

Roof beams and timber removal

Introduction

Timber is versatile and can often be readily reused and recycled. Roof beams, wall studs and floors can usually be retrieved for reuse and potentially 75 per cent of timber waste from construction and demolition disposed of to landfill in the Sydney Metropolitan Area could be recovered for reuse¹. Timber can be reused directly in buildings, re-milled and reused in construction, furniture manufacture and as floorboards, and recycled into woodchips and engineered timber products.

Recovering wood has substantial environmental benefits by reducing pressures placed on forests by logging (including soil degradation and loss of habitat). By diverting timber from landfill, the greenhouse gases normally generated in the decomposition process are avoided.

When planning house deconstruction and timber removal, it is recommended to consider the following:

- **Roof beams** removed in lengths greater than 3m allow greater reuse opportunities than smaller beams. Save time by cutting beams away from bolts and fastenings, and using an excavator to lift beams from their frame.
- Hardwood and softwood **timber wall frames and studs** can be reused in a variety of ways including in house construction and furniture manufacture.
- Good quality **floorboards** can be reused. The easiest removal method is to cut out a large section of the floor and turn it over to remove joists and bearer.
- **Weatherboards** can only be reused if they are in a reasonable condition, and old weatherboards can be brittle and difficult to recover. There are limited opportunities for reusing weatherboards.

Recovery rates

Based on our case studies, between 50-80 per cent of timber can be recovered from roof beams and wall studs. Full deconstruction recovers more timber for reuse and recycling, but requires more time than demolition.

Deconstruction versus demolition

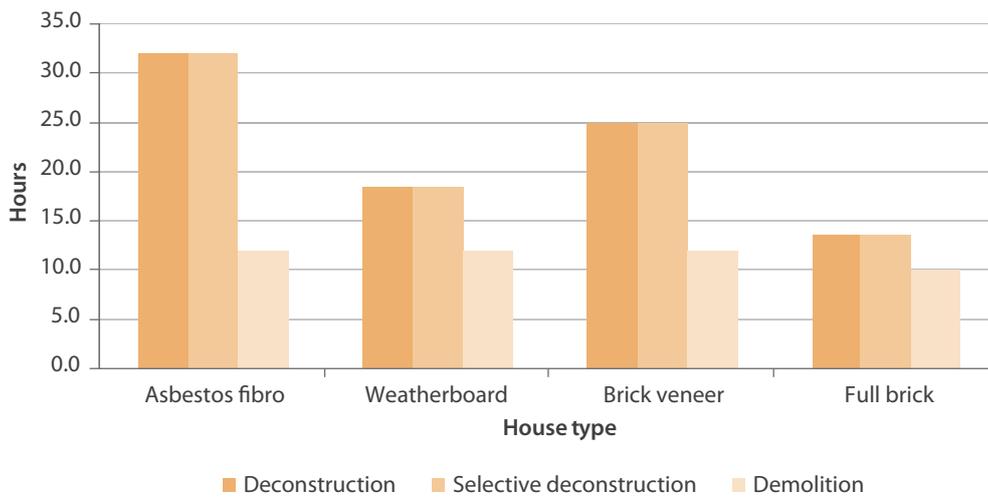
Time

The recovery of wood for reuse or recycling can take twice as much time as demolition as care is needed in the removal, separation and stockpiling of products, shown in Figure 1.

¹ Report into the Construction and Demolition Waste Stream Audit 2000-2005, Department of Environment and Climate Change NSW



Figure 1: Time comparison for wood removal



* Please note that time includes all aspects of labour and active plant costs. Disposal times are a percentage of demolition time. Labour required to recover wood from the asbestos fibro house was high due to the limited use of machinery.

Cost

Labour is a significant component of overall cost. Landfill fees for timber disposal are \$154 per tonne and recycling charges are \$125 per tonne – reusing timber makes it possible to avoid these costs and allows for income generation.

Table 1 provides the costs of reusing, recycling and disposing of wood across four building types.

Table 1: Costs associated with timber recovery

Building type	Building area (m ²)	Weight (t)	Costs/(income)		
			Reuse	Recycle	Disposal
Asbestos fibro	150	5.3	\$1,989*	\$1,989*	\$1,686*
Weatherboard	160	6.9	\$1,285	\$1,285	\$1,933
Brick veneer	200	9.55	\$1,477	\$1,477	\$2,340
Full brick	150	6.9	\$789	\$789	\$1,789

* Please note that the use of an excavator on the asbestos fibro house was minimal, increasing labour costs. Please note that disposal costs are average costs from a number of facilities in NSW.

Conclusions

Disposal costs of wood products to landfill make reusing and recycling financially competitive. Reusing wood provides the best opportunity for savings and environmental benefit.

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