James Hardie strives to be a good neighbour by protecting the environments in which our plants operate, contributing to the communities of which we are a part, and creating products that use less energy in their manufacture and which are more efficient when installed than alternative materials.

Our commitment to the environment is spelt out in our Environment Health & Safety objectives:

- Protection of the environment is critical to the way we operate and do business.
- We continue to seek ways to efficiently use materials and energy and to reduce waste and emissions.

Generally, our approach is to treat regulatory and other widely-accepted community standards as a minimum, and to strive to routinely exceed them. All our operating plants are licensed by local government authorities, such as environmental protection agencies, and comply with their requirements for specific issues such as waste management, air emissions, effluent discharge, and storm water run-off.

Our goal is to continuously improve the resource and energy efficiency of our operations, and the environmental performance of our products.

To assist us in this endeavour, we have conducted a life cycle assessment of our products, which considers every stage of their manufacture and use, from raw materials and their processing, to manufacture, construction activities, use, and eventual demolition and/or disposal, including the possibility of recycling in some way.

# We use renewable and recyclable resources

The raw materials we use are abundant. Cellulose fibre is obtained from unbleached, plantation wood pulp; we use silica ground from sand or crushed guartz rock; and the water

#### OUR GOAL IS TO CONTINUOUSLY IMPROVE THE RESOURCE AND ENERGY EFFICIENCY



used in the manufacturing process is recycled a number of times.

Cement is the biggest contributor to the environmental impacts of our products, because of the energy requirements and emissions associated with quarrying and cement manufacture. The cement industry continues to improve its environmental performance by introducing new, cleaner technologies.

## We conserve water, resources and energy

The water we use in our plants is recycled up to four times and is cleaned and neutralised before discharge.

The major energy input in our production comes from the highpressure steam curing of the product. Where possible, the steam is generated as a waste by-product from other industries. At one James Hardie plant, for example, excess refinery gas and steam from an adjoining oil refinery is used.

## We minimise waste by recycling process materials

Solid wastes - such as trimmings and scrap, fine particles and reject material - are reintroduced into the production process as raw materials. Solid waste that can't be reused is certified by authorities as non-toxic and nonhazardous material that can be safely disposed of in landfill.

#### We protect against pollution and conserve the natural environment

Dust emissions from manufacture are strictly controlled. For example, wet ball milling is used to grind sand. Fine particles generated by sanding and grinding finished sheets are mechanically collected and processed before re-use or disposal.

Finally, our building products are used in lightweight construction systems that are among the most energyefficient and environmentally responsible building systems available. They are also very durable and require little maintenance during their lifetime. The products have been in use for many years in residential and commercial building applications and do not suffer the durability problems of many other cladding materials.

If buildings created using our products are eventually demolished, the products can be safely disposed of as landfill or recycled.

## We strive to help our local communities

When it comes to contributing to the communities in which they operate, individual plants and businesses are encouraged to support local charities and organisations. At a corporate level, the company directs most of its charitable efforts to its long-standing commitment to medical research.

#### OF OUR OPERATIONS



Chris Prosser says his Queensland (Australia) home demonstrates how a house can combine maximum comfort for its occupants with minimum environmental impact.

His Healthy House (pictured on these pages) features HardiFlex<sup>™</sup> Sheets inside and out. It was designed by Dr Richard Hyde from the University of Queensland's Architectural Department, and brought together the University, the Queensland Department of Natural Resources and Australia's leading energy-efficiency and environmentally sustainable industries.



Their aim was to create a house that consumed less energy in construction and operation; minimised ecological impact; and maximised passively-controlled internal environments for comfort.

Chris Prosser said HardiFlex™ Sheets were "an obvious choice for the project considering the availability of the raw resource, its freedom from maintenance, excellent life cycle, and minimum environmental impact".