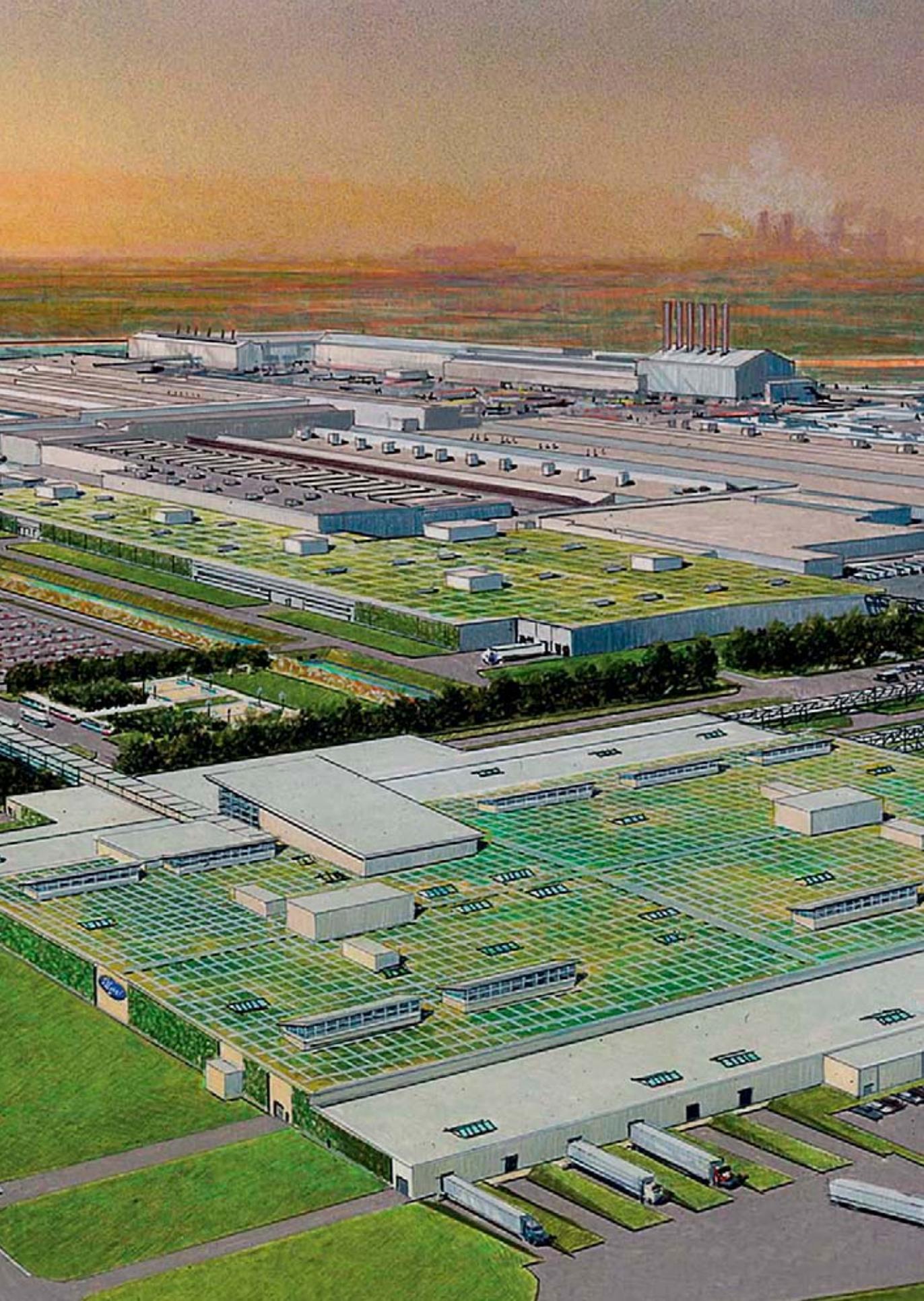


DESIGN FOR LIFE

He was the weird kid who turned off the showers at school to save water. Today, he's leading the global drive to rethink the way we live, work, build and consume.

WORDS Jim Wake



The green roof of the Ford plant is made of a three-inch “sandwich” as described below:

Plant layer containing various varieties of sedum

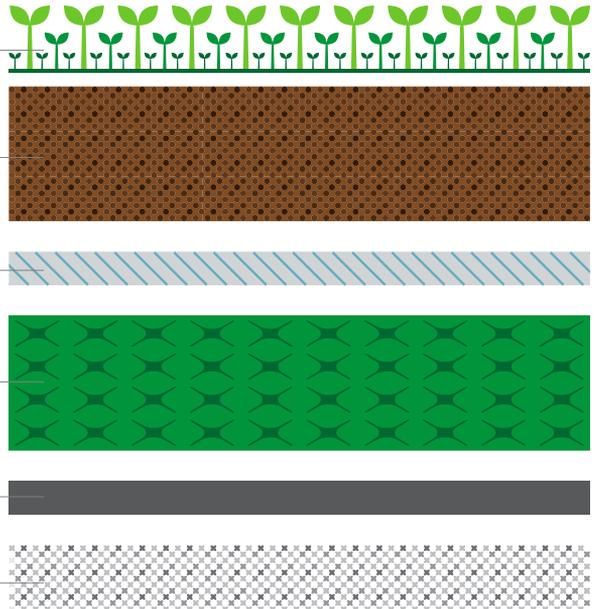
Growing medium

Filter fleece

Drainage layer

Waterproof membrane

Concrete slab



Architect Bill McDonough was selling his plan for redeveloping the Ford Motor Company’s historic River Rouge site to the company’s Board of Directors. Once, it had been the world’s largest manufacturing facility, with its own power plant, docks, ore processing capabilities and 100,000 workers.

Ford wanted a new manufacturing complex that would embrace sustainable architecture and sustainable manufacturing principles. “When I presented my building to the Board, I said: ‘This building’s for the birds.’ And that is true.” What he meant was that he wanted to build a building with a living roof, on which birds would nest. That he was able to persuade the Board to go along with his plan and approve the construction of what was, at the time, the largest green roof in the world says a lot about his vision, his powers of persuasion and the logic of the cradle to cradle principles he advocates.

“Bill Ford said ‘design this factory and create shareholder value.’ So what I did was go straight to the CFO the next day. I asked him what contingent liabilities were on their books posted as a corporate responsibility to the public and to law on the site. He said they had a \$48 million contingent liability to meet the Clean Water Act and they’d had it engineered and designed and were ready to take it to bid. That was \$48 million and nobody said ‘boo’ because it was the Clean Water Act and it was the law. And I looked at it – \$48 million – and said ‘let’s look more deeply.’”

What McDonough discovered was an enormously complicated technical plan involving a great deal of hardware and manpower to manage the treatment and discharge of storm water from the site to the Rouge River. He thought there ought to be a better way. “I said what if we put a green roof on the

building and change all the landscaping into water retaining habitats for birds and so forth and put swales in between all the roads going back to the Rouge River. It meant all the water would take three days to get to the river instead of three minutes, so the pipes would all disappear, the chemical plants would disappear and we’d build it for \$13 million instead of \$48 million. It wouldn’t require maintenance, the roof would grow by itself and it would be a habitat for thousands of birds.”

So what happened? “They won,” states McDonough emphatically, noting that he saved Ford \$35 million in capital expenditure with his radical plan. He reckons the saving is the equivalent of selling \$900 million worth of cars. Put in those terms, the decision was not so difficult. “But if we hadn’t gone out of the box to think through – no one had done this before on this scale – it wouldn’t have happened.”

McDonough has been thinking out of the box since long before he began actively pushing the notions of cradle to cradle design in collaboration with chemist Michael Braungart (see *A Magazine*, issue 1). Born in Tokyo, he recalls hearing the farmers with their ox carts coming through the neighborhood every night to collect the “night soil” to fertilize their fields. “It just seemed natural to me that our sewage was fertilizer,” he says. When he moved to the US as a teenager, he was the weird kid who turned off the showers in the high school locker room because it was a waste of water. Later, as an architecture student, he went to Ireland, from where his ancestors had originally come, and built a solar home. Working in the Jordan Valley in the 1970s, he realized that tents made of goat hair and mud-brick houses were the ideal dwellings for the intensely hot dry climate. He’s always done things a little differently, so it’s not all that surprising that he draws inspiration from a quote attributed



to Grateful Dead guitarist Jerry Garcia: "You don't want to be the best of the best. You just want to be the only one who does what you do." But just how do you move from a vision of what is right to persuading others to do what is right?

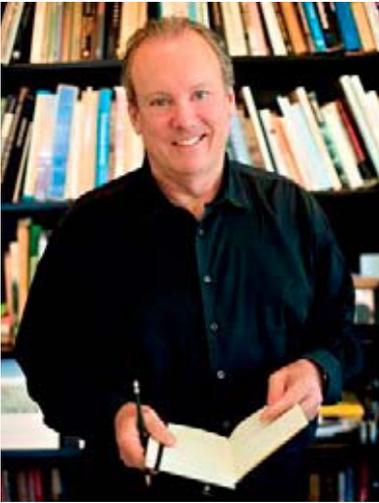
"If you want to talk about leadership and innovation, what I find is that you need a kind of fearlessness." Innovation, he points out, is not like sales or production efficiency – you can't benchmark it. When you set out to create something that never existed, there are no standards you can use to measure what you've achieved. Which means you've got to be supremely confident in the correctness of your own vision. Drawing on the observations of business management consultant and self-described social ecologist Peter Drucker, McDonough cites an important distinction between managers – who are supposed to do something right – and executives, who are supposed to do the right thing. "If you're doing the wrong thing efficiently, you're efficiently wrong, and if you do the wrong thing perfectly, you're perfectly wrong." But by extension, if you are "less perfect" about doing something that is harmful in any case – polluting the air or causing climate change, for example – you are "less bad", but that's not what leadership is about. "The concern we have is that it's not all that great in terms of inspiring innovation because less bad is not being good. It's bad de facto, and so it comes down to values. A leader's job is not to manage and it's not to be efficient. The first question to ask is: 'Am I doing the right thing for my business, for the environment, for people?'" So making toxic things efficiently is not it. So what I need to know is, what do I make that is wonderful and healthful and can be celebrated in its abundance instead of bemoaned by its limits?"

In 1992, together with Braungart, McDonough published *The Hannover Principles* as a set of guiding principles for the



Top: An aerial view of Ford's River Rouge plant.
Photography: Roy Feldman/Ford Photomedia.

Above: How the Ford plant looked before Bill McDonough's new design.



Bill McDonough has developed a close working relationship with AkzoNobel, in particular as an adviser to the award-winning Factory of the Future project.

World Expo that the city of Hannover in Germany would host in 2000. The immediate objective was to set standards for the event consistent with the exposition theme of Humanity, Nature and Technology. But the greater ambition was to provide a framework for design and development in general that was sustainable and life-affirming. Those principles still hold, he says. "We start with values and we think leaders do that. So we put values at the top and then we put principles and then we go from principles to goals. Michael and I have a simple goal – a delightfully diverse, safe, healthy and just world with clean air, water, soil and power, economically, equitably, ecologically and elegantly enjoyed."

In addition to designing buildings such as The Oberlin College Center for Environmental Studies – a building which generates 30 percent more energy than it consumes – and the green-roofed office building in San Bruno, California, which houses clothing retailer Gap and YouTube, McDonough has, in recent years, spent much of his time advising businesses on how they can be profitable while embracing the cradle to cradle vision (or at least some elements of it). He sits on the external advisory council of Walmart, the world's biggest retailer, advising the company on how it can shift to totally renewable energy to power its activities. From 2001 until 2010, he also

served as US Chairman of the Board of Councilors on the China-US Center for Sustainable Development, and drafted, together with Braungart, a Cradle to Cradle certification standard, which the two then donated to the Global Products Innovation Institute, a non-profit organization based in California which McDonough helped to get off the ground.

McDonough has also developed a close relationship with AkzoNobel over the past several years, in particular as an adviser to the Factory of the Future project which was launched by the company and six other Dutch-based partners in 2010 to demonstrate the feasibility of a cradle to cradle approach to chemical production facilities. "With people like AkzoNobel CEO Hans Wijers, the company's Corporate Director of Sustainability, André Veneman, and Ideation Manager Jan Verlaan (initiator of the Factory of the Future initiative), you've got individuals who are looking to the future and are aiming to chart a separate course," he says. "Their willingness to engage the positive agenda is really the key thing. Companies like AkzoNobel can lead us towards the production of positive materials; they can be making building materials that make buildings super-efficient and super-healthy. We are thrilled to see some of the new materials they, as a coatings and specialty chemicals company, are producing. Some of them are amazing, like paint that can clean the air, so you have interiors that are cleaner than the outside. That's innovation and it's coming out of values and they can offer that to their customers because at some point, people will be measured against these new kinds of standards. And AkzoNobel can help its customers by saying here's a fine product at a great price that does beautiful things that can differentiate you in the marketplace."

McDonough may be a futurist, an advocate, a philosopher and something of a dreamer, but he is also – perhaps above all – a designer. He recalls with irony the story of American philosopher Ralph Waldo Emerson sailing to Europe in 1832 on a sailing ship and returning on a steam ship. "He remarked on the absence of what he called the 'Aeolian kinetic' – the connection to the currents and the winds, because they steamed through it. So from a design perspective, we look at this and see that he started out on a recyclable craft operated by craftspeople practicing ancient skills in the open air with renewable energy, and came back in a steel rust bucket putting smoke in the sky, oil on the water, operated by people working in the darkness shoveling coal into the mouths of boilers. And then we ask ourselves: 'Who's the leader on a ship? Is it the captain or the navigator?'" And then you realize that it's the designer. So I think that's how I'd see it – leadership is design, and design is intention, and we need leaders who have good intentions and know how to design to manifest the things that we need in a way that's friendly and quick. We need velocity, we need scale and we need peace – and we need it now." 