

SELF-ASSEMBLY FURNITURE, THE VIRTUOUS WAY

IKEA supplier makes all the right moves.

Andrew Wahba

Swedwood Canada was established in Dartmouth, Nova Scotia as the North American manufacturer and supplier of furniture and wood-based board to IKEA. The company was a subsidiary of Swedwood International, but in September, 2003 it was sold to the Canadian president, Tommy Holmer and the name was changed to Scanwood Canada Ltd. Scanwood continues to manufacture bedroom furniture products for IKEA. What differentiates its culture and manufacturing process from many other companies in its industry, is its dedication to performing all its operations in an environmentally responsible manner.

In 1998, Swedwood made a commitment to achieve low environmental impact manufacturing. The company vowed to continually search for new ways of reducing the quantities of materials, emissions, and energy used in the production of their products. According to Swedwood's Quality, Environment and Safety Manager Peter Frederick, the management made this commitment for a number of reasons. At the time, he says, "The decision came top down from IKEA. They wanted to become environmental leaders promoting cradle to grave thinking and they wanted their suppliers to jump on board. Tommy Holmer, our president at the time, was very environmentally conscious and showed great leadership in making it happen. Also, it was time for this to take off."

Swedwood's actions since 1998 prove that their environmental commitment was not simply an act of "green washing". Since that day, they have been actively pursuing their goal and even in the current transition period, the commitment has not wavered.

Before Swedwood could begin its pursuit of achieving low environmental impact, the company had to assess its current performance. The company had to review its business practices comprehensively, and locate existing environmental hazards. Swedwood was guided through this process by a concept known as environmental design.

Upstream Solutions

The objective of environmental design is to make products, services, and/or processes sustainable by considering and eliminating harmful environmental impacts in their design. By positioning environmental considerations as central to the design process, companies are able to accomplish this goal.

One of the leading international organizations promoting environmental design is The Natural Step. This organization provides a visionary blueprint and effective leadership aimed at achieving a sustainable world. It develops upstream solutions to environmental problems by using the concept of environmental design. The Natural Step provides guidelines which enable companies to solve problems at their source and to transform them into opportunities for innovation. In the 1990s, IKEA became a significant supporter and adopter of the principles of The Natural Step Program. Consequently, in 1998, the

Swedwood group also applied The Natural Step to their operations.

Employees Launch EMS

The implementation of The Natural Step led to the creation of Swedwood's environmental management system (EMS) in 1998. Although the Swedwood system has not been certified by an international standard, it has been highly effective in achieving impressive environmental feats for which the company has received national recognition.

The position of environmental manager was created to coordinate and implement the EMS initiative. This was followed by the creation of an environmental group consisting of six plant employees. The group assumed the responsibility of assisting in the development of the EMS. Members of the group were responsible for assessing the environmental aspects of their work areas. This process was very effective in ensuring a comprehensive environmental analysis of the plant's operations. An important duty of the group was to maintain the EMS by ensuring that the employees in their work areas understood its purpose. Involving plant employees in the development of the EMS led to employee support of the system.



Scrap is either processed into wood chip fuel to heat the factory or re-cut into shelving for re-sale.
Photo: Swedwood

Tracking Progress

In 1999, the environment group developed a spreadsheet to monitor and continually improve the Swedwood EMS. The comprehensive database they created extensively tracks the company's entire inventory, including their incoming and in-house manufactured materials, and their outgoing products. The database is continuously updated and a tri-monthly report is generated on a one-page summary available to all staff. Through this monitoring system, Swedwood is effectively able to develop, establish, and maintain environmental objectives and targets.

Concurrent with the development of the database was the establishment of five environmental objectives. Swedwood focused its efforts on:

- recycling waste
- controlling generated waste
- energy consumption
- air emissions
- chemical usage.

The intent of focusing on these five objectives was to make the company eco-efficient.

Three Questions

To control its waste, Swedwood needed to know a) how much waste it was generating, b) if they could decrease this amount, and c) if the waste was being disposed of properly. The company assessed every process within the factory. Once the waste was identified, Swedwood identified the appropriate method of disposal for each waste product in each factory process. The steps in this system were documented and recorded in a procedure manual. Copies of the manual were placed at designated machines, work posts, and offices throughout the plant.

Swedwood's focus on waste reduction led to the implementation of a recycling system for plastic wrap, corrugated cardboard, beverage containers, metal, plastic strapping, compost, and office paper. Throughout the plant, the company designated areas where the waste could be disposed of and stored in separate receptacles. Through separating the waste, Swedwood was able to send waste by-products to the appropriate facilities to be recycled. Then, Swedwood extended its efforts of reducing waste to its supply chain. The company has been successful in influencing some suppliers to eliminate excess packaging.

Using Scrapwood as Fuel

These initiatives were not only performed for environmental reasons. By diverting unnecessary products from entering landfills, Swedwood has achieved significant financial savings. The company is charged a hauling fee of \$70/ton to send waste to the landfill. In 2000, Swedwood's activities to control and recycle a large amount of its waste diverted 16.24 metric tons of materials from landfills and so saved significantly on hauling fees. Swedwood also receives refunds for recycling cardboard (\$30/ton), plastic (3 cents/pound), and plastic bottles (5 cents/bottle). And controlling waste has enabled the company to decrease its energy bills.

When wood based boards are cut and shaped, small pieces of scrapwood and sawdust are produced. The company has implemented a computer program that assesses every piece of uncut board according to the size and shape of wood pieces required. The program identifies the most effective cut of the board to maximize the amount of wood pieces and minimize the amount of scrapwood generated. And the scrapwood and saw dust generated are not disposed of as waste. Rather, the company reuses these materials as fuel. Swedwood maintains a wood boiler that is fuelled by scrap wood. This boiler is used to decrease the reliance on the oil-fueled boiler for the factory's heat. The wood boiler has recently been upgraded to allow the burning of paint dust with wood chips. This upgrade has resulted in a significant reduction in energy expenses. Using the wood chips and paint dust as fuel reduced heating oil use from 110,000 liters in 1998, to 35,000 liters in 1999. This allowed Swedwood to save approximately \$30,000 worth on oil. But this was not the end of the company's effort to control its energy use.

One of the major projects that Swedwood implemented to reduce kilowatt energy usage was a complete retrofit of the plant's light bulbs. The retrofit project resulted in a replacement of the plant's 750–1000 fluorescent bulbs. They were replaced with halogen lights which are more economical, provide better light quality, and are more energy efficient. The new lights have not only reduced energy bills for Swedwood, but they will ultimately reduce greenhouse gas emissions by reducing energy consumption. The old fluorescent lights that were replaced were not disposed of at the landfill. Instead they were reused by a local used building materials company.

Swedwood initiated another large project that focused on its final objectives of reducing air emissions and chemical use. In 1998, Swedwood was using three substances that required reporting through the National Pollutant Release Inventory program. These substances were a byproduct of the lacquer topcoat system that was used to finish the wood based boards. Swedwood replaced the lacquer topcoat system with an ultra violet (UV) roller line. This new system reduces volatile organic compound emissions and uses less energy-intensive UV light to cure the paint. With the new system, Swedwood was able to eliminate the use of methyl ethyl ketone, their most prevalent toxin, and drastically reduce emissions of the isopropyl alcohol and xylene. Furthermore, the new process had a surprising effect on quality control. Plant managers found that the quality of the finished product has improved, dropping the rejection rate to less than 1%. So, by improving efficiency and producing fewer defective products, Swedwood has decreased both its waste and the cost of defective products.

Continuous Change

All of these initiatives at Swedwood, now Scanwood Canada Ltd., have proven that improving environmental performance does not have to be a barrier to enhancing business performance. This example has shown that a company can be both financially and environmentally successful through implementing the concept of environmental design. This one company has made giant steps towards achieving its goal of low environmental impact manufacturing and its efforts can serve as a model for others in its industry and beyond. However, Environment and Safety Manager, Peter Frederick states that, "Daily there is more to do. Everything changes and you won't get to a point where you can sit back and have it run itself. There is always room for improvement – especially where environmental practices are concerned." ●