

Interview with William McDonough, Architect

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Interviewer: John Echlin

TNS: There is tremendous interest in your work from people and businesses involved in the Natural Step here in Oregon. From your viewpoint of sustainability vs. eco-efficiency, I wonder if you would elaborate on that. What is the difference between green building and sustainability?

WM: The thing that we bring to the table that is different is this concept that we call eco-effectiveness, rather than eco-efficiency. Because we see eco-efficiency isn't changing the story, it just means that you wake up feeling bad, you try and feel better by being less bad and your goal is zero. So it's not really that interesting because it doesn't change the story. We see the difference between green building as it's presently thought of and sustainability as actually needing to go beyond sustainability toward what we are calling a sustaining architecture which starts to model itself on the idea of something becoming fecund rather than simply less destructive. So typical green building agendas are I'm going to be more energy efficient, I'm going to try to be less toxic or whatever. Those are interesting but they are actually not going to save us because what we are actually talking about are buildings that make more energy than they need to operate. We are talking about buildings that provide healthful air not just less bad air, and things like that, so we are actually trying to achieve a positive fecund agenda rather than just a less bad agenda.

TNS: What do you see are the barriers to achieving truly sustainable buildings?

WM: I think that the systems that are in place are based on the less is more concept, and less is more until you have nothing. So you end up with these strategies that are really demeaned I think and the whole idea of universal design presents a significant problem because the idea that we could design one size fits all will never work in the local circumstances. So we have to really re-understand again, like politics, that all sustainability is local, and then engage with a set of principles in the local circumstance rather than develop universal principles and then apply them as a generic response universally.

TNS: What would be your main suggestion for individuals, businesses, even municipal governments that are trying to get behind the sustainability movement, what would you suggest for them to remove these barriers?

WM: One thing is to have more fun. One of the problems I have with a lot of these sets of principles is when they become admonitions then they don't necessarily have the solution built into the admonition and they simply become depressing for a lot of people. They don't know what to do. We have to be careful with the Natural Step, for example, that it just doesn't become finger wagging. Somebody saying stop mining the earth's lithosphere is a nice thing to say but if you don't tell them how to do it then they stand there looking like a hound dog trying to read an algebra book, and they get a little confused. So we find it much better for forward motion to actually give people specific instructions that they can operate with, like: waste equals food, use current solar income, respect diversity, and have fun. Because I think that's the one element that's missing in a lot of the frame conditions. There is some magical thing that happens that is

human creativity that isn't reflected in pure admonitions, it needs to be understood as something that makes you get up in the morning and want to do something. So we are trying to have fun.

TNS: And you would suggest this for everyone.

WM: Everyone yes, because it is so hard! That you might as well want to get up in the morning and go do it. We have different criteria and different principles that we find all help you to understand what to do next.

TNS: You talk a lot about the abundance of nature as opposed to say the zero-impact mentality behind a lot of environmentalism. Elaborate on that a little. How can we partake in that?

WM: When I hear someone say that they want to save the environment by recycling paper for example, you are not saving the environment when you recycle paper. What you are doing is creating another use of a product as a white surface on which we are going to put writing that is going to require a system that uses chlorine and lots of water to develop a product to the market place that isn't at this point optimized from a design perspective. So you're not saving the environment you are simply being less bad. It's like saying that you are doing child protection if you only beat your child five times a day instead of ten times a day. When they call it environmental protection, when I see people in hotels and it says; help me save the environment use less paper towels. You are not saving the environment you are simply destroying it less quickly. So you haven't changed the story. The idea of celebrating the abundance of nature would be to take the idea of design as a signal of human intention. Apply a set of design assignments that honor what we now understand about the way the world works, and then re-imagine how we are going to promulgate those things that we require for our daily lives based upon ecological intelligence. And at that point you understand that nature is an incredibly abundant source. Because if we can model materials that go back to soils safely or that we can model to go back to industry forever, then we can have an abundance of things because instead of destroying the world every time we take something to use it we just simply create jobs and then close the loops on that material. That's why we have developed the leasing concept Products of Service. The idea is that you can close these loops and you could be Amelda Marcos and not feel guilty.

TNS: Do you think the Products of Service idea will be standard say in ten years, how far along do you see it developing?

WM: I think so, There are a lot of companies that haven't realized how to put this into play yet but we are working with a whole bunch to get that done.

TNS: What do think has to happen in terms of regulations to help make that come into play quicker?

WM: I don't think there is much we need to do in the world of regulations, we basically see regulations as signals of design failure, so that we need to move away from regulations. When someone tells me that they met the code you have to ask if they're telling you they would have done worse if they couldn't.

TNS: Just beyond breaking the law.

WM: If the minimum is someone's maximum you are not really dealing with someone who is engaging in the real creative possibilities.

TNS: Do you see much happening in terms of governments actually reducing regulations?

WM: I think so, once we started creating these products such as the (Design Tex) textiles, there was nothing to regulate. All of a sudden the regulators were all sitting there saying why is

anybody making it any other way and lights start to go off in their heads. They started using our process as benchmarks for other companies.

TNS: Back to the Natural Step for a minute. You were one of the founding members in the US...

WM: We helped bring Dr. Robert to the US and held the first meeting at the University of Virginia.

TNS: You described the Four System Conditions as being admonitions, for you they don't go quite far enough?

WM: No, I think the system conditions are really useful because they bring you into the world of thinking where you engage in the natural world and you are working with these fundamental conditions. I think what they do is set a platform for action, and what we are is an action platform.

TNS: You're taking the next step. You're implementing strategies to attain sustainability.

WM: Right, we haven't built our platform based on the Natural Step, it turns out that our platform is completely in tune with the Natural Step. We come at it from the design perspective, the creative side.

TNS: You have invented a number of tools and models that compliment the Natural Step framework. Could you describe those for us, for instance the index of sustainability?

WM: The index of sustainability is key to our ideas that we should think about. The fundamental contribution that Dr. Braungart and I are making is this idea of Products of Consumption and Products of Service. The idea of bifurcating product development into things that need to go into biological cycles or technical cycles is something we brought to the table. Then when you take the idea of use and apply Products of Consumption that go back to soils safely, Products of Service are essentially are what we call eco-leasing concepts such as what Interface is adopting. That once you start to look at that then you can start to design the products specifically using the index tools to optimize each product within its system, but first you have to understand what system it's in. Once you have articulated a product's typology then you can do an optimization on the specific product. Very interesting things start to happen when you design this way. The index has two fundamental characteristics. One is that it creates a fractal design tool that allows you to work stochastically. In other words you can take decisions...it's a physical manifestation of Yogi Berra's "When you get to a fork in the road take it!" Because you can go whichever direction but you still return home, and you fill in the diagram, so it doesn't matter what elements you have going on they all relate to the whole and they're self-similar. The index is like a fractal design tool that allows you to get within the sustaining world and stay there without leaving it. That's one part of it, the other is that we index out the persistent toxins, bio-cumulatives, endocrine disrupters and so on and say we are going to stop giving birth defects and various forms of dangerous design, and move into a more positive agenda. Then we actually articulate that and analyze it and develop it as a synthetic tool.

TNS: Would you recommend this process to others trying to follow the Natural Step?

WM: It would be a perfectly appropriate process for people interested in the Natural Step. It allows you to do the Natural Step. The Natural Step only tells you where you want your foot to fall. It doesn't tell you how to lift your leg.

TNS: In terms of applying your Index of Sustainability and some of your other tools how have you actually been able to measure the success of one of your projects?

WM: A good example is the (Design Tex) fabrics we've done where the water coming out of the factory is as clean as the water going in, that's a very measurable affect. The people in the factory can take off their masks, they can take off their gloves, that's a very measurable affect.

The business is extremely profitable, they are selling more than they can make right now which is a serious problem, but exactly the kind of problem you want to have as a commercial enterprise. And all the materials have been vetted for their larger issues on a planetary basis.

TNS: What about your buildings, some of the ones you have recently completed?

WM: A good example, one that is exciting for us is a building that we did for the GAP in San Bruno. There we were celebrating abundance not limits. We got a call from the people at the utility asking for our drawings because it turns out the building is apparently the second most energy efficient building in their territory compared to one that was designed to be the most energy efficient building in their territory. Now when you compare the two it's really fascinating. That other building was designed to minimize solar gain and minimize fresh air so they would only heat and cool the minimum. Our building said let's give everybody one hundred percent daylight and one hundred percent fresh air in their breathing zone. You have five trajectories to outdoors for every individual plus one hundred percent fresh air delivered to your breathing zone under your own control. So we are celebrating abundance of daylight and fresh air and we turn out to be the most energy efficient building, isn't that interesting. So it is a completely different strategy and if you occupy those two different spaces they're completely different. One is dark, and has air that's limited, one is light and has air that's unlimited and you realize that we haven't produced the same effect. Not by bemoaning limits, and designing to be efficient but by celebrating abundance in this case daylight, fresh air and people's well being and in then celebrating that.

TNS: Now, didn't it cost more?

WM: No, it cost the same as normal office building.

TNS: So what do you say to a client who is resistant and sees environmental responsibility as higher up front costs?

WM: We talk about real issues of money in their business language. We point out that the costs of a company are all in its people and not in its buildings. The buildings are chump-change. So we go straight to the real economics of their company and describe it in those terms and it's very effective. We refer them to our clients who basically say things like "these architects gave us this building as a gift and it pays for itself every few months for example."

TNS: Herman Miller?

WM: Herman Miller says that.

TNS: Have they actually used the money saved with the building to capitalize and reinvest?

WM: Actually, that building has now been renamed the Greenhouse, which I think talks about money and strategies. They have actually decided to move all their customer experience to our building because what was happening is that people would come to look at the furniture but they also would want to see the building. So now we are going to put the furniture in the building and it is where you will come to see their furniture. The idea that they would use the factory as the showroom for their final product is really an interesting moment and it shows what is the value of that to them.

TNS: A few questions about architecture. Certainly the current standards of design excellence in the form of awards are more based on visual aesthetics than they are on environmental performance. Do you think this will change?

WM: No, not in any big hurry. I think that's ok. I think the real task of designers is to incorporate these issues into buildings as part of their standard operations. See we don't want to be perceived as green architects, we want to be perceived as the best architects in the world, that's

all we're trying to do. We see this simply as a quality issue, the quality of design. So we're trying to focus on doing things that are really beautiful and very attractive, as well as having all these other characteristics. Because if you are going to measure success it won't be enough to measure ecological success if something's not attractive and doesn't work to manifest people's hopes and dreams.

TNS: What do you say to architects or builders or others who could care less about environmental concerns in their projects and focus solely on aesthetic issues?

WM: We just bemoan the limitations of their imagination that's all. A lot of people ask me to come into corporations to deal with CEO's that don't get it, and don't want to get it, and things like that, and ask me if I would be willing to work with them The answer is no because we have a motto in our office; We don't want to teach mules how to play the violin, it sounds terrible and the mules don't like it. So we don't waste our time with mules. The thing to remember about mules is that they're sterile and they're one generation, so just leave them out there and they won't come back.

TNS: Do you see the nature of the construction industry really changing, is it happening fast enough to make a difference, are you satisfied with the rate of change?

WM: I think the world will go on. We're simply here to celebrate our relationship to the cosmos. Life will go on. When people ask how long is this sustainability going to take the answer is it's going to take forever, that's the point. You know there is a sense of urgency that we have, but at the same time the world doesn't really care about us. You know we have to care about the world. Right now this frantic hand-ringing over this idea that we should start using nature as our tool is actually I think a little bit off the mark. Ultimately the real question is going to have to be how can we become tools of nature. It's just a different strategy, it's much more the native strategy, so it's not stewardship it's kinship. How do we become part of nature instead of simply transforming our tools into natural tools? I think there is a fundamental revelation that we have had in our work that we want to share with people and that is that. So even all the things you see, if you watch the evolution of eco-efficiency as it becomes natural capitalism thanks to a lot of the kinds of things that are going on, then you realize that it's still humans being anthropocentric with the world. Now we're using nature as our tool to develop our own capital. We're still seeing nature as capital. What will be very interesting to me is when we start to realize that we are part of nature's capital, when we start to transform our own relationship to nature based on that, that will be interesting.

TNS: When do think that will happen?

WM: I'm going to talk about that tonight. Hopefully that will start soon.

TNS: Will your talk tonight be something new, anything different?

WM: I think I might go into that zone, I think I'll talk also about how I personally found myself here, because I think people might find that interesting.

TNS: You've given us a number of very memorable phrases, which provoke serious thought: waste equals food, use current solar income, love all the children. What about architecture? Goethe said that architecture is frozen music, Louis Sullivan form follows function, Corbu the magnificent play of forms in light, and Mies less is more. What is architecture to William McDonough?

WM: I would say that architecture to me is a manifestation of human hope. I think if design is a signal of human intention, then architecture is a manifestation of human intention. Then the question has to be is it communicating a kind of optimism or a kind of pessimism? And since design inherently I think for most young architects, if they go into design, they go into it wildly optimistic, and then over the years they become more and more pessimistic. So I think the architecture that moves the most people is an architecture of hope. Something that manifests the

notion that there may be a tomorrow and that we can manifest things that are joyful legacies within that manifestation. So that starts to read back into what might be possible in the design of the buildings, a kind of long-term delightfulness. And that really does mean that efficiency is a really terrifying prospect. Because if we really look at the things which are most delightful in your life: the cherry tree in the spring? It's not efficient, Van Gogh was not efficient, Mozart was not efficient. If Mozart was efficient all the notes would happen at once, and that would be the end of that, you know. So I think what happens is you get this drawn out, it's like listening to the blues here, you get it drawn out, this is not efficient music, this is a celebration of the hope of connectivity. It's a celebration of synaptic space.

TNS: As though we have been chasing efficiency for so long, why aren't we efficient?

WM: And do we really want to be? If you are in the wrong system and you are efficient that's actually more terrifying. An efficient Nazi is scarier than an inefficient Nazi.

TNS: Are you a perpetual optimist?

WM: I have to be.

TNS: The glass always half full, not half empty?

WM: Well I'd rather measure that progress you know.

TNS: Current projects, a progress report? I understand you are working with Ford Motor Company at their Rogue plant, birthplace of the industrial age in America. What's it like to be working in that context?

WM: It's a great honor, it's also daunting. Richard Meier had a lot of years to spend two billion dollars on the Getty. We're going to have to do ours pretty fast. But sustainability is forever, it's a great project, we're also going to be designing the assembly plant there, a million and a half square foot building, we just got that commission. Bill Ford has read our material, has seen our principles and how we design and has asked us to transform the Rogue from the Icon of the first industrial revolution to our next industrial revolution.

TNS: Are you retaining existing buildings?

WM: Oh yeah.

TNS: Adding onto them as well?

WM: Yep, we're adding new facilities, we're going to be doing a lot of landscape work, we're going to have an onsite transformation of questionable soils into natural systems that are fecund again. It will become a productive landscape that's safe.

TNS: It must be Detroit's preeminent brownfield site.

WM: It's a world class brownfield site, no doubt about that.

TNS: What about Expo 2000 in Hannover?

WM: There is going to be no US pavilion I hear, we haven't been involved in the US pavilion which appears to have been a bit of a debacle. So it's interesting the Hannover Principles will be America's major contribution to the World's Fair. When you think about that it's actually interesting because if there is anything the United States has given as a gift to the world it's a set of principles for a kind of democratic balancing act. In a way the Hannover Principles I think find themselves manifesting out now as that.

TNS: Have you followed through with any of the architects who have gotten the commissions, have they actually been implementing according to the principles?

WM: Not really, because we did those for the City of Hannover when it won the bid. The whole process then took it to the state of Lower Saxony and there was a big question if the Federal Government even wanted an Expo because of the reunification, and the cost involved in that. When it finally got manifested it was so far along and we were so distantly involved because we had really been working for the city that there was no agency for us to engage with in order to affect those things. So we simply put them there as a gift from the city to all the designers and anybody who is interested in having them could pick them up and use them.

TNS: Do you think they followed through, has the city actually used them?

WM: In certain cases yes, a series of things have been adopted. One idea we had there, if you read it, about 2000 solutions, that they would actually not bring everybody to Hannover, they would actually go around the world and select things out there that are real and then make those part of the World's Fair. That's a big one and an important part of the Hannover Principles. The planning, master planning they did for the new housing and all that used them as a part of the basis for the competitions. The Dutch have taken them quite seriously in their Pavilion, things like that, so they'll show up here and there, it will be interesting to watch.

TNS: And the State of Connecticut has also adopted the Hannover Principles.

WM: Yes and other companies are adopting them, it's pretty exciting.

TNS: Do you see them changing? They're written eight years ago, have you evolved beyond them? Are there things you would like to add to them?

WM: Yeah, they'll always be changing, we're seeing the things, and a lot of the stuff that we heard today came out of them. So if you look at it, to eliminate the concept of waste, that was just 1991, so that's pretty early on, the whole idea of getting rid of toxins and all that was all stuff we brought to the table. But I think they will always be evolving and I think that everybody is going to have to write their own set of principles. One of the wonderful things about all of these scenarios is that they are not self-contradictory so they all seem to work together. That's why I think what we do is hugely complimentary to the Natural Step.

TNS: You've talked about measuring our legacy rather than our activities. Your own legacy, what are the things you feel you've achieved and have you gone as far as you want to?

WM: No, we're just getting started, but it's almost identical when thinking about Jefferson's legacies. I've been living in a house designed by Jefferson for the last five years. If you look at his tombstone he talks about the Declaration of Independence, I would say I will proud of contributing to the Declarations (plural) of Interdependence. I would like to think of our work such as the Hannover Principles as a Bill of Responsibilities rather than a Bill of Rights. A Bill of Rights would be am I free from you doing something to me but what would be interesting about a Bill of Responsibilities is what responsibility do I have to you, which is a whole different strategy. So I think Declarations of Interdependence instead of Independence, I think a Bill of Responsibility instead of a Bill of Rights is something I'm working on, and in his case Jefferson built the University of Virginia, I think I'll leave behind a lot of buildings that try and manifest these intentions. That's what I'll leave behind.

TNS: Are you getting involved in politics?

WM: No!

TNS: But perhaps influencing politicians?

WM: Yeah, I get a lot of calls to get involved in politics at different levels, but I'm not that interested in politics.

TNS: Any observations about the Pacific Northwest?

WM: My father is from Seattle and I spent my childhood summers in the Puget Sound, my grandfather is a lumberjack and I have a lot of connection to this place.

TNS: A lot of people here feel quite strong connections to the environment and quite strong responsibilities. At the same time there is pressure, for instance Portland and Oregon has adopted a number of rules such as urban growth boundaries to contain growth, but there is pressure to subvert that. Are we on the right track here in the Northwest?

WM: We call these the strategies of change. The humbling part is that we all have to recognize that we don't know what to do, and that there is no one solution to anything. So the dialogue is the key and the clash of ideas is important, and the clashing part of ideas is not to be avoided. We're meant to have an engaged dialogue, if everybody had the same answer we wouldn't have any progress here. The biggest fear I see is the idea that one size fits all or one answer to the problem is what everybody keeps looking for. That's a fundamental problem of modern design. It's like "oh that's not THE answer, of course it's not THE answer, that's ONE of the answers", so growth boundaries are one of the answers. It's very hard to explain to somebody in democratic society where something on this side of the line is worth a lot and that side of the line isn't. You're going to have to debate that quite a bit to come to some kind of consensus on it. But I think the most important thing would be to get the best examples of hugely profitable exercises that show the intentions of the system that we would really rather have and that's really the key place to be working. We have to understand that we need a great deal of humility in all this, because once we project tragedies and we realize that we take responsibility it means that we are now allowing for it to occur which means that we are strategically tragic. And once you recognize that you have a strategy of tragedy the only thing that can subvert it is a strategy of change, and that just means that we don't know what to do and that's the honest part. So the excitement is to engage with the strategies of change so that we can have a strategy of hope.

TNS: Any final words to our readers?

WM: Have fun!