation of the expertise and experience of the individual carrying out the modelling.
	• +1%		1.52			
	• +2%		2.27			
	• +4%		3.03			
	• +6%		3.79			
	• +8%		4.55			
	• +10%		5.30			
	• +12%		6.06			
	• +14%		6.89			
	• +18%		7.57			
	• +22%		8.33			
	• +30%		9.09			
	• +40%		9.85			
	• +50%		10.61			
	• +60%		11.35			
• ≥70%						
An <b>Innovation Credit</b> is available where evidence provided demonstrates that the building is designed to be a <i>carbon neutral</i> building as defined by the NCM as follows:- a) A new building achieves a CO <sub>2</sub> index <b>less than 0</b> on the benchmark scale b) A refurbished building achieves a CO <sub>2</sub>						

Credit Reference	ENERGY				
	Points Available	Points achieved	Comments	Evidence Required	
	index <b>equal to or less than 0</b> on the benchmark scale.  Two additional innovation credits can be awarded where evidence provided demonstrates the building is designed to be a <i>True zero carbon building</i> .				
Ene2	Where evidence provided demonstrates direct sub-metering of substantive energy uses is installed within each unit. This should cover the following as a minimum: <ul style="list-style-type: none"> <li>• Space heating</li> <li>• Computer room</li> <li>• Humidification plant</li> <li>• Cooling plant</li> <li>• Fans (major)</li> <li>• Lighting</li> <li>• Small power (lighting and small power can be on the same sub-meter where supplies are taken at each floor/department)</li> <li>• Other major energy consuming items where appropriate.</li> </ul>	0.76	0	Viridor has confirmed that direct sub-metering will not be incorporated in accordance with the credit criteria.	Specific wording in the development design brief stating the energy uses that will be monitored separately.  A drawing indicating the location and function of the sub-meters.

Credit Reference	ENERGY				
	Points Available	Points achieved	Comments	Evidence Required	
Ene3	Where evidence provided demonstrates sub-metering of energy use by tenancy/areas is installed within the building.	0.76	0.76	Viridor has confirmed that sub-metering of energy use will be installed in accordance with the credit criteria.	Drawings or specific wording in the development design brief indicating the location and function of sub-meters. Where building management systems are employed, details should be provided of how this will provide a breakdown of each tenancy area.
Ene4	Where energy efficient external luminaires are specified and all light fittings are controlled for daylight. <ul style="list-style-type: none"> <li>All external lighting for the building, access ways and pathways to be a minimum of 50 <u>lamp</u> lumens/circuit watt.</li> <li>All lighting to car parking areas and associated roads, where provided, to have a minimum of 70 <u>lamp</u> lumens/circuit watt.</li> <li>All flood lighting and sign lighting, where provided, to have a minimum of 70 <u>lamp</u> lumens/circuit watt.</li> </ul>	0.76	0.76	Viridor has specified that all external luminaires will be in compliance with the credit criteria.	Confirmation of the daylight or timer controls that have been fitted to the lights and either confirmation of the efficiency of the lights or specific wording in the development design documentation confirming that all lights will meet the required efficiency standards.

ENERGY					
Credit Reference		Points Available	Points achieved	Comments	Evidence Required
Ene5	Where evidence provided demonstrates that a feasibility study considering local (on-site and/or near site) low or zero carbon (LZC) technologies has been carried out and the results implemented.	0.76	2.27	Viridor has confirmed that a feasibility study considering local LZC technologies will be carried out and the results implemented.  Viridor aim for a 15% or greater reduction in CO2 emissions as a result of the installation of a feasible local LZC technology.	A copy of the feasibility study considering local LZC technologies.  A copy of the report produced by the approved energy modelling software illustrating:- - The name of the approved software used to carry out the modelling. - Confirmation of the expertise and experience of the individual carrying out the modelling. - Total CO2 emissions for the assessed building (without LZC energy technology). - Calculations showing the total carbon savings as a result of the installed LZC technology.
	Where evidence provided demonstrates that the first credit has been achieved and there is a 10% reduction in the buildings CO2 emissions as a result of the installation of a feasible local LZC technology.	1.52			
	Where evidence provided demonstrates that the first credit has been achieved and there is a 10% reduction in the buildings CO2 emissions as a result of the installation of a feasible local LZC technology.	2.27			
	Where evidence provided demonstrates that a contract with an energy supplier is in place to provide sufficient electricity used within the assessed building/development	0.76	0.76		



Credit Reference	ENERGY				
	Points Available	Points achieved	Comments	Evidence Required	
Ene 8	Up to two credits are available where evidence provided demonstrates the installation of energy-efficient lift(s).	0.76	0	Viridor has confirmed that an analysis of transport demand will not be conducted.	<p>A copy of the report/documentation detailing the analysis undertaken and findings/recommendations.</p> <p>A copy of the lift specification.</p> <p>Formal letter from the lift manufacturer/supplier confirming that the lift to be installed on the project meets the relevant requirement for the number of credits sought.</p>
	1.52				
Ene 9	Where evidence provided demonstrates that escalators reduce unnecessary operation where there is no passenger demand.	0.76	0	This credit is not applicable as there are no escalators to be installed.	
<b>Total points achieved to carry forward</b>		<b>19</b>	<b>9.85</b>		

TRANSPORT					
Credit Reference		Points Available	Points achieved	Comments	Evidence Required
Tra1	The number of credits awarded is based on the proximity of the development to a public transport node with a good service frequency for:	0.8	0	The site is located in a rural location and hence this credit is not achievable.	<p>Details of the location of the bus stop and distance from the main entrance to the building.</p> <p>The routes served by the public transport node.</p> <p>Frequency of the service at peak times.</p> <p>Details of the local urban centres that are served (e.g. connections with other transport modes, services provided etc.)</p>
	commuting	0.8			
	and/or				
	business travel.	0.8			
	<b>NOTE: These point scores are cumulative.</b>				
Tra2	Where evidence is provided to demonstrate that the building is located within 500m of accessible local amenities appropriate to the building type and its users.	0.8	0	<p>The site is located in a rural location and hence the requirements of this credit will not be met unless Viridor provide within the building:-</p> <ul style="list-style-type: none"> <li>- A grocery shop / food outlet;</li> <li>- A postal Box and;</li> <li>- A cash machine.</li> </ul>	<p>A scaled site plan/map outlining:-</p> <ul style="list-style-type: none"> <li>- the location of the assessed building,</li> <li>- the location and type of amenities.</li> </ul>

TRANSPORT					
Credit Reference		Points Available	Points achieved	Comments	Evidence Required
Tra3	Where evidence is provided to demonstrate that there is adequate provision of covered, secure and well lit cycle racks and showers. Compliant cycle storage facilities must be provided for a percentage of building occupants in accordance with the following figures:	0.8		Viridor has confirmed that an adequate number of appropriate cycle storage racks will be provided to serve the number of employees and that changing facilities and/or showers will be incorporated appropriate to the award of the second credit.	Design plans and/or documentation confirming: 1. The number and type of cycle racks provided (10% of building employee numbers). 2. The proximity of the racks to the main building entrance (50m max.). 3. Confirmation that the racks are covered and lit in accordance with BS5489 Part 1. 4. Size and location of showers and changing facilities plus the size and design of the drying space and/or number of lockers.
	<ul style="list-style-type: none"> <li>10% of building occupants up to 500 <b>PLUS</b></li> <li>7% for building occupants in the range of 501 – 1000 <b>PLUS</b></li> <li>5% for building occupants over 1000</li> </ul>		1.6		
	<p><b>Where in addition</b> to the above, information is provided to demonstrate that there is adequate provision of changing facilities and lockers for clothes or a dedicated drying space for wet clothes.</p> <p><b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b></p>	1.6			

Credit Reference	TRANSPORT				
	Points Available	Points achieved	Comments	Evidence Required	
<b>Tra 4</b>	Where evidence is provided to demonstrate that the site layout has been designed in accordance with best practice to ensure safe and adequate pedestrian and cycle access.	0.8	0.8	Viridor confirmed the site layout has been designed in accordance with best practice to ensure safe and adequate pedestrian and cycle access.	<p>A copy of specifications or a scaled site plan confirming compliance in accordance with best practice (including the external lighting design).</p> <p>A signed a dated copy of the NCN Design and Construction Checklist from the design/project team.</p>
<b>Tra5</b>	<p>Where evidence is provided to demonstrate that a travel plan has been developed and tailored to the specific needs of the users of the assessed development. The plan must include policies that address constraints, opportunities, targets and actions for the following:</p> <ul style="list-style-type: none"> <li>• walking;</li> <li>• cycling;</li> <li>• public transport;</li> <li>• use of the private car for travel to work;</li> <li>• mopeds/motorcycles;</li> <li>• reducing the need to travel;</li> <li>• visitors/customers;</li> <li>• deliveries.</li> </ul>	0.8	0	Viridor has confirmed that a travel plan will not be produced.	<p>Either a copy of the produced plan or, if not yet written, a firm written commitment to produce such a plan. The evidence should state the contents of the travel plan.</p>

Credit Reference	TRANSPORT		Points Available	Points achieved	Comments	Evidence Required
Tra 6	Where evidence is provided to demonstrate that the number of parking spaces provided for the building has been limited.	0.8	0	As the site is located in a rural setting Viridor have confirmed that they will not achieve this credit.	<p>A plan or specification showing that no more than one parking space is provided for every three building users.</p> <p>Or a plan or specification showing that no more than one parking space is provided for every four building users.</p>	
<b>Total points achieved to carry forward</b>		<b>8</b>	<b>2.4</b>			

Credit Reference	WATER			
	Points available	Points achieved	Comments	Evidence Required
Wat1				
	1	2	Viridor has specified that all fittings will be low water use. Viridor have also indicated their intension to conduct rainwater harvesting.	Documentation specifying the type of water fitments (WCs, urinals, showers and taps) to be used, including details of the rate of water flow.  Details of the rainwater storage capacity and amount/proportion to be used for sanitation purposes.
	2			
3				

**NOTE: These point scores are not cumulative.**

Credit Reference	WATER				
		Points available	Points achieved	Comments	Evidence Required
<b>Wat2</b>	<p>Where evidence is provided to demonstrate that a water meter with a pulsed output will be installed on the mains supply to each unit.</p> <p>An <b>Innovation Credit</b> is available where:-</p> <ol style="list-style-type: none"> <li>1) Sub meters are fitted to allow individual water-consuming plant or building areas to be monitored.</li> <li>2) Each sub meter has a pulsed output to enable connection to a BMS for the monitoring of water consumption.</li> </ol>	1	1	Viridor has specified that this will be incorporated into their design specification.	Confirmation of the building's water meter arrangement from the project team and confirmation that the meter(s) have a pulsed output.
<b>Wat3</b>	Where evidence is provided to demonstrate that a leak detection system is specified or installed to each unit.	1	0	Viridor has indicated that this will not be included within the development specification.	Confirmation that leak detection systems are to be specified on all water supplies to the building. This should include leak detection for the water supplies within the building and between the building and the site boundary. Provision of appropriate technical details to demonstrate compliance with the above should be made.

Credit Reference	WATER				
		Points available	Points achieved	Comments	Evidence Required
<b>Wat4</b>	Where proximity detection shut off is provided to the water supply for all urinals and WC's.	1	0	Viridor has specified that a proximity shut-off control systems will not be provided to the water suppliers to all urinals and WC's.	Specific wording in the design documentation should detail the specification of the proximity shut-off system to be installed, or if the system has already been installed, evidence should be supplied detailing the system's specification.
<b>Total points achieved to carry forward</b>		<b>6</b>	<b>3</b>		

Credit Reference	MATERIALS			
	Points Available	Points Achieved	Comments	Evidence Required
<b>Mat1</b> Where evidence provided demonstrates that the major building elements specified have an 'A rating', as defined in the <i>Green Guide to Specification</i> . In a formal BREEAM assessment the number of credits will be calculated using the BREEAM materials calculator, but as a guide the following can be used as a rough estimate of the likely number of credits achieved. Where 80% of the following achieve an 'A'-rating: <ul style="list-style-type: none"> <li>• Upper floor slab</li> <li>• External walls</li> <li>• Roof</li> <li>• Windows</li> </ul> NOTE: These point scores are cumulative.  An <b>Innovation Credit</b> is available where:- <ol style="list-style-type: none"> <li>a) Where assessing four or more applicable building elements, the building achieves at least two points additional to the total points required to achieve maximum</li> </ol>				
	0.96	1.92	Viridor has indicated that external wall and roof specifications will achieve an 'A' rating.	Evidence from the design team which confirms the materials' specifications and the appropriate Green Guide Rating.  Evidence from the design team of the relevant proportions/areas of different specifications.
	0.96			
	0.96			
0.96				

Credit Reference	MATERIALS				Comments	Evidence Required
	Points Available	Points Achieved				
	credits under the standard BREEAM requirements. b) Where assessing fewer than four applicable building elements, the building achieves at least one point additional to the total points required to achieve maximum credits under the standard BREEAM requirements.					
<b>Mat2</b>	Where evidence provided demonstrates that at least 80% of the combined area of external hard landscaping and boundary protection specifications achieve an A or A+ rating, as defined by the <i>Green Guide to Specification</i> .	0.96	0	Viridor have confirmed that at least 80% of the combined area of external hard landscaping and boundary protection specifications will not achieve an A or A+ rating.	Specification confirming a detailed description of each applicable element and its constituent materials.  Design drawings or specification detailing the location and area (m <sup>2</sup> ) of each applicable element.	
<b>Mat3</b>	Where at least 50% of the new building's total façade (by area) comprises re-used façade and at least 80% by mass of the reused façade comprises in-situ re-used material.	0.96	0	As the project is a complete new build, it will not be possible to achieve this credit.		

Credit Reference	MATERIALS		Comments	Evidence Required	
	Points Available	Points Achieved			
<b>Mat4</b>	Where evidence provided demonstrates that a design reuses at least 80% of an existing primary structure and for part refurbishment and part new build, the volume of the reused structure comprises at least 50% of the final structure's volume.	0.96	0	As the project is a complete new build, it will not be possible to achieve this credit.	
<b>Mat5</b>	Where 80% of the materials used in structural and non-structural elements are responsibly sourced.	0.96	1.92	Viridor have confirmed that they will select suppliers with such certification.	If suppliers are unknown, a letter of intent to use suppliers who can provide an EMAS certificate or equivalent for the process and extraction stages of the product.  If suppliers are known then either an appropriate EMAS or ISO 140001 certificate or a signed and dated letter outlining the EMAS accreditation information, name of the certifying body, certificate approval date, expiry date and certificate approval number.
	100% of any timber must be legally sourced.	1.92			
	An <b>Innovation Credit</b> is available where in addition to the above requirements, 95% of the applicable materials, comprised within the applicable building elements, have been responsibly sourced.	2.88			
<b>Mat6</b>	Where evidence provided demonstrates that thermal insulation products used in the building have a low embodied impact relative to their thermal properties, determined by the <i>Green Guide to</i>	0.96	0	Viridor have confirmed that this will not be conducted.	Design plans/elevations and/or a copy of the specification confirming:- <ul style="list-style-type: none"> <li>- The location of insulating materials</li> <li>- The area (m<sup>2</sup>) and thickness (m)</li> </ul>

Credit Reference	MATERIALS		Comments	Evidence Required
	Points Available	Points Achieved		
	<p><i>Specification ratings.</i></p> <p>Where evidence provided demonstrates that thermal insulation products used in the building have been responsibly sourced.</p>	0		<p>or volume (m<sup>3</sup>) of insulation specified.</p> <p>Manufacturer's technical details confirming the thickness and thermal conductivity of the insulating materials specified.</p> <p>Evidence confirming compliance.</p>
<b>Mat7</b>	<p>Where protection is given to vulnerable parts of the building such as areas exposed to high pedestrian traffic, vehicular and trolley movements.</p>	0.96	0.96	<p>Viridor has confirmed that protection is given to vulnerable parts of the building such as areas exposed to high pedestrian traffic, vehicular and trolley movements.</p> <p>Design drawings marked up to illustrate vulnerable areas/parts of the building.</p> <p>Design drawings and/or specifications confirming the durability measures specified.</p>
<b>Total points achieved to carry forward</b>		<b>12.5</b>	<b>4.8</b>	

Credit Reference	WASTE				
	Points available	Points achieved	Comments	Evidence Required	
Wst1	Where evidence provided demonstrates that the amount of non-hazardous construction waste (m <sup>3</sup> /100m <sup>2</sup> or tonnes/100m <sup>2</sup> ) generated on site by the development is the same as or better than good or best practice levels.	1.07	2.14	Viridor have confirmed that amount of non-hazardous construction waste generated on site by the development is the same as or better than good or best practice levels.  Viridor have also confirmed that a significant majority of non-hazardous construction waste generated on site by the development will be diverted from landfill and reused or recycled.	A copy of the compliant Site Waste Management Plan containing the appropriate benchmarks, commitments and procedures.  A copy of the specification clause that:- - Requires principal contractor to produce a SWMP in line with the requirements - Contains the detailed requirements with respect to resource efficiency benchmarks and target(s) and procedures to be included in the SWMP.
		2.14			
		3.21			
	Where evidence provided demonstrates that a significant majority of non-hazardous construction waste generated on site by the development will be diverted from landfill and reused or recycled.	1.07	0		

Credit Reference	WASTE		Points available	Points achieved	Comments	Evidence Required
	<p>An <b>Innovation Credit</b> is available where:-</p> <ol style="list-style-type: none"> <li>4. Non-hazardous construction waste generated by the building's development meets or exceeds the resource efficiency benchmark required to achieve three credits.</li> <li>5. All key waste groups are identified for diversion from landfill at pre-construction stage.</li> <li>6. At least 90% by weight of non-hazardous construction waste and 95% of demolition waste by weight generated by the build has been diverted from landfill and reused, returned, recovered or salvaged.</li> </ol>	1.07	0			

Credit Reference	WASTE		Comments	Evidence Required	
	Points available	Points achieved			
<b>Wst2</b>	Where evidence provided demonstrates the significant use of recycled or secondary aggregates in 'high-grade' building aggregates uses.	1.07	0	Viridor has confirmed that this will not be conducted.	<p>Structural engineer's calculations demonstrating that the amount of recycled or secondary aggregates specified is over 25% (by weight or volume) of the total high-grade aggregates uses for the building.</p> <p>A copy of the relevant specification or contract confirming recycled and secondary aggregate use requirements for the project.</p> <p>A letter from the aggregates supplier confirming that the aggregate supplied was from a recycled/secondary source.</p>

<b>WASTE</b>					
<b>Credit Reference</b>		<b>Points available</b>	<b>Points achieved</b>	<b>Comments</b>	<b>Evidence Required</b>
<b>Wst3</b>	<p>Where a central, dedicated storage space is provided for materials that can be recycled. This can be either within the building itself, or on site using skips, (provided there is good access for collections, clearly labelled and it is within easy reach of the building).</p> <p>For fully fitted out units: The space provided should allow an external hardstanding area that is adequate to enable the occupier to recycle materials from the operational area(s) effectively PLUS at least 2m<sup>2</sup> per 1000m<sup>2</sup> of office floor area (up to a maximum of 10m<sup>2</sup>).</p>	1.07	1.07	Viridor has confirmed that this will be included within the development design specification.	A plan showing the size and location of the storage area. Evidence that the area will be labelled for the storage of recyclable materials, will not be used for other purposes and is of sufficient size to accommodate the predicted waste stream.
<b>Wst6</b>	Where carpets and other floor finishes are specified by the future occupant or, in tenanted areas off speculative buildings, where carpets or floor finishes are installed in a limited show area only.	1.07	1.07	Viridor have confirmed that the carpets and other floor finishes will be specified by themselves.	<p>A copy of the specification confirming the type and coverage (m<sup>2</sup>) of any specified floor finishes.</p> <p>A letter from the design team confirming that the type and coverage of carpets and other floor finishes have been specified (or agreed to) by the future occupant.</p>
<b>Total points achieved to carry forward</b>		<b>7.5</b>	<b>4.28</b>		

Credit Reference	LAND USE & ECOLOGY				
		Points available	Points achieved	Comments	Evidence Required
LE1	Where the site has been previously built upon or used for industrial purposes within the preceding 50 years.	1	1	The site has been previously developed.	Plans of the site both pre and post development clearly demonstrating that at least 75% of the new development's construction footprint (including all land used temporarily during the construction process) lies on land previously developed.
LE2	Where land used for the new development has, prior to development, been defined as contaminated, and where adequate remedial steps have been taken to decontaminate the site prior to construction.	1	0	The land has not been confirmed as contaminated.	A copy of the report defining the site as contaminated; and  Contract documents or letters of appointment detailing the requirement/commitment to implement the necessary remedial steps identified within the report. These should include steps taken to decontaminate or contain contamination prior to development.
LE3	Where evidence is provided to demonstrate that the construction zone is defined as land of low ecological value and all existing features of ecological value will be fully protected from damage during site preparation and construction works.	1	0	An ecological survey has been conducted of the site, and the whole development footprint has unfortunately not been confirmed as being of low ecological value.	Report from a suitably qualified ecologist stating that the site is of low ecological value and all ecological features within the development site are adequately protected.

LAND USE & ECOLOGY					
Credit Reference		Points available	Points achieved	Comments	Evidence Required
LE4	<p>Credits are awarded based upon the degree of negative impact the new development has on the site's existing ecology. In a formal BREEAM assessment the ecological impact of the development is calculated based on the area of habitat and number of floral species displaced, using BREEAM's ecological value calculator. As a guide, the following can be used to estimate the likely number of credits:</p> <p>No credits can be awarded where the new development will displace a significant majority of the existing site's ecological habitat types and areas.</p> <p>Where a majority of the existing site's ecological habitat types and areas are not displaced as a result of the new development.</p> <p>Where either the development displaces none of the existing site's ecological habitat types and areas. Or, where there is no, or very limited existing site ecology; for example the new development is a</p>				
		1	1	Awaiting information from ecologist for confirmation. It is estimated that the site will score 1 credits.	<p>Details of vegetation plot types and their areas prior to development (including plans).</p> <p>Details of vegetation plot types and their areas post development (including plans).</p>
		2			

LAND USE & ECOLOGY					
Credit Reference		Points available	Points achieved	Comments	Evidence Required
	refurbishment, or it is on contaminated land or Brownfield land that has been derelict/unoccupied for less than one year.  <b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b>				
LE5	Where evidence is provided to demonstrate that the design team (or client) has i) appointed a professional to advise and report on enhancing and protecting the ecological value of the site; AND ii) implemented the professional's recommendations for general enhancement and protection for site ecology.	1	2	An ecologist has been appointed to advise and report on enhancing and protecting the ecological value of the site. The recommendations produced will be implemented.	Demonstrable evidence that an appropriately qualified ecologist has been appointed to report on enhancing and protecting the ecology of the site.  A copy of the ecologist's report, to include appropriate recommendations for the protection and enhancement of site ecology  Written commitment from the design team that the recommendations of the ecology report have been/will be implemented.
	<b>OR</b> Where, <b>in addition to the above</b> , evidence is provided to demonstrate a positive increase in the ecological value of the site of up to (but not including) 6 species.	2			
	<b>OR</b> Where, <b>in addition to the above</b> , evidence is provided to demonstrate a positive increase in the ecological value of the site of 6 species or greater.	3			

Credit Reference	LAND USE & ECOLOGY			
	Points available	Points achieved	Comments	Evidence Required
	<b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b>			

LAND USE & ECOLOGY					
Credit Reference		Points available	Points achieved	Comments	Evidence Required
LE6	<p>Where evidence is provided to demonstrate that the client has committed to achieving the mandatory requirements listed below and:</p> <p>At least two of the additional requirements.  <b>OR</b>            At least four of the additional requirements.</p> <p><b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b></p> <p><b>Mandatory Requirements</b>            A suitably qualified ecologist must confirm in writing that:</p> <ul style="list-style-type: none"> <li>All relevant UK and EU legislation relating to protection and enhancement of ecology has been, or will be, complied with during the design and construction process.</li> <li>An appropriate management plan is produced covering at least the first 5 years after project completion.</li> </ul>				

LAND USE & ECOLOGY					
Credit Reference		Points available	Points achieved	Comments	Evidence Required
		1	1	Viridor is committed to achieving the mandatory requirements and at least two of the additional requirements.	Written confirmation/evidence that each of the mandatory requirements and the four selected optional requirements have been implemented/achieved. This could include signed and dated meeting minutes, wording in the design specification, design drawings or correspondence.
	<p>This should include details of the scope of the management plan.</p> <ul style="list-style-type: none"> <li>Key responsibilities, and with whom these responsibilities lie, e.g. owner, landlord, occupier, FM, other.</li> </ul> <p><b>Additional Requirements</b></p> <ul style="list-style-type: none"> <li>A 'Biodiversity Champion' has been nominated</li> <li>The relevant site work-force has been trained on how to protect site ecology during the project.</li> <li>Record and monitor actions taken to protect biodiversity throughout key stages of construction</li> <li>The client requires that a new ecologically valuable habitat, appropriate to the local area, be created.</li> <li>The client requires the contractor to programme site works to minimise disturbance to wildlife.</li> <li>The client requires actions to be taken to protect/enhance biodiversity</li> <li>A Biodiversity Champion must have sufficient authority and time on site to influence activities and ensure that they have minimal detrimental</li> </ul>	2	1		

LAND USE & ECOLOGY					
Credit Reference		Points available	Points achieved	Comments	Evidence Required
	impact on biodiversity <ul style="list-style-type: none"> <li>Local biodiversity expertise should be sought at, or before, the design stage</li> <li>Where a site is deemed to have no ecological value</li> </ul> <p>The refurbishment of a listed building may be exempt from the credit requirements if they conflict with the need to maintain the building's listed features</p>				
<b>Total points achieved to carry forward</b>		<b>10</b>	<b>5</b>		

Credit Reference	POLLUTION		Points available	Points achieved	Comments	Evidence required
<b>Pol1</b>	<p>Where evidence provided demonstrates the use of refrigerants with a global warming potential (GWP) of less than 5 <b>OR</b> where there are no refrigerants specified for use in building services.</p> <p>For fitted out buildings with integral cold storage areas, the following must also be achieved: Where evidence provided demonstrates that all refrigerant types used in cold storage systems have a global warming potential (GWP) of below 5.</p>	0.77	0.77	<p>Viridor has confirmed that the use of refrigerants with a GWP of less than 5 will be implemented.</p> <p>This credit is also available where there are no refrigerants specified for use in building services.</p>	<p>Specific wording in the design specification stating that no refrigerants are to be used for building services or that the total refrigerant charge is less than 5kg.</p>	
<b>Pol2</b>	<p>Where evidence provided demonstrates that refrigerant leaks can be detected or where there are no refrigerants specified for use within the development.</p> <p>Where refrigerants are used, evidence is provided of the provision of an automated refrigerant pump down system with isolation valves.</p> <p>Please note that these scores are cumulative.</p>	0.77	1.54	<p>Viridor has confirmed that a refrigerant leaks detected system will be in place.</p> <p>This credit is also available where there are no refrigerants specified for use within the development.</p>	<p>Details of the refrigerant leak detection system.</p> <p>Details of the refrigerant recovery equipment installed and confirmation from the design team of the following: details of the enclosure/plant room where the refrigeration plant is installed and the threshold of the alarm system.</p>	

Credit Reference	POLLUTION	Points available	Points achieved	Comments	Evidence required
Pol4	<p>Where evidence provided demonstrates that the maximum dry NO<sub>x</sub> emissions from delivered space heating energy are:</p> <ul style="list-style-type: none"> <li>• ≤100 mg/kWh (at 0% excess O<sub>2</sub>).</li> <li>• ≤70 mg/kWh (at 0% excess O<sub>2</sub>).</li> <li>• ≤40 mg/kWh (at 0% excess O<sub>2</sub>).</li> </ul> <p>Please note that these scores are not cumulative.</p>	0.77	1.54	Viridor has stipulated the intent that the space heating system will produce a maximum of 70mg/kWh (at 0% excess O <sub>2</sub> ).	<p>Specification clauses detailing the heating system to be installed.</p> <p>Manufacturer's details for the type(s) of boilers to be installed and their dry NO<sub>x</sub> emission rates in mg/kWh.</p>
		1.54			
		2.3			
Pol5	<p>Where evidence provided demonstrates that the assessed development is located in a zone defined as having a low annual probability of flooding.</p> <p><b>OR</b></p> <p>Where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium annual probability of flooding and the ground level of the building, car parking and access is above the design flood level for the site's location.</p>	1.54	0	This credit will not be achieved.	Written confirmation from the design team of the flood zone or annual probability of flooding at the site. The information must state from where this information was sourced ( <i>i.e.</i> from the local authority, Environment Agency, <i>etc.</i> ).
		0.77			

Credit Reference	POLLUTION	Points available	Points achieved	Comments	Evidence required
	<p>Where evidence provided demonstrates that surface water run-off attenuation measures are specified to minimise the risk of localised flooding, resulting from a loss of flood storage on site due to development.</p> <p><b>NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.</b></p>	0.77	0		
Po16	<p>Where evidence provided demonstrates that effective on site treatment such as Sustainable Drainage Systems (SUDs) or oil separators have been specified in areas that are or could be a source of watercourse pollution.</p>	0.77	0.77	<p>Viridor has indicated that effective on site treatment such SUDs or oil separators have been specified in areas that are or could be a source of watercourse pollution.</p>	<p>Site Plan highlighting low and high risk areas on the site.</p> <p>A copy of the specification or design plan confirming the type of pollution control systems specified.</p> <p>A letter from the design team confirming all waste pollution prevention systems designed in accordance with PPG3 and the SUDs manual (where appropriate. , outlining examples of compliance.</p> <p>A copy of the drainage plan.</p>

Credit Reference	POLLUTION	Points available	Points achieved	Comments	Evidence required
<b>Po17</b>	Where evidence provided demonstrates that the external lighting design is in compliance with the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005.	0.77	0.77	Viridor has specified that the development design will comply with the credit criteria.	<p>Appropriate wording in the design specification demonstrating that the lighting in each of the external areas complies with the requirements.</p> <p>Confirmation from the design team that the external lighting design is in compliance with the relevant ILE guidance notes.</p>
<b>Po18</b>	Where evidence provided demonstrates that new sources of noise from the development do not give rise to the likelihood of complaints from existing noise sensitive premises and amenity or wildlife areas that are within the locality of the site.	0.77	0.77	Viridor have confirmed that the new sources of noise from the development will not give rise to the likelihood of complaints from existing noise sensitive premises and amenity or wildlife areas that are within the locality of the site.	<p>Site Plan highlighting:-</p> <ul style="list-style-type: none"> <li>- All existing and proposed noise sensitive buildings local to, and within the sit boundary.</li> <li>- Proposed sources of noise from the new development.</li> <li>- Distance (m) from these buildings to the assessed development.</li> </ul> <p>A copy of the acoustician's report including details of the acoustician's qualifications and professional status.</p> <p>A letter confirming that the assessment is in compliance with BS 4142:1997.</p>
<b>Total points achieved to carry forward</b>		<b>10</b>	<b>6.16</b>		

### 3.0 SCORING AND SUMMARY

The BREEAM: Offices assessment awards ratings to developments in six bands, Unclassified, Pass, Good, Very Good, Excellent or Outstanding, according to their points score, as follows:

<b>RATING</b>	<b>SCORE</b>
OUTSTANDING	≥85
EXCELLENT	≥70
VERY GOOD	≥55
GOOD	≥45
PASS	≥30
UNCLASSIFIED	<30

The table below shows the results of the appraisal of the Offices at Ardley Energy from Waste Facility:

<b>Technical area</b>	<b>Points achieved</b>
Management	9.6
Health and Wellbeing	10.39
Energy	9.85
Transport	2.4
Water	3
Materials	4.8
Waste	4.28
Land Use and Ecology	5
Pollution	6.16
<b>Innovation Credits</b>	<b>0</b>
<b>Total:</b>	<b>55.48</b>

The score of 55.48 translates into a BREEAM: Offices rating of **VERY GOOD**. Should the finalised development design brief be an accurate representation of the current design proposals the estimate should represent the final rating. It is the nature of development projects that the score usually decreases slightly upon formal assessment, as a result of unavoidable changes to the development brief and stochastic events. This development has only scored 0.48 points above the threshold of a VERY GOOD rating, so care needs to be taken to make sure that all commitments above are met.

It is anticipated that the final rating for the development will indeed remain as 'VERY GOOD' provided all commitments are met.

It should be noted that to achieve a BREEAM rating of VERY GOOD, the minimum percentage score must be achieved and the minimum standards as per the below table. I can confirm that all minimum standards below have been met.

<b>BREEAM issue</b>	<b>Minimum No of Credits</b>				
	<b>Pass</b>	<b>Good</b>	<b>Very Good</b>	<b>Excellent</b>	<b>Outstanding</b>
Man 1 – Commissioning	1	1	1	1	2
Man 2 – Considerate Constructors				1	2
Man 4 – Building user guide				1	1
Man 9 – Publication of building information (BREEAM Education only)					1
Man 10 – Development as a learning resource (BREEAM Education only)					1
Hea 4 – High frequency lighting	1	1	1	1	1
Hea 12 – Microbial contamination	1	1	1	1	1
Ene 1 – Reduction of CO2 emissions				6	10
Ene 2 – Sub-metering of substantial energy uses			1	1	1
Ene 5 – Low or zero carbon technologies				1	1
Wat 1 – Water consumption		1	1	1	2
Wat 2 – Water meter		1	1	1	1
Wst 3 – Storage of recyclable waste				1	1
LE4 – Mitigating ecological impact			1	1	1

**FINAL RATING: 'VERY GOOD'**