

# Will McDonough: architect Leader in the redesign of industrial society

How many modern architects can you name? Contrast your answer with the number of professional athletes, actors or musicians that the average person can rattle off his/her tongue without hesitation. Should we fill the cultural cavities of our brains with names like Shaquille O'Neal, Penelope Cruz and Madonna, or might there be something to be gained by substituting one of these names with a contemporary of ours that has been searching diligently for a better way for us to live? Will McDonough is a name that deserves a solid place in our cultural awareness for no more reason than that he has and will continue to reconstitute what it means to "build."

Architects are known for building structures of many kinds and the world has several wondrous examples of amazing architectural feats—the Taj Mahal (in Agra, India), the Eiffel Tower (in Paris, France), and the Verrazano Narrows Bridge (in New York City) to mention a few. Many such icons of architectural success are often noteworthy for their glamour and stature. Not surprisingly, they required sophisticated designs, engineering wizardry, copious resources, and steadfast dedication, not to mention strong backs, of many workers—a host of whom perished during the construction stages of each of these landmarks of human creation. Needless to say, not all architects are so fortunate to have been able to plan or construct such memorable testaments to human ingenuity. However, there are figures among us today that are implementing a new vision of human-designed landscapes and industries. One in particular deserves a hearing.

William McDonough is an architect pioneering innovations in ecologically-friendly and socially-responsible materials, buildings, and communities. This former dean of the University of Virginia's Architecture School and founder of William McDonough + Partners, Architecture and Community Design has been working ardently to rekindle attention and admiration for designs that are practical, energy-efficient, community-centered, ecologically-sound, and long term (i.e., sustainable). An exposure to his work over the past 20 years allows for a vivid image of the possibilities that exist within the planning and designing profession and how one mind can contribute so mightily to such a worthwhile enterprise. McDonough's knowledge and vision have been incorporated by many companies and institutions the world over. A select list of clients from his resume indicates how extensive McDonough's influence has been: Gap Inc.; BP; IBM; Nike; Oberlin College; University of Michigan; and, Smithsonian Institute. The profound diversity of the projects to which McDonough has been dedicated illustrates how broad and meaningful an impact one person can have.

In the early 1990s, McDonough and



chemist Michael Braungart were challenged by a textile company, DesignTex, to create a 100% biodegradable fabric that would be versatile as well. Initial material recommendations from DesignTex included incorporating a mix of cotton and PET (an acronym for a polyester that is used to make many plastic containers which also can be obtained in large quantities in the recycled stream). But since PET consists of hazardous chemicals that can abrade (i.e., wear down) over time and the dominant mode of cotton growing requires heavy allotments of water and pesticides, Will and his cohort looked beyond this suggestion. After several years of work on this matter, they settled on a fabric mixture of wool and ramie—the latter fiber coming from a tropical Asian herb, *Boehmeria nivea*. Not only were they able to produce a fabric that would satisfy the customer's demand for strong yet ventilated cloth, the material they designed fit into a closed loop cycle, meaning that it could be reused or recycled indefinitely. Additionally, and perhaps most amazingly, all the byproducts of the manufacturing required to make the fabric were completely "compostable," greatly reducing the environmental dangers involved in textile operations. Their efforts won many awards including the First Prize in the International Design Sense competition from the London Design Museum (DTEX press release).

One of McDonough's more recent and large scale contributions has been as a collaborator with Ford Motor Company (FMC). Henry Ford's grandson, William Clay Ford, Jr., who is the current chairman of FMC, contacted McDonough in 1999 to determine how environmental concepts could be utilized in the automobile industry. Original ideas included the remodeling and repaving of Ford's huge Rouge factory in Dearborn, Michigan. This legendary factory compound which once employed 100,000 workers was chosen to be the prototype for future industrial complexes. A 500,000 square foot living roof, plants used as soil decontaminants, and renewable energy sources including both solar and fuels cells are among some of the advanced environmental-friendly concepts to be utilized at the new and improved Rouge.

And while these alterations have resulted in tremendous waste reduction, increase efficiency and a much healthier and enjoyable environment for the workers at the plant, it was reported just this January that McDonough's influence on Ford has gone much further. A new car model, known as Model U and touted as the "Model T of the 21st Century," will be hitting the showrooms in the near future. This car, which represents a quantum

leap in car manufacturing technology, not only will be energy efficient but will be environmentally-sound from bumper to bumper. The interior will be modular which allows components to be easily mounted, replaced or added. Much of the car (including a corn-based roof, soy-based seating foams and lubricants made of sunflower oil) will be recyclable or able to be composted as well. This car will definitely cause a stir when it is released in quantity.

In yet another project, McDonough contributed mightily to the revitalization of what was once termed "the dirtiest city in America," Chattanooga, Tennessee received this dishonorable label by the Environmental Protection Agency more than thirty years ago. With the assistance of "forced" remediation through the Clean Air Act and the sustained efforts of many innovative people, this mid-sized city of southern Tennessee now boasts its environmental character. Katie McGinty, former Chair of President Clinton's Council on Environmental Quality called the city, "a model for the nation and the world." McDonough's contributions to this project included the design of a grass-roofed trade center and planning and consultation on an eco-industrial park where waste energy (from a nearby plant) will be recovered and recycled. The park project involved many local citizens in the process as well, making it truly a community venture (Motavalli).

One of McDonough's latest creations is a book that he coauthored with Michael Braungart entitled, *Cradle to Cradle*. This profoundly interesting work presents a model for reconceptualizing how we make things. Central to McDonough and Braungart's conception of the future is a transformation of the notion that products that we use must end up in the "grave" (i.e., landfill or incinerator—both which are damaging to us and the environment). The authors envision and lay out the floor plans for a design scheme where the materials that make up our everyday products, like a car or computer, end up being reused into perpetuity. In short, the authors are advocating that our species begin to behave like other species on our planet. This requirement mandates that we recognize our place in the larger scheme of life. According to the authors, two living things in particular—the ant and the cherry tree—have much to demonstrate in this regard.

The ant, diminutive in size, is a master at meticulous organization. (Ant biomass the world over is considered to be comparable to that of humans, so their individual size certainly belies their importance.) This animal consumes many materials in its surroundings but everything it produces is reusable by other organisms or naturally biodegradable. In this sense, the ant produces no "waste" and is completely integrated into its surroundings.

The cherry tree might appear completely inefficient in its form of reproduction. Each spring a single tree produces thousands of blossoms knowing full well that perhaps only one will materialize into another cherry tree somewhere down the line. And

while from a Darwinian perspective it may need to do this to ensure its future survival, the thousands of seeds that go unfertilized definitely do not go to "waste." Once on or in the ground, the many materials produced by a cherry tree—including the blossoms, fruit, seeds, leaves, and branches—all become nutrients that are utilized by other plants, fungi and animals. So in a sense, the cherry tree doesn't only produce blossoms for its own direct survival but also for the survival of many species with which it "lives." (The authors dedicate an entire chapter—given the paradoxical title, *Waste Equals Food*—to the importance of making ones waste useful.) Humans certainly have much to learn from the ants and the trees. These "simple" forms of life aren't as "unintelligent" as we often make them out to be.

Most of the wisdom of their book is synthesized down to five principles that will enable our civilization to see "eco-effectiveness" to fruition. First, we must free ourselves of known chemicals that are destructive to us and the Earth—such as dioxin, lead, mercury and cadmium. Second, people must be able to choose their individual futures, rather than have them dictated by others. Yet, they must first be properly informed about the impact of the processes that are currently imbedded in our industrial sectors. Third, we must categorize chemicals on the basis of what danger they pose to us and the other earth inhabitants (an X list for those things that must go, a gray list for those compounds that ought to go soon (and research should be driven to find safe replacements), and a P list for positive chemicals). Fourth, we have to make sure the P list items are the ones that are growing in use and importance. And lastly, we must use our greatest strength as a species—our ingenuity—to "reinvent the wheel" as many times as is required to make our society and our world harmonious and self-supporting. Simply put, "products not designed for human or ecological health are unintelligent and inelegant" (McDonough & Braungart).

So next time you are in an airport waiting for a plane to board or at the ticket counter at the Orpheum, perhaps you will strike up a conversation centered around a modern architect and his/her connection to our everyday lives. We must begin to recognize that as part of humanity, we are members of a global society that contributes not only to our continuance as a species but also to the maintenance of the planet itself. Until we come to this realization, we will continue to poison ourselves and our children's children. May visionary people, including architects like William McDonough, provide us the direction for a brighter and healthier future.

#### Works Cited

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