



INTRODUCTION

These articles have focused on the environmental impacts of flooring, including key topics such as depletion of finite resources, barriers to recycling, energy, CO₂, water pollution and the management of hazardous chemicals. At recent conferences groups as diverse as Carpet Recycling UK and the World Economic Forum have recognised the major contribution that has been made in all of these areas by companies who are following “Cradle to Cradle” (C2C) design principles and achieving certification of their products by the Cradle to Cradle Institute. In this article I talk to Paul Murray VP of Sustainability and Environmental Affairs at Shaw Industries which is the world’s largest Cradle to Cradle certified company and who are about to receive a major award for their pioneering efforts in implementing the Cradle to Cradle programme over the last 10 years.

AB

Paul can tell me about your background in industry and how you came to be in your current position leading sustainability initiatives in one of the world’s largest flooring manufacturers?

After college I taught high school chemistry and maths in rural South Dakota for three years. I began my industrial career as a research chemist working on coatings for wood products. I spent nine years as a bench chemist for PPG Industries and Boise Cascade. This is where I began to question the industrial process and its effect on the environment.

In 1985, I accepted a position with Herman Miller, Inc. to manage all of the company’s wood finishing operations for its office furniture production. I managed this large finishing operation for four years. During this time I was increasingly concerned about our planet, so while managing the wood line, I started an internal environmental and sustainability program for Herman Miller. In 1992, I accepted the role as the leader of these efforts on a full time basis. I continued in this role until February of 2011, when I accepted my current role with Shaw. As vice president of Sustainability and Environmental affairs, I have a tremendous opportunity to continue to advance Shaw’s significant sustainability efforts and innovations.

I have also served as a college Professor of Sustainability, onboards for non-profit organizations and owned my own consulting firm while at Herman Miller. These opportunities allowed for continual growth of the programmes I am involved with as well as my understanding of sustainability in corporate life.

AB

Clearly “Cradle to Cradle” Design has been at the centre of your work with Herman Miller and now at Shaw Industries. The standard has 5 key criteria and I would like to use these as the framework for the interview and look at what Shaw has done and is currently working on in these areas? Firstly

Cradle to Cradle Key Criteria

1. The use of environmentally safe and healthy materials and chemicals
2. Materials are designed for recycling or composting at end of life
3. Manufacturing must make use of renewable energy and carbon management
4. Water stewardship
5. Social fairness

how do you go about ensuring the use of only environmentally safe and healthy materials?

The material health aspect of Cradle to Cradle can be complex and challenging because we must involve many people outside the company. As you pursue Cradle to Cradle, you first must secure non-disclosure agreements with all your suppliers because what we ask them to do is to provide the formulas for all materials used in our products. In most cases, this information is their intellectual property, so the data must be managed in a way that only you and/or your consultants will ever see the raw data.

The chemicals are then rated or categorized and if any chemical(s) are deemed to harm the environment by your assessor/consultant, you try to remove them from the product's formulas. It can be very difficult to find replacements for problematic chemicals that have no current alternatives. It's an innovation and partnership challenge that our team enjoys tackling.

Beyond the obvious human and environmental health aspects of material health, the reason to do this work is that – as the name Cradle to Cradle implies– we want our products to be able to be easily disassembled and recycled. We believe that this assessment is the first step to create a value stream of safe and healthy materials to be recycled – either into more carpet or into materials for use by other industries.

Secondly how have you designed material for recycling at end of life? How do you collect them and how successful has this been?

At Shaw, we design with the end in mind. This begins with the material science, ensuring that the elements we use to manufacture our products can easily be recycled into more carpet or other uses at the end of its useful life.

In our commercial division, we have a Global Environmental Guarantee for our EcoWorxcarpet tile. To help our customers remember that we want to recycle our carpet tiles, we put our phone number on the back of each tile. When contractors are preparing to install new flooring, they or the customer can simply call us, and we take it back at no cost to them. Once received, the tiles go through a process that separates the backing materials from the face fiber. We pelletize the backing materials and insert them right back into the manufacturing of new commercial carpet tile. The face fiber is sent to Evergreen, which is our facility that depolymerizes the nylon 6 face fiber and produces new Caprolactum, which is used to make new nylon 6 fiber.

At Evergreen, we recycle fiber from the carpet tiles and broadloom carpet products from both commercial and residential markets. We recycle carpet from any manufacturer, not just Shaw's carpet. To effectively reclaim as much carpet as possible, we have partnered with more than 50 carpet collection companies around the U.S. We process approximately 100 million pounds each year at Evergreen to produce high quality yarns with qualities that equal or exceed that of virgin nylon 6 fiber, which makes Shaw the largest recycler of post-consumer carpet. Truly this is a Cradle to Cradle story.

What are the current challenges that you are working on in recycling and waste to energy?

Recycling is one of those opportunities that have transformed the way people view sustainability and environmental programs. In the past, these programs were looked at as a cost. Today companies like Shaw realize that recycling is simply good business. What may have once been seen as waste is now often seen as a resource, and we approach our product design and recycling efforts with that perspective.

We sell our waste products, which can improve our bottom line. Additionally, another positive aspect of a strong recycling effort is that it creates understanding of what is considered waste and the size of this waste stream. This knowledge is then leveraged by the “Lean” initiatives throughout our company which strive to reduce the amount of materials that we waste. The visibility creates a focus to improve our running efficiency as determined by what comes in vs. how much goes out as finished “A” grade materials.

Not all materials are yet able to be recycled into carpet or other products. To make productive use of these materials, Shaw has built two units that use some of these carpet wastes as fuel. W2E and Re2E are units where we create steam and electricity from our waste carpet thus providing Shaw a good and consistent source of energy for several of our manufacturing plants. We also have several waste-to-energy units on wood manufacturing plants where we use wood waste in a similar manner providing steam for operations.

Turning to the use of renewable energy and carbon management what initiatives have you undertaken and what are your future plans.

We have an energy team here at Shaw that identifies projects that will reduce our energy load. This team has done a great job showing how we are reducing our carbon footprint while still realizing a return on the investment.

Our transportation group is working on several initiatives that will reduce the amount of fuel used for the delivery of our products. They range from trucks with latest technology, logistics improvements to improve over the road delivery efficiency in miles driven and the use of rail to reduce our use of fuels for transportation.

We are also excited about our newest energy initiative. This month we are turning the switch on for our first major installation of solar collection. We have installed a one Megawatt solar collection system on the roof of our carpet tile manufacturing facility in Cartersville, Georgia. This array will help power a portion of this plant and help us meet our Cradle to Cradle commitments for renewable energy.

Water is probably the world’s most precious resource and textile related industries in general are said to be responsible for 20% of the world’s water pollution. How has Shaw approached this issue and how has Cradle to Cradle helped.

On the commercial carpet where many different colors of yarn are used, sometimes within just one carpet tile, we are using almost exclusively solution dyed yarns. This is where the colorant is incorporated into the yarn polymer as the fibers are extruded. The resulting yarn is one color completely throughout the entire fiber. This process has significantly reduced the use of water in the production of the commercial tile products.

Residential carpet colors tend to be more monolithic in nature. We use water to apply dyes to the carpets after they have been tufted. The water team has taken on the challenge to reduce water use and have significantly reduced our water consumption on these production lines. A couple of examples of how they have accomplished these reductions are that we’ve adjusted how much water is used based on the weight of the carpet and we now capture and reuse much more of the process water. Finally, our plants in California are using a significant amount of water that has been processed by the municipal treatment plant and while not drinking water quality it meets our requirements and keeps us from using fresh drinking water for our processes.

What is your approach to social fairness which is a key Cradle to Cradle criteria and what areas of your operations does this consideration affect?

Cradle to Cradle requires us to exhibit social fairness throughout the entire corporation. A company must demonstrate how they are clearly concerned about social fairness and provide evidence of a program that monitors and continuously improves all criteria including social fairness.

Shaw has a robust social responsibility program that includes diversity, safety and wellness, corporate giving and community service -- including partnerships with organizations like St. Jude, Brade Pitt's Make it Right, and United Way in the communities in which we operate.

Clearly both you as an individual and Shaw as a company have learned a lot during the 10 years or so that you have been working with the C2C programme. If you were advising a flooring company thinking about starting out on the programme what would be the main points that you would make? **Get started, do not wait!**

In this age of transparency, Cradle to Cradle is a great program to allow you to prepare your responses to some tough questions from customers. The program has allowed Shaw to better understand our products and improve formulations that not only have had positive environmental benefit but that have improved overall design, quality and/or durability.

I believe that the more companies that subscribe to this practice of self-evaluation of products and processes will ultimately be the companies that survive in a tough marketplace.

How has all of this commitment of time and resource paid off commercially and would you do it all again?

As mentioned above, the Cradle to Cradle philosophy has been a guiding light for many of our activities. It blends well with traditional efforts around waste reduction, environmental leadership, and Lean thinking. It continues to drive us to continuous improvement in these activities.

Our customers are asking for it, and this is a huge driver for any company.

For more information on Cradle to Cradle contact info@c2ccertified.org