



# Q: Why is recycling steel **not** the best solution?

**A: Because the adaptability and reuse of steel is a better outcome.**

It's a fact that steel is the most recycled material in the world by weight<sup>†</sup>, and it is estimated worldwide that around 75% of all available ferrous scrap is recovered.

By 2010<sup>†</sup>, this figure is expected to increase to around 85%.

Currently in Australia, at least 15% of post-consumer product scrap, steel industry scrap and internal plant scrap are used in the production of steel.

OneSteel's Sydney Steel Mill, with its electric-arc furnace steel making process, uses significantly higher quantities of post consumer product scrap, around 85-90%, in its production of steel annually.

But why is the ability of steel to be recycled through reprocessing, or the recycled content of steel manufactured, not the most important attribute of steel in improving building sustainability?

The answer is simply in the application of the waste management priority hierarchy of **Reduce, Reuse, Recycle and Dispose**.

## Sustainability during the life of a building

The ability of the product to be re-used rather than recycled by reprocessing is a better environmental outcome. In other words, smarter design that gives a longer and more adaptable service assists in reducing resource and energy use, as well as minimising waste and emissions in the life cycle of the product.

The typical life of a building varies from 20 to 60 years. If a building which has a typical life of 20 years could be renovated or adapted so its useful life is extended to 60 years rather than being demolished, then there could be a significant improvement in the sustainability of that building.

The inherent flexibility and adaptability of a steel-framed building allows it to be potentially designed for ease of renovation. The superior strength to weight ratio of steel also means it can be used to extend a building's life.

## Examples include:

- Chifley Tower, Sydney: Existing steelwork was modified to accommodate a new and more efficient air conditioning system, while the addition of internal stairs reduced the reliance on lifts.
- 347 Kent Street, Sydney: The relatively light weight of structural steel was used to add 8 levels to an existing 15 level building, rather than demolishing the existing building and rebuilding a new 23 level building.

## Sustainability after the life of a building

After the steel elements in a building have been adapted, modified, renovated and finally served a useful life in one location, steel has still not reached its full potential in sustainability before it is recycled through reprocessing.

Most steel elements can be potentially dismantled and used in other buildings, or indeed in the same building but in a different location. The Olympic Stadium in Sydney is a good example of element re-use. After the closing ceremony of the 2000 Sydney Olympic Games, part of the spectator stand was dismantled and relocated to WIN Stadium in Wollongong.

It is only after the structural steel elements have "lived" through a number of lives do they need to be recycled through reprocessing to become new steel elements.

## Designing for sustainability

Careful planning at the early design phase of a building project is the key to producing a more sustainable structure. Australian company, OneSteel Market Mills, is able to provide guidance on steel design for flexibility, adaptability and reuse.

**For further information or to discuss the sustainable design of your project, please contact OneSteel Direct on 1800 1 78335 or email [onesteeldirect@onesteel.com](mailto:onesteeldirect@onesteel.com).**

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