

20 november 2008

Zevende Ernst Hijmanslezing

‘Life is too short to be sustainable’

door **Michael Braungart**

Michael Braungart, grondlegger van de Cradle to Cradle-filosofie en een van de meest invloedrijke denkers van dit moment, gaf op 20 november de zevende Ernst Hijmans lezing. Zijn publiek in De Rode Hoed in Amsterdam drukte hij op het hart om geen energie meer te steken in “zero waste”. Hij wil niets meer horen over minimalisatie van koolstofdioxide-voetafdrukken. We moeten manieren vinden om alles, van ijsjes tot televisies, te ontwerpen voor hergebruik ofwel reïncarnatie in plaats van het graf of de verbrandingsoven. En wat is daarbij de rol van managers en consultants? Ophouden met schuldmanagement en de tendens veranderen van “minder kwaad doen” naar “goed doen”.

Good evening. Thank you for having me here. It is an honor for me to be here and give you some ideas about Cradle to Cradle. You might as well call it “Noodle to Noodle” if you want, it doesn’t matter. What’s more important is to know the difference between efficiency and effectiveness.

Management consultant Peter Drucker was the one who said: “There is nothing so useless as doing efficiently that which should not be done at all.” Efficiency means doing things right. Effectiveness, however, means doing the right thing. When you optimize the wrong thing efficiently, you make it perfectly wrong. You could say that just by doing things inefficiently, East Germany has been much better at protecting the environment than West Germany, because we traditionally define “protection” as destroying a little less. Our government says: “Please protect the environment. Don’t use your car that often.” It’s as if they’re saying: “Please protect your child. Don’t beat your child that often.” You’re not protecting it, you’re just destroying it a little less.

I am a chemical engineer. I analyze things. This, for example, is a Mattel toy, a small elephant. It contains about thirty chemicals. Mattel is the world largest maker of toys and I’ve been analyzing their toys for more than nineteen years. They are all about cancer, all about allergies, all about immune system damages. Their toys contain plasticizers from PVC, for example. Still, they costs about 40 euros. The question is: how to change a company like Mattel? I’d like to have your advice on that.

Here’s another example, a T-shirt, a compostable one. When you call it a compostable T-shirt, most people think it rots on your skin, but they cannot tell its fabric from that which other T-shirts are made of. Actually, it is made of the first fabric in human history that has been designed for skin contact. Other fabrics contain colors which cause skin irritation. As you might know, at the age of seven more than half of the children are already suffering from allergies. But if we advertize this as the first T-shirt designed for skin contact, how can the manufacturer sell all his other clothes? We need to deal with communication differently. And with management as well.

A glass box

We have to be wary of governments that pretend to do something. The worst thing is a government that says something like: “We are socially responsible.” Take a socialist country, like East Germany. Its government was never social, it only *pretended* to be social. The same happens in ecology. We pretend to do something, but in reality we aren’t doing anything.



The European Union, for instance, is banning asbestos from brake pads. New Volkswagen brake pads are advertised as “free of asbestos”, so we think: “Great, free of asbestos. They’re doing something!” But the asbestos in those brake pads is replaced by a much stronger consilicon. So what does it help to make things “free of” a certain chemical? It’s as if you’re invited for dinner and your hosts tell you it’s free of chicken. Does it help you?

I’ll show you what I do. I put things in a glass box and I look at what is off-gassing. Every signal you see on the diagram means the evaporation of at least one chemical. I said to the American president: “You don’t need to go to Iraq to find chemical weapons, here they are!” We find huge amounts of chemicals in toys, more than you would find in a gasoline station. Do you see that health, environment and social responsibility belong very closely together? It’s also a question of security, because when you give toxic stuff to your child, it’s a kind of terrorism. It all comes down to this problem: how to communicate. And how to help the management to change.

Another object that I’ve analyzed is a vacuum cleaner. The peaks are so high that it actively contributes to indoor air contamination. When you’re vacuuming, you think you’re doing the right thing, but it’s the opposite. The indoor air quality in an average house in the Netherlands is about three to eight times worse than outside urban air in Rotterdam. We seal our buildings to save energy, but we don’t look at what is inside the building. This way, we create an even bigger problem. One third of the houses in the Netherlands has mould, and people suffer from asthma because of that, so it’s a question of social responsibility as well.

Here’s another example, a shaver. On the left side is the diagram of a Chinese shaver, one you can buy here in Amsterdam for 19 euros. It’s basically designed for the Teletubbies, because you need to keep it at least one meter away not to exceed European Occupational Health Standards. The other shaver is made in Germany. You see there’s some off-gassing as well. The factory tries to buy the cheapest components globally but it still makes the biggest part of it here. The peaks are lower and less compared to the Chinese shaver on the left. But with globalization and lean production they can become much higher, because there are no Occupational Health rules in China or in Malaysia.

From cradle to grave

The European Union has been banning plasticizers, which is a good thing. In 1982, a study about plasticizers and fertility was published: we found out that plasticizers changed male fertility dramatically and suppressed hormone production in females as well. Plasticizers are used in child-

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ren’s toys, in wallpapers, in PVC, in flooring, in carpeting, everywhere. I told the government to stop this. Guess what happened? It took them five years to make a proper methodology to analyze stuff. Even though they use the same analytical process, it took them five years to do a monitoring program, five years to do a toxicological evaluation, five years to discuss the economic consequences. Then it took three years of decision making and two years of legislation. Last year, plasticizers were banned for children under the age of three. This means that 2 percent of the exposure is banned, and the main exposure still takes place through wall coverings and carpets and guest beds and swim rings and all kinds of different products. Pretending to do something is the current alibi. And in this complex world, to be a management consultant can be quite funny.

I was invited by the European Union to do a program on sucralose. Sucralose is a chlorinated hydrocarbon. When you drink a coke, for instance, you drink two thousand times more chlorinated hydrocarbons than the legal amount in drinking water. And when you’re eating a sugar free

Mentos, these chlorinated hydrocarbons stay in your body, they accumulate in your fat. They never degrade, which is interesting, because you know we have a shortage of sweet water. The whole planet will eventually have sweet water.

The first thing we need to ask is: "What is the *right* thing to do?" Instead of afterwards trying to optimize the wrong things. We have endless design problems. We have more than eight million tons of plastic going into the oceans. There are more whales, more turtles, more seals being killed by plastic than by anything else. They die because they swallow plastic and they become one big stomach. We're basically killing them. There are areas in the Northern Pacific bigger than Europe where the plastic concentration is six to eight times higher than the plankton concentration. The water looks like it's in a big toilet which doesn't flush.

In other words, we have a design problem. We traditionally take things from cradle to grave. When we do this, our planet will become one big graveyard. In that graveyard, we will lose all our materials.

Guilt management

What we have is a big management problem. That's because our managers grew up with a lot of environmental and social disasters, like Tsjernobyl and Bhopal. Somehow, we all got the feeling we are bad for this planet and that it would be better if we didn't exist. Have you heard this joke about one planet meeting another planet? "You look really terrible", it says. The other planet answers: "I know, that's because I have homo sapiens." And the first one says: "Don't worry, I've had it before. It will disappear."

Somehow we generated a whole generation of guilt management. Social justice guilt management, environmental justice guilt management. We became convinced of the idea that we need to be *less* bad.

My favorite cartoon is about a man who says to his wife: "For me, you are emancipated enough." We have a strange tendency to take away human rights and feel responsible for people. You can read it in all kinds of reports. The first chapter in a Corporate Responsibility Report is about how to minimize waste of natural resources, water reduction, and energy consumption. The next chapter is about "human resources". Do you get the language? It almost sounds like the darkest parts of German history. Human resources: human raw materials, or human capital. They're not human *beings* anymore, but we feel responsible for them. This way of thinking generated a culture of guilt management, the idea that we are bad. The idea that we have to try to be less bad, and the best thing would be if we didn't exist at all.

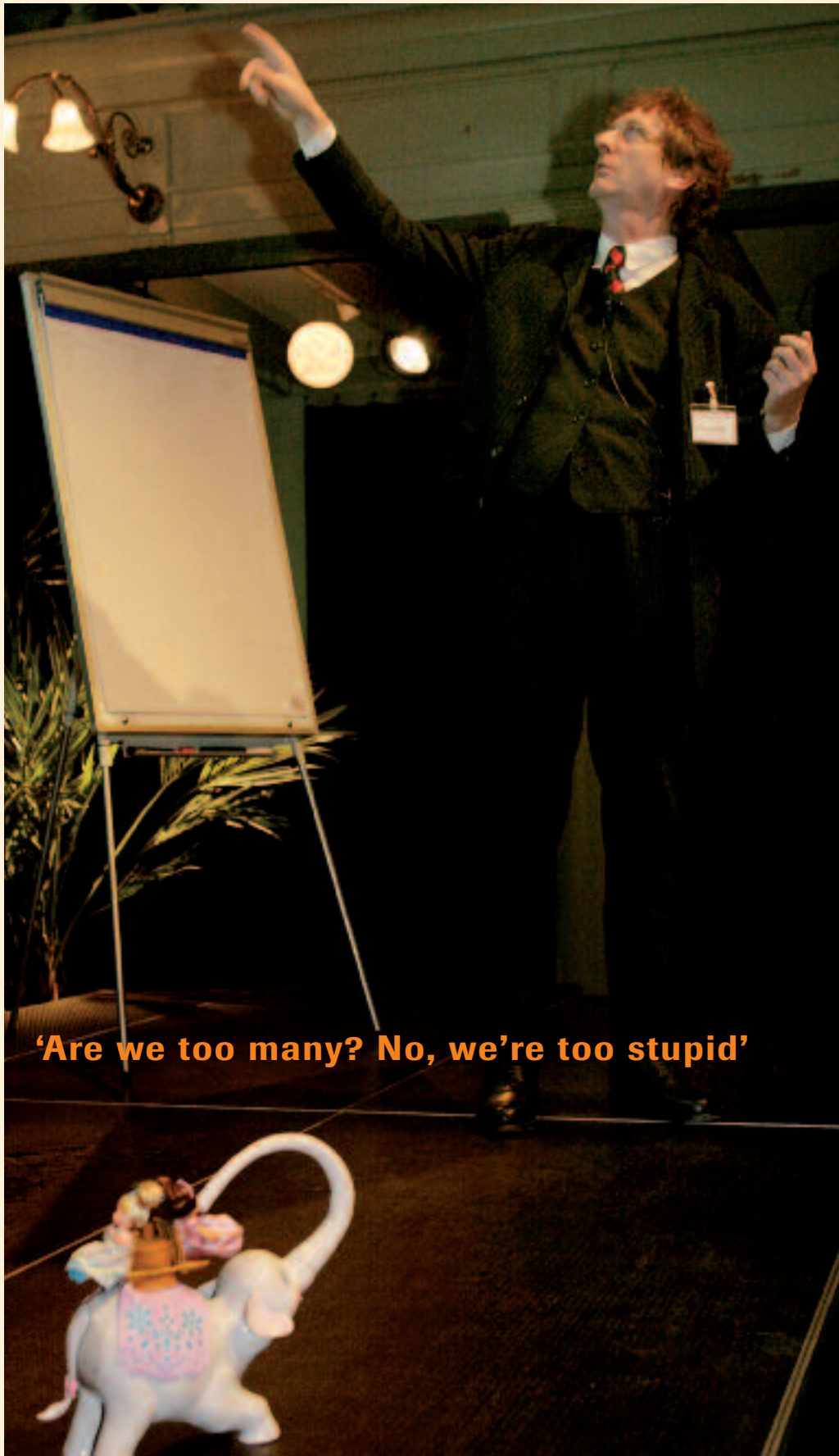
What are the consequences of guilt management? Zero waste. When you think about zero waste, you're still thinking about waste. When I tell you not to think about a pink elephant, it is inevitable: you'll be thinking about an elephant. Four weeks ago, there was a famous former American vice-president here and he was signing a declaration with you to be carbon neutral. The message is clear: you better stop existing, because every time you breathe, you are not carbon neutral. Every time you think, you're not carbon neutral. So we have this reduction, avoidance, minimization, prevention – this eco-efficiency which tells people that it's better if they don't exist.

By minimizing your footprint, by reducing and avoiding, you can do something. For example, I recommend that you don't drink sparkling water anymore in order to minimize your carbon footprint. Can you please make sure there's no sparkling water here anymore? And please stop eating bean products, because of the emissions. No Mexican restaurants anymore, okay?

Is it really that great to be zero carbon? Do you want to be zero, zero, all zero? Is that your biggest call?

The opposite of social awareness

Let's take a different perspective. Let's think about systems that allow us to be good instead of less bad. Al Gore said that there is nothing more crucial in the world than stopping population growth, stabilizing human population. In other words, he's telling children it would have been



'Are we too many? No, we're too stupid'

better if they didn't exist. Let's look at children and say: "How nice that you are here." By saying "It's better if you don't exist", you're talking about human *resources*. You're minimizing, reducing, avoiding. You're saying "Consume less!" and "If I don't buy this stuff, it's even better." Please don't make green labels, don't make social awareness labels on stuff, because you're achieving the opposite. You're reminding people of their own deficits. Don't do it, because it's not successful.

If you're saying: "I'm 100 percent today, but I will make it to 90 percent tomorrow, and eventually I will make it to zero." How attractive, what a nice business curve! Zero emissions doesn't exist. Even if you would shoot yourself right now, you would have emissions. It doesn't help you, so don't do it.

Because of guilt management, we've lost a whole generation of good scientists and engineers. That's a pity because the ones who studied chemical engineering are now at Tebodin, DHV, Akzo, or DSM, and they've done a lot they feel bad about. You can meet people from DSM who say: "Yes, I'm from DSM but I try to make the most out of it." These guilt managers just apologize for being less bad. And that doesn't help very much.

Instead of what Al Gore is saying, I'd say: no goal is more crucial than feeding all the children and providing drinking water for them. I work for Unicef and I can tell you there are five million children dying every year, because we don't give them healthy drinking water. It would cost us one cent a day to provide them with drinking water. We let them die on purpose, there's no doubt. We need to ask ourselves: what is our human role on this planet, what is our function?

Braungart Insulting

Did you know that the biomass of ants is about four times higher than the biomass of humans? Ants, these tiny little insects! If you take all the ants here and all the human beings there, the weight of the ants is four times higher. Ants live only between three and six months, but because they work so much harder physically, they equal about thirty billion people as far as calory consumption is concerned.

So, are we too many? No, we're too stupid. Our consultants are not good enough. I have a company called Braungart Consulting, and today I'm considering to rename it Braungart Insulting.

Again, are we really too many? No, but we can do something. We can protect the environment. For example, we can take the elevator. It takes five times less calories for the elevator to go to the next floor than for a human to take the stairs. That's minimizing our footprint. If you want to protect the environment, take the elevator.

Another way to protect the environment is to buy a Ferrari or a Porsche. These cars have ceramic brake pads, they have minimized abrasion. Twice as many people die from inhaling fine particles compared to those who die from alcohol. And one of the biggest origins of small particulates are brake pads. You inhale them, they go through your whole body, they change your cells and cause cancers. So buy a Ferrari and protect the environment.

Talking about these things isn't very positive, is it? It's about efficiency, and efficiency is ugly. Think about Mozart being efficient, think about Van Gogh being efficient, think about falling in love with someone efficiently. Everything nice in life is not efficient.

Efficiency standardizes and homogenizes people. I'd like to talk about *effectiveness* instead, and that's a top management thing. Efficiency means doing things right, effectiveness means doing the right thing. Effectiveness means to have a positive agenda and to say: "The more you buy, the quicker we'll get there." Buying becomes a good thing.

In this way, we've helped to transform a company like Desso. Desso is Europe's largest maker of carpet tiles. Their new carpets are designed to be good for the environment. They're designed to clean the air in the office, so they'll be good for your employees and by buying them, you're doing something to help the company to change. We don't need to be perfect. We can just start to change.

If by buying your products, your customer keeps you away from zero percent, your customer is your enemy. Treat your customer as your friend. Define what you have positively. When I invite you for dinner, I tell you what is *in* it, I define the recipe positively.

Reinventing everything

Let's think about what really makes sense. Take a simple thing, a piece of paper. You can't put this paper in your compost, you can't burn it and use it in your garden. So why don't we say: "In five years we'll only make paper which we can put in our compost?"

It's not that I want to blame or shame anybody, but I was at a company in the South of Holland, which makes big printers and controls the market in a lot of areas. The young research people told me: "We have a new printer and it's twice as fast and uses 20 percent less energy." I asked them: "What about the paper which comes out? You make the paper chemicals, you make the inks. Can I burn your paper in my oven and spread the ash out over my garden? Or can I put it in my garden to make compost out of it?" They looked at each other and said: "No." They had optimized the wrong things and made them perfectly wrong.

Let's begin by saying: what is the right thing to do? Let's decide that in five years our paper is designed so that we can put it back into the soil, because it's consumption material. In the Netherlands, we lose 5000 times more top soil than is made. In one year we lose the top soil of 5000 years. And two thirds of all the carbon is in soil, so it's not about reducing or avoiding, it's about being beneficial.

Let's facilitate material flows together. Let's see how we can work together to transform a system and make things that need people. Without you this won't work. I'm only a scientist and I cannot do this. If I would try to do this, I would lose my credibility as a scientist. So that's why I really want to talk to you about this. You are the facilitators.

The Floriade has committed itself to go Cradle to Cradle. The Dutch government announced to change all public purchasing to Cradle to Cradle before 2012. It costs 40 billion euros. But if *you* don't work with the companies, nothing will happen.

We need to reinvent everything that gets consumed. Food, detergents, shoe soles, break pads – everything needs to be designed to go back into the biosphere. Everything that is used as a service, needs to be designed to go back into the technosphere. You cannot make a TV set without toxic material, you cannot make an energy saving window, but they can be designed to go back into a technical cycle. This means that not just the design, but also the management and marketing have to be done in a completely different way.

Let's make things that are good for society, good for the environment and good for business at the same time. Let's look at good things, not at things that are less bad. Let's stop romanticizing nature and start to learn from nature.

Flowers and lipstick

We now have carpets which clean the air. We have paints which clean the air. We can clean the air through roof systems. We can recover biological nutrients, we can make products that go back into biological cycles.

We can make windmills which compensate the noise of the traffic. When they run, these windmills, they create counter noise to compensate for the other noise. We can make buildings like trees, buildings which become habitats for other species, buildings which make oxygen, which clean the air, which are not just not *toxic*. And we are already doing this, I'm not just talking about a nice theory.

We can make buildings like trees and cities like forests. There's no reduction, no avoidance, no minimization, no guilt management involved, but it's amazingly effective.

When you come home to your wife and you're late because you were super busy traveling, and you take a bunch of roses with you: it's completely inefficient, but amazingly effective. Or lipstick, for example. On average, a woman eats between three and six kilograms of lipstick during her lifetime. Completely inefficient, but I'm always distracted by nice lipstick, like yours for example. Lipstick is amazingly effective.

Let's reinvent things completely. A washing machine, for example. You don't consume a washing machine, you don't eat it, so it needs to go back into a technical cycle: its parts will be used to



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make something new. Everything that is used, consumed, goes into a biological cycle. We’re not talking about avoiding waste, about waste reduction, about zero waste. Everything is a nutrient. Ants are so productive because they don’t make waste, they only make nutrients. They even don’t think about waste or about minimizing waste.

Reincarnation

We can design things differently and call design reincarnation. We can make things that are good for the biosphere or the technosphere. All materials are a nutrient for the biosphere or the technosphere. It just needs communication, it needs management consultancy. If you don’t do it, should I build up a new marketing management consulting firm, just because you don’t do your work? You can make everything biologically and technically beneficial. We don’t need to use the cheapest stuff, we can use the best stuff because we’ll get the material back. But I’m not talking about luxury, or about ethics. It’s ethical to look at social and cultural and environmental aspects. But these things aren’t about ethics, we are just idiots if we don’t look at these things.

Steelcase office chairs, for example, the world’s best selling office chair. It has a profit rate of more than 40 percent net. It’s designed so that you can disassemble it in 32 seconds. Can you imagine how easy it is to make it and to disassemble it?

That’s innovation. It’s not green, it’s not sustainability. Sustainability is pretty boring. What if I asked you: “How is your relationship with your boyfriend?” and you’d say: “Sustainable”? In

Dutch it's even worse: "*duurzaam*". My God, life is too short for sustainability. We need to form communities around Cradle to Cradle. I'm really applying to work with you, because it needs you. It needs a different mindset, a different organizational structure of companies, and it needs consulting. It needs you endlessly. Without you, it doesn't work. Without you, we cannot change the structure.

I think that littering is fun, because you can mark your territory by throwing things away. You can say: "Look, I was here!" On highways in Italy, for example, people really enjoy this. A person in front of you will throw out a coca cola can and you'll say: "Hey, he's not aware of the environment!" No, it's a wrong design. Because lightweight packaging should be designed so that you can throw it away. We developed new ice-cream packaging for Unilever. And it's not just biodegradable. This ice-cream packaging becomes liquid at room temperature, it stays frozen for just a few minutes. It degrades within hours. But it's not only biodegradable, it also contains seeds from rare plants.

We got a big protest article in *de Volkskrant* by a guy from Unilever. Do you know why? He has been trying for 20 years to minimize the negative impact of ice-cream packaging. Poor guy.

Community building

We need networks. We need material pooling strategies, because we don't need to make the same chair over and over again. Today, the material goes into the chair, tomorrow it goes into the carpet, the next time it goes into a computer part. So we need to pool the materials and there has to be a completely different management structure around it. When you analyze a washing machine today, it contains more than 200 types of plastics, because manufacturers always use the cheapest. From now on, they can take the best. But we don't want to make the same washing machine for the next 10.000 years, so it needs to be designed for different cycles, and that is management. That's you.

First, you can come together and look at what you don't want. You can say for example "We don't want PVC anymore." Secondly, you say what you want and then organize pool purchasing

'Somehow, we got the feeling we are bad for this planet'

around these things and make far better stuff. Better and cheaper.

It's not about *duurzaamheid*, it's about defined use periods, because otherwise you don't know how to get it back to somebody else. Do you really want a computer to last for fifty years? No, you want to have the latest and best thing. You can apply this overall and you can generate a community of support. There are five ways to control people to be less bad, but there are millions of ways to support people to be good.

It's all about community building, otherwise you cannot do this. We did a fair last week in Frankfurt. We showed about 600 of these products there, we paid about 300.000 euros out of our own pocket money to demonstrate this. And it worked. A community of companies was formed who support each other, with Akzo, with DSM, with Philips, with Van Houten, all different kinds of companies.

We want to make a footprint which is not less bad. We want to make a big, big footprint because everybody is important. You're all important, you all are relevant, but you do need to be a changed agent as a marketing consultant, as a business consultant, as a management consultant.

We need you. Without you we're completely lost, because you are the framework, you know how to deal with structures. Cradle to Cradle means reinventing everything. Please help us to do it. Thank you very much.

Vijf vragen aan Michael Braungart

What should be the ambition for Cradle to Cradle (C2C) in the Netherlands in 2020?

'By 2020, at current rates of loss, most of the planet's large mammals will face extinction. Humans will be the only big mammals left. I start by saying this, not to be an alarmist, but to demonstrate that there is no time to waste, no time to just have nice ambitions. Concrete goals need to be set: now.

The world has to look very different in the year 2020. From the air, for example, the first striking thing to notice would be that most warehouses and other flat roofs would be green. The role of green roofs is multifold, from cleaning the air to insulating roofs and reclaiming land lost to urbanization. The next thing would be inside our buildings. Most of us would not have to come home from work with a headache anymore, because the air would be healthy.

And another thing, which you would *not* see: instead of rows of solar panels or huge windmills in fields, there would be solar coatings on windows, and walls would provide much of our energy invisibly.

Windmills would be placed on transmission towers, instead of taking up space by themselves and requiring extra transmission lines.'

How can we contribute to the realization of these goals in the Netherlands?

'The first thing is to learn what material flow management and partnerships are, and how they are transformed by C2C approaches. The next thing is to set concrete and measurable goals for where you want to be ten years from now.

Then you need to make sure government agencies help rather than hinder Cradle to Cradle development. Some C2C companies are already complaining that government regulations and bureaucracy are blocking them. Incinerator fees, for example, are penalizing companies for providing high-caloric value waste. Therefore, they have to mix their waste, which produces toxic residues. Dutch politicians might be "on board" with C2C, but the bureaucracy and regulations have to be changed to match that ambition.

On the other hand, we can't wait for governments to do everything, so it is important for management consultants to identify where C2C can move ahead quickly.'

What competences do we need as consultants in this field?

'The core competence is identifying and managing material flow partnerships. Management consultants have to understand what this means in reality, and not just treat it as a nice way to make money. Some consultants call themselves Cradle to Cradle, but they have no idea how it works. C2C is a fundamentally different way of organizing material flows, and this gives management consultants a special opportunity and responsibility to help companies and governments form new partnerships and enhance existing ones.'

Which successes have you encountered while implementing C2C? How can we improve the implementation?

'It's going well in carpets and in transforming waste management to nutrient management. It's also going well at the political level, where the heads of government and departments are really getting the idea. Now they have to translate that into substantial financial support, instead of continuing to subsidize incinerators.

The main challenge for managers is to understand how to formulate the right questions. For example: not how to reduce energy consumption by sealing buildings and making them toxic, but how to make buildings produce energy and clean air by changing the types of materials that are used for building them.'

What's the role of management consultants from now up to 2020, not just regarding a board of directors but also regarding the middle management?

'First, as I've said, they should learn what material flow management and partnerships are, and how these are transformed by C2C. Secondly, they need to set measurable goals for where they want to be in ten years, and identify "low-hanging fruit": projects that can proceed quickly. Green roofs, fertilizer recovery, material separation and optimization in construction are just a few examples.

And thirdly, they need to get government agencies to develop "one stop shops", where businesses can come for C2C-help instead of having to knock on many different doors.' ■