


Waste Arising from Demolition

Workshop by
Martin Bjerregaard



Introduction

Demolition Waste: Time for More?

Presentation

- **Advances in Demolition**
- **The ICE Demolition Protocol**
- **Site Waste Management Plans**
- **Web Resources**
- **Health & Safety**
- **Sustainability**

Workshop:

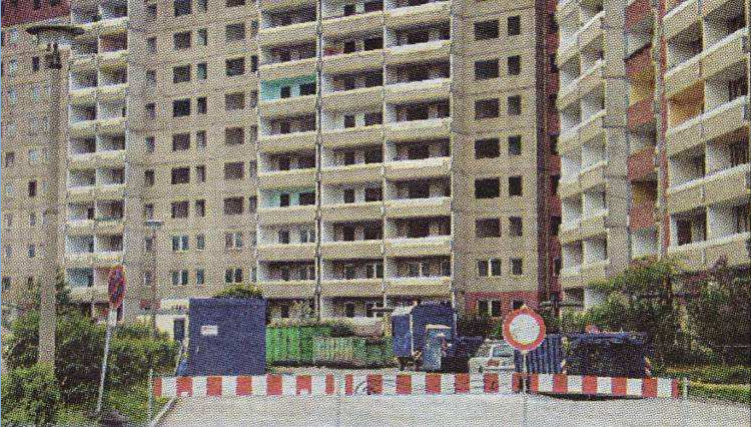
- **Client's Duty of Care**
- **End of Life directive for buildings?**
- **Design for Demolition**



Selective Demolition in action



Innovation



Stockpile of construction materials



Innovation



New housing from concrete panels of high rises



Efficiency



Selective Demolition in action

Waste Segregation



Selective Demolition in action

Cost - Benefit



Selective Demolition in action

Demolition Protocol

The ICE Demolition Protocol

<http://icextra.ice.org.uk/tlml/demolition>

“...shows how the production of demolition material can be linked to its specification as a high value material in new buildings.”

“A resource efficiency model for the demolition and construction industry”

Supporting Documents from WRAP at <http://www.aggregain.org.uk/demolition/>



Demolition Protocol in Action



Well Documented Demonstration Projects



Demolition Protocol in Action



Well Documented Demonstration Projects



Demolition Protocol in Action



Well Documented Demonstration Projects



Demolition Protocol in Action



Well Documented Demonstration Projects



Site Waste Management Plans

**DTI Site Waste Management Plans (SWMP)
“Guidance for Construction Contractors
& Clients - Voluntary Code of Practice”**

“...to help the construction industry face the major challenge of changes in waste management legislation.”

www.constructingexcellence.org.uk



Site Waste Management Plans



Hazardous of not using them

Health & Safety



Decontamination in action

Health & Safety



Demolition in action

Sustainable Resource Management Tool

Project description

Please input details of your project below.

Project name	<input type="text" value="IEMA Headquarters"/>
Description	<input type="text" value="situ demolition with new build"/>
Building size (in square metres)	
Floor area	<input type="text" value="5000"/>
Materials to be processed (in metric tonnes)	
Concrete	<input type="text" value="4000"/>
Masonry	<input type="text" value="3000"/>
Waste	<input type="text" value="1000"/>



Sustainable Resource Management Tool

Distances per journey (in miles)

Site to recycling facility	<input type="text" value="20"/>
Site to disposal	<input type="text" value="100"/>
Site to aggregates supplier	<input type="text" value="50"/>
Recycling facility to user	<input type="text" value="20"/>
Percentage urban/rural travel	
Percentage of miles urban	<input type="text" value="30"/>



Sustainable Resource Management Tool

Scenarios

Scenario	A	B	C	D	E
Recycled	0%	20%	40%	60%	80%
Demolition	Traditional demolition with no sorting of wastes	Traditional demolition with sorting of bulk concrete wastes	Demolition with sorting of bulk concrete and masonry wastes	Selective demolition with soft stripping and sorting of demolition materials	Selective demolition with full soft stripping and sorting of demolition materials
Recycled material breakdown: percentages by type					
Engineering fill	0	100	50	33	25
Roadbase material	0	0	50	33	25
Concrete aggregate	0	0	0	33	50
Scrap rebar steel	0	90	90	90	90



Sustainable Resource Management Tool

Total Indicative Cost of Project

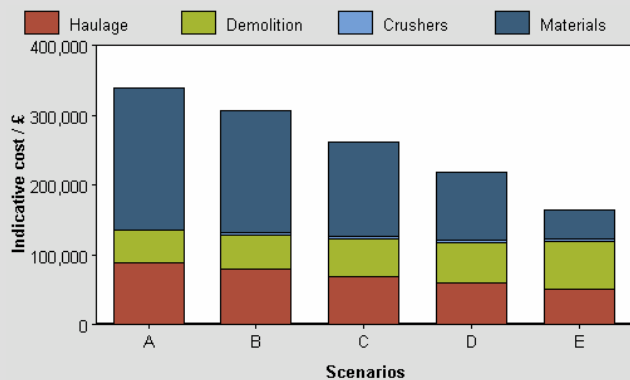


Figure 1: total indicative cost of the project under the scenarios, broken down within each scenario into major costing groups.



Sustainable Resource Management Tool

Fuel Use During Project

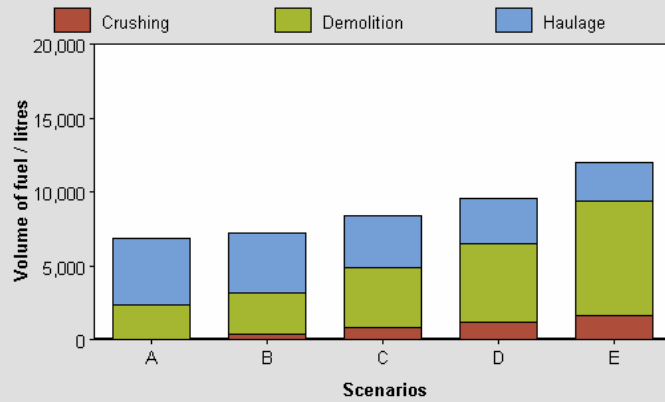


Figure 4: total fuel use, broken down within each scenario into the main processes that consume fuel.



Sustainable Resource Management Tool

Volume of Truck Movements

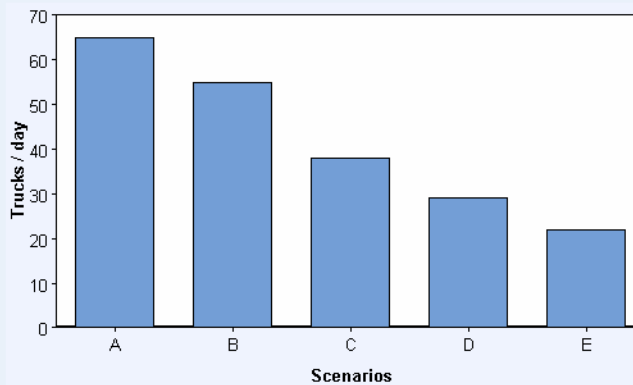


Figure 6: average number of truck journeys required per day to transport materials.



Carbon Neutral

Results also include

- CO₂ emissions split:
 - Recycling process
 - Demolition process
 - Haulage process

Can contribute towards designing a carbon neutral development



Workshop

Issues for discussion facilitated:

Client's Duty of Care

End of Life directive for buildings?

Design for Demolition



Thank You!

Martin Bjerregaard

Golder Associates (UK) Ltd.

Tel: 01245 291 946

Mob: 07971 49 29 57

mbjerregaard@golder.com

