P3Eco (Bicester) Ltd & A2 Dominion Group

NW Bicester eco development

Sustainable Waste and Resources Plan (Exemplar Site)

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PPS1 Requirement

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1 Overview

This Sustainable Waste and Resources Plan (SWRP) forms part of the planning application for the NW Bicester eco development Exemplar Site, in accordance with the requirements of Planning Policy Statement (PPS1): Eco-towns (A supplement to PPS1), ET19 – Waste. It has been prepared in conjunction with the NW Bicester Eco-town Energy Waste and Water (EWW) Workstream working group.

This SWRP sets targets for recycling and residual waste levels for the Eco-development, the overall concept for waste management, and presents specific measures that should be implemented to enable these targets being achieved (as required by PPS1). Progression of these measures will require ownership and support; including support from Cherwell District Council / Oxfordshire County Council, particularly relative to maintaining segregated waste collection. There may be opportunities to partner with third party organisations to implement some measures as pilot projects in the future.

The EWW Workstream working group recognise the opportunity to design a showcase waste management system at the NW Bicester Eco-town in accordance with

- The requirements set out in PPS1
- The exiting high recycling performance achieved by Cherwell District Council (CDC)
- The forthcoming Review of UK Waste Policy which will emphasise waste prevention and reuse, incentivising participation, and continuing to increase recycling rates.

Against this context, this SWRP sets out ambitious waste and recycling targets:

- For the percentage recycled/composted/reused: 70% from initial occupation**;** 80% by 2020
- For residual waste levels: 300 kg per household per year from initial occupation; 200 kg per household per year by 2020

In accordance with the waste hierarchy, waste reduction and reuse will be strongly encouraged: a community reuse centre will be established; residents will be provided with home composters, and a community recycling project will be established.

The high recycling performance in CDC is achieved with an alternate weekly collection (residual waste is collected one week, and comingled recyclables and mixed organics are collected the other) and bring banks for glass. This service will be provided to all households on the Exemplar site and supplemented with a number of measures including a reuse centre, a community composting project and an incentive scheme. Commercial operations will be supported, through the eco development governance organisation, to develop their own waste minimisation action plans.

The EWW Workstream working group considered a performance based charging system to incentivise participation. It is recommended that this initiative is further investigated as it would require bins to be chipped and bin weighing equipment to be installed on vehicles servicing the Exemplar site to enable monitoring against the targets as well as agreement of a suitable incentive scheme including how this would be managed. However the viability of such a system would require further investigation in the future, as substantial capital investment would be required from CDC.

In addition to these measures, this SWRP plan sets out how best practice will be facilitated through the design of the Exemplar site, in accordance with the standards for waste in the Code for Sustainable Homes.

2 Introduction

This Sustainable Waste and Resources Plan (SWRP) forms part of the planning application for the NW Bicester Eco-town Exemplar Site, in accordance with the requirements of Planning Policy Statement (PPS): Eco-towns (A supplement to PPS1), ET19 –Waste. It has been prepared in consultation with the Energy Waste and Water (EWW) Workstream working group.

While this SWRP is for the Exemplar Site, it will also inform the context of waste management across the whole site.

ET19 requirements state that: Eco-town planning applications should include a sustainable waste and resources plan, covering both domestic and non-domestic waste[1], which:

> (a) sets targets for residual waste levels, recycling levels and landfill diversion, all of which should be substantially more ambitious than the 2007 national Waste Strategy targets for 2020[2]; it should be demonstrated how these targets will be achieved, monitored and maintained
>
> (b) establishes how all development will be designed so as to facilitate the achievement of these targets, including the provision of waste storage arrangements which allow for the separate collection of each of the seven priority waste materials as identified in the Waste Strategy for England 2007
>
> (c) provides evidence that consideration has been given to the use of locally generated waste as a fuel source for combined heat and power (CHP) generation for the eco-town, and
>
> (d) sets out how developers will ensure that no construction, demolition and excavation waste is sent to landfill, except for those types of waste where landfill is the least environmentally damaging option.

This SWRP sets targets for recycling and residual waste levels for the Eco-town, the overall concept for waste management, and presents specific measures that if implemented will facilitate these targets being achieved (as required by PPS1). Progression of these measures will require ownership and support; including financial and resource commitment from Cherwell District Council / Oxfordshire County Council, particularly relative to maintaining segregated waste collection and extending this to the development. There may be opportunities to partner with third party organisations to implement some measures as pilot projects in the future.

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[1] This standard does not apply to health and social care services' medium and high risk waste, such as clinical and hazardous waste; these are covered by national regulations.

[2] The Waste strategy 2007 proposes national targets for waste for 2020 as follows:
• Residual waste reduction per person (amount left after reuse, recycling and composting) – from 370 kg in 2005 to 225 kg in 2020
Household re-use, recycling and composting – from 27% in 2005 to 50% in 2020
• Residual waste recovery (recycling, composting and energy recovery) from 38% in 2005 to 75% in 2020.

3 Background

3.1 Eco-towns

Eco-towns are a programme of new towns, to relieve the need for new housing while achieving high standards of sustainability.

The standards for Eco-towns are set out in Planning Policy Statement (PPS): Eco-towns (A supplement to PPS1) and include requirements for green space, promoting healthy and sustainable environments through 'Active Design'[3] principles and healthy living choices, use of technologies in energy generation and conservation in ways that are not always practical or economic in other developments; delivering a mix of housing type and tenure to meet the needs of all income groups and household size, creation of jobs within the towns; ambitious targets for and achieving high recycling standards.

3.2 The Exemplar Site development

The development site (subject to final confirmation) will comprise:

- Circa 393 residential units;
- a primary school;
- B1(a) office accommodation;
- retail units (class A1 – A5);
- social and community facilities within class D with associated means of access;
- Eco - pub
- car parking;
- landscape;
- amenity space; and
- service infrastructure.

Currently, the Exemplar Site planning application is submitted in as a hybrid, in outline with all matters reserved, with full planning permission sought for the residential development, means of access thereto, and associated car parking, landscape, amenity space and service infrastructure.

All such development shall accord with the Application Plans and Development Parameters Schedule.

[3] Active Design – www.sportengland.org/planning_active_design

4 Legislative Framework

Targets and measures for achieving them set out in this SWRP take into account current and emerging policies with direct relevance to the way in which waste must be managed at the Eco-town.

4.1 National and European

4.1.1 EU Landfill Directive

The main policy driver is the EU Landfill Directive, whose overall objective is to "*prevent or reduce as far as possible the negative effects on the environment, in particular the pollution of surface water, groundwater, soil and air, and on the global environment, including the greenhouse effect as well as any resulting risk to human health, from the landfilling of waste, during the whole life-cycle of the landfill*".

The Directive sets out a number of wastes that must be excluded from landfill but perhaps the most challenging aspect of the Directive for the UK is the targets for the progressive reduction of biodegradable municipal waste (BMW) being sent for disposal in landfill. In England and Wales the directive is applied under the Landfill (England and Wales) Regulations 2002.

The outcome of the Landfill Directive has already resulted in major changes to the waste management industry and increased the diversion of BMW from landfill. The Directive has led to a realisation that there is currently a large deficit in the capacity available to treat this BMW which needs to be addressed as a matter of urgency.

4.1.2 Waste Strategy for England 2007

The key objectives of the Waste Strategy are to:

- Decouple waste growth (in all sectors) from economic growth and put more emphasis on waste prevention and re-use;
- Meet and exceed the Landfill Directive diversion targets for biodegradable municipal waste in 2010, 2013 and 2020;
- Increase diversion from landfill of non-municipal waste and secure better integration of treatment for municipal and non-municipal waste;
- Secure the investment in infrastructure needed to divert waste from landfill and for the management of hazardous waste; and
- Get the most environmental benefit from that investment, through increased recycling of resources and recovery of energy from residual waste using a mix of technologies.

4.1.3 Landfill Allowance Trading Scheme

To help local authorities achieve the challenging targets in the Waste Strategy for England 2007, the Landfill Allowance Trading Scheme (LATS) was introduced in 1995. Under this scheme local authorities are given set allowances regulating the amount of BMW that they can send to landfill in each year.

One of the results of LATS has been an increase in the number of local authorities arranging the collection of household food waste and subsequent treatment options.

The future of the scheme is presently under review as a result of the revised Waste Framework Directive consultation.

4.1.4 Landfill Tax

Landfill Tax is a fiscal mechanism employed in the UK to encourage diversion of waste from landfill. The previous chancellor announced an annual increase in the Landfill Tax escalator. The landfill Tax is presently £48 per tonne. The current escalator runs to 2013/2014, rising £8 per year. By 2014 landfill tax will reach £80 per tonne. Increasing the landfill tax makes investments in alternative non-landfill treatments more economically viable. It also addresses the issue of the declining availability of landfill space available.

4.1.5 Consultation on the revised Waste Framework Directive

Consultation is taking place on how to implement the revised EU Waste Framework Directive (2008/98/EC) in England and Wales.

In order to transpose the revised Waste Framework Directive (rWFD) into law the government has undertaken a two stage consultation exercise. The first was completed in October 2009; the second stage closed in September 2010. The rWFD brings together new and existing measures to promote waste prevention, recycling, and better use of resources while protecting human health and the environment

The consultation includes proposals on:

- A legal obligation for those producing waste (other than householders) to deal with their waste in the best way possible for the environment wherever practical, prioritising actions to prevent waste in the first place; then preparing any waste for re-use; recycling it; using other types of recovery such as energy from waste; and if all else fails disposing of it. This 'waste hierarchy' is already part of policy in many areas.

- A statutory target to recycle 50% of waste from households by 2020.

- A statutory target to recover 70% of construction and demolition waste by 2020. There is an existing joint Government and industry voluntary target to halve construction, demolition and excavation waste disposed of in landfill by 2012, compared to a 2008 baseline.

- Setting up where practical separate collections for: waste paper; metal; plastic; and glass by 2015. Separate collections can include co-mingled waste collection followed by separation at recycling facilities.

At the forefront of the consultation is the banning of certain biodegradable and recyclable waste materials from landfill. The consultation also question the contribution that eliminating materials such as metals, glass, wood, textiles, paper, food, green (garden) waste, small electrical goods and plastics could make to increasing recycling rates and reducing greenhouse gas emissions.

In addition, views have been sought on:

- The options for a new interpretation of the definition of municipal waste;
- Changes to baseline values and targets; and
- The reporting and monitoring obligations necessary to enable the UK to fulfil it reporting responsibilities under EU law.

Currently across most of the EU the definition of municipal solid waste (MSW) includes household waste and waste which resembles household waste in composition i.e. commercial and light industrial waste (C&I). In the UK what we count as MSW is mainly household waste. C&I waste in the UK totals at 68 million tonnes a year and accounts for more than twice as much waste as household waste.

4.1.6 Review of Waste Policy

In June the Coalition Government announced there will be a full review of waste policy in England, looking at the most effective ways of reducing waste, maximising the money to be made from waste and recycling, and how waste policies affect local communities and individual households.[4]

The overarching aim of the review will be to ensure that the right steps towards a 'zero waste' economy are taken, setting new goals for 2014, 2020 and beyond.

Of particular relevance to the way waste will be managed at the Eco-town, the review will place emphasis on:

- Concentrating on waste prevention and reuse – stopping waste at source;
- Continuing to increase recycling rates, when it's the best option
- Incentivising households and businesses to take action.

4.2 Local

Oxfordshire Waste Partnership's (OWP) vision to maximise waste prevention across the county for the period 2010 - 2020. is set out in the Waste Prevention Strategy. It forms part of the wider OWP Joint Municipal Waste Management Strategy, which was adopted in 2006.

Oxfordshire's key targets are currently to:

- Reduce the growth of municipal waste to 0% per person per annum by 2012
- Achieve a 45% recycling & composting rate by March 2011.
- By March 2020, to recycle or compost at least 55% of household
- Reduce the amount of waste sent to landfill to no more than 81,000 tonnes by 2012/13 and 56,700 tonnes by 2019/20

[4] Press release http://ww2.defra.gov.uk/2010/06/15/waste-policy-review/ [accessed 05/08/2010]

- Reduce the amount of residual waste collected to 715 kg per household or less by 2010/11.

4.3 Eco-town specific

The requirements for the management of waste at Eco-towns are set out in Planning Policy Statement (PPS): Eco-towns (A supplement to PPS1), see section 1.

5 Existing system and performance

The targets in this SWRP and measures to achieve them take into account the existing waste management system provided by Cherwell District Council and its performance.

5.1 CDC Waste and recycling collection system

Cherwell District Council (CDC) provides an alternate weekly collection system for the properties in the district (approx 59,000).

For households, residual waste is collected on one week and co mingled dry recyclables and mixed organics are collected the following week. Blue bins are provided for co mingled dry recyclables (food tins and drinks cans, plastic bottles and containers, newspapers, directories and magazines, paper and card and aerosol cans). Brown bins are provided for mixed organics (food: waste cooked and uncooked, prunings, pet straw and sawdust, grass cuttings, plants and leaves). Glass is not collected at the kerbside, instead residents are encouraged to use bring banks for glass.

Residents of flats are provided with communal bin stores which typically comprise of blue co mingled recycling bins which are emptied one week, and green residual bins which are emptied the next. Brown bins are also provided for mixed organics. Some developments also have black wheeled bins for the collection of glass bottles and jars.

A chargeable bulky waste collections service is provided to all residents for items such as furniture and white goods.

Most dry recyclables are currently delivered to Enstone Community Waste Materials Recovery Facility (MRF) in West Oxfordshire (approx 90%). The other 10% to Helmdon transfer station from where it is transferred to Milton Keynes Community Waste MRF. (This has about 6-18 months before it needs to be re-tendered).

Cherwell District Council rolled out food collection services in October 2009, with everyone in the district being served by April 2010. The mixed garden waste and food waste goes to an in vessel composting facility (IVC) at Ardley (operated by Agrivert). This is in yr 1 of a 15 year agreement.

Most residual waste goes to Ardley Landfill. Residual waste generated in the north of the district goes to Banbury Waste Transfer station and then to Calvert in Buckinghamshire.

5.2 System performance

5.2.1 Recycling rates

2008/09 recycling rate

According to WasteDataFlow in 2008/09 (the most recent complete years worth of data), Cherwell DC achieved a recycling rate of 50%, compared to 42% in Oxfordshire and 38% across the rest of England.

2009/10 recycling rate

Cherwell DC recycling rates are already well above the UK average. According to Cherwell District Council data in 2009/10 14,078 tonnes was sent for dry recycling, (10,579 from the kerbside and 3,498 from bring banks), 15,002 tonnes of mixed organics was sent for composting, and 28,042 tonnes of residual waste was collected.

Taking into account rejects and a small amount of commercial waste, this equates to total waste arising of 57,621, or 970 kg per household of waste material per year, and a recycling rate of 51%, with a dry recycling rate of 25% and an organics recycling rate of 26%

Expected recycling rate for 2010/11

Since 2009 performance data was published on WasteDataFlow, all households have been provided with a food collection service.

Data collected by Cherwell District Council for the first quarter of 2010/2011 compared to the same period in 2009/10 indicate an increase in overall recycling rates by approximately 7%. Dry recycling rates increased by 1% during this period, while organics recycling has increased by 6%, which is strong evidence for the effect of the food collection on overall recycling rates.

Based on the performance in the first quarter of 2010/11, Cherwell District Council expect a recycling rate of 58% in 2010/11.

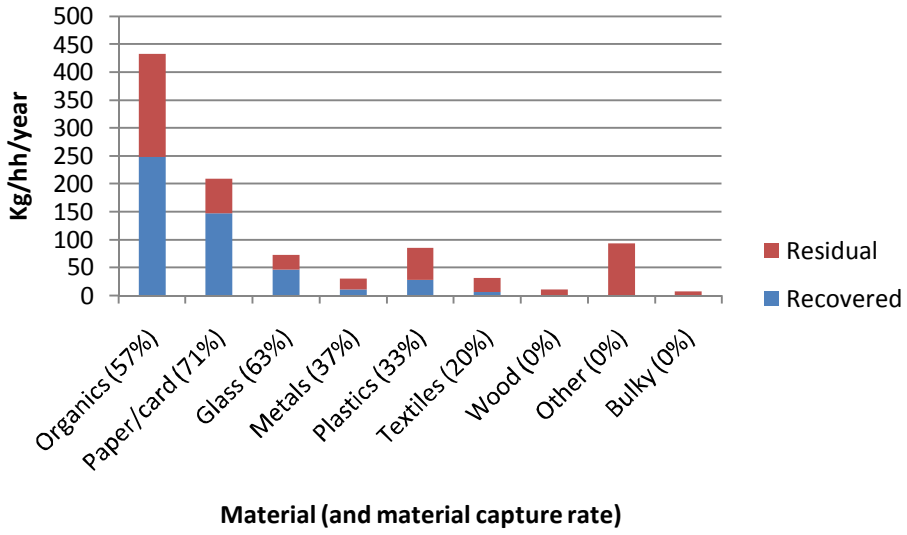
5.2.2 Material recovery

An estimate of individual material capture rates has been put together using actual waste and recycling data provided by Cherwell District Council and WasteDataFlow and compositional data for Cherwell District Council in a recent audit[5]. The estimate is based on 2009 material capture data as it is the most recent full years data in WasteDataFlow.

Materials are listed according to the seven priority materials listed in the WSE 2007, bulky waste (which could highlight opportunities for reuse) and other waste (which includes non recyclables items such as nappies, household hazardous waste etc).

[5] Oxfordshire Waste and Partnership two Season Waste Composition Report, prepared by SKM Enviros (2010).

Figure 1 Material capture rates



6 Targets

PP1 requires that waste and recycling targets set for Eco-towns should be substantially more ambitious than the 2007 national Waste Strategy targets for 2020. Targets should be set for waste levels, recycling levels and landfill diversion.

There are currently uncertainties relating to the treatment of residual waste in Oxfordshire due to the proposal of Energy from Waste as a treatment option. Residual waste treatment will affect the proportion of residual waste that is diverted from landfilled and it may be pertinent to set targets based on recovery of residual waste. Due to these uncertainties this SWRP sets targets for a recycling rate, and residual waste levels only – at this stage landfill diversion is directly linked to the recycling rate. The recycling rate will include dry recycling, composting / in vessel composting and reuse.

6.1 Targets to which the Eco-town is subject

WSE 2007

- 40% recycling rate by 2010.
- 45% recycling rate by 2015
- 50% recycling rate by 2020

- 450kg per person of residual waste by 2010.
- 225kg per person of residual waste by 2020.

Oxfordshire Waste Partnership

- 45% recycling & composting rate by 2011.
- 55% (at least) recycling & composting rate by 2020

6.2 Current performance against targets

In 2009/10 Cherwell District Council achieved the following for household waste:

- **a recycling and composting rate of 51% comprising a composting rate of 26% and a dry recycling rate of 25%.**

  Not only does current recycling and composting performance exceed the WSE 2007 target for 2010 (40%) and the OWP target for 2011 (45%), it also now exceeds exceed the WSE 2007 target for 2020 (50%) and is on track to exceeding the OWP target for 2020 (55%)

- **479 kg per household of residual waste, or 200 kg per person.**

  Again performance is well in excess of the WSE 2007 residual waste target for 2010 (450kg per person), the OWP target for 2010/11 (300kg per person) and it also exceeds the WSE 2007 target for 2020 (225 kg per person)

6.3 Eco-town waste and recycling targets

To maintain its high sustainability credentials as an Eco-town, the development must not only meet and exceed the WSE 2007 and OWP targets, but must be ambitious enough to stand out from the high performance already being achieved by CDC.

A number of material capture scenarios were investigated to assess potential performance.

Scenario 1

This is estimated to be the current scenario: with all material recovery rates as per Table 1 and food waste recovery increased to achieve the overall recycling rate. (To allow for the recent improvement to the food waste collection service).

Scenario 2

This scenario assumes material capture rates equivalent to the current maximum dry recyclables capture rate (65%) are achieved, with the exception of garden waste where capture remains at 92%, and 'other' (which includes WEEE and household hazardous wastes) where capture is increased to 10%

Scenario 3

This scenario assumes a 100% participation, and that both organics streams achieve 92% capture (as estimated to be the current capture rate for garden waste), and that 'other' waste achieve a 20% capture rate. A capture rate of 80% is assumed for all other scenarios.

Table 1 Material capture rate scenarios

Material	2009	Scenario 1 (Current)	Scenario 2	Scenario 3
Garden waste	92%	92%	92%	92%
Food	15%	64%	65%	92%
Paper/card	65%	65%	65%	80%
Glass	36%	36%	65%	80%
Metals	37%	37%	65%	80%
Plastics	30%	30%	65%	80%
Textiles	20%	20%	65%	80%
Wood	0%	0%	10%	80%
Other	0%	0%	65%	20%
Bulky	0%	0%	65%	80%
Recycling rate	**51%**	**58%**	**73%**	**80%**
Total recycling (kg/hh)	500	560	700	770
Total residual (kg/hh)	470	410	270	200

Following consultation with the WWE Workstream Working Group, and based on current recycling performance of CDC, and the analysis of potential capture of individual materials, the following ambitious targets have been set:

For the percentage recycled/composted/reused

- 70% from initial occupation
- 80% by 2020

For residual waste levels

- 300 kg per household per year (120kg per person per year) from initial occupation
- 200 kg per household per year (80kg per person per year) by 2020

Reducing waste levels

In addition to the scenarios detailed above for recycling targets, measures to reduce and reuse quantities of recyclable materials will have a significant impact on total waste production. Initiatives that focus on waste minimisation strategies are extremely difficult to quantify, however future sustained communications drives and education programmes conducted by CDC and the Ecotown community governance company are likely to further reduce the residual fractions in all three scenarios that are sent to landfill.[6]

While the majority of waste from the development will be household waste, the reuse, recycling and composting targets will apply to all sources of municipal waste across the development including: schools waste, and commercial waste.

[6] http://www.wrap.org.uk/local_authorities/research_guidance/monitoring_and_evaluation_guidance/

7 How the targets will be achieved, monitored and maintained

The kerbside collection services and bring bank for glass, currently provided by CDC, will be extended to all residents across the eco development. Commercial facilities will need to arrange their own collections, and will be supported to develop their own waste strategy action plans to minimise waste and improve recycling.

7.1 Supplementary measures

In order to further increase performance beyond current CDC levels, and achieve and maintain the targets set out above, the service will be supplemented by a number of measures

- Kerbside and bring bank recycle bins
- A community re-use centre
- Home/community composting
- Ongoing awareness and education campaigns
- Incentive schemes
- Weight based monitoring system relative measuring performance against the targets.

7.1.1 Community reuse centre

Ongoing awareness and education campaigns will emphasise the importance of waste prevention and reuse. A community reuse centre will be established either within the Eco business centre or as part of the Community Facility building.

Alternatively, a remote reuse service for bulky goods, operating virtually via the community information network, may be established. This may include regular 'swap shop' days where the community centre hosts (monthly) events which will encourage residents to reuse items and/or swap them. Remaining bulky items will then removed for reuse. Discussions with an existing Social Enterprise company are ongoing relative to establishing and managing this service.

Social enterprise / Local Authorities partnerships are becoming increasingly successful in the provision of bulky waste collection services. They often provide more than simply a waste collection service and in addition provide repair services and training / volunteering opportunities thus linking to PPS1 E10 which requires job creation within the town.

The role of reuse as a contributor to waste reduction is often hard to quantify. It is recommended that this service is provided which could also act as a trial pilot data gathering programme.

It is anticipated that in addition to bulky waste, the organisation is the focal point for any irregular wastes (with the exception of healthcare waste) generated at the site and will provide drop off points or arrange collections for: textiles, non bulky wood waste, books, toys and any household hazardous waste. The organisation would then arrange onward distribution or removal of any items that are not reused in the eco development.

7.1.2 Home and community composting

Composting of green waste will be encouraged. A free home composting unit will be available to residents as they move in for anyone wishing to participate. Regular mixed organics collections will also be provided.

Community composting will also be developed, and land will be available at the allotments to accommodate a small scale community composting project. This would need to be 'championed' by a residents group. The eco development governance organisation would initially facilitate this, which may in the future be taken over by a Social Enterprise.

7.1.3 Kerbside collection service

Households

Households will be provided with CDC's three bin alternate weekly system:

- A brown 240 litre wheeled bin for mixed organics
- A blue 240 litre wheeled bin for co-mingled recyclables
- A green 180/190 litre wheeled bin for residual waste. Currently a 240 litre bin is provided but CDC are looking to move to 180/190 litre size from 2011. The smaller residual bin size is provided to residents at the Eco-town.

Kitchen caddies will be provided to all residents for food waste, which can then be emptied into the brown wheelie bin.

Space for internal storage of material, prior to depositing in outside wheeled bins will be provided for three waste streams: comingled recyclables; glass and residual waste.

Adequate space for external storage has been incorporated into the design of the Exemplar site.

Flats

Flats will be provided with CDC's system for flats:

- Brown 240 litre wheeled bins for mixed organics
- Blue 240 litre wheeled bins for co-mingled recyclables
- Green 240 litre wheeled bins for residual waste.

Kitchen caddies will be provided to all residents for food waste, which can then be emptied into the brown wheelie bin.

Space for internal storage of materials, prior to depositing in outside wheeled bins will be provided for three waste streams: comingled recyclables; glass and residual waste. Reusable bags will be provided for transporting recyclables to the communal facilities.

Adequate external storage space to accommodate these bins has been incorporated into the Exemplar design.

7.1.4 Bring banks

Provisions for glass collection will be equivalent to those already provided by CDC: appropriate bring banks for glass will be located within the centre of the development for use by all residents.

Bring banks can also be supplied for textiles although it is anticipated that this service will be provided by the bulky waste service provider (see section 7.1.1).

7.1.5 Performance based charging

The WWE Workstream Working group supported the concept of itemised charging for waste management. This section outlines the discussions, however, further investigation and agreement as to its appropriateness and workability is needed.

A number of different charging models have been discussed: and a performance based charging system was favoured to incentivise recycling as opposed to charging for residuals disposal.

A performance based charging scheme would require bins to be chipped and for the CDC/OCC waste collection vehicles servicing the Exemplar site to be fitted with bin weighing equipment. CDC/OCC have confirmed that this is possible, however the viability of such a system would require further investigation in the future, as substantial capital investment would be required from CDC/OCC.

For households the performance based charging system would be applied individually, and to flats, where communal facilities will be provided, an average charge will be applied (dependant on communal performance and the number of residents per household).

While the details for such a system are beyond the requirements of this plan, the following is elements may form the basis of such a scheme (further investigation and discussion pending):

- Charges based on residual waste and co-mingled recyclables so as not to dissuade home /community composting.
- That the charging system is in place of, rather than in addition to, the waste management component of council tax.
- Performance is linked to the percentage of dry recycling of the total kerbside collected material (not including organics), as opposed to direct quantity, so as not to 'penalise' those not generating as much recyclable waste
- The system is accompanied by a comprehensive education programme to ensure that amounts of contaminants in the recyclable stream does not increase

For a scheme of this nature to be implemented, CDC would need to commit to installing the additional bin weighing devises on their collection lorry and the necessary administrative and

council tax reduction/rebate mechanism. This option should therefore be maintained for future consideration pending further investigation and discussion.

7.1.6 On-going education and support campaigns

Fundamental to the achievement of the targets set out in this SWRP is community awareness through appropriate publicity and education which will be organised by the eco development governance organisation established by the developer. Residents will be actively encouraged to participate in achieving the targets, which are significantly higher than previously experienced. To facilitate this all new residents will be met by the waste/sustainability officer, funded by the governance organisation, who will explain the waste management system, the targets and provide advice on how to minimise waste.

Education, support and awareness will need to be ongoing and should be reported back to residents through community forums and information portals; to enable residents to monitor the eco developments performance.

Funding through WRAP or central government organisations may be available for undertaking education campaigns. Further research would be required in the future to assess the viability of such options.

7.1.7 Commercial waste

Commercial premises will be required to meet the same recycling target as households. Each commercial operation will be supported to produce a waste management plan to identify how the targets are to be achieved.

Bin types and sizes will be allocated according to the type of premise. Commercial waste reduction will be undertaken based on the type of enterprise and the type of waste produced. Retail / business units and the proposed primary school are likely to have a high percentage of paper and card which is able to be accommodated. The eco pub and proposed service industry developments will have a larger amount of food waste. Due to the introduction of food waste collections throughout the Eco-town exemplar site these needs will be catered for by the wider recycling collection services for the private sector.

Commercial facilities will also be encouraged to utilise the reuse centre in events such as office fit outs.

Private arrangements will be made for ad hoc wastes such as small quantities of hazardous waste and medical waste.

7.2 Monitoring

The EWW Workstream working group discussed a performance based charging system to incentivise participation. This would require bins to be chipped and bin weighing to be installed on vehicles servicing the Eco-town and would provide the mechanism for monitoring against the targets. The scheme would apply to both households and commercial premises.

Flatted properties will have access to communal recycling facilities: performance will be monitored per block of flats as opposed to per unit.

As an alternative to chipping bins and monitoring performance on a household level, waste and recyclable arisings will be monitored on a development-wide basis: readings will be taken before and after servicing the Eco-town. It is likely that this would happen periodically as opposed to each service.

In addition, periodic residual waste audits, organised and funded by the governance organisation, will be carried out to identify opportunities to increase material capture.

8 Facilitating performance by design

The achievement of the targets set out in this plan will be facilitated through the design of the development, both at the kerbside and for communal facilities. Also considered are the design requirements of the Code for Sustainable Homes.

8.1 Internal storage

Kitchens will incorporate storage for three waste streams: comingled recyclables; glass, and residual waste. Kitchen caddies will be provided for food waste: these will not require fixed storage space.

8.2 External storage

Kerbside properties will be provided with external storage space for three wheeled bins, as in accordance with the existing CDC kerbside collection scheme:

- 1 x 240 litre wheeled bin for mixed organics
- 1 x 240 litre wheeled bin for co-mingled recyclables
- 1 x move to 180/190 wheeled bin for residual waste. Currently a 240 litre bin is provided but CDC are looking to move to 180/190 litre size from 2011. Residents at the Eco-town will be provided with the smaller size.

Flats will be provided with communal facilities consisting of 240 litres wheeled bins for each material stream.

8.3 Additional design requirements

8.3.1 Bring facilities

Communal facilities will be provided for glass; textiles, and bulky waste (to include wood). These will be located in within the commercial / retail zone within the Exemplar site. This is identified on the site drawings.

8.3.2 Composting

Land at the allotment areas has been designated to accommodate a community composting. In addition, every home will be provided with a composting unit available for residents that wish to undertake green waste recycling at home.

8.3.3 Community reuse

Either a unit in the Eco-business centre, appropriate space within the Community Facility building or one of the commercial units along the Exemplar High Street will be designated to accommodate the reuse centre and associated storage, repair and training facilities.

Iternatively, a remote reuse service for bulky goods, operating virtually via the community information network, may be established. This may include regular 'swap shop' days where the community centre hosts (monthly) events which will encourage residents to reuse items and/or swap them. Remaining bulky items will then removed for reuse. Discussions with an existing Social Enterprise company are ongoing relative to establishing and managing this service

8.4 Storage and collection of the priority waste materials

PPS1 requires the provision of waste storage arrangements which allow for the separate collection of each of the seven priority waste materials as identified in the Waste Strategy for England 2007: organics, plastics, glass, metals, paper/card, wood and textiles.

In order to utilise the already high performing waste collection system provided by CDC, this SWRP proposes to store and collect **plastics, glass, metals and paper/card** as co-mingled recyclables.

Food and garden waste would be collected as mixed **organics** and stored/collected separately. Residents will have the opportunity to home compost organics, and is anticipated that a community composting scheme will be established at a later stage of the project.

It is anticipated that a Social enterprise will operate the bulky waste collection service and swap shop. In addition to bulky waste it is recommended that this service is the focal point for any none regular wastes (with the exception of healthcare waste) and would therefore include any non bulky **wood waste**, and **textiles**, in addition to any household hazardous waste.

8.5 Code for Sustainable Homes.

The Code for Sustainable Homes (CSH) provides a comprehensive measure of the sustainability of new homes, ensuring that sustainable homes deliver real improvements in key areas including waste.

Dwellings are rated on a scale from Level 1 to level 6, where level 6 is the highest. For each design category there are mandatory standards, on top of which each scores a number of percentage points.

The Code assigns one or more performance requirements (assessment criteria) to all of the environmental issues. When each performance requirement is achieved, a credit is awarded (except the four mandatory requirements with no associated credits). The total number of credit available to a Category is the sum of credits available for all the issues within it.

Mandatory minimum performance standards are set for some issues. For four of these, a single mandatory requirement is set which must be met, whatever Code level rating is sought. Credits are not awarded for these issues. Confirmation that the performance requirements are met for all four is a minimum entry requirement for achieving a level 1 rating.

Further credits are available on a free-choice or tradable basis from other issues so that the developer may choose how to add performance credits (converted through weighting to percentage points) achieve the rating which they are aiming for.

Storage of non-recyclable waste and recyclable household waste is one of the unaccredited issues, for which a maximum number of tradable credits is four. Composting, is also allocated one tradable credit.

Table 1 sets out how the development design meets the CSH standards[7] and includes comments for how these standards will be met, or where an alternative will be provided.

Table 2 CSH Standards and comments

Criteria	Credits available	Comment
Storage of household waste The space allocated for waste storage should be able to accommodate containers with at least the minimum volume recommended by British Standard 5906 (British Standards, 2005) based on a maximum collection frequency of once per week. This is 100 litres volume for a single bedroom dwelling, with a further 70 litres volume for each additional bedroom. A Local Authority recycling scheme offering containers equal to or greater than this volume would meet the requirement, providing adequate external space is allocated to accommodate them. If the Local Authority provides containers with a smaller volume, or if no Local Authority scheme exists, the developer will need to ensure and demonstrate that the minimum volume according to BS 5906 2005 and defined above, is met. All containers must be accessible to disabled people (checklist Was 1), particularly wheelchair users, and sited on a hard, level surface. To ensure easy access, the containers must not be stacked.	Mandatory No credits available	The minimum performance standard for Storage of non-recyclable waste and recyclable household waste would be met through providing the CDC waste and recycling system, which meets this standard.

[7] Code For Sustainable Homes Technical Guide Version 2, Communities and Local Government (2009)

Storage of recyclable household waste Dedicated internal storage for recyclable household waste can be credited where there is no (or insufficient) dedicated external storage capacity for recyclable material, no Local Authority collection scheme and where the following criteria are met: At least, three internal storage bins: • all located in an adequate internal space • no individual bin smaller than 15 litres • with a minimum total capacity 60 litres	Credits available: 2	Not applicable

A combination of internal storage capacity provided in an adequate internal space, with either: • a Local Authority collection scheme; or • No Local Authority collection scheme but adequate external storage capacity. **Local Authority Collection Scheme** In addition to a Local Authority Collection Scheme (with a collection frequency of at least fortnightly) at least one of the following requirements must be met: • where recyclable household waste is sorted **after** collection and at least a single 30 litre bin is provided in an adequate internal space. • where materials are sorted **before** collection and at least three separate bins are provided with 30 litres total capacity. Every bin must have a capacity of at least 7 litres and be located in an adequate internal space. • an automated waste collection system which collects at least 3 different types of recyclable waste. **No Local Authority collection scheme but adequate external storage capacity** **For houses and flats**, there must be at least 3 identifiably different **internal** storage bins for recyclable waste, located in an adequate internal space: • with a minimum total capacity of 30 litres • where every bin has at least 7 litres capacity **AND** **For houses**, an adequate **external** space must be provided for storing, at least, three external bins for recyclable waste: • with a minimum total capacity of 180 litres • with no bin smaller than 40 litres • all bins should be located within 30m* of an external door **For blocks of flats**, a private recycling scheme operator must be appointed to maintain bins and collect recyclable waste regularly. Recycling containers must: • be located in an adequate **external** space • be sized according to the frequency of collection, based on guidance from the recycling scheme operator • store at least 3 types of recyclable waste in identifiably different bins • be located within 30m* of an external door * Where strategic reasons outside the control of the developer make it impossible to meet this requirement, the maximum allowable distance is 50m, and a written justification must be provided to the Code Service Provider.	Credits available: 4	The CDC collection scheme will be provided Comingled recyclables will be sorted after collection. Internal storage will be provided for comingled recyclables in both houses and flatted propertied and will accommodate a minimum of a total capacity of 30 litres Glass will be sorted before collection. Internal storage for glass will accommodate a minimum container size of 7 litres. Food waste will also be sorted prior to collection. Internal storage will be in kitchen caddies which will not require fixed storage. External storage will be provided for 2 x 240 litre bins for recyclables (comingled and mixed organics). In place of a third bin, glass will be taken to bring facilities. Flats will be serviced as per the CDC flats waste and recyclables service.

Composting • Individual home composting facilities. **OR** • A local communal or community composting service, which the Local Authority runs or where there is a management plan in place. **OR** • A Local Authority green/kitchen waste collection system (this can include an automated waste collection system). All facilities must also: • be in a dedicated position • be accessible to disabled people • have an information leaflet that is delivered to each dwelling	Credits available: 1	Space will be allocated for a community composting project All houses with gardens and/or allotments will be provided with home composting units in addition to a kerbside green waste collection service.

Definitions

Adequate External Space
Refers to outdoor space supplied for storing non-recyclable waste and recyclable materials. External recycling bins should be located on level hard standing and must be covered and within a reasonable distance of the external door to the dwelling / block of flats.

Adequate Internal Space
Refers to indoor space supplied for storing non-recyclable waste and recyclable materials. Internal recycling bins should be located in a dedicated non obstructive position. This should be in a cupboard in the kitchen, close to the non-recyclable waste bin, or located adjacent to the kitchen in a utility room or connected garage. Free-standing recycling bins placed directly on the floor or in a cupboard do not comply.

9 Consideration of waste to energy

PPS1 requires that consideration has been given to the use of locally generated waste as a fuel source for combined heat and power (CHP) generation for the eco-town.

An Energy Report (ref 4502-UA001881) analysis has been carried out which considers the use of food waste in an on-site anaerobic digestion facility. The analysis identifies the potential for anaerobic digestion to be considered for the supply of renewable energy to the Bicester Eco-town development when the Masterplan, phasing and the respective loading schedule are finalised. Relative to the Exemplar development in isolation, the quantities of food / organic waste generated are unlikely to be sufficient to enable an anaerobic digestion facility to operate commercially.

10 Construction, demolition and excavation waste

PPS1 requires that the SWRP must set out how developers will ensure that no construction, demolition and excavation waste is sent to landfill, except for those types of waste where landfill is the least environmentally damaging option. This requirement will be satisfied by the Site Waste Management Plan (SWMP)

The Site Waste Management Plan (SWMP) is used to plan, implement, monitor and review waste minimisation and management on construction sites. In April 2008 the Site Waste Management Plans Regulations 2008 came into force in England for construction projects costing more than £300,000 excluding VAT.

The SWMP is used to record how waste is reduced, reused, recycled and disposed of on a construction site. This effectively means:

- Recording decisions taken to prevent waste through concept and design.
- Forecast waste produced on site.
- Plan how to reduce, reuse and then recover the forecasted waste.
- Implement and monitor the planned activity.
- Review the SWMP and record lessons learnt.

The SWMP is a live document recording how waste is managed and is updated regularly during the course of the project. Preparing a SWMP encourages the review of current waste reduction and recovery practice levels, highlighting areas were Good and Best Practice can be achieved. The SWMP facilitates the identification and implementation of waste minimisation at the design stage and reuse and recycling opportunities during on site operations, reducing the quantities of construction waste sent to landfill.