

Bricks and concrete removal

Introduction

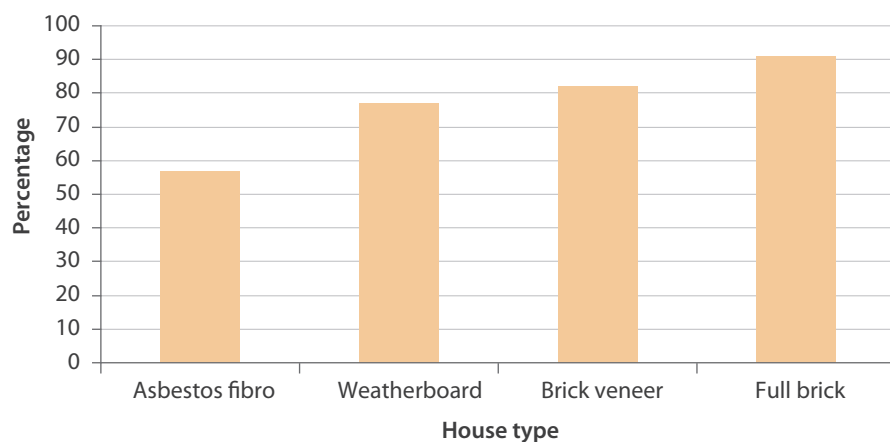
Used bricks and concrete have a good chance of being reused or resold, making saving on landfill and disposal costs easier. A strong demand for recovered bricks and concrete means that all bricks and concrete can be reused or recycled.

- High quality bricks can be resold.
- Everything else can be crushed and used as a landscaping medium, as road base and in a range of other uses.
- Even reinforced concrete can be crushed and separated from reinforcing steel (which is also recycled).
- Cleaning mortar from second-hand bricks is unnecessary.
- Broken or chipped bricks can be crushed, graded and used in road base, driveways and for drainage. Standards encourage the use of recycled aggregate in works such as road construction.
- Clean brick and concrete materials are a cost effective alternative to the use of sand and gravel and can be used on the site they were removed from.
- For large demolition works it may be cheaper to process bricks and concrete on-site, though council approval may be required in order to use crushing machinery.
- Less waste in our landfills and environmental damage caused by mining is reduced.

Weight of bricks and concrete

By weight, bricks and concrete make up the majority of waste generated from demolition activities. Choosing reuse or recycling options can be very beneficial by cutting disposal and landfill costs. Figure 1 shows the cost-saving potential of recovering bricks and concrete from each type of dwelling.

Figure 1: Percentage of bricks and concrete in house deconstruction waste

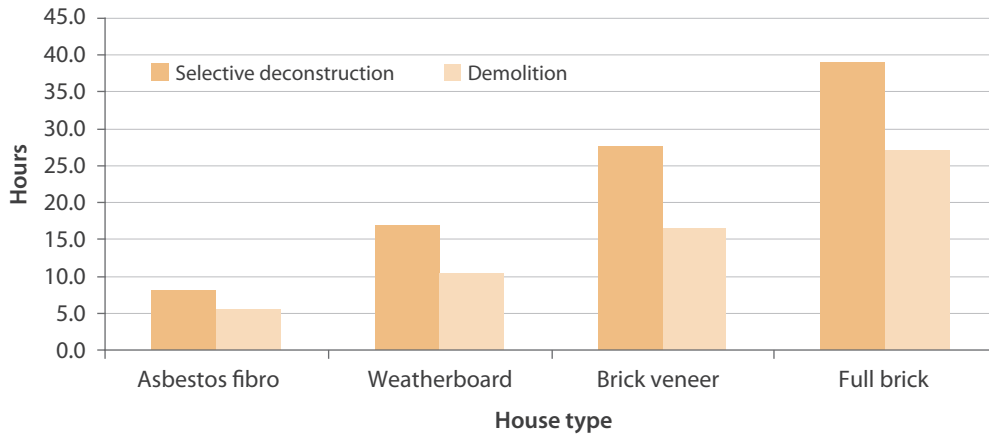


Deconstruction versus demolition

Time

Full demolition requires less time than deconstruction. Time taken includes the labour (total man hours) and active plant costs.

Figure 2: Time comparison for brick and concrete removal



Cost

Table 1 shows the costs associated with reusing, recycling and disposing of bricks and concrete for four building types:

- Demolition is more expensive than deconstruction: brick and concrete disposal costs to landfill are \$115/tonne, recycling uncontaminated material costs \$24/tonne.
- The landfill disposal rate is increasing.
- Although bricks were not reused in the study, many companies will collect bricks, free of charge and typically sell them for \$0.50 each, making reuse an attractive option.

Table 1: Costs associated with brick and concrete recovery

Building type	Building area (m ²)	Weight (t)	Costs/(income)*		
			Deconstruction	Selective deconstruction	Demolition
Asbestos fibro	150	20 T	\$1,863	\$1,863	\$2,888
Weatherboard	160	50 T	\$2,843	\$2,843	\$6,958
Brick veneer	200	120 T	\$5,441	\$5,441	\$15,451
Full brick	150	180 T	\$8,149	\$8,149	\$23,986

* Please note the costs presented are based on average costs from facilities accepting materials across NSW.

Conclusions

Reuse and recycling options are economically attractive because costs associated with sending bricks and concrete to landfill are high and rising. Reuse has the most economic and environmental benefit, although strong markets exist for substandard and broken bricks and concrete. If time is tight, recycling bricks and concrete still presents a viable option.

Published by:

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DECCW 2010/87 ISBN 978 1 74232 545 3
 Published July 2010
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