

CONSTRUCTION AND DEMOLITION WASTE SURVEY 2001

EXECUTIVE SUMMARY

Enviros was commissioned by the Environment and Heritage Service (EHS) in March 2002 to undertake a survey of Construction and Demolition waste in Northern Ireland.

Objectives and scope

The aim of the project was to identify the quantity of construction and demolition (C & D) wastes arising in Northern Ireland in 2001. The survey also sought to categorise the wastes by European Waste Classification (EWC) and to quantify the volumes reused and recycled.

The sectors were chosen in order to reflect the industry structure in Northern Ireland.

- ◆ Licensed landfills
- ◆ "Exempt" landfills
- ◆ C & D waste crushers/screeners
- ◆ C & D companies

Methodology

The project was undertaken using a combination of site visits, telephone interviews and questionnaires.

1. Licensed landfills. Survey forms were distributed to 72 private landfill operators in Northern Ireland (17 detailed survey forms 55 simple survey forms) and 9 site visits were undertaken.
2. "exempt"¹ landfills. Telephone interviews were conducted with 14 exempt landfills and 4 site visits undertaken.
3. C & D waste crushers/screeners. The 3 contactable Waste management companies in Northern Ireland who advertise the sale of recycled construction and demolition waste were surveyed by means of site visits.
4. C & D companies. 685 survey forms were distributed to C & D companies.

Survey results

The key results of the survey are given below for each of the four groups:

Licensed landfills

13 responses were received from the detailed survey and 7 from the simple survey. This represents a 28% response rate overall.

¹ Exempt facilities are those sites which do not require a waste license due to the type of wastes being deposited and the short lifespan of the site. Exempt sites must, however, be registered as exempt with the appropriate local authority.

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64% of respondent landfill operators were able to break the C&D waste down into the 2nd level EWC category. Others simply identified it by the 1st level category. This is given below.

Construction and Demolition Waste Breakdown Landfill respondents

EWC Category	Description	Tonnage
17 00 00	Construction and Demolition wastes	115,545
Of which,		
17 01 00	Concrete, bricks, tiles, ceramics	84,405
17 02 00	Wood, glass, plastics	195
17 05 00	Soil, stones and dredging spoil	5,450
17 09 00	Other Construction and Demolition Wastes	3,734

Exempt landfills

18 sites were identified as having planning permission for the infilling of land and had no waste licence. The telephone survey and site visits revealed the following:

- ◆ Four sites were now complete and closed
- ◆ Five sites were active for C&D waste
- ◆ Three operators could not/did not complete the survey
- ◆ Two sites were licensed

The five respondent sites disposed of 9,951 tonnes of C&D waste in 2001. This comprised bricks, rubble, soils and clay, although a full breakdown of the waste by type was not achieved.

C & D waste crushers/screeners

Information relating to the crushing and screening of C&D waste was obtained from three of the four identified waste contractors crushing/screening C&D waste in Northern Ireland. The fourth company was not contactable.

The quantities and types of C&D waste handled by the crusher/screener respondents and the treatment methods for these wastes are listed below.

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C&D Waste Handled by Crusher/Screeners Respondents

EWC Category	Description	Tonnage
17 01 00	Concrete, bricks, tiles, ceramics	10,000
17 02 00	Wood, glass, plastics	2,854
17 04 00	Metals	120
17 05 00	Soil, stones and dredging spoil	6,160
17 09 00	Other Construction and Demolition wastes	43,680
<i>Total</i>		<i>62,814</i>

Treatment Methods of Crushed/Screened C&D Waste

EWC Category	Landfilled	Reused	Transferred /Recycled	Total
17 01 00		10,000		<i>10,000</i>
17 02 00			2,854	<i>2,854</i>
17 04 00			120	<i>120</i>
17 05 00	960		5,200	<i>6,160</i>
17 09 00		43,680		<i>43,680</i>
<i>Total</i>	<i>960</i>	<i>53,680</i>	<i>8,174</i>	<i>62,814</i>

C & D companies

Of the 686 companies sent surveys, a total of 126 responses were received. The total waste produced and disposed of by respondents to the survey is shown below.

Construction and Demolition Waste Reported by Respondents, by Stratum

Stratum	Reused (tonnes)	Recycled (tonnes)	Other Disposal (tonnes)	<i>Respondents Total (tonnes)</i>
45.1	73,068	4,804	41,986	<i>119,858</i>
45.2	189,102	10,567	429,888	<i>629,558</i>
45.3	12	189	3,975	<i>4,176</i>
45.4	5,110	8,189	6,969	<i>20,268</i>
<i>Total</i>	<i>267,292</i>	<i>23,749</i>	<i>482,819</i>	<i>773,859</i>

The respondents were asked to break down the wastes according to EWC category and the responses are shown below.

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Waste Breakdown by Level 2 EWC Category

EWC Category	Description	Waste Arisings (tonnes)
17 00 00	Construction & Demolition wastes	773,859
Of which,		
17 01 00	Concrete, bricks, tiles and ceramics	92,382
17 02 00	Wood, glass and plastic	15,788
17 03 00	Bituminous mixtures, coal tar and tarred products	69,587
17 04 00	Metals (including their alloys)	3,453
17 05 00	Soil (including excavated soil from contaminated sites), stones and dredging spoil	540,562
17 06 00	Insulation materials and asbestos containing construction materials	1,687
17 08 00	Gypsum-based construction material	633
17 09 00	Other construction and demolition wastes including mixed wastes	49,768

Key Findings

Licensed landfills

The survey of private licensed landfill operators estimates that over 800,000 tonnes of C&D waste was accepted in 2001 at privately operated facilities. Of this very little was reported as being reused for engineering and capping purposes. However, this does not represent the total quantity of C&D landfilled as it excludes waste sent to Council operated landfills. Future surveys should be widened to include Council operated landfills.

The extent and quality of the survey returns also highlighted the need for annual waste returns to be a licence requirement, as this is the only method of obtaining accurate information on the quantity of C&D waste handled at landfill sites.

Exempt landfills

There were less exempt landfill facilities in Northern Ireland than expected and therefore less C&D waste disposed of to these facilities for the purposes of agricultural land improvement, etc. It was estimated that less than 25,000 tonnes of C&D waste were disposed of in this manner.

Sites may not be registered as exempt or have the appropriate planning permission. This would lead to sites not being identified for the survey and the quantity of waste handled via this route being underestimated.

Therefore, consideration needs to be given to developing a method of for identifying facilities that use C&D waste for the purposes of agricultural land improvement, etc, pending the introduction of waste management licensing regulations.

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C & D waste crushers/screeners

The survey highlighted that less than 100,000 tonnes of C&D waste is currently being processed by crushers/screeners. However the number of crushers/screeners processing C&D waste is likely to increase due to increased recycling markets, landfill constraints and the Aggregate Tax. Therefore systems should be put in place to monitor the quantities of C&D waste handled at such facilities on an annual basis, under waste management licensing.

C & D companies

This element of the overall C&D survey has the potential to provide valuable insight into the production patterns of C&D waste arisings in the future.

The quality of responses to this survey were generally high with the C&D companies appearing to have a high level of understanding of the types and quantities of wastes they handle. It should be noted for future surveys that the simplicity of the survey form appeared to contribute to the quality of the response.

However, carrying out the pilot survey has highlighted a number of issues that need to be addressed if future surveys are to produce more accurate data with acceptable confidence levels.

The survey sample gives an indication of the total C&D waste produced, reused, recycled and disposed in Northern Ireland but the analysis shows that the results are highly variable, with a total estimated waste arisings of 5,000,000 tonnes and a confidence range of nearly 6 million tonnes. This large range highlights that the estimated total is statistically highly variable.