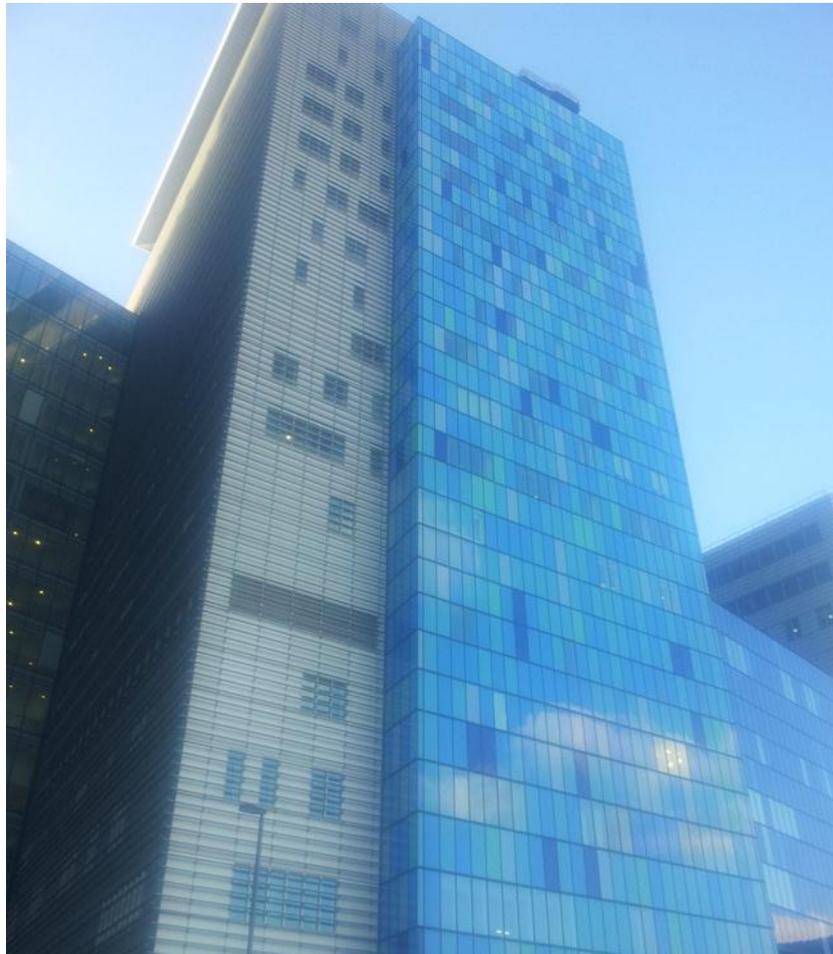


Case study

Case Study: Barts Health NHS Trust Food Waste Collection



Case study outlining food waste collection services from Barts Health NHS Trust hospital sites

March 2014

Food waste collection from Barts Health NHS Trust hospital sites

Barts Health NHS Trust is the largest NHS Trust in England, formed on 1 April 2012, by the merger of the Barts and The London NHS Trust and three other London-based NHS Trusts.

Food waste management plays a key role as part of a much wider remit to improve sustainability and health outcomes, including the Trust's desire to reduce the overall carbon footprint of waste services. Via its sustainability strategy, the Trust aims to reduce food waste by 15% per patient, per year and to be the most sustainable Trust by 2020.

Skanska currently deliver both PFI and non-PFI waste management contracts across the 6 primary hospital sites. Food waste is collected via a sub-contract to CD Waste, who in turn sub-contract Grays Waste Management Ltd. Grays Waste Management collects food waste from four of the six sites with the remaining two¹ due to receive the scheme later in 2014.

Background

Barts Health NHS Trust has a rigorous sustainability strategy in place covering social, financial and environmental aspects of the Trust's operations. The primary desire of the Trust is to manage food waste in line with the waste hierarchy and the Trust views food waste reduction as preferable to collection for treatment by anaerobic digestion. There are a number of initiatives to reduce the amount of food waste generated in the first place. Segregation and collection of food waste for anaerobic digestion is considered to be one of the steps towards zero waste to landfill. Food waste collections were introduced initially as a measure to better meet the waste hierarchy, achieve sustainability goals and comply with Thames Water in minimising food waste disposal via macerators.

¹ *Newham University Hospital currently macerates food waste, whilst Mile End Hospital disposes of its food waste as part of the residual waste stream.*

Food is provided across all hospital sites through a “cook from chilled” model. Packaged food arrives (often in foil containers) for reheating in regeneration kitchens or trolleys² at the sites.

Image 1. Chilled packaged food at The Royal London Hospital



Key facts

Topic	Fact
Number of beds in total	1,939 (for food waste collection hospitals only)
Number of hospitals	6 primary sites: Royal London, Mile End, London Chest, Whipps Cross , St Bartholomew’s and Newham
Charging mechanism	Food waste charged by the tonne
Accepted materials	Food waste and biodegradable liners only

² The chilled or frozen foods have been prepared and packaged via procured food service providers; the regeneration kitchens / trolleys are used to reheat the food until the cooking process is completed.

Topic	Fact								
Internal container types	40 litre caddies, 120 litre bins								
External container types	660 litre bins								
Liner provision	Mix of Soft FM contractor purchase and Trust purchase (site dependant) provision of biodegradable liners								
Collection frequency	Five times per week								
Vehicle type	23 tonne capacity DAF LF 55 250								
Crew size	1 driver, 1 loader								
Annual tonnage	162 tonnes (2013)								
Point of arising	4 hospitals Wards with a total of 1,939 beds Main hospital restaurants for staff and public								
Kilograms per bed per week collected	The amount of food waste collected per bed in 2013 varied between sites: This is influenced by each hospital sites control mechanisms which help to minimise food waste. <table border="1"> <tbody> <tr> <td>London Chest</td> <td>1.7</td> </tr> <tr> <td>Royal London</td> <td>0.8</td> </tr> <tr> <td>St Barts</td> <td>1.4</td> </tr> <tr> <td>Whipps Cross</td> <td>2.4</td> </tr> </tbody> </table>	London Chest	1.7	Royal London	0.8	St Barts	1.4	Whipps Cross	2.4
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Treatment point	AD at J Knight Ltd, London								

Contract procurement

Skanska delivers the waste services under two contracts; a 5 year PFI contract awarded in October 2011 and a 5 year non-PFI contract awarded in October 2013.

When procuring the waste contracts, the Trust was interested in appointing a contractor that shared its vision to change the way that waste is viewed and managed through innovation and future proofing.

The Trust included staff behaviour change as a key element of this service, in order to deliver improved waste disposal compliance through better education and understanding, ultimately resulting in cost savings through better segregation of waste. The latest contract was let through an Office of Government Commerce framework with all 12 companies on the framework being invited to bid. The Trust used an output driven specification in order to allow maximum flexibility for innovation.

Evaluation criteria with weightings towards the behaviour change goal were provided to bidders; with those that responded best to the specification, particularly the behaviour change element, performed well in evaluation.

Food waste collection operations

How food waste is managed at each hospital site depends upon the hospital layout. Since multiple parties, including catering staff, ward staff and logistics porters are involved, the process requires good coordination and communication. As part of this study, two sites that differed in layout were visited to view the different challenges presented by building design; this influenced the implementation of food waste collection services:

- **The Royal London Hospital** is a new build hospital that opened in February 2012 (see cover photo). The site is primarily high rise blocks with purpose built regeneration kitchens and waste storage areas located next to the service lift, reducing manual transport.
- **Whipps Cross University Hospital** consists of multiple low rise buildings of different ages dating from around 1880 to around 1990 where waste services have been retrofitted.

Figure 1 outlines a flow diagram of the processes involved at each site.

Figure 1: Food waste collection process at The Royal London Hospital and Whipps Cross University Hospital

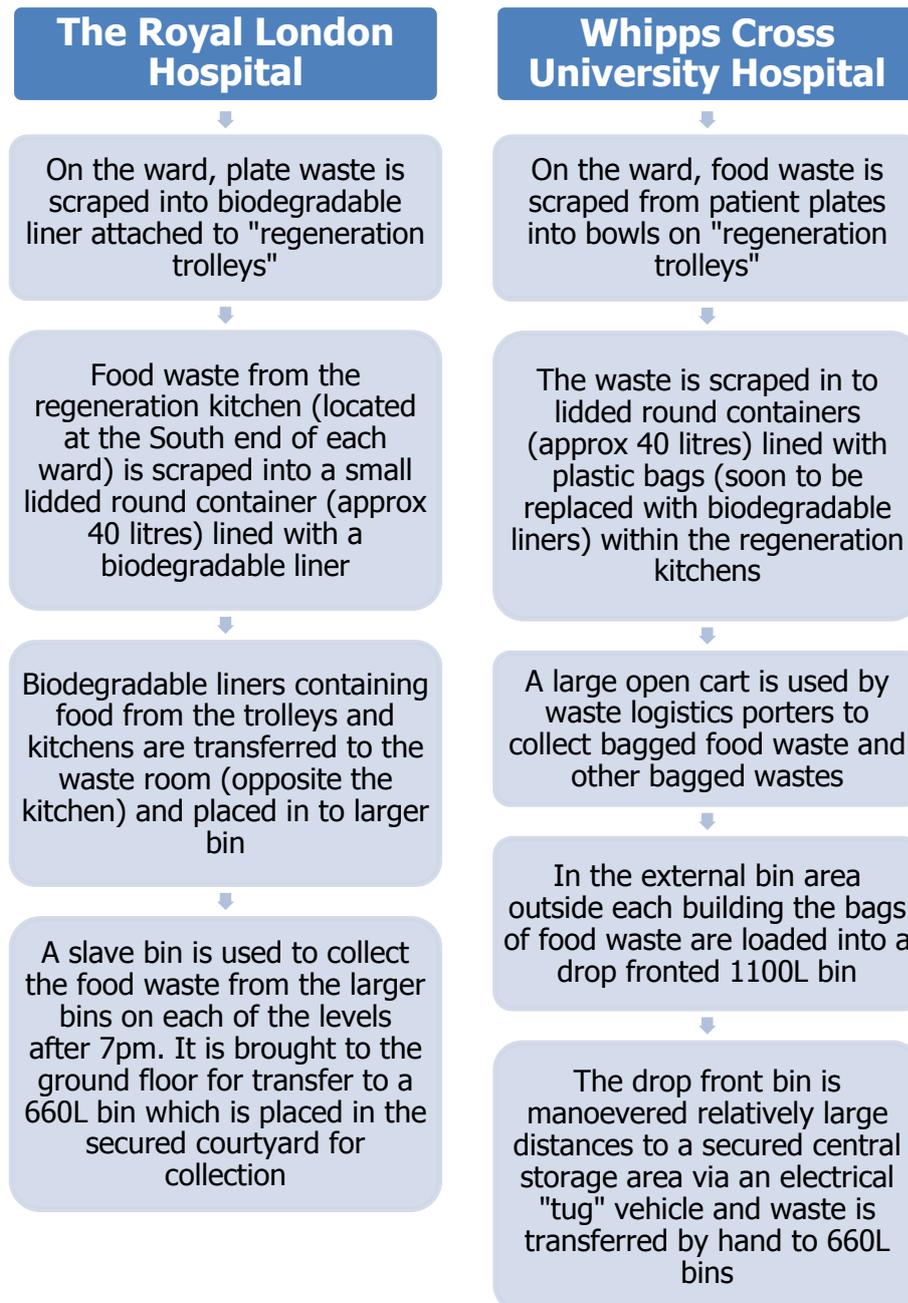


Image 2: One of the older buildings at Whipps Cross Hospital



Image 3: Blue 660L containers in gated waste storage area at The Royal London Hospital



Communications

As part of their contract, Skanska provide a full time dedicated behavioural change team that visit, train, audit and report on waste disposal activity to every clinical area at each hospital site across the Trust. The team visit every bin in each hospital once every six weeks; as a result, they have undertaken 120-130,000 bin audits to date (March 2014). The auditing process highlights any non-conformances that can be acted on through further education. Each audit is reported back to ward or departmental managers; these reports include photographic evidence to visually demonstrate good and bad practice. Subsequent staff training is delivered via a variety of methods, including on a "one to one" basis, in small groups and at Trust Audit Days. The behavioural change team audit residual and clinical waste streams, but will include identifying excessive or inappropriate food waste disposal if it enters the residual waste stream. The amount of food waste placed within the residual waste stream is estimated at less than 5% at all hospitals, except Mile End, where food waste is currently not segregated from the residual waste stream.

Waste initiatives are prominently supported from a high level in the Trust. For example, in 2013, Sir Stephen O'Brien (Trust Chairman) presented Skanska sponsored Certificates of Achievement to the wards who had the best Waste Segregation records within the Trust.

Whipps Cross University Hospital has food waste posters displayed on the walls in all the ward kitchens.

Image 4. A3 food waste poster for ward kitchens at Whipps Cross

Barts Health 
NHS Trust

Food Waste

✓ **Yes please** 😊

✓ Any cooked or uncooked food waste including:

- ✓ Meat, cooked / uncooked, fish, fish bones
- ✓ Pasta, pizza, rice, bread, noodles, cereals
- ✓ Tea leaves, tea bags, coffee grounds
- ✓ Fruit, vegetables, salad & peelings
- ✓ Cooked / boiled eggs & egg shells
- ✓ Plate scrapings / leftover food
- ✓ Cake, confectionery
- ✓ Cheese & butter

✗ **No thank you** ☹️

✗ **Liquid foods such as:**

- ✗ Milk, yogurt, custard, raw eggs, oil, gravy or juices
- ✗ Plastic or metal knives, forks & spoons
- ✗ Food packaging

Liquid foods must be sluiced / rinsed away in the kitchen sink and NOT put in the food waste bags!



DID YOU KNOW?
All food waste disposed of in these green corn starch bags is sent to an Anaerobic Digestion (AD) Facility. The AD process creates power from the heat generated by the food decomposing, making fertilizer for composting.



Performance

The Trust receives a monthly report which includes weights of materials and the associated costs.

Indicator	Amount								
Tonnes per annum diverted	163 ³ (2013)								
Kilograms per bed per week diverted	The average diversion per site is: 1.6 <table border="1" style="margin-left: 20px;"> <tbody> <tr> <td>London Chest</td> <td>1.7</td> </tr> <tr> <td>Royal London</td> <td>0.8</td> </tr> <tr> <td>St Barts</td> <td>1.4</td> </tr> <tr> <td>Whipps Cross</td> <td>2.4</td> </tr> </tbody> </table>	London Chest	1.7	Royal London	0.8	St Barts	1.4	Whipps Cross	2.4
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Incidents of contamination	Food waste contamination within residual waste stream is less than 5% at all hospitals, except Mile End								

³ based on average bin weights for the 12 month period

Potential future improvements

Bart's Health NHS Trust is committed to continuous improvement in moving its waste up the waste hierarchy and is exploring a number of initiatives:

- Implement de-watering of food waste
- Introduce standardised sustainable and potentially biodegradable packaging
- Implement better ordering of meals at a ward level based on daily needs
- Build responsibility for reducing food waste into suppliers contracts

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