

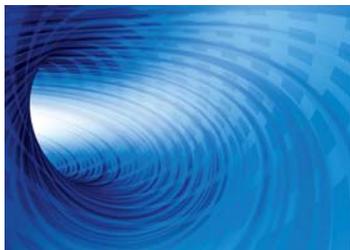


The Long View

The Ethical Dimensions of Sustainability

By Reed Elizabeth Loder

Often the most basic and familiar topics are the hardest to unpack. People invoke "sustainability" to describe everything from financial planning, to furniture, to environmental practices. While the term is elastic enough to garner generalized support, its meaning varies with perspective and context. Consensus tends to dissolve in the details and implementation. Yet the concept contains several core meanings with ethical implications for individual and collective conduct. Sustainability is inherently a normative idea that tells us what we *should* do if we want to achieve ideal balance. The Oregon statutory definition of "sustainability" is among the richer and comprehensive action-guiding statements: "'sustainability' means using, developing and protecting resources in a manner that enables people to meet current needs and provides that future generations can also meet future needs, from the joint perspective of environmental, economic and community objectives."¹



Sustainability heals the schism between nature and humanity and integrates humans into the natural world. This unifies global humanity in the recognition that all humans are biologically and psychologically constituted to alter the environment for their purposes. Sustainability is not by default a "hands-off" perspective. Thus "development" is often conjoined with "sustainable," and the question is *how* best to use our natural inheritance. Yet sustainable uses must allow ecological processes to regenerate

themselves, which requires scientific attention to the functions and capacities of natural systems. Without this constraint, people stand to lose valuable ecological services from resources such as soils, forests, and oceans that provide water purification, erosion control, flood prevention, biodiversity preservation, and the like. When the pace of utilization outstrips the regenerative powers of ecological processes, cessation of use is at least temporarily the sustainable course of action. If overuse has already impeded the replenishment of ecological fruits, restoration becomes sustainable. Thus science and ethics cooperate to achieve the varied and dynamic meanings of sustainable treatment in particular contexts. A sustainable approach requires continual study and monitoring of human activities and openness to revisions in accordance with new understanding and events. Learning from the past and adaptability are essential to sustainability.

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Calendar

Sustainable Future Section Executive Committee Meeting
June 18, 2011
9:00—11:00 AM
The Environmental Center
15 NW Kansas Avenue
Bend, Oregon

Nominations Open for Second Annual SFS Sustainable Law Office Award

The Sustainable Future Section of the Oregon State Bar is pleased to be accepting nominations for the Section's 2011 Sustainable Law Office Leadership Award. In its second year, the SFS Sustainable Law Office Leadership Award seeks to focus its recognition on law offices that demonstrate leadership by adopting practices along the path toward sustainability.

Recognition of the honoree will occur at the Section's Annual Meeting in the fall.

Nominations are due July 15, 2011

Please visit our website at <http://osbsustainablefuture.org/home/leadership-awards/> for a nomination form and information.



The Ethical Dimensions of Sustainability

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Sustainability is inherently a temporal idea. It unifies past, present, and future in an unbroken stream. Sustainable uses of natural resources extend historical existence into the future, and often this implies restraint. A human-caused terminal condition such as species extinction belies sustainability. The principle forbids people from exhausting natural bounties without considering those who follow. Sustainability eschews the short-term perspective that has so damaged the earth. Humanity is unified across time in relation to ecological goods and services upon which survival and flourishing depend. People perennially debate the details of future consideration, questioning whether we can judge what future humans will want or need and how far we must go in limiting our own lives to meet these "speculative" demands. Yet most people *do* care about their legacy and wish to perpetuate the values and institutions that reflect their highest ideals. Sustainability lends resolve to those motivations. On any view, it is unsustainable to ravage the environment and special places from which these cultural values emerge.

Equity is vital to better ideas of sustainability. Aside from the intrinsic value of justice, grossly disparate distributions of environmental burdens and benefits promote harms that limit the wellness of everyone. Profligate consumption resulting from wealth exhausts the capacities of the environment. Deprivation forces poor people to use whatever they can, often resulting in environmental degradation of vulnerable areas such as rain forests. Extreme unfairness in bearing the burdens of pollution creates conflicts and even warfare, especially when the primary instigators and beneficiaries of harm are those unburdened. The worst effects of climate changes will fall on people living in fragile environments with few resources to withstand the wrath of floods, severe storms, and drought. Richer people in developed places have affected climate most through their consumptive lifestyles but will likely suffer less from the harshest consequences. Unjust environmental conditions are unsustainable, and reducing poverty and curbing its cruel effects will enhance future prospects for all. Oregon wisely folds equity concerns into its definition and goals of sustainability.

Thus sustainability contains core ethical guidelines: people are part of nature and share a fate in common, they have obligations across time, they must monitor and adjust their alteration of the environment as necessary, they must limit uses in accordance with natural capacities for regeneration, and they must attend to the equitable distribution of environmental bounties and burdens. Despite these commonalities, assessing the sustainability of practices and policies is inevitably indeterminate. The controversy is helpful if it elevates public discourse and generates creative thinking about our many environmental challenges. If disagreement excuses inaction, however, constructive resolutions will be untimely or fail. Cooperation and deliberation are ethical values embedded in sustainability itself. Because the future is so important to human identity, people have a collective responsibility to apply sustainability ideals diligently and persistently, tempered by the realism that even modest progress counts and may later spawn greater success. The "bone weariness of the damned" is simply not justified.²

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The Ethical Dimensions of Sustainability

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The lessons that sustainability has to teach are sometimes easier to recognize in *unsustainable* circumstances. Recent world events offer unfortunate insights on this. Much of the response to the Gulf oil spill of 2010 defies the most basic ethical components of sustainability. We have advanced knowledge somewhat from the catastrophic mistakes and have analyzed what caused the events technologically and even culturally.³ Suspending deep-water drilling during such study was reasonable, but lifting the moratorium was premature, given limited understanding of the longer-term effects on ocean ecology and the known unworthiness of blowout-prevention technology. Somewhere in the post-spill process, debate shifted from prevention to better containment, consigning the future to new thresholds of environmental injury. Even the remedial step of using dispersants to break up and sink the oil disregarded current boundaries of knowledge about the impacts of oil at far ocean depths. Attitudes toward the future preceding the spill were reckless, with no one bothering to consider worst cases. After an "impossible" combination of failures caused an "unfathomable" spill, the newly remade Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE) clung to typical modes of cost and benefit analysis and a static, full-throttled ethic of use.⁴ No more were terrible events too remote, distant, or speculative to justify the hesitance of a precautionary approach, yet the key actors refused to halt long enough to investigate the capacity of ocean systems to regenerate. Neither did they take equities seriously. Corporate profit and pursuit of flawed governmental energy policy suppressed warnings, and while some oil industry workers remained employed, others died for oil. More suffered grave damage to their fishing and tourism livelihoods, and Gulf residents generally faced threats to their cultural identity of place. Our descendants and the rest of us are yet to grasp the full impact of these events. This aftermath fails every ethical test of sustainability.

Recent catastrophe in Japan heralds another opportunity to move earnestly in a sustainable direction. So far, insistence on the central place of nuclear power in the world's energy future is not promising. Sustainability is a springboard for dialogue on these and other looming environmental problems. Sadly, ecological disasters are no longer unimaginable or even rare. However people disagree about sustainability on an operational level, they should coalesce around the fundamental ethical urgency of the idea.

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“Cooperation and deliberation are ethical values embedded in sustainability itself.”

Ecosystem Services and Markets

By Sara Vickerman

Background

During the last five to ten years, there has been increasing activity and interest in documenting the value—economic and otherwise—of ecosystem services. Ecosystem services are generally defined as the benefits that nature provides. These include climate regulation, carbon sequestration, water retention and filtration, flood control, nutrient cycling, habitat for fish and wildlife, and pollination. Nature also provides tangible products such as food, construction materials, and medicines, but for the purposes of this article, the emphasis will be on those services for which traditional markets do not exist. These are often referred to by economists as public goods.

There have been efforts to establish markets for some of these services, often as an alternative to compliance with existing regulations. Water-quality trading has evolved as an alternative compliance mechanism for meeting water-quality

standards under the Clean Water Act. Conservation banks have been created to replace lost or damaged endangered species habitat. Voluntary markets have also gained attention. Voluntary markets work when there is sufficient demand from potential buyers who may be interested in promoting sustainability activities to the public or shareholders, or to

Properly structured and implemented, market-based approaches and payments for ecosystem services have the potential to make conservation investments more efficient and effective.

prevent additional regulations. Carbon trading in the United States is an example of a voluntary market, since Congress declined to establish a cap-and-trade program similar to the one in Europe. Other voluntary programs include potential precompliance markets for resources that are likely to be regulated in the future, such as sage grouse

and gopher tortoise, where there is interest in avoiding listing under the Endangered Species Act by establishing credit-trading programs within the range of the species.

There is also growing interest in public or private programs that offer payments to landowners who provide ecosystem services. For example, Clean Water Services, a special district near Portland, Oregon, pays private landowners to restore streamside vegetation to shade creeks and reduce water temperature. The price tag is about one-tenth the cost of building cooling towers, and the community receives other aesthetic and ecological benefits from the riparian restoration projects.

Potential Benefits of Market-Based Approaches and Payments for Services

Properly structured and implemented, market-based approaches and payments for ecosystem services have the potential to make conservation investments more efficient and effective, to tap new funding sources for

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Ecosystem Services and Markets

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conservation, to expedite development in the right places while discouraging it in sensitive areas, to provide alternative revenue to rural landowners to supplement traditional commodity production, to provide opportunities for private organizations (nonprofit and for-profit) to generate income to support restoration and conservation projects, and to facilitate a transition to the use of more natural infrastructure, where appropriate, to address conservation challenges.

Potential Issues Associated with Payments and Markets for Ecosystem Services

Ecological

Like any policy instrument, programs that compensate people for providing public benefits can be implemented in a manner that inadvertently causes more harm than good. Because ecological values are unevenly regulated, some values may be enhanced at the expense of others. For example, some projects designed to sequester carbon can adversely affect biodiversity. Another risk is that landowners and others who have been supplying ecosystem services at no cost to the public may expect to receive compensation if others are being paid, and sufficient public funds for these purposes are not likely to be available. Efforts to grow markets to an ecologically relevant scale could shift decision-making to investors who are interested in making profits and have little knowledge of or concern about whether the ecological benefits are real. The lack of standardized measurements for ecological values can shift investment to things that are easily measured but may not be the highest priority. The transaction costs associated with building and supporting market infrastructure and quality assurances for the credits being sold may be higher than the conservation value of the conservation actions taken.

Legal

Generally, ecosystem services created an opportunity to offer larger, landscape-level approaches to conservation, yet many well-established environmental laws and regulations make this no small task. While laws have addressed some of the most visible and egregious sources of environmental degradation, they are focused on specific impacts and individual species and habitats. Also, many unregulated resources are not considered in decision-making processes, thereby leading to their decline and further fragmentation of the landscape. Consequently, building programs around ecosystem services will require a shift in thinking on how to approach environmental problems through existing and future legislation and regulation.

In addition, most ecosystem services have public-good characteristics and therefore present complex allocation questions in current property-law regimes. These ecosystem services will need definition in the private-property-rights context to create value and the incentive to protect or restore the ser-

vices. Questions remain as to the most effective approach to defining these rights, but it's likely that allocations will differ depending on the service.¹

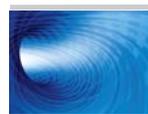
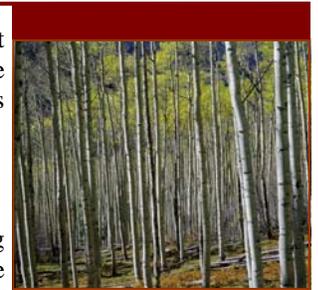
Oregon Legislative Approach

Oregon has led the country in adopting comprehensive legislation guiding the development of markets and payments for ecosystem services. In 2009, the legislature approved SB 513, which addressed the need for consistent measurement of ecosystem services, improved integration across agencies, and, perhaps most importantly, established a state policy to *support the maintenance, enhancement, and restoration of ecosystem services throughout Oregon, focusing on the protection of land, water, air, soil, and native flora and fauna*. The bill also directed a work group to make recommendations on a variety of unresolved issues. The recommendations include integrating existing conservation plans, using natural infrastructure in place of concrete and steel where appropriate, and considering the impact on ecosystem services in the state's land use program. HB 3109, pending before the 2011 legislature, implements many of the work group's policy recommendations and offers updated guidelines for mitigation programs to make them more effective ecologically.

What's Next?

Many policy issues remain to be untangled, but there are two critical paths ahead for ecosystem services and markets. The first is for the federal agencies to adopt more consistent and effective procedures to support the private sector in its efforts to use market-based approaches and payments for ecosystem services. For exam-

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Notes

¹ ORS 184.421

² Al Gore, *Earth in the Balance: Ecology and the Human Spirit* 241 (1992).

³ National Commission on the Deepwater Horizon Oil Spill and Offshore Drilling, *Deep Water: The Gulf Oil Disaster and the Future of Offshore Oil Drilling, Report to the President* vii-x (Jan. 2011).

⁴ See, e.g., John M. Broder & Clifford Krauss, *Regulation of Offshore Rigs Is a Work in Progress*, N.Y. Times: Apr. 17, 2011, available at <http://www.nytimes.com/2011/04/17/us/politics/17regulate.htm> (last visited Apr. 17, 2011).

Professor Reed Elizabeth Loder is an accomplished ethicist. She holds a Ph.D. in philosophy in addition to being a lawyer. The courses she has taught at Vermont Law School include Environmental Ethics, Legal Profession, Moral Philosophy for Professionals, and Property Law. She also has taught Ethics in the Professions at Dartmouth College.

Introducing Net Zero Building—Shifting From Green Building to Green Performance

By Clark Brockman

For the past decade or more, the world of green building has been dominated by the evolution of third-party certification systems for green buildings. The Leadership in Energy and Environmental Design (“LEED”) rating system of the U.S. Green Building Council (“USGBC”) has led the way in this regard, transforming the commercial building marketplace in the United States. Ten years ago, all facets of the building industry (i.e. owners, developers, designers, engineers and contractors) found the requirements of green building very challenging, and often costly. This was primarily because the services, expertise, processes and products needed for green buildings were poorly understood or nonexistent in many markets, thus driving the need for transformation. Now that LEED certification of commercial buildings is becoming more and more common, *and* is required for a majority of public buildings, *and* is now part of the building code for a small but growing number of cities, let’s look at a key “what’s next” trend for the green building movement.

“As it turns out, it is a game-changer to have a specific performance goal being clearly understood at the beginning of a project by all three key contractual parties: the building owner/developer, the design team, and the contractor.”



What’s next is a growing focus on the actual performance of buildings, delineated by the growing interest around “Net Zero Energy Buildings” (NZEBS), and “outcome based codes”. (Note: for the purposes of this article, an NZEB is a building that makes as much (or more) renewable energy on site in one year as it uses in that same year. For more on the sub-definitions of NZEB, please see the National Renewable Energy Laboratory white paper on the subject at: http://www.nrel.gov/sustainable_nrel/pdfs/44586.pdf.)

This focus on how buildings actually perform is easy to describe, yet profound in its implications. To understand this, one must first understand the metrics by which we currently measure buildings: building codes and certification systems. Both of these metrics are inherently prescriptive and predictive in nature. Said another way, both of these systems ask the development/design/construction team to declare or “promise” a certain level of performance across a wide range of systems and flows within the building based on modeling—from structural integrity to energy and water usage, a series of models are employed to predict how the building will perform under “design conditions” (e.g., earthquakes, very hot or cold days, very dry or wet years).

Regarding models, we need to remember George E.P. Box’s often-quoted phrase: “Essentially, all models are wrong, but some are useful.” The green building community has been living this axiom for the last few years, focusing intently on a variety of complex (and useful) models to help us understand, to some degree, how our high-performance buildings are going to work. After a decade of this work, enough LEED buildings

have been built and certified to provide some meaningful statistics on how they have actually performed as compared to how their models predicted. This analysis is well illustrated in a report entitled “Energy Performance of LEED® for New Construction Buildings,” published in 2008 by The New Buildings Institute. The report can be found at:

http://www.newbuildings.org/sites/default/files/Energy_Performance_of_LEED-NC_Buildings-Final_3-4-08b.pdf.

The study found: “that projects certified by the USGBC LEED program average substantial energy performance improvement over non-LEED building stock.” Another interesting result from the study, which looked at the actual performance of 121 LEED-certified buildings as compared to their predictive energy models, was that there were as many buildings outperforming their energy models as there were those performing worse than their models, and that very few buildings performed actually as modeled. These findings support Box’s axiom.

Interestingly, this study was widely cited as evidence that LEED buildings don’t live up to the promises made by LEED’s certification process. Yet such criticism is only evidence of the lack of understanding by those making these critiques of what is and isn’t promised by LEED and, in this specific case, by the energy models developed for the building analyzed. What this study did illustrate is the dramatic impact that the plug loads, or “people loads” within a building have on the building’s actual energy usage, and the inability of our current modeling techniques to isolate those plug loads, which are largely dependent on the building’s occupants and owners.

At this time, there is no codified way for energy modelers to accurately predict how people in a building will actually use energy, both in terms of the intensity of their use and the schedule of their use, but methods and protocols are beginning to be developed. The advent of real performance requirements on projects is driving the development of such protocols. Three examples of such performance requirements are:

- NEZB
- The Living Building Challenge, a recent addition to the world of green building standards which requires achievement of 20 “imperatives,” including net zero energy, net zero water and net zero wastewater performance. A copy of this standard can be

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Moving Green Building Forward: Carrots or Sticks?

By Marian Thomas and Chris Forney

Moving Green Building Forward: Carrots or Sticks?

CALGreen is the nation's first green building standards code. For the first time, *all* new buildings in the state of California are required to incorporate sustainable design and construction practices to gain planning department approval and pass building department inspections. Oregon has also played a leadership role in green building, choosing to focus its policies on incentives instead of requirements.

These "carrot" and "stick" approaches provide very different benefits and challenges for legislative bodies and the development and construction industries. Which will move green building forward faster? And does it make sense for other states to follow California's lead? The answers depend on how a few crucial aspects of CALGreen play out and on whether Oregon can keep supplying the financial incentives that the green building industry has come to rely upon.

America's First Green Building Code

On January 1, 2011, California's new statewide green building code went into effect. The intent of CALGreen is to create a *baseline* of green building requirements across the state. In 2006, California passed Assembly Bill 32, requiring a statewide reduction in greenhouse gas emissions to 1990 levels by 2020. The California Air Resources Board allocated more than 26 million metric tons of carbon dioxide reduction to energy efficiency upgrades and green building strategies.

While many cities in California already had existing green building ordinances in place, the requirements were not widespread, nor did they apply to every building type. Under CALGreen, even smaller jurisdictions without established green building ordinances are required to, at a minimum, reduce water consumption by 20 percent, meter outdoor water use, recycle construction and demolition waste, install low-emitting materials, and commission buildings larger than 10,000 square feet.

The new code also ensures that project scopes and occupancy types not governed under existing ordinances are now covered under the code. For example, all new hospital projects under the jurisdiction of the Office of Statewide Health & Planning must now comply with a list of green building standards. Prior to 2011, there were no green building requirements for healthcare projects in the state.

While CALGreen currently applies only to new ground-up construction, the next generation of the code is expected to incorporate requirements for existing building renovations. This will further ensure green building practices are integrated into all projects, re-

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found at: <https://ilbi.org/lbc/Standard-Documents/LBC2-0.pdf>.

- Energy Star, the U.S. E.P.A.'s program, which has created national branding around the measured energy performance of many things, from TVs to washing machines to buildings. The program website is found at: <http://www.energystar.gov/>.

As it turns out, it is a game-changer to have a specific performance goal being clearly understood at the beginning of a project by all three key contractual parties: the building owner/developer, the design team, and the contractor. This goal, which by definition requires proof of actual target energy performance over a period of at least one entire year, requires an entirely different contract between the parties than the contracts currently entered into by the design and construction industry. Not only does the contract performance period actively extend to some period beyond 12 months after occupancy (much longer than standard current design/construction contracts), but all three parties, including the owner/developer, retain key obligations during the performance period for

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Moving Green Building Forward: Carrots or Sticks?

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ardless of scope or size.

Unlike the LEED rating system, which is often complicated by limited scopes, a green building code can be broken down into specific measures. At the end of the day, the majority of CALGreen's requirements are neither overly stringent nor onerous, particularly given the state's existing energy code, and are a solid first step toward advancing green building through mandatory measures.

An Oregonian Approach—Offer Carrots

Oregon's legislative record on green building demonstrates a willingness to invest in sustainable infrastructure to spur economic development and promote environmental leadership, which is important to many Oregonians. The legislature's investment strategy has relied on incentives rather than requirements.

For example, the Oregon Built Environment & Sustainable Technologies Center ("Oregon BEST") convenes Oregon's academic research and development institutions and facilities with key innovation clusters of renewable energy and sustainable built environment products and services. The goal is to nurture public/private partnerships to transform marketable ideas and research into business opportunities and jobs. The legislature established Oregon BEST in 2007. Since its creation, the organization reports more than \$38 million in research revenue generated for Oregon from federal, industry, and foundation sources.

The state's Business Energy Tax Credit ("BETC") has also been an extremely popular incentive. Oregon has been exemplary in setting statewide sustainability goals (as articulated in the Oregon Revised Statute section 184.423) and giving the private sector, including private developers, the tools to build greener buildings that align with those goals. However, the 2011 Oregon Legislature faces a \$3.5 billion budget deficit and BETC has come under intense scrutiny. Cost overruns have created a backlash against Oregon's most successful green building and renewable energy incentive programs, which are now expected to fade into the sunset in 2012.

Oregon's Department of Administrative Services ("DAS") enacted a policy in November 2004 that requires, like many states, the construction and renovation of state-owned facilities to meet the LEED rating system's Silver level. The DAS mandate and similar requirements by the City of Portland and City of Eugene for green building performance criteria and certification are having an impact on municipally owned and operated buildings, but private developers are not required to comply.

For many private developers, BETC has taken the edge off higher upfront costs needed to achieve long-term energy savings that ease pressure on the failing utility grid and to create healthier buildings for occupants. LEED requirements for state facilities, on the other hand, have emphasized operational cost savings and benefits over initial costs and have arguably contributed greater

long-term value to taxpayers. As a result, Oregon ranks fifth in the nation for LEED-certified green buildings, surpassing other states with far more buildings and more diverse economies.



Challenges Ahead: Heavy Sticks and Withered Carrots

As the stick and carrot methods play out in the post-recession economies, different types of challenges emerge. Building green has nearly become the status quo in many metropolitan areas, so developers may not want to move backwards and create less green, less competitive buildings now that the market as a whole has moved forward. But they may also not be economically bullish enough yet to pursue the more aggressive goals for steadily increasing performance, such as 2030 Challenge goals for moving toward carbon-neutral buildings.

Oregon's budget deficit is forcing the BETC program to wind down and it's unclear whether green building in the state will maintain its momentum after the state tax incentive money dries up. A fortunate legacy of the BETC program is that there is now a concentration of green building practitioners experienced in LEED who are better trained to meet the challenge of developing more sustainable buildings on shrinking budgets.

The challenges of CALGreen's stick method are in the minutiae of compliance measures new to both cities and developers. For instance, many have assumed documentation for all measures, mandatory and voluntary, would be included in the construction drawings or specifications submitted to and reviewed by the building department as part of the plan check. However, each building department can mandate its own documentation and compliance review process as well—from requiring third-party reviews, to bringing on a licensed "Green Building Compliance Professional of Record" or "Green Building Certifier" (at the owner's expense) to sign off on the green measures in the project.

Given the budget crisis impacting many municipalities over the last few years, numerous positions in planning and building departments have been eliminated. Cities now have less capacity and expertise to review green building-specific documentation. In addition, municipal requirements for third-party project reviews are creating concern about liability. As a result, few licensed professionals are willing to sign off on the "CALGreen features" in a project as required by cities such as San Francisco.

At the same time, CALGreen includes requirements that may extend beyond the occupancy permit. For instance, building commissioning, which is mandated for projects over 10,000 square feet, requires a commissioning agent to perform an onsite

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Carrots or Sticks?

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review to verify that all energy-related systems are calibrated properly and operating as designed. This process often occurs after occupancy, when the building systems are running in normal operating conditions. Enhanced commissioning requires the commissioning agent revisit the site within 10 months following occupancy to review the systems again.

This raises a number of questions: How do we demonstrate compliance with a requirement that extends past the occupancy permit? What happens if the commissioning duties are never fulfilled? Will cities incorporate fines or penalties? Who is responsible at that point? As projects proceed forward through building department approvals, it is clear that many of these compliance issues will need to be addressed.

Looking Forward – What to Watch For

Given the different advantages and challenges of mandatory codes and incentives, what should people look for to decide which method produces better results? In Oregon, the extent to which development in Oregon will maintain its current green adoption rate without the BETC program incentives will be a strong indicator of whether incentives can leave more than a temporary legacy. For CALGreen's code method, lingering questions remain about who will oversee compliance of new green building codes as state government deficits grow and building department staffs shrink.

One thing remains clear: every state and private company faces long-term negative economic impacts as a result of climate change, over-consumption of limited resources, and diminishing critical ecological services for clean air and water. It also remains clear that those private companies and public agencies that can successfully navigate the relatively short-term budget challenges—while remaining true to the values of sustainability—will emerge as the long-term winners and leaders as the economy recovers.

Marian Thomas and Chris Forney are sustainability advisors at Brightworks, a consulting firm recognized as a leading provider of end-to-end sustainability services in the built environment and for organizational strategy.



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successful achievement of the project's energy performance goal. This point is key because it requires all three parties to acknowledge their roles in the achievement of actual energy performance and to work as team members throughout the post-occupancy performance period to achieve success. For a project with aggressive performance goals, the design team, contractor, and owner need to collaborate from early in the design process on everything from accurate occupancy and schedule predictions (led by the owner) to understanding the building's response to its climate (led by the design team) to the best way(s) to construct the building and its interrelated systems to best perform within the established constraints (led by the contractor and its key subcontractors).

In addition to changing the way the design/construction/owner teams work together, the growing focus on actual performance of buildings is also being seen in the development of a new type of building code: outcome-based codes. These codes will govern how buildings actually perform in terms of their energy use. Initially, this is being explored in the context of existing buildings, since the United States' existing building stock is responsible for almost 40 percent of the country's CO₂ emissions (according to the U.S. Energy Information Agency). A report on this subject was recently released by the National Trust for Historic Preservation and the New Buildings Institute and can be found here:

<http://www.newbuildings.org/sites/default/files/SeattleOutcomeBasedEnergyCodesReport.pdf>.

As a firm working on multiple projects with aggressive performance targets (in addition to the industry norm prescriptive, predictive metrics), SERA Architects has found this evolving process to be inspiring, and unnerving at times, as we work with our clients and their general contractors to move toward a new way of making buildings in which the primary parties to the contract(s) need to work as partners in order to achieve success. We find it to be a richer and more interesting prospect than the status quo alternative, and we are finding that it is helping us to make better buildings as we all get better and better at collaborating in the process.

Clark Brockman is the Director of Sustainability Resources Group and Associate Principal at SERA Architects. He is the recipient of BetterBricks Awards in both the Designer and Advocate categories (2007 and 2011, respectively).

The Long View

Photo by J. Michael Mattingly

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Editor's Note:

Thank you for reading *The Long View*. Your input and suggestions on content are welcome.
E-mail SFSeditor@millernash.com to comment.

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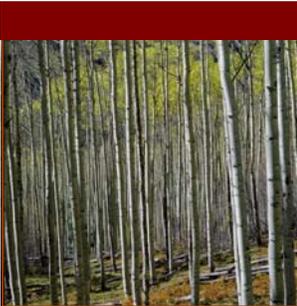
Consider This...

“Almost anything you do will seem insignificant, but it is very important that you do it.”

~ M.K. Gandhi

Ecosystem Services and Markets

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ple, federal agencies could pool funding to finance the development of consistent, credible, and practical methods to measure water quality and quantity, carbon sequestration, and biodiversity. All agencies need to figure out how to streamline the process for creating, selling, and buying multiple types of ecosystem service credits.

The second important action is to fully implement pilot projects that demonstrate how markets and payments for services can produce improved results at a lower cost than some existing, opportunistic approaches. This will require careful integration with existing conservation programs that are already producing tangible benefits. These pilot projects can also help to further identify the legal implications of ecosystem services programs, and aid in figuring out ways to address laws and regulations that could impede progress, and identify legislative opportunities to support ecosystem services.

This is the worst possible outcome for ecosystem services: “*Conservation has a history of placing great faith in new ideas and approaches that appear to offer dramatic solutions to humanity’s chronic disregard for nature . . . only to become disillusioned with them a few years later.*”² The best possible outcome is that ecosystem services will add new, effective tools to the conservation toolbox.

Notes

¹ For a thorough discussion on some of the legal and policy issues surrounding ecosystem services, see J.B. Ruhl, Steven E. Kraft & Christopher L. Lant, *The Law and Policy of Ecosystem Services* (2007).

² Kent. H. Redford & William M. Adams, *Payment for Ecosystem Services and the Challenge of Saving Nature*, 23 *Conserv. Biol.* 785 (2009). (emphases added)