

Material resource efficiency in construction

Supporting a circular economy

Katherine Adams and Gilli Hobbs





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Back cover image

Shredded building insulation foam (courtesy of Green Grinder)

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1 What is material resource efficiency?

Material resource efficiency, put simply, is doing more with less. The aim is to use material resources in the most sustainable manner while minimising environmental impact. This can include:

- using fewer materials
- optimising the use of materials (ie ensuring a long life-span and durability)
- preventing waste
- using materials that are reclaimed or that have a higher recycled content, thereby diverting waste from landfill.

A common framework, which is embedded in EU legislation, is the waste hierarchy (Figure 1). The preferred option is not to produce waste if possible, which results in the greatest cost savings and environmental benefits, followed by reuse, recycling (open and closed loop), recovery (eg energy recovery and certain backfilling operations), then finally disposal (eg to landfill, incineration with no energy recovery).

Material resource efficiency can be applied across a construction project's life cycle, with the greatest benefits at the early stages where more opportunities arise to design out waste and investigate material choices. Greater material resource efficiency requires the various parts of the construction supply chain to work together for a common goal, as a decision by one part could adversely affect another.

This guide provides the background, drivers, benefits and practical advice to assist the construction sector in achieving higher levels of material resource efficiency. There is an increasing awareness that improved material resource efficiency would produce benefits across the industry such as cost savings, reduced environmental impact and an enhanced reputation. At a construction project level, resource efficiency can be implemented at all stages (design, procurement, construction, in use and end of life) using established tools and techniques.

The guidance is intended for those involved in construction projects, especially clients, designers and contractors. It will also be relevant to those who provide products and services for construction projects, such as product manufacturers, suppliers and waste management companies.

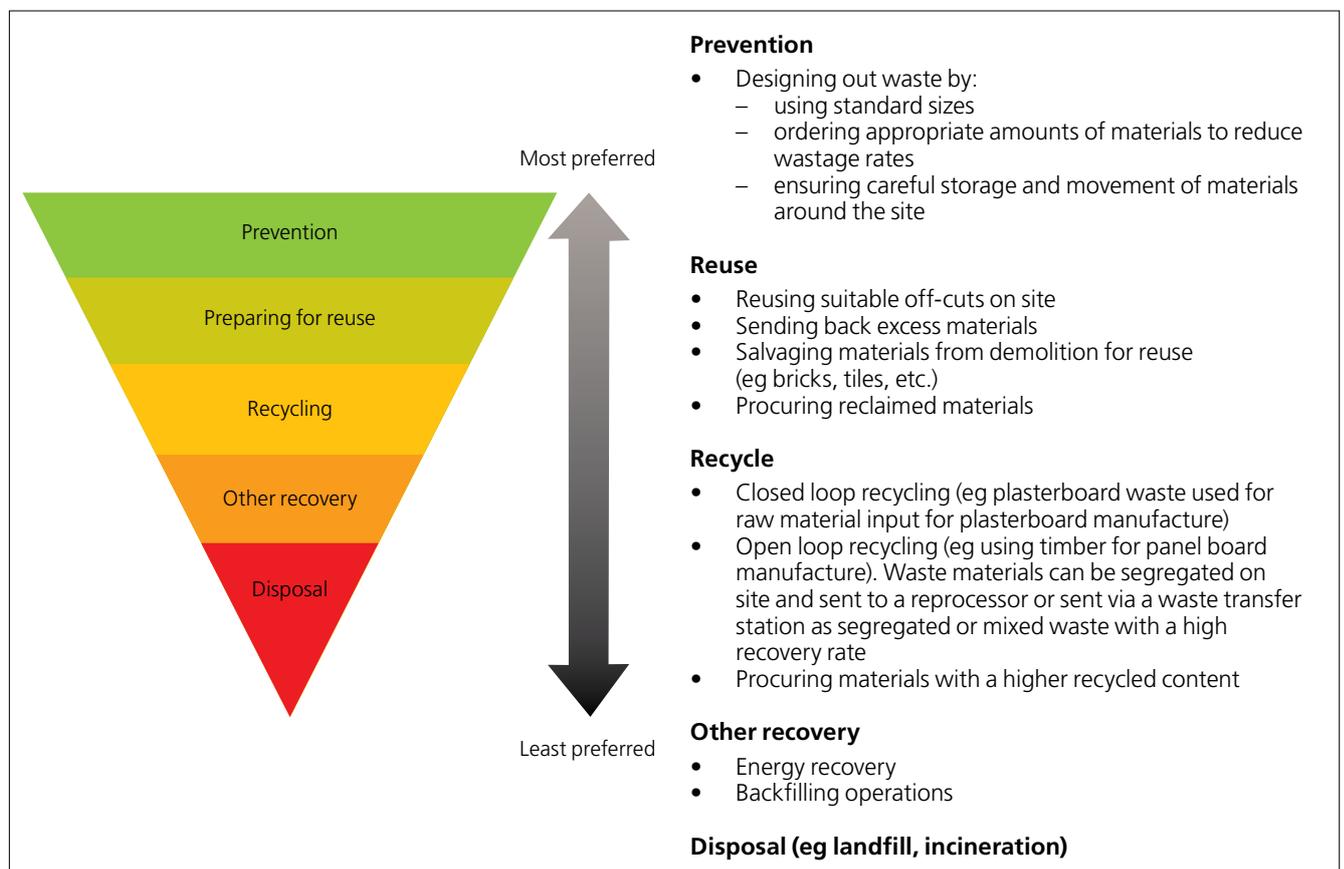


Figure 1: Waste hierarchy



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This guide describes the material resource efficiency requirements in BREEAM. It provides the background, drivers, benefits and practical advice to assist clients, designers and contractors in achieving higher levels of material resource efficiency. It will also be useful to product manufacturers, suppliers and waste management companies.



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