



CONCRETE

When buildings are demolished, it is usually because they are no longer functional, beyond repair, in the way of new development, or are merely out of style. However, the construction and demolition of these resources can make up to 40 percent of waste sent to landfill (DEH). As well as resources being wasted by sending them to landfill, the majority of these wastes do not decompose and can't be compacted to reduce bulkiness. In the past, millions of tonnes of building and construction waste have been dumped as landfill, but are now beginning to be seen as valuable recoverable resources. Recoverable materials include metals, bricks, glass, fittings and fixtures (for example, carpet underlay), wood, wall paneling and concrete.

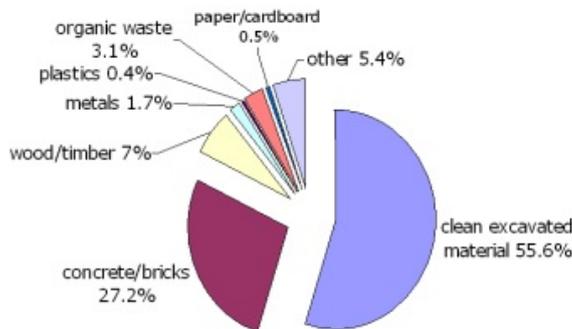
The building industry estimates that concrete makes up approximately 25% of their total waste going to landfill each year (see graph below). Concrete waste from new projects can cause significant issues. For example, damp cement slurry from disused concrete has a high pH, is chemically reactive and can poison ecosystems, creating health and safety hazards. Concrete resources from the

demolition sector have a large mass, are strong and being long lived, take up precious space in landfill as well as being a wasted resource.

Due to increased technology, concrete recovery and recycling programs are now diverting large amounts of concrete from landfill, for example approximately 830,000 tonnes annually in Victoria alone. Concrete of 100% recycled content is currently able to be used as a substitute for virgin material in non-structural applications such as road base, footpaths, kerbs and channel works. In structural applications, however, crushed concrete is remixed with new cement and chemical additives. Buildings such as the Australian Conservation Foundation's 60L building in Melbourne have proved that structural materials can now consist of up to 60% recycled concrete (ACF), while recovery and recycling rates continue to grow as new markets are created.

Recycled concrete is also being used as a base in road works and is used in foundation floors for large buildings such as Melbourne Casino and all of the Sydney Olympic buildings. This means that when buildings are demolished, their materials can be recovered, prolonging the life of landfills. The natural resources used to create concrete, such as gravel, are also able to be used in more projects, minimising the amount we take from the ground and benefiting the environment.

Composition of Building Waste



References:

- Wastewise Construction Program, Department of Environment and Heritage, online at www.deh.gov.au/industry/construction/wastewise/
- Australian Conservation Foundation, online at www.acfonline.org.au
- Australian Greenhouse Office, online at www.greenhouse.gov.au/buildings/index.html

WHAT CAN I DO?

- Construction and demolition businesses have great scope for recycling concrete. For example, mobile concrete crushers are available for remote areas now, while works in urban areas make it easy to recycle with the use of skips. Contact your local council regarding waste and recycling programs for building materials.
- Segregate the different types of waste, making it easier for waste transfer. Remember that minimising the amount of waste produced will create savings on raw materials and disposal costs.

MORE INFORMATION

- <http://www.knelson.com/cr/index.php> - an example of a company recovering concrete for reuse.
- <http://www.csiro.au/promos/ozadvances/Series8ConcreteL.html> - recycling concrete in Australia
- www.environment.gov.au/settlements/industry/construction/wastewise/index.html - The Wastewise Construction Program provides some good resources for businesses in the construction and demolition sector.