

# REPORT

## Southend Airport Business Park

### Waste Assessment Report

Client: Henry Boot Limited

Reference: IEMPB3903-102-102R001F01.1

Revision: 01/Final

Date: 22 October 2015

HASKONINGDHV UK LTD.

Rightwell House  
Rightwell East  
Bretton  
Peterborough  
PE3 8DW  
United Kingdom  
Industry, Energy and Mining  
VAT registration number: 792428892

+44 1733 334455 **T**  
+44 1733 262243 **F**  
royalhaskoningdhv.com **W**

Document title: Southend Airport Business Park

Document short title:

Reference: IEMPB3903-102-102R001F01.1

Revision: 01/Final

Date: 22 October 2015

Project name: Southend Business Park

Project number: PB3903

Author(s): Jak Fazakerley, Gary Bower

Drafted by: Jak Fazakerley;

---

Checked by: Gary Bower

---

Date / initials: 22/10/2015 GB

---

Approved by: Gary Bower

---

Date / initials: 22/10/2015 GB

---

Classification

Open



### Disclaimer

*No part of these specifications/printed matter may be reproduced and/or published by print, photocopy, microfilm or by any other means, without the prior written permission of HaskoningDHV UK Ltd.; nor may they be used, without such permission, for any purposes other than that for which they were produced. HaskoningDHV UK Ltd. accepts no responsibility or liability for these specifications/printed matter to any party other than the persons by whom it was commissioned and as concluded under that Appointment. The quality management system of HaskoningDHV UK Ltd. has been certified in accordance with ISO 9001, ISO 14001 and OHSAS 18001.*

## Table of Contents

|          |  |          |
|----------|--|----------|
| <b>1</b> | <b>Introduction</b>  | <b>1</b> |
| 1.1      | Background   | 1        |
| 1.2      | Site description and surrounding area  | 1        |
| 1.3      | Development Proposals  | 1        |
| <b>2</b> | <b>Waste Planning Policy Context</b>   | <b>2</b> |
| 2.1      | National Planning and Policy   | 2        |
| 2.1.1    | National Planning Policy Framework   | 2        |
| 2.1.2    | National Planning Policy for Waste 2014  | 2        |
| 2.1.3    | Government Review of Waste Policy in England 2011  | 3        |
| 2.1.4    | National Waste Management Plan for England 2013  | 3        |
| 2.1.5    | Waste Prevention Programme for England 2013  | 4        |
| 2.1.6    | BS 5906:2005 - The British Standard on Waste Management in Buildings   | 4        |
| 2.1.7    | BS 8895-1:2013 - Designing for Material Efficiency in Building Projects. Code of Practice for Strategic Definition and Preparation and Brief | 5        |
| 2.1.8    | BS 8895-2:2015 - Designing for Material Efficiency in Building Projects Code of Practice for Concept and Developed Design                    | 5        |
| 2.1.9    | BRE Home Quality Mark 2015   | 5        |
| 2.2      | Local and Regional Planning Policy   | 5        |
| 2.2.1    | Rochford District Council Local Development Framework Core Strategy Adopted Version (December 2011)  | 6        |
| 2.2.2    | Rochford District Council – Local Development Framework Development Management Plan,   | 6        |
| 2.2.3    | Rochford District Local Strategic Partnership: The Sustainable Community Strategy 2009 – 2021 (Adopted April 2009)                           | 6        |
| 2.2.4    | Municipal Waste Management Strategy for the Borough of Southend on Sea: 2004 – 2020 (Adopted June 2004)                                      | 7        |
| 2.2.5    | Southend on Sea Borough Council - Waste Storage, Collection and Management Guide for New Developments (Adopted October 2014)                 | 7        |
| 2.2.6    | Southend on Sea Development Planning Document 1 (DPD1) - Core Strategy (Adopted December 2007)   | 7        |
| 2.2.7    | Southend on Sea Borough Council - Development Management Document (Adopted July 2015)  | 8        |
| 2.2.8    | London Southend Airport & Environs Joint Area Action Plan (JAAP) (Adopted December 2014)   | 8        |
| 2.2.9    | Joint Municipal Waste Management Strategy for Essex (2007 to 2032)   | 8        |
| 2.2.10   | Waste Development Document: Preferred Approach (Published November 2011)   | 9        |
| 2.3      | Waste Legislation  | 9        |
| 2.3.1    | Waste Framework Directive  | 9        |
| 2.3.2    | Duty of Care   | 9        |
| 2.3.3    | The Waste Hierarchy  | 10       |
| 2.3.4    | Separate Collection of Waste   | 10       |
| 2.3.5    | Household Waste, Industrial Waste or Commercial Waste  | 11       |

|          |   |           |
|----------|---|-----------|
| 2.3.6    | Hazardous Waste                               | 11        |
| <b>3</b> | <b>Methodology Criteria</b>                   | <b>12</b> |
| 3.1      | Methodology Approach                          | 12        |
| 3.2      | Assumptions and Limitations                   | 12        |
| <b>4</b> | <b>Description of Baseline Conditions</b>     | <b>12</b> |
| 4.1      | Existing Conditions at the Site               | 12        |
| 4.2      | Waste Management Facilities in the Local Area | 13        |
| 4.2.1    | Council Commercial Waste Services             | 14        |
| 4.3      | Regional Waste Management Facilities          | 14        |
| <b>5</b> | <b>Waste Composition and Quantities</b>       | <b>17</b> |
| 5.1      | Construction Waste Arisings                   | 17        |
| 5.2      | Composition of Construction Waste             | 17        |
| 5.3      | Construction Waste Management Measures        | 21        |
| 5.3.1    | Construction phase                            | 21        |
| 5.3.2    | General Waste Management Measures             | 21        |
| 5.3.3    | Waste-Specific Management Measures            | 22        |
| <b>6</b> | <b>Occupational Waste Arisings</b>            | <b>26</b> |
| 6.1      | Commercial waste production                   | 26        |
| 6.2      | Occupational Phase Waste Management Measures  | 26        |
| 6.2.1    | General waste management measures             | 26        |
| 6.2.2    | Segregation and storage                       | 28        |
| <b>7</b> | <b>Conclusion</b>                             | <b>31</b> |
| 7.1      | Construction Phase                            | 31        |
| 7.2      | Completed Development                         | 32        |

## Executive Summary

This report assessed the impact of the proposed development in terms of waste generation. In particular, the potential impact of wastes generated during the construction and occupation phases of the development on the environment and local waste management facilities were considered. The potential waste impacts during construction and operation were assessed by taking into account the predicted waste arisings and proposed options for recycling, recovery or disposal of waste; then assessing the capability of the existing local or regional waste management infrastructure to be able to manage such wastes.

It is estimated that that approximately 132,000 tonnes of construction waste will be produced during the construction phase. Management measures were provided for the predicted wastes during the construction phase.

For inert wastes, the measures would reduce the amount of material requiring off-site management to a minimum; and there are sufficient facilities within the region to recycle this material.

Approximately 90% of the predicted non-hazardous arisings are anticipated to be excavated soil. Options for on-site reuse or recovery would be prioritised. Surplus excavated material being sent off-site would be prioritised for recovery in accordance with the waste hierarchy (for example a soil conditioning facility).

The region does not have any hazardous waste landfill facilities, therefore any hazardous waste produced as a consequence of the development that requires landfill disposal would have to be exported out of the region. However, the waste management measures proposed would effectively reduce the amount of hazardous waste on site; and also reduce the amount that requires disposal off-site. Off-site options for surplus material or material that was not suitable for use would be prioritised towards soil treatment to facilitate the reuse or recovery of the treated material; thereby promoting the waste hierarchy and proximity principle by avoiding the need to export out of the region for landfilling. There are sufficient facilities within the region to recycle or treat these wastes.

The impacts associated with construction waste are short-term residual effects that would exist during the excavation and construction phase only. As such, there would be no residual effect once construction is complete.

A Site Waste Management Plan has been produced to provide further details on the waste produced during construction. It should be read in conjunction with this report. See '*Southend Airport Business Park - Site Waste Management Plan Report (SWMP)*' (Royal HaskoningDHV, 2015) and associated '*Southend Airport Business Park - SWMP tool.xls*' (Royal HaskoningDHV, 2015).

The specific nature and quantity of the commercial waste produced from the proposed development would be dependent upon the nature of the businesses operating at the site. The type or sector of a particular business and the number of employees will have a significant influence on the types and quantities of waste produced. At the present time in the absence of knowledge about the types of businesses that will operate across the full extent of the proposed development area, and the number of employees that will work there, it is not possible to estimate the type and quantity of wastes that would be produced on occupation of the development.

Effective waste management during occupation would be achieved where the design incorporates the allocation of space to store dry-recyclable and non-recyclable waste bins; and that the waste collection frequency is adequate to ensure that there is no overspill of any container between collections.

## 1 Introduction

### 1.1 Background

This waste assessment report is submitted as part of an Outline Planning Application for the development of a new business park at land east of Cherry Orchard Way, Rochford, falling within the Rochford District Council boundary.

This report assesses the impacts of the proposed development in terms of waste generation during the construction and occupation phases, taking into account the proposed options for recycling, recovery or disposal of waste, and the capability of the existing local or regional waste management facilities to manage the waste.

A Site Waste Management Plan has been produced to accompany this report 'Southend Airport Business Park - Site Waste Management Plan Report (SWMP)' (Royal HaskoningDHV, 2015) and associated 'Southend Airport Business Park - SWMP tool.xls' (Royal HaskoningDHV, 2015).

### 1.2 Site description and surrounding area

The development site is in a strategic location<sup>1</sup> to the north of London Southend Airport and situated 1.2 km south-west of Rochford town centre and 3.6 km north of Southend-on-Sea town centre. The Site is bounded by Cherry Orchard Way to the west, a principal route out of Southend-on-Sea, and Aviation Way and an existing commercial estate to the south. The site is bordered to the north and east by open land.

### 1.3 Development Proposals

The proposed development is an *Outline application with all matters reserved other than access for the development of land at Cherry Orchard Way to create a business park to comprise use classes B1 and B2 along with other ancillary uses to include A1, A3, A4, D1, D2 and B8, landscaping of access road, and demolition of the existing rugby club.*

The application is submitted on behalf of Henry Boot Developments Ltd (South) ("HBD"). The owner of the land is Southend Borough Council.

The application site comprises 55 acres of predominantly greenfield land in agricultural use. The land is allocated in the recently adopted London Southend and Environs Joint Area Action Plan (2014) (hereafter "the JAAP") for a business park. The JAAP is one of a number of plans prepared jointly by Rochford District Council ("RDC") and Southend on Sea Borough Council ("SBC"). The JAAP has been developed in accordance with the Local Development Framework of both RDC and SBC and conforms to the provisions of the National Planning Policy Framework which seeks to support sustainable economic development, such as now proposed.

---

<sup>1</sup> Location Plan '0688\_A\_0100\_D - Location Plan' Jefferson Sheard Architects, Rev D 22/09/2015

## 2 Waste Planning Policy Context

### 2.1 National Planning and Policy

#### 2.1.1 National Planning Policy Framework

The National Planning Policy Framework<sup>2</sup> (NPPF), which was published on 27 March 2012, does not contain specific waste policies. Paragraph 5 indicates that waste policy will be set out in the National Waste Management Plan for England (2013). In terms of achieving sustainable development, the NPPF identifies that minimising waste and pollution is a fundamental part of the environmental role of the planning system.

The NPPF encourages Planning Authorities to prepare Local Plans that, so far as practicable, take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials, whilst aiming to source minerals supplies indigenously. The proposed development should therefore have regard to the requirements of the relevant Local Plan in terms of waste management. This is discussed further below (see section 2.2).

#### 2.1.2 National Planning Policy for Waste 2014

The Government has published the National Waste Planning Policy<sup>3</sup> for England as a replacement of Planning Policy Statement 10 (Planning for Sustainable Waste Management – 2011)<sup>4</sup>: The updated policy maintains the core principles of the ‘plan led’ approach, with a continued focus of moving waste up the waste hierarchy.

It requires local planning authorities to have regard to its policies when discharging their responsibilities to the extent that they are appropriate to waste management. Increasingly local authorities are working together in partnerships to deliver full and efficient waste services; a requirement of the duty to cooperate in section 110 of the Localism Act 2011. The document sets out detailed waste planning policies to facilitate a more sustainable and efficient approach to resource use and management, for example by ensuring the design and layout of new residential and commercial development and other infrastructure complements sustainable waste management, including the provision of appropriate storage and segregation facilities to facilitate high quality collections of waste.

When determining planning applications for non-waste development, the Policy requires that local planning authorities should, to the extent appropriate to their responsibilities, ensure that:

- The likely impact of proposed, non-waste related development on existing waste management facilities, and on sites and areas allocated for waste management, is acceptable and does not prejudice the implementation of the waste hierarchy and/or the efficient operation of such facilities;
- New, non-waste development makes sufficient provision for waste management and promotes good design to secure the integration of waste management facilities with the rest of the development and, in less developed areas, with the local landscape. This includes providing adequate storage facilities at residential premises, for example by ensuring that there is sufficient and discrete provision for bins, to facilitate a high quality, comprehensive and frequent household collection service; and

<sup>2</sup> Department for Communities and Local Government (2012) *National Planning Policy Framework*, DCLG, London

<sup>3</sup> DCLG, 2014, *National Planning Policy for Waste*, The National Archives, London

<sup>4</sup> DCLG, 2011, *Planning Policy Statement 10: Planning for Sustainable Waste Management*, London: TSO

- The handling of waste arising from the construction and operation of development maximises reuse/recovery opportunities, and minimises off-site disposal.

### 2.1.3 Government Review of Waste Policy in England 2011

Defra conducted a review of the existing national waste policy in 2011 to set a direction towards a ‘Zero Waste Economy’<sup>5</sup>.

The principle commitments from the policy review that are relevant to this development include:

- Continued assessment of progress against a number of EU targets; focussing action in specific areas, including recovering at least 70% of construction and demolition waste by 2020;
- A greater focus on waste reduction at the earlier, design stages of construction projects as this is where the largest environmental and financial savings can be made. This would be part of a wider, ongoing programme of work with the industry including support for the Sustainable Construction Task Group Action Plan; and
- A review of the SWMP Regulations 2008, examining how effective the regulations have been in reducing costs for businesses, embedding resource efficiency and reducing the fly tipping of construction waste.

Note: The SWMP Regulations 2008 were revoked by the UK Government in December 2013 as part of an initiative to reduce red tape, meaning that SWMPs are no longer a legal requirement in England for all construction projects. However, despite this change SWMPs are considered the standard practice on C&D sites as they facilitate compliance with the Waste Hierarchy.

### 2.1.4 National Waste Management Plan for England 2013

Defra published a National Waste Management Plan<sup>6</sup> England in July 2013. The key aim of the Waste Management Plan for England was to set a direction towards a zero waste economy as part of the transition to a sustainable economy. In particular, this meant using the “waste hierarchy” (waste prevention, re-use, recycling, recovery and finally disposal as a last option) as a guide to sustainable waste management.

The Waste Management Plan for England was a high level document which is non–site specific. It evaluated how it would support implementation of the objectives and provisions of the revised Waste Framework Directive<sup>7</sup> (rWFD).

The rWFD established the principle of ‘proximity’. This is within the context of the requirement on Member States to establish an integrated and adequate network of waste disposal facilities for recovery of mixed municipal waste collected from private households. The requirement included where such collection also covers waste from other producers.

The plan identified the measures to be taken to ensure that by 2020:

- At least 50% by weight of waste from households is prepared for re-use or recycled; and

<sup>5</sup> Government Review of Waste Policy in England 2011, accessed 05/08/2015, available at URL: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69401/pb13540-waste-policy-review110614.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69401/pb13540-waste-policy-review110614.pdf)

<sup>6</sup> Defra, 2013, ‘National Waste Management Plan for England 2013’, Defra: London

<sup>7</sup> Waste Framework Directive (2008/98/EC)

- At least 70% by weight of construction and demolition waste is subjected to material recovery.

The construction, demolition and excavation sector is the largest contributing sector to the total waste generation. This generated 77.4 million tonnes of waste in 2010 (down from 81.4 million tonnes in 2008). The Government keeps progress towards the 2020 targets under review by monitoring actual recycling rates and by modelling future recycling. England and the UK are already achieving an estimated 93% recovery rate of construction and demolition waste. This already exceeds the 2020 target of recovering at least 70% by weight, of non-hazardous construction and demolition waste.

### 2.1.5 Waste Prevention Programme for England 2013

The Government developed Waste Prevention Programme<sup>8</sup> for England in 2013 to set out the key roles and actions which should be taken to move towards a more resource efficient economy. As well as describing the actions the government is taking to support this move, it also highlights actions businesses, the wider public sector, the civil society and consumers can take to benefit from preventing waste. Using resources more efficiently, designing and manufacturing products for optimum life and repairing and reusing more items could save money and provide opportunities for economic growth at the same time as improving the environment.

The waste prevention programme is a requirement of the rWFD.

The Waste Prevention Programme sets out detailed actions to:

- Encourage businesses to contribute to a more sustainable economy by building waste reduction into design, offering alternative business models and delivering new and improved products and services;
- Encourage a culture of valuing resources by making it easier for people and businesses to find out how to reduce their waste, to use products for longer, repair broken items, and enable reuse of items by others;
- Help businesses recognise and act upon potential savings through better resource efficiency and preventing waste, to realise opportunities for growth; and
- Support action by central and local government, businesses and civil society to capitalise on these opportunities.

In order to measure progress against the aim of the programme, the government measures changes in overall waste arising, assesses the environmental impacts of this waste and considers how these factors relate to changes in the resource efficiency of the economy.

### 2.1.6 BS 5906:2005 - The British Standard on Waste Management in Buildings

BS 5906<sup>9</sup> is a code of practice for methods of storage, collection, segregation for recycling and recovery, and on-site treatment of waste from residential and non-residential buildings. BS 5906 applies to new buildings, refurbishments and conversions of residential and non-residential buildings, including, but not limited to, retail and offices.

<sup>8</sup> Defra, December 2013 'Prevention is better than cure - The role of waste prevention in moving to a more resource efficient economy', HM Government, London (<https://www.gov.uk/government/publications/waste-prevention-programme-for-england>)

<sup>9</sup> British Standards Institution, 2005, BS 5906:2005 Waste management in buildings. Code of practice, BSi, London

### 2.1.7 BS 8895-1:2013 - Designing for Material Efficiency in Building Projects. Code of Practice for Strategic Definition and Preparation and Brief

BS 8895-1<sup>10</sup> is the first part in a projected suite of codes of practice that address specific and interrelated issues and processes of material efficiency in building projects in line with the RIBA Plan of Work. It sets out the process for the integration of designing for material efficiency and gives recommendations that are accepted as good practice by industry leaders and practitioners, and brings together the results of practical experience and acquired knowledge for ease of access and use of the information.

### 2.1.8 BS 8895-2:2015 - Designing for Material Efficiency in Building Projects Code of Practice for Concept and Developed Design

BS 8895-2<sup>11</sup> is a code of practice for designing for material efficiency. It gives recommendations for the processes, information exchanges and responsibilities for design teams to incorporate into projects at the Concept Design and Developed Design Stages of a building project. These recommendations are accepted as a good practice by industry leaders and practitioners.

#### Key benefits of BS 8895-2:

- Helps achieve higher levels of resource efficiency in a building project;
- Takes account of design activities that might occur in either the concept and/or developed design stages, providing a flexible approach in applying material efficiency;
- Looks at the efficient use of materials throughout the lifecycle of a building, not just one part of it;
- Keeps environmental impacts of the construction process at front of mind fulfilling corporate social responsibility criteria; and
- Addresses interrelated issues and processes so they can work together to improve material efficiency in building projects.

### 2.1.9 BRE Home Quality Mark 2015

The Code for Sustainable Homes 2010<sup>12</sup> was developed to enable a step change in sustainable building practice for new homes. In 2014 the Government announced the Code for Sustainable Homes would be revoked. The replacement was announced in March 2015 to be the BRE Home Quality Mark<sup>13</sup>. Full technical guidance on how the Home Quality Mark works will be released shortly.

## 2.2 Local and Regional Planning Policy

The Rochford District Council Corporate Plan 2012 – 2017 (Adopted March 2012)<sup>14</sup> states that in order to continue to improve the quality of local environment and street scene it is necessary to prepare a strategy to inform the review of waste management contracts (due in 2015). However, to date this has not been

<sup>10</sup> British Standards Institution, 2013, *BS 8895-1:2013 Designing for Material Efficiency in Building Projects. Code of Practice for Strategic Definition and Preparation and Brief*, BSI, London

<sup>11</sup> British Standards Institution, 2015, *BS 8895-2:2015 Designing for Material Efficiency in Building Projects. Code of Practice for Concept and Developed Design*, BSI, London

<sup>12</sup> <https://www.gov.uk/government/policies/improving-the-energy-efficiency-of-buildings-and-using-planning-to-protect-the-environment/supporting-pages/code-for-sustainable-homes>

<sup>13</sup> <http://www.homequalitymark.com/what-is-the-hqm>

<sup>14</sup> Rochford District Council Corporate Plan 2012-2017. Accessed on: 17/08/2015, available at URL: [http://www.rochford.gov.uk/sites/rochford.gov.uk/files/documents/files/plans\\_and\\_strategies\\_corporate\\_plan.pdf](http://www.rochford.gov.uk/sites/rochford.gov.uk/files/documents/files/plans_and_strategies_corporate_plan.pdf)

produced, and instead waste management policies and strategies are contained within a number of local development plans and county-wide strategies; which are reviewed below.

A number of Southend on Sea Borough Councils development planning and management documents have also been reviewed and incorporated, due to the developments close geographical proximity, and the challenges and opportunities posed by London Southend Airport to the area.

### **2.2.1 Rochford District Council Local Development Framework Core Strategy Adopted Version (December 2011)**

Rochford District Council Local Development Framework Core Strategy (December 2011)<sup>15</sup> is the main, overarching document of the Rochford District Local Development Framework – a collection of documents that will determine how the District develops in the future. It sets out the overall strategy for the District until 2025.

Although there are no specific waste policies built in to the document, it is assumed that waste management would form part of vision and objectives of the ‘Environmental Issues’ and ‘Economic Development’, with particular focus on:

- Policy ENV9 – Code for Sustainable Homes;
- Policy ENV10 – BREEAM; and
- Policy ED2 – London Southend Airport.

### **2.2.2 Rochford District Council – Local Development Framework Development Management Plan,**

The Development Management Plan was adopted on 14 December 2014. It sets out the detailed day-to-day planning policies through which development within the District will be delivered. The Development Management Plan sits below the Core Strategy in the hierarchy of local development documents for Rochford District. Both documents are used in the determination of planning applications for the development and use of land and buildings in the District.

Appendix 1 of the Development Management Plan provides advice on the design of waste and recyclables storage and collection requirements for new developments.

### **2.2.3 Rochford District Local Strategic Partnership: The Sustainable Community Strategy 2009 – 2021 (Adopted April 2009)**

The Rochford Sustainable Community Strategy (SCS) 2009-2021<sup>16</sup> introduces the long term vision, aspirations and objectives for the District of Rochford and its Local Strategic Partnership (LSP). The Local Strategic Partnership (LSP) is a non-statutory multiagency partnership which brings together, at a local level, the different parts of the private, public, community and voluntary sectors.

<sup>15</sup> Rochford District Council Local Development Framework Core Strategy Adopted Version (December 2011), accessed on: 17/08/2015, available at URL: [http://www.rochford.gov.uk/sites/rochford.gov.uk/files/PDF/planningpolicy\\_cs\\_adoptedstrategy.pdf](http://www.rochford.gov.uk/sites/rochford.gov.uk/files/PDF/planningpolicy_cs_adoptedstrategy.pdf)

<sup>16</sup> Rochford District Local Strategic Partnership: The Sustainable Community Strategy 2009 – 2021 (Adopted April 2009), accessed on: 17/08/2015, available at URL: [http://www.rochford.gov.uk/sites/rochford.gov.uk/files/documents/files/evibase\\_D14\\_sustainable\\_comm\\_strat2009.pdf](http://www.rochford.gov.uk/sites/rochford.gov.uk/files/documents/files/evibase_D14_sustainable_comm_strat2009.pdf)

Although there are no specific waste policies built in to the SCS document, it is assumed that waste management would form part of the 'Promoting a Greener District' vision, which highlights the need to:

- Continue to improve recycling performance;
- Promote renewables and minimising use of resources;
- Improve environmental performance of residential and commercial development across the District; and
- Minimise the climate change impacts of those who live in, work in and visit the District.

#### **2.2.4 Municipal Waste Management Strategy for the Borough of Southend on Sea: 2004 – 2020 (Adopted June 2004)**

The Municipal Waste Management Strategy for the Borough of Southend on Sea<sup>17</sup> (adopted June 2004), sets out the Southend on Sea Borough Council waste management plans to meet European legislative requirements and Government targets from 2004-2020.

This strategy is aimed entirely at MSW. The management of Construction & Demolition waste is contained within the Replacement Waste Local Plan (2011), a shared partnership plan that ensures cost-efficient and sustainable waste management is delivered across the county and Southend is currently under review.

#### **2.2.5 Southend on Sea Borough Council - Waste Storage, Collection and Management Guide for New Developments (Adopted October 2014)**

The purpose of this Guide is to provide an outline of the waste storage, collection and management criteria that developers should be applying to new developments<sup>18</sup>.

This Guide is intended to set out the expectations of Southend-on-Sea Borough Council with an emphasis on new residential developments and the planned storage and collection of waste and recycling. As such it seeks to provide baseline information to the developer in order to assist them both in the planning process and the delivery of effective waste management within residential developments once constructed. The Council does not currently deliver commercial waste collections to businesses; however parts of this guide will equally apply to proposed commercial development.

#### **2.2.6 Southend on Sea Development Planning Document 1 (DPD1) - Core Strategy (Adopted December 2007)**

The Core Strategy DPD sets out the Borough Council's spatial strategy and strategic planning policy framework for Southend. It contains the vision and strategic objectives for the spatial strategy, key development principles, detailed core thematic policies and a monitoring and implementation framework. The Core Strategy DPD is a strategic level document that provides the framework for subsequent DPDs, including the Development Management DPD.

The document promotes sustainable construction and design practices in all new development proposals, including a reduction in the use of resources, the use of renewable and recycled resources, and

<sup>17</sup> *Municipal Waste Management Strategy for the Borough of Southend on Sea: 2004-2020*, accessed on: 07/08/2015, available at URL: [http://www.southend.gov.uk/info/200327/recycling\\_and\\_waste/482/recycling\\_and\\_waste\\_policies\\_and\\_strategies](http://www.southend.gov.uk/info/200327/recycling_and_waste/482/recycling_and_waste_policies_and_strategies)

<sup>18</sup> *Southend on Sea Borough Council - Waste Storage, Collection and Management Guide for New Developments*, accessed on: 07/08/2015, available at URL: [https://www.southend.gov.uk/download/downloads/id/3105/final\\_waste\\_management\\_guidance\\_for\\_developers\\_oct\\_2014.pdf](https://www.southend.gov.uk/download/downloads/id/3105/final_waste_management_guidance_for_developers_oct_2014.pdf)

consideration of how the development will provide for the collection of re-usable and recyclable waste (Policy KP2: Development Principles).

### 2.2.7 Southend on Sea Borough Council - Development Management Document (Adopted July 2015)

The 'Development Management' Plan Document (July 2015)<sup>19</sup> forms part of the Southend-on-Sea Local Planning Framework.

Policy DM2: Low Carbon Development and Efficient Use of Resources, states that:

To ensure the delivery of sustainable development, all development proposals should contribute to minimising energy demand and carbon dioxide emissions in accordance with the energy hierarchy and address the following:

#### *New Development*

1. *All new development that creates additional residential and/or commercial units, should be energy and resource efficient by incorporating the following requirements*

(ii) *Prioritising the use of sustainably sourced material, and adopting sustainable construction methods that minimise the use of raw materials and maximise the recovery of minerals from construction, demolition and excavation wastes produced at development or redevelopment sites.*

### 2.2.8 London Southend Airport & Environs Joint Area Action Plan (JAAP) (Adopted December 2014)

The London Southend Airport & Environs Joint Area Action Plan (JAAP) (Adopted December 2014)<sup>20</sup> has been prepared by Rochford District Council and Southend-on-Sea Borough Council in response to the challenges and opportunities offered by London Southend Airport together with an airport related employment cluster. The Plan is intended to integrate land use, transport, environmental and regeneration proposals with clear mechanisms for delivery up to 2031 and beyond.

Although there are no specific waste policies built in to the document, it is assumed that waste management would form part of Environmental **Policy ENV7 – Environmental Sustainability**:

### 2.2.9 Joint Municipal Waste Management Strategy for Essex (2007 to 2032)

The Joint Municipal Waste Management Strategy for Essex (2007 to 2032)<sup>21</sup> was developed by the thirteen waste authorities of Essex, comprising Essex County Council, as the Waste Disposal Authority (WDA), and the twelve District and Borough Councils, as the Waste Collection Authorities (WCAs), along with the unitary authority of Southend-On-Sea Borough Council. Southend-on-Sea Borough Council

<sup>19</sup> *Southend on Sea Development Management Document, accessed on: 07/08/2015, available at URL:*

[http://www.southend.gov.uk/downloads/file/3737/southend\\_development\\_management\\_document\\_adopted\\_version](http://www.southend.gov.uk/downloads/file/3737/southend_development_management_document_adopted_version)

<sup>20</sup> *The London Southend Airport & Environs Joint Area Action Plan (JAAP) (Adopted December 2014), accessed on: 07/08/2015, available at URL: [http://www.rochford.gov.uk/sites/rochford.gov.uk/files/documents/files/planning\\_jaap\\_adoptedversion.pdf](http://www.rochford.gov.uk/sites/rochford.gov.uk/files/documents/files/planning_jaap_adoptedversion.pdf)*

<sup>21</sup> *Joint Municipal Waste Management Strategy for Essex: 2007 to 2032, accessed on: 07/08/2015, available at URL: [http://www.essex.gov.uk/Environment%20Planning/Recycling-Waste/Waste-Strategy/Documents/Waste\\_Strategy\\_-\\_version\\_approved\\_by\\_ECC\\_Full\\_Council\\_on\\_15.07.08.pdf](http://www.essex.gov.uk/Environment%20Planning/Recycling-Waste/Waste-Strategy/Documents/Waste_Strategy_-_version_approved_by_ECC_Full_Council_on_15.07.08.pdf)*

published its own Municipal Waste Management Strategy for the Borough of Southend-on-Sea in June 2004 and the strategy identifies joint working with other Essex local authorities as highly desirable – as previously discussed. Whilst there are references to Southend-on-Sea and Thurrock unitary authorities, this strategy relates specifically to Essex County Council and the twelve District and Borough Councils of Essex; providing a 25 year plan for the future of recycling and waste management in the area.

### 2.2.10 Waste Development Document: Preferred Approach (Published November 2011)

The Replacement Waste Local Plan (WLP) (formerly the Waste Development Document (WDD)) is a joint plan being developed by Essex County Council and Southend-on-Sea Borough Council intended to replace the existing Waste Local Plan (1986-2001)<sup>22</sup>.

Since the production of the Plan, a significant number of national planning policy and guidance changes have been introduced and new local evidence arisen (such as updated waste capacity gap analysis<sup>23</sup>). The change has driven the Authorities' decision to prepare a further preferred approach; the 'Revised Preferred Approach' (RPA), which will provide the key principles to guide the future management of waste in Essex and Southend up until 2032.

The RPA document has recently undergone a six-week public consultation (18 June – 30 July 2015)<sup>24</sup>. The responses received are now being reviewed and considered. The RPA is expected to be adopted in December 2016.

## 2.3 Waste Legislation

### 2.3.1 Waste Framework Directive

The key European legislation is the revised Waste Framework Directive (2008/98/EC) ('rWFD'), which consolidates a number of separate waste Directives and amendments. It establishes the basis for the management of wastes across the European Union (EU). It defines certain terms, such as "waste", "recovery" and "disposal", to ensure that a uniform approach is taken across the EU.

### 2.3.2 Duty of Care

The waste duty of care is a legal requirement, originally implemented by Section 34 of the Environmental Protection Act 1990, to ensure that producers and holders handle their waste safely and in compliance with the appropriate regulations. One of the fundamental aspects of duty of care requires the holder of waste to make sure that anyone else dealing with their waste has the necessary authorisation to do so. If the holder does not do this and their waste is subsequently found to have been illegally disposed, the holder could be held responsible and may face prosecution.

<sup>22</sup> The Essex and Southend Waste Local Plan, accessed on: 07/08/2015, available at URL: [http://www.essex.gov.uk/Environment%20Planning/Planning/Minerals-Waste-Planning-Team/Planning-Policy/Documents/Essex\\_Southend\\_Waste\\_Local\\_Plan\\_2001.pdf](http://www.essex.gov.uk/Environment%20Planning/Planning/Minerals-Waste-Planning-Team/Planning-Policy/Documents/Essex_Southend_Waste_Local_Plan_2001.pdf)

<sup>23</sup> Essex County Council and Southend-on-Sea Borough Council - Waste Local Plan Capacity Gap Report 2013 Update, accessed on: 07/08/2015, available at URL: <https://www.essex.gov.uk/Environment%20Planning/Planning/Minerals-Waste-Planning-Team/Planning-Policy/Documents/Waste%20Capacity%20Gap%20Report%202013%20update%20%20July%202013.pdf>

<sup>24</sup> Waste Local Plan – Revised Preferred Approach Consultation (18 June – 30 July 2015) Consultation Sign-posting Document, accessed on: 07/08/2015, available at URL: <http://www.essex.gov.uk/Environment%20Planning/Planning/Minerals-Waste-Planning-Team/Planning-Policy/Documents/WasteLocalPlanSIGNPOSTINGdoc.pdf>

The duty of care provisions are contained in the Waste (England & Wales) Regulations 2011 SI 2011 (No. 988).

### 2.3.3 The Waste Hierarchy

The Waste (England and Wales) Regulations 2011 implements the rWFD in England and Wales. The waste hierarchy is set out at Article 4 of the rWFD. The waste hierarchy requires a demonstration by the producer/holder of a waste that the priority identified in **Table 1** has been considered in order to determine the most suitable waste management option for all waste arisings:

**Table 1 The Waste Hierarchy**

| Waste Hierarchy      | Relevant activity   |
|----------------------|---|
| Prevention           | Using less material in design and manufacture, keeping products for longer, re-use, using less hazardous materials  |
| Preparing for re-use | The waste is capable of being recycled by existing local or regional waste management facilities without requiring adaptation   |
| Recycling            | Turning waste into a new substance or product, includes composting if it meets quality protocols  |
| Other recovery       | Includes anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat and power) and materials from waste, some backfilling |
| Disposal             | Landfill and incineration without energy recovery   |

It is a legal requirement for waste producers/holders to follow the waste hierarchy when making decisions about waste management options for their waste. Waste holders have to choose the highest possible hierarchical option for their wastes. Lower hierarchical options cannot be justified by cost alone. They require environmental justification over available higher options, for example the location of a site may justify sending waste to a lower option (e.g. local landfill), rather than sending it hundreds of miles to the nearest facility that could provide a higher option.

### 2.3.4 Separate Collection of Waste

The rWFD (Article 10) requires that “*Member States shall take the necessary measures to ensure that waste undergoes recovery in accordance with Articles 4 and 13 [paragraph 1]...*” and “*Where necessary to comply with paragraph 1 and to facilitate or improve recovery, waste shall be collected separately if technically, environmentally and economically practicable and shall not be mixed with other waste or other material with different properties*”.

This has given rise to the term ‘TEEP’ ‘Technically, Environmentally and Economically Practicable’ with reference to the separate collection of wastes destined for recovery operations. TEEP applies to all commercial (business) and municipal (household) waste. However, only paper, metal, plastic and glass have been explicitly named in the rWFD as specific waste streams that are required to be collected as separate fractions – and only if this is necessary to improve recycling quality and quantity. This requirement applies from January 2015.

Municipal solid waste and similar waste arisings from commercial and industrial premises are collected for recovery, either as source segregated waste streams; or as co-mingled wastes. Waste Collection Authorities have a duty to separately collect the four types of recyclable material, and must apply the “TEEP” tests to determine if this is needed in their circumstances. The requirements of ‘TEEP’ do not make it mandatory that separate collection has to be introduced; and co-mingled collection is acceptable if

the aim of high quality recycling can be achieved just as well with a form of co-mingled collection<sup>25</sup>. Decisions about whether co-mingled collections are justifiable need to be taken locally, based on the particular circumstances in each area. Advice in this regard has been provided by WRAP in the Waste Regulations Route Map<sup>26</sup>.

The requirements of TEEP will be enforced by the Environment Agency under the Environmental Permitting (England and Wales) Regulations 2011 (as amended)<sup>27</sup>.

### 2.3.5 Household Waste, Industrial Waste or Commercial Waste

The Controlled Waste Regulations 2012<sup>28</sup> describes wastes that are to be treated as household waste, industrial waste or commercial waste because of the place where it is produced; or because of its nature or the activity which produces it (notwithstanding the place where it is produced).

### 2.3.6 Hazardous Waste

The Hazardous Waste Regulations provide the rules for assessing if a waste is hazardous or not. As part of the assessment of waste, the HWR refer to the List of Wastes (which is often referred to as the European Waste Catalogue (EWC)) for the relevant thresholds for some of the hazardous properties; and to assign the formal description and code for the waste. The regulatory framework to do this is contained in:

- Hazardous Waste (England and Wales) Regulations 2005 SI 894.
- Hazardous Waste (England and Wales) (Amendment) Regulations 2009 SI 507.
- List of Wastes (England) Regulations 2005 SI 895.
- List of Wastes (England) (Amendment) Regulations 2005 SI 1673.
- The Hazardous Waste (Miscellaneous Amendments) Regulations 2015 SI 1360

Detailed technical guidance on the hazardous waste assessment process is provided by 'Waste Classification and Assessment (Technical Guidance WM3)<sup>29</sup>' issued in July 2015 as a consequence of changes to the way in which wastes are assessed and classified in accordance with the 2015 amendment.

This document is jointly approved by all of the UK environmental regulators. It provides thresholds and criteria for assessing each of the 15 hazardous properties and Persistent Organic Pollutants (POPs).

<sup>25</sup> [http://ec.europa.eu/environment/waste/framework/pdf/guidance\\_doc.pdf](http://ec.europa.eu/environment/waste/framework/pdf/guidance_doc.pdf) Section 4.3.4

<sup>26</sup> <http://www.wrap.org.uk/content/requirements-waste-regulations>

<sup>27</sup> The Environmental Permitting (England and Wales) (Amendment) Regulations 2012 SI 2012 No. 1889

<sup>28</sup> The Controlled Waste (England and Wales) Regulations 2012, SI 2012 No. 811

<sup>29</sup> <https://www.gov.uk/government/publications/waste-classification-technical-guidance>

### **3 Methodology Criteria**

#### **3.1 Methodology Approach**

The assessment considers the likely quantity and composition of waste materials predicted to be generated during the construction phase of the development. On-site re-use and recovery of the waste in the development are explored, along with the capability for existing local and regional waste management infrastructure to manage the arisings according to the principles of the waste hierarchy. The approach also considers the likely types of waste produced during occupation; and provides waste management measures to ensure wastes are managed effectively.

The assessment tools and criteria were derived for this assessment based on professional judgement and guidelines derived from national and local planning policy relating to waste management and the waste hierarchy.

#### **3.2 Assumptions and Limitations**

The total proposed plot area is 38.69<sup>30</sup> acres (15.66 hectares (ha) or 156,573m<sup>2</sup>).

The development proposal is for a mixed use development scheme comprising B1 and B2 Uses along with other ancillary uses to include A1, A3, A4, D1, D2 and B8.

There is a separate hybrid application for the relocation of the existing Westcliff Rugby Club to land east of Cherry Orchard Way, Rochford. The relocation of the rugby club is outside the scope of this report.

At this stage in the application process for the proposed development, it is estimated that works would commence in 2017 and be complete by 2032.

### **4 Description of Baseline Conditions**

#### **4.1 Existing Conditions at the Site**

The proposed development site currently consists of Westcliff Rugby Football Club (sports fields, rugby club house and associated car park) that forms the eastern half of the site; and agricultural land forming the western half. Cherry Orchard Cottage, a Grade II listed 17<sup>th</sup> century timber framed house, is located on the western edge, to the north of the Rugby club within the gross area encompassed by the proposed development area but it is excluded from the proposed development as the cottage will remain and does not form part of the planning application.

Due to the current land uses on site, it is anticipated that the types of waste currently generated at the site are likely to consist of very small quantities of agricultural waste associated with the current farming activities on the site; and small quantities municipal-type waste from the rugby club.

---

<sup>30</sup> Based on the proposed Schedule of Accommodation, 0688\_Rev K, 26/08/2015, Jefferson Sheard Architects

## 4.2 Waste Management Facilities in the Local Area

Local waste management facilities were identified from the Environment Agency Public Register<sup>31</sup>. The search radius was limited to 10km of the proposed site (based on postcode SS4 1PP).

The list of facilities on the Public Register includes all waste management facilities that hold an existing permit within a 10km radius. This would include facilities that are not likely to receive waste from the proposed development, e.g. vehicle dismantling facilities, Household Waste Recycling Centres (HWRC), etc. The waste management facilities that could receive waste from the proposed development are shown in **Table 2**. Waste Management facilities on the Public Register that are not likely to receive waste from the construction phase or the completed development were not included in the table below.

**Table 2 - List of waste management facilities within 10km from the proposed development**

| Name                                      | Address   | Distance from Site (km) | Waste Types Accepted                                      |
|---|---|-------------------------|---|
| Brickfields Way Transfer Station          | Brickfields Way Transfer Station, Brickfields Way, Purdeys Industrial Estate, Rochford, Essex | 2.3 km                  | Household, Commercial & Industrial Waste Transfer Station |
| Ecologic Yard                             | Ecologic Yard, Welton Way, Purdeys Ind Estate, Rochford, Essex                                | 2.4 km                  | Household, Commercial & Industrial Waste Transfer Station |
| Roachside Recycling Centre                | Cottis Yard, Welton Way, Pursey's Ind Est, Rochford, Essex                                    | 2.5 km                  | Inert & Excavation Waste TS + Treatment                   |
| Hadleigh Salvage                          | Plot 9, Stock Road, Southend On Sea, Essex  | 3.0 km                  | Household, Commercial & Industrial Waste Transfer Station |
| Cory Environmental Municipal Services Ltd | Central Cleansing Depot, Eastern Avenue, Southend On Sea, Essex                               | 3.3 km                  | Material Recycling Treatment Facility                     |
| T J Cottis Transport                      | Unit 13 Rawreth Ind Estate, Rawreth Lane, Rayleigh, Essex                                     | 6.7 km                  | Household, Commercial & Industrial Waste Transfer Station |
| Franklin Hire                             | Unit 1, Rawreth Industrial Estate, Rawreth Lane, Rayleigh, Essex                              | 6.7 km                  | Household, Commercial & Industrial Waste Transfer Station |
| Benfleet Scrap                            | Unit 16, Brunel Road, Manor Trading Estate, Thundersley, Essex                                | 8.0 km                  | Metal Recycling Site                                      |
| Benfleet Scrap Transfer Station           | Unit 16, Brunel Road, Manor Trading Estate, Thundersley, Essex                                | 8.0 km                  | Household, Commercial & Industrial Waste Transfer Station |
| Sherwood Waste                            | 12, Parsons Road, Benfleet, Essex   | 8.2 km                  | Household, Commercial & Industrial Waste Transfer Station |
| A A Quickskips                            | 5a, Brunel Road, Manor Trading Estate, Benfleet, Essex  | 8.2 km                  | Household, Commercial & Industrial Waste Transfer Station |
| Hurn M R F                                | Hurn M R F, Chapel Lane, Hurn, Christchurch, Dorset   | 8.2 km                  | Material Recycling Treatment Facility                     |
| Barling Marsh Landfill Site               | Barling Marsh, Barling Magna, Great Wakering, Essex, SS3 0LL                                  | 8.3 km                  | Treatment and Disposal of Non-Hazardous Waste             |

<sup>31</sup> Environment Agency Public Register, accessed on 05/08/2015, available at URL: <https://www.gov.uk/access-the-public-register-for-environmental-information>

#### 4.2.1 Council Commercial Waste Services

Rochford District Council does not currently deliver commercial waste collections to businesses. Waste generated as a result of commercial activities cannot use the recycling and waste services provided to households. The Household Waste Recycling Centres (HWRCs) are not permitted to accept business waste. There are a number of waste management companies who offer commercial waste collection and recycling services in the area.

Southend-on-Sea Borough Council does not currently deliver commercial waste collections to businesses. Waste generated as a result of commercial activities cannot use the recycling and waste services provided to households; or the Council's HWRCs. Cory Environmental is the Council's waste collection contractor for household recycling and waste; they also provide commercial waste collection services. There are also a range of contractors providing commercial recycling and/or waste collections within the local area. A commercial waste directory can be found on the Council's website at: <http://www.southend.gov.uk/commercialwaste>.

### 4.3 Regional Waste Management Facilities

The potential regional waste management capacity was assessed. The Environment Agency provides waste capacity data on its website<sup>32</sup>. This data set was assessed to identify the remaining regional capacity according to waste management options in East of England. This provides an indication of whether the predicted waste types from the development can be managed within the Region in accordance with the proximity principle (i.e. managing wastes as close to the source of production as possible).

The rWFD (Article 16) establishes the principle of proximity for managing waste as close to the source of production. The Proximity Principle recognises that transporting waste has environmental, social and economic costs so, as a general rule, waste should be dealt with as near to the place of production as possible.

The data in **Tables 3 to 6**<sup>33</sup> inclusive provides an indication of the widespread availability of a range of types of waste management facilities within East of England. Note that the facilities identified in **Table 2** would also be included within the summarised data below. There are too many regional sites to list individually.

---

<sup>32</sup> Environment Agency Waste Management Data Tables 2013  
<https://www.gov.uk/government/statistics/waste-management-for-england-2013>

<sup>33</sup> Note: the EA data tables are reproduced as screenshots from the original data tables.

Table 3 - Number of Waste Management Facilities in East of England (2013)

| Site type      |  | Former Planning Region |            |                        |               |               |                 |        |            | ENGLAND |            |
|----------------|--|------------------------|------------|------------------------|---------------|---------------|-----------------|--------|------------|---------|------------|
|                |  | North East             | North West | Yorkshire & the Humber | East Midlands | West Midlands | East of England | London | South East |         | South West |
| Landfill       | Number of sites with an environmental permit at end 2013 | 25                     | 46         | 70                     | 62            | 50            | 76              | 8      | 83         | 60      | 480        |
|                | Number of sites that accepted waste in 2013              | 23                     | 39         | 54                     | 42            | 30            | 47              | 8      | 49         | 39      | 331        |
| Land Disposal  | Number of sites with an environmental permit at end 2013 | 4                      | 25         | 23                     | 19            | 18            | 43              | 11     | 45         | 42      | 230        |
|                | Number of sites that accepted waste in 2013              | 1                      | 14         | 11                     | 9             | 11            | 25              | 7      | 33         | 32      | 143        |
| Incineration   | Number of sites with an environmental permit at end 2013 | 8                      | 15         | 16                     | 15            | 16            | 11              | 10     | 25         | 18      | 134        |
|                | Number of sites that accepted waste in 2013              | 3                      | 9          | 11                     | 8             | 11            | 5               | 7      | 16         | 7       | 77         |
| Transfer       | Number of sites with an environmental permit at end 2013 | 178                    | 506        | 412                    | 321           | 404           | 375             | 222    | 412        | 365     | 3,195      |
|                | Number of sites that accepted waste in 2013              | 137                    | 367        | 319                    | 222           | 271           | 300             | 168    | 325        | 307     | 2,416      |
| Treatment      | Number of sites with an environmental permit at end 2013 | 127                    | 373        | 306                    | 272           | 256           | 276             | 106    | 316        | 302     | 2,334      |
|                | Number of sites that accepted waste in 2013              | 92                     | 233        | 234                    | 198           | 159           | 211             | 73     | 268        | 233     | 1,701      |
| Metal Recovery | Number of sites with an environmental permit at end 2013 | 161                    | 408        | 415                    | 247           | 384           | 299             | 108    | 221        | 287     | 2,530      |
|                | Number of sites that accepted waste in 2013              | 85                     | 172        | 188                    | 112           | 192           | 162             | 55     | 131        | 146     | 1,243      |
| Use of Waste   | Number of sites with an environmental permit at end 2013 | 8                      | 28         | 26                     | 25            | 22            | 22              | 2      | 35         | 64      | 232        |
|                | Number of sites that accepted waste in 2013              | 7                      | 18         | 12                     | 19            | 11            | 14              | 2      | 28         | 45      | 156        |
| Total          | Number of sites with an environmental permit at end 2013 | 511                    | 1,401      | 1,268                  | 961           | 1,150         | 1,102           | 467    | 1,137      | 1,138   | 9,135      |
|                | Number of sites that accepted waste in 2013              | 348                    | 852        | 829                    | 610           | 685           | 764             | 320    | 850        | 809     | 6,067      |

Table 4 - Remaining Landfill Capacity in East of England (2013) - All Figures Provided in 000s Tonnes

| Landfill Type                  | Sub-Region   |                |               |               |              |              | EAST OF ENGLAND |
|--------------------------------|--------------|----------------|---------------|---------------|--------------|--------------|-----------------|
|                                | Bedfordshire | Cambridgeshire | Essex         | Hertfordshire | Norfolk      | Suffolk      |                 |
| Hazardous Merchant             | -            | -              | -             | -             | -            | -            | -               |
| Hazardous Restricted           | -            | -              | -             | -             | -            | -            | -               |
| Non Hazardous with SNRHW cell* | -            | 1,120          | 41            | 0             | -            | 4,968        | 6,129           |
| Non Hazardous                  | 0            | 12,012         | 17,374        | 3,256         | 5,705        | 1,137        | 39,485          |
| Non Hazardous Restricted       | -            | -              | 427           | -             | 75           | -            | 502             |
| Inert                          | 2,205        | 3,100          | 545           | 8,456         | 71           | 1,730        | 16,107          |
| <b>Total</b>                   | <b>2,205</b> | <b>16,233</b>  | <b>18,388</b> | <b>11,712</b> | <b>5,852</b> | <b>7,834</b> | <b>62,223</b>   |

\*Some non-hazardous sites can accept some Stable Non-Reactive Hazardous Wastes (SNRHW) into a dedicated cell, but this is usually a small part of the overall capacity of the site.

**Table 5 - Transfer, Treatment and Metal Recycling Volumes in East of England (2013) – All Figures Provided in 000s Tonnes**

| Site Type                           | Sub-Region   |                |              |               |              |            | EAST OF ENGLAND |
|-------------------------------------|--------------|----------------|--------------|---------------|--------------|------------|-----------------|
|                                     | Bedfordshire | Cambridgeshire | Essex        | Hertfordshire | Norfolk      | Suffolk    |                 |
| Hazardous waste                     | 52           | 435            | 121          | 52            | 174          | 154        | 989             |
| HIC                                 | 348          | 366            | 649          | 400           | 460          | 398        | 2,619           |
| Clinical                            | -            | 0              | 0            | -             | 2            | -          | 3               |
| Civic amenity site                  | 41           | 74             | 198          | 75            | 52           | 92         | 531             |
| Non Biodegradable                   | -            | 7              | 373          | 36            | 1            | 3          | 421             |
| <b>Transfer Total</b>               | <b>441</b>   | <b>883</b>     | <b>1,341</b> | <b>562</b>    | <b>688</b>   | <b>647</b> | <b>4,563</b>    |
| Material recovery                   | 0            | 111            | 305          | 86            | 0            | 138        | 640             |
| Physical                            | 115          | 242            | 698          | 387           | 391          | 247        | 2,080           |
| Physico-chemical                    | -            | 184            | 13           | -             | 0            | 75         | 273             |
| Chemical                            | 7            | -              | -            | -             | 105          | 0          | 112             |
| Composting                          | 72           | 240            | 134          | 125           | 133          | 57         | 762             |
| Biological                          | 179          | 233            | 127          | 133           | 548          | 51         | 1,270           |
| <b>Treatment Total</b>              | <b>373</b>   | <b>1,010</b>   | <b>1,277</b> | <b>731</b>    | <b>1,177</b> | <b>568</b> | <b>5,137</b>    |
| Vehicle depollution                 | 1            | 75             | 75           | 35            | 9            | 40         | 236             |
| Metal recycling site                | 100          | 210            | 1,160        | 295           | 166          | 10         | 1,940           |
| <b>Metal Recycling Sector Total</b> | <b>102</b>   | <b>285</b>     | <b>1,235</b> | <b>330</b>    | <b>175</b>   | <b>49</b>  | <b>2,176</b>    |

**Table 6 - Incineration Capacity in East of England (2013) – All Figures Provided in 000s Tonnes**

| Incineration Type                        | Sub-Region   |                |          |               |            |            | EAST OF ENGLAND |
|--|--------------|----------------|----------|---------------|------------|------------|-----------------|
|  | Bedfordshire | Cambridgeshire | Essex    | Hertfordshire | Norfolk    | Suffolk    |                 |
| Animal By-Product                        | 192          | -              | -        | -             | 444        | 150        | 786             |
| Animal Carcasses                         | -            | -              | -        | -             | -          | -          | -               |
| Clinical                                 | -            | 2              | -        | -             | -          | 8          | 11              |
| Co-Incineration of Hazardous Waste       | -            | -              | -        | -             | -          | -          | -               |
| Co-Incineration of Non Hazardous Waste   | -            | -              | -        | -             | -          | -          | -               |
| Hazardous                                | -            | -              | -        | -             | -          | -          | -               |
| Municipal and/or Industrial & Commercial | -            | -              | -        | -             | -          | -          | -               |
| Sewage Sludge                            | -            | -              | -        | -             | -          | -          | -               |
| <b>Total</b>                             | <b>192</b>   | <b>2</b>       | <b>-</b> | <b>-</b>      | <b>444</b> | <b>158</b> | <b>796</b>      |

Note: This data table is for operational incineration facilities that accepted waste from off-site sources. It does not include facilities that burned waste from their own in-house processes or were non/pre-operational.

The specific waste streams that are predicted to be generated as a result of the Proposed Development are identified in sections 5 and section 6 below. These sections provide a discussion on the availability of the facilities described in **Tables 3 - 6** according to the types of waste that are predicted to be generated and whether those wastes would be recovered on site; or would be recovered or disposed off-site.

The information shows that there are numerous waste management facilities providing a wide variety of waste management options within the region.

The overall capacity data means that these facilities are likely to be capable of managing the majority of the wastes requiring off-site management that are predicted to be generated by the Proposed Development during construction and operation. However, if there are any hazardous wastes produced that require landfill disposal, these will have to be exported out of the region.

## 5 Waste Composition and Quantities

### 5.1 Construction Waste Arisings

Waste material will be generated at all stages of the construction process. The type of development, ground conditions and on-site waste management practices will influence the composition of the waste.

The assessment below considers the total amount of each type of waste produced over the whole construction period. This data is averaged by month and year to provide a general assumption about the potential impacts through the phases of construction.

The BRE (Building Research Establishment) SMART Waste data report (2013)<sup>34</sup> was used to estimate volumes of waste arisings from the construction phase of the proposed development. BRE produced the SMART Waste data report by assessing actual data from approximately 10,000 completed new build, refurbishment and other civil engineering projects. The report is available from the Waste Resource Action Programme (WRAP) website<sup>35</sup>, and registered users of the WRAP website can download the report.

**Table 7** provides a breakdown of the average volume of total waste arisings per 100m<sup>2</sup> of site area from excavation and construction of new build projects using the BRE SMART Waste data report. This data was derived from 1,486 completed new build projects. This data set was used as a model to estimate all of the waste arisings from the proposed Development, based on the estimated construction area of 15.66ha.

**Table 7 - Average Waste Arisings by Volume per 100m<sup>2</sup> of the Site Area**

| Phase of the development | Volume (m <sup>3</sup> ) of waste per 100m <sup>2</sup> of the Site area | Volume (m <sup>3</sup> ) of waste per 15.66 ha of the Site area |
|--------------------------|--|---|
| Excavation               | 40.10  | 62,636  |
| Construction             | 32.00  | 49,984  |
| Demolition               | 3.80   | 5,936   |
| <b>Total</b>             | <b>72.10</b>   | <b>118,556</b>  |

### 5.2 Composition of Construction Waste

A detailed breakdown of the composition of construction waste for the entire Proposed Development is set out in **Table 8** below.

The waste types and volume information is derived from BRE's SMART Waste Data Report. The final column has been colour coded to identify the generic waste type: green = inert waste; orange = non-hazardous waste; and red = hazardous waste.

WRAP has produced an online guide on the volume to mass conversion factors for a wide range of construction wastes and the appropriate conversion factor for each waste type is provided in **Table 8** below.

<sup>34</sup> Building Research Establishment (2013) SMART Waste Data Report 2013.

<sup>35</sup> WRAP website  
<http://www.wrap.org.uk/smartwaste-summary-data>  
[last accessed 22/04/2014]

Table 8 - Estimated Quantity of Construction Waste

| Waste Product  | BRE Average<br>m <sup>3</sup> /100m <sup>2</sup> | % of total | Volume of total<br>waste (m <sup>3</sup> )* | WRAP<br>conversion<br>factor | Mass in<br>Tonnes* |
|--|--|------------|---|------------------------------|--------------------|
| Asphalt, bitumen and tarmac  | 0.6  | 0.79%      | 937   | 0.82                         | 769                |
| Concrete binders   | 0.1  | 0.13%      | 155   | 1.27                         | 197                |
| Bricks   | 1.3  | 1.71%      | 2,028                                       | 1.2                          | 2,434              |
| Canteen/office/ad-hoc waste  | 0.7  | 0.92%      | 1091  | 0.21                         | 230                |
| Concrete   | 2.1  | 2.76%      | 3,273                                       | 1.27                         | 4,157              |
| Floor coverings - soft   | 0.1  | 0.13%      | 155   | 0.27                         | 42                 |
| Gypsum   | 1  | 1.32%      | 1,565                                       | 0.33                         | 517                |
| Hazardous miscellaneous<br>excavation and construction waste               | 0.4  | 0.53%      | 629   | 0.87                         | 548                |
| Inert mix of concrete, tiles, bricks<br>and ceramics                       | 6.8  | 8.95%      | 10,611                                      | 1.24                         | 13,158             |
| Insulation   | 0.6  | 0.79%      | 937   | 0.25                         | 235                |
| Aqueous Liquids, including<br>chemical toilet waste                        | 0.1  | 0.13%      | 155   | 0.9                          | 140                |
| Metals   | 0.6  | 0.79%      | 937   | 0.42                         | 394                |
| Mixed waste not otherwise<br>specified                                     | 5.8  | 7.63%      | 9,046                                       | 0.87                         | 7,871              |
| Mixed Packaging & empty drums  | 1.7  | 2.24%      | 2,656                                       | 0.21                         | 558                |
| Segregated Plastics  | 0.6  | 0.79%      | 937   | 0.23                         | 216                |
| Soils (excavated soil and topsoil,<br>including material to be reinstated) | 50.7   | 66.71%     | 79,089                                      | 1.25                         | 98,862             |
| Tiles and Ceramics   | 0.1  | 0.13%      | 155   | 0.59                         | 92                 |
| Timber   | 2.7  | 3.55%      | 4,209                                       | 0.34                         | 1,432              |
| <b>Total</b>   |  |            | <b>118,565</b>                              |                              | <b>131,852</b>     |

*The individual volume and mass values in the table have been rounded up to the nearest whole number.*

The total waste arisings from the construction phase was predicted to be approximately 131,852 tonnes. The estimated quantity according to the generic category of waste is summarised in **Table 9**.

**Table 9 - Summary of the Estimated Total Quantity by Waste Category**

| Generic Waste Category | Estimated Quantity (Tonnes) | Percent of Total (%) |
|------------------------|-----------------------------|----------------------|
| Inert                  | 20,038                      | 15.2                 |
| Non-hazardous          | 111,266                     | 84.4                 |
| Hazardous              | 548                         | 0.4                  |

The total waste arisings detailed in **Table 9** are for the full length of the construction programme.

At this stage of the design, it is not possible to quantify the rate of production of each of the waste streams over the course of the construction phase and it is likely that waste production volumes will vary during construction. The anticipated construction programme, based on estimates at this stage of the application process, is likely to be over the course of approximately 15 years. For the purposes of calculation the average monthly quantities were calculated to provide a general assumption about the potential maximum amount of any particular type of waste present on site at one particular time. These are presented in **Table 10** below.

Table 10 - Total, Average Annual and Average Monthly Waste Production

| Waste Product   | Total arisings (Tonnes) | Average Annual <sup>+</sup> Amount (Tonnes)* | Average Monthly Amount (Tonnes)* |
|---|-------------------------|--|----------------------------------|
| Asphalt, bitumen and tarmac   | 769                     | 52   | 5                                |
| Concrete binders  | 197                     | 14   | 2                                |
| Bricks  | 2,434                   | 163  | 14                               |
| Canteen/office/ad-hoc waste   | 230                     | 16   | 2                                |
| Concrete  | 4,157                   | 278  | 24                               |
| Floor coverings - soft  | 42                      | 3  | 1                                |
| Gypsum  | 517                     | 35   | 3                                |
| Hazardous miscellaneous excavation and construction waste               | 548                     | 37   | 4                                |
| Inert mix of concrete, tiles, bricks and ceramics                       | 13,158                  | 878  | 74                               |
| Insulation  | 235                     | 16   | 2                                |
| Aqueous Liquids   | 140                     | 10   | 1                                |
| Metals  | 394                     | 27   | 3                                |
| Mixed waste not otherwise specified, including vegetation clearance     | 7,871                   | 525  | 44                               |
| Mixed Packaging & empty drums   | 558                     | 38   | 4                                |
| Segregated Plastics   | 216                     | 15   | 2                                |
| Soils (excavated soil and topsoil, including material to be reinstated) | 98,862                  | 6,591  | 550                              |
| Tiles and Ceramics  | 92                      | 7  | 1                                |
| Timber  | 1,432                   | 96   | 8                                |
| <b>Total</b>  | <b>131,852</b>          | <b>8,801</b>                                 | <b>744</b>                       |

<sup>+</sup> Based on a 15 year Construction Programme

The individual mass values in the table were rounded up to the nearest whole number.

The estimated average annual and average monthly quantity according to the generic category of waste is summarised in **Table 11**.

Table 11 - Summary of the Estimated Average Quantity by Waste Category

| Generic Waste Category | Estimated Quantity (Tonnes) | Average Monthly Amount (Tonnes) | Average Monthly Amount (Tonnes) |
|------------------------|-----------------------------|---------------------------------|---------------------------------|
| Inert                  | 20,038                      | 1,340                           | 115                             |
| Non-hazardous          | 111,266                     | 7,424                           | 625                             |
| Hazardous              | 548                         | 37                              | 4                               |

## 5.3 Construction Waste Management Measures

### 5.3.1 Construction phase

This section describes the measures that can be implemented in order to eliminate or reduce the anticipated quantity of waste sent to landfill by implementing the waste hierarchy. These measures would increase reuse; recycling or recovery opportunities, thereby reducing the effect of significant environmental impacts. The mitigation measures for the construction phase are split in the section below, into those that can generally be applied to one or more waste type; and those that are applied to specific waste streams.

### 5.3.2 General Waste Management Measures

There are certain principles of mitigation that can be applied to the majority of wastes that would be created during the construction phase. These are:

- Adhere to waste legislation for storage and handling on-site; and also ensure that the relevant regulatory controls have been applied to the reuse, recycling or recovery of waste on-site.
- No waste from the Proposed Development shall be deposited outside the boundary of the Site, unless it is at a facility that holds a valid environmental permit or suitable authorised exemption. Off-site waste management facilities are legally obliged to operate under an environmental permit (or an authorised exemption), which is in place to ensure that the site is operated in a manner to prevent emissions causing harm to human health or the environment.
- Ensure that those who remove waste from site have the appropriate authorisation (i.e. are registered waste carriers); and those facilities that receive waste from the site hold a valid environmental permit or authorised exemption.
- Allocate space on site for the storage of waste materials and ensure that storage areas and containers are clearly labelled so site workers know which wastes should be put there.
- Hazardous waste must be stored separately from non-hazardous wastes to avoid contamination. The Hazardous Waste Regulations make it illegal to mix hazardous waste with non-hazardous waste.
- Provide separate containers for dry recyclables, such as paper & cardboard, plastic, glass, wood and metal. This would encourage recycling and increase the potential value of the recyclable items by avoiding contamination.
- Monitor the actual quantities of wastes produced during construction, and update the Site Waste Management Plan to allow comparison with waste arisings estimated prior to construction. Record the proposed waste management option (e.g. reuse on site, recycle off-site, or dispose off-site) for each waste produced.
- All wastes that are removed off site would be described on a waste transfer note or hazardous waste consignment note (as appropriate) that tracks the movement of the waste to the specified disposal or recycling facility.
- The appointed contractors should identify the staff who are responsible for waste management; and ensure that all contractor staff are aware of the appropriate reuse, recycling or disposal routes for each waste.

These measures would promote sustainable waste management practices by maximising waste prevention, re-use and recycling for material destined for offsite waste management. This would actively discourage sending waste to landfill and would promote the waste hierarchy, which is a legal requirement. It is recommended that these measures are incorporated into the Construction Environmental Management Plan (CEMP) for the proposed development.

### 5.3.3 Waste-Specific Management Measures

#### Inert Waste:

Waste inert materials (for example concrete, bricks, rubble) could be crushed and processed in accordance with an appropriate environmental permit or waste exemption for on-site reuse as engineering fill material complying with an appropriate engineering standard for fill in accordance with Manual of Contract Documents for Highway Works Volume 1 - Specification for Highway Works<sup>36</sup>.

These measures would reduce the amount of waste sent off-site; and promote on-site recycling into engineering-standard product, therefore, reducing the amount of material classed as waste on-site. The remaining surplus would be sent off-site to a local recycling facility for processing into aggregate. This is a waste recycling measure in accordance with the waste hierarchy.

#### Non-Hazardous Wastes

##### Biodegradable Waste from Vegetation Clearance

Biodegradable waste generated from site clearance of any vegetation would be effectively managed by being sent for recycling at a local composting facility. None of this material is anticipated to require landfill disposal.

##### Excavated Material

Topsoil would be retained on site for reinstatement and reuse where practicable, within the Proposed Development for landscaping in open spaces. Stockpiles of topsoil would be kept separate and be identifiable from other excavated material to ensure effective reuse. Topsoil is not waste when it is reinstated. Waste topsoil that is surplus to requirements would be sent to a soil conditioning facility.

Subsoil: Some of the subsoil arising on the site would be anticipated to be retained on site for reuse as general fill as part of the construction process. Subsoil that is surplus to requirements would be sent to a soil conditioning facility.

At the time of writing this report an intrusive Ground Investigation (GI) had not been undertaken at the site. Therefore, at the present time, the extent of any potential contamination within the proposed development area is unknown. This is particularly relevant given the site is located adjacent to the former brick works, with some excavation and potential infill (of unidentified material) likely within the proposed development area, particularly at the northern edge of the site where it borders the former brick works. As such, this report has been produced on the assumption that specific contamination issues are unknown. Therefore, a conservative approach was applied and it was assumed that some contaminated material would be encountered (see **Table 10**).

A watching brief would be maintained during construction, in accordance with the Construction Environmental Management Plan, and any excavated material that is suspected of contamination (e.g. because of staining or odour) would be stockpiled separately and samples taken for analysis.

<sup>36</sup> Department for Transport (DfT), 2009, 'Manual Of Contract Documents For Highway Works Volume 1 Specification For Highway Works', DfT: London  
[http://www.dft.gov.uk/ha/standards/mchw/vol1/pdfs/series\\_0600.pdf](http://www.dft.gov.uk/ha/standards/mchw/vol1/pdfs/series_0600.pdf)

Any material found to be hazardous and unsuitable for reuse on site would be sent off-site for treatment and/or disposal as appropriate, to a facility holding a valid environmental permit that authorises treatment or disposal of such waste. Sending contaminated excavated material to a soil treatment facility with a view to treatment and recycling promotes the waste hierarchy and enables hazardous waste to be treated at facilities within the region and consequently reduces the amount of hazardous waste being landfilled. If any excavated material is classified as hazardous and is required to be landfilled because it cannot be treated at a soil recycling facility, further testing would be carried out to ensure that it meets the Hazardous Waste Acceptance Criteria (WAC)<sup>37</sup> prior to disposal.

Effective stockpile management would be essential within the proposed development. It would maximise the amount of material that can be reused on site in landscaping or backfill. Where excavated material is used on-site, the appropriate regulatory mechanism must be followed to demonstrate that it is not waste when reused. The CL:AIRE Definition of Waste: Development Industry Code of Practice<sup>38</sup> (the CoP) is anticipated to provide the framework for the reuse of the excavated material. This would apply for contaminated material (including excavated material classified as hazardous waste), where the risk assessment demonstrated that there was no unacceptable level of risk to human health or the environment.

The CoP is supported by the Environment Agency and is subject to self-regulation, via the use of an independent assessment by a Qualified Person, who is a person that fulfils the required experience, qualifications and professional membership criteria set by CL:AIRE. It sets out the principles for achieving a non-waste status by setting a risk-based approach when excavated material is used within a development. The principles are:

- *The proposed use of the material must not cause any harm to human health or the environment.*

A risk assessment for the specific end use would be required following the principles defined in Environment Agency Contaminated Land Report 11<sup>39</sup>, ('CLR11'). This would find out whether any contaminants from anthropogenic and/or natural sources present an unacceptable level of risk to human health, controlled waters, ecosystems and/or the built environment, based on the available pathways and receptors. If the level of risk is unacceptable after treatment, the CoP cannot apply to the material, therefore, it would be a waste and an environmental permit would be required to allow the reuse of the material.

- *The excavated material is suitable for its proposed use.*

This would take into account the chemical and geotechnical requirements of the material in relation to a specification defined for their end use.

- *The excavated material must not require further treatment prior to use.*

The material must be suitable for use in all respects without treatment. If it requires treatment, it is waste.

- *The use of the excavated material is certain.*

The holder must be able to demonstrate that all of the material would be used and that use is a certainty, not a probability. The use of the excavated material must form part of the final design, so it can be clearly

<sup>37</sup> Council Decision (2003/33/EC of 19 December 2002 'establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC', European Council: Official Journal of the European Communities

<sup>38</sup> Contaminated Land: Applications In Real Environments (CL:AIRE), 2011, 'The Definition of Waste: Development Industry Code of Practice' (Version 2), CL:AIRE: London

<sup>39</sup> Environment Agency, 2004 'Model Procedures for the Management of Land Contamination - Contaminated land report 11', Environment Agency, Bristol.

identified where in the scheme the material would be used; and how much would be used. This requires a Materials Management Plan to be prepared to show how and where all materials on the ground are to be dealt with; and a tracking system to monitor any waste/material movements; and also contingency measures must be defined, i.e. who takes responsibility and what happens in the event that the material is not suitable for use.

- *Only a sufficient quantity of material would be used.*

The material must be destined for a defined purpose, which is defined in the scheme design. The quantity of material required for that purpose must be known prior to construction. If excess material is deposited to undertake that purpose this is an indication that it is being discarded and it would be considered to be waste.

The benefit of the CoP is that an environmental permit is not required where the principles can be met; and the quantity of waste is reduced, because the material ceases to be waste when it is used.

These measures would promote on-site recovery and reduce the amount of waste on-site.

A proportion of the excavated material may not be suitable for reuse due to the presence of large rocks/stones or fibrous material. This material would be stockpiled separately for off-site management at a regional soil-recovery facility for processing into soil-conditioner. This is a waste recovery measure in accordance with the waste hierarchy.

### **Dry Recyclables from Site Workers**

The most effective mitigation solution for managing waste generated by site contractors taking refreshment on site is to introduce a policy to require them to take their own waste home. This is likely to reduce the amount of waste produced.

In terms of the waste that would be produced on site, this is similar in composition to mixed municipal waste and is therefore, considered to be non-hazardous. Space should be made available to provide receptacles to collect different waste streams and allow the separate collection of dry recyclables from residual waste. Segregation of the different streams of plastic waste (e.g. PET, HDPE and mixed plastics) would maximise opportunities for recycling. Some source segregated plastics, particularly PET and HDPE, can generate income. Card and paper should be separately collected as should aluminium and steel cans. Glass should be separated into different receptacles where possible. These measures would ensure that the maximum amount of waste is diverted for reuse, recycling and recovery. The food waste should also be separately collected and sent for anaerobic digestion. All receptacles for contractor waste should be clearly labelled and have lids to prevent wind-blown litter.

Frequent collections of waste should be arranged to ensure that quantities on site are within the capacity of one skip and waste is not retained on site for long periods to reduce scavengers and vermin.

The remaining residual waste should be sent to an off-site materials recycling facility.

### **Excess Construction Materials**

Timely procurement and buying the required amount of material should ensure that the right amount of material is delivered at the time when it is needed. This would prevent waste from unused items as a consequence of bulk purchasing.

Ensure that perishable materials are stored so that they are protected from the local climate.

All damaged or off-specification material should be returned back to the supplier where possible, which would reduce the amount of wastage.

These measures are anticipated to reduce the amount of this type of waste on site at any one time.

### Imported Materials

Local and sustainable products would be imported in order to minimise the effects on the environment by reducing carbon emissions from transport, promoting local businesses and saving natural resources.

### Packaging

To minimise the effects of packaging, suppliers should be required to take back any packaging associated with their products. This would assist the suppliers in fulfilling their own producer responsibility obligations under Packaging Waste Regulations 2007<sup>40</sup>.

Packaging materials that cannot be returned should be kept for on-site use (e.g. use of pallets for storage).

Any residual packing that cannot be used on site should be segregated into distinct dry recyclable waste streams and sent for recycling off-site. No waste packaging would be landfilled.

### Hazardous Wastes

Empty fuel or oil drums should be retained for reuse on site for storing waste oil where possible. Those that cannot be retained should be sent to a drum reconditioning facility to enable the container to be prepared for re-use. Damaged drums should be sent for recycling.

These measures are anticipated to maximise waste managed at the highest waste hierarchical option and reduce the amount of waste sent off site.

The use of an active maintenance regime on plant and equipment should reduce the potential for machinery to cause leaks. Valves, stopcocks and pipes should be regularly checked for leakages. Fuelling activities should be carried out in bunded areas, or off-site.

The storage of fuels and liquids should be in accordance with the Oil Storage Regulations 2001<sup>41</sup> and the appropriate pollution prevention control guidelines to protect the environment from both storage and spillages of hazardous substances, which can be obtained from the government website<sup>42</sup>:

- PPG 2 - Choosing and using oil storage tanks;
- PPG 7 – Operating Refuelling facilities;
- PPG 8 - Safe storage and disposal of used oils;
- PPG 22 - Dealing with spills; and
- PPG 26 – Storage and handling drums and intermediate bulk containers.

<sup>40</sup> HMSO, SI 2007 No. 871, *The Producer Responsibility Obligations (Packaging Waste) Regulations 2007 (as amended)*, HMSO, London

<sup>41</sup> HMSO, SI 2001 No. 2954, *Control of Pollution (Oil Storage) (England) Regulations 2001*, HMSO, London

<sup>42</sup> <https://www.gov.uk/government/collections/pollution-prevention-guidance-ppg#pollution-prevention-guidance-series-ppgs> (accessed 22 July 2014)

Using these guidelines as mitigation against leaks would reduce the potential for leakages, therefore reducing the volume of absorbent required to clean up spillages.

Ensure that Hazardous materials are stored securely, away from non-hazardous or incompatible materials. Small items of hazardous waste should be prevented from being disposed of in general waste skips to avoid contamination. Ensure frequent collection of hazardous material to minimise the total volume on site at any one time.

Any excavated material that is found to be hazardous would be assessed against the principles of the CL:AIRE CoP and reused where it is demonstrated to be suitable for use. This would reduce the amount of material on site that is waste. Surplus hazardous material should be sent to a soil treatment facility, where it can be treated to remove or reduce the levels of contamination to a level acceptable for recovery of the material. This would reduce the amount of hazardous waste from the facility going to landfill (which would have to be exported out of the region), and promotes the waste hierarchy and proximity principle.

## 6 Occupational Waste Arisings

It is acknowledged that detailed estimations about the types and quantities of waste cannot be provided until the nature of the occupiers is known.

During the occupational phase of the development, units will be occupied by businesses and organisations. The wastes generated would likely comprise Municipal Solid Wastes (MSW) and food waste, which are non-hazardous wastes; and a small quantity of separately-collected hazardous wastes, such as redundant waste electrical and electronic equipment (WEEE), fridges, fluorescent tubes) and hazardous chemicals (e.g. used oils).

### 6.1 Commercial waste production

The specific nature and quantity of the commercial waste produced from the proposed development would be dependent upon the nature of the businesses operating at the site. The type or sector of a particular business and the number of employees will have a significant influence on the types and quantities of waste produced. At the present time in the absence of knowledge about the types of businesses that will operate across the full extent of the proposed development area, and the number of employees that will work there, it is not possible to estimate the type and quantity of wastes that would be produced on occupation of the development.

Much of the bulk waste arisings from the proposed commercial development is likely to be similar in composition to MSW and food waste produced by households. The data provided for local and regional waste facilities in **Tables 3 to 6** inclusive demonstrate that there is likely to be adequate regional capacity to manage Commercial wastes from the development. However, if any of the businesses produce hazardous waste that would require landfill disposal, these wastes would have to be exported out of the region.

## 6.2 Occupational Phase Waste Management Measures

### 6.2.1 General waste management measures

General waste management practices for commercial occupiers are provided below.

## Duty of Care

The commercial occupiers of the proposed development would be under a legal obligation to comply with the waste duty of care to ensure that they handle their waste safely and in compliance with the appropriate regulations.

The duty of care involves making sure that the waste has been described properly and that all of the properties associated with the waste are known; and to ensure that persons involved in the transfer of waste hold the necessary authorisation to do so.

The basic responsibilities that the commercial occupiers would be expected to follow are:

- Know whether waste is hazardous or non-hazardous
- Store waste in suitable containers at a secure location, in a manner that prevents releases of the waste.
- Label the waste containers so that it is clear what is in them.
- Check that the waste is subsequently handled by those who hold an appropriate environmental authorisation. This means checking that the waste carrier is registered (or is exempt from having to be a registered waste carrier). It is also good practice to check that the facility that will receive the waste holds a suitable environmental permit that allows the waste to be handled on their site.
- Provide documentation with any waste transfer that accurately describes the waste and contains the relevant code for the waste.
- Keep records of all waste transfers in a register.

## Hazardous waste

The commercial occupiers would be required to know the difference between hazardous waste and non-hazardous waste. The controls that are applied to hazardous waste are stricter.

Any commercial occupier that produces more than 500kg of hazardous waste over a 12 month period must register with the Environment Agency.

## Producer Responsibility

Producer responsibility requires businesses to:

- minimise waste arising and promote their re-use
- ensure the waste products are treated and meet recovery and recycling targets for the waste materials
- design products by reducing material use and enhancing reusability and recyclability.

The key requirements for commercial occupiers of the proposed development in terms of producer responsibility would be to ensure Waste Electrical and Electronic Equipment (WEEE) and packaging are managed appropriately.

## WEEE

If a business does have WEEE to recycle, it has a Duty of Care to act responsibly and ensure that the contractor it appoints to collect the WEEE is legitimate and has the appropriate licences and permits. A business should ensure that the WEEE is taken to a suitable facility to be treated and recycled, i.e. the site

has a permit or licence that allows them to accept trade waste; and it obtains and keeps proof that WEEE was given or sold to a waste management (or asset management) business, and was treated and recycled in an environmentally sound way.

All WEEE from a business should go through an AATF or ATF AATF (Approved/Authorised Treatment Facilities) for treatment.

## Packaging

The Packaging Waste Regulations require businesses or organisations to:

- reduce packaging
- reduce how much waste packaging goes to landfill; and
- increase the amount of packaging waste that is recycled and recovered

Compliance is facilitated by the segregation of packaging from other waste; and the segregation of different types of packaging from each other (e.g. separating plastic packaging from paper and cardboard packaging).

The amount of packaging waste held by a business or organisation can be reduced by returning as much packaging back to the supplier as possible. This in turn will help suppliers achieve their obligations under the Packaging Waste regulations.

## Landfill disposal

Before any waste can be sent to landfill, the commercial occupiers must ensure that the option for landfill has been justified in accordance with the waste hierarchy.

It is a legal requirement that all wastes going for landfill must be pre-treated, unless treatment is not technically possible (note, this applies to inert wastes only); or if treatment would not reduce the quantity or the hazards that it poses to human health or the environment. The proposed pre-treatment option must comply with the definition of 'treatment'. This involves a 'three-point test':

- It must be a physical, thermal, chemical or biological process including sorting.
- It must change the characteristics of the waste. and
- It must do so in order to:
  - reduce its volume; or
  - reduce its hazardous nature; or
  - facilitate its handling; or
  - enhance its recovery.

### 6.2.2 Segregation and storage

Commercial occupiers would be required to provide separate receptacles for dry recyclables, such as paper & cardboard, plastic, glass, wood and metal. This would encourage recycling and increase the potential value of the recyclable items by avoiding contamination. This is required to ensure compliance with TEEP (see section 2.3.4) and to facilitate the most appropriate reuse, recycling or recovery option in accordance with the waste hierarchy.

Effective waste management would be achieved where the design incorporates the allocation of space to store dry-recyclable and non-recyclable waste bins; and that the waste collection frequency is adequate to ensure that there is no overspill of any container between collections.

The specific details of storage provision for the commercial units would be determined at the detailed design stage, however, there are certain requirements that should be met, which are provided below.

Rochford Local Development Framework Development Management Plan, Appendix 1<sup>43</sup> should be considered by the developer to ensure that adequate provision for waste storage, collection and management is included in new developments.

The amount of waste storage required for any given development type is determined by a number of factors including:

- Volume and composition of waste;
- Segregation;
- On-site treatment; and
- Collection frequency.

The principles behind the required storage provision for the Proposed Development are that:

- The space must be adequate to store the predicted accumulation of waste between waste collections;
- The storage must be accessible to occupants and collectors; and
- The storage must be adequate to accommodate all of the different types of storage containers to meet current and proposed residual waste and waste recycling regimes by waste management companies collecting the waste.

Storage should allow segregation of residual waste and mixed dry recyclables. Storage areas and enclosures should be sensitively integrated within their surroundings and reflect the building design, materials and architecture of their surroundings. Where possible, bins should be screened from external view by planting, fencing, walls and other appropriate structures. All commercial premises would be expected to store refuse in wheeled bins rather than sacks for reasons of health and safety and manual handling.

As a minimum, the developer would be required to provide the appropriate amount of space into which the required external storage containers would fit. This requirement should be reflected in the design of developments and is anticipated to be secured through the application of appropriate planning conditions.

It is anticipated that collection points for commercial waste would be located within a designated compound. The design of the collection compounds would be confirmed at detailed design stage, however, a number of design principles would be accommodated:

- The storage facility would be covered.
- Permanent ventilation.
- An impervious floor.
- If walls are constructed they would be lined with a hard impervious material suitable for washing down, with adequate drainage provided.

<sup>43</sup> Rochford District Council – Local Development Framework Development Management Plan, Adopted 16 December 2014  
Appendix 1 – Advice on the Design of Waste and Recyclables Storage and Collection Requirements  
[http://www.rochford.gov.uk/sites/rochford.gov.uk/files/documents/files/planning\\_jaap\\_dpdadopted.pdf](http://www.rochford.gov.uk/sites/rochford.gov.uk/files/documents/files/planning_jaap_dpdadopted.pdf)

- Adequate space above and around each waste container to allow access; and the full opening of any container; and room to service any one container without have to move any other container.

Consideration should be given to vehicle access and egress to ensure the facilities can be easily serviced by refuse collection vehicles. Vehicle access should not be obstructed by archways, overhanging trees or vegetation.

The Rochford Local Development Framework Development Management Plan advises that the following guidelines should be considered when allocating storage space for commercial developments:

- Offices: 2,600 litres of waste storage for every 1,000m<sup>2</sup> gross floor space.
- Retail: 5,000 litres of waste storage for every 1,000m<sup>2</sup> gross floor space.
- Restaurants and Fast Food Outlets: 10,000 litres of waste storage for every 1,000m<sup>2</sup> gross floor space.
- Hotels: 7,500 litres of waste storage for every 1000m<sup>2</sup> gross floor space.

## 7 Conclusion

### 7.1 Construction Phase

The total waste arisings from the site clearance and construction phases of the Proposed Development were predicted to be:

| Generic waste category | Estimated quantity (tonnes) | average annual amount (tonnes) | average monthly amount (tonnes) | % of total |
|------------------------|-----------------------------|--------------------------------|---------------------------------|------------|
| Inert                  | 20,038                      | 1,340                          | 115                             | 15.2       |
| Non-hazardous          | 111,266                     | 7,424                          | 625                             | 84.4       |
| Hazardous              | 548                         | 37                             | 4                               | 0.4        |

#### Inert Wastes

The waste management measures identified above would reduce the amount of inert wastes by ensuring that the maximum amount of this material is processed on-site to enable it to be recycled into an engineering standard product. Where this cannot be achieved, other on-site uses such as recovery in the construction of site access tracks or construction of bunds would be prioritised over any off-site options. Therefore, the measures would reduce the amount of material requiring off-site management to a minimum; and there are sufficient facilities within the region to recycle this material.

#### Non-Hazardous Wastes

Approximately 90% of the predicted non-hazardous arisings are anticipated to be excavated soil. The waste management measures would ensure that topsoil would be reinstated in landscaping where possible and as such is not waste. The mitigation measures for subsoil would ensure that this material is used within the Site for landscaping, or the construction of bunds, or as backfill in accordance with the CoP, where possible. The proposed use on site in the construction of bunds or as backfill; or in landscaping, would be considered a justifiable option under the waste hierarchy, because the retention of the material on site would prevent emissions as a consequence of removal from the site. Furthermore, the proposal to use the material on-site as an engineering material achieves the status of non-waste, where the CoP is followed; and has the further benefit of embracing the proximity principle by being used at the site where it came from. Therefore, the use of the CoP would reduce the quantity waste being managed, because if the principles of the CoP are followed, the excavated material ceases to be waste when used.

Any excavated material (topsoil or subsoil) that is not suitable for use on site or is surplus to requirements for use for construction purposes would be sent off-site in accordance with the waste hierarchy. Options for reuse or recovery, for example to a soil conditioning facility, would be prioritised to ensure that the amount of waste excavated material being landfilled is reduced to an absolute minimum.

The return of packaging and excess / out-of-specification material to suppliers; and the reuse of such wastes would also reduce the amount of waste. Any residual packaging would be sent to an off-site recycling facility and there are sufficient facilities within the region to recycle this material.

## Hazardous Wastes

The waste management measures proposed would effectively reduce the amount of hazardous waste on site as a consequence of the material ceasing to be waste when reused under the CL:AIRE CoP; and also reduce the amount that requires disposal off-site. Off-site options for surplus material or material that was not suitable for use would be prioritised towards soil treatment to reduce or remove contaminants to a level that would facilitate the reuse or recovery of the treated material; thereby promoting the waste hierarchy and proximity principle by avoiding the need to export out of the region for landfilling. There are sufficient facilities within the region to recycle or treat these wastes.

The impacts associated with construction waste are short-term residual effects that would exist during the excavation and construction phase only. As such, there would be no residual effect once construction is complete.

## 7.2 Completed Development

The specific nature and quantity of the commercial waste produced from the proposed development would be dependent upon the nature of the businesses operating at the site. The type or sector of a particular business and the number of employees will have a significant influence on the types and quantities of waste produced. At the present time in the absence of knowledge about the types of businesses that will operate across the full extent of the proposed development area, and the number of employees that will work there, it is not possible to estimate the type and quantity of wastes that would be produced on occupation of the development.

Effective waste management would be achieved where the design incorporates the allocation of space to store dry-recyclable and non-recyclable waste bins; and that the waste collection frequency is adequate to ensure that there is no overspill of any container between collections.

Commercial occupiers would be required to provide separate receptacles for dry recyclables, such as paper & cardboard, plastic, glass, wood and metal. This would facilitate the most appropriate reuse, recycling or recovery option in accordance with the waste hierarchy.

The required storage provision for the Proposed Development would ensure that:

- The space would be adequate to store the predicted accumulation of waste between waste collections;
- The storage would be accessible to occupants and collectors; and
- The storage would be adequate to accommodate all of the different types of storage containers to meet current and proposed residual waste and waste recycling regimes by waste management companies collecting the waste.