design is intelligence made visible.

An Anthology of Essays

Introduction by

David Feldberg

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Frank Delfino

Design Does Matter

3rd Edition

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Quote on front cover: Lou Danziger

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introduction David Feldberg

Nearly a decade ago, Teknion published the first edition of *Design Does Matter* and in 2005, printed an expanded version inspired by the book's enthusiastic reception among the architecture and design community. Once again, we are moved to publish a new edition of *Design Does Matter,* a collection of essays by a diverse group of authors each with his or her own angle of vision, but who hold in common the conviction that design does indeed, matter. Given the economic and environmental dilemmas of our time, I feel confident in asserting that good design, effective design, matters now more than ever.

Certainly, at Teknion, we have continued to invest in design even as we weather a global financial crisis. We've developed new alliances with independent designers and continued to build our product portfolio. Design thinking remains an integral part of our culture. It is as much a part of our business strategy as is the form and function of our furniture products. And I believe that as we, our industry and business as a whole continue to investigate and integrate design into our various activities — product development, communications, organizational development — design will prove to be a powerful tool for realizing a world of rich and sustained abundance.

At Teknion, sustainability is now understood as a basic tenet of good design and a principle of doing business. That's as it should be. It is rewarding to see how far the furniture industry has come along the path to sustainability, and deeply gratifying to see the spirit with which all at Teknion have rallied around our vision of sustainable leadership. We have come a long way in our efforts to reduce environmental impact as we pursue sustainable development and I'm very proud of Teknion's accomplishments. Within these pages, you will find several voices that speak to the subject with insight and eloquence.

I am immensely pleased that this book has found such a receptive audience in the architecture and design community and beyond, engaging business leaders and others who want to know more about design — what it is, what it does and why it matters. It is my hope that *Design Does Matter* helps to advance awareness and understanding of the role of design and the skills that designers bring to business — from product development to communications to organizational structure and work processes. In this way perhaps we can at last achieve some kind of harmony among nature, technology and human purpose.

I am grateful to each writer for the generosity shown by contributing to our book. I hope you find it an instructive, pleasurable and inspiring read.

David Feldberg is President and Chief Executive Officer of Teknion.

Design should do the same thing in everyday life that art does when encountered : amaze us, scare us or delight us, but certainly ope n us to new worlds within our daily existence.

– Aaron Betsky

foreword: Leading Creatively Through Design

Frank Delfino

Design is everywhere, yet it is misunderstood by a majority of people who fail to grasp the true depth and breadth of design practice, or its full potential to act as a medium of positive change. With the third volume of *Design Does Matter,* it is our intent to expand and enliven the dialogue initiated by the first two volumes and to illustrate how design, in some form, touches almost everything we see or use.

This new edition presents some of today's most observant and intelligent design thinking and celebrates its extraordinary diversity by drawing essays from design writers, thinkers and luminaries working across the spectrum of architecture, urban and landscape design to product, graphic and interactive design to emerging disciplines like biomimicry. We also expand the dialogue geographically, including voices that speak from cultures around the world. I think you will find these essays provocative, interesting and always on the mark.

Recently, I've been inspired by work being done as part of the Don River Valley restoration at Evergreen Brick Works, in Toronto. This multi-faceted project has reclaimed and transformed an abandoned industrial site into a large-scale environmental community center — farmer's market, meeting and event center, exhibition space, children's camps, and educational and youth-based programming center — that exemplifies urban sustainability and green design. Truly a model of adaptive reuse of historical buildings, design and construction of the new administrative building will qualify for LEED Platinum certification. The Evergreen Brick Works project suggests new possibilities for the design of urban spaces and protecting historically significant buildings, addressing the issue of a more sustainable pattern of living by creating economic, social and environmental returns under one roof.

Projects that re-imagine the uses of design — like the Evergreen Brick Works project — need support not only from the community, but also from the highest level of government, if they are to be successfully implemented and thus have a positive impact on people, culture and the economy. Significant money, talent, time and energy need to be invested if new ideas, technologies and methodologies are to bear fruit in terms of human needs. Designers and engineers have already developed ways to harvest energy from airborne wind turbines that harness the power of the jet stream. Multi-disciplinary teams are working to make renewable fuel from algae — a solution with enough real market potential to reap investment by business leaders including Bill Gates. Such innovative, cross-disciplinary approaches are what is needed to address critical environmental challenges and achieve a stable co-existence with the natural systems on which our human enterprise depends.

I believe that we also need to encourage the cross-collaboration between and among the design disciplines in order to integrate their respective intelligence and thus amplify their potency. A green office building, hospital or hotel needs innovative thinking beyond the traditional disciplines, as well as thoughtful graphic communications that live up to the building's identity and smart material choices for signage and wayfinding that reinforce its purpose and link the building to its environment of earth, river and sky — or concrete, glass and steel. Of course, some designers with deep skills in architecture and graphics are also applying design to products and environments beyond furniture or interiors, but I believe that the more designers collaborate with each other or borrow from other fields like engineering, the better the prospect for creativity and innovation.

There are tremendous opportunities for innovation that serve the human good — including the emerging clean economy with a yet-to-be-realized economic activity. We've designed things that are beautiful and a pleasure to use. We've designed products that make life safer and more fun. Now, we must also design things that serve multiple purposes, products that can be repurposed or reused and that do not become waste or degrade the natural world. I also believe that manufacturers have an obligation to look at products that are approaching the end of their life cycle — and figure out ways to retool, reuse, recycle or repurpose those products. Just because they've already been designed, manufactured and entered the market, doesn't absolve us from the responsibility of creating ways to remove those products from the waste stream.

Unfortunately, there is still resistance by some business leaders and policy makers to the idea of sustainability — a belief that prosperity and sustainability are inevitably at cross-purposes. It is my belief that design and innovation are powerful tools for resolving this misguided conflict. As an example, there has been a prevailing perception that a LEED building costs more to build, but recent studies discredit that myth and offer substantial evidence to the contrary. I believe that sustainable practices in all industries will ultimately prove to enhance prosperity rather than impede or endanger it.

Can design lead to a new age and fresh start? Many of the essays contained in this book suggest that it can. And also that design in the coming decade must necessarily involve new ways of thinking that lead to new ways to build, produce, consume and reuse. But whatever their subject, however provocative their point of view, these authors offer important clues to a deeper understanding of design and how design can help people lead better lives through the 21st century and beyond. Design can be a country's economic driver and a corporation's sustainable competitive advantage.

I am so pleased that we are able to again present *Design Does Matter* to the architecture, design and business communities. These essays represent not only Teknion's ongoing commitment to design, but also a personal and professional desire of my own to honor and support the continuing evolution of design toward making a more beautiful, humane and sustainable world.

Frank Delfino is President of World Markets at Teknion and a member of the Board of Directors at the Design Exchange in Toronto.

Design is the term we use to describe both the process and the result of giving tangible form to human ideas. Design doesn't just contribute to the quality of life; design, in many ways, now constitutes the quality of life.

– Peter Lawrence

Scott

Deugo

laying the groundwork for sustainable development

I would venture to say that every designer who spends time thinking seriously about design finds the subject not only intriguing, but also somewhat elusive. Webster's defines design as "the act of working out the form of something" or an "arrangement scheme." Also, "to plan, devise or invent." All are more or less appropriate, yet somehow incomplete. I could of course present any number of pithy definitions by quotable design icons, but I prefer to look at my own experience and offer a perspective about the nature of design — and more specifically, about the potential of design thinking.

The unique process of design thinking has immense value for business, government or any organization — and I believe that designers themselves have an opportunity to put their talent, skill and intuitive sense to work to solve urgent and broader economic and environmental problems.

Educated and trained as an industrial designer, I've practiced design in a number of ways during my career: designing products, leading teams of designers and also using design thinking to create organizational systems with the goal of developing or improving a business. I joined Teknion in 2000 as a designer to develop new products and as a leader to "design in" mechanisms that would help expand a corporate culture. Our intention was to engage people at all levels and ensure that everyone felt valued, empowered, inspired and connected.

Teknion defines itself as a company that embraces change. We work strategically to be clever, agile and responsive. As the company's first Vice President responsible for Sustainable Development, my job was to build on our values with a commitment to proactive environmental responsibility in support of sustainable business development. We began by designing a strategy which would change our understanding of how best to design and manufacture our products. The strategy became the seed of bigger changes. Today, although a work in process, the principles of sustainability are integrated into the company culture and operations at every level. Clearly we are all in this together. Sustainable development drives decision-making at the top and the choices of people working on the production line. We strive to make sure that everyone understands and has the tools to participate in our effort to change how Teknion touches the environment.

How did this strategy evolve and take the form of actions? How did we go about changing people's thinking and behavior on a large scale? And how did we tackle this job as designers using design thinking? We looked at the strategy development as a creative process. We followed a path of research and investigated the multitude of problems across complex challenges. We asked a ton of questions and read books on the subject (which were, for the most part depressing, except for a few that we saw as inspirational like *The Ecology of Commerce* by Paul Hawken). We listened carefully and observed with a passion the work of others like Ray Anderson, Founder and Chairman of Interface. We fielded ideas from across our company through our Greenworks teams and we looked for any and all opportunities and identified constraints that we needed to move through. We opened ourselves up to be inspired and finally, identified an appropriate and thoughtful solution, continuing to be sensitive to any details of the design that needed adjustment or revision.

If it sounds complex, it is. Almost always, design involves synthesizing vast amounts of information, although the output may appear to be quite simple. "Look at that," people say. "It's so simple, so beautiful." But simplicity is never simple to achieve. And yet, that's exactly what designers do. Our job is to identify the essence of the problem; to find the straight line from here to there; from where we are to where we want to go. That's why design thinking works so well to develop a system or craft public policy, to confront organizational and even global change, just as well as it works to build a bridge or fashion a chair.

As designers, we are trained to be both rigorous and original in our thinking, to visualize potential solutions and explain to our client, our superior or our team members how our work addresses the problem we are trying to solve. Our training allows us to present our rationale and then willingly accept critique, using these other perspectives to further the design to arrive at a more refined and elegant response.

Another of the advantages a designer brings to an organization is that he or she has not inherited concepts of how things should or must always be done. A designer is not encumbered by tradition. In fact, a designer's whole orientation is to look for and see the unique opportunity;

to deconstruct, if you will, the structures in place and see how one might rearrange or reframe those elements. Or, what elements might be eliminated or need to be added, so as to effect change. You have to allow for exploration, for imagination and a little bit of risk. You have to make room for what can't yet be precisely measured or controlled if you really want to innovate.

Using this type of thinking, we've set about creating a context for innovation and organizational change. We have taken significant steps as a company to follow a greener path, evolving our operations to have less impact on the environment and to educate everyone about how his or her own attitudes, habits, behaviors and values contribute to new more sustainable outcomes. As with any new idea, some people immediately grasp and embrace it. Others resist, but that very resistance serves an important purpose — conflict forces us to be very clear about why we should change and to be specific in articulating how we're going to go about it.

Organizations that take sustainability seriously know that it goes beyond getting people to use recycling bins or bike to work. At Teknion, we are rethinking what we make, how we make it and how we distribute our products. We are using design and design thinking to manufacture products in such a way as to use fewer materials and less energy, to create less waste and derive value from materials through intentional re-use throughout the product life cycle. I'm not the first to make this note, but in essence, these practices are simply good design. Good design lasts a long time. It's efficient and effective and in some way, it makes life better. Ideally, it allows us as a furniture manufacturer to begin to model our operations on natural systems and thus create a healthy and sustainable prosperity.

As we move forward it is clear that the new measure of success for any company is to balance economic prosperity with social and environmental imperatives. From where I sit, that's just a natural step up from the historical purpose of business. Today, we have to look beyond the immediate goal of shareholder value to fulfill present needs "without compromising the ability of future generations to meet their own needs."[1] It's a natural evolution of the concept of organizational development, which became current in the 1950s. Organizational development was a concept and process that sought to increase an organization's effectiveness by changing

people's beliefs and values, along with the organizational structure, so that they could adapt to new technologies and the rapid pace of change. The objective was to forge a strong culture that would ensure the company's viability beyond present leadership. Sustainable development enlarges that concept to encompass our collective future and the continued viability of human life on our planet.

Today, a new generation of companies envisions sustainability as their core corporate purpose. To make such vision a reality — and it is imperative that we do so — organizations have to evolve and rather quickly. And that means educating people and in many cases convincing them that sustainable development is to their individual benefit, as well as to the organization's goals as a collective enterprise. It means finding ways to prompt people to take action, innovate and inspire others. That doesn't mean climbing onto the soapbox and making grand speeches. Any program or practice designed to effect change has to be thoughtful and meaningful — and it should engage not only a company's own staff, but also its suppliers, partners, shareholders and customers. The capacity to collaborate is essential.

In the past, cost has been put forward as an obstacle to the practice of sustainable design. But that's really no longer the case. Green buildings — those that incorporate sustainable principles — do not cost more to build per square foot and are, in fact, less expensive to operate than those designed and built without regard to environmental impacts. They also happen to be safer and healthier places to work. We also know now that sustainable strategies — the responsible use of land, water, energy and materials — can enhance the building's brand and make it more attractive to tenants. As more and more developers seek to build LEED Gold and Platinum projects, and more companies want to house their staff in those well-lit, well-ventilated buildings, green design will become an economic as well as a humanistic imperative. To put it another way, environmental responsibility and economic growth are no longer mutually exclusive.

I am also hopeful that governments around the world will embrace design as a powerful tool for innovation and use that tool to enhance global prosperity and to address the global environmental issues that threaten humanity. It is time for governments, business leaders and designers to act on our responsibility to the future; to our children and our children's children. We have to transform human industry from one of consumption and waste to one of natural, economic and cultural abundance. [2] To take part in and design that transformation will be demanding, but the reward will be true and effective change.

1 This definition of sustainability can be traced to a 1987 UN World Commission on Environment and Development.

2 A reference to concepts put forward by William McDonough and Michael Braungart in their 2002 book, *Cradle to Cradle.*

As Senior Vice President of Design, Marketing and Sustainable Development, Scott is responsible for Teknion's worldwide product design and corporate marketing. He also leads the corporation's strategic focus on reducing environmental impacts towards the goal of sustainable development. Scott graduated from the School of Industrial Design at Carleton University in Ottawa, Ontario, in 1980 with a Bachelor of Industrial Design.

But we must first realize th at ecological and social and economic issues are all dee ply intertwined. There can be no solution to one witho ut a solution to the others.

– Jean-Michel Cousteau

Michael

Bierut

innovation is the new black

I was invited by Patrick Whitney, director of the Institute of Design at the Illinois Institute of Technology, to participate in a symposium on the "'creative corporation' and the adoption of design by business leaders." Naturally, I said yes, quoting Lance, the drug dealer in Pulp Fiction, who, when asked by Vincent Vega what will happen after he gives Marcellus Wallace's wife an adrenalin injection to the heart, answers "I'm curious about that myself."

It turned out that the operant word at the symposium wasn't design but innovation. Yes, innovation. Everyone wanted to know about it. Everyone wanted to talk about it. One of the panelists was *Business Week's* legendary design advocate Bruce Nussbaum. "When I talk to my editors about design, I have trouble keeping them interested," he confessed. "But there's a tremendous interest in innovation." The lesson to me seemed clear. If we want the business world to pay attention to us, we need to purge the d-word from our vocabularies. That's right: we are all innovators now.

A recent email provides proof of the timeliness of this approach. "Empower Yourself to Innovate," the DMI urges me, sounding suspiciously like Stuart Smalley. A visit to the DMI's website for their upcoming conference, "Empowered Innovation," confirms that the organization has already gotten with the program in a big way. The word "design" is nowhere to be found in the main description of the conference. It finally makes its appearance halfway through a list of conference topics that include "Innovation within an Organizational Context," "Experimentation Matters: New Opportunities for Innovation" and "Culture-Driven Innovation." It turns out that Magdalena De Gasperi from Braun GmbH will be speaking on "The Impact of Innovation and Design on Brand Equity." Design, it appears, is welcome only when properly escorted...by Innovation! And it's no surprise that the organization officially known as the Design Management Institute is using its acronym more and more and letting its formal name wither quietly away, just like KFC did as it sought to distance itself from the greasy brand equity of the words Fried Chicken. I suppose I hardly need to add that the DMI has a blog called — care to guess? — that's right, the Innovation Blog.

This mania for innovation, or at least for endlessly repeating the word "innovation," is just the latest in a long line of fads that have swept the business world for years. In the mid-eighties, Motorola developed a seemingly effective quality management program based on a sophisticated statistical model called Six Sigma, which involved attempting to reduce the number of defects in their business processes to less than 3.4 per million. Within a few years, managers everywhere were demanding that their organizations begin "implementing Six Sigma principles." The mystical invocation of the Greek letter; the unnerving specificity of 3.4 per million (as opposed to the presumably unacceptable 3.5 per million); the talismanic power of the bell curve diagram that was often used to "illustrate" the theory: all of this arcana was meant to instill awe in employees who would shrug off a homelier directive like "measure twice, cut once."

It's not hard to see why innovation is becoming the design world's favorite euphemism. Design sounds cosmetic and ephemeral; innovation sounds energetic and essential. Design conjures images of androgynous figures in black turtlenecks wielding clove cigarettes; innovators are forthright fellows with their shirtsleeves rolled up, covering whiteboards with vigorous magic-markered diagrams, arrows pointing to words like "Results!" But best of all, the cult of innovation neatly sidesteps the problem that has befuddled the business case for design from the beginning. Thomas Watson Jr.'s famous dictum "good design is good business" implies that there's good design and there's bad design; what he doesn't reveal is how to reliably tell one from the other. Neither has anyone else. It's taken for granted that innovation, however, is always good.

Everyone wins on the innovation bandwagon. A recalcitrant client may cheerfully admit to having no taste, but no one wants to stand accused of opposing innovation. And a growing number of firms stand ready to lead the innovation charge; a much-talked-about article in *Business Week* last August, "Get Creative! How to Build Innovative Companies," singled out Doblin, Design Continuum, Ziba, and IDEO. In fact, if anyone deserves the credit for inventing the don't-think-of-it-as-design-think-of-it-as-innovation meme, it's IDEO. "Innovation at IDEO," visitors are assured on their website, "is grounded in a collaborative methodology that simultaneously examines user desirability, technical feasibility, and business viability." No idle sitting around and waiting for inspiration to strike at IDEO! Skeptics requiring further persuasion will find it in *The Art of Innovation* and *The Ten Faces of Innovation,* two books that IDEO's general manager Tom Kelley has written on the subject.

I was surprised to learn, however, that although innovation is always good, it isn't always effective. "We all know that reliable methods of innovation are becoming important to business as they realize that 96% of all innovation attempts fail to meet their financial goals," read the invitation to the Institute of Design symposium, a figure derived from research by Doblin. Now, I suppose you could do worse than failing 24 out of every 25 tries, but this sounds suspiciously like Albert Einstein's famous definition of insanity: doing the same thing over and over again but expecting a different result. But thank goodness, a solution is at hand: "Business leaders are increasingly looking to design to not just help, but lead their innovation processes." So we come full circle. Don't say design, say innovation, and when innovation doesn't work, make sure you saved some of that design stuff, because you're going to need it.

With this new vision of design-as-innovation identified — somewhat chillingly, if you ask me — in *Business Week* as "the Next Big Thing after Six Sigma" (the ironically-intended capitalization is theirs), perhaps a new golden age of respect for designers — or innovators, or whatever you want to call us — is upon us at last. Or maybe it simply announces the availability of a turbo-charged version of the kind of frantic rationalizations that we've always deployed in our desperation to put our ideas across. Either way, I'm reminded of something Charles Eames used to say: innovate as a last resort. Have we run out of options at last?

Michael Bierut studied graphic design at the University of Cincinnati's College of Design, Architecture, Art and Planning. Prior to joining Pentagram in 1990 as a Partner, he worked for 10 years at Vignelli Associates, ultimately as Vice President of Graphic Design. Michael has won hundreds of design awards. His work is represented in the permanent collections of the Museum of Modern Art (MoMA), the Metropolitan Museum of Art, and the Cooper-Hewitt, National Design Museum, all in New York; the Library of Congress in Washington, D.C.; the Museum für Kunst und Gewerbe, Hamburg, Germany; and the Musee des Arts Decoratifs, Montreal.

When one tugs at a single thing in nature, he finds it attached to the rest of the world.

– John Muir

Paul

Hawken

you are brilliant, and the earth is hiring

The Commencement Address by Paul Hawken to the Class of 2009, University of Portland, May 3, 2009

When I was invited to give this speech, I was asked if I could give a simple short talk that was "direct, naked, taut, honest, passionate, lean, shivering, startling, and graceful." No pressure there.

Let's begin with the startling part. Class of 2009: you are going to have to figure out what it means to be a human being on earth at a time when every living system is declining, and the rate of decline is accelerating. Kind of a mind-boggling situation…but not one peer-reviewed paper published in the last thirty years can refute that statement. Basically, civilization needs a new operating system, you are the programmers, and we need it within a few decades.

This planet came with a set of instructions, but we seem to have misplaced them. Important rules like don't poison the water, soil, or air, don't let the earth get overcrowded, and don't touch the thermostat have been broken. Buckminster Fuller said that spaceship earth was so ingeniously designed that no one has a clue that we are on one, flying through the universe at a million miles per hour, with no need for seatbelts, lots of room in coach, and really good food — but all that is changing.

There is invisible writing on the back of the diploma you will receive, and in case you didn't bring lemon juice to decode it, I can tell you what it says: You are Brilliant, and the Earth is Hiring. The earth couldn't afford to send recruiters or limos to your school. It sent you rain, sunsets, ripe cherries, night blooming jasmine, and that unbelievably cute person you are dating. Take the hint. And here's the deal: Forget that this task of planet-saving is not possible in the time required. Don't be put off by people who know what is not possible. Do what needs to be done, and check to see if it was impossible only after you are done.

When asked if I am pessimistic or optimistic about the future, my answer is always the same: If you look at the science about what is happening on earth and aren't pessimistic,

you don't understand the data. But if you meet the people who are working to restore this earth and the lives of the poor, and you aren't optimistic, you haven't got a pulse. What I see everywhere in the world are ordinary people willing to confront despair, power, and incalculable odds in order to restore some semblance of grace, justice, and beauty to this world. The poet Adrienne Rich wrote, "So much has been destroyed I have cast my lot with those who, age after age, perversely, with no extraordinary power, reconstitute the world." There could be no better description. Humanity is coalescing. It is reconstituting the world, and the action is taking place in schoolrooms, farms, jungles, villages, campuses, companies, refuge camps, deserts, fisheries, and slums.

You join a multitude of caring people. No one knows how many groups and organizations are working on the most salient issues of our day: climate change, poverty, deforestation, peace, water, hunger, conservation, human rights, and more. This is the largest movement the world has ever seen. Rather than control, it seeks connection. Rather than dominance, it strives to disperse concentrations of power. Like Mercy Corps, it works behind the scenes and gets the job done. Large as it is, no one knows the true size of this movement. It provides hope, support, and meaning to billions of people in the world. Its clout resides in idea, not in force. It is made up of teachers, children, peasants, businesspeople, rappers, organic farmers, nuns, artists, government workers, fisherfolk, engineers, students, incorrigible writers, weeping Muslims, concerned mothers, poets, doctors without borders, grieving Christians, street musicians, the President of the United States of America, and as the writer David James Duncan would say, the Creator, the One who loves us all in such a huge way.

There is a rabbinical teaching that says if the world is ending and the Messiah arrives, first plant a tree, and then see if the story is true. Inspiration is not garnered from the litanies of what may befall us; it resides in humanity's willingness to restore, redress, reform, rebuild, recover, reimagine, and reconsider. "One day you finally knew what you had to do, and began, though the voices around you kept shouting their bad advice," is Mary Oliver's description of moving away from the profane toward a deep sense of connectedness to the living world.

Millions of people are working on behalf of strangers, even if the evening news is usually about the death of strangers. This kindness of strangers has religious, even mythic origins, and very specific eighteenth-century roots. Abolitionists were the first people to create a national and global movement to defend the rights of those they did not know. Until that time, no group had filed a grievance except on behalf of itself. The founders of this movement were largely unknown — Granville Clark, Thomas Clarkson, Josiah Wedgwood — and their goal was ridiculous on the face of it: at that time three out of four people in the world were enslaved. Enslaving each other was what human beings had done for ages. And the abolitionist movement was greeted with incredulity. Conservative spokesmen ridiculed the abolitionists as liberals, progressives, do-gooders, meddlers, and activists. They were told they would ruin the economy and drive England into poverty. But for the first time in history a group of people organized themselves to help people they would never know, from whom they would never receive direct or indirect benefit. And today tens of millions of people do this every day. It is called the world of non-profits, civil society, schools, social entrepreneurship, non-governmental organizations, and companies who place social and environmental justice at the top of their strategic goals. The scope and scale of this effort is unparalleled in history.

The living world is not "out there" somewhere, but in your heart. What do we know about life? In the words of biologist Janine Benyus, life creates the conditions that are conducive to life. I can think of no better motto for a future economy. We have tens of thousands of abandoned homes without people and tens of thousands of abandoned people without homes. We have failed bankers advising failed regulators on how to save failed assets. We are the only species on the planet without full employment. Brilliant. We have an economy that tells us that it is cheaper to destroy earth in real time rather than renew, restore, and sustain it. You can print money to bail out a bank but you can't print life to bail out a planet. At present we are stealing the future, selling it in the present, and calling it gross domestic product. We can just as easily have an economy that is based on healing the future instead of stealing it. We can either create assets for the future or take the assets of the future. One is called restoration and the other exploitation. And whenever we exploit the earth we exploit people and cause untold suffering. Working for the earth is not a way to get rich, it is a way to be rich.

The first living cell came into being nearly 40 million centuries ago, and its direct descendants are in all of our bloodstreams. Literally you are breathing molecules this very second that were inhaled by Moses, Mother Teresa, and Bono. We are vastly interconnected. Our fates are inseparable. We are here because the dream of every cell is to become two cells. And dreams come true. In each of you are one quadrillion cells, 90 percent of which are not human cells. Your body is a community, and without those other microorganisms you would perish in hours. Each human cell has 400 billion molecules conducting millions of processes between trillions of atoms. The total cellular activity in one human body is staggering: one septillion actions at any one moment, a one with twenty-four zeros after it. In a millisecond, our body has undergone ten times more processes than there are stars in the universe, which is exactly what Charles Darwin foretold when he said science would discover that each living creature was a "little universe, formed of a host of self-propagating organisms, inconceivably minute and as numerous as the stars of heaven."

So I have two questions for you all: first, can you feel your body? Stop for a moment. Feel your body. One septillion activities going on simultaneously, and your body does this so well you are free to ignore it, and wonder instead when this speech will end. You can feel it. It is called life. This is who you are. Second question: who is in charge of your body? Who is managing those molecules? Hopefully not a political party. Life is creating the conditions that are conducive to life inside you, just as in all of nature. Our innate nature is to create the conditions that are conducive to life. What I want you to imagine is that collectively humanity is evincing a deep innate wisdom in coming together to heal the wounds and insults of the past.

Ralph Waldo Emerson once asked what we would do if the stars only came out once every thousand years. No one would sleep that night, of course. The world would create new religions overnight. We would be ecstatic, delirious, made rapturous by the glory of God. Instead, the stars come out every night and we watch television.

This extraordinary time when we are globally aware of each other and the multiple dangers that threaten civilization has never happened, not in a thousand years, not in ten thousand years. Each of us is as complex and beautiful as all the stars in the universe. We have done great things and we have gone way off course in terms of honoring creation. You are graduating to the most amazing, stupefying challenge ever bequested to any generation. The generations before you failed. They didn't stay up all night. They got distracted and lost sight of the fact that life is a miracle every moment of your existence. Nature beckons you to be on her side. You couldn't ask for a better boss. The most unrealistic person in the world is the cynic, not the dreamer. Hope only makes sense when it doesn't make sense to be hopeful. This is your century. Take it and run as if your life depends on it.

Paul Hawken is an environmentalist, entrepreneur and author. His work includes starting ecological businesses, writing about commerce's impact on living systems, and consulting with heads of state and CEOs on economic development, industrial ecology and environmental policy. Paul's seven books have been published in over 50 countries in 27 languages and four have become national bestsellers. Businesses he has founded include some of the first natural food companies in the U.S. to rely solely on sustainable agricultural methods. Paul was presented with an honorary doctorate of humane letters by University president Father Bill Beauchamp, C.S.C., when he delivered this speech.

Whenever you see a succ essful business, someone once made a courageous decision.

– Peter Drucker

Michael

Vanderbyl

branding by design

From this side of the millennium we can say with certainty that things have changed — and still much has remained remarkably consistent. For anyone working in communications design, it's impossible not to notice that technology and new media have transformed both the process and practice. Design gets delivered in ways one could not have imagined even a decade ago — the iPhone being just one example. Yet the purpose of communications design — to realize and convey a message — has not changed. Nor have the designer's real tools: ideas, insight, intuition.

At present, one also hears a great deal of discussion in the design world about branding or brand strategies, whereas our professional vocabulary once privileged words like "identity" and "image." Yet like an identity, a brand is still in essence the "message" of a company or product. It's about the creation of meaning. More than a logo or trademark, a brand is the philosophy that animates a company and initiates the *conversation* with its publics. For example, the audience for Target's print and television advertising may not be able to articulate exactly what Target's philosophy or brand message is, but it is understood and internalized on an intuitive level.

So what is a brand? It includes graphic elements like the logo, tangible materials like product packaging and print collateral, web sites and intranets, as well as environments like a Prada store or the lobby of a W Hotel. It also includes personal interactions — the warmth with which one is greeted or how technical support personnel answer the phone. A brand is not just a business card, or this year's ad campaign or a catchy tag line. It's a 360-degree experience that builds over time — the cumulative effect of multiple communications and the sum of the experiences of all those who come into contact with a company, its products, services and people.

One of the most valuable ways that design can distinguish a brand or the enterprise it represents is through a powerful visual identity that captures and projects all of the ideas that make up the message of a brand. A well-conceived and well-executed visual language not only delivers and clarifies a message — it *is* the message. It answers questions about

the brand before they are even thought of, much less asked. But to achieve an elegant and eloquent visual language is a process that takes a great deal of thought.

Fortunately, there are business leaders who understand the demands of the design process and the value of design for business and society. From my perspective, the best-case scenario is to be able to work with top management that is willing to champion good design and see its potential for creating and sustaining the company's brand. Historically, Thomas Watson at IBM and Steve Jobs at Apple have been very vocal advocates of design who have significantly influenced its place in American business. One cannot help but admire Sir Richard Branson's bold leadership and branding genius at Virgin America. After only three years in the air, Virgin America is recognized for stylishly elevating the travel experience and has positioned itself as an airline in a class of its own.

"To be irreplaceable," said Coco Chanel, "one must always be different." Chanel's dictum makes an important point. There's no such thing as a me-too company that can maintain as a brand. A brand represents a unique set of characteristics and conditions that cannot be duplicated. It's about developing content around what is different and what is true. *Truth* is always at the core of a successful brand. You have to deliver on the promise. A "luxury" brand has to deliver something special. Not something good, something great. A "green" brand has to walk the talk. Authenticity begets the trust and loyalty that ultimately sustain a brand.

Certainly, it is a challenge for any brand to remain true to its essence over time or to be consistent at every point. It's never easy. Even smart branding programs sometimes miss the mark. While Target has done a great job of advertising, and the brand has attracted stellar designers like Jean Paul Gaultier and Marcel Wanders, the store environments don't live up to the promise of the ads. Unfortunately, what you see, hear and feel in the store does not have the wit and style of a Target ad. Imagine a shopping experience that delivered the modern consumer paradise promised by those ads! Likewise, I believe that some online brands — Google, for one — need to work on improving the virtual experience of users across their vast markets. The promise and the reality are a world apart. Ultimately, that gap can undermine a brand.

Companies like Apple or Tiffany get it right. They deliver. These brands live up to their philosophy, their image, their message — and in so doing illustrate respect for their customer. Loyalty to the Apple brand isn't due to the enormous amount of money spent on ad campaigns or even just about life-changing products like the iPhone and iPod. The attributes of the Apple brand are embodied in everything the company does. The stores are as sleek and smart as an iMac and set up so that potential customers can play with the technology and talk with a personable and knowledgeable salesperson. Products are displayed almost as if they are works of art. Apple advertising captures a feeling of energy and freedom and summons up words like "imaginative," "innovative," "modern" and "hip."

The relevance of the brand and its rapport with its audience is repaid in unwavering loyalty. The sales are merely a byproduct of that loyalty. Clearly for Apple, the brand is just as important as the technology or the product. After all, the products are designed to evolve as technology continues to advance and the next great thing comes along. But the brand, if well managed, will outlive today's iPhone or its new iPad and continue to inspire and engage consumers.

The strength of an image can permeate the consciousness of consumers and act as a kind of vivid shorthand for the brand. Tiffany & Co., a prestige brand with a heritage spanning two centuries, created an extraordinary ad series during the holiday season a few years back. The ads showed a man knocking at the door holding a box behind his back — just the famous blue box in his hand. The name Tiffany didn't even appear in the ad. It didn't have to. Almost every reader instantly recognized the Tiffany package. The ad was brilliant and audacious, but it was possible only because of the emotional power of the brand. Very few companies could get away with it. The focus is on the brand, not a Tiffany diamond, and the brand is expressed consistently at every touch point.

As an analogy, my belief is that a brand is not a suit of clothes, but rather a wardrobe. It's everything in your closet that you have chosen to represent yourself, your values, the way you live, what you stand for. If one chooses intelligently, that brand, like a well-crafted wardrobe, can work very well for quite a long time with a bit of adjustment here and there.

Good design and quality almost always pay off. And that doesn't have to mean expensive products or a prestige brand; it works for MINI-Cooper as well as Mercedes-Benz. What is really required in all cases is authenticity. No one has ever built a lasting brand by imitating a logo or a clever ad or by trying to persuade people that a brand is something it simply is not. I recently read an interview with the renowned graphic designer Milton Glaser in which he makes a distinction between using design to inform or using it to persuade. I think branding should be about *informing*. In fact, I think it has to be if it is to truly succeed. To have integrity — to possess the qualities of wholeness, soundness, truthfulness — works whether you're designing a product or an identity or a life. That's another thing that hasn't changed.

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Aaron

Betsky

working with what we have

We have to understand that sustainability is not a religion. To confront the environmental challenges of our century, we have to change our patterns of behavior and make thoughtful choices in every aspect of our daily lives. We have to change our notions of abundance and plenty. I think we should look at design as gathering together and revealing potential, rather than just as inventing or streamlining. Droog, for example, is a Dutch design group that started in the early 1990s with the idea that the last thing we need is more stuff. We don't need to invent clever new products that do essentially the same thing again. Rather, we can consider the possibility of using what already exists in new ways. How can we rethink and reuse what we have? How can we reconceptualize a situation through design? Design can be thought of as something other than an act of invention. It's not about creating something new out of nothing — which is actually not possible anyway. We can reconceive of design as gathering, collecting and rearranging. Design can even be analyzing a situation and doing nothing, at least not physically — what the architect Willem Jan Neutelings has called "lazy architecture." This is, to me, a very important way to talk about design and sustainability.

We can look beyond architecture as the act of putting an object on land, of installing a building that is fundamentally different from and in opposition to what is already present in the landscape. Rather, our work can be an unfolding, an opening up of the landscape and building with the land rather than on it. This is central to any idea of sustainable architecture.

There is a tendency in our culture to meet every problem with a new technology. Here at the Cincinnati Art Museum, we've applied for grant money being disbursed as a result of the American Recovery and Reinvestment Act. The act is intended to promote sustainable, energy-efficient buildings. But we've found that in order to get the support, because of the way ARRA is administered in this state, we have to spend a great deal of money adding gizmos to our buildings. One has to buy solar collectors and so forth that actually don't get you very far in terms of energy efficiency when you consider the cost of the equipment and the environmental costs of manufacturing and delivering the gizmo to us. Such add-on technologies are not always the most productive solution.

The strategies that often work best to minimize impact on the environment and optimize use of resources are those that are the most integrated with the conditions of the site and the pre-existing building. Renovation and reuse are a good start. How do we get the most out of what we already have? We can use natural daylight and ventilation much more than we do. Outside the building, vegetated swales for example can be part of a stormwater drainage system and have significant environmental benefits at a low cost. Simple canopies can help keep a building cool and mitigate the use of energy for air conditioning.

Rather than looking for a silver-bullet technology to cure our prevailing problem, I think it's important to remember that architects and designers have a responsibility as human beings and as citizens to do the right things in our own lives. Of course, we also need to be able to contribute our skills to the larger project of creating objects and spaces that accomplish more environmentally, socially and perhaps economically. That is, we need to rethink how we go about making architecture that sustains life and community with less waste of resources. We need to reorganize, rearrange and reuse so as to create environments that are, even in some small way, more beautiful, accessible and affordable. Beauty is important because it reflects a rightness of how things should be. As architects, we also need to take an active part in design that allows people to do more than they might otherwise be able to do. Design that improves mobility and access for the disabled, or for those made vulnerable by age or illness, offers just one example.

I am very interested in a transport project developed in South Africa. The people who live in and around Johannesburg rely on a network of mini-buses to get them to and from the different districts of the city. These mini-bus "taxis" are the standard and essential form of transport for most of the population of Johannesbug. But in terms of sustainable design, what is most interesting about the mini-bus project is the transformation of the mini-bus stations into markets, clinics, art projects and memorials that are integrated visually and functionally with the station sites. Each structure serves practical, social and cultural purposes beyond marking a point of departure or arrival on the city map.

In the U.S., firms like Diller Scofidio + Renfro in New York are doing great urban design work with projects like the Lincoln Center renovation and the High Line, a city park that is built along an abandoned railroad structure running from Midtown Manhattan to the meatpacking district. Both of these projects grow seamlessly out of the existing space or urban landscape, but give it an entirely new significance and meaning. The revamp of Lincoln Center opens the space up and makes it more commodious, fluid and accessible, replacing the "barrier" of a concrete facade with glass and giving passersby a look into the cultural complex where people work and rehearse. These two projects and others by the group straddle the disciplines of art, architecture and landscape design, and create places where beauty, pleasure and sustainability converge.

To expand on that theme, more than one design group has begun to make creative use of what we already have by collecting waste and scrap — abandoned washing machines and the like — and using those materials to make chairs, tables, bars and even buildings. Scrap metal, waste plastic, discarded fabric or even old bicycle parts come to life in "new" and useful objects. This change of focus is an important piece of the sustainability puzzle. Often when people think they need new stuff — new buildings, new objects, new products — what they really need is connection. People need ways to meet and gather and share information.

The gathering and dissemination of information is another way to think about sustainability. If, as an economy and as a culture, we are moving towards a digital reality characterized by the display of information, that trend could ultimately obviate the need to get on a plane or get in the car in order to collaborate on a project or attend a class. In the corporate world this solution primarily takes the form of high-tech teleconferencing that cuts back on travel to meetings in distant cities or countries. It is, at present, a relatively expensive solution that requires investment in equipment, bandwidth and network infrastructure. Unfortunately, more stuff.

Of course, while we spend more and more time in digital reality, we also live in cities and towns and suburbs where we are for the most part dependent on travel by car to work,

school and recreation. In Cincinnati where I presently live, and all across the U.S., there seems to be a general assumption that dense downtowns are the answer to more sustainable cities. People think that we have to stop sprawl, which is actually not feasible or even possible. Moreover, there are many aspects of downtowns that oppose sustainability. A lot of food and other supplies have to be trucked in. You have to take a lot of waste out. That takes a lot of energy and fuel and it's a logistical nightmare.

For me, the challenge — potentially the greatest gain — is to find a way to make sprawl work. How can we design urban settlements that are more intertwined with the landscape? What sort of infrastructure and buildings would support that goal? I think a partial answer is to design villages linked by alternative modes of transportation that make it easy to travel from home to office to market by mini-bus, small trolleys or electric bicycle. Such villages offer the possibility of a much more varied social and physical environment than the standard urban sprawl or suburbia. They also offer the possibility of more patches of green, more gardens and parks, more open space where nothing is built — an environment more conducive to human health and happiness.

In the U.S., we tend to think about the natural environment as "big nature" — national parks and great swaths of prairie or desert or coastline. We don't often think about how every aspect of the landscape we come near has been ordered and transformed by human beings physically and also conceptually in terms of the context in which it exists. In Europe on the other hand, there is very little land that corresponds to our idea of "wilderness." The Dutch, in fact, created 70 percent of their country by turning swampland into a landscape that could be inhabited by human beings. Holland is a completely artificial landscape. It reminds us that nature is a malleable reality that we have to work with in a responsible and productive manner. What the concept of sustainability now gives us is an opportunity to redesign our working relationship with the natural environment in order to allow the environment to continue to sustain the various forms of life while also supporting our human projects — social, cultural and economic.

Again, good design is a way to rethink what we have. It's not about solving problems. I have often said that if the roof leaks, it must be architecture. Because the thing is, when you create great architecture, a really beautiful and inspiring space, it often turns out that the roof will leak or there is some other little problem. But a problem with the roof or the difficulty of heating a space doesn't detract from the experience of being in that space.

Often, a design is intended to solve one problem and ends up addressing another problem or creating a new problem. Sunglasses are great, but their use has led to many more incidents of skin cancer because they obviate the use of brimmed hats. On a more trivial level, the iPhone is designed to solve a communication problem, but then when the electricity goes out during a storm the phone becomes a way to bring light into a dark room. The Tizio lamp solves a lighting problem, but also creates an object that anchors my desk. It is a moment of beauty that helps organize how I work, rather than just a functional object. Then again, both of these objects will eventually present a problem of waste or rather, an opportunity for recycling or creative reuse.

So you see, although we can talk in lofty and abstract ways about design and sustainability, I think it is most productive to talk about and practice design at the very human level and to think about sustainability in terms of one's day-to-day life. What is here in this place at the present moment and what can be unfolded through the process of design that will ultimately help to create a better world? How can design best address itself to making a world that is diverse, healthy, humane and beautiful?

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Design, in the end, is about cre ating better things for people.
Along the way, it can generate better profits as well.

– Bruce Nussbaum

Roger Martin

the design of business

These are turbulent times for business, as companies struggle to adjust to the globalization of markets and competition, the expansion of the service-based economy, the impact of deregulation and privatization, and the explosion of the knowledge revolution. All of these forces are driving firms to fundamentally rethink their business models and radically transform their capabilities — but an equally important (though less obvious) business transformation is taking place with respect to design.

As we leave behind one economic age and enter another, many of our philosophical assumptions about what constituted competitive success grew out of a different world. Value creation in the 20th century was largely defined by the conversion of heuristics to algorithms. It was about taking a fundamental understanding of a 'mystery' — a heuristic — and driving it to a formula, an algorithm — so that it could be driven to huge scale and scope. As a result, many 20th century organizations succeeded by instituting fairly linear improvements, such as re-engineering, supply chain management, enhanced customer responsiveness, and cost controls. These ideas were consistent with the traditional Taylorist view of the company as a centrally-driven entity that creates wealth by getting better and better at doing the same thing.

Competition is no longer in global scale-intensive industries; rather, it's in non-traditional, imagination-intensive industries. Today's businesses are sensing an increased demand for speed in product development, design cycles, inventory turns, and competitive response, and there are major implications for the individuals within those organizations. I would argue that in the 21st century, value creation will be defined more by the conversion of mysteries to heuristics — and that as a result, we are on the cusp of a design revolution in business.

The Progression from Mysteries to Binary Code

Over the course of time, phenomena enter our collective consciousness as mysteries — things that we observe, but don't really understand. For instance, the mystery of gravity once confounded our forefathers: when they looked around the world, they saw that many things, like rocks, seemed to fall to the ground almost immediately; but others didn't — like birds, and some seemed to take forever, like leaves. In art, there was the long battle to

understand how to represent on a two-dimensional page what we saw in front of us in three dimensions. Music continues to be a mystery that confounds: what patterns of notes and sounds are enjoyable and make listeners feel happy and contented?

We start out with these *mysteries,* and at some point, we put enough thought into them to produce a first-level understanding of the question at hand. We develop heuristics — ways of understanding the general principles of heretofore mysteries. Heuristics are rules of thumb or sets of guidelines for solving a mystery by organized exploration of the possibilities.

So why do things fall down? We develop a notion of a universal force called 'gravity' that tends to pull things down. In art, we develop a notion called 'perspective' that guides our efforts to create renderings that appear to the eye to have three dimensions rather than two. What kind of music do people like to listen to? We learn about chords, and then create song types like ballads, or folk songs, or the blues. By following a set of guidelines, we will likely create something that people enjoy listening to.

Heuristics don't guarantee success — they simply increase the probability of getting to a successful outcome. They represent an incomplete understanding of a heretofore mystery. In any given field, some people barely understand heuristics, while others master them. The difference between them is the difference between one-hit-wonder Don McLean, author of "American Pie", and Bruce Springsteen, composer of scores of hit songs. For McLean, the mystery remained just that: he came up with a single inspiration that created one random event — one of the biggest pop song hits of all time. Yet he failed to produce another hit of any consequence in his entire musical career. In contrast, Springsteen developed a heuristic — a way of understanding the world and the people in it — that enables him to write songs that have great meaning to people and are immensely popular. His mastery of heuristics has allowed him to generate a steady stream of hit albums over a 30-year period.

In due course, increasing understanding can (though in many cases it never does) produce an *algorithm:* a logical, arithmetic or computational procedure that, if correctly applied, ensures the solution of the problem. With gravity, great scientists like Sir Isaac Newton studied and experimented long and hard enough to create precise rules for determining how fast an object will fall under any circumstance. In the late 1970s, musical innovators like British technomusic guru Brian Eno experimented with the human heartbeat and determined that songs with a synthesized heartbeat as their rhythm track are instinctively enjoyed by listeners, no matter what you add on top of them. The end result of such algorithms is not always positive, of course — this discovery led to electropop and eventually to sham bands like Milli Vanilli, who lip-synched recorded music onstage until caught in the act by an unsuspecting audience. And in art, we eventually got paint by numbers.

In the modern era, a fourth important step has been added to the sequence of *mystery* to *heuristic* to *algorithm.* Eventually, some algorithms now get coded into software. This means reducing the algorithm — the strict set of rules — into a series of 0's and 1's — binary code — that enables a computer to produce a result. For example, with gravity, the fact that we had an algorithm for 'how things fall' meant that we could program aircraft with autopilot, enabling a plane to 'fall' from the sky in the organized fashion that we want it to, so that it lands in exactly the right spot. At the coding level, there is no longer any judgment involved: the plane lands on the basis computer instructions that are nothing but a series of 1's and 0's, because our understanding of gravity has moved from a *mystery* to a *heuristic* to an *algorithm* to *binary code.*

Implications for the Design of Business

The progression of the 'march of understanding' described here has important practical implications for today's business people. Broadly speaking, value creation in the 20th century was about taking a fundamental understanding of a mystery — a heuristic — and reducing it to a formula, an algorithm — so that it could be driven to huge scale and scope.

Take McDonalds, for instance. In 1955, the McDonald brothers took a mystery —'how and what do Californians want to eat'? And they created a format for answering that — a heuristic — which was the quick-service restaurant. Is this heuristic what created enormous value? No, because there were many restaurants in California doing similar things at the time, and all of them were discovering that Californians wanted faster, more convenient food. What made

McDonalds different is that Ray Kroc came along and saw that he could drive the McDonald brothers' heuristic to an algorithm. He bought the store and figured out *exactly* how to cook a hamburger, *exactly* how to hire people, *exactly* how to set up and manage stores, and *exactly* how to franchise them. Under Kroc, nothing was left to chance in the McDonalds' kitchen: every hamburger came out of a stamping machine weighing exactly 1.6 ounces, its thickness measured to the thousandth of an inch, and the cooking process stopped automatically after 38 seconds, when the burgers reached an internal temperature of exactly 155 degrees. By creating an algorithm out of a heuristic, Kroc was able to drive McDonalds to huge size and scope, and to its place today as a global icon.

This move from heuristic to algorithm was repeated over and over throughout the 20th century. Early in the century, Ford developed the algorithm for assembling cars — the assembly line — and with it grew to immense size. Late in the 20th century, Electronic Data Services (EDS) developed algorithms for routinizing systems integration and training COBOL programmers, and with it grew to previously unimagined size in the systems integration business. In between, Procter & Gamble created the algorithm for brand management, Anheuser-Busch for making and selling beer, Frito Lay for making and distributing snack chips, and so on. For these companies, as well as Dell and Wal-Mart, success depended not so much on a superior product, but on a superior process, and each is an example of the relentless 'algorithm-ization' that paved the way for massive value creation in the 20th century.

This dynamic accelerated in the latter part of the 20th century (1985-2000), when many algorithms were driven to code. Like most things in life, this final step of reducing something to binary code has good and not-so-good aspects to it. While coding enables an incredible increase in efficiency, it is also true that with coding comes the end of judgment: patterns of 0's and 1's have no judgment or artistry — they just automatically apply an algorithm. In many respects, the extreme achievement of the 20th century is soulless numbers. Neither all bad or all good, this is simply the result of the combination of the relentless march of understanding with the relentless march of Moore's Law (Intel co-founder Gordon Moore's prediction that data density would double approximately every 18 months, resulting in diminishing costs of information technology) — all of which lead to binary code.

So where do we go from here? Will there be more relentless algorithm-ization? I don't think so. I believe that we will look back on the 20th century as a tour de force of producing 'stuff' — lots of it, as efficiently as possible. I believe we are transitioning into a 21st century world in which value creation is moving back to the world of taking mysteries and turning them into heuristics. I see the beginnings of a fundamental backlash against algorithm-ization and the codification of the world around us — a realization that reaching to grab the benefits of economies of scale often involves accepting standardization and soullessness in exchange.

I believe the 21st century will go down in history as the century of producing elegant, refined products and services — products and services that delight users with the gracefulness of their utility and output; 'goods' that are produced elegantly — for example, that have the most minimal environmental footprint possible, or that produce the fewest worker injuries, whether it be broken limbs or repetitive stress syndrome.

The 21st century presents us with an opportunity to delve into mysteries and come up with new heuristics. As a society we are faced with major mysteries like, 'how can big cities actually work'? There are more of them than ever before, and while cities like Toronto and New York work pretty well, many cities around the world don't, and fixing this is a major mystery. Another big mystery involves how to make health care work, when there's an infinite demand and a constrained supply. These are the kind of modern mysteries that are being presented to us, and there is no algorithm for them, no coding to magically solve the problems they engender.

Implications for Businesspeople

There are three major implications of this shift for today's business people. The first is that design skills and business skills are converging. The skill of design, at its core, is the ability to reach into the mystery of some seemingly intractable problem — whether it's a problem of product design, architectural design, or systems design — and apply the creativity, innovation and mastery necessary to convert the mystery to a heuristic — a way of knowing and understanding.

But unlike in the 20th century, this time the goal won't be to develop mass formulas or algorithms. Firms today are desperately trying to find out what each individual customer wants. Kellogg's cereals and Hershey's chocolate bars have 1-800 phone numbers printed on them encouraging consumers to call them with feedback. Pepsi has its Web site printed on each can. Information is being gathered and used to cater to and customize solutions to your every need.

I would argue that to be successful in the future, businesspeople will have to become more like designers — more 'masters of heuristics' than 'managers of algorithms'. For much of the 20th century, they moved ahead by demonstrating the latter capability. This shift creates a huge challenge, as it will require entirely new kinds of education and training, since until now, design skills have not been explicitly valued in business. The truth is, highly-skilled designers are currently heading-up many of the world's top organizations — they just don't know they are designers, because they were never trained as such.

The second implication is that we need a new kind of business enterprise. This new world into which we are delving will require us to tackle mysteries and develop heuristics — and that will require a substantial change in some of the fundamental ways we work. Traditional firms will have to start looking much more like design shops on a number of important dimensions, as shown in Table 1, below.

Table 1: Modern firms Must Become More Like Design Shops

feature	from traditional firm...	...to design shop
Flow of Work Life	Ongoing tasks Permanent assignments	Projects Defined Terms
Source of Status	Managing big budgets and large staffs	Solving 'wicked problems'
Style of Work	Defined roles Wait until it is 'right'	Collaborative Iterative
Mode of Thinking	Deductive Inductive	Deductive Inductive Abductive
Dominant Attitude	We can only do what we have budget to do Constraints are the enemy	Nothing can't be done Constraints increase the challenge and excitement

Whereas traditional firms organize around ongoing tasks and permanent assignments, in design shops, work flows around projects with defined terms. The source of status in traditional firms is 'managing big budgets and large staffs', but in design shops, it derives from building a track record of finding solutions to 'wicked problems' — solving tough mysteries with elegant solutions. Whereas the style of work in traditional firms involves defined roles and seeking the perfect answer, design firms feature extensive collaboration, 'charettes' (focused brainstorming sessions), and constant dialogue with clients.

When it comes to innovation, business has much to learn from design. The philosophy in design shops is, 'try it, prototype it, and improve it'. Designers learn by doing. The style of thinking in traditional firms is largely inductive — proving that something actually operates — and deductive — proving that something must be. Design shops add *abductive* reasoning to the fray — which involves *suggesting* that something *may be*, and reaching out to explore it. Designers may not be able to prove that something is or must be, but they nevertheless reason that it may be, and this style of thinking is critical to the creative process. Whereas the dominant attitude in traditional firms is to see constraints as the enemy and budgets as the drivers of decisions, in design firms, the mindset is "nothing can't be done for sure," and constraints only increase the excitement level.

The third implication is that we must change the focus of our thinking about design and business. The trends discussed here have generated increased interest in design by the business world, but it is largely focused on 'the business of design': the traditional business world is trying to figure out what designers do, how they do it, and how best to manage them. This misses the point fundamentally, and it won't save the traditional firm. The focus should actually be placed on 'the design of business': We need to think much more about designing our businesses to provide elegant products and services in the most graceful manner possible.

Business people don't need to understand designers better: *they need to be designers*. They need to think and work like designers, have attitudes like designers, and learn to evaluate each other as designers do. Most companies' top managers will tell you that they have spent

the bulk of their time over the last decade on improvement. Now it's no longer enough to get better; you have to 'get different'.

I believe that we are on the cusp of a design revolution in business — a revolution in the purpose of business, the work of business, and the skills required of business people. The challenge of making the transformation to the Design of Business should not be underestimated. The initial goal is to help modern managers understand this new business agenda and become shapers of contexts, to increase the likelihood that their organizations will thrive in the era of design.

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David

Suzuki

a legacy from the past

Life has been playing out its drama on a vast planetary stage; and there has been enough rehearsal time to produce an extraordinary repertoire. You might say, looking at the diversity and proliferation of life today, that this production has run and run. Human beings have a limited perspective on time; we find it difficult to imagine how minute amounts of organic material in carcasses of bacteria, plants and animals can accumulate into massive deposits. Yet that is how life as we know it spread out across the planet. Over billions of years those bodies of dead organisms drifted down, piled up, drifted down, piled up on the ocean floor; more than 400 million years ago, as the planet's crust became geologically active, seas were drained and nutrient-rich sediments brought to the surface. Until this point the land had been barren of plants; now pioneers ventured into this new niche. Soon massive trees stretched into the sky, reaching for sunlight above the profusion of low shrubbery.

Between 280 and 360 million years ago, continents moved and sank, seas filled and drained some fifty times. Each time, some species disappeared while others took advantage of the changed environment. When seas drained, thick forests occupied swamps and lowlands; when these areas were again flooded, the organic matter in the forests was submerged in swampy water that had little oxygen to break down the plant carcasses. This organic matter, which was created by photosynthesis and metabolism, was made up of carbon atoms from the greenhouse gas carbon dioxide, which had been removed from the air during those processes. Microorganisms decomposed the organic material, liberating oxygen and hydrogen and concentrating the carbon. Then the bacteria were killed by the acids liberated from the decaying plants. The partially decayed material is peat. As peat was buried under sediment, water and gases were squeezed out and the remnants were even richer in hydrocarbons. Initially, peat became a soft brown coal called lignite. As it became more deeply buried, lignite was transformed into a harder, darker material called bituminous coal. Then, as bitumen was subjected to greater heat and pressure, it changed into anthracite.

Oil and gas are also made up of hydrocarbons from once living-organisms. But whereas coal was formed from plants in swamps, oil and gas came from marine plants and animals that were buried in sediment that inhibited oxidation. Over millions of years, the buried

organisms were compressed and the organic molecules underwent chemical changes to form petroleum and natural gas. As they were compressed further, the oil and gas moved upwards through porous sedimentary rock until they were trapped by an impermeable cap. Those accumulated reservoirs were a once-only gift of ancient life-forms to an energy-hungry industrial civilization.

Fossil fuels are the result of a long process in Earth's history, a legacy of countless generations of life that flourished and died with energy stored in the molecules of their bodies. It took hundreds of millions of years for this energy to accumulate and cook into coal, oil and gas, and during all that time these substances kept carbon out of circulation, helping to balance the proportion of greenhouse gases in the atmosphere. Now, in a flicker of an eyelash, relatively speaking, the work of ages is being undone.

For most of its history, our species has burned animal fat, dung, straw and wood as fuels. Coal has been used for just a few centuries, and oil and gas are new fuels, in use only since the Industrial Revolution. In this brief period we have suddenly become dependent on fossil fuels on a global scale; at current rates of use, we will reach the limits of oil deposits within a few short decades. The estimated known and potentially discoverable world reserves of oil would supply global needs for about 35 years at current rates of use.

"If all people in the world enjoyed a standard of living and energy consumption similar to the U.S. average, and the world population continued to grow at the rate of 1.7% per year, the world's fossil fuel reserves would last a mere 20 years."

– David Pimentel, "Natural Resources and an Optimum Human Population"

Fossil fuels are finite, a one-time-only gift from the ancient life of our planet. During the lifetime of our species, they will never again be created.

As well as depleting most oil reserves within a few generations, we are returning carbon dioxide to the atmosphere at a rate that exceeds the capacity of natural recycling mechanisms to remove it. For a century or more our use of energy has altered the amount of global atmospheric carbon dioxide. Although we can detect the changes in atmospheric composition, our ignorance of all the factors affecting climate and weather is so vast that we cannot predict all the consequences of these changes. Nevertheless, current models are remarkably consistent with the direction of the effects and in predicting the observed fluctuations in weather and temperature. Knowing that oil and gas will run out, that using them creates health and environmental problems and that there will be unpredictable climatological effects, we must clearly govern our use of energy within a program for ecological sustainability. Coal and peat deposits are vast, but they release even more greenhouse gasses and are a greater problem.

It is clear where the chief responsibility for this crisis lies when Earth is viewed from space at night. As Malcolm Smith has described it:

> Most of sub-Saharan Africa, vast expanses of South America and central China are stark in their black vastness. North America, Western Europe and Japan, where a quarter of the world's population uses three quarters of the world's 10,000 million kilowatts of electricity, shine out as if we are hell-bent on advertising our profligacy.

"A citizen of an advanced industrial nation consumes in six months the energy that has to last the citizen of a developing country his entire life."

– Maurice Strong, quoted in the *Guardian*

Playing with Fire

All the gods of all our stories know that fire is a double-edged sword; what warms may burn, what gives power may also consume, what gives life may take it away just as easily. Our relationship with fossil fuels is just the latest evidence of this difficult, dangerous truth. Our use of energy in the industrialized world has given us comfort, economic security, mobility, food and the power to change Earth to suit ourselves. It has also given us a Pandora's box of

associated miseries: air pollution, soil erosion and environmental destruction. Fossil fuels have provided cheap, portable energy to fuel vehicles and to manufacture machinery that has brought us that deadly affliction of overconsumption, which is clearing the world's forests, emptying its oceans, devastating its waterways, obliterating its nonhuman life. So how can we contain the power we have snatched so recklessly?

The mix of life, balanced yet constantly changing over time, teaches us the ground rules: what species do is local and small-scale and introduces little that is novel. In nature, the dung beetle lays its eggs in animal droppings to exploit the remnant food value of the dung. Plants bleached of chlorophyll survive by parasitizing photosynthetic green plant carcasses, only to become food for insects and other animals. There are cycles within cycles. In biological systems, the passage of energy and materials forms loops that are completely circular, and so there is no end product to be dumped into soil, air or water, the other elements we are pledged to protect.

Human beings have broken those loops, creating linear use of energy and matter that go from raw resources to heat and materials that are discarded or lost. Often there are unanticipated consequences to the buildup of these wastes. Intrinsic to our myths of power are warnings: technologies have unexpected side effects, and the bigger the technology, the more intractable the consequences. When Pandora opened her box, all the plagues that torment humanity scattered to the far ends of the Earth. But one thing was left behind: tucked into a corner was the welcome figure of Hope. And hope remains that we can achieve sustainable levels of energy consumption by making existing systems more efficient and by using alternative sources of energy: the sun, the wind, the tides and the deep, abiding heat of the Earth.

David Pimentel outlines an economy based on the sustainable use of energy, land, water and biodiversity while achieving a relatively high standard of living, but steps on a heroic scale must be taken immediately with a view to reducing both use of fossil fuels and population. He estimates that 90 million hectares of land (equal to the combined areas of the states of Texas and Idaho) could be used to collect solar energy without disrupting agricultural and forest productivity. By conserving energy, per capita consumption of oil could be cut in half to 5,000 liters of oil equivalents. By conserving soil and water, reducing air pollution and massively recycling, a conserver society could be achieved in the United States in which

> the optimum population would be targeted at about 200 million …. Then it would be possible for Americans to continue to enjoy their relatively high standard of living…. Worldwide, resolving the population-resource equation will be more difficult than in the United States.

The global population level could reach 10 billion before the middle of the next century. Pimentel's projections all suggest the need for a massive effort to conserve soil and to recover enough food for each person on 0.5 hectare of land. These measures will have to be accompanied by rapid stabilization and then reduction in population. If these goals are achieved,

> it would be possible to sustain a global population of approximately 3 billion humans. With a self-sustaining renewable energy system … providing each person with 5,000 liters of oil equivalents per year (one half of America's current consumption/year but an increase for most people in the world), a population of 1 to 2 billion could be supported living in relative prosperity.

Although Earth's population is currently almost 6 billion, and every eleven years brings us another billion more people, Pimentel's vision is still one of hope. It talks about focused effort, about conserving energy and sharing it out fairly; above all it proposes a new beginning. Fossil fuels now suffuse every aspect of our lives, used in our cars, furnaces, energy-dependent manufacturing, farming and so on. But we became dependent on this source of energy very recently. Now that we understand the repercussions of the finite nature of oil and gas and the buildup of greenhouse gases when we use too much, we can turn our creative energies to finding alternatives, especially by harvesting the energy flooding onto Earth from the sun. There is a great deal of opportunity. It will take time to wean ourselves

from our current patterns of energy use, and we can extend that time by becoming much more efficient, stretching our reserves and reducing our use of effluent gases and our wastes. Hypercars are capable of traveling 150 kilometers on a liter of gas and could allow us to continue to use vehicles with greatly reduced ecological impact. This could buy time for the design and construction of living spaces for most of humanity that eliminate the need for cars altogether. Greater efficiency in manufacturing processes can reduce energy and materials use by a factor of four, while conservation through reduced consumption can solve the ecological problems and increase equity. The potential is there. What is needed is the will.

A Legacy from the Past and Playing with Fire are excerpts from the book The Sacred Balance, Rediscovering Our Place In Nature, *By: David Suzuki with Amanda McConnell published by: Greystone Books, a division of Douglas & McIntyre Ltd.*

David Suzuki, Co-Founder of the David Suzuki Foundation, is an award-winning scientist, geneticist and environmentalist. He graduated from Amherst College in Massachusetts with an Honors BA in Biology, followed by a PhD in Zoology from the University of Chicago. He held a research associateship at Tennessee's Oak Ridge National Lab, was an Assistant Professor in Genetics at the University of Alberta, and faculty member of the University of British Columbia. He is now Professor Emeritus at UBC. David is renowned for his radio and television programs that explain the complexities of the natural sciences in a compelling, easily understood way.

Good design doesn ’t cost, but it pays.

– Richard H. Driehaus

Jack

Diamond

beauty in economy

Our buildings have mirrored our excess — we need standards that gratify environmentally, technically and functionally

Architecture is an expression of its time and place. It reflects the values, power and dominant elites of the prevailing social structure and the relevant position of nation states in the global context. It even demonstrates the attitudes of imperial powers to their subject peoples.

The most obvious example is the pyramids of Egypt. In a hierarchical culture in which the disparity between pharaoh and fellaheen was immense, so was the difference in scale between royal monuments and the hovels of the poor.

The power of the church in Europe from the 11th to the 17th century was equally clear. Cathedrals were the largest, most elaborate structures at the center of most European cities. In the 20th century, bank buildings reflected the importance of a mercantile culture: They became the new temples, the dominant structures. It was clear where the power lay.

And what of our time? The excesses of the late 20th and early 21st century are only too apparent. The extremes of individualism, and its accompanying greed, have ruined financial systems and left chaos in its wake. And once more this is reflected in architecture. The so-called iconic buildings (more egonic than iconic) were monuments to ego and extreme individualism. The emphasis was on the dramatic exterior: the way the building looked, rather than how it worked. The interiors could be perfunctory or dysfunctional.

Many iconic buildings are a direct reflection of conspicuous consumption. Instead of exploring engineering, electrical, mechanical and materials technologies to determine the most economic systems, there is a flagrant disregard for cost. Excess is celebrated: the highest, most expensive, most dramatic. The pick-a-shape school of architecture. It isn't simply the money unnecessarily spent on construction, but the energy necessary to heat and cool the building, the steel used to build it.

You can build structures that are both dramatic and sustainable. Consider Buckminster Fuller's domes that were designed to have the smallest ratio of structural steel to the area enclosed or load supported. He was looking at an elegant way to use the least amount of material. Fifty years ago, he explored a dramatic an1d sustainable path to the future, a path followed by relatively few.

The world is changing quickly and industry has been slow to adapt. The automobile industry, with all its resources, and research and development, was suddenly, and perhaps fatally, revealed as a dinosaur, unable or unwilling to adjust. The building industry should not follow suit.

There isn't a shortage of technologies. The automobile industry had dozens of alternatives that were either ignored or tentatively explored (Henry Ford had intended the Model T to run on ethanol; the electric car is more than a century old). The building trade has dozens of options that are underutilized or deemed too experimental or expensive. But the cost of a building has to be considered, not just in its initial construction, but in its maintenance, and the resources it consumes.

There is recognition that the resources of the planet are not inexhaustible, that the environment's ability to replenish itself must not be pushed beyond a point of no return. It is now an existential question.

Banks have been caught out investing in poorly understood and inadequately researched instruments that ultimately benefited very few while devastating millions. It was a short-term strategy designed to satisfy the pressures of quarterly results. In this new climate of value, banks could assume a leading, progressive role. They could, for example, peg their financing to the sustainable value of projects.

Architecture, in the new era, should exhibit commensurate responsibility. Buildings that were conceived essentially as advertisements for a company or a museum or a city are now advertising an outdated and unfortunate ethic. We need new standards for beauty, one that is gratifying environmentally, technically and functionally. Economy, a word that is re-entering our vocabulary with a vengeance, carries a stigma, but it shouldn't: There can be beauty in economy.

Evolution has shown us such economies: the amazing cantilevered branches of trees, the strength of a spider's thread, the streamlined form of fish, the intricate and delicate strength of plant life. These have survived by being responsive to the forces to which they are subject, using the least — not the most — material in that effort. Man-made objects such as Shaker furniture, a racing yacht, or a geodesic dome, fuse form, function and technology. And we marvel at their beauty.

This article originally appeared March 23, 2009 in The Globe and Mail.

Born in Piet Retief, South Africa, Jack Diamond received a Bachelor of Architecture degree from the University of Cape Town. He received a Master of Arts degree in politics, philosophy and economics from Oxford University, then a Master of Architecture degree from the University of Pennsylvania. In 1964, Jack immigrated to Canada to become the founding director of the Master of Architecture program at the University of Toronto. In 1975, he established his own firm, today called Diamond and Schmitt Architects. The firm has developed a reputation as a teaching office, encouraging a highly discursive and collaborative design process.

Penny

Benda

matters of beauty

"It is alarming that publications devoted to architecture have banished from their pages the words Beauty, Inspiration, Magic, Spellbound, Enchantment, as well as the concepts of Serenity, Silence, Intimacy and Amazement. All these have nestled in my soul, and ... never ceased to be my guiding lights."

– Luis Barragan, Pritzker Prize acceptance speech

Has the idea of beauty lost its power? Is it an ideal we need no longer reach for in art or design? Is it simply an artifact of an earlier era, a remnant of a pre-digital age that has no virtue or value in a world driven by the wheels of global commerce? At the risk of being unfashionable, I think not. For if designers are to create images, tools and environments that reflect human experience, Beauty must on occasion be appeased.

In fact, I think beauty is a quality that people recognize, want and need — in design as in life. Currently, it's not unusual to see a fair amount of talk about design in print and in publications as dissimilar as *The New Yorker, Business Week* or *Metropolis.* And design has a place at the table in more and more conference rooms, creating a richer understanding of what design is and what it can do. But the conversation tends to center on design and innovation, design and market share and how it is that good design is good business. All are worthy discussions. But the word "beauty" is largely missing from the conversation. After all, what does beauty have to do with fulfilling a need — or creating "more happiness," to quote Charles Eames. Faced with a present and a future that seem to demand pragmatic solutions to pressing problems, what good is it?

I think that it is quite possible that beauty is significant, even essential, and that its ability to astonish our eyes or renew our spirit is an experience we hunger for even in our post-postmodern century. Indeed, the experience of beauty may be linked to sustaining our life as human beings every bit as much as those innovations designed to cure our prevailing economic and ecological problems. A designer of no less stature than Milton Glaser has said, "We respond [to beauty] as a species; we have always responded to beauty all through history, whatever the standard was." And further, "Beauty is the means by which you move

towards attentiveness. And art does have its purpose and that is for survival."[1] Perhaps we could fairly substitute design for art and say that, at the least, beauty can get us to pay attention long enough to perceive meaning in pictures, objects or spaces — a uniquely human capacity — or to receive vital signals from our environment or our psyche.

Writer Anne Lamott echoes that idea in her book *Bird by Bird,* musing about why writing matters: "I think; to help others have this sense of — please forgive me — wonder, of seeing things anew, things that can catch us off-guard, that break in on our small, bordered worlds. When this happens, everything feels more spacious." [2] That description seems to me to be an equally fine way of saying why beauty matters.

In more concrete terms, the beauty of a typeface can lead the reader's attention to the text and to the message the words are meant to convey. Thus, the beauty of the letterforms serves the intent to express, to illuminate, inform or persuade. If one is not a designer, it's easy to forget that letterforms organized into words, paragraphs and pages, are designed every bit as much as an object or a graphic user interface or a roof that keeps the rain off; that a typeface acts as the vessel of language and embodies ideas about balance, grace and clarity. As designer Michael Vanderbyl has said, "To create a beautiful typeface is one of the most difficult tasks for a designer and one of the great accomplishments of our culture."

Most designers would agree that their job is to communicate. How that is to be achieved is often a matter of passionate disagreement. For some time now, there have been those who intentionally use corrupt typefaces or dense, dissonant and "dirty" layers of type and images in order to confront cliché and complacency. Too often, however, such strategies only obstruct comprehension without offering valid alternatives to assumptions about what constitutes legibility or good design or beauty. Of course, adherence to classic standards does not guarantee a beautiful result, nor do unconventional uses of type render a design "ugly." One has only to see the lucid and lyrical use of typographic scale and structure by a designer as gifted as Jennifer Sterling to perceive the potential beauty of a radical visual language.

But what is beauty? The answer depends a great deal upon time and place and the individual. Our eyes are schooled to recognize and admire the beauty of certain things — like seashells or stars or stone cathedrals — and to be blind to others. Concepts of beauty are embedded in the system of symbolic forms we call culture just as design reflects its cultural — and commercial — context.

Here, in what we blithely call western civilization, we have inherited standards of beauty from Greek philosophers, Renaissance merchants and the early European modernists. The Renaissance in particular used the human body as a primary reference for form and thus unity, symmetry and proportion were its standards of beauty. The irregular charm of asymmetry or intentional imperfection appeared late in the West as an aesthetic transplant from the East — the seductive organic form of Isamu Noguchi's iconic coffee table being just one example.

But to note that attributes of beauty are culturally grounded is not to deny that the experience of beauty appears to be common to human beings across time and geography. It does not dilute the aesthetic power of a designed object — Calatrava's Alamillo bridge, Mies van der Rohe's Barcelona chair or the elegant graphics of Massimo Vignelli — and its offer of a valuable if variable mode of engagement with the world of forms. Surely all of us have been surprised by beauty, captivated and held immobile for a moment in wonder and even joy. Such an experience helps to give meaning to our lives whether or not we know the true source of its spell.

As anthropologist Clifford Geertz suggests in his essay Art as a Cultural System, perhaps nothing very measurable would happen to our society if we no longer concerned ourselves with elegance of line and harmonies of color, the shapeliness of objects or the magical play of light and space. Chances are, society would not fall apart just as we could go on without those things that many of us treasure like the books of our childhood or the songs of our youth. But it is just possible that with disuse, our ability to perceive beauty could fade and eventually disappear and life would surely be the greyer for it.[3] Maybe we need to reclaim beauty just as we reclaim the abandoned places and discarded materials of our consumer culture.

It could be argued that designers must put aside beauty for the moment to concentrate on working with scientists, engineers, business leaders and governments to design immediate practical solutions to the current economic slump and the potential environmental disaster. But surely we want to save our forests, waters and creatures not only so that we can go on making more and more stuff (although modern societies do depend on making a certain amount of stuff), but also because these things are beautiful and restorative to the mind and spirit. Perhaps the neglect of the natural world, beautiful in its orchestral complexity and wholeness, is a corollary to the neglect of beauty.

The perception of nature's sublime beauty deepens and widens our sense of life, restores buoyancy and reminds us that we are all on "spaceship earth" together. We can use design to get us where we want to go on that spaceship and champion beauty in art, architecture and design to make it worth the trip. Without apology, we can reach towards ideals of beauty just as we can turn solemnly to the task of using design to forge a sustainable society and guard the future of our grandchildren.

The question is not whether beauty is merely an occasion for monastic contemplation, but whether beauty has a place in design practice and what exactly that place may be. Once, designers were thought of as mere stylists; today they are required to lead "innovation processes." Perhaps they can also be active participants in the shaping of culture, bringing ideas and ideals, passion and yes, beauty, to the adventure of our collective life in a new century. As French designer Pierre Bernard famously said, "Be rational. Demand the impossible."

1 *Milton Glaser* by Cathie Bleck, Communication Arts, March/April 2009
2 *Bird by Bird: Some Instructions on Writing and Life,* Anne Lamott, Anchor 1995
3 *Local Knowledge,* Clifford Geertz, Basic Books, 1985

Penny Benda is an experienced freelance writer and editor who crafts copy across an array of print and electronic media. Based in the San Francisco Bay Area, her clients have ranged from high-profile hotels and hospitality groups to top furniture manufacturers. Penny attended the San Francisco State University. In 1990 she began her career as freelance copywriter in the marketing and advertising industry.

We do not know anything about the future, but we will arrange it nevertheless.

– Peter Lorenz

Norma Kamali designing the future of fashion

In February of 2010, *The New York Times* ran an article describing designer Norma Kamali as being at the forefront of a technological transformation. “Shoppers will soon be able to stand outside … Norma Kamali’s boutique in Manhattan, point a phone at merchandise in the window and buy it — even late at night when the store is closed.” To anyone familiar with her highly original work — the glamorous swimsuits, parachute silk jumpsuits and sleeping bag coats — Ms. Kamali’s unorthodox approach comes as no surprise. Speaking by telephone, she shared some thoughts about design and fashion and her excitement about technology.

DDM: It’s been said that fashion tells us where we come from, who we are and how we fit in. How does fashion matter for you?

NK: For many years, I thought that my obsession with the minutiae of fashion design was meaningless when compared to those pursuing life careers like curing cancer. And while fashion design will never alleviate cancer or ensure the well-being of my fellow man, I have learned through the people who buy my clothes that what one is wearing has an amazing effect on how one feels.

People tell me stories about the wedding dress that made them feel beautiful or about a suit that gave them confidence in a job interview. Finally, I understood that my job is to make people feel good. I think that’s a wonderful thing to be able to contribute.

Fashion helps people to create an identity in what sometimes feels like an overwhelming world. You can say who you are and the mood you are in today. Even those who wear uniforms — a three-button business suit or a physician’s lab coat — often choose those positions or professions knowing that the uniform will say a lot about who they are and they are comfortable in that identity.

Of course, all forms of design affect how we feel. It can be stimulating or inspiring and more importantly, that feeling is catching — it radiates out into the culture. Something as simple as moving the furniture around in your home or bringing in a new color or planting

a garden can help put beauty and meaning into everyday life. On a grander scale — the architecture of a public building or the design of a city park — design affects the quality of life for many people.

Today, technology has changed the ways we are influenced by design. As designers, we get to see so much more, especially work from other countries and cultures and we can, in some way, interact with it. Today, we learn from things we would never have been exposed to before the advent of the Internet and e-mail. It's instant communication with the world. The sources of inspiration are virtually boundless. We can reference history or technology or be inspired by the artwork of people outside our own society.

There is so much that is exciting about new technology and how it's changing the world of fashion. Nothing in my experience has been as powerful a change in the way we do everything as technology. Through the Internet, I am able to present my line directly to the shopper and provide what I believe is good quality and design to many women who could not previously afford to buy designer fashion. More women can have the confidence of being well-dressed. Feeling good and looking good empowers you. It makes you stronger.

Through my work in the public schools, I meet women who are embarrassed to visit the teachers because they do not feel they have the right clothes. The teachers, too, need good-looking outfits they can wear to work — suits and other pieces that are priced within their budget but with enough quality to be part of their wardrobe for a long time. I think teachers can set a great example for students by dressing up for class.

Technology is making the people who shop just as important as the fashion elite. We're no longer designing only for the top-tier magazine editors or the few people who can afford to buy couture. Technology has started a revolution. In this case, the revolution is about the democratization of fashion.

In fact, almost everything we do in the industry has been altered by technology. Simply the speed with which information is now broadcast has made all of us reevaluate how and when we show a new collection. It is no longer an exclusive event. At one time, only a few buyers and people from the press would see new designs. Then, three months later, the magazines would publish photos of the show or feature spreads that highlighted the new looks — and that was an exciting moment. A bit later, the clothes would arrive in stores — another big event.

Now, anyone who wants to can see the new collections right away. The same day new designs appear in a fashion show and are photographed, the images can be posted on the web. In a sense, everyone now sits in the front row. Technology makes that possible. It gives people access to so much more. And thus, the customer plays a bigger part in the design process. What people want and what they need is as important as the concept of design.

Beyond the structure and process of the fashion industry, the clothing itself has changed. Designers are thinking less about each collection as a "season" because people know what's going to be in the stores before the clothes arrive and begin to make purchasing decisions before the spring or summer rollout. We're using more year-round fabrics because what people want to buy has less to do with season and more to do with lifestyle. People have to be able to live in their clothes. And it's much more modern to have clothes that you can wear year-round. Of course, one still needs a warm coat or a swimsuit, but that's not a wardrobe.

DDM: Is there a precedent for this kind of thoroughgoing change in the fashion industry?

NK: In a way, the excitement I feel today reminds me a bit of when I first went to London as a young woman in the late 1960s and early '70s. Everything has changed immensely, but in the same way, fashion was very alive with a new creativity and the young Londoners were themselves very creative in putting together new looks — taking cues from history, from other cultures, from books and movies.

There were two extraordinary stores in Kensington High Street — Biba and Bus Stop — and they were selling clothes for $12. It was a complete change from the look of the early

'60s, epitomized by Jackie Kennedy and the pillbox hat and classic sheath dress. And, of course, Biba wasn't couture. Having great style didn't depend on spending a lot of money. It was about your own creativity. Once again, there's that sense of freedom and originality. Fashion is less about prestige and labels and more about who you are and how you want to present yourself. It's much more interesting and more fun.

Shopping, too, should be fun and easy and that's why I am excited about the link between my business, the web and the women who want to buy clothes. Versus what was going on in the '50s and '60s, our lives move very quickly today. Women's lives especially are full of activity and for most, shopping cannot be the leisurely occupation it once was. Few spend an entire day shopping and lunching on a regular basis. With technology, your BlackBerry or iPhone can scan bar codes on merchandise, give you the details of the garment and also let you order. It's as simple as pointing your phone at the window of the shop as you pass by before work or after dinner.

DDM: What about the place of couture in the future of fashion?

NK: Couture is extraordinary and so much a part of fashion history, but there's so much that's exciting about new technology that offers a kind of creativity and style that is so much more relevant for modern lifestyles. Still, history remains an important reference point.

Everything has its time and if in 20 years there are women who still have the means and the desire to buy couture, then it will continue to exist. But it may also pass by. Fashion more than any other art form changes with the times and reflects the feeling of the moment. You can see what 1939 was like by looking at the clothes. The dresses and hats and shoes tell us a lot about the social environment and the rules by which women lived. Couture in its heyday was very much a part of fashion and the life of wealthy people. It was a way of differentiating oneself and proclaiming how you fit into society.

Today, with new lifestyles and technology offering a much more fluid society, there are endless opportunities for using design to identify yourself.

DDM: How does technology relate to your own gifts and career as a designer?

NK: I am inspired by everything everyday. Fashion designers must reflect social influences in their work. We need to continually evolve and must have finely tuned antennae. I am one of my clients. I think like her and I live her life. So that is the gift I am given to do a good job. Technology now allows me to interact one-on-one with my clients so that I can do a better job of meeting their needs. And I can show anyone what I'm doing at any time around the world. This is my excitement about fashion now.

Norma Kamali is known as an innovative designer who follows her own path. She invented iconic designs like the sleeping bag coat, a collection of styles created from actual parachutes, and packable multi-use clothing. Norma has received numerous awards for fashion, architecture and interior design, the creation of the fashion video short stories, and community public service. She has a plaque on the fashion walk of fame. For 15 years Norma has dedicated time in New York City public schools working with students to bring together art and commerce to establish job opportunities for artistic and creative students.

John

Hellwig

design and the future

Twenty years ago, any claim that “design is a matter of importance” was an assertion apt to invite skepticism. Today, such reservations are less likely to be the case. Design is now more widely understood as a tool for driving innovation and economic growth, as well as a means of ensuring a sustainable future. And beyond the attention given to competitive advantage, there is an emerging awareness of how design shapes our entire physical and cultural landscape. Design can change people’s lives and hopefully for the better, whether focused on fulfilling a need as yet unmet or mapping out the path to a world yet to come.

Nevertheless, despite the influence of design on a local or a grand scale, one of the hardest questions to answer remains: what will the future bring? Given that 15 years ago or so there was no World Wide Web, much less the portable digital technology we now take for granted, it is risky to predict what will happen in even the next decade. Still, I’d like to at least speculate about what may happen in the world of design, and in particular, the practice of industrial design, which is what I do.

There are three major drivers that influence the work we do as designers of furniture for the contract market. The first is based on human behavior or what we call “the world of work.” As human beings, we are social animals and that aspect of our nature will always ensure the existence of the office as an idea and as a physical space for face-to-face meetings and working together at a table or side by side, as well as via e-mail and video links. Even as the Internet has become a way of life, being connected by a web can go only so far. The day-to-day interactions, the grouping and regrouping of people, the building of common bonds, even the shifting politics of the office, are all a rich source of ideas and satisfaction for most of us. It is this collaboration and the collective intelligence it generates that forms the essence of work and creativity.

Of course, these behaviors change as the world at large changes, as demographics shift with the arrival of new generations and the migration of global populations, and as organizations rethink their structure and their methods. Our job as furniture designers is to stay attuned to these changes, to recognize and understand significant shifts and use this knowledge to

generate innovation. Future design success depends on how accurately we interpret behavior as it expresses new needs and expectations.

The second major driver is technology. The advent of the personal computer radically changed our idea of work and the blueprint of the office as it underwent a massive automation and we all dealt with a tangle of wires and cables, cluttered desks and new ergonomic problems created by long hours at the keyboard. At the same time, a more dynamic and democratic workplace began to emerge. Going forward, the combination of miniaturization and mobility has changed this picture, with technological gadgets integrated more seamlessly into our lives and carried with us everywhere. Oddly, these developments have allowed office furniture to become simpler, more like the familiar forms of residential furniture.

In today's workplace, teamwork takes many forms and collaborative spaces exist at various sites throughout the office. The environment is characterized by visibility, openness and places for spontaneous interaction that encourage people to move around and share their knowledge. These spaces may be furnished with simple worktables, or take the form of loosely structured clusters of lounge seating where people gather on an informal basis. Though not really designed as a work tool, it is still significant that the iPad was first demonstrated while sitting on a couch rather than at a desk or table.

Changes in architecture — the third major driver — also influence furniture design. Furniture must support the building architecture rather than compete with it. Well-designed furniture — simple, functional and flexible — can modify the interior space or flow within the spatial structure and allow the building to adapt to changes over time. The goal is to design furniture that can evolve as the organization evolves and space layouts or other workplace requirements change. Today, the emphasis has shifted from making an object that serves present needs to designing the entire lifecycle of the product. It's the long-haul lifecycle that counts in terms of economics and in terms of environmental responsibility.

As green building becomes the norm, it is only natural that furniture will be designed to ensure that it contributes to indoor air quality and the general health and well-being of building occupants. The new demands are now captured in LEED requirements and other standards, but the future will hold ever-more stringent standards as we move toward a culture that makes things with less environmental impact. As sustainability becomes an accepted tenet of good design, new constraints will change products, simplifying them and making them easier to service, disassemble and reuse. Furniture will also be lighter and more frequently built with bio-based, renewable materials.

Although it has only begun to emerge, the science of low-impact materials will result in as-yet unimagined new designs. One has only to recall how greatly material innovations such as tubular steel and bent and laminated wood veneers contributed to furniture design in the 20th century. Laminated woods and plywood made possible chairs that were light yet strong and provided comfort with a minimum of bulk and a new fluidity. Steel tubing helped to create radically new profiles for seating, tables and coffee tables. Molded plastics made other innovations in shape and structure possible. It will be interesting to see what sort of furniture will appear with new advances in materials technology.

Although there are other drivers of change in furniture design, I believe that these three — people, technology and architecture — along with their interactions, will be where the action is for some time to come. That said, how does innovation in furniture design occur in practice?

In my own work, leading design at a major furniture manufacturer, we tend to innovate in steps, with each new idea connected to the context from which it emerges. In fact, I believe that it is essential to always look for context — the environment within which the furniture will live, the context of the organization or the place a new product holds in a company's portfolio. Finnish architect Eliel Saarinen has often been quoted, but I think it bears repeating: "Always design a thing by considering it in its next largest context — a chair in a room, a room in a house, a house in an environment, an environment in a city plan."

A table is just a surface with legs. It has very few components. But in designing one, the designer has to think about how it will fit into an office environment and a work process and also if the table can be produced at the right cost. Decisions must be made about materials and finishes to ensure that the table meets indoor air quality requirements and will offer the potential of reuse at the end of its current life cycle. Of course, the table also has to be ergonomically sound and able to deliver wires for lighting and technology. It's not as simple as it looks.

More and more I believe, it is the new combinations of furniture that are most interesting, rather than individual components. One really can do "more with less" with multi-purpose products that work in multiple ways with other products to create various scenarios for work. This is particularly true in public and teaming spaces within the office, which are used by various people in different ways and which now make up a larger and larger portion of the floorplate. And because space in almost every office is at a premium, clever storage, multi-layered surfaces and small-scale components become more important.

It is likely that chairs, desks and storage will always be part of the office, but we also work seated on lounge furniture with laptops at hand on mobile tables. We socialize with fellow workers in office cafes and take time for reflection in quiet rooms. To get a glimpse of the future office and tomorrow's workforce, take a trip to your local college or university. The libraries, cafeterias and student lounges are full of life, with people grouping together and moving through space. The activity appears to be spontaneous and fluid, but it is also driven by purpose and schedule, with students intent on gaining, sharing and using knowledge — much like the office of the future.

Design can fully enable tomorrow's workers to be as mobile and connected as they desire. It can serve both employees and the organization by providing more creative, flexible and productive ways of working. Design can be the agent of change for the better — at work and in the world.

John Hellwig is Vice President, Design & Innovation at Teknion. He studied Architecture, Engineering and Industrial Design at McGill University in Montreal and at Carleton University in Ottawa, graduating in 1978. In 1985 he joined Teknion, where he established the formal disciplines of Design and Development, building the department to its present award-winning capabilities. John's design work has ensured that Teknion products evolve and address workplace trends, technology and planning practices, and that all products work as a coherent portfolio. In 2006, John's work was recognized in a career retrospective exhibit by the Association of Chartered Industrial Designers of Ontario.

Always design a thing by co nsidering it in its next larger context — a chair in a room, a room in a house, a house in an environment, an envir onment in a city plan.

– Eliel Saarinen

Kay

Sargent

challenge and change

Challenge and Change: How Paradigm Shifts Affect the Art and Science of Workplace Design

Many companies are currently in analysis-paralysis mode about how to handle their real estate and workplace needs. But pent-up demands to address space issues, the need for companies to generate innovative solutions to remain competitive, and the drive for speed to results requires action. Yet many companies still hold on to old concepts about the workplace seemingly unaware that the paradigm has shifted and we don't necessarily need to go to an office anymore to work. Work comes to us, whether we're at home, on the road, or anywhere else with access to technology. We are less dependent on a physical office; technology has enabled us to become untethered. Most people in corporate real estate (CRE) and the C-suite understand that there are smarter ways to work, yet many are struggling to weave those ways into their existing workplace culture and business dynamics.

Change is Inevitable

The workplace has been affected by changes in demographics, social shifts and advances in technology. But little changes until economically challenging times create a major catalyst for embracing new ways of work. The recession of the early '90s, the attacks on 9/11 and the recession that began in 2008 created such opportunities. By necessity, the workplace is rethought, reconfigured and rebuilt to address those changes and to provide greater return on investment. Proactive CREs plan tactically and leverage opportunities to maximize the potential savings, move their companies towards the workplace of the future and support an innovative business culture.

Changes in the real estate portfolio, such as lease expirations, resizing, mergers or consolidations, and infrastructure renovations or energy upgrades, often result from necessity after economically changing times may be the trigger event needed to justify workplace modifications.

Creating the Right Environment to Match Your Workplace Culture

An essential element to being able to move forward is setting aside old workplace paradigms

and existing perceptions. Understanding that just because you can't see someone doesn't mean they aren't being productive; or that more people are pilers than filers; or that rewarding people with space or walls isn't always the right answer are paradigms shifts that are hard for some to embrace. The key is getting workers to clear their minds, be willing to think about the possibilities and to realize that in order to progress, change is necessary. After all, things have changed significantly over the past 10 years and technology will continue to enable change at an increasingly exponential rate. What will happen if your company doesn't innovate, grow and change?

There are Several Key Issues Affecting the Paradigm Shift in the Workplace

A new social dynamic emerged in the workplace. For the first time in history, more women than men are graduating from college each year in the United States with career expectations, and more women are migrating to the U.S. in search of career opportunities. This shift is driven by the impact more women in the workplace will have coupled with the generation shifts and a growing ethnic blend that will create a majority of minorities. A blend of cultures will give us opportunities to see things differently and expand one's horizons. Altogether, these shifts will result in an increasing demand for workplace variety and flexibility.

Generational diversity is another leading issue. The Boomer Generation, on the verge of retirement, wants to ensure that its legacy is more than just a residue of the corporate scandals that have rocked the U.S. for the past 10 years; Generation X, with its focus on work-life balance, is moving into leadership roles; and the socially conscious Millennial generation is emerging as a driving force. Considering the breadth of corporate scandals that Gen-X'ers and Millennials have witnessed in their lifetime, it's no surprise that they are wary of large corporations. Looking for opportunity, talented Millennials and Generation-X'ers are attracted to those companies that align with their expectations and create an employee friendly atmosphere that meets their work and life styles and trusts staff to honor alternative work schedules.

Collaboration and increased need for social interaction have affected the paradigm shift. The workplace has become more of a collaborative community than a top-down, production-driven work zone. Cross-pollination of ideas and cross-mentoring are necessary for innovation, but these don't happen if people are glued to their seats in isolated boxes, tethered to their computers. However, while sitting in a different spot each day may encourage a cross-pollination of ideas among people who normally had little to no interaction; it can also erode social bonds.

After all, most people have a peer group within the office that they check in with everyday, like office siblings so to speak, with whom they are comfortable sharing. It's no wonder people aren't always willing to sit in a different spot every day. By nature we are creatures of habit, territorial and more comfortable around familiar faces and places. Although we enjoy amazing technological forms of communication today, face-to-face interaction is still essential for forming and building bonds. Even casual interaction can help build the loyalty, trust and interaction necessary for innovation. Whether staff comes to the workplace daily or once a week, the workplace is becoming more of a venue for engagement than a place to sit in solitude and do concentrative work. To maximize this new model, it's important that staff have access to a variety of work settings including small dedicated spaces, communal areas, collaborative zones and focus areas.

Knowledge Sharing

With the amount of information available via the Internet, we have access to an unlimited abyss of information. But that's not knowledge. Knowledge comes from taking information and applying it optimally. Wisdom is the ability to craft knowledge into new concepts and innovations. Since innovation doesn't happen on a schedule, but rather at random when the thought hits, co-location is essential. As we move away from a production-driven economy, through a knowledge-based economy, and, hopefully into a wisdom-driven one, the focus on collaborative environments will become more and more essential.

Collaborative Environments

Companies looking to redefine their work environments with an eye on the next generation of

workspace will move towards more free-flowing environments that blur the lines between collaborative and dedicated space. With technological advances that allow workers to truly work remotely, the significance of the office will diminish and work will be done in a variety of places including the home, client touchdowns and community centers.

The term "office" as we know it — the primary place where one goes to do work — will become obsolete. It will be a place for collaboration, face-to-face encounters, knowledge sharing and bonding to build company culture. Creating attractive, energizing and engaging spaces to foster interaction will convert the office to a hub. Teamwork builds on itself as people feed off each others' ideas and energy. So creating dynamic spaces for interaction is key. For example, stand-up zones enable quick idea exchange versus sit-down areas for in depth conversations. Both are needed. Work culture, socialization and collaboration go hand-in-hand.

Socialization is particularly relevant to the Millennials, also known as the "We-generation." The Millennials, who do everything in packs, value not only the experience and mentoring they glean from being in the office, but strive to have an impact and play a pivotal role. They desire to be part of something, an active contributor and want opportunities, but social and corporate responsibility are also important factors for them.

Culture

The culture created by any corporate structure and management style has a strong impact on socialization in the workplace. Two diverse trends are currently centered on workplace culture: creating a "mobile workforce" vs. creating a "presence essential for community." Companies moving to a more mobile workforce strive to decrease real estate costs, limit risk, reduce time and resources lost to commuting, and encourage staff to be on-site with their customers. These companies design their space to foster mobility by reducing desk-to-staff ratio. But many have done this so well that team camaraderie and information sharing has suffered, diminishing the bonds of loyalty between workers, unless practices were intentionally put in place to encourage a virtual corporate community. Some companies that have successfully encouraged staff to work remotely are now redesigning the workspace to provide amenities that will attract staff back to the primary office on a weekly basis and help reestablish their ties to their greater work community.

While many industries want to increase mobility, others are doing everything in their power to discourage it. Companies that thrive on the energy of group collaboration are designing spaces that encourage staff to be in the office on a daily basis, not just sitting at a desk, but in environments designed to inspire and encourage interaction. The belief that "presence is essential" and community fosters innovation is the cornerstone of many organizations. Free snacks, play areas, concierge services and spaces designed to encourage camaraderie and interaction are elements intended to attract staff to the workplace. In some cases, employee designations like "associate" have been replaced with titles such as "liaison," "family member" or even "owner." So what are your work culture and your work objectives? Your space should support the culture you want to encourage, mirror the organizational structure you employ, and enhance the work styles of your staff.

What's Right for Your Company?

CRE teams often look at industry benchmarking as a tool to measure their workplace environments against the competition. But the key is evaluating what is "working" versus just looking at what is being "done." After all, documenting existing metrics just tells you what employees are doing, it doesn't tell you whether they want to be doing it, if it's working, or if they like it. Assessing what practices are worth emulating and how they may apply to your company requires going beyond statistical benchmarking.

Evidence-based strategic analysis is an essential tool in defining and programming the right requirements and right solutions for your organization. Addressing how your company's staff uses space, what types of space they really need, and creating out-of-the-cubicle solutions that reinforce corporate goals and employee work patterns is essential to determine what's right for today's work environment. Developing the appropriate workplace strategy also requires a holistic approach that evaluates human resources, technology, facilities, real estate, security and change management, and includes them in the solution. Assessing the needs of an orga-

nization requires the right balance between the art and science of design. Going beyond traditional benchmarking to see what has proved to be successful and then relating that knowledge to your own organization is where knowledge is converted into wisdom to yield best results. By following the same path set forth by peers, companies often replicate mistakes rather than learn from them. Savvy companies review the lessons learned and apply them to fit their unique needs. In the workplace of today, true competitive advantage comes not from mirroring what your peers are doing, but learning from what they want to do — what has worked and what has not — and then assessing its relevance to your own specific business goals and drivers. Compelling organizations are rarely followers; they are trend setters. Those that evaluate industry benchmarking, yet chart their own course that is specific and unique to them, will drive innovation by providing the next level of workplace solutions to attract and retain their employee base and continue to outpace the competition.

Conclusion

A significant shift in the way we work and the way we use space has occurred. The driving factors — economic, technological, demographic and cultural — have emerged driven by economic necessity. Companies that can break through the old workplace paradigm and evolve to a new concept of work life will benefit from a workplace that thrives and optimizes performance gain. The impact of design is huge and either enables or inhibits the environments we habitate.

Design Does Matter. Smart design inspires, improves and enables. True purpose creates true meaning.

Kay Sargent is Principal with IA Interior Architects. She holds a design degree from Virginia Commonwealth University and an environmental design degree from the Parsons School of Design. Prior to joining IA, Kay was a Vice President with Peck-Peck & Associates and, most recently, a security consultant for Standing Stone Consulting. As a practicing design professional for 25 years, Kay specializes in working with government agencies and corporations, especially focused on workplace strategies. Her approach to design is enriched by an understanding of the industry and how it has responded to the challenges facing organizations and their workplaces today.

Virginia Postrel

the art of healing

How better aesthetics in hospitals can make for happier — and healthier — patients

I'm sitting in a mauve vinyl recliner facing a mauve laminate counter and cabinets. On the countertop are a couple of candy jars, five peacock feathers leaning around a black wall phone, a small plant that may or may not be real, three boxes of medical-exam gloves, and a radio tuned to smooth jazz. A curling 5- x 7-inch photo of the participants in a 2000 fund-raising walk hangs below a sign warning guests not to use cellphones. Someone has pinned three teddy bears to a small strip of cork on the grayish-white wall. "I'm gonna be Okay," says the slogan on the orange bear's chest. The yellow bear wears a blue scrub outfit with an 800 number and the slogan for a cancer organization. On the white bear, hot-pink embroidery declares, "Cancer sucks."

Thank God for intravenous Benadryl, which knocks me out in just a few minutes. The cancer treatment is state-of-the-art, but the decor is decidedly behind the times.

Over the past decade, most public places have gotten noticeably better looking. We've gone from a world in which Starbucks set a cutting-edge standard for mass-market design to a world in which Starbucks establishes the bare minimum. If your establishment can't come up with an original look, customers expect at least some sleek wood fixtures, nicely upholstered chairs, and faux-Murano glass pendant lights.

Unless, that is, your establishment is a doctor's office, medical clinic, or hospital. Mounting clinical evidence suggests that better design can improve patients' health — not to mention their morale. But the one-sixth of the American economy devoted to healthcare hasn't kept up with the rest of the economy's aesthetic imperative, leaving patients to wonder, as a diabetes blogger puts it, "why hospital clinic interiors have to feel so much like a Motel 6 from the '70s."

A Hyatt from the early '80s might be more accurate. The United States is in the midst of a hospital-building boom, with some $200 billion expected to be spent on new facilities

between 2004 and 2014. Although more spacious and sunlit than the 50-year-old boxes they often replace, even new medical centers tend to concentrate their amenities in public areas, the way hotels used to feature lavish atriums but furnish guest rooms with dirt-hiding floral bedspreads and fake-wood desks. Hospital lobbies may now have gardens, waterfalls, and piano music, but that doesn't mean their patient rooms, emergency departments, or imaging suites are also well designed. "Except for the computers you see, it's like a 1980s hospital," says Jain Malkin, a San Diego-based interior designer and the author of several reference books on healthcare design. "The place where patients spend their time 24/7 is treated as if it's back-of-the-house."

Consider diagnostic imaging departments. MRIs and CT scans can frighten many patients, and research shows that simple elements such as nature photos can ease their stress. Yet the typical scanner room still looks "as if it's a workshop for cars," says Malkin, with bare walls and big machines. One of the bleakest rooms at the UCLA Medical Plaza, where I spend my time, is a waiting room in the imaging center. Small and beige, it epitomizes aesthetic neglect, with stained chairs, mismatched tiles, and tattered copies of *U.S. News & World Report.* The only wall art is a drug-company poster on myocardial perfusion imaging — just the thing to comfort anxious patients.

Cost is of course an issue. Malkin estimates that enhanced design amenities can add about 3 percent to the cost of a large project. The big shortage, though, is not money but attention. When hospital boards and executives talk with architects and designers, it's rarely about the imaging department.

Also, unlike a hotel, a medical center rarely trains its staff to pay attention to how the place looks to guests. Hence the often-torn drug posters, teddy bears, and countertop clutter. If you work somewhere every day, after a while you don't notice eight-year-old snapshots and peacock feathers too tall for the space. The ad hoc, staff-oriented decorating that fills an aesthetic vacuum can be worse than bare walls. Lee Mequet, a Southern California real-estate agent, recalls a chemotherapy visit with her husband, who was so ravaged by lung cancer that his skull and bones showed under his skin. The treatment room, she says, was "decorated for Halloween, with pumpkins and paper skeletons, and the tragicomic horribleness of the images made me want to rip the fucking things from the wall." Alas, cable TV has yet to create a makeover show called Designed to Heal.

When I started thinking about healthcare design, I assumed that insurance price controls and third-party payments were the source of the problem. But hotels upgrade their rooms to please business travelers whose expense accounts impose budget limits. When airfares were set by law, airlines competed by offering better food and prettier stewardesses. Patients generally do decide where to take their business, even if rates are fixed and someone else is paying. They may not know what their healthcare costs, but they certainly know what the hospital looks like. In academic surveys, patients in better-decorated, hotel-like rooms rate not just the environment but their medical care more highly than do patients in rooms with standard hospital beds and no artwork. That customer-satisfaction result would tell any smart hotelier to redecorate. But hospitals feel less competitive pressure and are more resistant to change.

Patients like me are part of the problem. When I was diagnosed with breast cancer, I didn't shop around for the most attractive chemotherapy clinic. I went to the best oncologist I could find and got the room that came with him. "Most people would take the most-competent clinicians even if they were in the worst possible environment," says Malkin.

But why assume good medicine must come with bad design? Most hotel guests care more about reliable reservations than about crisp duvet covers. That doesn't mean they want ugly rooms, though. Given the choice, they'll go for the hotel that offers the best of both. When Starwood Hotels, which owns the Westin, Sheraton and W brands, upgraded its rooms in the late 1990s, the rest of the hotel industry followed.

Under similar competitive pressure, medical facilities react the same way. When Baby Boomer women started choosing hotel-like birthing centers over hospital delivery rooms, hospitals

quickly wised up. Now even rural hospitals offer well-designed labor-delivery-recovery suites. “People do shop, and they will actually sometimes change an obstetrician because they want a certain hospital experience,” says Malkin.

Much of the time, however, patients don’t know they can do better. Take semi-private rooms. Like hotel guests, sick people aren’t eager to share their rooms with strangers. But most patients assume they don’t have a choice. “You grow up thinking that is how hospitals are, that there’s always two people in a room,” says Malkin. As of 2006, however, the American Institute of Architects’ guidelines, which many states use for their regulatory codes, specify single rooms in new medical-surgical and postpartum units. Medical centers may not care what makes patients happy — such a subjective, unscientific concept! — but they can no longer ignore the research demonstrating that single rooms lead to better outcomes: lower infection rates, shorter stays, less noise and hence better sleep, fewer expensive patient transfers and subsequent medical errors, and much less stress for patients.

Such “evidence-based design,” which draws its principles from controlled studies, is the great hope of professionals who want to upgrade the look and feel of medical centers. Much of this research follows a seminal 1984 science article by Roger S. Ulrich, now at the Center for Health Systems and Design at Texas A&M. He looked at patients recovering from gallbladder surgery in a hospital that had some rooms overlooking a grove of trees and identical rooms facing a brick wall. The patients were matched to control for characteristics, such as age or obesity, that might influence their recovery. The results were striking. Patients with a view of the trees had shorter hospital stays (7.96 days versus 8.70 days) and required significantly less high-powered, expensive pain medication.

Along similar lines, a 2005 study compared patients recovering from elective spinal surgery whose rooms were on the sunny side of a ward with those on the dimmer side. Those in the sunnier rooms rated their stress and pain lower and took 22 percent less pain medication each hour, incurring only 80 percent of the pain-medication costs of the patients in gloomier rooms. Other studies, with subjects ranging from the severely burned to cancer patients to those receiving painful bronchoscopies, have found that looking at nature images significantly reduces anxiety and increases pain tolerance. Not all distractions are good, however. Ulrich and others have found that inescapable TV broadcasts and “chaotic abstract art” can increase patients’ stress.

Of course, Starbucks and Starwood didn’t wait for decades of peer-reviewed research to prove that customers would respond to better aesthetics. Their CEOs were willing to bet that subjective quality improvements would translate into higher sales. Patients like the diabetes blogger who are tired of “dreary, dull and dare I say, a bit depressing” medical environments need similar visionaries.

Meet Joanna Cain, an oncologist and the Director of the Center for Women’s Health at the Oregon Health & Science University in Portland. When the center hired interior designers for its new facility, Cain told them she wanted the place to feel like a day spa filled with artwork. She got her wish, with cherrywood finishes, curving fixtures and ceilings, warm colors, chair groupings that encourage conversation, and slate accent walls. The mission and design inspired philanthropy — gifts not only of money but also of glass-art tiles, a “grandmother’s garden” of rosemary and lavender, and, above all, lots of art. “Going to the doctor now has a bit of the feeling of also going to see a very special, almost private, art collection at the same time,” says one patient. “I can’t tell you how nice that has been, especially when you are going for a less-than-pleasant procedure or discussion, or are simply in pain.”

Cain acknowledges that “it does cost more to build this, but not that much more” — perhaps 10 percent to 15 percent. Asked how she measures the design’s success, Cain points to her patients undergoing chemotherapy: “It’s a place that makes them happy.” She acknowledges that a beautiful environment should never trump excellent care. “But take it from the other side,” she says. “If you have a choice and you can be in a place full of light, where there’s beautiful art that your eyes can rove over and feel comfort from — which would be a better experience, assuming they both are the same [medically]? And why don’t we think people deserve that?”

A brilliant analyst and award-winning commentator, Virginia Postrel speaks and writes about a wide range of topics, often centered on culture, social trends and economics. She offers audiences valuable business-oriented insights into fashion, design and architecture, innovation and intellectual property, politics and social policy. Virginia has been a contributing editor for The Atlantic, *writing a monthly column on Commerce and Culture, and a columnist for* Forbes *magazine. For six years, she was an economics columnist for* The New York Times. *Virginia's recent work focuses on aesthetics and how fundamental they are to our personal, social and economic lives.*

Sara

Diamond

design thinking and the healthy society

We need to apply design thinking of every kind, as well as the myriad tools of cultural creativity to the most profound challenges in health and wellness. We must couple this shift with rigorous evidence-based research that measures the impact that design and culture can make when applied to these challenges. As the health debate in the U.S. reminds us, there are Gordian knots so tight that they seem impossible to pick open — but unravel they must.

A new order is needed that engages individuals and groups in healthy behaviors. One that provides the tools (such as data visualization) that healthcare providers need, and that can guarantee patient safety. One that can radicalize the delivery of prevention knowledge and effectively intervene in disasters such as the aftermath of the Haitian earthquake. One that levers new discoveries and medicines and that applies the resulting knowledge to accelerate healing and decelerate the spiraling costs of healthcare. Last but not least, this new order needs to eliminate bleak, unwelcoming institutional spaces and allow users to access systems that are currently difficult for even the most literate to navigate.

There is a deadly absence of user-centric understanding in the field of medical technology design, whether home care, internet delivery of health information, or patient-expert communication (where at times complex emotional information needs to be successfully transmitted and received). Demand continues to grow for long-term, life-long wellness, as the worldwide aging population grows. Inclusive and universal access to a productive life requires overcoming physical and attitudinal barriers. Health and healthcare are "wicked" design problems of dramatic proportion, and overcoming them presents boundless opportunities for public and private profit.

A Personalised, Individual Approach to Wellness

Mike Evans is a Canadian doctor, health columnist *(The Globe and Mail)* and television celebrity (CBC Newsworld), and the leader of the Health Media & Innovation Lab at St. Michael's Hospital, in Toronto. He reminds us that the vast proportion of spending is currently on emergency intervention, when it must shift to the healthy individual and

ongoing care. Attitudes towards health and even access to care are mediated by cultural difference, gender, geography, even religion.

Digital tools and social media can play a significant role in building a continuum of individual and group engagement around health. He argues for a Healthy 2.0 approach that combines self-care, personalization for individuals and groups, and a rich engagement of healthcare providers with their users, humanizing the patient and making them a partner in care. Evans notes that individual behavior accounts for at least 40 percent of the factors contributing to early death.

Bioinformatics and cancer researchers such as Dr. Lincoln Stein and The Ontario Genomics Institute share an interest in the emerging markets for personalised tools in fields such as genomics, as these facilitate family planning, disease prediction and prevention, as well as genealogy. There have also been some technological developments around diabetes treatment, helping to empower the end-user in the daily reality of their illness. Linking health delivery to everyday communications is a critical challenge, and mobile phone telemedicine allows independence and accuracy in living with Type 1 diabetes amongst adults, and radically alters parents' ability to manage Type 1 and 2 diabetes in young children.[1]

Aesthetics at Work in Existing Healthcare Environments

Healthcare institutional architecture succeeds when it draws from a dynamic architectural palette that exudes a sense of optimism, yet protects against infection, and allows ease of navigation as well as the flow of patient care. Bloorview Kids Rehab streams with natural light, living walls, and the ubiquitous presence of art and music. Baycrest, a research hospital dedicated to the brain and aging populations, works with designers, artists and computer scientists to develop memory-rich environments that use familiar cultural materials to assist brain-damaged patients.

Roger Ulrich, Director, Center for Health Systems and Design, Texas A&M University, has studied the impact of landscape photography and painting and actual physical landscapes that are visible to patients on their recovery processes. His evidence-based research draws on emotional convergence theory and finds psychological benefits from these calming images and a resulting reduction in the length of recovery and stay – a direct cost benefit. [2] For these reasons hospitals in Sweden and Norway have set aside art funds for all new buildings. And architecture requires excellent industrial design to impact on the spread of disease.

These practices are dependent on integrating user-centered design processes that understand the procedures and the actual practices of healthcare workers in order to design for these behaviors at the same time as intervening with them when appropriate.

My university created Cultural Knowledge and the Healthy Society [3] in order to share case studies such as those above and develop an interdisciplinary strategy to promote the inclusion of design and cultural knowledge into evidence-based practices and health system reform. This event received the support of all three of Canada's research councils and featured international practitioners. In her remarks, Margaret McCuaig-Johnston, Executive Vice-President of the Natural Sciences and Engineering Research Council of Canada (NSERC) stated "… we fully recognize the value of bringing together not just other 'hard' science disciplines, but also the social sciences, health research, the arts and design."

The Role of the Arts in Improving Healthcare Systems

Cultural knowledge is broad-ranging, focused on "human factors," but capable of extending thinking beyond that framework. Designers play a role by demonstrating their expertise in the development and application of technologies which respond to the human factor, from the physical comfort of a design to the cultural appropriateness of its presentation and the likelihood of its acceptance and use. Diane Gromola's pain mediation systems in virtual reality and other interactive media are a strong example of physical and virtual space that is empathetic, communicative, efficient and engaging.

Designers are expert in predicting and understanding social trends and in developing messages that can reach specific and general populations, and create participation in processes

of change and self-management. They can use the artifice and functionality of fashion, interior design or architecture to address health prevention, and patient-care environments. They can streamline systems and processes, and invent inclusive technologies and systems with the disabled, as the globally connected TRUST research at SmartLab with assistive technologies proves. They are also brilliant at imagining and implementing applications for existing and emerging technologies — but need to be at the bench when a discovery is made in order to maximize its potential.

Where Brands Fit In

Cultural industries such as advertising, branding and media are expert in engaging and responding to consumers and in designing effective communication, one of the great challenges in the healthcare industries.

We are at an opportune moment. The semantic shift from sickness to wellness suggests a fundamental breakthrough in the ways in which health and the healthcare system are gradually being understood by governments, the medical establishments and allied professions, and the public. This shift has moved the focus from the provider to the user. Environmental and behavioral factors — the domain of culture, media and design — have the most impact on health, and insights from design, cultural industries and creative/artistic research are beginning to strengthen research and applications in prevention, health and technology.

Sources

1 Dusan Belic, ‘Mobile technology could address the needs of parents of children with diabetes’, December 12, 2009. *IntoMobile*.
2 Lisa Zamosky, ‘Roger Ulrich: A Case for Design’ in *Healthcare Financial Management,* Leadership Breakthrough Business Management in Healthcare Issue.
3 Documentation from *Cultural Knowledge and the Healthy Society*

Further reading

bloorview.ca | gromala.iat.sfu.ca | smartlab.uel.ac.uk

Sara Diamond was born in New York City and later moved to Canada. She received a degree in communications and history from Simon Fraser University in British Columbia, and has been active as a video curator, cultural critic, television-video producer, and instructor in video production and theory at art centers and colleges throughout North America. Sara created the renowned Banff New Media Institute (BNMI) in 1995 and led it until 2005, when she joined the Ontario College of Art & Design as President. Sara’s video art and broadcast works have been exhibited and screened internationally.

Design is not just what it looks like and feels like.

Design is how it works.

– Steve Jobs

Art

Gensler

design and the everyday

The everyday is where designers should put their focus. While designers relish the plum and visible assignments — a new tower on the skyline or a beautiful object that other designers covet — the real impact of design happens in the midst of life, affecting people at the level of their daily experience.

Take work, for example. In 1965, most architects saw the office as an extension of the building — spaces and settings that were designed or decorated to convey solidity, importance and power. We started Gensler that year, and our idea was to design the office to support companies and their employees. We were interested in organizational and human performance, so we engaged the people who really did the work. And over time, office design moved beyond gorgeous furniture and the expression of status.

Workspace is a setting for everyday life. That means that it exists in time and is constantly subject to change. Because change is rarely cataclysmic, the everyday is deceptive: we don't see it changing, but then suddenly we wake up to the fact that real changes have occurred. (It often takes a recession to provide the wake-up call.) As designers, we start with the everyday — the actual experience of working. We consider the factors that influence how people work, like generational and cultural expectations. We ask, in the context of the organization that's commissioned our involvement, how the workspace fits into the picture. What's its role? Why would anyone come there? Why should they come there?

In my lifetime, organizations in the developed world have gone from hierarchies to something much more open. Today, work is based on a much different social contract than applied at mid-century. Technology accompanies it and makes mobility the rule, steadily freeing people from the office "tether." How free varies, of course, from organization to organization, but the potential is there to pare the role of the office down — not to zero, but to a lot less than was the case even 10 years ago.

Getting the Balance Right

Starting with the everyday reminds us that design applies to all of it. As people weave work

into their lives, we as designers have to consider how to support them in new ways. Nor are we alone in this. Our clients have a much greater stake in getting the balance right. They can't afford to lease or own space that's used 30 or 40 percent of the time. That's a given, and organizations are properly acting on it. Yet they need what workspace provides: points of face-to-face contact, acculturation and mentoring. And at different points in their lives, the people who work for them may need the workspace as a refuge from young children, as part of the training ground that work crucially provides, and as a community.

Gensler works with several thousand clients, many of them in cities that are identifiably at the heart of the world economy. Every day, my colleagues and I talk with our peers — people at every level in these organizations. We hear how hard it is for some of them to retain women. We hear how younger people, tech-savvy and born networkers, upset some of their elders. We still hear managers wondering aloud if people will really work productively if they aren't sitting in the office at a desk. We also conduct annual office workplace surveys in the United States and the United Kingdom, with other E.U. countries and East Asia on the horizon. These surveys consistently show that top-ranked companies are willing to tackle these issues head-on, and that workplace design has an important role in helping them do so.

Time Matters as Much as Space

When people talk about design, they're thinking of products, surfaces and spatial constructions, but design is equally about enabling people to give shape to time — their own and that of other people. In this respect, we could almost say that design is total or it's nothing. In the 1950s and 1960s, beautiful office campuses were developed in the auto-dominated suburbs around Manhattan. That isolation is passé today. If you want it, of course, mobility will enable you to embrace it to your heart's content. For the bulk of the modern knowledge workers, transit access and a rich social matrix close at hand are necessities to organize their lives effectively around work and other demands on their time. So, by necessity, design has to take the bigger picture into account. Even cities understand this now.

If time is as important a medium for design as space, then the designer has to think about each project in a new way, considering not just how it's used, but how it fits into the patterns of everyday life of the people it's meant to support. This puts design considerably upstream of its usual starting place. Design can look a lot like strategy, early on, but with the difference that it's informed by what designers know.

In the context of strategy, what designers bring is what I would call a qualitative understanding, rooted in their knowledge of cities, of organizations, and of real people living and working, productively or not. Some of this comes from personal experience and some of it draws on colleagues and research, but it leads them to ask good questions about goals and intentions — and raise flags about possible negative implications. Mobility is a good example. Some organizations jump on it, thrilled with its potential to slash costs, but the best ones rigorously monitor the human performance side of it. If that's not part of a mobility strategy, designers need to ask why. Conversely, some organizations resist mobility despite clear evidence of low space utilization rates. Are they really the exception? That has to be asked.

Implications play out over time. The best designers are worldly, savvy people who are deeply interested in the issues of the organizations they serve. They understand the limits of design, as well as its power. Design can't compensate for fundamental flaws in an organization, or for short-sighted decisions.

The Importance of Externalities

There's a photographer named Chris Jordan who documents the accumulated waste generated by everyday life in the United States. His photos have titles like "Depicts two million plastic beverage bottles, the number used in the US every five minutes" and "Depicts 1.14 million brown paper supermarket bags, the number used in the US every hour." He argues that unless you see it, you can't really grasp the sheer quantity of waste involved. Of course, more of it today is recycled and reused, but there is a home truth that his photos capture: We don't give much thought to waste in daily life.

The built environment has huge consequences for the natural environment. It takes energy to make, occupy, maintain and replace. It generates travel, with its own consequences. So the environmental implications of everyday design are a growing preoccupation for designers. Christopher Leinberger, a developer and Brookings Institution Fellow, has said that transit access — and the density levels that make it possible — is no longer optional. Like the link between smoking and lung cancer, old-style freeway commutes deserve a government warning: "Bad for you, and bad for the planet!" It's not just pollution, but it's also the sprawl that freeways make possible, eroding open space and water supplies.

One of the most interesting phenomena in modern urban life is the revival of true mixed-use districts as entrepreneurial centers. Whether it's parts of Puxi in Shanghai or the inner Mission in San Francisco, you find that these older areas are hospitable to a range of working and living situations, all of which exist in close proximity — the opposite, really, of how it's done in most new mixed-use developments. In San Francisco, 60 percent of office leases are for 5,000 square feet or less. While there's still a market for the big office floor plates in the financial district, the real need is for 10,000 square feet — the next step for smaller companies that are outgrowing their original quarters. And they'd like it to be located in areas that have housing, restaurants, entertainment, and other uses close at hand. Transit can help, since a few train or tram stops is often close enough for the location to feel sufficiently in the mix.

Within Gensler, there's a strong sense that the typical postwar real-estate products are reaching the end of the line. In the future, new developments will include a different mix of uses, reflecting the realities of demand. Single-use districts will be less the norm in urban downtowns. In some parts of the world, cities will deliberately get smaller to recover a healthy density and free up land for agriculture, recreation and other purposes. Elsewhere, the challenge will be to avoid making the very same mistakes that the developed world made: favoring freeways over transit; allowing cities to sprawl; allowing exurbs to eat up the regional watershed; and erasing the historic character of the urban core. In China and India, especially in second- and third-tier cities, this is being decided here and now.

The Possibility of Changing the Game

The look of our cities reflects a series of technological innovations that were made in the last three decades of the 19th century. Our Shanghai Tower breaks new ground in supertall building design, with a lighter structure, a real sense of vertical community, and a compatibility with its highrise neighbors that turns them into a transit-served precinct at the heart of the city's financial district. Yet Shanghai Tower's DNA is still attributable to that earlier period in building systems engineering. As we look for better ways to live our everyday lives, it seems likely that a new set of innovations will emerge that will make this easier. We may not be that close yet, but there are promising things on the horizon. New materials that change the relationship between buildings and the environment are one example.

Ironically, the first and best innovation may be simply to live and work in a better way. One result of being a large, energy-intensive country is that individual decisions have a big impact. Americans are not only leading innovators in science and technology, but they are among the fastest to adopt innovation once they see its utility — and to drop existing practices when they've proven to be obsolete or toxic.

We are reaching that point today, questioning patterns of living that took hold at mid-century, when we opted for cars and freeways, envisioning progress but finding that there were other consequences. We left the urban core to businesses and the poor, and then found that we missed it. Yet the move back caused its own imbalances, threatening to turn some cities into enclaves and tourist destinations. Now, instead of ignoring these problems, we are addressing them. The results could be amazing.

The everyday is where all this will play out. Design is a way we make progress, tackling real problems, often of our own making, and learning not just from our mistakes, but from our successes when we achieve them. Designers are often the first to notice when something is working. The best designers have no pride of authorship — great ideas can come from anywhere, and they're smart enough to know that humanity is the richest

source. People are blessed with ingenuity as well as common sense. Like water, they push on, looking for a better life. Design can catch that wave and magnify it.

In 1965, Art Gensler, with Jim Follett and Drue Gensler, founded the firm that bears his name. An Architect, Art is widely credited with elevating the practice of interior design to professional standing. He is a Fellow of the American Institute of Architects and of the International Interior Design Association, and a professional member of the Royal Institute of British Architects. Art graduated from Cornell University's College of Architecture, Art and Planning and is a member of its Advisory Council. A charter member of Interior Design's Hall of Fame, he has also received many distinguished awards.

Paul D.

Oberman

design as renewal

If, according to the old modernist prescription, form follows function, the fate of forms that have outlived their original function is unlikely to be promising. At its most uncompromising, modernism has always had a violent utopian bent. The desire to break decisively with the past easily evolves into a desire to obliterate the past; and, because the present is forever retreating into history, obliteration must necessarily remain an ongoing project. Since I live in the real world, not utopia, and since violence has never held much appeal, my interest has been in reconciling form and function, giving priority to neither the one nor the other. For me, design matters when it combines the old and the new, the historic and the modern, in the adaptive reuse of landmark buildings and the creation of livable, vibrant cities.

I first became aware of the importance of design in the 1970s as an observer of the residential renovation business in downtown Toronto. The fashion in those days was to whitewash the exterior of older homes and replace as much of the interior as possible with stucco and shag carpets. It struck me that the aesthetic of the original designers was far more appealing than the tastes of the renovation artists. In my own work, I began to expose and restore historic design elements that had remained intact. Highlighting these elements, while supplementing them with contemporary kitchens and bathrooms, proved a winning combination with clients.

In the 1980s, before brick and beam came of age, I applied the principles I had learned in residential renovation to commercial buildings. I worked collaboratively with Bruce Kuwabara and Shirley Blumberg and their newly established firm, Kuwabara Payne McKenna Blumberg Architects (KPMB) to design a new style of office space. The premise was that many of us spent more of our waking hours in our offices than we did in our homes and that we therefore deserved a better work environment than was typically available in the "international-style" towers that were springing up around the globe.

Incorporating old and new, our approach was to adapt existing historic buildings to contemporary work uses. We undertook painstaking restoration work, sometimes going to inordinate lengths to return key features of a building's design to their original state. We

also, however, integrated these features with a new structure that was as technically advanced as that of a contemporary high-rise building with state-of-the-art systems and efficiencies. Our artful blending of old and new combined modern efficiencies with amenities not typically found in modern buildings: spaces with a human scale and proportion, an abundance of natural light, opening windows, balconies, terraces and so on.

Our first major construction project incorporating these principles was King James Place. A heritage structure situated on Toronto's historic King Street East, one of the few streetscapes to have survived intact from the city's Victorian past, King James Place offered us the perfect opportunity to restore and conserve a building of historic significance but also to modernize it fundamentally to suit contemporary needs. The result was a resounding success. We were able to attract tenants from the "ivory towers" at the city's financial core, and the widely publicized project won numerous architectural and urban design awards. The City of Toronto still uses it as an example of the urban design standards it seeks, 25 years after it was initially designed and more than 20 years after it was constructed.

King James Place and subsequent projects like it taught us many valuable lessons. They confirmed, of course, our view that new functions could successfully be found for old forms. The upfront investment required to restore and conserve historic structures and adapt them to modern uses can be considerably higher than tearing them down and building anew. Yet time proves that such initial investments yield significant and sustained long-term returns.

Our spaces are highly sought after and command deep loyalty among tenants. For many of our tenants, both commercial and retail, our buildings have become intimately tied to their brand and to the loyalty of their clients. They also offer an important means of attracting and retaining talent. As employers are increasingly recognizing, employees are choosing jobs for reasons beyond a good paycheck. A great work environment that is uplifting and that employees are proud of can go a long way to attracting highly talented and creative individuals. Renewing historic design does matter.

The key point to understand — and that we ourselves came to realize — is that our approach does not involve merely restoring or slavishly imitating past forms. Nor does it involve mechanically constructing a modern building that happens to have a historic façade. We attempt to bring the old and the new into organic relationship. We create new, architecturally powerful buildings that at the same time remain historic buildings firmly rooted in their immediate urban setting. Our aim is not simply to return buildings to their past glory but to adapt them to more vibrant uses today than they had in the past. I like to say that we pass through the lives of our buildings, not that buildings pass through our lives.

Another important lesson we learned is that renewing historic buildings can have an inordinately positive influence on city building. Our buildings are not just good for tenants; they are good for the surrounding urban environment. Today, 50 percent of the world's population lives in cities, with that number only to rise in coming decades. Making cities livable is more of a priority than ever. Yet, from an aesthetic point of view, most cities continue to be built with the skyline in mind. A new building's impact on the skyline continues to be a paramount design concern. What happens at street level is frequently of secondary interest.

The result is that new construction often takes inadequate account of urban context, and measures to integrate new buildings with their surroundings at street level are often mechanical afterthoughts. In Toronto, for example, providing retail at grade in compliance with city directives is something of a knee-jerk response to the challenge. Retail at grade, the thinking goes, will encourage pedestrian traffic and connect buildings with the public sphere. Bitter practical experience, however, has revealed the flaws in such thinking. Just because you build it does not mean they will come. In many locations, new buildings with retail at grade simply fail to attract the necessary traffic to sustain viable businesses. A creeping urban blight is the inevitable consequence.

Historic buildings in historic districts, by contrast, are often already fully integrated into the fabric of urban life and in any case offer a human scale and warmth that are naturally attractive. It is no accident that, in many cities around the world, the most vibrant and dynamic

precincts are historic Old Towns. Even when such districts have fallen out of favor, restoring and renewing their built forms soon attracts new shoppers, diners and theatergoers. While the pedestrian malls under the towers of Toronto's financial district are soon deserted after 5:00 p.m., pedestrian-friendly neighborhoods with buildings of more modest scale remain lively both during and after work. When these neighborhoods include historically and architecturally significant buildings that have had new life breathed into them, they are livelier still.

Another way of understanding the approach that my collaborators and I have been pursuing over the years is to recognize its holistic quality. Architectural design, interior design and urban design are often considered and pursued as separate disciplines, sometimes with less than ideal results. How many buildings are constructed without due consideration given to the urban context? How often is a fine exterior design betrayed by an aesthetically inappropriate or mediocre interior design? The task of renewing an historic building and knitting it into the surrounding urban fabric necessarily entails tackling design challenges on all three fronts — architectural, interior and urban — as an integrated whole.

We never consider one without considering the others. For example, one of our challenges as building managers is to persuade tenants to share our vision of maintaining a building's aesthetic integrity inside as well as out. Our argument is that respecting such integrity is essential to preserving the unique experience we offer to users and the unique branding opportunities we offer to tenants. While this argument is usually persuasive, we have at times found it necessary to turn prospective tenants away.

Many of the historic buildings that I have been involved in renewing date from the Victorian period. Victorian architectural design was, of course, one of the prime targets of the modernists. For modernists, breaking with the past meant breaking with the 19th century if it meant anything at all. In Britain, a society to preserve Victorian architecture was not founded until 1958, more than two decades after the founding of a similar society to protect British architecture's "less objectionable" neo-classical legacy. Despite my record of renewing 19th-century buildings, I want to emphasize that I have no interest in reviving and taking sides in an old debate. I am not arguing for the superiority of one aesthetic over another but, rather, for the merits of design as renewal and of renewal as a path to a more rational urban future. However critical I may be of some modernist practices, I'm also aware of modernism's numerous virtues. In fact I am a modernist at heart.

I note with a certain irony that, with the passage of time, many of the icons of modernism are themselves, as it were, passing into history and showing distinct signs of needing renewal. In Toronto, Mies van der Rohe's landmark Toronto-Dominion Centre, now over four decades old, is widely recognized as one of the city's finest projects, certainly its finest example of the international style. Yet vacancy rates in this architecturally distinguished structure are uncommonly high. Its interior spaces, built for a time when organizational structures were more hierarchical, have not entirely kept pace with evolving workplace needs. At the same time, its historic modernist aesthetic has sometimes been compromised by tenants who have failed to understand or appreciate it. Perhaps more than any other, this is an aesthetic that requires explanation.

Over the course of time, modernist buildings of all kinds will increasingly require restoration and renewal, outside as well as in. A chief characteristic of many of these structures is that they were often built with inadequate thought given to how their materials would look and function after decades of weathering. In Toronto, we witnessed the dramatic consequences of such construction when in 2007 Carrara marble used as an exterior cladding began falling off of the Bank of Montreal's First Canadian Place (opened 1975). Modernist buildings, in short, are gradually becoming historic and will be as subject to the imperatives of design as renewal as Victorian buildings are.

Historic buildings integrating old and new are, for me, the lifeblood of a city. If we don't care about renewing our historic buildings, if we don't care about preserving them by finding new uses for them, what will we care about? How will we create a vibrant urban environment consisting of exciting and remarkable built forms if we turn our backs on the great achievements — and even the mere survivals — of our past? If we don't value our heritage,

how will we create anything of value in the future? A desirable future, I submit, is tied to our past.

Paul D. Oberman has been President and Chief Executive Officer of Woodcliffe Landmark Properties Limited, its predecessor and affiliate companies for more than 25 years. Paul is noted for development of niche-oriented commercial projects that exceed the highest standards of architectural and urban design. Recent projects include: The North Toronto Station (Summerhill LCBO), The Shops of Summerhill, King James Place and the Flatiron Building in Toronto; The Chambers (Senate of Canada and National Capital Commission) in Ottawa; and the Westmount Post Office in Montreal. Paul is an active participant and board member of several community-based and charitable institutions and organizations.

Kate
Orff

design after nature

Does design really matter? Given what we are learning about the impact of human systems on natural systems, one might reasonably question whether design can effect positive change in the face of realities like melting polar ice caps, sea level rise and loss of biodiversity. I am hopeful that the answer is "yes." But we can insist on the power of design to create change only if it is understood and practiced as something more than aesthetics and more than the creation of desirable consumer products, whether that product is a chair, a building or a neighborhood. If, on the other hand, design is practiced as a collaborative and inclusive process of integrative thinking, of synthesis, a nexus of science and art set firmly within an explicit context of social and environmental ethics, then perhaps we can claim the power of design to make change, to create a landscape aligned with natural systems and shaped to human needs.

SCAPE is a landscape architecture and urban design firm founded as a way of engaging broader cultural questions about urbanism and the environment. One of the ideas that inform the work at SCAPE is that virtually everything in what we call the natural world has been made and re-made in some way by people. There is no untouched Edenic wilderness. And while our culture has tended to regard nature as a quasi-divinity to be revered, at SCAPE we have based our work on another idea of nature as a system, or rather systems, with which to engage. Our job as designers is to address complex questions of environment and development with a creative approach grounded in research and analysis, observation and experiment. Because our society needs ideas that work.

To make landscape projects in the public realm requires, more than anything else, political skill and the ability to analyze and quantify issues so that they can be integrated into a public decision-making context. If there is to be a useful exchange of ideas with the goal of workable and sustainable design solutions, one has to be able to describe landscape in terms of quantities: stormwater gallons retained or square feet of habitat created. One has to be aware of the effects of one's work, not just the aesthetics of the product, the picture created, as has been the case in landscape design traditionally. This approach keeps the discussion at the level of politics and choices where ethics and science have at least as much authority as

form. I represent the landscape architect as investigator and expert witness, giving evidence and creating dialogue about the built environment.

One result of this point of view is that the design output at SCAPE takes many forms: interdisciplinary teaching, building landscapes, research, reports and temporary installations. We don't necessarily make models. An architect concerned primarily with form makes elaborate project models. More often, we present materials that offer a set of criteria, research data and alternative outcomes by using maps, graphs, flow charts and other visual representations borrowed from the sciences. These complementary visualizations communicate with clarity the ideas, processes and patterns we uncover to our audience.

Our process at SCAPE is not necessarily "hard work," but the result of an open brainstorming process in which we figure out what is necessary to show to get what we want. It's not very highfalutin, poetic or mystical. The site does not "whisper" a deeply embedded history waiting to be revealed. And there is no signature landscape gesture of lines or mounds or grids. Rather, each project is a micro-utopia in which one or two key ideas that have to do with new earth technologies can get made and discussed. Each project is an experiment in eco-technology, education and exchange.

The process is: imagine the world you want to inhabit, convince whoever needs convincing with diagrams, numbers, spreadsheets and images, and then try to make it out of things available to you, the tools that are provided, the things you can afford.

As an example, SCAPE was involved in the massive renovation of the Austin Nichols Warehouse, an icon on the East River waterfront in Brooklyn, New York. A key issue for the design team was that city planning regulations demanded a contiguous public waterfront promenade. However, the building is half on water, half on land with both slab and pier construction. We had two choices. We could go inboard, cutting through and gutting the historic building, an issue from a preservation standpoint. Or, we could go outboard above the water, which is the direction we advocated. Rather than do a solid vertical bulkhead wall, we would make a new edge and step it with baskets so that marsh grasses could take hold along the waterfront pathway.

This concept entailed hundreds of meetings with over 30 stakeholder agencies, all of which enthusiastically approved the idea, with the exception of the Department of Environmental Conservation (DEC), which opposed it. The crux of the debate was the definition of nature as a pre-existing entity to be conserved versus understanding nature as a potential living system to be constructed. The debate became quite heated. By proposing anything built over the water at all, we were "destroying natural resources" – a verdict delivered by the DEC even though scientists had conducted a study showing that there is no life under the building except for plankton where the sun gets through the cracks. Thus, the DEC directed us to mitigate for that "lost habitat" at 1:1 on the site. We then met that requirement and every legal requirement with the alphabet soup of agencies.

The DEC came back to us and said that our plan was "covering up water." Actually, with the exception of the piers, we were not covering water due to the height at which we set the walk, the sun angle and so forth — and we had studies to prove it. Although our plan received approval from the governor at the time, we were forced back inside the building so as not to harm a fantasy "natural condition." The alternative approved by the DEC required gutting the historic structure to make way for a public path that is alongside but does not engage the East River. Despite all of the research and reframing of the issue as making a good habitat for both people and animals, we failed.

A study conducted by SCAPE for the NYC Audubon also illustrates a broader concept of landscape as the interface between artificial and natural systems. Funded by a grant from the U.S. Fish and Wildlife Service, the purpose of the study was to report on the issue of bird strike and do outreach to the design community. At SCAPE, our task was to re-imagine the issue of bird strike as a negotiation of human and avian habitat, then visualize the causes and effects of collisions and indicate design techniques that would be potential solutions. The result was a downloadable booklet of guidelines that included an overview of bird strike,

and case studies in bird safe-design techniques. Study outcomes are now being integrated by New York City's Green Codes Task Force into a set of design directives and will also be part of the USGBC's GreenBuild International Conference and Expo in Chicago in the fall of 2010.

So we continue to work motivated by the idea that in the light of global warming (which just as we have discovered it, seems already beyond our control), dialogue about designed landscapes is a manageable chunk of thinking and acting and a window into what could be a larger public debate about new potentials, positive directions and collective responsibilities. Today, we are all "designers." We all take part in the making and remaking of our environment. And each of us as citizens must take responsibility for the landscapes we inhabit and the next generation will inherit.

Kate Orff is an Assistant Professor at the Columbia School of Architecture, Planning and Preservation, and Director of the Urban Landscape Lab where she leads studios that integrate the earth sciences into the design curriculum. Kate founded SCAPE, a landscape architecture and urban design studio based in Manhattan, New York. Through her creative leadership of the firm, she explores the cultural and physical complexity of urban landscapes and their unique textures, ecologies, programs and publics. After graduating from the University of Virginia with Distinction, Kate earned a Master in Landscape Architecture from the Graduate School of Design at Harvard.

Dina

Frank

where are the foxes when we need them?

"The fox knows many things, but the hedgehog knows one big thing."

– Archilochus, Greek Poet, 7th Century, B.C.

Sir Isaiah Berlin, the late Oxford philosopher and historian of ideas, wrote in his famous 1953 essay The Hedgehog and the Fox, that writers and thinkers (and, I would add, designers) can be divided into two groups: hedgehogs, who see the world from the perspective of a single defining idea, and foxes, who draw on a multiplicity of different experiences and cannot reduce the world to a single idea.

The world of architectural and interior design has a great many hedgehogs — really smart, knowledgeable hedgehogs, who are essential to the health of our profession. What we need are hedgehogs who can also think like foxes, because they are essential to the sustainability of our profession.

Being a professional used to be a relatively straightforward matter. If you were a physician, you treated the sick, the injured, the hypochondriacal, who paid you with a sack of turnips, perhaps a chicken. A teacher taught, pretty much as he or she saw fit, without benefit of departmental meetings or days off for "teacher development." If you were an architect, you were a master-builder with a patron for whom you designed, engineered, budgeted, procured, managed and built.

For at least the past century, however, we have been on a steadily narrowing intellectual and professional march. We are in the age not merely of the specialist but the super-specialist: not just surgeons, but orthopedic surgeons; not just orthopedic surgeons but hand (or elbow, or shoulder) specialists. The general practitioner has become the primary care physician who, depending on the nature of the complaint, dispatches the patient to the appropriate specialist. Law firms are divided into departments by field of practice: tax, estates, intellectual property and so on.

As for the master-builder, that professional has become a veritable Hydra. There are, of

course, the architect, the interior designer, the structural engineer, the MEP engineer, the estimator, the expeditor, the project manager, the contractor, the owner's representative, the trades. On some projects, the architect, or interior designer, or both, may well be a plurality of experts, in healthcare, retail, hospitality, workplace, K–12 and higher education and historic preservation.

We all begin as generalists, of course. But sooner or later, the pathway constricts: art becomes art history, which closes in on architectural history, where we focus on Roman architecture — but only of the second century BC. We become experts, people who, "know more and more about less and less," as Nicholas Murray Butler, President of Columbia University for the first half of the 20th century, said in a commencement address.

I am not disparaging expertise, by any means. It is comforting to know that the surgeon who is about to remove your appendix has removed thousands, or that the lawyer handling your divorce not only knows the ins and outs of the law, but has the experience to know which argument to put to which judge.

Architecture and interior design today are not only complex undertakings, they are often very costly; it is hard to fault the owner who would rather go with the tried and true than take a risk on an innovative newcomer to the market. Our essential skills may be universal to the profession, but our knowledge and experience — of a type of project, a market sector, a location — need to be specific because there is so much to know.

The problem is that this concentration seems inevitably to breed fragmentation and compartmentalization. The more we know about a particular thing, the more we see the world through that special lens, the less we communicate with — or appreciate — those who see it through a different, equally special lens, and the more impenetrable the walls we build between our expertise and that of another group of hedgehogs. It's a problem, as I see it, that begins at least as early as architecture school, continues into apprenticeship, partnership, and, sadly, can be manifest even in leadership.

In school, whether undergraduate or graduate, students are supposed to learn some of everything, at least in principle; everyone is introduced to the fundamentals. At some point, though, students have choices, including — perhaps most significantly for their professional future — architecture or interior design. Mind you, an interior designer is an architect. But deciding whether to concentrate on buildings or spaces puts the student in a particular group. And like other such groupings among students — English majors vs. history majors, mathematicians vs. physicists — they tend not to have much to do with each other.

Of course, a degree in architecture, even the subsequent licensure, does not a professional make. Much like doctors, we enter a period of what amounts to apprenticeship in which, theoretically, we are still pretty much generalists. How one is shaped during that period depends on a great many factors, most especially the firm he or she joins. If it is divided, as some are, into an architecture group and an interiors group, that schism will tend to be reinforced; on the other hand, the neophyte might have more exposure to different typologies and clients. Some practices are organized into studios by market sector — education, commercial, healthcare, public sector — with one or another "other" for specialized services. What then shapes the junior's future depends on how the studio is structured and run: do studio members truly collaborate, from beginning to end, on a project, or does everything pass through the studio head? Are the interior designers contributors to the architectural design, or are they expected simply to fill the container, as it were?

More significantly, if a specialist in hospitality, say, has a terrific and innovative approach to an issue also faced by healthcare experts, will the latter ever know about it? After all, once a design practice reaches critical mass — more than about 40 in staff — it has to be organized into some sort of groupings in order to get anything done. But groups tend to sit in silos, if not literal then figurative, working pretty much exclusively with others in that same silo. It's a simple truism that the more we deal only with those who do the same thing we do, the more we know about that thing and the less we know, or even hear, about anything else. We are experts and proud of it.

To be fair, many architecture and design schools are trying to break loose from hedgehog-dom. A school might bring in visiting experts, to expose students to a wider variety of ideas and approaches and to shake up their complacency about "how it's done." It's difficult to do much more than that, however, since the basic degree requirements are so extensive and demanding.

Similarly, various practices have experimented with different ways of minimizing the silo effect and introducing a degree of foxiness, so to speak: putting staff together on a project-by-project, rather than studio, basis; bringing in a senior designer whose perspective on design — and on the world — is radically different from the firm's culture; having regular gatherings, with required attendance, at which a particular project is presented and critiqued thoughtfully and productively. None of these efforts is radical or innovative; there probably isn't a practice in the country that hasn't applied one or another, or something else entirely.

The difficulty lies with the practical needs and demands of contemporary architectural and interior design practice. You lose all kinds of efficiencies and economies if you create a new team for every project; people don't become a genuine team until they've worked together over time and develop a comfort with one another. The "starchitect" or technical wiz who comes in to shake up the firm's conventional wisdoms may instead shake its foundations and, following the law of unintended consequences, create tension where there was harmony. As for required presentations, chalk-talks, site visits and the like, anyone who has ever tried to schedule a meeting with a group of designers knows that it can be like trying to herd cats; quite properly, the client and the project trump everything else.

However difficult it may be to take down the barriers between fields of expertise, to encourage specialists to be open to other ways of thinking and seeing, to make collaboration something more than a good message for marketing, we have no choice but to keep trying, if only for one reason: sustainability.

Without question, sustainability has gone mainstream, and its influence on our profession is radical. Just as technology has utterly and forever changed the way we work, what we are able to do and with whom and with what speed and accuracy, so sustainability is changing the way we work, what we should be doing, what it means to collaborate, and, not least, how we think about our profession.

In the beginning, most people thought about sustainability in terms of separate and discrete interventions, such as the use of recycled materials or the application of photovoltaics. Now we understand that sustainability is interrelational, systemic, operational and even behavioral. That means, for instance, that the collaboration between interior designer and architect has to go beyond "you do your bit and I'll do mine," to consider the entire structure as an organism whose sustainability depends on how inside and outside cooperate. It means that the designers can't work in isolation from the engineers, because each depends on the approaches and solutions of the other for the sustainability of the whole. It means, too, that the client's leadership, the human resources people, and the end-users need to be involved, because real sustainability is not just a function of place, but of how people behave in and around it.

None of us would wish to uncurl the array (yes, that is, in fact, the collective noun) of hedgehogs in such a way as to sacrifice their expertise. Nor do we want to turn into a troop of foxes, with so many different perspectives as to be unable to make a decision. What I believe we do all want, and certainly need, is a new way of teaching students, training juniors, and practicing architecture and interior design — an approach that, perhaps taking sustainability as its model, values both depth of expertise and breadth and openness of thinking.

During a career spanning nearly 30 years, Dina Frank, a registered architect and Mancini·Duffy's President and Design Principal, has earned an outstanding reputation in the industry for her thoughtful, creative and business-like approach to her work. She brings to her projects extensive experience in achieving planning, branding and design solutions based on the business and organizational goals of her clients. Past President of the New York Chapter of the IIDA and a frequent speaker at universities and professional events, Dina has had her work published in leading trade publications and been the recipient of many industry design awards.

Dean

Matsumoto

repurposing the interior designer

I've always believed that the role of the interior designer in corporate office design is to improve the business success of the client. Although our product is the work environment, our true value lies not only to design their space but also in the ability to help our clients redesign their business. Business success is defined with each and every client upon engagement through initial consultation and the deep understanding of future strategy and cultural aspirations. In recent years, the definition of business success has changed for many corporations. They are reworking, rethinking, reinventing every aspect of their business and undergo profound transformation. Business success is measured by outcome versus output. Competitive advantage lies in the ability to out-innovate the competition and leverage the company's knowledge capital. Progressive-thinking companies that embrace this philosophy have formulated entirely new ways to approach the market and create new markets, to configure and deploy their resources, to act and perform and to capture their profits. The result can lead to unprecedented wealth creation. As interior designers, we need to redefine our role as consultants to these organizations. We need to shift the magnitude of our effort from traditional areas of focus to new areas and create new value within and beyond our established marketplace.

For most clients, business success is traditionally focused on increasing profits. As designers, we tend to focus on ways to lower costs. Overall, we have done a pretty good job at helping our clients. Occupancy costs have been reduced, space clearly expresses their brand, their processes have become more efficient and the necessary tools needed to do their work have been provided. However, let's push the envelope. We can affect many areas of the client's business directly through shifting our focus from cost reduction to contributing to higher revenues through design. It is not about stopping and starting something new but rather about shifting the focus and building upon what was done in the past.

Let's start with the cost component of the equation. Through observation, time and motion studies and survey analysis, we can uncover areas for cost reduction and process improvement. We discover the opportunities to institute self-managing systems, identify the working affinities between groups and co-locate them to reduce or eliminate wasted effort. The

reduction in occupancy cost can be achieved by reducing the overall space requirement. Effective space utilization can be achieved by efficient space planning with decreased circulation, the conception of multi-purpose spaces and amenities, optimization of the workspace and office footprint sizes. More flexible work typology planning can lower the yearly cost of churn. Going green can affect costs on many levels including energy reduction and life cycle. The cost of leasehold improvements can actually be decreased while simultaneously implementing environmentally friendly, sustainable design solutions.

"We possess the unique ability to examine and interpret the invisible into something tangible."

So what about the revenue component of the equation? We apply creative insight in support of their business strategies. Working together with many companies through organizational redesign, the implementation of Lean Design processes, unified communications and talent acquisition and retention strategies has opened doors of opportunities for corporate executives to apply design thinking to their business. It makes logical sense to have designers on the team. Roger Martin, Dean of Rotman School of Business, discusses the shift from traditional analytical business thinking to design thinking in his book, *The Design of Business,* propelling knowledge to breakthrough innovations and competitive advantage. Visionary business leaders can conceive new value strategies as well as enhance and create new revenue streams. They can clearly articulate their ideas in business terms, but lack the ability to visualize these ideas within the work environment. Designers are uniquely equipped to "imagineer" the future. We possess the unique ability to examine and interpret the invisible into something tangible. We can then realize and translate these findings into requirements for the client. Through design, we increase the potential of the people which in turn will raise the potential of revenue generation.

Designers affect the client's revenue potential through design by creating high-performance workspaces. Traditionally, spaces were planned as a direct reflection of the corporate organizational chart and reporting structure. This approach did not optimize the work effort but instead, reinforced ineffective hierarchical thinking and behavior. "Lay the organizational chart on the floor and that's the space plan." Designers immediately recognized that the manner in which work takes place often has little to do with reporting structure. Designers shifted the focus from hierarchical-based planning and space standards to work-process-based planning and functional space standards. Work-process planning examines the flow of work and enables people to be co-located for maximum efficiency and effectiveness. Comparing hierarchy versus process, the balance has been tipped in favor of work process, representing a big mind shift for many companies.

However, designers can no longer hang their hat on work-process planning. It is not sustainable. It works for a snapshot in time, and then progressively becomes ineffective. One of the problems with work-process planning is the speed at which businesses change. Successful companies are highly agile and quick to change. Prompted by market changes and new business opportunities, companies can reorganize, make acquisitions and embrace new technologies at breakneck speed. In this digital age, you've got to be fast. Some of these strategic moves can happen overnight and the magnitude of these changes can quickly make the existing workplace obsolete.

The work environment is not as quick to change and lags behind the business. It simply can not keep up with the pace of business change. Over an extended period of time, this pace disparity and resulting gap grows to the point where the work environment becomes an inhibitor to the business. Revenue potential and business success can actually suffer. It stands to reason that a properly conceived work environment, harmonious with the business strategy, can be an important tool to maximize work effectiveness while a work environment misaligned with the business can be an inhibitor to success.

"Designing the worker experience releases the latent potential of the people held back by process."

If change is constant, how will designers future-proof the work environment? Just as we shifted focus from hierarchical planning to work-process planning, we need to shift our focus again from work process planning to experience planning. Designing the worker experience

releases the latent potential of the people held back by process. A company is comprised of networks — information and data networks, technology networks, communication networks, social networks. It is nearly impossible to map all of these and chain them to overriding processes since the networks are constantly changing and evolving. Experience Design creates several touch points to these networks and empowers people with multiple choices to select the experience and setting to best support his or her task at any given time.

The work environment breaks down into several experiences. These are much easier to foretell and as the very nature of work becomes increasingly virtual, the purpose of the office will be redefined. In a simplified definition, the "office" is a place for knowledge aggregation and dissemination. The office is an enormous knowledge filter. It can serve to filter the knowledge to be affirmed, disputed, enriched or selectively eliminated. It is a place to share stories, create new stories, a repository for memories. It is a place to enrich the mind, body and spirit. There are areas for people to experience independent and collaborative work, areas for social interaction, refreshment, entertainment and meditation. Experience planning is more predictable and therefore sustainable than work-process planning. It is more authentic than simply branding the work environment as it is less about prescribing behavior and more about enabling each person to customize their interaction with the company at multiple levels. It is a more meaningful, emotional modification of human behavior.

Work happens any time, any place, anywhere. The trend towards mobile and distributed work represents a sea of change. The potion for virtual work finally has all the necessary, interactive ingredients. We have an emerging workforce that has been raised on the Internet and is the most proficient generation at electronic social networking. We have middle management with an "I don't need to see you everyday" attitude towards their staff. We have affordable, trustworthy wireless technologies, unified communications and enterprise data management. We have green-conscious corporate executives thinking about reducing carbon footprints and promoting work/life balance for employees. The resulting concoction leads to a new concept in office planning, rooted on the integration of dedicated and non-dedicated habitats for resident and non-resident workers. These new planning typologies

will change the worker experience forever. No longer tethered to desks, people are much more nomadic within the work environment. People have become experts at working independently from remote locations. It is finally happening. Mobile, distributed and telework modes are becoming mainstream. Having completed several occupancy studies over the past three years for companies in varying industry sectors, it is discovered that the average vacancy rate is 45 percent. That means at any given point and time, approximately 45 percent of the workstations and offices in traditionally planned offices are unoccupied. It's quite an eye opener when a CEO is told nearly half of the office space is not being fully utilized.

"When strategy is not aligned with culture, culture wins all of the time. Culture eats strategy for breakfast."

If this is the future, it also presents perhaps the biggest issue facing corporate executives today. It is founded in corporate culture, not corporate strategy. Consider the following. Every eight seconds a boomer retires. Digital content on the Internet doubles every 18 months. Human knowledge doubles every eight years. In that same eight-year period, many companies experience at least 80 percent churn. With a workforce becoming increasingly virtual, how does a company build culture, manage its knowledge capital? When strategy is not aligned with culture, culture wins all of the time. Culture eats strategy for breakfast.

Designers have typically viewed the work environment as the manifestation of the client's corporate strategy. Much of the needs analysis and information gathering during the programming phase of a project aims to understand corporate organizational design, departmental needs, functions and operational space requirements. Very little attention is paid to culture and in particular, the course of knowledge through an organization. In the culture/strategy grid, culture typically falls behind in aligning with the company strategy. Realizing the importance of culture and the impact it can have on the workplace environment is key to the success or the failure of strategy. Designers need to concentrate their analysis on uncovering knowledge networks within a company and creatively design ways to transcend knowledge to innovation, make it visible, share it and exploit it.

Business success is based on the proper management of a company's key asset, the human imagination. It is the innovation of the people that can take a company from good to great. Innovation has the ability to gain and sustain competitive advantage. They ask and hope for innovation from their people, try to seek creative thinkers, but, it doesn't happen naturally. They fail to recognize that they must make innovation. To begin with, people need to come to the office for detraining and retraining. Yes, detraining. They have been bombarded with process, systems and procedures, roles and responsibilities. As much of this knowledge loses its relevancy, people need to unlearn "what used to be" and be retrained with new purpose.

"Creativity and innovation are widely recognized as essential to success in business, and so many aspects of our lives."

In his book, *Cirque Du Soleil The Spark,* John U. Bacon tells a story on how to create an environment for innovation. Creativity and innovation are widely recognized as essential to success in business, and so many aspects of our lives. "Everyone, when they come to Cirque as an employee, even an accountant, comes there because it's a creative and admired company, and they want to be able to contribute something creatively."

Lyn Heward, Creative Leader, describes how her own secretary, who came from magazine publishing, became enthusiastic about wanting to make a unique creative gesture in one of their projects. A paper hobbyist, she proceeded to illustrate the project storyboard on handmade paper and water colors. "It fit, because the story was about water. She felt creatively fulfilled because she was able to make this contribution. She goes on to explain, "You have to share the culture and after this you can't then tell them to go work in their cubicle. So the working space also has to reflect the values/vision to each employee."

The interior designer can unleash innovation in the workplace. We can design the space to influence and build a culture. We can create an atmosphere to foster and breed innovation. Heck, as designers we have lived and worked in such environments our whole careers. Corporations can learn from the design firm model. The offices of Kasian Architecture were designed to inspire creative thought and promote original thinking, encourage the sharing of ideas, build and nurture expertise, work collaboratively with our clients. The space is bright and open with teams working at long harvest tables, enabling impromptu encounters and free communication. Every wall is a work wall, either white board, tacking or digital. All current work in progress is posted, inviting comment from anyone. Writeable, floor-to-ceiling walls and glass partitions are covered with notes and sketches. When the meeting finishes, it all stays there and passers-by can pause to see the design process at work. It eventually gets wiped down, but not before it is digitally captured for the knowledge bank.

Corporations are redefining the purpose of the office. The designer must in turn repurpose her/himself in order to deal with the new issues facing companies today. We must sharpen current skills and develop new skills. We must create the experience to help our clients raise revenue potential, leverage knowledge and make innovation the outcome of every day at work. The areas of study stretch far beyond the traditional scope of the interior designer, now encompassing organizational design, financial stress modeling, demographics, social anthropology, visual interface facilitation, enculturation, cybernetics and cognitive ergonomics. While it is unfair to expect designers to become an expert in these areas, they need to transcend their current skill sets and build competency in these sciences, partner and build alliances with specialists. The designer should manage and lead the charge. We are uniquely appropriate for this task because of our expertise in design methodology. All of the other disciplines utilize the scientific method of problem solving and as mentioned earlier, corporations seek design thinking. In order to conceive the work environment that CEOs desire, art must lead science. Interior designers have a reinforced reason to realize and support the fact that design does matter!

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corporate and commercial design, and is one of the most respected design professionals in Canada. He has consulted to scores of Top 500 Companies in the financial services, accounting, law, insurance, technology, pharmaceutical, food services and entertainment industries. In 2006, Dean joined Kasian, where he now a Principal. His depth of knowledge includes interior and industrial design, and strategic facilities planning. His principle role in projects deals with business organizational design, culture and the application of design thinking to corporate strategy towards improving client business success.

Carolyn

Hatch

design perspectives: from creator to consumer

In this essay, I attempt to bridge two career streams under the theme of design. I begin in my present role as doctoral candidate and economic geographer to reflect on why design matters within the production sphere, in particular the significance of design inputs in urban production systems and the cultural economy of cities during the present period of capitalist activity. I then draw on my previous career in the museum, and take a curatorial perspective to discuss the meaning of design in the consumption realm. Here I consider how the design we create and the design we consume fosters our understanding of culture and identity.

The Creation of Design

In the midst of growing concerns of widespread economic downturn throughout advanced economies, many scholars point to the importance of creativity as key to competitiveness and economic growth in the contemporary period of capitalist activity. This topic has garnered a flurry of attention in academic and policy circles of late, and has been concerned primarily with the idea of creative and cultural activity in the knowledge-based economy. It is widely acknowledged that such activity assumes an increasingly important place in the contemporary economy, particularly in urban settings, and that there is a growing significance of creative, symbolic and aesthetic inputs into the production of goods and services. Several geographers point to the rising importance of aesthetic and creative inputs in providing decisive competitive advantage, and that these qualities are often tied to particular places.

Concomitant with the emphasis on creativity in the cultural economy of cities has been the growing interest in design as a specific creative tool. Design is increasingly valued as the ultimate source for differentiation and uniqueness and for its role in customizing products, adding value to production processes, research and innovation, facilitating commercialization, and building global brands. A burgeoning strand of research in management and competitive strategy recognizes the economic value of design and designers, and the capacity of integrating design with business strategy to enhance the competitiveness of firms, regions and nations. Several policy studies indicate that designers can make the best use of technology, shorten time to market, reduce production costs, and they also have the capacity to enhance environmental sustainability. Design is theorized in an increasingly broad perspective and is

recognized as key to economic and social responsibility in the 21st century, contributing to public policy, quality of place, quality of life and social justice.

One strand of research in geography suggests that the production of physical goods that are imbued with a high degree of creative and aesthetic content have certain intangible qualities that serve as the basis for their economic success. In a similar vein, it is said that those sectors that can most creatively and consistently exploit the symbolic aspects inscribed in their products will define the frontier of modern capitalism. This work emphasizes the symbiotic relationship between place and production system, and how place-specificity enhances differentiation and cultural value. Design, when coupled with place-based identity, may optimize product differentiation in the marketplace as well as position objects so they stand out among competing objects. One area of research recognizes the significance of place (i.e., city, region, nation) in which objects are created and produced that influences the way they turn out. In other words, goods contain details of their places of origin, and conversely, elements of place and culture are imbued in products through the process of design.

Two important bodies of work highlight how place can be a stimulant for aesthetic creativity in the sense that creative workers exploit localized experiences as a source for ideas. For example, there are certain attributes of the locality in which enterprises are located which form a resource of prompts and ideas that act as a catalyst during the design process. A creative worker's subjective response to place – which is molded by identity and value – shapes their aesthetic motivations. In the process of responding to place, designers also construct place because they have their own highly personalized understandings and senses of meaning related to that locality. These subjective perceptions of place can serve as a vital source of creativity and innovation and the same place might be interpreted differently by others.

Related to this, attributes of particular places promote aesthetic creativity within clusters of creative economic activity. In this way, creative industries such as design can benefit from a local community's characteristic styles, sensibilities and thematic associations. This emphasizes how localized agglomerations of creative economic activity behave as stimuli for higher order of creativity and innovation, and that creative workers are mobilized and channeled by the machinery of commodified production. A more recent view argues that design has been more linked to the nation than other creative pursuits, and that national identity may be more important than local, particularly in the area of furniture. The attributes of national identity are a key force in shaping design distinctiveness such that narratives about the nation have become entangled with an understanding of design.

Another discussion takes an explicitly economic orientation and considers that the symbolic aspects inscribed in goods provide the decisive competitive advantage in global trade, and that designers play an integral role in transforming creative stimuli to economic advantage. Of particular pertinence is the idea that capitalizing on place-based associations can support high-value products that can be profitably designed and produced in high-cost locations. Certain high-cost manufacturing contexts demand economic restructuring towards a less price- and more quality- and design-oriented product range, in other words, moving product ranges upwards towards more diversified, customized demands and high-quality markets. These various approaches can insulate production from the pressures of price competition, shifting the economy towards a model of diversified quality production which runs counter to traditional mass production that is based upon price competition and volume. A significant amount of the value of such products is entwined in place-specific symbolic relationships and therefore design-intensity provides a form of geographical stickiness that protects particular types of production from competition. These constitute viable strategies because it is doubtful whether producers in high-cost nations can compete with those from low-cost countries who will always out-price them due to cheaper labor. As such, high-cost countries often have no choice but to opt for the 'high road," concentrating exports on quality, design-oriented market niches.

Design-led innovation in the production realm and manufacturing industries is contingent upon a careful interplay and synergy between designers, production workers and other actors of the innovation process, and face-to-face interaction is crucial. Of important consideration is the dynamic relationship between manufacturers, designers and other actors within the

commodity network in order to understand the design process, and the ways in which production knowledges are worked and reworked across a broader cultural field. These ideas underscore the fact that design is not an isolated sphere of activity but rather emerges from a wider field of relationships and knowledges, and that innovation rests on the creative process of design being embedded in industrial production activities, rather than being isolated from them.

Therefore, of critical value is our understanding of how design innovation happens in industrial production activities. The incorporation of design expertise into a product and related production process involves the interaction between tacit and codified knowledge. Literature on the geography of innovation suggests that there is a two-fold industrial knowledge base in design-intensive manufacturing activity: symbolic knowledge (crucial to the design component), and synthetic knowledge (crucial to the industrial manufacturing component). Knowledge creation and innovation for each rest on divergent labor practices and work organizations because symbolic knowledge is facilitated by open labor markets and the rapid movement of workers between firms and projects, whereas synthetic knowledge rests on a more long-term employment arrangement and consensus-based working relations. The analysis of the complex knowledge base of design activity raises questions regarding the optimal organization and division of "design" versus "production" labor that drives creativity and innovation. Similar to other parts of the creative economy, design is developing into a project-based sector in which teams of freelance designers are created on a short-term, project-to-project basis. However, the increasingly close association between and interplay with design and production activities suggests that a more long-term employment structure (i.e., the presence of an in-house design team) would be an important precondition for design innovation to happen in certain scenarios. Building on this view, presumably any combination of an in-house team and/or the hiring of external or freelance design talent would be industry, sector, perhaps even product specific. Thus a framework for understanding the organization of design work and its relation to production activities within design-intensive manufacturing, and the division and organization of design labor within manufacturing firms is crucial.

The Creation and Consumption of Design: a Curatorial Perspective

Design matters not only in the creation and production of objects, but also in how they are used and consumed by society, and the museum plays a fundamental role in our understanding of this dimension of design. In the 21st century, it is recognized that a museum's role extends beyond the functions associated with the collection and preservation of objects of artistic and historic significance. Rather, it is essential that museums operate as powerhouses of information. The building of information associated with a collection, the dissemination of knowledge through publications, lectures, programs and exhibitions, and the investigation of culture through objects are, therefore, essential to this process.

Literature in geography that recognizes that goods contain the details of their places of origin, builds upon a central tenet of material culture studies which suggests that objects in the material world derive from particular cultural contexts, and consequently are imbued with meaning and identity associated with such contexts. As previously stated, one of the primary functions of museums is the study of culture through artifacts, where culture (across the broad curatorial domain) is understood as the preferences, tastes, values, ideas, attitudes, assumptions and belief systems of a particular community or society across time. Within the museum, it is recognized that objects that are made or modified by humans, consciously or unconsciously, directly or indirectly, reflect the cultural and social systems in which individuals who made, commissioned, purchased or used them, are embedded. The formal qualities of objects — their style and design, construction, materiality, form, function and beauty — expresses the cultural ideologies and specificities of the producer. In this way, the creation of objects (and design) reflects culture. On the other hand, however, taste and identity are cultivated by learning to distinguish style and design, by selecting those things that best match one's preferences, however they are defined. Thus the use and consumption of objects (and design) also reflects culture. Through the collection, preservation and study of objects, the museum therefore plays a crucial role in advancing our understanding of these multiple dimensions of design, both the design we create, and the design we consume.

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When strategy is not aligned with culture, culture wins all of the time. Culture eats strategy for breakfast.

– Anonymous

Janet

Rosenberg

the evolution of the urban landscape

The time has come to evolve beyond the clichés of landscape design to explore different combinations and juxtapositions of urban elements that will create a new language with a people-centered and sustainable focus. It is time to make a commitment to meaningful and significant private and public spaces where people can experience the beauty of nature even in a densely populated urban environment.

On both the grass-root and professional levels, city planning and landscape architecture are now being approached more responsibly than ever before. We are finally beginning to understand the true importance of building healthy, environmentally sustainable spaces. This is, in part, a response to the increased density of urban centers and in part, a result of experiencing the negative effects of our past actions. Developers, the general public and design professionals alike are beginning to see that urban planning and design must be shaped to human needs and guided by principles of sustainability.

As landscape architects, our work is essential to the impetus of environmental awareness and thus, we have to be proactive in educating everyone that open space is not just a menial addition to a project. Beauty is not optional. Well-designed open space is necessary to a thriving city. And people need beauty and calm for health. Design professionals need to speak up for spacious and accessible parks where people can walk, ride bicycles or sit under the trees. We also have to speak up for new methods and materials that address key environmental issues like air pollution or, from a broader perspective, global warming.

Community Common Park is a multi-use, three-acre park in downtown Mississauga, Ontario, that illustrates the use of sustainable strategies. Our firm's design maximized softscape and minimized hardscape to reduce the amount of storm water runoff. In addition, our scheme incorporated native, large-growing shade trees to reduce heat island effect and smog. Leafy trees define the edges of the park and create wide micro-climate allees that promote pedestrian use. People who live in the neighborhood can walk to a green open space, rather than getting in the car and driving several miles.

One of the key environmental challenges our cities face is the decrease of healthy tree canopies. In rethinking the urban landscape, we have to ask: how can we increase the presence of trees and equally, how do we plant trees to guarantee their health and longevity? Simply planting more trees is not enough. We must work with planning departments and developers to find creative ways to maximize tree survival. Municipal requirements may have to be reassessed and generic classifications adapted accordingly.

Increasing tree canopies and ensuring their long-term survival were key considerations in our design of Town Hall Square, for example, which is an urban plaza that successfully greens the cityscape of Toronto. It is built atop an underground parking garage located between the historic Yorkville Public Library and a new condominium building. Inspired by the formal design of the French Parterre, the park employs a planting palette that includes yew hedging, vinca ground cover, boxwood and Gingko trees specifically chosen to withstand harsh urban conditions. Large concrete pots hold neatly trimmed boxwood balls, while precise concrete tree disks and wood benches provide seating. Continuous tree pits and structural soils maximize tree growth and, at the same time, provide the necessary level of compaction for hard paving surfaces. A computer-controlled irrigation system records daily rainfall and adjusts irrigation accordingly. We wanted people to be able to sit under a canopy instead of having to look only at buildings — a goal hard to achieve in dense urban areas.

In Toronto, we are starting to see evidence of a shift in urban thinking with the emphasis moving from cars to people in the design and upkeep of the city's public spaces. A new "back-to-basics" mentality in landscape architecture focuses on design that is comfortable, livable and inspiring, which very much involves looking at successful people-centric precedents like Bryant Park in New York or the traditional pedestrian and café culture of European cities and adapting these models to fit our particular time and place. Pedestrian-friendly streets, healthy trees, proportion and scale — these are not new ideas, but they have been lost in the hectic urban life of recent decades. We are finally beginning to realize that cities are made up of people as much as buildings.

This realization affected how we designed Franklin Children's Garden, one of the few landscape projects in Toronto that makes a place for the environmental education of children. In designing the park, we wanted to give children who live in dense urban settings an opportunity to interact with nature first hand in a way that would be fun, imaginative and exciting. What better way than to draw upon Franklin the Turtle's natural world?

Using the familiar Franklin character as inspiration, we worked with the book's author and illustrator to realize a barrier-free public garden where children incorporate nature in their play. We developed interesting topography and used diverse plant materials to create magical play areas scaled especially for kids like the Hide & Seek Garden or Snail Trail, a spiraling uphill path densely lined with willow shrubs. We also created a natural wetland where children can observe different species of frogs, turtles, fish and birds, as well as the Little Sprouts Garden where children can take a more active role by watering plants and seeing them grow over time. The site's natural wetland ecosystem was an ideal backdrop to highlight the shrinking habitat of indigenous turtles in the face of waterfront development. Such positive playful experiences are an early first step towards environmental awareness. If we create beauty, people will love it, protect it and champion it.

In the case of the HTO project — an urban beach along Toronto's waterfront — we sought to revitalize a neglected and derelict industrial site to create a seasonally adaptive public space that would invite people to the water and reconnect the city with its beautiful lake. HTO has also played a key role in knitting together other destinations along the waterfront.

HTO consists of a boardwalk along the water's edge and a sand beach buffered from the city of Toronto by grassy dunes. Visually and functionally, the park creates a more fluid passage between downtown and the waterfront. As people enter the park, the topography visually leads visitors uphill along paved pathways that wind through sodded green berms. Visitors then descend to the beach and the lake, leaving the clamor of the city behind. Functionally, the park draws people by providing places for relaxation or leisurely activities like walking, bike riding, picnicking or just napping in the sun. The materials — sand,

tall grasses, willows — are associated with a beach setting, but as an "urban" beach, the design also makes use of permeable paving, sod and bright yellow umbrellas that create a focus for gathering.

Because HTO sits on a site with a history of environmental damage, we had to address issues of soil contamination and other remnants of industry. Capping was used to leave contaminated soils undisturbed, rather than shipping them elsewhere. Effective on-site storm water management systems are in place and all water used for irrigation is lake water. To revive natural lake ecologies, fish habitats were built along the edge of the park and in the slip using recycled concrete and rip-rap. The HTO project shows that it is possible to create a living space that brings people to nature and to each other.

We are entering a time where we will pursue innovative and creative design responses more than ever before — not despite the economic slowdown, but because of it. In my experience, we work harder during periods of economic constraint; we are more thoughtful and in general, put our best foot forward. In our office, periods of economic turndown have historically been periods of creativity and growth. We have grown in our ideas and our body of work. We have developed new techniques and built stronger relationships with our clients. Working with limited resources, these periods of "growth" provide a discipline that only works to serve us well in periods of prosperity.

Rather than be discouraged by economic and environmental challenges, I look forward to advancing the cause of sustainability as we take up the task of great city-building for the future. It is my hope that, as we go forward, we will create landscapes that reflect not only the human condition, but also our highest human aspirations.

For more than 25 years, Janet Rosenberg, the founding principal of Janet Rosenberg + Associates, has been pushing the boundaries of landscape design. Janet has led her firm towards the completion of numerous high-profile, innovative and award-winning projects, tirelessly defending the public realm and bringing landscape architecture to the forefront of discussion. She frequently sits on international design review and jury panels, as well as speaks about the profession at conferences and universities across North America. Being recognized as one of Canada's top landscape architects who is committed to design excellence and environmental sustainability, Janet has received numerous awards.

Cindy

Allen

the planet's biggest realist

"To generate a creative attitude [in man], we must stimulate human sensitivity, [and] offer him occasions for apprehension and wonder."

Paolo Soleri has followed a long and circuitous path in life, passing through many stages that others might have called their final destination. But Soleri looked and lived toward a farther horizon that most of us don't see, because seeing would mean renouncing our immediate appetites, our familiar surroundings, and the comfort of our beliefs. He has not traveled light either; on this journey, he cheerfully carries the burden of a whole new intellectual discipline — a theory of architecture, ecology and community that he calls arcology — and a whole new archetypal city, Arcosanti, in the high desert of Arizona. Soleri has ventured forth with a razor-sharp sense of reality and a refusal to let himself be pinned down.

I met Paolo Soleri at his latest port of call, Washington, D.C., where he has been campaigning on behalf of his arcological proposal for reconstructing New Orleans. At the same time, the Smithsonian's Cooper-Hewitt, National Design Museum invited him to the White House to honor him with the prestigious National Design Award for Lifetime Achievement. I've never bagged one of those myself, but I did serve as a juror; my greatest consolation prize came from a conversation with Soleri, within which I gained an increased understanding and appreciation for a visionary who describes himself as the "planet's biggest realist."

When I asked Soleri what figures and events influenced his early growth, he replied, "'Collaterals': Verne, Nietzsche, Bergson, Choisy, Croce, Valery, Le Corbusier." But he said, mainly it was "the event central to any young organism: the joy of life." He went on to describe his early life in Turin, Italy, a boy's life that was all about "Tarzan — climbing, swimming, jumping and learning." Soleri would buy the Tarzan books and for many years "that was my universe. If I could find a place where there were some trees, then I could fly from one tree to the next." Soleri also walked for hours with his father, a serious mountain climber who took his young son climbing as well. Nature was a big part of life, an activity and a pleasure.

Still, the time came for Soleri to leave Italy during the time he was finishing his university studies in architecture at the Polytechnic. "I picked up a little book by Frank Lloyd Wright and I was so impressed that I wrote him a beautiful two-page letter in English and six months later got a very short answer: Come." Soleri characterizes the 18-month experience as "terrific…" but when asked if he was changed by the experience, qualifies that reply somewhat: "I wasn't a worshipper."

During this period, Soleri acquired international recognition for a bridge design displayed at the Museum of Modern Art, and designed his first from-the-ground-up project, the Dome House, in Cave Creek, Arizona. He returned to Italy in 1950, where he was commissioned to design a large ceramics factory, Ceramica Artistica Solimene. Although Soleri's resume was entirely academic where large commercial projects were concerned, Solimene has an electrifying, contemporary volume, lavished with an organic inner structure that seems flawless.

The Rationalist movement and in particular Corbusier, Gropius and Aalto influenced the way that Soleri practiced in Italy although he says that he never "practiced architecture." The Solimene project came about while he was learning ceramics. "I was looking for work," says Soleri, "while traveling down [the Italian South] and we stopped in Vietri sul Mare at the end of the Amalfi coast and camped there." Soleri built a "little house on wheels on the beach" and started working in a small ceramics factory. "Famous ceramics," he says. "After a while, they asked me if I could design a factory because they had an engineer they didn't like." He came away from this experience with an idea about the fundamental integration of craft and ceramics and also, a "naïve" notion that Solimene would be a good introduction for an "'architect career' that never materialized."

Soleri moved back to the United States in 1956, and settled in Scottsdale, Arizona, with his late wife, Colly, and their two daughters. In Arizona, he and Mrs. Soleri started a lifelong commitment to research and experimentation in urban planning, establishing Cosanti, a not-for-profit educational foundation. The foundation's major project turned out to be Arcosanti, a town for 5,000 people designed by Soleri, under construction since 1970. The project is based on Soleri's concept of arcology — architecture intimately connected with ecology. It advocates cities designed to maximize the interaction with and accessibility to the surrounding natural environment, and composes communities that minimize the use of energy, raw materials and land.

Looking back — an early view in a rear mirror — Soleri juxtaposes his experience over four decades of work at Arcosanti with the way mainstream design and architecture are building our surroundings. "We have a brittle notion of 'today' which gives us a profound ignorance of yesterday (five million years of human history), and makes our commitment to practicality flaky. To the practical universe of the practitioner I try the parallel universe of the real. Tough."

Soleri's perception of the gap between his own operative models and today's design practice is typically penetrating. He expresses admiration for the "skill, cleverness and elegance" of contemporary practitioners while being disturbed by the "virtuality of their virtuosity." "Are we all out of touch?" he asks. Soleri's critique focuses on what he calls the "relentless inroad" of materialism. "The design practice of today is an endorsement and implementation of the consumerist icon. It is the sheltering of the limitless consumerist anxiety that is taking us deeper and deeper into the paradise of materialism — an indifference toward equity and balance." The indoctrination begins he notes with the youngest children and ends with the "$20,000 coffins advertised in the media."

In talking with Soleri about current Gulf Coast reconstruction around the city of New Orleans, I perceived a militant Soleri, a soldier who has not put down his arms. And when I asked for a "qualified" prophecy on where design and architecture will be in the future, his answer was provocative. "The non-existence of the future makes prophecy a hiccup of semantics, a game attempting to set rules for naught." He asserts that if there is to be "progress," the world's millions of designers should stop and consider: "If my dedication is really my contribution to materialism, it would be wise for me to take a sabbatical in the Democratic Republic of the Congo, in North Korea, or in the butcheries so popular here and there, to find out about the condition of man — try a little harder to discover why I

am a mix of grace and disgrace…to wise up a little!?"

If the above sounds severe, Soleri also holds a vision and a plan for building cities that will "generate a less-endangered human experience." He proposes the "Lean Alternative" for New Orleans "not as a magic wand," but as a possible methodology for generating that less-endangered experience. "In New Orleans, I see the construction of a modular-nodular Lean Linear City that is also a firm stopper of sea tantrums. Do not bury a China Wall (levees) along the coast, build a linear city." Soleri sees this as a "very modest first step" that will extend itself in successive urban modules.

The last question I posed to Soleri elicited a poetic answer imbued with a sense of human loneliness. "What" I asked, "do you think of the sustainable movement?" In reply, Soleri averred that we are only dealing with the fringes of the problem. The heart of the problem is that, "We decided to live as hermits. So there are eight billion hermits on this planet… it's tragic…that's the end…we are severed from each other…we isolate ourselves…we build walls…man wasn't meant to live alone."

This article is based on an interview with Paolo Soleri conducted in 2006.

Cindy Allen has been with Interior Design *since 1996, becoming Editor in Chief in 2001. A self-proclaimed design junkie, Cindy brings an unbridled passion for design to the magazine each month, offering a unique view into design, and personal connections to industry leaders. She is an industry champion, promoting both the giants of design as well as the young Turks who have thrust interiors and architecture into the mainstream of American life. Cindy has received many esteemed industry honors including the Circle of Excellence Award from IFDA and an honorary doctorate from the New York School of Interior Design.*

Peter

Lawrence

design and the future of business

It may be useful to remember that the profession of industrial design began in the Depression. During the 1930s a few business leaders called on the first of this new product-design profession, individuals such as Raymond Loewey, Henry Dreyfuss and others to redesign their products. In a very bad economy design was seen by some as a means to attract new customers, and it worked. This understanding by business has grown only slowly, in part because most executives have thought that technology and engineering was all they needed for success.

At the Corporate Design Foundation (CDF), we work to develop a real understanding of what design is, and what it can do for business. The goal is to enable business leaders to use design as a strategic tool for improved performance. Design can be used to solve business problems, build customer relationships and create products that people find meaningful, engaging and a pleasure to use. Happily, a deeper understanding about the broader role of design is beginning to take root in the business world — and to nurture that trend, CDF works with deans and faculty at schools worldwide so that today's MBA candidates get exposure to design through the school curricula.

We know, of course, that simply presenting a lecture about design has limited impact. But by working with students over a full semester, we have found that such exposure does provoke a significant change in the business students' appreciation of design and the skill sets of designers whether the students were primarily interested in marketing, operations, organizational development or another aspect of business. In addition, designers and engineers are gaining an understanding of business thinking.

To achieve this, the Foundation began working with business schools to initiate multi-disciplinary courses. The early response from the few business school faculty interested in design was, "Oh, you mean product design," so our initial work focused on product development courses. Our efforts with multi-disciplinary courses began in the late '80s and included providing a grant to Carnegie Mellon to keep their business school involved in a product development course that had recently been started by their industrial design

department. We were also able to bring industrial design students and faculty from Rhode Island School of Design (RISD) together with engineering and business at MIT to expand Steven Eppinger and Karl Ulrich's product development course.

One of the things that impressed the MIT students in this course was the ID department's model shop at RISD, where you can go in at almost any hour and a short time later walk out with a rough model. The exposure to working with models and prototypes helped the MIT students to understand design in the product development process.

It can be helpful for those unfamiliar with design to think of designers as a group that learns a language understood by everyone, but which only designers are trained to "speak", the language of models. This development language can range from rough sketches and crude models to finished prototypes. The engineering and business students on the teams come to understand that this is not just a presentation skill, but more important, a very effective way to develop ideas.

These visual representations are part of the designer's thinking process. The modeling language of prototypes also provides a common ground for discussion and discovery for everyone on the development team, although the iterative process of prototyping may at first may appear chaotic to a predominantly left-brain engineer.

The methodology of design also entails a user-centered approach. Design starts, it has been said, from the outside and works in. How is somebody going to use this tool or technology? How are they going to hold it? Engineering starts from the inside and works out. How do we make it work? What bits and bytes do we put together to create a new and wonderful electronic gadget? Designers go beyond the raw technology, using design to simplify and clarify, to make the product easy to use and understand.

Final presentations at these and other multi-disciplinary courses are given at the end of the semester and are sometimes called a "design fair," that is attended by faculty, students and occasionally by venture capitalists. Some of these student-developed products are in the market today.

One comment we often hear when debriefing participating students is that "it took half a semester" for the students to understand the other disciplines, learning that designers were not just artists and business students were not all "money- grubbing creeps." Giving students the opportunity to work in multi-disciplinary teams provides a very valuable experience that many companies are looking for. A student who had been interviewing across the country recently told me, "There was only one thing that everyone I spoke to asked me about, that course." As many students do, she had included a reference to the course in her resumé.

The course at Carnegie Mellon has evolved into a multi-disciplinary program resulting in a degree in product development. The MIT course continues today in its 18th year. Another early multi-disciplinary course was started by CDF board member Sara Beckman at Berkeley's Haas School of Business, bringing business and engineering at Berkeley together with industrial design students at California College of the Arts.

At the end of 2009, the Foundation committed to focus on how we could advance sustainable design with the long-term objective of eliminating the necessity of saying sustainable design, because it would be a part of the understanding of what design is. Our first program began as a sustainable design competition open only to multi-disciplinary teams including students from business, design and at least one other discipline. Design could be architecture, industrial design, graphic design, interior design and the third discipline might be green chemistry, biology, engineering and so on.

This program evolved in discussions with interested students and faculty into a "partnership" between the participating schools to develop a sustainable transportation center. Teams were given the task of developing a prototype and viable business model for a transportation center that will provide information, act as a service and fuel station, and encourage alternative means of transportation from bicycles to the use of electric vehicles and mass transit.

In addition to advancing the practice and understanding of sustainable design, the Foundation's second objective for this partnership was to facilitate the start of new multi-disciplinary sustainable design courses. Four of the six participating school teams are new courses. Philadelphia University will ultimately set up an entirely new multi-disciplinary school. The Savannah College of Art and Design (SCAD) partnered with Georgia Tech to bring in engineers and Illinois Institute of Technology as the long-distance business component of its team. At the University of Oregon, a new product design program has been developed that works with the School of Business and the University's Green Chemistry department.

Business schools have been talking about teamwork for years. Yet, in most schools MBA students have had no exposure to collaborating with students studying other disciplines. Often, the multi-disciplinary courses that we assist in starting offer students their first chance to work with engineers and designers or people from other disciplines. Given the scale and complexity of economic systems, not to mention social systems and technology, the ability to work effectively with other disciplines would seem to be as necessary to a marketing professional as it is to the professional designer.

It is gratifying to be able to say that most senior executives today do have a better understanding of design than formerly. Sometimes, however, while there is a savvy executive like A.G. Lafly, former CEO at P&G who championed design and specifically wanted to do more with user-centered design, those charged with the task of implementation understand the process less well. If that is the case, the potential power of design to strengthen the brand is never quite realized.

While the understanding of design as it relates to products and communication is growing, there is much less executive awareness of the power of the design of buildings. The design of the workplace is the next, but unrecognized design opportunity for many companies. Most executives say that achieving innovation is extremely important for their business. Yet, there is almost no recognition that the design of the place people work can be a powerful enabler of innovation.

Business today succeeds because of collaboration — sharing ideas and expertise among marketing, engineering, R & D and design among other disciplines. And successful collaboration requires a workplace that allows people to interact frequently, fluidly and spontaneously.

In 1998, CDF developed and taught a course entitled The Effective Workplace at Babson College in Wellesley, Massachusetts. We believe this was the first such course ever taught at a business school and several of the participating students went on to work for firms doing office design. The Foundation also publishes case studies for use in business schools that examine the potential of the workplace to drive performance and explore how corporate philosophy is reinforced by its physical surroundings.

SEI Investments, Redesigning Business is a case that discusses how SEI Investments used the redesign of its office space as an important part of its reinvention process. In the late 1980s, CEO and SEI founder Al West was frustrated with the "silo" mentality of three internal divisions — technology, asset management and pension consulting — that did not collaborate or cross-sell services. West began a reinvention to shake things up and get people "out of their box."

During the seven-year process, West realized that the firm's existing facilities could not support the new culture. A radically different kind of office was required. At SEI today, everyone works in an open desk area. All the furniture is on wheels. There are no "barriers to change." And the bottom line results of the redesign would make any businessman happy. After moving in to the new buildings, one of SEI's divisions had a 90 percent close rate if they brought the potential customer to the site. That is double what it had been previously.

It is true that many people will resist working in new types of spaces like the open office. Al West reported that some executives at SEI were adamantly opposed to the open office, but that after a short time those same executives became the most active proponents. The new environment gave people permission to talk to each other across the organization and also up and down the hierarchy. Ideas were communicated between all levels and among the

divisions. People built relationships that helped them to share information, to think more creatively and reach innovative solutions.

As noted above, innovative companies today are distinguished by a highly collaborative culture where multi-disciplinary teams are the norm. Within the process of collaboration, design can play a unique and essential role, clarifying and simplifying complex input into something understandable, workable and often unexpected. Teams that include designers, companies that make design part of their DNA, are likely to achieve their goals and much more likely do something new and wonderful.

Peter Lawrence is Chairman and Founder of Corporate Design Foundation and consults with companies about the use of design. Peter has taught about design at Babson, London Business School and Boston University School of Management. After eight years of developing and directing the Design Management Institute (DMI), he established the Corporate Design Foundation. This non-profit education and research organization was founded on the belief that design can make a major contribution both to an individual's quality of life and to a corporation's success through the effective use of the product, architecture and communication design disciplines.

Optimism is a strategy for ma king a better future. Because unless you believe that the fut ure can be better, it's unlikely you will step up and take resp onsibility for making it so.

– Noam Chomsky

Geoffrey

Cape

nature in the city — a design challenge

For the past 100 years, environmentalists have focused considerable resources on saving endangered species in an effort to protect what we have left. The priority has been on whales, seals, polar bears, snow leopards and elephants, along with critically important rivers, rainforests, wetlands, old-growth forests and sensitive arctic areas. Organizations such as the World Wildlife Fund, National Geographic, Greenpeace, Nature Conservancy and many others, have all made protecting nature the priority. This work has been critically important, and in some respects, it has been very successful. Without this effort, we might have lost even more than we already have. But by other standards, the environmental conservation movement has been a complete failure.

Unfortunately we continue to experience mass extinctions of animals, insects and plant life faster than any other period in history. We are burning and cutting down our rainforest at a rate of over 80 million acres per year. Wetlands are being filled in and destroyed to the extent that less than half remain. The ocean is being fished at a rate that could see a collapse of all major fish species within 20 years, and toxic chemicals continue to be poured into our air and water systems at ever increasing-rates.

Representing a significant shift in strategy, cities are emerging as the critical frontier for our most pressing environmental issues. In an effort to address environmental problems from a different angle, many organizations are moving away from conservation and beginning to focus on the urgent need to change human behavior. Some feel that we can change human behavior most effectively by redesigning of our cities, towns and villages with nature as the key element.

At Evergreen, where I have been working for the past 20 years, we have focused exclusively on integrating nature into the design of urban landscapes; school grounds; public parks; and residential front yards and back yards. We began our work in 1991 with the view that we could affect environmental change by fundamentally shifting the way citizens experience life in cities. Ultimately, we hope that by designing cities that deeply integrate nature we will be able to change the attitudes and behaviors of people and turn the tide on the broader

environmental challenges we face globally.

The ideas are simple. We want to involve people in the process of restoring local ecosystems — planting trees and caring for the land. By doing so, people will begin to understand nature, learn how it works and, as a result, respect it more and shift their decision-making patterns. With understanding and respect will come changes in the way we think about the soil, air and water that sustains life on earth — our lives.

The inspiration to start Evergreen came during the real estate boom in the late '80s and early '90s when "highest and best use" was defined by building density and profit margins — and not by more mundane ideas like "quality of life." Green space was never part of the design conversation and yet environmental issues were top of mind according to various public opinion poles in the day.

My family background — going back more than five generations — has been in construction and real estate development so the idea of city building is in my blood. This orientation was balanced by childhood experiences growing up on the edge of the Toronto ravines, and weekend access to a remote wilderness family property north of Belleville, Ontario, where I gained a personal understanding of the importance of nature for learning and play. My views were reinforced again, during a visit to New York City in the spring of 1990, when I spent a day in Central Park where after a hectic night out with friends. The madness of the city was calm in Central Park, the ground was softer, the air smelled sweeter and the people seemed nicer. Like magic, my hangover drifted away and the therapeutic effects of nature proved themselves to be real for me.

My early life experiences helped to shape a perspective on urban design that became formal in the work of Evergreen and the thousands of projects we have been part of over the past 20 years across Canada.

It has become clear to me over the years that a primary ingredient for the future of urban design has to be nature — the sort of natural space that gives us an opportunity to escape the city without going too far. Nature in the city creates an important outlet for a city and its citizens, and regular contact with it helps ground everybody in the city.

We are part of nature although many people today feel we have somehow "outgrown" nature through technology and machines. Our roots are in nature — it is where we come from. We weren't born in some concrete box somewhere — as a race I mean. We are not superior to nature — we are part of it. This fact has been largely forgotten as we have increasingly isolated ourselves in cities, far away from natural systems.

For most of the past 500 years, with a few exceptions, urban planners, architects and citizens alike have tried to dominate nature, and push wilderness to the edge of our cities. We have channelized our rivers, we have manipulated our waterfront by filling in wetlands and constructing beaches of crushed marble and imported sand. We have paved our children's school playgrounds, and developed suburban areas with Astro Turf and lollypop trees with flowers planted in rows. We have organized our city in a grid — north, south, east, west — and as a result we have become completely disconnected from the land beneath our feet, the natural world.

Not surprisingly, it is my belief that our most critical environmental problems stem from the simple fact that we have become disconnected from nature. We no longer see ourselves as part of nature. As such we treat it as a resource to be plundered as if it will continue to replenish and sustain us forever.

The opportunity to rethink, redesign and rebuild our collective future by focusing on the idea of welcoming nature back to cities is very exciting. It will change the shape of our cities and it will change the way we live. It will change our attitudes and it will change our behaviors. The process will have to involve a broad field of participants from across many disciplines — architects and designers, community members and school children, along with corporations and politicians. Some work will be explicitly environmental, and some

will be political. Some work will be organized and pragmatic, and some will be playful and artistic.

Around the world, designers and politicians are pursuing ambitious goals that 10 years ago would have been unimaginable. Close to home, Vancouver is aspiring to be the greenest city in the world and Toronto wants to be the greenest city in North America (challenging Vancouver on a basic level). In the United Arab Emirates, Masdar is being built as the first zero-waste, zero-carbon city in the world. In Europe cities such as London, Stockholm and Rotterdam are each advancing unique and ambitious green strategies. And in Brazil the city of Curitiba is, by some accounts, winning the global race to be the best — the greenest.

The scale of many of these projects is stunning as waterfronts are redesigned with long bands of natural space where indigenous plants dominate what might have otherwise been rows of neatly planted tulips. Greenbelts that wrap urban areas are being established with some resistance, but they are happening — London with 1.2 million acres, Melbourne with 1.6 million acres and Toronto with 1.8 million acres — and they are happening with huge political support. Apart from protecting the environmental significance of these lands they also help to constrain urban sprawl (the single-worst land use design issue in human history). Greenbelts establish a boundary that forces intensification, infill developments, the creative reuse of old industrial sites and smarter city planning. They enable investments in public transportation, district energy programs and more efficient waste management, not to mention the opportunity for a walkable and bikeable city. They also make nature available to those who live in the city.

At a smaller scale, architects and planners are also actively advancing ideas that put green space on the roofs of buildings, in alleyways and along road sides in downtown areas. Tax incentives in cities such as Chicago and Vancouver have made it economically advantageous for landowners to transform asphalt parking lots into gardens, and recent laws have made pesticide-free, ecological landscapes the default position for many municipal parks departments across Canada. A walk through many trendy neighborhoods in New York, London, San Francisco and Toronto will make one appreciate that things are changing. The idea of nature in the city — and ecological gardening — has become the new design aesthetic for residential front yards, contrasting sharply with the perfectly manicured suburban yard of mown grass.

On an even deeper level — that promises to help inform the values of the next generation — there is an important global movement to transform our children's learning environments. The idea is to transform traditional asphalt playgrounds into school grounds that welcome the diverse learning opportunities offered by a more natural landscape. On school grounds across Canada and around the world, children are get getting their hands dirty and learning about ecosystems, climate change and what it takes to grow healthy tomatoes. They are creating food gardens and habitats for birds, monitoring stations for weather and structures for shade. Some have integrated ponds, swales and water collection systems to help manage storm water runoff. Others have involved local businesses to help remove asphalt surfaces and replace them with more diverse landscapes that include animal habitat and small stone amphitheaters for outdoor classroom sessions. The power of these simple projects is profound and can shift the attitudes and behavior of an entire community.

The design work to support these projects is often led by landscape architects but increasingly the work is being led by school children, teachers and community members. Ideas are being developed by local participants in an effort to express their values and interests. Decisions are being made by the people in the community. The responsibility of creating these projects establishes a deeper sense of ownership and a commitment to take care of the spaces once created.

Close to home, our work at Evergreen continues to push at the outer edges of this idea to integrate nature into the design of cities. Evergreen Brick Works will open in Toronto as an international center for sustainable green cities — a place where we will share design ideas and explore best practices. The 41-acre property was an active brick factory for over 100 years — helping to build cities across Canada with the production of 43-million bricks each year. The transformation of this old factory into a center for green cities will maintain its role in city building — but moves it into the future with an even bigger purpose.

The design and development of the site has involved a long list of participants, led by Evergreen staff and coordinating architect Joe Lobko from du Toit Allsopp Hillier. The fundamental design challenge has been to effectively integrate the landscape and the heritage buildings together with the program plans for the site.

The need to integrate the landscape extends from both Evergreen's work and the immediate location context of the site.

The Brick Works sits in the middle of Toronto's 26,000-acre ravine system — the largest ravine system of any city in the world — and directly connects to the 1.8-million-acre greenbelt that wraps around the city of Toronto. These two enormous natural assets define Toronto in a way that makes this city unique internationally. The design and development of Evergreen Brick Works has honored this landscape context by literally weaving ribbons of green though the 16 buildings on site. The involvement of landscape architects John Hillier and Claude Cormier, working with heritage architect Michael McClelland, has been a remarkable success as green spaces and buildings are seamlessly integrated. The work of Donald Schmitt and Michael Leckman from Diamond Schmitt Architects on new building structures complements the landscape again with green roofs and facades. As visitors explore the site, they will have to navigate the waterways, green ways and bridges between buildings. These spaces will make real the land below our feet.

Much is happening on the ground across Canada and around the world on this subject of integrating nature in the city. Some work is community driven and local in its impact while other projects are large scale and have the potential to change entire systems.

We are in the early stages of what many refer to as the urban century with over half of the world's population living in urban areas. By some accounts, the green design of our cities is the single greatest design challenge we face in the 21st century. If we do not design nature into the fabric of our communities, the collapse of our civilization as we know it is inevitable. As cities become increasingly important, we need the idea of ecological design to develop further and connect more deeply with all aspects of design, as cities of the future will have to find a way to connect people and our infrastructure with nature.

To solve the global environmental crisis we will have to shift attitudes and behaviors and we will only make this leap through increased understanding and interaction with the land. We will continue to need to conserve and save what we have but, by designing cities that deeply integrate nature, we might be able to change the attitudes and behaviors of people and turn the tide on the broader environmental challenges we face globally.

Geoffrey Cape is the founder of the Canadian charity Evergreen and has been its Executive Director since its inception in 1990. Evergreen is focused on the idea of integrating nature in urban design. Geoffrey attended Trinity College School, Queen's University (BA) and McGill University (Masters of Management) in Canada. He is an author and public speaker on urban space planning and themes related to social innovation. He has been recognized as one of Canada's Top 40 under 40, a Sr Ashoka Fellow, winner of the Peter F. Drucker Award, and the Governor General's Golden Jubilee Medal.

We can't solve problems by using the same kind of thinking we used when we created them.

– Albert Einstein

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