THE POLITICS OF WASTE

feature editor, patti southard and king county greentools
How many years will your next building last?

Then what?

Design for Disassembly
For additional information contact Kinley Deller at kinley.deller@kingcounty.gov or 206-296-4434.

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BARBARA SWIFT
QUESTIONS FROM A PRACTICE

APRIL 28, 2009 | HENRY ART GALLERY AUDITORIUM
LECTURE AT 6:30 PM | RECEPTION AT 7:30 PM

Sponsors: University of Washington Department of Landscape Architecture and local professional landscape architecture firms.

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As the magazine for the contemporary Northwest design community, the mission of ARCADE is to provide an independent voice for civic discussion and a platform to explore and promote quality design in the built environment. ARCADE is published quarterly by the Northwest Architectural League, a nonprofit educational organization. Donations to ARCADE are tax-deductible.

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In the 19th century, we devoted ourselves to exploring nature. In the 20th century, we devoted ourselves to controlling and harnessing it. In the 21st century, we must devote ourselves to restoring it.

— Stephen Ambrose
LAND DEVELOPMENTS

a conversation with seattle artist vaughn bell

abigail guay

The project at MASS MoCA is called *Village Green*, and it is a collection of “Personal Biospheres.” Each one is a miniature landscape of plants native to the Berkshires presented in front of your face as a living system with plants and moss and little insects. As both frightening and sad. At the same time, I do think the work fits within the prevailing symbolic responsibility. Has an adopted parent of a landscape admitted to either sloppy or failed upkeep? Do you consider yourself an environmental activist? Vaughn Bell creates interactive projects and immersive environments that deal with how we relate to our environment. She has exhibited at venues across the United States, as well as in the UK.

ABIGAIL GUAY Last spring, the Massachusetts Museum of Contemporary Art (MASS MoCA) commissioned you to create new work for the exhibition Badlands: New Histories in Landscape (on view through April 12, 2009). The context and exhibition organizers saw the show as an opportunity to bring together artists who tackle issues of land use, environmental politics and natural beauty. Common to the age of nonhierarchical value systems, they did not attempt to make a single, sweeping comment on the landscape and instead settled on a handful of categories, of sub-statements. You were grouped with the artists who make a practice of reinterpreting the landscape, artists who examine and customize the language of the most iconic landscape traditions. Can you talk a little bit about your project? Are you happy with the category you were assigned?

VAUGHN BELL: The project at MASS MoCA is called *Village Green*, and it is a collection of “Personal Biospheres.” Each one is a miniature landscape of plants native to the Berkshires presented in front of your face as a living system with plants and moss and little insects. As both frightening and sad. At the same time, I do think the work fits within the prevailing symbolic responsibility. Has an adopted parent of a landscape admitted to either sloppy or failed upkeep? Do you consider yourself an environmental activist?

VAUGHN BELL: Absolutely. I am always thinking about these issues, and it is precisely why the word landscape is so important. It brings up our historical and evolving relations to our environment: — from being forested and developing many different aspects of the inquiry. Landscape is very important to the creative process for me. I look at a word like landscape, and the seemingly simple definition of it reveals all kinds of history. There is a huge depth of theory that can be explored just in examining this one word and what it means for art history, design, planning and policy.

AG: I do consider myself to be an environmental activist on a personal level, but I don’t necessarily feel that my work is activist in a really direct way. I think that one of my primary concerns my work is asking questions, and so in that sense I don’t think of the work as having a definitive message to convey or a position to promote. For example, as part of my ongoing project, Land for Adoption, I wander the streets with a careful of land, the Cultivation Utility Vehicle (CUV), and people can adopt some if they are willing to go through the paperwork and commit to caring for it. In this scenario, my audience is the random people I encounter, and I guess this is my ideal audience because I like the openness of it.

VAUGHN BELL: The irony is that the local early industrial sites, just like the buildings housing MASS MoCA, are environmental catastrophes. When I lived in Williamstown (one town away from North Adams, where MASS MoCA is located) I witnessed a local, dirty summer while the local electric company oversaw the cleanup of my background, the former site of a manufacturing gas plant. And I drive by a Superfund Site, an old refinery, on my way to work each day.

AG: How does *Village Green* fit into what you are working on, your ongoing practice?

VAUGHN BELL: I really began making the definitive body of work out of graduate school about five years ago. Beginning with a broad question — how do we human in relation to our environment? — I’ve been fostering and developing many different aspects of the inquiry. Landscape is very important to the creative process for me. I look at a word like landscape, and the seemingly simple definition of it reveals all kinds of history. There is a huge depth of theory that can be explored just in examining this one word and what it means for art history, design, planning and policy.

AG: While you are thinking words like landscape, the rest of the country is buzzing with the catchphrases of the transitional political season: infrastructure, sustainability, climate change, etc. Have you given these terms (and all that you could interpret them to mean) a place in your work?

VAUGHN BELL: Yes, deliberately confusing the macro and the micro can lead to some interesting situations. A transformation can occur in terms of how we relate to something, simply based on how it is named.

AG: What is *Village Green*? Well, it is a series of closed ecosystems, come and go in a way that an ecosystem comprising an entire continent can't. It may be useful for some of our policymakers to observe your adoption procedures, to see how a random cross-section of people respond to a situation that tends both real and symbolic responsibility. Has an adopted parent of a landscape admitted to either sloppy or failed upkeep?

VAUGHN BELL: I do consider myself to be an environmental activist on a personal level, but I don’t necessarily feel that my work is activist in a really direct way. I think that one of my primary concerns my work is asking questions, and so in that sense I don’t think of the work as having a definitive message to convey or a position to promote. For example, as part of my ongoing project, Land for Adoption, I wander the streets with a careful of land, the Cultivation Utility Vehicle (CUV), and people can adopt some if they are willing to go through the paperwork and commit to caring for it. In this scenario, my audience is the random people I encounter, and I guess this is my ideal audience because I like the openness of it. The situation is interesting because of the all meaning that goes with identifying biospheres under the radar, in a way, work that sneaks in and asks questions and presents ideas without too much announcement.

AG: The situation is interesting because of the all meaning that goes with identifying biospheres. For example, if I walk a forested, I usually say that all they can do is take on the responsibility for the biosphere with a clear intention. But we can’t control everything, and we often fail, so they have to be prepared that they may fail. It becomes a really funny philosophical conversation about how we have to proceed in spite of the fear of failure.
The architectural criticism of urbanist Jane Jacobs and former activists writing on the preservation of historic buildings. Passing over the line from activist writing to activist organizing, Morris as critic was most effective in describing how layers of past and present are connected. The critical role of Morris in this process is not widely acknowledged, but his writings serve as a reminder of the importance of understanding the past in order to shape the future.

From William Morris – especially his writings on the preservation of historic buildings – we can learn important lessons about the role of architecture in creating social change. Morris believed in the importance of the relationship between art and society, and his work as an architect and writer emphasized this connection. The principles outlined in Morris’s writings continue to be relevant today, as we consider the role of architecture in shaping the built environment.

This RISD lecture series is supported by the School of Architecture at Brown University, the Harvard Graduate School of Design, the Massachusetts Institute of Technology, and the Rhode Island School of Design.

To these two streams from the English-language literature of architecture must be added a third originating in nineteenth-century German philosophy and art. German philosophers, like Immanuel Kant and Georg Wilhelm Friedrich Hegel, and the writers on historic buildings were called to immediate action, and Moritz as critic was most effective in describing how layers of historic building details were pulled away from the romantic and restored buildings to one point in their diverse histories. Passing over the line from activist writing to activist organizing, Morris then went on to found the preservation lobby group "Anti-Scape" on the one hand, the architectural criticism of urbanist Jane Jacobs and former New York Times critic Ada Louise Huxtable on the other hand.建设了公共建筑的摩天大楼和摩天大楼的公共建筑。公共建筑批评是对建筑文化的批评，但其当前的脆弱性在于其在大学和艺术画廊中仅进行理论研究，很少影响到实际设计过程。这可归咎于美国和日本的教育体系，其中对公共建筑的批评不被重视。在中东和非洲，通过新的建筑实践和理论的引用，建筑批评得到了更广泛的应用。在中东、北非和拉丁美洲，建筑师、作家和现当代学者等都在用批评性的视角审视建筑。在这些地区，批评性的建筑评论已经成为一种时尚，其目的是为未来的建筑实践提供理论基础。这使得批评性建筑评论成为一种独立于传统建筑理论和建筑技术的学科，其目的是为建筑实践提供理论和批评性的视角。通过建筑评论和理论的引用，建筑师和设计师可以更好地理解建筑的过去和未来。通过这样的讨论，我们可以在全球范围内建立一个对话的平台，以推动批评性建筑评论的发展。
My city of Vancouver has one of the most dynamic and interesting building cultures on the continent, but the main daily newspaper here recently cut architectural criticism from once monthly to not at all, meaning that the entire northwest quadrant of North America is now without any independent, specialist commentary on architecture in its daily newspapers.

Because the public criticism of buildings is so difficult, dangerous and debt-inducing, the number of practicing critics is tiny. For example, all of us who live by writing or buildings in Canada can ride together in a taxi, and the International Committee of Architectural Critics (ICAC) – the global architecture critics’ organization – has 120 members. I have no doubt that there are rare subspecies of Himalayan mudfish or Arctic sea slugs that rate more specialists looking at them than does commentary and waypoints on contemporary construction. Following a pattern in many other cities, the post of architecture critic was abolished at both daily newspapers in Seattle within one month of each other last year. This loss of a public forum happened after a reported campaign by the development industry to eliminate those irksome independent opinions—and builders wanted only their weekend “homes pages” advertorial coverage. Not only our designers want to control architectural criticism, it seems. My city of Vancouver has one of the most dynamic and interesting building cultures on the continent, but the main daily newspaper here recently cut architectural criticism from once monthly to not at all, meaning that the entire northwest quadrant of North America is now without any independent, specialist commentary on architecture in its daily newspapers. This is one of the crueller conundrums of all: for one of the most public of the arts of appreciation, there are fewer and fewer places to practice it. While local critical coverage has diminished, we have seen more and more coverage about fewer and fewer global architects, and the coverage has shifted from true criticism to celebrity journalism. Celebrity coverage of “starchitects” and their latest sculptings has displaced criticism and commentary on buildings and cities in most mainstream periodicals. While local critical coverage has diminished, we have seen more and more coverage about fewer and fewer global architects, and the coverage has shifted from true criticism to celebrity journalism. Celebrity coverage of “starchitects” and their latest sculptings has displaced criticism and commentary on buildings and cities in most mainstream periodicals.

The situation in magazines is only marginally better. Amongst the “glossies” (the highest profile international, English-language architecture magazine) only London’s The Architectural Review maintains a regular commitment to criticism, in opposition to the descriptive and explanatory writing more common to design journals. While Toronto’s Canadian Architect and New York’s Architectural Record occasionally publish pointed criticism, critical writing is not a high priority amongst the information conglomerate corporations that own them, no matter what the personal predilections of their editors. Urban magazines such as Metropolis and Blueprint do slightly better, but even the best of shelter magazines – such as the otherwise clever Dwell magazine – promote a kind of cheerleading promotional writing that is only occasionally, do slightly better, but even the best of shelter magazines – such as the otherwise clever Dwell magazine – promote a kind of cheerleading promotional writing that is only occasionally, do slightly better, but even the best of shelter magazines – such as the otherwise clever Dwell magazine – promote a kind of cheerleading promotional writing that is only occasionally, do slightly better, but even the best of shelter magazines – such as the otherwise clever Dwell magazine – promote a kind of cheerleading promotional writing that is only occasionally, else than mentioning or personalities.

The Qatar-based news network Al Jazeera has just spent one billion dollars launching a new English-language service. Those of us privileged to visit, teach and occasionally write about architecture in the Middle East know that there is a huge interest in Western countries about the evolution of cities there, especially in the Gulf region. The issues are global, and the stakes are high as cities there transform themselves month by month. Will Kuwait City set a separate course from the extravagance and schmaltz of much of Dubai’s tourist-oriented development? Has the condominium apartment turned into a global commodity to be traded across borders like crude oil or orange juice futures, or does housing still have some relation to the cities in which it is planted down? Riyadh, Ankara and Damascus have enormous issues of urban infrastructure but also enormous reservoirs of talent architects deal with them. I hope we’ll see more Al Jazeera programs find time in the other news programs for a show about design and cities. I suspect it would be surprisingly popular on the English-language network and, even more so, on the Arabic one. This will be watching.
Portland recently had a novel view (of costs) return, Sergio Pallerone and his program for building sustainable communities that calls BaSiC. Essentially a design-build operation for “under-nurtured” clients (those who cannot afford or access architects), BaSiC designs and builds homes, schools and civic structures. In truth, this is not unusual—there are dozens of such outfits, with the Rust Studio being the most well-known. What’s different here is Pallerone is a “sustainability” expert according to his new boxed Portland State University’s Architecture Department and Center for Sustainable Practice and Processes. Through the work includes the usual green building strategies, he was hired to expand the standard definition of sustainability to one that emphasizes the preservation and enhancement of what he calls “Cultural Sustainability” through design.

This is a smart thinking, maybe even a paradigm shift, because like the work of Tony Fry it steps back from what has become a low-level checklist approach to sustainable building but takes a broader view. The typical definition of sustainability in design—unfortunately rated via LEED Silver, Gold, Platinum and beyond—remains imprisoned within the cultural environment of “two 20th century capitalism,” where buildings are safe and foremost commodities, vehicles of financial profit like Rockefeller sets or Wall Street machines. To this end, the LEED checklist is inadvisable promoting basic energy conservation—fully complex or a local architectural value or cultural significance to buildings with higher LEED ratings.

Of course nothing could be further from the truth, and bringing the question of Cultural Sustainability to the table is an intelligent and important act, certainly more challenging and thought-provoking for students than choosing insulated windows. This is the force behind reactionary movements like Post-Modernism, the Pattern Language and the draconianally named New Urbanism—all killed attempts to regain the core of “Cultural Sustainability” that the modernist movement inadvertently tossed out.

Although Pallerone spends worlds with smaller buildings in out-of-the-way places, approaching them through the lens of Cultural Sustainability allow him to face the direct dislocation of modernism head on and offer alternate a forum for its resolution. Without question, the work—though modest—engages issues far greater than anything in a celebrity architect’s latest museum. High rise or quaint villa.

Louis Kahn often expressed himself through the point of view of a child (he had a strong standing interest in children’s books), defining a city, for example, as “the place where a small boy, as he walks through it, may see something that will tell him what he wants to do his whole life.” When applied to design, the perspective has the power to directly access children’s desire to be recognized and admired. Kahn’s search for “year zero,” Aalto’s fascination with the disparate scales, comforts and traditions that especially embodies a local culture? As every architect knows, this has grown into a great beast of dissatisfaction undermining modernism. The postmodern work, a sweeping demolition ignited by starch and the press, yet never appeased. It rapidly transformed Le Corbusier’s Pavillon into a state of cosmic bungling, fuelled passionless CIAM and Team X debates. In 1968, inspired, Louis Kahn’s search for “year zero,” Auds in fashion with Nordic vernacular and John Lurie’s obsession with mid-century Japanese and Moroccan designs. This same installment was the initial awakening of the public to taste Modernism—like Post-Modernism, the Pattern Language and the draconianally named New Urbanism—all killed attempts to regain the core of “Cultural Sustainability” that the modernist movement inadvertently tossed out.

In the same vein, there are those urban places of great cultural significance that exist due to lack of balance between or subtly “historical” inanity (as in “George Washington slept here”). In Portland, two restaurants with deep cultural connections were replaced not long ago by generic buildings with national chain stores (both by the same architect, in an area, a very small). Each gathering place had a generation or more of popular local history behind it, and each contributed to the city’s character as much as any museum or opera house. This destruction was mourned, but in another case was there any cultural platform upon which to plead for their survival.

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This phrase, Cultural Sustainability, simultaneously (and probably inadvertently) engages the big question that unceasingly haunts the modern architect: is “avant-garde” architecture, favoring it as does uncompromising abstraction and purity of form, able to simultaneously accommodate the disparate scales, comforts and traditions that collectively embody a local culture?
As someone who has viewed the politics of waste from several angles — as an artist, a businesswoman and now as a public servant — I have reached the same conclusion that many of my colleagues have reached: Our country’s waste management system is flawed. The essence of these flaws lies in the fact that as a country we’ve been trained to buy stuff, use it and throw it away, only to buy new stuff again. This is true for several hard goods ranging from clothes to computers. Historically, this has been especially true in the built environment, where construction debris has been sent to landfills en masse as we update our cityscapes, towns and infrastructure.

The politics of the 1960s taught us that the “personal is political” and so it goes for our decision-making and behaviors when it comes to the consumption and disposal of products that, for the most part, eventually end up in a landfill. The nature of waste is provocative in that personal choices ultimately get handled in a political manner through waste management and taxpayer dollars. For example, in many jurisdictions — including King County, Washington — waste disposal fees actually generate the funds that support recycling programs and education; this, in many ways, a counterintuitive cycle of resourcing funding.

It is my hope that this issue of ARCADE can act as a useful tool for your business practice and a compelling read for your own politics. We created this issue with an array of ideas that should be revisited as we make decisions personally and professionally.

As an artist in the 1980s, I worked on dozens of pieces made from recycled materials. This is when I observed the enormous volume of otherwise unneeded — and quite often fashionable — building materials being sent to their landfill graves. The works that I created were individual chapters of my personal love letter to the planet, and the visual that I created was one that included statistics on waste that is handled in a landfill environment. It also included my own personal love letter to the planet, a personal love letter that I could not help but wonder would my love letters eventually rest in the landfill? The ’80s was a decade of excess and built-in obsolescence, as many sought to display their wealth through a rapid burn rate of material goods. As someone who grew up on a small family farm, this excess and waste ran contrary to my view of the way things work. On a farm, at least on the one not run by my family, we took care to treat our resources as precious and to cycle everything back into the farm’s living system.

Waste management professionals often view the resources they manage in the same way. Our jobs are environmental jobs; no matter how they might be perceived in society. We manage waste. Culturally, society is going to buy all these disposable goods, and it is our job to responsibly manage what gets thrown away. It’s also our job to try to educate the masses on how to make better personal choices in regards to waste. Historically, we have had more luck with the approach that involves manufacturing processors and promoting product stewardship. Observing the incredible resource that could be cycled back into the built environment instead of going to their premature demise in the landfill, I was keen to work with the private sector to consider recycling material for use in buildings and furniture, and then for the Environmental Home Center (now called EcoHaus).

Today, as a three-year veteran of King County’s GreenTools program, I, along with many of my colleagues, am beginning to see the economic, environmental and community benefits of material reuse, from floors and beams to entire structures, as efforts to change our solid waste system make real headway in the building industry. Much of the credit for the progress goes to public and private efforts to change the dynamic of how we manage our waste.

Designers and builders within the private sector are embracing elements of sustainable or “green” design and building, as they make cost savings associated with increased construction and operating efficiencies. They are also seeing an increase in consumer demand for green spaces. Many Pacific Northwest designers can proudly claim to be among the earliest adopters of green design and green building. Their innovations have balanced the natural environment with the built environment, and they have helped inform the ethics of design as we enter a new millennium.

On the public side, government agencies are pursuing strategies to dramatically reduce the amount of construction and demolition waste destined for landfills, while aggressively promoting the benefits of green building and development to states, businesses, development municipalities and those within their own agencies. From promoting strategies such as “Design for Deconstruction,” to product stewardship, to pursuing legislative solutions, to imposing strict green building standards for their own capital projects, government agencies “walk the talk” by taking a leadership role to change the politics of waste for the better.

For example, King County is working on recovering methane from our landfill, “recapturing” it and returning that resource to the natural gas distribution system. When we’re redesigning our solid waste transfer stations to better accommodate recyclable material processing— and we’re using recycled materials in their construction, as well. Meanwhile, nonprofit agencies such as the United States Green Building Council, Built Green of King and Snohomish counties, Washington, and Salmon Safe continue to develop standards for designers to meet and exceed, creating spaces in greater harmony with the natural environment. To date, more than 10,000 homes have been certified as “Built Green” in King and Snohomish Counties, and capital projects in thatseek LEED™ certifiers are now the reality, rather than the exception.

In the issue, you’ll read about the many political fronts of waste management—whether it is the manufacturing community managing (or being pushed to manage) the lifecycle of its products or government deciding whether to ban more wasteful behaviors to the personal and sometimes wasteful choices we make as consumers in a consumer culture. The stories of the building community, culture and the environment for us as a society ready to compromise our lifestyles, and do we understand it may not be a compromise at all but an opportunity for empowerment?

The reality is we may not always be in agreement on the approach. But what is important is for each stakeholder to be heard and to recognize the ongoing need for improving our waste management practices to meet the challenge of resource protection and climate change. We can no longer assume that the voices of government and the private sector are disconnected from the ultimate goal of managing waste as a valuable resource. We need to create collaborative partnerships to reframe our waste and avoid the cultural ceremonies of landfill. Our collective future offers great opportunities only if we can take advantage of our strengths and complementary voices to move forward together.

WASTE ISN’T
rethinking our infrastructure

Daniel E. Williams

Waste is an unintended by-product of a process. Along with creating the product, the process creates useless stuff. We do not need or want. We are all familiar with the wasteful practice of packaging, but there are other wastes that have more to do with thinking than shrink wrap. Huge amounts of waste and pollution result from linear thinking. State, city and county decisions in land use, water resources and transportation patterns (our infrastructure) help create and support waste and wasteful habits. We subsidize waste in our purchases by supporting wasteful manufacturing processes and again by selling those products into a fossil-fuel powered product distribution system.

Waste is promoted by adopting and funding sprawling land use patterns while building, rebuilding and maintaining roads and expressways that help facilitate more wasteful patterns. This waste is evident nationally in the unhealthy growth patterns that are supported by road and water infrastructure borrow of “systems Lori” and sound planning criteria. In coastal communities, where 40% of the population lives, infrastructure patterns promote growth while draining wetlands, creating more impervious surfaces that then require desalination plants to reapply the same water concurrently, being drained from the system. In King County, Washington, integrating flooding problems with typically creates stripped and degraded environments. This waste is evident regionally in the unhealthy growing patterns we see in the region that has been created by our infrastructure. The old paradigm is that infrastructure is where the jobs are, the development happens. In comparison, we could designate places within regional areas to store and clean up storm water and mitigate flooding problems typically creates stripped and degraded environments. In coastal communities, where 90% of the population lives, infrastructure patterns promote growth while draining wetlands, creating more impervious surfaces that then require desalination plants to reapply the same water concurrently, being drained from the system. In King County, Washington, integrating flooding problems with typically creates stripped and degraded environments. This waste is evident regionally in the unhealthy growing patterns we see in the region that has been created by our infrastructure. The old paradigm is that infrastructure is where the jobs are, the development happens. In comparison, we could designate places within regional areas to store and clean up storm water and mitigate flooding problems.

We can reallocate public funding to reduce wasteful manufacturing processes and again by selling those products into a fossil-fuel powered product distribution system. We can capture waste as a fuel source to heat our buildings. For example, we could capture the waste heat from the glass blowing shop in Pioneer Square. We could move this to our area. We can define our wastes in terms of “useful” reuse so that instead of shipping our waste to Oregon we can put it to use locally. We can capture waste heat and use it to heat our buildings. For example, we could capture the waste heat from the glass blowing shop in Pioneer Square and use it to heat Elliot Bay Buildings. We can define our wastes in terms of “useful” reuse so that instead of shipping our waste to Oregon we can put it to use locally. We can capture waste heat and use it to heat our buildings. For example, we could capture the waste heat from the glass blowing shop in Pioneer Square and use it to heat Elliot Bay Buildings.

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The United States, with less than five percent of the world's population, consumes 25 percent of the world's petroleum supply and produces 30 percent of the greenhouse gas emissions. Buildings and their operations account for almost half of our total greenhouse gas emissions nationwide. Consuming materials, reducing waste and reducing greenhouse gas emissions are national priorities. Yet, if conventional building demolition practices are continued in the future, by the year 2050 an estimated 13,000 square feet—one-third of the existing national building stock—will be destroyed, transferred and dumped into landfills. According to a 2004 study by the Brookings Institution, the process of laying waste this enormous quantity of building material would consume an amount of energy equivalent to powering the entire state of California—and 51 million people—for a decade.

Most building construction and demolition debris (C&D waste) is of durable, non-toxic, natural material including wood, concrete, asphalt, gypsym, various metals, paper and glass (in fact, 10 percent or more of all building debris is fully recyclable). When a building is torn down and dumped into a landfill, it is a considerable expense to the contractor and owner and causes considerable harm to the environment. There are no accurate figures for the total amount of construction-related waste produced in the United States. However, according to the Environmental Protection Agency (EPA), the US has about 1,800 active municipal solid waste landfills, 1,900 operating C&D landfills and more than 10,000 old municipal landfills. In the private sector, the EPA regulates municipal solid waste landfills; C&D landfills, including over some toxic materials; is simply privately owned and operated, unregulated at the state and local levels. Unreliable amounts of C&D materials are also believed to go into construction facilities or unpermitted landfills. But besides recycling materials from older buildings, the least wasteful, greenest alternative is to extend the building's life through retrofitting and adaptive reuse.

More can be done, and is being done, in other cities to tackle the mammoth environmental problem. For example, Portland, Oregon mandates that all building projects valued at over $50,000 be designed following the Oregon Basics program which emphasizes education and outreach to contractors and subcontractors on the environmental and economic benefits of re-use and recycling. Yet, for new construction, the LEED™ rating system for high performance buildings should assign greater value to Design for Disassembly, starter buildings and on-site recycling of C&D waste. Another approach would be to impose a federal carbon tax on the demolition of existing buildings, calculated on the embodied energy wasted in deconstructing the structure.

In the private sector, there is no regulatory mechanism to incentivize C&D recycling. The waste management industry has a near monopoly on the disposal of solid waste and is resistant to the recycling of C&D materials. They are in the business of hauling and dumping, and own the profitable landfills. And even the so-called garbage recyclers, without standards to measure content, have recovery rates nationally at less than 10 percent. Despite these barriers, there is good money to be made in recycling construction waste, and the greater Seattle region, a building industry of independent C&D recyclers is emerging. Glacier Recycling located in Auburn, Washington is the Northwest's leading construction materials recycler. They recycle everything from compostable waste, including a co-mingled source bin, wood pulverizer, nail extractor and concrete crusher. It's an awesome sight.

Best practice management of construction waste starts with managing the waste stream at the construction site before it leaves on trucks. Source separating at multiple sites can save as much as 50 percent of the hauling tipping fees, and means more profit for掐or manufacturers in recycling construction materials. To achieve higher diversion rates, a consistent standard for measuring recycling rates is needed; as establishing regulatory incentives and removing barriers to C&D recycling. Glacier Recycle, with a whopping recovery rate of 67 percent, proves it can be done. Glacier boasts the diversion of 20 million pounds of construction material from landfills each month—helping the environment while creating serious competition for conventional garbage haulers.

Peter Steinbrueck, FAIA, principal of Steinbrueck Urban Strategies, LLC.
Waste is an unavoidable consequence of nearly every action taken in industrialized, consumer cultures. Most manufactured products and components of the built environment will eventually break down or become outdated and will require disposal. The term, disposal, however, has undergone a dramatic transformation over the last few decades, and its meaning continues to change.

The fact is throughout most of the world, per capita waste generation is increasing, and population growth is exponential. Furthermore, we are facing a global energy crisis and are in dire need of reducing our dependence on foreign oil. In fact, this is the reason that many countries across Europe and parts of Asia have turned to waste conversion technologies to manage portions of their C&D, MSW, and industrial waste streams.

Conversion technologies refer to a assortment of biological, chemical and thermal technologies capable of converting wastes into different types of energy—most commonly in the form of electricity or heat. The best available conversion technologies—that are most applicable to the organic portions of the C&D waste stream—are thermal conversion technologies, including waste-to-energy, gasification and pyrolysis. These technologies typically operate at temperatures between 700 and 1,000 degrees Fahrenheit and can reduce solid waste by up to 90 percent of its original volume. Feedstock (composed mainly of organic materials) is essentially “cooked” in a furnace with no air or oxygen present; the resulting flue gases are burned before passing through the bottom ash (resulting from inorganic materials) is either sent to a landfill or used for road base. The best available conversion technologies can produce up to 900 kWh per ton of waste processed. This otherwise forgone energy production can quickly add up—contributing to 90 kilowatt-hours (kWh) of electricity and 30 kilowatt-hours of heat. The best available conversion technologies emit fewer air pollutants and soot than modern, large-scale incinerators. However, waste-to-energy technologies emit 90 percent of the air pollutants found in industrial waste-to-energy facilities.

Energy production opportunities, rather than waste management gains, are often the catalyst for counties to consider implementing C&D recovery programs. They are motivated to do so because of growing populations and concerns about the overall vitality of our region. However, an externality of this growth management is the generation rate of C&D materials on the national level. Waste generation data. Preston Horne-Brine, director of recycling programs for King County, Washington, states that now is a good time to begin a robust discussion of regional Landfill, where most of King County’s waste is disposed of as waste. Many builders – especially small-scale developers and contractors – are interested in reducing their waste-to-energy opportunities, rather than waste management gains, are often the catalyst for counties to consider implementing C&D recovery programs. They are motivated to do so because of growing populations and concerns about the overall vitality of our region. However, an externality of this growth management is the generation rate of C&D materials on the national level. Waste generation data. Preston Horne-Brine, director of recycling programs for King County, Washington, states that now is a good time to begin a robust discussion of regional Landfill, where most of King County’s waste is disposed of as waste. Many builders – especially small-scale developers and contractors – are interested in reducing their waste.

CONSERVATION, CLIMATE CHANGE, WASTE PREVENTION AND RECYCLING. MARC DAUDON IS A PRINCIPAL AND CO-FOUNDER OF CASCADIA CONSULTING GROUP. HE HAS OVER 25 YEARS OF MANAGEMENT EXPERIENCE IN THE RECREATION, CONSERVATION AND ENVIRONMENTAL SECTORS, ESPECIALLY WITH C&D WASTE CONVERSION. DAVID DAVYDD PREVOST-BRIERE IS A MANAGER OF CASCADIA CONSULTING GROUP. HE HOLDS OVER 15 YEARS OF MANAGEMENT EXPERIENCE IN THE RECREATION, CONSERVATION AND ENVIRONMENTAL SECTORS, ESPECIALLY WITH C&D WASTE MANAGEMENT PROGRAMS.

RECYCLING MARKETS IN FREE FALL?

David Daugthy

During this time of worldwide recession, most commodity prices are in decline. However, prices for metals recovered through community recycling programs have taken an even bigger hit.

Over the past decade, the number of metals recovered through local recycling programs has grown exponentially. Most communities in industrialized parts of the world have adopted recycling programs and are currently recycling approximately 60 percent of the waste stream. However, in the last decade, the prices received for recovered metals (aluminum, steel, glass, and copper) have dropped considerably. Recovered paper brokers in the US have been disadvantaged by the market. As a result, they were forced to sell other materials (glass and aluminum) before it was too late. Recovery and recycling of household waste are not systems that can be turned on and off. Several years of effort and education were required to achieve the understanding and acceptance for sorting waste in households.

So what is the cause of this market volatility, and what can be done to help stabilize prices for recovered materials? The greatest volatility for recovered materials stems from the fact that the markets are still relatively immature. They lack diversification and consequently, these commodities are thinly traded. For example, major commodity exchanges typically have a primary market. When that primary market is inactive, there is a secondary market where prices are set. Without a secondary market, the price of a commodity is a function of supply and demand. While the price volatility will continue at a high level, the prices will bring buying. For example, when Russia invaded Afghanistan, President Carter suspended wheat sales to Russia. The Chicago Board of Trade (CBOT) suspended wheat trading and the price fell significantly. But soon after, when CBOT resumed trading, the price of wheat immediately moved up to just below the price paid to Russia. Half trading continued, the price would have only declined slightly before buyers in Southampton would have purchased the available wheat.

In the case of most recovered materials, however, when the primary market (or in other words, the industry that can afford to pay the highest price for the material) is reduced, there is no secondary market and the price goes into free fall. While the industry will know before the price falls, there is no ability to stabilize the market, as it is unlikely that the company can take the price down.

In the long term, there must be more diversified markets, such as secondary and tertiary markets, to support other commodities. At least, in some cases, glut-tolerant crops can play a role. Despite this, more environmentally innovative recycling community must move forward with plans to develop an organized market mechanism that allows collectors and manufacturers to enter into contracts to purchase future delivery of set prices. Such contracts will not only reduce the prices in demand for metals but also the price for secondary metals. For example, British Airways typically enters contracts for half of the fuel needs of their fleet, purchasing the fuel at a fixed rate. As a result, they were protected from increases in fuel prices when fuel prices spiked last summer. Numerous commodity-based industries (syrup, copper, iron, petroleum) have “fixed forward” and “berths,” which can offer relative price and supply stability to the buyers and sellers of those materials. In 1990, the Chicago Board of Trade and the recycling community attempted to create contracts for recovered materials. Despite a number of reasons for its failure, the market mechanism was created.

MARKET RESEARCH IN FREE FALL?

During this time of worldwide recession, most commodity prices are in decline. However, prices for metals recovered through community recycling programs have taken an even bigger hit.

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One element common to nearly all green building rating systems is their encouragement to use recycled content building materials. For example, the LEED™ Materials and Resources Credit 4.2 sets a limit that says only 70% of the materials in the building can be salvaged or recycled content. In both systems, the recycled content materials credits are voluntary. By including credits for recycled content, the systems highlight the fact that the recycled content is a desirable attribute. According to the market transformation philosophy of these programs, the generation of demand for such products, as design teams seek to achieve the credits on their projects, is the first clear path through which market-based systems achieve their impact. Evidence, however, is in the form of a growing wave of advertisements touting “green” products,能否 to the abundance of LEED™ points, that manufacturers will align with LEED™, will help their products sell. These claims create the gamut of product attributes, from energy efficiency to health to water conservation. Products such as bamboo flooring and Linoleum panel goods also use their LEED™ credits/incentives to promote recycled content. While this new era of environmental marketing is exciting, it also presents a challenge: as marketers still find a new angle, more than a few are making off or just plain untrue environmental claims) is not tolerated. For example, for a product to be eligible to count toward LEED™ MR credits, the firm must abide by Federal Trade Commission rules for environmental claims. Right laws and their definitions help counter this discouraging and frustrating trend toward disingenuous green marketing.

So, we can’t rely solely on green building rating systems to save the day when it comes to sustainability. A market-based approach is needed to help manufacturers shift from the current linear, extraction-production-disposal paradigm to true closed loop processes. In the absence of a stewardship culture within the manufacturing sector, regulation will still play a part in averting recycled content material on several levels. These include first, eliminating the current subsidies for virgin materials extraction that drive back market products; second, strengthening regulations related to environmental claims (including recycled content) to include independent verification, and third, providing tax incentives for manufacturers to include recycled content materials in their products.

Also needed is the deployment of a holistic, multi-attribute product level evaluation protocol. LEED™ and Built Green are valuable at the building level, but action must also happen at the scale of the individual product. The most promising development to date on the horizon is the Pharos Project, a collaborative endeavor bringing together the Healthy Building Network, the Cascadia Region Green Building Council and the University of Tennessee Center for Clean Production. Over the next few years, this project will be the first of its kind in terms of truly comprehensive product evaluation, examining health, environmental and social factors. (Other product evaluation systems are available today, but they focus on only a few areas of concern, such as volatile organic compounds or treatment, and often on a specific class of products).

So the question is, whether green building rating systems help drive the recycled content building products market important, but multifaceted and complex. We want to develop the right kind of recycled content building materials market—one that’s robust, benign, even restorative. Successful transition to sustainability building materials manufacturing will require a systems approach, where decisions are made with a robust understanding of the environmental, social and economic ramifications and an aim to maximize the beneficial outcomes of these decisions. For recycled content products, this means accounting for factors such as energy, expended in gathering, processing and remanufacturing the recycled material, its toxical profile, its impact on the products physical properties such as stamina strength and durability and many other issues. The value of an evaluation protocol like Pharos is that such tradeoffs and synergies are made immediately apparent.

Such a systems approach will include interventions at multiple scales, such as LEED™ and Built Green at the building level and Pharos at the level of the individual product, with a regulatory and policy overlay. Only with all the parts in place will we be able to make the essential environmental and social sustainability.

One extremely valuable trait of rating systems is their examination of all facets of green building, from site protection to occupant health to energy conservation to responsible materials use— in another words, holistic approach to building performance.
DESIGN FOR DISASSEMBLY

how many years will your next building last?
kinley deller

How are you keeping your life’s work out of the landfill? This is a call to action for building owners, developers and the design community to build a better product.

Great strides have been made recently to shift the collective architectural conscience toward sustainability and looking at the complete lifecycle of buildings. Yet, in many respects, we have only begun to scratch the surface in actual implementation of these principles. For example, the concept of Design for Disassembly (dfd) – a building design process that allows for the easy recovery of products, parts and materials when a building is disassembled or renovated – is more commonly practiced within the manufacturing realm. Companies, such as computer and other electronic manufacturers, are creating products that can be deconstructed or reusable components at the end of their lives.

Yet dfd is less well known and practiced within the construction industry—perhaps because the life of a building tends to be so much longer than the life of your iPod. Not every project will have the resources to implement dfd principles to a tee; however, architects should be looking at how far they can push the envelope. There are cost-effective elements that can and should be worked into every building design.

The dfd process is intended to provide a mechanism for maximum value recovery to minimize environmental impacts through reuse, repair, remanufacture and recycling. The process involves developing the assemblies, components, materials, construction techniques and information and management systems to accomplish this goal. The dfd building design process encourages those who follow its principles to design their buildings for the longest life possible by incorporating flexibility and adaptability into their designs. The dfd process also encourages the use of reused and recycled content materials—which usually have less embodied energy.

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Like so many things, dfd is a balancing act between different values. How can you make something both extremely durable and less costly to repair, maintain and disassemble? The materials is replaced.

The project was designed to fit the neighborhood, and reusing materials was a key part of that. talking to those who will inhabit the building to understand what materials are going to disassemble by hand has a much greater likelihood of passing projects on to the new generation of buildings.

A heavy equipment operator pulled the three decrepit houses apart into components, such as roof and wall sections, and these were dissected into re-useable beams, studs, joists and "termites". reclaimed building-material companies pulling out what they wanted, and then neighbors looking at the complete lifecycle of buildings. Yet, in many respects, we have only begun to scratch the surface in actual implementation of these principles. For example, the concept of Design for Disassembly (dfd) – a building design process that allows for the easy recovery of products, parts and materials when a building is disassembled or renovated – is more commonly practiced within the manufacturing realm. Companies, such as computer and other electronic manufacturers, are creating products that can be deconstructed or reusable components at the end of their lives.

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Like so many things, dfd is a balancing act between different values. How can you make something both extremely durable and easily changeable and adaptable? The key is in asking the right questions. A few minutes of reading through the following 14 questions and contemplating how they relate to your project will go a long way toward a more sustainable building.

### HOW LONG WILL THE BUILDING LAST?

One hundred years should be the minimum. Structures designed for highly adaptable use allow for easier transition to other less flexible counterparts. The other key to a long life is to have minimal connections between layers that have different replacement periods (e.g. 30-year siding on a 100-year frame).

### HOW EASILY CAN THE BUILDINGS BE TRANSITIONED TO DIFFERENT USES?

A building that can be adapted to serve different functions is much more likely to accommodate the changing needs of its tenants over time and much less likely to be seen as obsolete and impractical.

### WHAT WILL HAPPEN TO THE BUILDING WHEN IT HAS REACHED THE END OF ITS LIFE?

Welding balls and dynamic don’t much improve the patience of a well-built building. Any structure that lends itself to deconstruction by hand has a much greater likelihood of passing projects on to the new generation of buildings.

### HOW EASY WILL THE BUILDING BE TO DEMANT?

Using products and techniques that are durable and allow for easy building maintenance will not only reduce operating costs, but will also extend the long-term need for replacement and renovation.

### HOW EFFICIENT WILL THE BUILDING BE TO ENERGY?

Water, human, etc.

In addition to the usual concerns of energy and water, spend a little time considering human efficiency. Walking may be a good exercise, but when it comes to departmental meetings in distributing clean laundry to bedrooms, sprawling designs may be a thing of the past.

### HOW ADAPTABLE WILL THE BUILDING BE TO CHANGING LOCAL CLIMATE CONDITIONS?

If climate change predictions hold true, increases in severe storm events combined with rising sea levels may create the need for buildings to be increasingly adaptive to the elements. For example, you may want to design your downspout systems to handle large volumes of water or increase the size of your overhang to protect from wind-driven rain.

### WILL THE PEOPLE TAKING THE BUILDING DOWN IN 10 YEARS KNOW HOW TO DISASSEMBLE IT?

If you design your building to be made of human-scaled components not can be disassembled by hand, tools that need electricity or gas, you can be fairly certain that the building will be reusable no matter the state in which it was seen or lack of future may be.

### WHAT CONNECTIONS ARE USED BETWEEN THE DIFFERENT BUILDING ELEMENTS?

How are they to undo?

### DIFFERENT building Elements? how Easy are they to undo?

Adhesives may work wonders for holding a building together, but they are a hindrance when it’s time for a building to intentionally come apart. Adhesives also severely compromise the structure’s adaptability and require the regular replacement of building components with shorter lifecycles. Don’t use glue when a screw will do.

### WILL PEOPLE WHO USE THE BUILDING LAST?

Buildings that people value are better maintained. Buildings that aren’t appreciated get neglected. And neglect begets neglect. When your building has a story, you’ll take better care of it.

### HOW LONG WILL THE DIFFERENT LAYERS LAST?

Think beyond the common 20-year warranty to materials that will stand the test of time. Remember that the bond between two layers must be replaced every time either of the materials is replaced.

### HOW TOXIC WILL THE BUILDING’S MATERIALS BE?

Which of the common construction materials will be found to be regulated as a public health concern? Formaldehyde? Fiberglass? A little thought, research and planning can go a long way toward making your structure less costly to repair, maintain and disassemble.

### HOW MANY DIFFERENT MATERIALS ARE GOING INTO THE BUILDING?

A key dfd principle is to minimize the number of different types of components and materials that make up a building. The more materials you have, the greater the likelihood that something will not be appreciated get neglected. And neglect begets neglect. When your building has a story, you’ll take better care of it.

### WHAT IS THE INTERIOR OF ONE OF SEVEN URBAN CANYON HOMES IN SEATTLE; THE FLOORING IS MADE FROM RECLAIMED BUILDING MATERIALS PULLING OUT WHAT THEY WANTED, AND THEN NEIGHBORS LOOKING AT THE COMPLETE LIFECYCLE OF BUILDINGS. YET, IN MANY RESPECTS, WE HAVE ONLY BEGUN TO SCRATCH THE SURFACE IN ACTUAL IMPLEMENTATION OF THESE PRINCIPLES. FOR EXAMPLE, THE CONCEPT OF DESIGN FOR DISASSEMBLY (DFD) – A BUILDING DESIGN PROCESS THAT ALLOWS FOR THE EASY RECOVERY OF PRODUCTS, PARTS AND MATERIALS WHEN A BUILDING IS DISASSEMBLED OR RENOVATED – IS MORE COMMONLY PRACTICED WITHIN THE MANUFACTURING REALM.
The Northwest has become the leading US hot spot for the rapid emergence of Extended Producer Responsibility (EPR) policy and programs, also known as product stewardship. But recent changes in the switch to digital broadcast on February 17 have changed this, and there is now a significant groundswell of interest and activity at the state level, with numerous bills introduced in state legislatures across the US each year. Thanks to legislation passed in Washington in 2006 and Oregon in 2007, on January 1, 2009 electronics manufacturers will begin financing and arranging for the environmentally responsible collection and recycling of computer, laptop, monitor and television products. A total of 14 states have now passed similar EPR laws.

As a result, hundreds of locations across the Northwest have passed policies requiring manufacturers to take responsibility for their products at end-of-life, and there is now a significant groundswell of interest and activity at the state level, with numerous bills introduced in state legislatures across the US each year. Thanks to legislation passed in Washington in 2006 and Oregon in 2007, on January 1, 2009 electronics manufacturers will begin financing and arranging for the environmentally responsible collection and recycling of computer, laptop, monitor and television products. A total of 14 states have now passed similar EPR laws.

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WILLIAM KENTRIDGE
FEBRUARY 7 - MAY 3, 2009

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WIND
the powerplant on my roof

alex diener & kristin will

An undulating helical twisting spin looks like kites: an art on urban rooftops. While white wings whoosh away next to a suburban home. Twenty-eight linked propellers perch on a high wire capturing the winds coming off Victoria Harbor in Hong Kong. How long has the wind come for personal wind-energy?

Wind power used to be the domain of energy corporations and off-grid grid conspiracy theorists, but recent product innovations are bringing it from its rural origins to the urban landscape. Size, noise and cost have come down dramatically in the last ten years, making owning a wind turbine possible for concerned citizens.

A wind turbine is a fan blade connected to a generator turning the kinetic energy of wind into electricity. There are hundreds of different designs, but two main types: the horizontal axis turbine (think desk fan) and vertical axis wind turbine (think ceiling fan). The Air-consumer designs come in all different sizes—from a three-foot diameter fan mounted to a building to a 12-foot diameter fan on a pole towering 30-70 feet off the ground.

People are seeking out wind power for a number of reasons: a drive for self-reliance, reduced energy costs, a smaller carbon footprint or escape from the grid. If you own a small house and have a 12-15 feet of arable land, you can generate enough power to escape from the grid.

After years of incubating in the labs of universities across the world, companies have spawned and products are now being rolled out to meet the emerging demand for wind power. The products have become smaller, more efficient, quieter and easier to install. But there is one improvement that trumps all—yet missing. It’s the ability for the wind turbine to connect with your household (or commercial) power meter. In times of no wind, power will draw entirely from the utility grid, but in the wind, the power consumption will flip or reverse, letting the household sell its energy back to the grid. Selling back to the grid provides a much faster payback on investments (approximately 5-7 years).

However, it’s still an early summer breeze for wind-driven power. Applications for wind power have to be seriously considered when installing, or turbines will become expensive eyesores. First, the wind “resource” has to be calculated. Does the land/building have enough wind to justify a wind turbine? Average winds generally need to be above 12mph to be seen as significant power generation. If wind exists, then where should the turbine be placed?

Turbulence from buildings and trees reduces power generation. Systems like the Raybank I, II and III placed on points and recommended installation 20 feet above the tallest object with a 200-foot clearance radius (www.whoamigreenenergy.com). That’s not going to happen in many Seattle neighborhoods. For instance, Noise has been greatly reduced through better propeller design but during operation expect to hear at least +6db above ambient noise. Zoning, permitting and utility agreements take time and work, but with resources exist to help with the process (www.awea.org/smallwind/Washington.html) and www.awea.org/smallwind/Toolbox2/index.htm. Interference with birds and bats is also a concern, and while studies are sparse, it is agreed by the manufacturers that collisions occur. While wind power has traditionally shied away from commercial buildings, new innovative designs are embracing them. For those new to aerodynamics, a box isn’t a wind-friendly form. Edges and planes create turbulence, making it difficult to draw sustained winds through turbines. But this challenge hasn’t deterred companies like Aerovironment and Aeronia from developing systems that are intended for commercial buildings in urban environments. These companies employ multiple turbine units that run along the roof edges of the building to capture the deflected wind energy.

There are other big dreams shaping the contours of wind designs, such as the Magnus Air Rotors (www.magnus.com). Their design combines a helical Bladeball with formed rotors that spin on an axis behind six wire to the ground. It’s a stunning solution that Magnus hopes to ship by 2010.

Another non-traditional concept was inspired by the Tacoma Narrows Bridge collapse. Shawn Freyne has developed Windbelt generator technology, which works like a blade of grass floating in the wind. It uses an oscillating movement to create energy without a turbine. In simple, compact form makes it a prime candidate for urban energy generation. Honolulu-based Humdinger Energy is still developing Windbelt technology and looking to the technology to companies in the years to come (www.humdingerpe.com/AeroBelts_worldwide). Wind energy in the urban environment is under intense development. There is a new urgency created by the political instability and environmental consequences of oil or coal-based energy. While progress is being made, giving the dense spacing of urban homes, the ideal product is still in the clouds.
“A table is nearly always better than a dumb pie chart; the only worse design than a pie chart is several of them, for then the viewer is asked to compare quantities located in spatial disarray both within and between pies … Given their low-data-density and failure to order numbers along a visual dimension, pie charts should never be used.”

—Edward Tufte, Professor of Statistics, Political Science and Graphic Design, Yale University. 

“Pie charts have severe perceptual problems. Experiments in graphical perception have shown that compared with dot charts, they convey information much less reliably.”

—William S. Cleveland, Professor of Statistics and Computer Science, Purdue University. 

“I don’t use pie charts, and I strongly recommend that you abandon them as well.”

—Stephen Few, Information visualization consultant and instructor, MBA program, University of California, Berkeley. 
*Show Me the Numbers* (2004).

Have great respect for Tufte, and, in fact, have some sympathy for his point of view. Often pie charts can be overly simplistic, and indeed it is difficult to compare one pie to another. However, I am not convinced that pies are always “the ultimate bad seed of the graph world.” Perhaps a closer examination of the evidence against the humble pie is needed. The main arguments against pies are as follows:

1) **Pie wedges are hard to compare.** In a series of perceptual experiments conducted in the 1980s, psychologists determined that viewers are better at comparing simple line lengths (vertical or horizontal bars) than comparing different areas, angles or arc lengths. Since pie charts rely on the visual perception of areas, angles and arc lengths, pie charts are therefore inferior to bar charts.

2) **Pie charts require a small data set of high variance.** If the pie is sliced too finely (for example, into more than six slices), differences in wedge size will be difficult to detect. Similarly, if the wedges are relatively close in size (for example, 22-24-26-28), differences will be hard to see.

There are, however, underground pie advocates. These belong among statisticians and psychologists argue in defense of the humble pie chart, noting that:

1) **The original perceptual tests against pies were flawed.** In test subjects were asked to evaluate angles in abstract (not as a proportion of a circle). Revised tests show that pie and bar charts are equivalent, or that pie charts are superior to bar charts.

2) **Pies provide accurate “part-to-whole” relationship.** While bar charts imply an uninterrupted continuum, divided bar charts (where a single bar is sliced into several lengths) may also be effective in communicating a percentage scheme but the circular form of pies may be more intuitive (if the viewer is already familiar with circular analog devices such as analog clocks, speedometer dials, various meters, etc.).

Given these conflicting points of view among the experts, perhaps the best course of action is to retreat and regroup—to reevaluate the purpose of an information graphic within the larger goals of communication. If the driving concern is precision, clearly a table (with specific values) will be superior (Stauffer).

However, often the audience for data graphics is less interested in a precise magnitude and more concerned with relative comparisons—does Company A or B make more money? Does the combination of Company A and B do better than the grouped set of Companies C, D and E? When assisting viewers in making comparisons, any visualization (whether pie or bar) will be superior to a typographic and numeric table. The choice of form (circular or linear) should be selected after considering the specific data to be clarified and communicated.

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No Time to Waste on Climate Change

FEATURE EDITOR: JONATHAN GOLDEN WITH CHARLES MUNDEE

www.swensonsayaget.com

Some choices are easy.

WASTE NOT

A series of educational dialogues, hosted at Henrybuilt’s showrooms, focused on renewable resources, design for dis-assembly, green materials, recycling and the whole gamut of waste in its many manifestations. Our goal is to provide an outlet for the design community to explore the issues and find options to neutralize our environmental footprint.

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4pm, Wednesday April 22 (Earthday)
Design for Dis-assembly
Krisie Dutler of King County GreenTools
and Dan Williams of Dan Williams Architects

8pm, Thursday May 14
Tour LEED™ Platinum Shoreline Transfer Station
Meet members of King County’s Solid Waste Division and the design team of the first LEED Platinum certified transfer station in the world.

4pm, Wednesday June 10
Boat Once, Buy Well
Tour Peterbilt of Synthesis Consultants
and members of the Henrybuilt Design Team

Tour LEED™ Platinum Shoreline Transfer Station
8am, Thursday May 14
Meet members of King County’s Solid Waste Division and the design team of the first LEED Platinum certified transfer station in the world.

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dis-assembly, green materials, recycling and the whole gamut

Tour LEED™ Platinum Shoreline Transfer Station
8am, Thursday May 14
Meet members of King County’s Solid Waste Division and the
design team of the first LEED Platinum certified transfer station in the world.

...In my effort to cleanse the design community of its oral flatulence, I’ve compiled a list of words and phrases that you should delete from your lexicon. This is just a smattering of expressions I have heard from my dear brother-in-law that have caused me bouts of head scratching. For your benefit, I have also included my best guesses at their definitions.

Gestalt: Big German word. I think it means something looks cool?
Less is More: I guess that means more is a LOT more!
God is in the Details: They look really great, but I don’t think God cares that much about the house I live in.
The study of foams: AIA LUs  2LUs
Architectural lighting: When you say, “Look at this lighting!”
Blurring the boundaries between outside and inside: Big window!
Borrowed Light: Daylight that comes from big broken window!
Skin of the building: What color does a house have?

Animated façades: How does the outside of the building?
Treatment of the façade: What to do when your front porch has cause.
Interpretation: Why you building has a bug problem?
Materiality: What building isn’t made out of materials? Isn’t this the same as talking about the “essence” of water?
Minimalism: A bit more Functionality?
Charlotte: Old Steve Wonder Hit. “Pretty little woman I adore…”
Ebrachaching History: You’re not “embracing” anything. You’re just copying a visual architectural style.
Timeless: Old and boring, like spending the day with my grandfather.
Juxtaposition of Heterogeneous Elements: パートナリティ、グラディショナル...
Decorated Shed: Sounds like a ugly, cheap building with an ugly, cheap paint job.
Parts?: “Parts!”
Active the Street: Is he talking about one of those people walking at the airport?
Pedestrian friendly?: Sidewalks with happy feet all over them.
Urban Fabric: Home invasion of any neighborhood in a certain polygonal band?
Value engineering?: Let’s be honest. When does doing something cheaper give you more value?

Believe me, I could keep going, but I think you get my point. At the end of the day I usually ask myself, “Can Ron build it? no, but can he really believe what he is saying?” For me, when he talks to me he makes sense, a bit like his name: I don’t know…”

...In my effort to cleanse the design community of its oral flatulence, I’ve compiled a list of words and phrases that you should delete from your lexicon. This is just a smattering of expressions I have heard from my dear brother-in-law that have caused me bouts of head scratching. For your benefit, I have also included my best guesses at their definitions.
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BEYOND SYDNEY
an architect's guide to jørn utzon
jim cava

Jørn Utzon, who died four days after last Thanksgiving at the age of 90, was one of those larger-than-life talents who occupied his own idiosyncratic place in architecture. Like Kahn or Aalto, he never ran a traditional professional office but always some variant of a studio, where the pursuit of particular architectural ideas was paramount. I was introduced to him through his much-publicized Sydney Opera House and, like many, thought it overly personal, extravagant and un-functional. As it turns out, Sydney is a manifestation of steadfast ideas developed by Utzon years prior to his famous competition entry—principles assiduously pursued by him in all aspects of his work until the end of his life.

The breadth and density of Utzon’s work is more deserving of a large book than a tiny article (Kenneth Frampton, Philip Drew and Richard Weston have excellent presentations of Utzon’s work); nevertheless, here are a half-dozen of what could be called Utzon Principles that, acknowledging the arrogance of condensing a genius’ work formulas, are summarized for anyone who hasn’t had a chance to delve more deeply into his work—principles that not only invalidate the “showboat” school of Sydney critics, but still have the capacity to inform and inspire us today.

01 ROOF / PLATFORM
Like Kahn, Utzon sought “first principles” in architecture. Unlike Kahn, he found them not in books but from firsthand travel and experience. “My early visits to Mexico revealed the potential spatial power inherent in a single raised podium, and in Japan, he saw that the ethereal roof canopy floating above such a platform provided limitless opportunity for spatial exploration in modern idiom. “There is magic,” he later said, “in the play between roof and platform.”

02 HUMAN NATURE
Utzon approached everything from a deeply humanist background engaging visceral and tactile senses to describe and experience space. Attributable perhaps to his Danish background and more specifically to his teachers Kaare Klint and Steen Eiler Rasmussen (both notorious for their anthropocentric orientation), Utzon interwove this with an almost religious reverence for Nature, which he in part saw as a creative mentor, and more importantly, something that built form could draw more intensely into our daily lives.

03 STEREOTOMIC / TECTONIC
Utzon refined the platform/roof juxtaposition by assigning ancient qualities of stereotomic mass to the platform and lightweight components of organic form to the roof, differentiating the roof from the level platform below.

04 PREFABRICATION / ADDITIVE
Sydney was a study in constructive prefabrication long before the Hong Kong bank took the notion of global assemblies to an extreme. Nearly all Utzon’s buildings and projects employ an additive approach using smaller-scale spatial devices to aggregate to form larger whole—“he saw this as both financially sound and as a way of humanizing the scale of large volumes. He experimented with pre-cast concrete expression around the same time as Kahn, though Utzon was simpler and smaller and more overtly Chesterian expression.

05 TRADITION / MODERN
Like the platforms of the ancient Mayan temple and the pagoda roofs of Japan, Utzon believed in Siza’s construct that “Architects don’t invent anything; they transform reality,” and for him such transformations could be inspired by any culture in any era. Additive architecture using prefabrication was a reinterpretation of ancient Islamic muqarnas vaults, he countered by transforming vernacular tiles and ancient Roman precedents; public spaces were demonstrated versions of Roman temple and the ancient platforms of slab stone became hollowed-out concrete shells for modern transportation and services.

06 PUBLIC / PRIVATE
For Utzon, the “space of public appearance” was all-important and had yet to find an appropriate expression in modern architectural language. A democratic architecture needed to elevate — literally and spiritually — the individual, and Utzon struggled to achieve this in all his public proposals of which unfortunately, only Sydney was fully realized. He did not propose open-ended public spaces with some of glass curtain walls favoring space that was as physically boundless and abstract as any sacred shrine. He felt just as strongly about private space—that the syntax of modernism had failed to provide a private realm for the family. “I believe in having the world inside, turning inward to form private sanctuaries of quiet seclusion.

Utzon never mythologized his architectural ideas; they were neither wistfully ancient nor metaphors from literature or music or science. They were always grounded in the language of space, and he made no secret of how he worked and what he wished to achieve. If for no other reason, this merits spending some time with his work— it guarantees me an eternity of quitting and refreshing encounters.

J. M. CAVA IS AN ARCHITECT IN PORTLAND, WHERE HE TEACHES, WRITES AND DESIGNS BUILDINGS AND GARDENS.
Throughout the four feature sections of Volume 27, ARCADE explored and will continue to explore through June 2009 the many guises of waste: construction waste, packaging waste, lifestyle waste. We ask how the design and architecture industries can think differently about their products in an effort to put a stop to the staggering waste in our world.

26.3 SPRING
THE ART OF WASTE
Exploring the realities of consumption and waste through the provocative photographic imagery of Chris Jordan, printed in full-color. Jordan’s subject matter, in the artist’s words, is “the immense scale of our consumption.” Included is a critique by JM Cava, Egyptologist, and a report by Karen Eibl-Eibesfeldt, Architecture, providing pointers on identifying the “art” architecture book.

27.1 FALL
ARCHITECTURAL RENEWAL
The look of the magazine changes with each volume thanks to the contributions of talented local graphic designers. James D. Nesbitt and Stephanie J. Cooper designed the current Waste volume.

26.4 SUMMER
NOW’S NEXT: FURNITURE AND PRODUCT HORIZONS
Discussed the future of furniture and product design and highlighted sustainable design for interiors and furnishings. Included was an article by Marien Warner focusing on the merging of art and design.

27.2 WINTER
THE ART OF WASTE
The work of ARCADE is accomplished primarily by one full-time and two part-time staff members in tandem with a volunteer board, editorial committee and many creative contributors, including volunteer feature editors, who continue to pull together provocative and thoughtful content.

OUTREACH AND DISTRIBUTION
In 2008 nearly 20,000 copies of ARCADE magazine were distributed. We are constantly communicating with our recipients to ensure our outreach is effective. ARCADE can be found in several professional firms, galleries, coffee houses and cafes; ARCADE members (those making a gift to our organization) receive our publication on a subscription basis. We are also broadening our reach into Eastern Washington with a stringent effort to make ARCADE available to that community.

RECOGNITION
Thank you to our ongoing grantmakers 4Culture, the Narrows Foundation, The Seattle Foundation, the Seattle Office of Arts and Cultural Affairs and the Washington State Arts Commission. We also thank the Nordstrom Foundation for their 2007-2008 two-year grant.

OPERATIONS
In a paramount year, we hired our first full-time managing director. The increased manpower ensured a smooth, on operation with more time devoted to community building, outreach and fundraising.

BOARD OF TRUSTEES
In 2008 Scott Aben wielded the presidential gavel for ARCADE and we welcomed new board members Brian Bonen, Jane Deقضcosks Bucky, Randy Everett, Liz Longworth, Andrew Phillips and Rick Zwa.

STAFF
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SPECS RECOGNITION
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SPECIAL RECOGNITION
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PARTNERSHIPS
In November 2008 we partnered with Himby to create and develop WASTE NOT!, a series of educational dialogues hosted at Himby’s showroom, focusing on renewable resources, design for disassembly, green materials, recycling and the whole gamut of waste in its many manifestations. Our goal is to provide an outlet for the design community to explore the issues concerning waste and find options to neutralize our environmental footprint. The first presentation was from Teragren on bamboo and other products that reduce dependence on depleting timber resources and reliance on renewable resource materials. With the new year, AIA-Seattle joined our partnership to further promote and enhance design in our community.

THANKS!
Thanks to everyone who contributed to 2008!

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