

A NEW WAY OF DOING THINGS

by Ed O'Rourke

William McDonough and Michael Braungart call for manufacturing our goods in a totally different way by eliminating all toxic and harmful ingredients. After reading their book, *Cradle to Cradle: Remaking the Way We Make Things* (North Point Press, 2002, 186 pages), I concluded that any product with toxic materials must have something like a Material Safety Data Sheet that list the harmful materials along with health effects. Prescription drugs have had an information sheet for a number of years.

Most people do not know that shoe manufacturers have replaced vegetable tanning with chromium tanning. In some forms, chromium is carcinogenic. In poor countries, there is little protection for the workers or the ecosystem. When the manufacturers dump their waste into a river or burn it, they distribute toxins. Conventional rubber shoes contain lead and plastics. Shoe wear breaks down these particles into the atmosphere and soil. Shoes' soles can be made of biodegradable materials.

It is easier to eliminate harmful ingredients before they become part of the manufacturing process than to take them out in the early stages. Most polyester clothing and water bottles contain antimony, a heavy toxic metal that in some circumstances can cause cancer. Since antimony is a catalyst in the polymerization process that is not necessary for polyester production, one wonders why it is in the product. The authors had a client, a Swiss textile mill, that had lived up to high environmental standards. Government regulators had recently defined the mill's fabric trimming as hazardous waste. Since the mill could no longer bury or burn the trimmings, managers were planning to export them to Spain for disposal.

As part of the solution, the authors selected a mixture of safe, pesticide-free plant and animal fibers for the new fabric. The difficult part was deciding which new finishes, dyes and process chemicals to use. Instead of filtering out mutagens, carcinogens, endocrine disruptors, toxins, and bioaccumulative substances at or near the end of the manufacturing process, they filtered them out in the beginning.

The authors made overtures to 60 chemicals companies to participate in their project but only one accepted the challenge of presenting their products to intense scrutiny. With this company's help, they eliminated nearly 8,000 chemicals commonly used in the textile industry. This also eliminated the need for additives and corrective processes. They wound up with 38 chemicals needed for an entire fabric line.

After production of the new fabrics started, regulators visited the mill and tested the effluent (the water coming out of the factory). Since they could not identify any pollutants, they thought that their instruments were broken. When they examined the influent from the city's water pipes, they discovered that their instruments were working. The water leaving the factory was cleaner than the water coming in.

Our society needs to encourage manufacturers to rent their products such as computers, televisions, automobiles, carpets and refrigerators. Reminiscent of the old Coke bottles, dealers would pay people for bringing them in. This would be a major incentive to design products that could be easily disassembled.

Garden or green roofs may be more economical than conventional roofing. It is no surprise that homes and businesses have to replace roofs about every 30 years or less. Heat and ultraviolet rays take their toll. A rainfall on an August afternoon subjects a roof to sudden temperature change. Along with paved roads, driveways, sidewalks and parking lots, conventional roofs increase flooding. Unless the roof is reflective, it contributes to heat island effect and global warming.

A light layer of soil with plants on top of a roof helps maintain the roof at a stable temperature, provides some cooling in the summer, some insulation in the winter and protection from ultraviolet rays. These roofs will last longer.

Since Americans waste or cause to be wasted about one million pounds of materials per person per year, a fundamental change in our manufacturing will increase our standard of living, reduce our health expenses and do our country's share of reducing global warming.

The authors implicitly advocate a steady state theory for the economy that would have almost no mining, more recycling, less advertising and more leisure time than we have now. Smarter design can do all of that.

Ed O'Rourke is an environmental accountant in Houston.