Case study: Waste recovery in construction

Quick Win opportunities in multiple hospital refurbishment

Bovis Lend Lease, Manchester, 2006

WRAP has identified good practice and best practice recovery rates for a range of common wastes on construction sites. Best practice reflects the leading approach in the industry but may involve a cost premium or require a significant change in working practice.

The choice of Quick Wins will depend on site circumstances but will tend to be those wastes produced in sufficient quantities to make recovery cost effective, easily segregated on site, with a significantly higher value when segregated; and where local reprocessing options are available.

Project details

BLL was the main contractor for a £380 million project, The New Hospitals Development, in Manchester. The project involved updating facilities at four existing hospitals and building a new children’s hospital at the Manchester Royal Infirmary site. Work included a 1,600 space multi-storey car park. Waste management services at the site were provided by two contractors.

Data on waste arisings were monitored at the site for six weeks during the structural and fit-out phases of the project.

All wastes at this large and complex site were collected in mixed containers. Space was the main factor in this choice although use of segregated skips would have been cheaper. One waste management company collected materials in 360-litre and 660-litre containers each day for segregation off site at its waste transfer station in Greater Manchester. The other waste contractor supplied 8 cu. yd skips as required, transporting the collected materials.

Key facts

- 57% overall recovery of materials achieved.
- Quick Wins identified for structural and fit out phases.
- Quick Wins could have achieved 71% recovery by targeting all waste streams and 68% by targeting packaging, timber and metal wastes alone.

By implementing good practice on three Waste Recovery Quick Wins, Bovis Lend Lease (BLL) could have achieved a 68% recovery rate on its £380 million hospital refurbishment project in Manchester.

What are Quick Wins?

Quick Wins represent good practice. They focus on materials where recovery rates can be increased over baseline performance (standard practice) without the need for significant investment or major changes.

The benefits of Waste Recovery Quick Wins include:

- lower material and waste disposal costs;
- reduced environmental impact;
- improved corporate image; and
- helping to meet sustainability targets and to deliver efficient Site Waste Management Plans.

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materials to its nearby waste transfer station for segregation. The two companies collected approximately 50% of the waste each. Although the waste was mixed, some containers contained only one material.

Packaging (27%), timber (26%) and metals (19%) were the three largest waste streams by volume from the weekly average of 182 m$^3$ (46 tonnes) collected during the monitoring period. Therefore identified as the Quick Wins.

**Recovery performance**

An overall recovery rate of 57% was achieved during the monitoring period. Recovery rates for individual materials (see table) were higher than standard practice but less than good practice for packaging, timber, plasterboard and plastics. Metals recovery was lower than standard practice.

Adopting Quick Wins good practice for packaging, timber and metals wastes would have increased the project’s overall recovery performance to 68%. Adopting good practice for all waste streams would have achieved 71% recovery overall.

Improved performance could have been achieved through:

- greater segregation of different waste streams on site;
- setting recovery targets for different materials;
- imposing clear requirements on sub-contractors;
- monitoring and reporting waste arisings and recovery rates; and
- drawing up and following a Site Waste Management Plan.

<table>
<thead>
<tr>
<th>Material</th>
<th>Case study performance*</th>
<th>Standard practice**</th>
<th>Good practice**</th>
<th>Best practice**</th>
</tr>
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<tbody>
<tr>
<td>Plasterboard</td>
<td>74%</td>
<td>30%</td>
<td>90%</td>
<td>95%</td>
</tr>
<tr>
<td>Timber</td>
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<td>57%</td>
<td>90%</td>
<td>95%</td>
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<tr>
<td>Packaging</td>
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<tr>
<td>Plastics</td>
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<tr>
<td>Metals</td>
<td>74%</td>
<td>95%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Rates are for total waste recovery (i.e. on site and off site).
** WRAP identified recovery rates for the construction industry as a whole.
† The waste management contractors were unable to provide a detailed breakdown.
These figures represent the average overall recovery rate from the two transfer stations. In reality there would be differences between materials.

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