

ARTICLES

AT HOME WITH NATURE: EARLY REFLECTIONS ON GREEN BUILDING LAWS AND THE TRANSFORMATION OF THE BUILT ENVIRONMENT

BY

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Green building, which was formalized only fifteen years ago to promote healthier and more efficient building practices, has exceeded virtually all predictions of its potential. Green building has entered markets in almost every major city in the United States, while developing as a sophisticated basis for investment, human health, and conservation. Stated otherwise, green building is no longer a fringe environmental policy and, as argued in this Article, is even shedding its markings as a political ideology.

This Article examines two parallel but distinct consequences of the green building movement. First, by considering the major challenges to green building, this Article examines the conditions for success of the movement—how green building has become acceptable to consumers, the construction industry, and building regulators. Second, this Article explores the relationship between the goals and methods of green building laws and argues that green building compels a transformative, constructivist effect on humans' place and position in nature. This Article ultimately argues that green building is special because of its pluralistic approach to regulation, ethics, and even to nature itself.

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I. INTRODUCTION

Buildings are one of the distinguishing elements of human civilization, but if they are not constructed thoughtfully they can waste precious natural and financial resources, as well as harm the environment and the health of people who use them.¹

Although it is generally accepted that the built environment (homes, office buildings, schools, roads, dams, etc.) imposes adverse but avoidable impacts on the natural environment, we have had some trouble identifying what changes to make in our building practices.² One application of sustainability principles to building design, construction, and operation—known as green building—has provided some guidance on how to change the way we build. Green building represents the notion that by consciously

¹ S.F., CAL., ENV'T CODE ch. 7, § 700, <http://www.municode.com/Resources/gateway.asp?pid=14134&sid=5> (last visited July 19, 2009).

² See *infra* Part III.A.

employing less wasteful construction methods, designing more efficient building systems, and using more friendly (earth-friendly and human-healthy) materials, the built environment can remove the excesses that characterize our carbon and (more generally) ecological footprint.³

What appears most notable about the green building movement is the rate of its success: what arguably started only fifteen years ago as “no more than a back of the napkin idea”⁴ has exceeded virtually all predictions and expectations of its potential.⁵ In November of 2006, *Building Design and Construction* published a white paper entitled *Green Buildings and the Bottom Line*, the fourth in a series of reports on sustainability, green building, and the real estate financing industry.⁶ After describing past uncertainty over whether green building *could* survive, the white paper delivered a definitive statement laying to rest any doubts: “We can now safely report that green building is alive and well and active in virtually every major city in America.”⁷ The U.S. construction market in all sectors (public and private, commercial, residential, industrial, educational, etc.) has entered the green building market in force and is expected to account for five to ten percent of all new construction starts in the year 2010.⁸ At the center of a new and growing collective consciousness, green building is hot.

³ Green building “encompasses ways of designing, constructing, and maintaining buildings to decrease energy and water usage and costs, improve the efficiency and longevity of building systems, and decrease the burdens that buildings impose on the environment and public health.” CITY OF BOSTON, MAYOR MENINO’S GREEN BUILDING TASK FORCE REPORT EXECUTIVE SUMMARY 4 (2004); see also Bradford Swing, *Project-Based Policy Development: Building the Case for Boston’s Green Building Policy*, 11 N.Y.U. J. LEGIS. & PUB. POL’Y 33, 48 (2007) (quoting Mayor Menino’s Task Force Report).

⁴ Rick Fedruzzi, President, Chief Executive Officer & Founding Chairman of the U.S. Green Bldg. Council, Opening Plenary Remarks at Greenbuild 2008 (Nov. 19, 2008), available at http://www.usgbc.org/Docs/News/Speech_Rick.pdf. The quote is not intended to suggest that the goals, concepts, and techniques involved in green building suddenly materialized only fifteen years ago. Rather, many of the ideas implemented in green building codes—such as certain materials, passive designs, and solar equipment and design—have been used for decades, and in some cases, centuries. See, e.g., BLDG. DESIGN & CONSTRUCTION, WHITE PAPER ON SUSTAINABILITY 4 (2003), available at <http://www.usgbc.org/Docs/Resources/BDCWhitePaperR2.pdf>. The quote specifically refers to the Leadership in Energy and Environmental Design (LEED) programs developed by the U.S. Green Building Council (USGBC). See generally Fedruzzi, *supra*. However, underlying this Article is the notion that the recent activities of the USGBC and similar groups have turned the ideas of green building into a viable and successful movement. As such, I would suggest that the quoted statement does refer to something more extensive than the LEED programs.

⁵ Fedruzzi, *supra* note 4.

⁶ BLDG. DESIGN & CONSTRUCTION, GREEN BUILDINGS AND THE BOTTOM LINE (2006), available at <http://www.bdcnetwork.com/contents/pdfs/whitepaper06.pdf> [hereinafter BDC WHITE PAPER].

⁷ *Id.* at 1.

⁸ MCGRAW-HILL CONSTR., RESIDENTIAL GREEN BUILDING SMARTMARKET REPORT 4 (2006), available at <http://www.ferriercustomhomes.com/MHCResidentialGreenBuildingSmartMarketReport.pdf> [hereinafter MCGRAW-HILL SMARTMARKET REPORT]. At this point in time, only three years after this prediction, McGraw-Hill’s original figure appears to be too conservative. McGraw-Hill has recently noted that, even in this troubled economy, approximately 70% of homebuyers would prefer a green-built home, and that 20–25% of all new commercial and institutional construction starts will be green in 2013. MCGRAW-HILL CONSTR., SMARTMARKET REPORT: THE GREEN HOME CONSUMER 2 (2008); MCGRAW-HILL CONSTR., 2009 GREEN OUTLOOK: TRENDS DRIVING CHANGE 2 (2008).

Why has green building become so popular? Of course, one easy answer—the most common answer—is that the threat of climate change has found the mainstream ear, and green building provides some response to our current understanding of the linkage between past consumptive practices and the increasing threat of climate change.⁹ The easy answer, however, may not account for the breadth of green building's popularity; given the birth of green building from the principles of sustainability, and that sustainability was largely championed as an environmental cause, we might have expected a property backlash against green building to match that seen in previous environmental regulations.¹⁰ If curtailing consumptive practices was the only perceived benefit of green building, the trend might be understood simply as the next incremental step in the otherwise embattled evolution of the environmental movement into state and local regulation.

The development of green building laws illustrates that there is something special involved. The thought behind efficient, “greener” building is that a more informed approach to the built environment can result in buildings that complement the natural environment, instead of conflict with it.¹¹ Yet, in green building there is no attempt to *prevent* human interaction with the environment.¹² Green building assumes that construction will occur, that building materials are needed, and that land and natural resources will be transformed, used, or otherwise displaced—but meanwhile is reflective of the fact that every building causes avoidable environmental impacts.¹³ Meanwhile, the pluralistic and informational approach of green building has accommodated a convergence of economics and environmental protection, of resource use and nonuse, and of anthropocentrism and the needs of nature's Others.¹⁴ The success of this convergence suggests that the environmental

⁹ Bradford Swing categorically attributes the “key underlying issue motivating green building work [to be] . . . the threat of climate change.” Swing, *supra* note 3, at 50. Likewise, Edna Sussman identifies the primary goal of green building to be a mitigating measure against carbon emissions and climate change. Edna Sussman, *Reshaping Municipal and County Laws to Foster Green Building, Energy Efficiency, and Renewable Energy*, 16 N.Y.U. ENVTL. L.J. 1, 2 (2008). In contrast, Del Percio attributes the green building movement in general to the “sick building syndrome” of the 1960s and 70s. See Stephen T. Del Percio, *The Skyscraper, Green Design, & the LEED Green Building Rating System: The Creation of Uniform Sustainable Standards for the 21st Century or the Perpetuation of an Architectural Fiction?*, 28 ENVIRONS: ENVTL. L. & POL'Y J. 117, 151 (2004).

¹⁰ The market counterpart might be less passionate, but by no means less obvious: Wachovia's Bill Green is reported to have stated that “[i]f you see two buildings, and one has good views and the one has good indoor air quality, the one with good views will always win.” BDC WHITE PAPER, *supra* note 6, at 17. Green's point, of course, was that features contributing to market value (based on how the market *perceives* value) are more influential—and will “win”—than features which might be understood as mere preference. Yet, as discussed herein, green building challenges our prior perceptions of value in the marketplace.

¹¹ See CITY OF BOSTON, *supra* note 3.

¹² See *generally id.* (describing how green building takes advantage of local climate and landscape conditions to conserve resources and enhance the quality of life).

¹³ See N.Y., N.Y., Local Law 86, § 1 (Sept. 15, 2005), *available at* http://www.nyc.gov/html/dob/downloads/pdf/l1_86of2005.pdf (describing the need for construction and the potential for increased efficiency).

¹⁴ See CITY OF BOSTON, *supra* note 3, at 1.

ethics of sustainability, governing the human *use* of the environment, is transforming the manner in which we build in the environment.

This Article examines green building laws to illuminate two important contributions from this movement: first, the manner in which these laws introduced green building into the regulatory process governing building construction has allowed the innovative ideas of sustainability to develop in ways that are ethically progressive and market friendly, and as such, appear fundamentally distinct from other environmental laws; and second, that the principles of green building suggest an effective approach to environmental protection that is ethically pluralistic. In Part II, this Article describes and further defines green building to illustrate the goals at issue in the movement. Part III turns to the development of green building laws in the United States to understand how these new ideas were able to navigate practical and legal challenges, and also to identify the more significant early successes of the movement. Part IV considers how the early successes are influencing the direction of green building and green building laws; given the manner in which green building laws have developed, this Article suggests that challenges are unlikely and, in any event, unlikely to be successful. Finally, Part V returns to the principles of sustainability and green building to examine the manner in which the pluralistic foundations of green building operate to expand the ethical implications of the built environment beyond the traditional human-centered, limited duties to the natural environment.

II. WHAT IS GREEN BUILDING?

Probably no urban activity has greater impact on human health and the environment than building construction and use. Enormous quantities of resources are used during building construction, renovation and operation, and the production of these resources has substantial environmental impacts. It is estimated that 40% of raw materials consumed globally are used for buildings. In addition, in the United States, commercial and residential buildings are responsible for approximately 65% of electricity consumption, 30% of greenhouse gas emissions, 12% of potable water use and 136 million tons of construction and demolition waste annually. Also, many indoor building materials release hazardous toxins, impairing indoor air quality and reducing occupant health and productivity. [Because much electricity is locally produced] and many buildings use oil or natural gas for their heating and hot water, energy consumption in building operation translates into greater local pollution, including emissions of sulfur dioxide, nitrogen oxides, particulate matter, carbon dioxide, and mercury. These pollutants contribute to respiratory disease, heart disease, smog, acid rain, and climate change. Moreover, as energy demand rises, so does our reliance on dirty, inefficient power plants, as well as the nation's dependence on foreign oil and natural gas.¹⁵

A historical understanding of the built environment might illustrate the difference between construction that sets buildings into and in harmony

¹⁵ See N.Y., N.Y., Local Law 86, § 1 (Sept. 15, 2005).

with an existing environment and construction that transforms and comes to characterize the natural environment. Although we may individually aspire to the former, our civilized tendencies toward the latter may be due to the *manner* in which we use the environment: we cut live trees to build homes (rather than reuse building materials); we use cheap (and easy to manufacture) chemicals to treat and decorate our homes; we value larger homes on larger lots; and we generally leave the lights on, toilet and faucet running, and (to some) we shower too often.¹⁶ As a result, in the United States, buildings drain immense amounts of energy and water and generate astounding quantities of waste.¹⁷ In the meantime, we arguably have not thought deeply enough about our choice of construction methods and building materials—both for structural durability, but also for indoor health and air quality implications.¹⁸ Given the foregoing, our human, built environment might be summarized as a bit short on wisdom, a bit short of foresight, and a bit long on economic interests—economic returns have historically taken priority over the “preference” for preservation of the natural environment.¹⁹ At least, environmental quality has been understood by many as a second-rate priority, barely even qualifying as a human need.²⁰

Humans are emerging from the traditional perspective with a new sense of place and relationship with nature. EPA recently announced that “America is shifting to a ‘green culture’ where all 300 million citizens are embracing the fact that environmental responsibility is everyone’s responsibility.”²¹ The past fifteen years have seen an explosion in green building—indicating a dramatic market increase in both the awareness of and participation in realizing the potential benefits of higher-performing buildings—and a corresponding explosion in the incorporation of green building standards into the laws governing building construction.²² Why does this matter? According to the U.S. Green Building Council (USGBC), there are presently over 120 million homes in the United States, with an estimated

¹⁶ See generally *id.* (describing the unsustainable practices associated with traditional building construction, renovation, and operation).

¹⁷ See U.S. ENVTL. PROT. AGENCY, SUPPLEMENTAL ENVIRONMENTAL PROJECTS: GREEN BUILDING ON CONTAMINATED PROPERTIES 1–2 (2004), available at <http://www.epa.gov/compliance/resources/policies/cleanup/brownfields/sep-redev-fs.pdf>.

¹⁸ See U.S. Dep’t of Labor, Occupational Safety & Health Admin., Indoor Air Quality, <http://www.osha.gov/SLTC/indoorairquality/index.html> (last visited July 19, 2009) (discussing indoor air quality and its health implications.).

¹⁹ See Mark Sagoff, *At the Shrine of Our Lady of Fatima, or Why Political Questions Are Not All Economic*, 23 ARIZ. L. REV. 1283, 1285 (1981) (for a discussion of how economic interests influence building decisions).

²⁰ See generally Robert Thompson & William Green, *When Sustainability is Not a Priority: An Analysis of Economic Trends and Strategies*, 6 INT’L J. SUSTAINABILITY HIGHER EDUC. 7, 8 (2005) (discussing how very few institutions of higher learning have made sustainability a priority).

²¹ U.S. Env’tl. Prot. Agency, Go Green! Monthly Newsletter, <http://www.epa.gov/newsroom/gogreen/index.htm> (last visited July 19, 2009).

²² See Del Percio, *supra* note 9, at 127–32 (discussing the history of green building from various American disciplines); Swing, *supra* note 3, at 52 (noting that less than a decade ago green building was still an idea in its infancy); Charles J. Kibert, *Greenbuildings: An Overview of Progress*, 19 J. LAND USE & ENVTL. L. 491, 497–501 (2004) (describing the global economic influences on green building development).

two million new homes constructed every year.²³ Even without considering the opportunities in public buildings, commercial construction, renovations, multi-family, and industrial buildings, we have at least two million opportunities every year to minimize the impacts of construction on the depletion of natural resources, greenhouse gas emissions, human health, and generation of waste.

There have been many approaches to green building, resulting in several definitions.²⁴ Each seems accurate, except that some appear more comprehensive than others.²⁵ For instance, the term “green building,” has been used in a manner coterminous with the term, “sustainability.”²⁶ In this use of the term, the goals of improved environmental quality through land development account for the assimilation of human presence in an environment characterized by scarcity. This approach exemplifies a more holistic, comprehensive approach to environmentally conscious building practices; examples of such green building might include smart growth planning on a comprehensive and inclusive scale, cluster zoning, comprehensive environmental planning, water conservation and aquifer

²³ U.S. GREEN BLDG. COUNCIL, LEED FOR HOMES PROGRAM: PILOT RATING SYSTEM 4 (version 1.11a 2007), *available at* <http://www.usgbc.org/ShowFile.aspx?DocumentID=2267>. In 2004, EPA reported approximately 76 million residential and 5 million commercial buildings in the United States. *See* U.S. ENVTL. PROT. AGENCY, *supra* note 17, at 1.

²⁴ Kibert, *supra* note 22, at 492.

²⁵ Charles Kibert details the difficulty in defining terms this early in the green building movement as follows:

Perhaps the most complex terminology used is *sustainable construction* which encompasses the notion of green building, but, in the spirit of sustainable development, addresses the social and economic issues of habitat, as well as the community context of buildings. ‘Green’ buildings are a subset of sustainable construction, representing simply the structures. In effect truly sustainable ‘green’ commercial buildings that are designed to be sustainable in the sense of renewable energy systems, closed materials loops, and full integration into the landscape are scarce to non-existent. High performance green buildings represent the current state of best practices with respect to attempting to reach the Holy Grail of sustainable building. In the present era, green buildings generally represent incremental change rather than radical rethinking of the built environment. However this is an important first step and the green building landscape is populated with ever more experiments representing the trial and error process of getting to sustainable buildings.

Kibert, *supra* note 22, at 492.

²⁶ This Article is specifically concerned with building codes, laws, and ordinances that govern a “whole systems” approach to building design, construction, and operation. Therefore, this Article does not address other sustainability approaches and sustainable development codes that may be designed with similar purposes in mind. Examples might include green procurement strategies, rainwater harvesting ordinances, efficient irrigation laws, and gray-water use regulations, among others. *See, e.g.*, City of Costa Mesa, Cal., City Council Agenda Report on Draft Council Policy 500–14, at 7–8 (Sept. 4, 2007), *available at* <http://www.ci.costa-mesa.ca.us/council/agenda/2007-09-04/090407MunicipalGreenPolicy.pdf> (specifying low-water use landscaping, with consideration given for artificial turf for public recreational fields); Dallas, Tex., Resolution on Green Cement Purchasing Preference (May 23, 2007), *available at* http://greendallas.net/pdfs/cement_kiln_ordinance.pdf (identifying a preference for awarding bids to public construction proposals that procure “green cement”—defined by the process in which the cement is produced).

recharge limitations on impervious surfaces, open space and habitat set asides, infrastructure planning, and so on.²⁷ This Article will refer to green building as the attempt to govern the construction process itself, involving the use of environmentally conscious building design, building methods, and materials which incorporate principles of human health and conservation of natural resources. This more specific meaning of the term “green building” is not philosophically distinct from the broader category, but focuses more on 1) reducing the impacts on the natural environment from the construction process itself, such as siting, the quantity of materials used, their sources, and the waste created in the construction process, and 2) the long-term performance of buildings on both the natural and built environment, including the effect of design and materials used on energy and natural resource consumption, and preservation of indoor air quality and waste reduction.

Green building goals are implemented in “green building codes” and other development regulations that seek to modify the prescriptions in conventional building codes.²⁸ The development of green building guidelines and rating systems have consistently used “whole system” assessments, taking into account building location, materials, design, construction methods, and building operating systems.²⁹ Although green building codes are intended to foster innovation and flexibility, they are concurrently designed to standardize green building by identifying actions that are deserving of individual credits towards the efficiency, low-impact, or other aspects of the “greenness” of buildings. In the accumulation of green credits, builders and buildings can achieve various “shades of greenness”—the Leadership in Energy and Environmental Design (LEED) rating system currently offers four levels of green, entitled Certified, Silver, Gold, and Platinum—by weighing the attributes and green elements that are incorporated into the building design,

²⁷ See generally James A. Kushner, *Smart Growth: Urban Growth Management and Land-Use Regulation Law in America*, 32 URB. LAW. 211, 212 (2000) (discussing the current state of the law in relation to smart growth initiatives); Patricia E. Salkin, *The Smart Growth Agenda: A Snapshot of State Activity at the Turn of the Century*, 21 ST. LOUIS U. PUB. L. REV. 271, 272 (2002) (reviewing state smart growth activities).

²⁸ Some of the specific practices employed in green building practices are occasionally shared in conventional homes and in conventional building codes. To some extent, many if not most buildings can be considered green. See ALLAN M. BILKA, INT’L CODE COUNCIL, ICC GREEN BUILDING WHITE PAPER 1–2 (2007), available at http://www.iccsafe.org/news/green/ICC_Green_Building_White_Paper.pdf; see also INT’L CODE COUNCIL, ICC GREEN BUILDING WHITE PAPER II: THE CASE FOR THE INTERNATIONAL CODES AS THE FOUNDATION FOR GREEN AND SUSTAINABLE BUILDING PROGRAMS AND STANDARDS, available at www.iccsafe.org/news/green/ICC_Green_Building_White_Paper2.pdf. Green building, however, is based less on specific practices than it is on general principles, encouragement for innovation, and ideals of quality of life within a larger community. This is not to say that they are necessarily incompatible or contrary to one another. Nevertheless, the two are distinct, which provides an important point about green building: As the green building movement presented itself in an already existing, developed industry of construction, it was apparent that the ideas in green building were new.

²⁹ U.S. GREEN BLDG. COUNCIL, LEED FOR HOMES RATING SYSTEM, at iv (2008), available at <http://www.usgbc.org/ShowFile.aspx?DocumentID=3638> [hereinafter LEED FOR HOMES]; U.S. GREEN BLDG. COUNCIL, LEED FOR NEW CONSTRUCTION AND MAJOR RENOVATIONS 6–7 (Version 2.2, 2005), available at <http://www.usgbc.org/ShowFile.aspx?DocumentID=1095> [hereinafter LEED NC].

while also allowing for “green” building claims to maintain integrity by siphoning out false and exaggerated claims.³⁰

To understand what is at stake and how the general principles of green building are applied in the design, methods, and materials of construction, it is helpful to stroll through the manner in which green building rating systems operate. Of the different rating systems, LEED, developed by the U.S. Green Building Council, is the most prevalent so far.³¹ Among the different LEED systems, LEED for New Construction and Major Renovations (LEED NC)³² has been the most frequently employed due in large part to its age and subject matter.³³ However, because this Article is as much concerned with the benefits of green home construction, the analysis of green building applications will also discuss LEED for Homes. In both systems, LEED scores the building in six categories: Sustainable Sites (SS), Water Efficiency (WE), Energy and Atmosphere (EA), Materials and Resources (MR), Indoor Environmental Quality (EQ), and Innovation and Design Process (ID).³⁴ LEED for Homes considers two additional categories of greenness, Location and Linkages (LL) and Awareness and Education (AE), and also makes adjustments for home size (in recognition that a smaller home, on average, will impose less of an impact on most of the green categories over the lifecycle of the structure).³⁵

The first category in green construction is identified as the Sustainable Sites element, which focuses builders³⁶ on minimizing damage to the environmental characteristics of a given building site.³⁷ This element favors building locations that “do not include sensitive site elements and restrictive land types”³⁸ (e.g., sites rating high in ecosystem services, such as high-functioning wetlands, floodplains, and other natural areas), locations that

³⁰ LEED FOR HOMES, *supra* note 29 (“By recognizing sustainable design and construction in homes nationwide . . . homebuyers can more readily identify third-party verified green homes.”).

³¹ The USGBC is a nonprofit organization comprised of various members from all aspects of the building industry. U.S. Green Bldg. Council, About USGBC, <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=124> (last visited July 19, 2009).

³² LEED NC, *supra* note 29. LEED NC Version 2.2 is the basis for registration of applicable projects after January 1, 2006. *Id.* For other similar and comparable green building programs, see notes 130–34, 235, and accompanying text. Generally, the rating systems share the core elements discussed herein, with some variations according to philosophies, regional preferences, and needs.

³³ See, e.g., Tremco, Inc., LEED Information, <http://www.tremcosealants.com/commercial/green/leed.asp> (last visited July 19, 2009) (“LEED-NC is the most common program for sustainable building design in use today.”).

³⁴ LEED FOR HOMES, *supra* note 29; LEED NC, *supra* note 29.

³⁵ LEED FOR HOMES, *supra* note 29.

³⁶ For purposes of simplicity, this Article generally uses the term “builder” to refer broadly to the various professionals engaged in the process of building construction, including but not limited to architects, engineers, contractors, and designers.

³⁷ LEED FOR HOMES, *supra* note 29, at 33.

³⁸ LEED NC, *supra* note 29, at 9. Note that LEED NC combines the on-site and off-site impacts into the Sustainable Sites category, encouraging consideration of both the site selection and use of the building site. See *id.* at 8–23. However, LEED for Homes separates the two into the Sustainable Sites category for on-site considerations, and Location & Linkages for off-site impacts. See LEED FOR HOMES, *supra* note 29.

minimize site and region disruption³⁹ (e.g., site close to existing infrastructure and public transportation, or those for which alternative transportation is accessible), and even locations that are brownfield sites, where soils and groundwater have been contaminated, but where the site might be recaptured by employing sustainable land use practices.⁴⁰ The site stewardship purpose of SS favors compact, dense development,⁴¹ landscaped in a manner to minimize water demand⁴² and in consideration of alternative, nontoxic pest control techniques.⁴³ LEED also requires storm water management with the incorporation of best management practices,⁴⁴ and builders are encouraged to incorporate innovative storm water control strategies into their projects, such as green roofs.⁴⁵

The Water Efficiency element of green building recognizes the immense, and often unnecessary, consumption of potable water in construction and occupied buildings.⁴⁶ The chief aim of WE design is to reduce water consumption in building construction and operations, and at occupied sites, which impacts both the sustainability of natural resources use and the costs of building use.⁴⁷ As a result, credits may be obtained by implementing a variety of water conservation measures, including choices in landscaping (native and water efficient landscaping) and the source of irrigation water, with the goal of reducing potable water use in landscaping irrigation.⁴⁸ By focusing on consumptive practices, the WE standard seeks to change water use practices, but not the purposes to which water is put; WE encourages the capture of rainwater, on-site treatment and gray-water reuse, and installation of water conserving fixtures throughout buildings.⁴⁹

Building for Energy and Atmosphere focuses on reducing the energy needs of occupied buildings.⁵⁰ As the largest source of green credits in the LEED rating system, EA credits are also the most clearly tied through empirical data to the felt need to reduce our reliance on energy production and its atmospheric effects through design, materials, and operations of buildings (e.g., insulation, windows, and more efficient heating and cooling equipment).⁵¹ Credits are awarded for efficient energy systems (including meeting Energy Star requirements⁵²) and alternate power sources, and

³⁹ LEED NC, *supra* note 29, at 10.

⁴⁰ *Id.* at 11.

⁴¹ LEED FOR HOMES, *supra* note 29, at 44.

⁴² *Id.* at 35.

⁴³ *Id.* at 42.

⁴⁴ *Id.* at 33. LEED NC requires that builders meet the more stringent of either local erosion and sedimentation control standards, or stormwater discharge requirements under the Clean Water Act National Pollution Discharge Elimination System regulations. LEED NC, *supra* note 29, at 8, 18–19.

⁴⁵ LEED NC, *supra* note 29, at 20–21.

⁴⁶ *Id.* at 24; LEED FOR HOMES, *supra* note 29, at 46.

⁴⁷ LEED NC, *supra* note 29, at 24–25; LEED FOR HOMES, *supra* note 29, at 46–48.

⁴⁸ LEED NC, *supra* note 29, at 25–26; LEED FOR HOMES, *supra* note 29, at 46.

⁴⁹ LEED NC, *supra* note 29, at 28; LEED FOR HOMES, *supra* note 29, at 46, 52–53.

⁵⁰ LEED NC, *supra* note 29, at 29; LEED FOR HOMES, *supra* note 29, at 55.

⁵¹ LEED FOR HOMES, *supra* note 29, at 58, 62, 64–72.

⁵² *Id.* at 55.

credits encourage use of alternate power both produced on-site (such as photovoltaic systems) and taken from the grid (such as wind power).⁵³ Credits are also available for monitoring the building's energy consumption one year after occupancy.⁵⁴

The Materials and Resources element aims at reducing the correspondence between construction practices and the burden placed on natural resources, either due to use of resources for construction materials or how construction wastes are disposed.⁵⁵ Hence, MR credits are awarded by implementing a construction plan which reduces the generation of waste,⁵⁶ uses regionally extracted or manufactured materials,⁵⁷ diverts reusable materials from collection in landfills, and reduces the burden on natural resources by focusing on materials reuse.⁵⁸ Credits are also awarded for maintaining structural elements in existing buildings⁵⁹ and for projects that incorporate the salvage or reuse of building materials, products, and furnishings.⁶⁰ Of course, materials that are inefficient or constitute contamination sources ought to be replaced or eliminated, including mechanized and plumbing systems, windows, and treated products.⁶¹

The Indoor Environmental Quality element applies a comprehensive approach to the relationship between the indoor environment and comfort, health, and productivity.⁶² Reports indicate that, "[o]n average, Americans spend more than 90% of their time indoors, yet the air in new homes can be ten times more polluted than outdoor air."⁶³ Green building attacks indoor air quality problems by focusing on building operations—such as inadequate ventilation, moisture infiltration (e.g., contributing to molds), and inadequate dust filtration—and the presence of construction materials containing volatile organic compounds (VOCs),⁶⁴ as well as other contaminants. A building might implement EQ goals by designing for effective indoor air flow, ventilation, filtering, and exhaust, and can even be awarded credits for designing a management and monitoring plan for air flow.⁶⁵ The EQ element also addresses the contaminants themselves by identifying acceptable

⁵³ *Id.* at 73; LEED NC, *supra* note 29, at 36, 42.

⁵⁴ LEED NC, *supra* note 29, at 41.

⁵⁵ *Id.* at 43–56; LEED FOR HOMES, *supra* note 29, at 77–84.

⁵⁶ LEED FOR HOMES, *supra* note 29, at 77.

⁵⁷ LEED NC, *supra* note 29, at 53–54.

⁵⁸ LEED FOR HOMES, *supra* note 29, at 79, 83.

⁵⁹ LEED NC, *supra* note 29, at 44–46.

⁶⁰ *Id.* at 49–50.

⁶¹ *Id.*

⁶² *Id.* at 57.

⁶³ BUILD IT GREEN, NEW HOME CONSTRUCTION GREEN BUILDING GUIDELINES 10 (2007), available at http://www.builditgreen.org/system/files/uploads/GreenPoint%20Rated/Guidelines_checklists/2007-New-Home-Guidelines.pdf.

⁶⁴ VOCs are a known precursor to ground-level ozone and are considered a health hazard. See LEED FOR HOMES, *supra* note 29, at 114 (“[A VOC is a] carbon compound that vaporizes (becomes a gas) at normal room temperatures. VOCs contribute to air pollution directly and through atmospheric photochemical reactions to produce secondary air pollutants, principally ozone and peroxyacetyl nitrate.”).

⁶⁵ LEED FOR HOMES, *supra* note 29, at 85–92, 95; LEED NC, *supra* note 29, at 60–64.

materials and behaviors. For instance, LEED identifies standards for (among others) VOC emissions in wood finishing products and paints,⁶⁶ and awards credits for controlling tobacco smoke⁶⁷ and achieving exposure limits to indoor airborne contaminants.⁶⁸

The Innovation and Design Process element is intended to accomplish two results: first, to emphasize the relevance and importance of building design to the general goals of green building; and second, to allow builders to acquire green credits for innovations that might fall outside of the established green categories with the specific purpose of encouraging creativity to guide the building process in ways that achieve progress in green technology.⁶⁹ Because of the substantial overlap in the goals of green building and the expertise needed to effectuate those goals (e.g., from the input of architecture, performance testing, and mechanical or electrical engineering), credits are also awarded for organizing an integrated design team early in the design process to maximize green benefits and minimize the costs of green building strategies.⁷⁰

Other important elements in LEED for Homes that are not applied in other LEED rating systems include LL⁷¹ and AE.⁷² The LL element in LEED for Homes recognizes the relationship between the local and regional impacts of home construction, encouraging builders to choose low-impact building locations.⁷³ Hence, LL credits are awarded for homes built in developments certified under LEED for Neighborhood Development,⁷⁴ or alternatively under a rating system that focuses on the location of the construction relative to environmentally sensitive areas, existing communities and infrastructure, transit, and open spaces.⁷⁵ The credits available for AE, also unique to green home construction, ensure longevity in the performance of a green residence through the education of homeowners, tenants, and building managers in the design, materials, and operational aspects of the structure.⁷⁶

When incorporated into building design, construction, and operation, green building principles can provide durable and predictable benefits to the costs of ownership (e.g., lower utility bills), the health costs of presence in the structure (e.g., comfort and hospital bills), and the costs of maintaining green features over the lifetime of the structure.⁷⁷ In the meantime, green

⁶⁶ LEED NC, *supra* note 29, at 65–69.

⁶⁷ *Id.* at 58.

⁶⁸ *Id.* at 70; LEED FOR HOMES, *supra* note 29, at 96–97.

⁶⁹ LEED FOR HOMES, *supra* note 29, at 23. LEED NC is less specific, and instead awards points primarily for exceeding the performance requirements. LEED NC, *supra* note 29, at 77.

⁷⁰ LEED FOR HOMES, *supra* note 29, at 19.

⁷¹ *Id.* at 2.

⁷² *Id.* at 9.

⁷³ *Id.* at 26–31.

⁷⁴ *Id.* at 25.

⁷⁵ *Id.* at 31.

⁷⁶ *Id.* at 101–04.

⁷⁷ *E.g.*, Jim Broughton, *Green Building: What We Have Learned About Costs, Savings and Value*, ENVTL. DESIGN & CONSTRUCTION, Nov. 1, 2006, at 110; Cal. Integrated Waste Mgmt. Bd., Green Building Basics, <http://www.ciwmb.ca.gov/greenbuilding/basics.htm> (last visited July 19, 2009).

building principles seek to accomplish results similar to those in several past iterations of environmental policy, including human and wildlife health, pollution control, natural resource conservation, and, more generally, reductions in the impact of human presence on the planet.⁷⁸

III. EXAMINING THE REVOLUTION OF GREEN IN BUILDING PRACTICES

Codes seem to come into being after we have experienced a problem, even an unfortunately grave one. And from the beginning, codes have their origin in the notion that we are interdependent. One must be regulated for the good of all. Because of this forced imposition of the majority's good on the property owner there is a natural reluctance to impose building laws; and when they are enacted, they are often after the fact, curing the ills of yesterday's technology, rather than tomorrow's.⁷⁹

The problem with new ideas is seldom whether they are strong or otherwise well reasoned—the problem with new ideas is always that they are in fact *new*.⁸⁰ In the case of social conventions, it takes time for new ideas to either “fit” into existing perspectives, or alternatively, to replace existing beliefs.⁸¹ It is the same in law, and indeed, the development of green building laws demonstrates a triumph of green building over its status as both a new idea and a green idea. The success enjoyed by green building is illustrated by looking into the challenges facing the movement.

A. Challenges to Overcome

Building codes⁸² have traditionally been based on the need to protect the health, safety, and welfare of inhabitants.⁸³ Through the ages, building

⁷⁸ See generally LEED FOR HOMES, *supra* note 29, at 101–04.

⁷⁹ Stephen Tobriner, *The History of Building Codes to the 1920s*, in PROCEEDINGS OF THE STRUCTURAL ENGINEERS ASSOCIATION OF CALIFORNIA: 1984 CONVENTION 49, 56 (1984).

⁸⁰ Although this statement may seem fairly obvious, elsewhere I have argued that this circumstance provides a persuasive reason to think strategically rather than dogmatically about resolving our environmental problems. See Keith H. Hirokawa, *Some Pragmatic Observations About Radical Critique in Environmental Law*, 21 STAN. ENVTL. L.J. 225, 260 (2002). It seems reasonable to suggest that the lesson should also be applied when assessing the efforts of new movements to change social and legal conventions.

⁸¹ *Id.*

⁸² Gaylon Claiborne explains,

Building codes are sets of legal requirements having to do with the physical structure of buildings, primarily new buildings. There are several areas of code administration that are closely associated with building codes and should properly be included as part of it. These are the electrical code, the plumbing code, and the mechanical code. Related areas of code administration that are generally not included are the housing code, which emphasizes healthful living, and the zoning code, which emphasizes a desirable municipal environment.

Gaylon R. Claiborne, *Principles of Building Codes*, in 1 READINGS IN CODE ADMINISTRATION 31, 31 (Richard L. Sanderson ed., 1974).

⁸³ *Id.*

codes have been employed to prohibit certain flammable materials in building construction, to provide minimum stabilization standards, and even to allocate the use of rain water off of roofs.⁸⁴ By the twentieth century, building regulations were well beyond fire safety, having expanded into plumbing design, weight loads for certain materials, heating and ventilation systems, and other identifiable, objectively ascertainable goals.⁸⁵

The standards comprising modern building codes are typically classified as either performance standards or prescriptive standards.⁸⁶ Performance standards are, in general, more flexible. In most performance standards, a stated result is required, with some flexibility in accomplishing that result.⁸⁷ Therefore, a performance standard might specify a given load or carrying capacity of a wall, with the builder left to determine which materials, design, or methods will be used to accomplish that load capacity. An early example of a performance standard, albeit one that established liability rather than expressed a regulatory purpose, is found in the Code of Hammurabi: “[I]f a builder builds a house . . . and the house . . . collapse[s] and cause[s] the death of the owner of the house [then] that builder shall be put to death.”⁸⁸

Building codes have tended to be prescriptive in nature, dictating certain methods, designs, and materials, to the exclusion of others. For example, a prescriptive standard might call for certain dimensions in the support structure of a wall, certain doorway dimensions, or certain types of insulation materials.⁸⁹ Because prescriptive rules are clear and closed to creative interpretation, building officials (and, in all likelihood, the insurance industry) understandably prefer these “[r]ules that are clear and reasonable [and therefore] easy to enforce.”⁹⁰ In addition, prescriptive rules provide some certainty in the uniform structural integrity of buildings.⁹¹

In early green construction projects, prescriptive codes were problematic precisely because green builders represented the notion that past practices were not working.⁹² New, innovative designs were needed,

⁸⁴ Tobriner, *supra* note 79, at 50.

⁸⁵ *Id.*

⁸⁶ Robert C. Levy, *Home Rule, Uniformity, and Performance Standards in Codes*, in 1 READINGS IN CODE ADMINISTRATION, *supra* note 82, at 69, 73 (discussing the tension between the need for uniformity in setting prescriptive standards and the draw of subjectivity in performance standards).

⁸⁷ *Id.*

⁸⁸ Tobriner, *supra* note 79, at 49 (quoting the Code of Hammurabi).

⁸⁹ See, e.g., *Fedus v. Zoning & Planning Comm'n of Colchester*, 964 A.2d 549, 555–56 (Conn. App. Ct. 2009) (finding, without regard for past practices or for whether alternative materials would perform effectively, that “there are no exceptions . . . to the requirement that pipes be made from reinforced concrete”).

⁹⁰ H.P. Kucera, *Legal Aspects of Building Department Administration*, in 1 READINGS IN CODE ADMINISTRATION, *supra* note 82, at 234, 238.

⁹¹ See generally *id.* (describing the benefits of building codes and rules).

⁹² Bradford Swing identifies the concerns behind green building as adaptive, rather than technical, problems. Swing, *supra* note 3, at 49. Technical problems are those that can be resolved by straight-forward application of expertise, such as the expertise with which a plumber fixes a clogged drain. By contrast, an adaptive problem requires experimentation, discovery, and adjustment in our practices to accomplish a novel goal. *Id.*

with better materials and higher standards of performance.⁹³ The use of alternative methods, materials, and designs fell outside of the prescriptions in most building codes. Even worse, as in the typical circumstance of new building materials, “the building official often [is] technically and professionally unqualified to evaluate the factual supporting data that may have been submitted.”⁹⁴ Moreover, even where builders were able to argue under the infrequent alternative, performance-based standards in conventional building codes, builders were required to show—with reports, tests, or some evidentiary support—that the innovative use of materials or designs would in fact perform to the level demanded.⁹⁵ The obvious dilemma for early green builders was the absence of an existing or pervasive market for green building materials or designs.⁹⁶ The resulting lack of experience, models, examples, or data was a significant obstacle in the permitting process.⁹⁷

There was little opportunity to develop information on such practices, such as comparative data on costs, materials, designs, or expected benefits.⁹⁸ Where “green” building materials were available, an informational discord shaped the uncertainty of consumers in what they were buying.⁹⁹ As a result, green builders faced practical challenges in supporting their proposed green buildings.¹⁰⁰ In addition to the more obvious obstruction that building codes posed, green builders also faced at least four fundamental, essentially social roadblocks to the acceptance of these new ideas: information, leadership, liability, and cost.

1. Information

The green building movement could not have developed merely on the basis of its goals; merely proclaiming the goal of resource efficiency does not imply that we know how to accomplish that feat. In the experiments

⁹³ See *id.*

⁹⁴ Verner L. Lane, *Code Problems and New Fastening Methods for Wood*, in 3 READINGS IN CODE ADMINISTRATION, *supra* note 82, at 191, 193 (arguing that only a performance based building code will allow for the acceptance of innovative techniques and building materials).

⁹⁵ *Id.*

⁹⁶ See generally *id.*

⁹⁷ See, e.g., Kelly Lemons, *Permitting Green Projects: City Undergoing Greening Pains in Permit Process*, BELLINGHAM BUS. J., Dec. 2007, http://findarticles.com/p/articles/mi_hb6548/is_2007_Dec/ai_n29396652 (last visited July 19, 2009) (“[C]ity planners’ and developers’ lack of experience with permitting green building . . . makes the process difficult . . .”).

⁹⁸ See Gail A. Lindsey, *Building Values*, in RESHAPING THE BUILT ENVIRONMENT: ECOLOGY, ETHICS, AND ECONOMICS 195, 205–06 (Charles J. Kibert ed., 1999) (“We learn as individuals and as a society by evaluating, measuring, observing, and noting the consequences of our actions over time—recording what works and what doesn’t. Unfortunately, we have had few plans and benchmarks for our pursuits in the sustainable design world until recently.”).

⁹⁹ Charles J. Kibert, *The Promises and Limits of Sustainability*, in RESHAPING THE BUILT ENVIRONMENT: ECOLOGY, ETHICS, AND ECONOMICS, *supra* note 98, at 9, 32 (“Shifting to construction products that can be considered environmentally responsible or ‘green’ is hampered by a lack of definition of what comprises these materials.”).

¹⁰⁰ The 2006 McGraw-Hill SmartMarket Report identifies several primary obstacles to green building: higher perceived initial costs, consumer willingness, lack of public information, and the inflexibility of current building codes. MCGRAW-HILL SMARTMARKET REPORT, *supra* note 8, at 13.

with these new ideas, green building applications were not well supported by reports or data on the suitability of materials, integrity of designs, health benefits from construction methods, or environmental benefits of location.¹⁰¹ Because so many early green building applications relied on innovative building concepts and materials, the innovations were understandably approached by building officials as alternatives to building codes.¹⁰² Even building codes that contained flexible performance standards relating to function, rather than form, were often inaccessible to green builders due to the lack of information that plagued green building applications.¹⁰³ In an absence of technical and factual support, these ideas appeared aspirational but unproven, and therefore, often too risky.¹⁰⁴

This informational challenge manifested itself in the form of uninformed agencies, an unprepared industry, and an uninspired market.¹⁰⁵ Each of the important players—builders, architects, building officials, consumers, and manufacturers—were faced with the uncertainty inherent in new ideas.¹⁰⁶ The result was predictable: builders were not building due to cost and uncertainty, consumers were not investing for the same reasons, and building officials were not approving due to a lack of information.¹⁰⁷

2. Leadership

The acceptance of new practice and ideas is likely contingent upon effective leadership from professionals in the industry.¹⁰⁸ Professional

¹⁰¹ Hence, Edna Sussman opens her article on green building with a story about Al Gore's difficulties in acquiring permits to install solar panels on his home; apparently, the local building code did not permit solar panels, and the subsequent appeal to the legislative body to amend the otherwise inflexible building code was frustrating. Sussman, *supra* note 9, at 1. Al Gore's experience is not unique. Early surveys on the perceived obstructions to green building efforts showed code inflexibility in prescriptive building requirements as a major contributing disincentive to green buildings. *See, e.g.*, DAVID EISENBERG ET AL., BREAKING DOWN THE BARRIERS: CHALLENGES AND SOLUTIONS TO CODE APPROVAL OF GREEN BUILDING 1 (2002), *available at* http://www.dcat.net/resources/breaking_down_barriers.pdf (reporting the results of an industry-wide survey to determine the primary causes of green building application obstructions).

¹⁰² *See generally* EISENBERG ET AL., *supra* note 101, at 2, 21 (noting that green alternatives are often denied approval because of a lack of supporting information about the product, materials, system, or design that can satisfy safety concerns).

¹⁰³ *Id.* at 21.

¹⁰⁴ *See id.* ("Applications are more likely to be denied . . . if they lack sufficient supporting information about the green product, material, system, or design to satisfy safety concerns.")

¹⁰⁵ *See id.* at 14 (explaining that code officials blamed denial of green alternatives on "lack of adequate supporting information" and "insufficient technical knowledge," thereby stifling green development).

¹⁰⁶ *See, e.g.*, SECRETARIAT OF THE COMM'N FOR ENVTL. COOPERATION, GREEN BUILDING IN NORTH AMERICA 55–56 (2008), *available at* http://www.cec.org/files/PDF//GB_Report_EN.pdf (describing uncertainty as one cost barrier "that developers, real estate professionals, and some capital providers feel about green building").

¹⁰⁷ *See* EISENBERG ET AL., *supra* note 101, at 21.

¹⁰⁸ Hence, Thomas Kuhn noted that a shift in scientific paradigms could not be considered complete, noteworthy, or even possible until a portion of the scientific community took the new ideas seriously. *See generally* THOMAS KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS 6 (2d ed. 1970) ("The extraordinary episodes in which that shift of professional commitments occurs

education, including some handholding for the uninitiated, is a necessary component of adaptation from conventional building codes to green building practices. Green building clearly needed influential leaders to effectively advocate for and manage the transition and transfer of knowledge as building practices adapted to these new ideas.

The dilemma in leadership, as with other hurdles for green building, was bounded by informational limitations, which then translated into a lack of consensus on the goals of green building.¹⁰⁹ Without marketable building materials, green building was largely uneventful. Without examples, experiments, and other models for innovation, there was no information on the proposals. Without information, there were few who could lead builders into the green building movement.

3. Liability Concerns

In the informational divide, alternative building methods, designs, and materials could reasonably be understood to pose a liability risk. For instance, the implied warranties of quality that often accompany new home construction¹¹⁰ raised a daunting uncertainty over whether the construction quality of newly constructed green homes will be measured on the same standards as conventionally constructed homes or (more likely) a much higher standard which incorporates the expectations attendant to “high performance” homes.¹¹¹ In such cases, do the implied warranties act to guarantee lower energy costs, higher performance for indoor air quality, or a set percentage of water or energy efficiency? How long would such warranty—and the uncertainties inhering in it—pervade if a building began to fail (say, if it was only 20% more efficient than a conventional building) in five years? Moreover, given that green buildings were initially (and to some extent remain) plagued with a lack of information regarding the performance expectation of particular green materials designs, what types

are the ones known in this essay as scientific revolutions.”). Other disciplines and professions face similar circumstances. *Id.*

¹⁰⁹ See Alex Tynberg, *The Natural Step and Its Implication for a Sustainable Future*, 7 HASTINGS W.-NW. J. ENVTL. L. & POL’Y 73, 73 (“The current economic and legal system in the United States fails to guide society towards a sustainable future.”). In his introduction, Tynberg emphasized that “[t]he key to achieving sustainability is to change the practices of commerce, which presently exist unencumbered by real connections to the environment.” *Id.*

¹¹⁰ For instance, warranties of habitability and workmanlike construction have applied in many instances to the fitness of new construction for purposes of habitation to reflect the unequal bargaining power of the parties and the importance of safety in the construction industry. See, e.g., *McDonald v. Miannecki*, 398 A.2d 1283, 1292 (N.J. 1979) (finding an implied warranty of habitability and workmanship in builder-vendor construction contracts); *Groff v. Pete Kingsley Bldg., Inc.*, 543 A.2d 128, 131–32 (Pa. Super. Ct. 1988) (holding that a construction contract between builder and layperson included an implied warranty of habitability and workmanship due, in part, to the unequal bargaining power of the parties).

¹¹¹ See, e.g., U.S. Green Bldg. Council, LEED Rating Systems, <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=222> (last visited July 19, 2009) (explaining its rating system for green buildings as the “nationally accepted benchmark for the design, construction and operation of high performance green buildings”).

of disclosure are required? Would builders need to warranty the acquisition of recycled building materials from a certifiable source?¹¹² Would builders be required to identify chemicals used to treat building materials? Because green building applications require analysis of alternative building standards, are builders at risk of negligence in seeking approval of alternative standards?¹¹³

The contract possibilities raise related health and construction quality fears, but could extend into new potential implied warranties; assuming that green building is marketable for, at the least, providing certain benefits beyond typical building codes, what warranty is appropriate for the delivery of these benefits? If a builder is marketing a building as "green" based on, for instance, energy and water performance, indoor air quality, and materials, to what degree can performance standards of "greenness" apply? The contract fear (including architects, builders, and homeowners), then, includes the difficulty of contracting for and around performance standards for energy efficiency, indoor pollution, emissions, and water usage, among others. Moreover, it remains uncertain that green buildings will perform uniformly to provide these benefits.¹¹⁴

Finally, the introduction of green building standards in the construction process also functions at the financial level of the construction industry.¹¹⁵ At least, lenders must face the dilemma of determining how to assess the value

¹¹² There may have been (and may continue to be) fear about whether laws regulating deceptive trade practices would be applicable to green building standards. Deceptive trade practices legislation currently addresses standards for organic foods; will it apply (and how) to green building? *See, e.g.*, ALASKA STAT. § 17.06.010 (2008) (statute on organic food labeling); *see also* Claudia L. André, Comment, *What's In That Guacamole? How Bates and the Power of Preemption Will Affect Litigation Against the Food Industry*, 15 GEO. MASON L. REV. 227, 228 (2007) (examining consumer protection litigation over misleading product labeling); Delcianna J. Winders, Note, *Combining Reflexive Law and False Advertising Law to Standardize "Cruelty-Free" Labeling of Cosmetics*, 81 N.Y.U. L. REV. 454, 456 (2006) (examining legal tools for strengthening rules on representations in product labeling concerning animal testing and cruelty).

¹¹³ Historically, building code violations could constitute negligence per se. *See, e.g.*, *Real Estate Mktg., Inc. v. Franz*, 885 S.W.2d 921, 927 (Ky. 1994). On the other hand, compliance with building codes constitutes a significant defense. Which applies to a building constructed to alternative, performance-based standards? In all likelihood, green buildings will be subject to the same litigation over negligence through which any alternative building method would suffer. *See, e.g.*, *Davis v. Fischer Single Family Homes, Ltd.*, 231 S.W.3d 767, 777 (Ky. Ct. App. 2007) (submitting to the jury the question of building code violation where the applicable building code provision allowed for alternative use of "materials and methods which substantially comply with the spirit of the code"). In such a context, it will be little reprieve to know that plaintiffs will bear the burden of demonstrating causation.

¹¹⁴ Building officials might legitimately fear claims of negligent review and enforcement of conventional building code standards. Despite the protections afforded to municipal officials (public duty doctrine), the risk of liability based on an informational gap can be daunting. *See, e.g.*, *Brown v. Syson*, 663 P.2d 251, 252 (Ariz. Ct. App. 1983) (applying negligence principles to the exercise of building official's duties); *Butler v. Bogdanovich*, 705 P.2d 662, 663 (Nev. 1985) (indicating that a duty of care is owed in inspecting building for defects).

¹¹⁵ *See generally* Geoff White, *The Legal Issues of Green Real Estate Finance*, GREEN REAL ESTATE L.J., Jan. 23, 2009, <http://www.greenrealestatelaw.com/2009/01/legal-issues-of-green-real-estate-finance> (last visited July 19, 2009) (identifying some of the threshold liability issues concerning lenders and recommending that lenders convene a "green team" so that certification and operational issues will be understood).

added in green buildings.¹¹⁶ Assuming conventional building standards establish baseline values for comparability, what effect might alternative, green performance standards have on market value analysis? Should different market standards apply? These questions may be answered in time, but in the meantime, it is reasonable to ask whether the informational gaps in the stated benefits of green certification might fail to correspond to market value, particularly given the difficulties of assessing the impact of green building standards on the costs of home construction. In the absence of an established framework for assessing these added amenities, all players in the construction market have been frustrated with expectations in green buildings as investment opportunities. The uncertainty is exacerbated by the hesitancy of a lender to finance construction that is intended to reflect something other than conventional building codes.¹¹⁷

4. Building Costs, Perceived and Real

Without a track record or base of data, green buildings have been thought—whether merely perceived or real—to dramatically increase the cost of home building.¹¹⁸ In the absence of a lucrative market for development of green building technology, green building might have been unable to overcome the perceived costs. Few green buildings were being built.¹¹⁹ Without new green building construction, the industry was not generating data to use in understanding or advancing green building methods.¹²⁰ In the meantime, building inspectors and building officials remained uninformed on such methods, as they were not gaining experience.¹²¹ The resistance to higher performance buildings was self-perpetuating.

In reality, costs were as simple to exaggerate as they were to calculate. These costs come in several forms, such as the task of acquiring alternative but unproven “green” materials and designs, the dilemmas in convincing building officials that particular materials or designs would meet existing, prescriptive building code standards, and the added time needed to overcome these challenges.¹²² Then, for the excessive amount of time and effort needed to convince a building official on the sustainability of a

¹¹⁶ See *id.*

¹¹⁷ See EISENBERG ET AL., *supra* note 101, at 14.

¹¹⁸ *E.g.*, BDC WHITE PAPER, *supra* note 6, at 7 (“[The initial] inability to convert general client interest in sustainability into a more substantial amount of work may be linked to client concerns over the up-front cost of green buildings.”); GREG KATS, THE COSTS AND FINANCIAL BENEFITS OF GREEN BUILDINGS: A REPORT TO CALIFORNIA’S SUSTAINABLE BUILDING TASK FORCE 12 (2003), *available at* <http://www.ciwmb.ca.gov/greenbuilding/Design/CostBenefit/Report.pdf> (“There has been a widespread perception in the real estate industry that building green is significantly more expensive than the traditional methods of development.”); Swing, *supra* note 3, at 49, 52 (recognizing that one of the initial hurdles for green building is to deal with the “perceived ‘green premium’”).

¹¹⁹ See BDC WHITE PAPER, *supra* note 6, at 4.

¹²⁰ See *generally* KATS, *supra* note 118, at 12–13 (describing some of the barriers to obtaining information on green building, particularly with respect to costs); *cf. id.* at 11 (suggesting the importance of the increasing availability of data in the emerging green building industry).

¹²¹ See EISENBERG ET AL., *supra* note 101, at 14.

¹²² See BDC WHITE PAPER, *supra* note 6, at 4; EISENBERG ET AL., *supra* note 101, at 14, 17.

particular method, design, or material, the costs of building increase. The costs of delay, the costs of investigation, and ultimately, the costs of compliance would reduce the financial incentives for such projects. Even after shouldering the burden of these costs, builders were not assured that, after the effort, the proposal would be approved.¹²³ As a result, builders advanced the perception that green building was more expensive than conventional building methods.¹²⁴ It was assumed that green building standards would create an upfront cost increase of twenty to twenty-five percent.¹²⁵

B. The Informational Approach to Green Building

The first generation of green building laws might be best described as a movement inspired by the possibility of overcoming uncertainty, and the laws were designed to address a critical lack of information. Green building laws needed to educate builders and building officials about green building issues, despite the absence of an active market for green building services and with the mechanics of green construction largely undeveloped. Despite challenges, informational green building laws are proving to be overwhelmingly successful. At least four specific projects implemented by state and local governments are contributing to this success: first, the private sector has taken an active leadership role in developing green building codes to standardize green building methods; second, local governments have adopted voluntary, incentive-based green building standards for private buildings;¹²⁶ third, state and local governments have adopted laws requiring public buildings and other construction to meet green building standards;¹²⁷ and finally, green building laws have often been accompanied by outreach programs to educate public officials, builders, and the general public on the benefits, costs, and processes of green building.¹²⁸ Although each component of early green building laws has been significant on its own, the combined effect has been to generate the information needed to close the gap between green building goals and methods, and has meanwhile made green building a credible and worthwhile movement.

¹²³ See EISENBERG ET AL., *supra* note 101, at 16.

¹²⁴ See, e.g., BDC WHITE PAPER, *supra* note 6, at 4 (“The launch of LEED for New Construction in 2000 was accompanied by dire predictions in some quarters of the construction industry that LEED buildings could cost 20–25% more than conventional buildings.”).

¹²⁵ *Id.*

¹²⁶ Not all of the early green building laws have been voluntary. Some have instead mandated that both private and public construction meet LEED or other comparable green standards. See *infra* Part IV.A.

¹²⁷ For example, the California Building Standards Commission recently adopted the 2008 California Green Building Standards Code. CAL. CODE REGS. tit. 24, pt. 11 (2008), available at http://www.documents.dgs.ca.gov/bsc/2009/part11_2008_calgreen_code.pdf.

¹²⁸ See, e.g., City of W. Hollywood, Green Building Program, <http://www.weho.org/greenbuilding/> (last visited July 19, 2009) (describing the city’s green building ordinance, which includes an “education and outreach program”).

1. Leadership from the Building Community: LEED and Beyond

Green building owes its very existence to the promulgation of green building standards by private and cooperative efforts. Green building collaboration has produced several systems of performance rating and guidance to determine how green a building may be. The most prevalent, of course, is the market-driven rating system promulgated as the LEED standards by the USGBC.¹²⁹ Also significant are the Green Globes green rating program,¹³⁰ the Energy Star products marketing program administered by EPA,¹³¹ the guidance provided by the National Association of Homebuilders¹³² (NAHB), and the many (and still growing) local and regional green building programs, including EarthCraft House¹³³ and Build It Green.¹³⁴

¹²⁹ At present, the most widely employed standard in state and local legislation is the LEED certification, first promulgated by the USGBC as a pilot program in 1998. See CHRIS W. SCHEUER & GREGORY A. KEOLEIAN, NAT'L INST. OF STANDARDS & TECH., EVALUATION OF LEED USING LIFE CYCLE ASSESSMENT METHODS 16–17 (2002), available at <http://www.bfrl.nist.gov/oa/publications/gcrs/02836.pdf>. LEED currently boasts six related but separate programs, including neighborhood development, homes, commercial, and home renovation, among others, with some programs currently in pilot stage. See U.S. Green Bldg. Council, *supra* note 111.

¹³⁰ The Green Globes program was developed by the Green Building Initiative (GBI), a non-profit organization which has as its purpose the implementation of healthier and more sustainable building practices. See Green Bldg. Initiative, About GBI, <http://www.thegbi.org/about-gbi/> (last visited July 19, 2009). Green Globes was modeled after the guidelines produced by the National Association of Homebuilders. *Id.*

¹³¹ Energy Star is a joint agency program between EPA and the United States Department of Energy. See Energy Star, About Energy Star, http://www.energystar.gov/index.cfm?c=about.ab_index (last visited July 19, 2009). The intent of Energy Star has consistently been to advance the use of energy efficient products and practices. *Id.*

¹³² The National Association of Homebuilders (NAHB), although a latecomer relative to the other associations, has provided insightful guidance in the Model Green Home Building Guidelines, which reaches deep into the principles of green building. Like the LEED programs, the NAHB guidelines organize green building into separate but related principles: lot design, preparation, and development; resource efficiency; energy efficiency; water efficiency; environmental quality; operation, maintenance, and homeowner education; global impact; and site planning and land development. See NAT'L ASS'N OF HOME BUILDERS, NAHB MODEL GREEN HOME BUILDING GUIDELINES 1–4 (2006), available at http://www.nahbgreen.org/content/pdf/nahb_guidelines.pdf. The NAHB guidelines further emphasize the advantages of converting to green building or making the choice to build green. See *id.* The primary benefits of green building, when compared to ownership of conventional homes, include lower operating costs, increased comforts, improved environmental quality, enhanced durability, and less maintenance. *Id.* at 4.

¹³³ EarthCraft House was founded in 1999 as a partnership between Southface and the Greater Atlanta Home Builders Association. See EarthCraft House, EarthCraft House Homepage, <http://www.earthcrafthouse.com/index.html> (last visited July 19, 2009). An Atlanta-based, regional residential green building program, EarthCraft presently boasts certification of over 4000 EarthCraft House single family homes and over 1500 EarthCraft Multifamily dwelling units. *Id.* Earthcraft includes promotion of comprehensive natural and built environmental planning, resulting in six EarthCraft Communities in the Greater Atlanta region and promotion of green affordable housing. *Id.*; EarthCraft House, EarthCraft Communities, <http://www.earthcrafthouse.com/About/communities.htm> (last visited July 19, 2009). EarthCraft certification includes achieving a minimum point allocation and Energy Star certification. EarthCraft House, The EarthCraft House Story, <http://www.earthcrafthouse.com/About/about.htm> (last visited

These collaborative projects are filling the leadership gap. The purpose of these projects has been to develop new building standards to provide an objective, voluntary, and market-driven rating system to help define and measure the benefits attributable to green building practices.¹³⁵ As discussed above, the application of these standards in the regulation of the building process has been to transform our consumptive practices within our homes.

Common among these programs is the attempt to standardize the process of comparing and measuring the green performance attainable by particular buildings. To accomplish this feat, green standards are based on a complex point system under which credit is awarded for innovation in design, use of recycled construction materials, energy efficiency, indoor air quality (materials used), location, water use, and emissions.¹³⁶ Because measurement in green performance is an evolving science, the use of standards rather than set code rules incorporates needed flexibility into the process of identifying green design, methods, materials, and means.

Also common among these green building programs is flexibility. Because green performance measurement of the built environment is an evolving science, and because of the felt need to include so many varying locational, media, anthropocentric, and other factors,¹³⁷ the use of standards rather than set code rules should not be surprising. On the other hand, one may be surprised to find that, as a result of the flexibility and adaptability of most green building criteria, it is possible to find two different buildings achieving equal green status in entirely different ways: perhaps one resulting from exceptional energy efficiency, another from design and choice of

July 19, 2009); EarthCraft House, EarthCraft House Guidelines Overview, <http://www.earthcraft-house.com/About/criteria.htm> (last visited July 19, 2009).

¹³⁴ Build It Green, a nonprofit organization in Alameda County, California, first designed a Green Building program in 2000 intended to serve multiple objectives, including use as an educational tool for local governments, builders, and homeowners; presentation of flexible foundations in accomplishing the goals of green building; and creation of a uniform set of guidelines built upon the collaboration of government and building industry experts. *See* BUILD IT GREEN, *supra* note 63, at 4. Among other things, the Build It Green guidelines are as user-friendly as they are comprehensive and specific in identifying the elements of building design and construction which can contribute to green building objectives. In large part, the success of Build It Green is attributable to the collaborative process in its development, calling on representatives from builders, local governments, and green building experts. *See id.* Build It Green identifies four fundamental and converging objectives to guide application of green building concepts: conserve natural resources, use energy wisely, improve indoor air quality, and plan for livable communities. *Id.* at 9. Build It Green focuses on the manner in which these objectives converge and on the methods used to achieve them. For instance, use of recycled building materials can concurrently conserve forest resources, reduce indoor emissions from new building materials, and can even extend the life expectancy of a building. *Id.*

¹³⁵ *See* U.S. GREEN BLDG. COUNCIL, GREEN BUILDING RATING SYSTEM FOR EXISTING BUILDINGS: UPGRADES, OPERATIONS AND MAINTENANCE (LEED-EB) VERSION 2, at 2 (2004), *available at* <http://www.usgbc.org/Docs/LEEDdocs/EB-final%20content%20version.pdf>.

¹³⁶ *See, e.g.,* U.S. Green Bldg. Council, LEED for Homes Point Categories, http://www.greenhomeguide.org/green_home_programs/leed_for_homes_points.html (last visited July 19, 2009).

¹³⁷ *See, e.g., id.*

building materials.¹³⁸ Yet, the need for flexibility in green building standards accommodates the need for innovative building practices in accomplishing high-performing buildings.

2. Voluntary and Incentive Programs for Private Builders

A significant aspect of green building programs is that they were largely introduced as voluntary to builders on private construction projects.¹³⁹ Local governments have entertained and, in some cases, encouraged the use of green building methods.¹⁴⁰ In some cases, the very act of allowing builders to seek green building benefits has effected a more flexible approach to conventional building code limitations.¹⁴¹ In others, green building standards have been encouraged by the use of specific incentives.¹⁴²

Some local governments have opted to provide multidimensional incentive approaches to encourage green building. For instance, Gainesville, Florida, offers a voluntary green building program that incorporates a variety of incentives to encourage the private sector to engage in green practices.¹⁴³ Among other things, Gainesville offers several “green building awards,” fast-track building permit review, and reduced permitting fees (50% of building permit fee applicable to conventional buildings).¹⁴⁴ Those private projects involving multifamily residential retrofitting or remodeling may take advantage of additional incentives, identified as a “cash renovation incentive” and a “solar water heater incentive.”¹⁴⁵ Finally, Gainesville also promises to provide a variety of free marketing incentives for private green projects, including posting building site signs to advertise the project under the green program, inclusion in the city’s program webpage, provision of promotional packages (such as a program logo) for private use in advertisements, press releases, and information about available financial programs.¹⁴⁶ Likewise, Sarasota County, Florida, expects to provide a flurry of incentives to encourage builders to participate in the green building

¹³⁸ Examples of this flexibility are documented in Davis Langdon’s report, which points out that (not surprisingly) many of the choices in green standard compliance are driven by increases in building costs. See DAVIS LANGDON, *COST OF GREEN REVISITED: REEXAMINING THE FEASIBILITY AND COST IMPACT OF SUSTAINABLE DESIGN IN THE LIGHT OF INCREASED MARKET ADOPTION* 23 (2007), available at <http://www.davislangdon.com/upload/images/publications/usa/the%20cost%20of%20green%20revisited.pdf> [hereinafter LANGDON, *COST OF GREEN REVISITED*]; see also DAVIS LANGDON, *COSTING GREEN: A COMPREHENSIVE COST DATABASE AND BUDGETING METHODOLOGY* 25 (2004), available at http://www.usgbc.org/Docs/Resources/Cost_of_Green_Full.pdf.

¹³⁹ Carl J. Circo, *Using Mandates and Incentives to Promote Sustainable Construction and Green Building Projects in the Private Sector: A Call for More State Land Use Policy Initiatives*, 112 PENN ST. L. REV. 731, 735 (2008).

¹⁴⁰ *Id.* at 756.

¹⁴¹ *Id.* at 765.

¹⁴² *Id.* at 753.

¹⁴³ See GAINESVILLE, FLA., CODE OF ORDINANCES ch. 6, art. I.5, § 6-12 (2008), <http://www.muni.com/resources/gateway.asp?pid=10819&sid=9> (last visited July 19, 2009).

¹⁴⁴ *Id.* § 6-12(1), (4).

¹⁴⁵ *Id.* § 6-12(2).

¹⁴⁶ *Id.* § 6-12(3).

program.¹⁴⁷ The Sarasota Board of County Commissioners has ordered that the green building program provide fast-track permitting for building permits, reduced building permit fees, and marketing incentives to include providing building site signs for participants, identifying participants on a county web page, and providing promotional packages and press releases.¹⁴⁸

a. Voluntary Green Building Codes

Early green builders were faced with the significant challenge of being proponents of innovative ideas and designs that were not *established and proven* ideas and designs.¹⁴⁹ Indeed, in many cases, the goals sought by green builders fell outside of the regulatory schemes in building codes.¹⁵⁰ When green building codes such as LEED and Build It Green began to be incorporated into local laws, builders were not required to build green.¹⁵¹ Rather, early green building laws merely encouraged builders to do so.¹⁵² Hence, the subjects and techniques associated with green building goals have generally operated to supplement, rather than supplant, building code requirements. As building code supplements, the task of voluntary green building laws has been to link the goals of green building with the means of accomplishing those goals. Because voluntary green building codes have been based on performance standards, builders could approach their projects as experimental, innovative, and progressive.

b. Expedited Review

In most developments, time delay during the governmental review of development applications can be cumbersome and costly.¹⁵³ Accordingly, expedited review of a building or other development applications can provide a significant incentive by shortening the administrative process, thereby reducing the time to market. Several state¹⁵⁴ and local governments¹⁵⁵

¹⁴⁷ Sarasota County, Fla., Res. 2005-048 (Mar. 15, 2005), *available at* <http://www.scgov.net/Sustainability/documents/GreenBldg2005048.pdf>.

¹⁴⁸ *Id.*

¹⁴⁹ *See supra* Part III.A.

¹⁵⁰ One significant development in green building codes is the expansion of the *scope* of building code review. Traditionally, although building codes may have exhibited broad goals, the exact subject matters of regulations have been quite limited. *See* Claiborne, *supra* note 82, at 33 (discussing the limitations on the domain of the code; for example, in considering a risk of fire, it may be outside of the scope of the building code to regulate the provision of fire services, or even the source of ignition of fire, such as by use of cigarette lighters indoors).

¹⁵¹ *See, e.g.,* Circo, *supra* note 139, at 753–54 (noting that most jurisdictions that have enacted mandatory green building standards have primarily applied the mandates to “public projects and those that use public funds,” rather than the private sector).

¹⁵² *Id.*

¹⁵³ Ctr. for Hous. Policy, Expedite Permitting: Overview, http://www.housingpolicy.org/toolbox/strategy/policies/expedite_permitting.html (last visited July 19, 2009).

¹⁵⁴ *See, e.g.,* HAW. REV. STAT. § 46-19.6 (Supp. 2007) (requiring counties to give priority application processing for projects that achieve LEED Silver or equivalent).

¹⁵⁵ *See, e.g.,* SANTA MONICA, CAL., MUN. CODE § 8.108.050 (2008), http://www.qcode.us/codes/santamonica/index.php?topic=8-8_108-8_108_050 (last visited July 19, 2009) (expedited

have recognized the attractiveness of expedited review periods and have fashioned green building incentives to appeal to development costs. San Mateo County, California, for instance, offers “guaranteed building inspections within two working days of a request for inspection” for private commercial projects achieving LEED Silver certification.¹⁵⁶

c. Tax Incentives

Another prevalent method of encouraging green building practices from state and local governments has come in the form of tax incentives for qualifying construction.¹⁵⁷ The State of New York extends tax credits to both new construction and renovations for energy efficiency.¹⁵⁸ The credits are

permitting for registration with LEED for New Construction, LEED for Homes, and LEED for Core and Shell); D.C. CODE § 6-1451.06(a) (Supp. 2009) (establishing the “Green Building Expedited Construction Documents Review Program”); GAINESVILLE, FLA., CODE OF ORDINANCES ch. 6, art. 1.5, §§ 6-11 to -12 (2008), <http://www.municode.com/resources/gateway.asp?pid=10819&sid=9> (last visited July 19, 2009) (describing fast-track building permit process and reduced building permit fees for private contractors who use LEED); DALLAS, TEX., CODE ch. 52, § 1003.1 (2008), *available at* <http://www.dallascityhall.com/pdf/Building/Chapter52Booklet.pdf> (describing expedited plan review of green building projects); Sarasota County, Fla., Res. 2006-174 (Aug. 22, 2006), *available at* https://building.scgov.net/OSG/Sarasota/Green%20Building/Resolution_2006-174.pdf (describing expedited application review for residential and commercial green developments).

¹⁵⁶ San Mateo County, Cal., Ordinance 04411 (Feb. 26, 2008), *available at* http://www.co.sanmateo.ca.us/vgn/images/portal/cit_609/9/47/1243662796green%20buildin0ordinance.pdf (adding Chapter 14 to the San Mateo County Code).

¹⁵⁷ See, e.g., S.B. 543, 48th Leg., 1st Sess. (N.M. 2007), <http://legis.state.nm.us/Sessions/07%20Regular/bills/senate/SB0543.html> (last visited July 19, 2009) (providing sustainable building tax credit for LEED for New Construction, Existing Buildings, Core and Shell, Commercial Interiors, and Homes, with the amount of the credit depending on the LEED level achieved); BALTIMORE COUNTY, Md., CODE art. 11, § 11-2-203.2 (2008), [http://www.amlegal.com/nxt/gateway.dll/Maryland/baltimore_co/baltimorecountycode?f=templates\\$fn=default.htm\\$3.0vid=amlegal:baltimoreco_md](http://www.amlegal.com/nxt/gateway.dll/Maryland/baltimore_co/baltimorecountycode?f=templates$fn=default.htm$3.0vid=amlegal:baltimoreco_md) (last visited July 19, 2009) (providing three year tax credit for LEED Silver certified residential construction on a sliding scale, depending on the achieved certification level, and a 10 year tax credit for commercial construction); MONTGOMERY COUNTY, MD., CODE ch. 52, § 52-18Q (2008), http://www.amlegal.com/nxt/gateway.dll?f=templates&fn=default.htm&vid=amlegal:montgomeryco_md_mc (last visited July 19, 2009) (describing property tax credits for buildings that achieve LEED Silver, Gold and Platinum, or their equivalents: buildings over 10,000 square feet that earn LEED for New Construction or LEED for Core and Shell certification receive five year tax credits of 25% for achieving Gold and 75% for Platinum; buildings less than 10,000 square feet that earn LEED for New Construction or LEED for Core and Shell certification receive five year tax credits of 25% for achieving Silver, 50% for Gold, and 75% for Platinum; buildings over 10,000 square feet that earn LEED for Existing Buildings certification receive three year tax credits of 10% for achieving Gold and 50% for Platinum; buildings less than 10,000 square feet that earn LEED for Existing Buildings certification receive three year tax credits of 10% for achieving Silver, 25% for Gold, and 50% for Platinum); Cincinnati, Ohio, Ordinance 446-2007 (Dec. 12, 2007), *available at* http://city-egov.cincinnati-oh.gov/Webtop/ws/council/public/child/Blob/21605.pdf?rpp=10&m=2&w=doc_no%3D%27200701240%27 (property tax exemption for LEED certified commercial or residential properties). Harris County, Texas adopted guidelines for providing partial tax abatement for costs incurred in the green certification process. HARRIS COUNTY COMM’RS COURT, GUIDELINES & CRITERIA FOR GRANTING TAX ABATEMENT IN A REINVESTMENT ZONE CREATED IN HARRIS COUNTY 6 (2008).

¹⁵⁸ N.Y. TAX LAW § 19(a) (McKinney 2008).

allowable for meeting any of six green feature elements (which must be certified by a licensed architect or engineer): a whole building component, a base building component, a green tenant space component, a fuel cell component, a photovoltaic module component, or a refrigerant component.¹⁵⁹ The program, which is managed by the New York Department of Energy Conservation, allows both tenants and owners to take advantage of the tax credits (to the extent applicable).¹⁶⁰ Likewise, New Mexico offers a graduated tax credit for the “construction in New Mexico of a sustainable building or the renovation of an existing building in New Mexico into a sustainable building.”¹⁶¹

In 2007, the City of Cincinnati amended legislation applicable to the City of Cincinnati Community Reinvestment Area.¹⁶² Cincinnati’s incentives are aimed more specifically at the end users of green homes, and as such, have attempted to entice home buyers into the green building frenzy.¹⁶³ The City of Cincinnati offers significant financial incentives in the form of property tax credits to private property owners to encourage application of green building standards in both new construction and renovation.¹⁶⁴ Citing research on the economic benefits of green buildings, studies relating to indoor air quality, and the progressive green building programs around the nation, Cincinnati’s program provides tax abatement for certain commercial and residential construction in the reinvestment area.¹⁶⁵ Qualifying developments may be eligible to benefit from this program for 15 years for new construction or 12 years for renovations.¹⁶⁶ Owners of residential structures are offered tax abatement on the value of the building, but not the land, of up to 15 years for new construction and 10 years for renovations.¹⁶⁷ The benefits are subject to repayment for noncompliance.¹⁶⁸

d. Grants and Loans

Another effective incentive towards green buildings has been the adoption of financial incentive programs designed to offset (or at least mitigate) the costs associated with the application of innovative building

¹⁵⁹ *Id.* § 19(a)(2)–(7).

¹⁶⁰ N.Y. COMP. CODES R. & REGS. tit. 6, §§ 638.1–.14 (2008), <http://www.dec.ny.gov/regs/4475.html#17896> (last visited July 19, 2009).

¹⁶¹ N.M. STAT. § 7-2-18.19(A) (Supp. 2008).

¹⁶² Cincinnati, Ohio, Ordinance 446-2007 (Dec. 12, 2007).

¹⁶³ *See id.*

¹⁶⁴ *Id.*

¹⁶⁵ *See* Laura Baverman, *City’s Green-Building Effort Waiting to Bloom*, BUS. COURIER CINCINNATI, May 12, 2006, <http://cincinnati.bizjournals.com/cincinnati/stories/2006/05/15/story1.html> (last visited July 19, 2009) (Environmental concerns have “made green building not just a trend but a standard. . . . The health benefits of working and living in a sustainable environment are no longer just theory. . . . But the biggest benefit local leaders see is the potential to reverse declining population and job trends.”); Cincinnati, Ohio, Ordinance 182-2007 (May 16, 2007), *available at* http://city-egov.cincinnati-oh.gov/Webtop/ws/council/public/child/Blob/20406.pdf?rpp=10&m=2&w=doc_no%3D%200700567.

¹⁶⁶ Cincinnati, Ohio, Ordinance 446-2007 (Dec. 12, 2007).

¹⁶⁷ *Id.*

¹⁶⁸ Cincinnati, Ohio, Ordinance 182-2007 (May 16, 2007).

concepts, including the green certification process, developing innovations in design, the costs of greener materials, and delays that plagued early efforts at green building programs. Several states¹⁶⁹ and local governments¹⁷⁰ have specifically allocated funds to provide such incentives in the form of grants, loans, permit fee waivers, and fee reductions. There is some variation in the approach, particularly in the identified direct beneficiary,¹⁷¹ but each attempt is intended to make green building compliance more attractive. For instance, Miami Lakes, Florida, awards grants for residential buildings achieving compliance with LEED for New Construction and Major Renovations (LEED NC), LEED for Building Cores and Shells (LEED CS) and LEED for Existing Buildings (LEED EB), as well as homeowners who comply with LEED for Homes.¹⁷²

Many local governments apply fee waivers, refunds, and reimbursements, in whole or in part, to offset the costs of green certification.¹⁷³ For instance, the Eagle County Efficient Building Code

¹⁶⁹ For instance, the Texas LoanSTAR Program is a revolving loan program aimed at encouraging energy efficiency in building design, construction, and use. See Tex. State Energy Conservation Office, LoanSTAR Revolving Loan Program, <http://www.seco.cpa.state.tx.us/lr.htm> (last visited July 19, 2009).

¹⁷⁰ See, e.g., CITY MANAGER, CITY OF PASADENA, GREEN BUILDING ORDINANCE AND PROGRAM AGENDA REPORT 10 (2005), available at http://cityofpasadena.net/councilagendas/2005%20agendas/Dec_19_05/5A1.pdf (considering offering grants in Pasadena, California to private developers of \$15,000 for LEED Certified, \$20,000 for Silver, \$25,000 for Gold, and \$30,000 for Platinum); CITY OF SANTA MONICA, ENERGY & GREEN BUILDING PROGRAMS, THE SANTA MONICA GREEN BUILDING LEED GRANT PROGRAM 1 (2008) (indicating that Santa Monica, California, provides grants to private developers starting at \$20,000 for LEED Certified, and increasing in \$5000 increments to \$35,000 for LEED Platinum); KING COUNTY DEP'T OF DEV. & ENVTL. SERVS., GREEN BUILDING & LOW IMPACT DEVELOPMENT 4 (2008), available at <http://your.kingcounty.gov/ddes/acrobat/cib/55.pdf> (indicating that King County, Washington offers grants from \$15,000 to \$30,000 depending on the LEED performance level); Memorandum from Craig Perkins, Dir. of Env't & Pub. Works Mgmt., to the Mayor and City Council of the City of Santa Monica (Feb. 12, 2008), <http://www01.smgov.net/cityclerk/council/agendas/2008/20080212/s2008021207-B.htm> (last visited July 19, 2009) (indicating that Santa Monica also provides grants for homes ranging from \$2000 to \$3500 for multi-family projects and \$3000 to \$8000 for single family homes).

¹⁷¹ See Circo, *supra* note 139, at 756–57 (discussing the variety of state and local incentives benefiting developers, builders, and owners).

¹⁷² Miami Lakes, Fla., Ordinance 07-92 (July 10, 2007), available at <http://webform.townofmiamilakes.com/public/Ordinances/ORD%2007-92.pdf>.

¹⁷³ See, e.g., Anchorage, Alaska, Ordinance AO 2008-93 (Aug. 12, 2008), available at <http://www.muni.org/iceimages/Assembly2/ao2008-093.pdf%20> (providing for permit fee refunds on both the expedited fee and building permitting fees, the size of which depends on the level of certification sought); Chandler, Ariz., Res. 4199, Exhibit A, at 4–5, 9–11 (June 26, 2008), available at http://www.chandleraz.gov/Content/20080626_15.pdf (including fee reimbursement based on LEED certification levels, and also providing expedited plan review for private developments that register with the intent to certify at LEED Silver or better); Miami Lakes, Fla., Ordinance 07-92 (July 10, 2007) (providing reduced permitting fees for commercial applicants that comply with LEED NC, LEED CS, LEED for commercial interiors (LEED-CI), LEED EB, and LEED for Schools); Sarasota County, Fla., Res. 2005-048 (Mar. 15, 2005), available at <http://www.scgov.net/Sustainability/documents/GreenBldg2005048.pdf> (providing 50% reduction in building permit fees for using LEED); New Albany, Ohio, Ordinance O-34-2008, Exhibit A, at 3–4 (Oct. 21, 2008) available at <https://www.usgbc.org/ShowFile.aspx?DocumentID=5021> (providing green building incentive program for new commercial buildings that awards reductions from building

(ECObuild) in Eagle County, Colorado, applies to all new residential and most non-residential construction, as well as expansions adding more than 50% of existing square footage.¹⁷⁴ Buildings that are awarded points above the required minimum are eligible for rebates on their permit fees, as well as additional rebates for each twenty-point increment above the minimums.¹⁷⁵ This strategy is a bit unique in how benefits are organized in the structure of the program; projects may elect to pay a fee for falling below the number of green points required as a minimum standard, which in turn provide for the financial assistance, incentives, and rebates for sustainable building and sustainable energy projects in Eagle County.¹⁷⁶

e. Other Incentive Programs

Other innovative ideas have been tried throughout the country. For instance, some local governments are experimenting with density bonuses, under which a builder agreeing to participate in a green building program would enjoy densities exceeding the otherwise applicable zoning restrictions.¹⁷⁷ Arlington County, Virginia piloted a program to apply a floor area ratio (FAR) bonus ranging between 0.15 and 0.35 FAR for proposals that meet a minimum of LEED certified status.¹⁷⁸ A more comprehensive approach

permits fees based on the level of LEED certification); DEP'T OF ZONING & PLANNING, BOROUGH OF DOYLESTOWN, "GREEN POINTS" GREEN BUILDING INCENTIVE PROGRAM 1 (2007), *available at* <http://doylestownborough.net/greenpoints%20schedule.pdf> (indicating that Doylestown, Pennsylvania provides a substantial reduction in building permit fees for commercial and residential construction, additions, and interior remodels with additional reductions for projects that achieve LEED Silver certification or better).

¹⁷⁴ EAGLE COUNTY, COLO., LAND USE REG. art. 4, §§ 4-810, -910, (2008), *available at* [http://www.eaglecounty.us/uploadedFiles/commDev/Planning/Article%204%20%20Site%20Development%20Standards\(2\).pdf](http://www.eaglecounty.us/uploadedFiles/commDev/Planning/Article%204%20%20Site%20Development%20Standards(2).pdf).

¹⁷⁵ *Id.* §§ 4-820, -920.

¹⁷⁶ *Id.* §§ 4-820, -840.

¹⁷⁷ *See, e.g.*, ACTON, MASS., ZONING BYLAWS § 5.5B.2.2.d (2005) (providing density bonus for buildings achieving LEED certification in the East Acton Village District); BAR HARBOR, ME., MUN. CODE § 125-69M(6)(2)(d) (2008), <http://www.ecode360.com/ecode3back/getSimple.jsp?custId=BA1953&guid=8375391> (last visited July 19, 2009) (providing density bonus for planned unit development (PUD) projects in which all dwelling units meet LEED standards); PORTSMOUTH, N.H., ZONING ORDINANCE art. 3, § 10-301(F)(2) (2009) (providing floor area ratio (FAR) bonus for private LEED certified projects); Cranford, N.J., Ordinance 2005-46 (Nov. 15, 2005) (awarding green certification with "a slightly larger building than would normally be allowed"); Pittsburgh, Penn., Ordinance 2006-0540 (Dec. 19, 2007) (indicating projects that earn LEED NC or LEED CS certification are entitled to a density bonus of an additional 20% FAR and a variance on 20% of applicable height restrictions); U.S. GREEN BLDG. COUNCIL, LEED INITIATIVES IN GOVERNMENTS AND SCHOOLS 34-35 (2009) (citing Kearny, N.J., Ordinance 54 (Sept. 11, 2007), which provides density bonuses to private redevelopment projects that earn LEED certification, depending on the level of certification achieved).

¹⁷⁸ Arlington, Va., Environmental Services: Green Building Incentive Program, <http://www.arlingtonva.us/Departments/EnvironmentalServices/epo/EnvironmentalServicesEpoIncentiveProgram.aspx> (last visited July 19, 2009) (allowing FAR bonuses up to 0.50 for proposals that meet a minimum LEED certified status); ARLINGTON COUNTY, VA., ZONING ORDINANCE § 36.H.7.b (2009), *available at* <http://www.arlingtonva.us/departments/CPHD/>

is taken in the City of West Hollywood, which incorporates other design and planning elements into the incentive package, including a FAR increase, additional unit allowances, and reductions in parking space requirements.¹⁷⁹

3. Leadership by Example

One of the most notable examples of green building laws implements the notion that government can—or should—be a driving force in the evolution toward cleaner and healthier building practices. Governmental entities at all levels have adopted laws and policies requiring that publicly owned buildings be constructed and even retrofitted to meet green building standards.¹⁸⁰ In some instances, states,¹⁸¹ counties, and cities have even specified high LEED standards for public buildings.¹⁸² The clear intent of this

planning/zoning/pdfs/Ordinance_Section36.pdf (allowing additional height for proposals that meet a minimum LEED certified status).

¹⁷⁹ West Hollywood, Cal., Ordinance 07-762 § 6 (July 16, 2007), available at <http://www.weho.org/media/File/GreenbuildingOrdinance.pdf>.

¹⁸⁰ The federal commitment, which has resulted in LEED rating of buildings managed by the National Park Service, National Aeronautics and Space Administration, Department of State, Department of Energy, and others, has been advanced somewhat by executive order. See Exec. Order No. 13,423, 72 Fed. Reg. 3919 (Jan. 26, 2007); Jesse W. Abair, *Green Buildings: What It Means to Be "Green" and the Evolution of Green Building Laws*, 40 URB. LAW. 623, 626 (2008).

¹⁸¹ Ariz. Exec. Order No. 2005-05 (Feb. 11, 2005), available at <http://www.lib.az.us/is/state/eo/2005-05.pdf> (providing LEED Silver certification and incorporation of renewable energy for state-funded buildings); Cal. Exec. Order No. S-20-04 (July 27, 2004), <http://www.dot.ca.gov/hq/energy/ExecOrderS-20-04.htm> (last visited July 19, 2009) (indicating all state-owned facilities must meet LEED Silver standards); FLA. STAT. ANN. §§ 255.251–.2575 (West Supp. 2009) (requiring state building construction and renovation to follow LEED or other green rating guidelines, and requiring public construction by counties, municipalities, school districts, water management districts, state universities, community colleges, and state courts to follow green guidelines); Mass. Exec. Order No. 484 (Apr. 18, 2007), available at <http://www.mass.gov/Agov3/docs/Executive%20Orders/Leading%20by%20Example%20EO.pdf> (requiring LEED certification for construction and major renovation projects over 20,000 square feet).

¹⁸² See, e.g., ANCHORAGE, ALASKA, MUN. CODE § 23.05.050(A) (2008), <http://www.municode.com/resources/gateway.asp?pid=12717&sid=2> (last visited July 19, 2009) (requiring LEED certification for all new municipal buildings, increasing to LEED Silver in 2012); BRISBANE, CAL., MUN. CODE § 15.80.040 (2008), http://www.ci.brisbane.ca.us/municode/_DATA/TITLE15/Chapter_15_80_GREEN_BUILDING_R.html (last visited July 19, 2009) (requiring LEED Silver certification for certain municipal and commercial construction); LIVERMORE, CAL., MUN. CODE § 15.74.040 (2004), available at http://www.ci.livermore.ca.us/CDD/green_building/documents/CivicGreenBuildingOrdinance.pdf (requiring that all city buildings meet LEED Silver certification); PASADENA, CAL., MUN. CODE § 14.90.050 (2008), <http://www.municode.com/Resources/gateway.asp?pid=16551&sid=5> (last visited July 19, 2009) (requiring LEED Silver certification for all new municipal buildings and all municipal renovations over 15,000 square feet, and requiring LEED certification for certain new commercial and residential construction); ATLANTA, GA., CODE OF ORDINANCES § 75-19 (2008), <http://www.municode.com/resources/gateway.asp?pid=10376&sid=10> (last visited July 19, 2009) (requiring LEED Silver certification for certain city-funded projects); CITY AND COUNTY OF HONOLULU, HAW., REV. ORDINANCES § 2-9.3 (1990), available at <http://www.co.honolulu.hi.us/refs/roh/s/2.doc> (requiring LEED Silver for city facilities over 5000 square feet); ARLINGTON, MASS., TOWN BYLAWS, tit. 1, art. 16, § 4 (2008), http://www.town.arlington.ma.us/Public_Documents/ArlingtonMA_TownBylaws/title1?textPage=1#article16 (last visited July 19, 2009) (requiring LEED Silver for new buildings and renovations); KANSAS CITY, MO., CODE OF ORDINANCES § 2-1604 (2009), <http://www.municode.com/resources/gateway.asp?pid=12717&sid=2>

trend has been to lead by example, to minimize the environmental impacts of public buildings, and to provide healthy public spaces.¹⁸³ The sustainable building standards ordinance in the City of Anchorage, Alaska, bears this proclamation: “[G]overnment is ultimately responsible for leading by example and setting a community standard for the sustainable planning, design, construction, renovation and operation of buildings to support economic, social, and environmental sustainability”¹⁸⁴

com/resources/gateway.asp?sid=25& pid=10156 (last visited July 19, 2009) (requiring all new municipal buildings over 5000 square feet to earn LEED Silver certification); CHAPEL HILL, N.C., CODE OF ORDINANCES ch. 5, art. VII, §§ 5-122, -123 (2007), <http://www.municode.com/resources/gateway.asp?sid=33&pid=19952> (last visited July 19, 2009) (requiring LEED Silver certification for construction of municipal buildings over 5000 square feet.); EVERETT, WASH., MUN. CODE § 16.13.030 (2008), <http://srch.mrsc.org:8080/code/template.htm?sessionid=5E3E29A936D04ADB5EAD690CF9984D37?view=main> (last visited July 19, 2009) (requiring new buildings 5000 square feet or larger to meet LEED Silver in all new city capital improvement projects unless not practicable or appropriate); Flagstaff, Ariz., Res. 2008-32 (June 3, 2008) (requiring LEED Silver certification for municipal buildings); Oro Valley, Ariz., Res. 07-94 (Aug. 14, 2007) (requiring LEED Silver guidelines for all new town buildings and additions, and further imparting an aspirational directive to achieve LEED Gold or LEED Platinum where feasible); Scottsdale, Ariz., Res. 6644 (Mar. 22, 2005) (requiring all new city buildings to meet LEED Gold); Fayetteville, Ark., Res. 176-07 (Oct. 2, 2007) (requiring city-owned facilities greater than 5000 square feet to achieve a minimum of LEED Silver certification); Berkeley, Cal., Res. 62,284-N.S. (Nov. 18, 2003) (requiring certain municipal buildings to meet LEED Silver guidelines); Temecula, Cal., Res. 08-74 (July 22, 2008) (requiring all municipal buildings and additions to be LEED certified); Fort Collins, Colo., Res. 2006-096 (Sept. 5, 2006) (requiring LEED Gold certification for new municipal buildings over 5000 square feet, with some exceptions); Greensburg, Kan., Res. 2007-17 (Dec. 17, 2007) (requiring LEED Platinum certification for city-owned buildings greater than 4000 square feet); Bowie, Md., Res. R-15-03 (Feb. 3, 2003) (requires all municipal projects to follow green building criteria and to use LEED guidelines); Gaithersburg, Md., Res. R-33-07 (Apr. 16, 2008) (requiring LEED Silver certification for new municipal construction); N.Y., N.Y., Local Law No. 86 (2005) (requiring LEED Silver certification for municipal construction over \$2 million); Syracuse, N.Y., Gen. Ordinance 36 (Sept. 10, 2007) (requiring new municipal construction and major renovations to meet LEED Silver); Austin, Tex., Res. 000608-43 (June 8, 2000) (requires all city buildings to earn a minimum of LEED Silver certification); Bellingham, Wash., Res. 2005-21 (May 9, 2005) (requiring city buildings over 5000 square feet to achieve LEED Silver certification where feasible); King County, Wash., Ordinance 15118 (Feb. 7, 2005) (requiring LEED certification for capital facilities construction); Madison, Wis., Res. 08-00109 (Jan. 22, 2008) (requiring LEED Silver certification for municipal buildings over 5000 square feet).

¹⁸³ This interesting, but not particularly surprising, trend converges with the notion that governments should monitor, if not influence, markets that directly affect public welfare issues. *See, e.g.*, Sarah van Gelder, *Environmental Ethics*, in *RESHAPING THE BUILT ENVIRONMENT: ECOLOGY, ETHICS, AND ECONOMICS*, *supra* note 98, at 54, 63 (“[A] critical role of government is to help ensure that the market signal is right, that the environmental and social costs of producing and distributing a product are included in the price we pay at the cash register, that these costs are not externalized, forcing someone else, now or in the future, to pay.”).

¹⁸⁴ Anchorage, Alaska, Ordinance 2008-93 (Aug. 12, 2008), *available at* <http://www.muni.org/iceimages/Assembly2/ao2008-093.pdf%20>; *see also* Greensburg, Kan., Res. 2007-17 (Dec. 17, 2007) (“[I]t is the goal of the City of Greensburg, Kansas . . . to be a model community based on the principles of economic, environmental, and cultural sustainability.”); Syracuse, N.Y., Gen. Ordinance 36 (Sept. 10, 2007) (“[M]unicipal government should assume the role of leadership role in promoting the efficient use of natural resources providing for the long-term protection and enhancement of our environment, our economy and the health of our citizens and future generations”); Asheville, N.C., Res. 07-91 (Apr. 24, 2007) (stating that because the City “has

There is some variation among the many entities adopting green building standards for public buildings. The State of Washington requires LEED Silver standards for all building construction and remodel projects over 25,000 square feet.¹⁸⁵ The City of Asheville, North Carolina, requires LEED Gold certification for all city-owned and occupied buildings larger than 5000 square feet, with additional encouragement to achieve Platinum certification where possible.¹⁸⁶ Under the resolution, public buildings smaller than 5000 square feet must be able to meet LEED Silver certification requirements.¹⁸⁷ Notably, the Gold level requirement is contingent upon a projection that the energy savings result in cost recovery over a period of ten years; for projects where the ten-year payback is not achievable, public buildings need only meet LEED Silver certification.¹⁸⁸ Likewise, San Antonio, Texas passed a resolution requiring all new buildings funded and constructed by the City to meet LEED Silver certification standards.¹⁸⁹ Public buildings in scores of others must at least meet minimum LEED standards, with many requiring actual certification in the LEED program.¹⁹⁰

Some governments have gone beyond buildings and applied green principles for all public construction. The Metropolitan Government of Nashville and Davidson County, Tennessee, for instance, requires green certification for all government-owned buildings, with the additional requirement that certain “capital construction” projects meet LEED Silver rating.¹⁹¹ The City of Plano, Texas, requires the highest level of LEED certification feasible for all city-owned facilities.¹⁹²

a fiscal and social responsibility to conserve natural resources and understands the direct connection between environmental protection, economic development and local/regional quality of life,” the City will “take a leadership role” in green building).

¹⁸⁵ Wash. Exec. Order No. 05-01 (Jan. 5, 2005), *available at* http://www.governor.wa.gov/execorders/eoarchive/eo_05-01.pdf (establishing “Sustainability and Efficiency Goals for State Operations”).

¹⁸⁶ Asheville, N.C., Res. 07-91, § 1 (Apr. 24, 2007).

¹⁸⁷ *Id.* § 2.

¹⁸⁸ *Id.* § 3.

¹⁸⁹ San Antonio, Tex., Res. 1208 (Apr. 19, 2007), *available at* http://chapters.usgbc.org/centraltexas/Docs/pdf/COSA_GBR.pdf.

¹⁹⁰ *See, e.g.*, OAKLAND, CAL., MUN. CODE § 15.35.040 (2008), <http://bpc.iserver.net/codes/oakland/> (last visited July 19, 2009) (requiring LEED silver rating for new construction and renovations of city owned or occupied structures where construction costs total \$3 million dollars or more); S.F., CAL., ENV'T CODE § 707(e) (2008), *available at* http://ia311226.us.archive.org/2/items/gov.ca.sf.environment/ca_sf_environment.pdf (requiring LEED silver certification for projects of 5000 square feet or more); ATLANTA, GA., CODE OF ORDINANCES § 75-19(c) (2009), <http://www.municode.com/Resources/gateway.asp?pid=10376&sid=10> (last visited July 19, 2009) (requiring LEED Silver rating levels for design and management plans of new construction or renovations of facilities over 5000 gross square feet or exceeding \$2 million dollars in total project costs); N.Y., N.Y., CITY CHARTER ch. 9, § 224.1(b) (2009), <http://24.97.137.100/nyc/chapter/entered.htm> (last visited July 19, 2009) (requiring LEED green rating for capital projects with estimated construction costs of two million dollars or more involving new building, additions, or substantial reconstruction).

¹⁹¹ NASHVILLE & DAVIDSON COUNTY, TENN., CODE §§ 16.60.050, .070 (2008), *available at* <http://www.municode.com/resources/gateway.asp?pid=14214&sid=42>.

¹⁹² *See* Plano, Tex., City's LEED Policy, <http://www.plano.gov/Departments/Environmental%20Services/GreenLiving/buildings/Pages/4policy.aspx> (last visited July 19, 2009).

Another notable, but not entirely unique example of local government assuming a leadership responsibility in green building is seen in the City of Santa Clarita, California's effort to improve air quality in the Santa Clarita Valley. The city converted its bus fleet from diesel to compressed natural gas to reduce air emissions from public vehicles.¹⁹³ In conjunction with the vehicle conversion, the city sought to design and construct a new transit maintenance facility to meet high LEED standards.¹⁹⁴ The result of this effort was one of the first Gold-rated, LEED-certified straw buildings in the world.¹⁹⁵ Of course, the project was troubled by an initial lack of familiarity with green building strategies, but early efforts to integrate and coordinate the various areas of expertise that participants brought to the project effectively navigated the uncertainties of green building goals.¹⁹⁶ The project ultimately incorporated a "less is more" strategy in the materials chosen to construct the facility, the building fixtures, and operational designs of the building to reduce maintenance costs over time.¹⁹⁷ Design choices were made to reduce water consumption (e.g., drought-tolerant, native plantings), reduce site impacts (e.g., close to regional transportation corridors), and decrease energy dependency (designed to maximize natural light and ventilation resources).¹⁹⁸ The city also committed to on-site energy production and continuous monitoring to identify, quantify, and maintain the benefits of its green building strategy.¹⁹⁹ The structure is further highlighted in explanatory materials and self-guided tours of the facility that showcase the structure's features and accomplishments.²⁰⁰

¹⁹³ Charles R. Smith, Jr., *High-Performance Building Envelopes: High-Performance Straw Bale*, ENVTL. DESIGN & CONSTRUCTION, May 1, 2007, http://www.edcmag.com/Articles/Featured_Special_Sections/BNP_GUID_9-5-2006_A_1000000000000095483 (last visited July 19, 2009).

¹⁹⁴ *Id.*

¹⁹⁵ *Id.*

¹⁹⁶ *See id.* (describing how informing the various project participants about sustainable building from the beginning helped ensure a sustainable design).

¹⁹⁷ *Id.* One member of the design team explains the reasoning behind using straw-bale construction:

Materials were selected based on renewable/recycled content, locality, low toxicity, durability and ease of maintenance.

Incorporating straw-bale construction brings a fresh use to a method of construction largely relegated to residential development. A readily available, renewable and local agricultural waste product that may have gone into a landfill or been burned—creating particulate pollution—has been used as a valuable construction material. Straw-bale construction is highly energy efficient, promotes good indoor environmental quality (contains no VOCs or other toxic compounds), and is biodegradable and cost-effective.

Id.

¹⁹⁸ *Id.*

¹⁹⁹ *Id.*

²⁰⁰ *Id.*

4. Green Building Education

A final interesting development in green building laws has been the incorporation of green building education. Given that green building was developed within a framework plagued by informational deficiencies,²⁰¹ the educational initiative might be seen as a necessary component to the success of the movement. To combat the informational problem, some entities provide information to the general public, while others provide specific consulting assistance to builders on meeting the requirements of high performing, green buildings.²⁰² Under these laws, local building departments may provide consulting on private projects and instruction on how green building standards can be met on a project-specific basis.²⁰³ The City of Frisco, Texas, hosts accredited educational programs to provide information on green building initiatives.²⁰⁴ King County, Washington, established a green building team to provide education and guidance to county governmental departments on achieving and implementing green building goals.²⁰⁵ Oakland, California, provides technical assistance to builders of green projects and publicly promotes green projects for builders.²⁰⁶

C. Successes of the Informational Approach

The green building movement has had a great start.²⁰⁷ At the least, owners of homes and commercial buildings have sought green building

²⁰¹ See *supra* Part III.A.

²⁰² See, e.g., OAKLAND, CAL., MUN. CODE § 15.35.046 (2008), <http://bpc.iserver.net/codes/oakland/> (last visited July 19, 2009) (free technical assistance); Chandler, Ariz., Res. 4199, Exhibit A, at 12 (June 26, 2008), *available at* http://www.chandleraz.gov/Content/20080626_15.pdf (indicating staff will direct developers and homeowners to appropriate sources for green building advice); Issaquah, Wash., Res. 2004-11, Attachment A, at 6 (Dec. 21, 2004), *available at* <http://www.usgbc.org/ShowFile.aspx?DocumentID=1982> (free consultation).

²⁰³ See Issaquah, Wash., Res. 2004-11, Attachment A, at 6-7 (Dec. 21, 2004), *available at* <http://www.usgbc.org/ShowFile.aspx?DocumentID=1982>.

²⁰⁴ Frisco, Tex., Ordinance 06-10-110, Exhibit A (Oct. 17, 2006), *available at* <http://documents.friscotexas.gov/weblink/index.asp?DocumentID=47966&FolderID=47785&SearchHandle=0&DocViewType=ShowImage&LeftPaneType=Hidden&dbid=0&page=1>.

²⁰⁵ See King County Solid Waste Div., Green Building and Sustainable Development Ordinance, <http://www.metrokc.gov/dnpr/swd/greenbuilding/program/ordinance.asp> (last visited July 19, 2009).

²⁰⁶ OAKLAND, CAL., MUN. CODE § 15.35.046 (2008), <http://bpc.iserver.net/codes/oakland/> (last visited July 19, 2009).

²⁰⁷ Sara Bronin provides a less optimistic analysis of the promise and potential of local governments in furthering sustainability. See Sara C. Bronin, *The Quiet Revolution Revived: Sustainable Design, Land Use Regulation, and the States*, 93 MINN. L. REV. 231, 259 (2008) ("Despite examples of successful local reform, very few localities have taken steps to amend existing laws or to create new laws which address green building. Institutional inertia serves as a key obstacle: simply put, local government officials resist change."). The difference between Bronin's analysis and that offered in this Article may be based on a divergence in how we measure success. This Article assumes that a movement that is able to face an adverse presumption and capture even a minority market share in construction and building sales, as well as the attention of consumers, materials producers, and state and local legislators, is worthy of attention; Bronin appears to defer judgment until green building is either universally mandated or constitutes a majority of building construction. See *id.* at 249-50.

benefits in significant numbers.²⁰⁸ As early as 2006, industry observers noted that, “[w]hat started out as a charismatic crusade had matured into an established sector of the U.S. construction industry.”²⁰⁹ Arguably at least, laws concerned with environmental quality have never experienced nor expected this type of interest in compliance, and certainly not from all sectors (political, industry, and consumer) at the same time. The easiest explanation for the interest in green building can be found in the manner in which information was obtained through green building experimentation—using a carrot instead of a stick.²¹⁰ The information-gathering exercise of early green building laws produced knowledge for overcoming the prescriptive inclination behind conventional building codes and fitting the innovative ideas of green building into a regulatory process otherwise governed by prescriptive building codes.²¹¹ In a sense, green building has become compatible with conventional building methods, primarily through a better understanding of *how* to build green. Of course, this understanding is slow to come.²¹² Specifically, as more projects have been completed, and more green building methods have been explored, the extraordinary informational effect of green building has been an understanding of the costs of building green and a verification of green building benefits. So, we are now building green because of what green building has to offer.

Not surprisingly, the practical successes of early green building laws include the experience gained from actually engaging green building standards. First, even if experiences in green building had been limited to the construction of publicly-owned buildings, we would have emerged from the informational laws with a host of experienced building officials, who are able to guide builders more effectively through building code review based on alternative code and performance standards. Experienced builders can meanwhile manage inexperienced building officials more effectively to avoid denial of a project based on lack of understanding. Experienced builders can also more accurately account for the costs and pitfalls of the green building process. In this regard, it is significant that the green building movement has produced “green building codes”—incorporating both performance and prescriptive standards—that could be relied upon by builders and officials

²⁰⁸ USGBC estimates that its membership has more than quadrupled since 2000. See U.S. GREEN BLDG. COUNCIL, GREEN BUILDING BY THE NUMBERS 1 (2009), available at <http://www.usgbc.org/ShowFile.aspx?DocumentID=3340>. In 2008, USBGC reported that LEED workshops were attended by over 90,000 people, that there were 80,000 accredited LEED professionals, and that the number of attendees at Greenbuild increased by over 5000 people between 2007 to 2008. *Id.* at 2. As noted above, the United States construction market (both residential and commercial) is incorporating green building principles and methods at a surprising rate. MCGRAW-HILL SMARTMARKET REPORT, *supra* note 8, at 2–3. The McGraw-Hill report further projects 5–10% of all new construction starts in 2010 will be green. *Id.*

²⁰⁹ BDC WHITE PAPER, *supra* note 6, at 1.

²¹⁰ The 2006 *McGraw-Hill SmartMarket Report* indicates that the principal motivators for green builders were “doing the right thing” and “lowering lifecycle costs” in finished buildings. MCGRAW-HILL SMARTMARKET REPORT, *supra* note 8, at 5.

²¹¹ See *supra* Part III.A (discussing prescriptive building codes).

²¹² See, e.g., Bronin, *supra* note 207, at 251–53 (discussing conflicts between green building standards and conventional building and landscaping codes).

on common grounds as objective criteria. The effect of standardization in green building has made the movement accessible, realistic, and credible. Although obvious, this informational development, primarily affecting knowledge of the building process itself and the products at issue, should not be underestimated.²¹³

Second, as green buildings have been occupied, it appears that the projected benefits of green building principles—efficiency, health, direct and indirect impacts on the environment, and cost—are being verified.²¹⁴ Therefore, in what is apparently the most comprehensive study to date of LEED building performance, the New Buildings Institute reports that “[e]ach of three views of building performance show average LEED energy use 25–30% better than the national average, a level similar to that anticipated by LEED modeling.”²¹⁵ The cost of building maintenance and operation, in the form of reduced utility bills and maintenance costs, has meanwhile excited consumers in the market.²¹⁶

Likewise, in a typical story on the health benefits of green buildings, it is difficult to identify a loser:

What is being said about green building benefits? Occupants report improved comfort, convenience and worker performance. Owners reduce operating expenses for utilities, repairs and maintenance while increasing their lease rates and occupancy. Developers dispose of their commercial space faster than their competitors—at higher lease rates or higher sales prices. Real estate investors net greater returns.²¹⁷

The information gathered so far on the projected health and productivity benefits of green buildings is understandably light.²¹⁸ However, the early results are impressive and promising. One review, undertaken to

²¹³ Removing this obstacle to green building, and making it easier to implement the principles of green building, may have been the most important development in the movement. See generally Ann E. Carlson, *Recycling Norms*, 89 CAL. L. REV. 1231, 1236 (2001) (“Though social norms can, and sometimes do, play a role in encouraging cooperative behavior . . . their force is limited. Instead, reducing the effort required to engage in the desired behavior can have far greater success in increasing the numbers of people who cooperate over a long period of time than efforts to intensify social norms.”).

²¹⁴ KATS, *supra* note 118, at v.

²¹⁵ See, e.g., CATHY TURNER & MARK FRANKEL, NEW BLDGS. INST., ENERGY PERFORMANCE OF LEED FOR NEW CONSTRUCTION BUILDINGS 5 (2008), available at <https://www.usgbc.org/ShowFile.aspx?DocumentID=3930>; Allyson Wendt, *Homes Get Their Own LEED*, ENVTL. BUILDING NEWS, Dec. 2007, available at <http://www.buildinggreen.com/auth/article.cfm?fileName=161205a.xml>.

²¹⁶ KATS, *supra* note 118, at v.

²¹⁷ Broughton, *supra* note 77.

²¹⁸ In 2007, the U.S. Green Building Council reported a finding of an imbalance between green building investment and the extent of the problems that green building aims to resolve; federally-funded research from 2002–2004 was comprised of approximately 0.2% of all federally funded research (averaging \$193 million per year). See USGBC RESEARCH COMM., U.S. GREEN BLDG. COUNCIL, GREEN BUILDING RESEARCH FUNDING: AN ASSESSMENT OF CURRENT ACTIVITY IN THE UNITED STATES 5 (2007), available at <http://www.usgbc.org/ShowFile.aspx?DocumentID=2465>; USGBC RESEARCH COMM., U.S. GREEN BLDG. COUNCIL, A NATIONAL GREEN BUILDING RESEARCH AGENDA 2 (rev. 2008), available at <http://www.usgbc.org/ShowFile.aspx?DocumentID=3402>.

identify the link between indoor environmental quality and human health,²¹⁹ reported strong evidence that “indoor environments significantly influence the occurrence of communicable respiratory illness, allergy and asthma symptoms, sick building symptoms, and worker performance.”²²⁰ According to the reviewer, the scientific literature suggested that a focus on the associations between indoor environments and health could substantially improve human health and economic concerns: that improved ventilation could reduce communicable respiratory illnesses by several factors;²²¹ that the causes of sick building syndrome symptoms, which are most commonly found in schools and office buildings, could be controlled by improved building methods; and that “significant reductions in asthma and allergy symptoms if the moisture problems were prevented or repaired, indoor smoking was reduced, and dogs and cats were maintained outdoors of the homes of allergic subjects” would be expected.²²² Although admittedly based on limited empirical evidence, the report concluded that improved indoor environments based on even existing technologies could increase health and productivity at large projected gains.²²³

Moreover, as health and energy efficiency expectations were panning out, the costs of meeting green building standards have not been nearly as onerous as initially anticipated. Notwithstanding the costs attributable to green features—design, materials, and the cost of the certification process—green building certification has been found to cause only a negligible increase in upfront building costs.²²⁴ A California study prepared in 2003, entitled *The Costs and Financial Benefits of Green Buildings*, found that:

[T]he average premium for . . . green buildings is slightly less than 2% [or \$3–\$5 per square foot], substantially lower than is commonly perceived. The majority of this cost is due to the increased architectural and engineering . . . design time necessary to integrate sustainable building practices into projects. Generally, the earlier green building gets incorporated into the design process, the lower the cost.²²⁵

²¹⁹ See William J. Fisk, *Health and Productivity Gains from Better Indoor Environments and Their Relationship with Building Energy Efficiency*, 25 ANN. REV. ENERGY & ENV'T 537, 537–38 (2000).

²²⁰ *Id.* at 560.

²²¹ *Id.* at 539–43.

²²² *Id.* at 545.

²²³ *Id.* at 561.

²²⁴ KATS, *supra* note 118, at v.

²²⁵ *Id.* at viii. Some estimates of upfront green building costs indicate a range of 3–5% above comparable market prices for buildings meeting conventional building codes. Other assessments of green building costs describe the transition to green building as entirely benign. For instance, in July of 2007, Davis Langdon published the *Cost of Green Revisited: Reexamining the Feasibility and Cost Impact of Sustainable Design in the Light of Increased Market Adoption*, which is based on a review of buildings designed and constructed to implement green building methods and achieve LEED green building standards. LANGDON, *COST OF GREEN REVISITED*, *supra* note 138, at 4. The sample relied upon was comprised in large part of public buildings (academic buildings, laboratories, libraries, community centers, ambulatory care facilities), which might not have been available without the above-mentioned leadership by state and local governments. The Davis Langdon report compared green buildings versus

The time factor of green integration decreases as architects, engineers, builders, and building officials gain experience,²²⁶ and so it makes sense that the cost of building green decreased in correlation to the number of public green buildings constructed and private green building incentives used. In addition, given the above-described findings on the consistent energy performance of green buildings, any remaining increased front-end costs may be offset in large part over the lifetime of the structure, such as in utility savings and saved medical expenses.

The explosion of market activity seen in green building has not gone unnoticed on Wall Street. Over the last several years, a growing number of financial institutions and private investors have seized upon the popularity of green building to develop green marketing strategies and “socially responsible” investment products.²²⁷ In the midst of generating green building information, the financial acquiescence is described as a reasonable reaction to market growth: “What happened is that the financial sector of the real estate industry, heretofore a casual bystander, suddenly woke up to green building—not necessarily because its members had miraculously developed an insatiable urge to save the planet, but because they had begun to see a *viable* new investment opportunity.”²²⁸

Finally, it is notable that, as of this date, there are no reported decisions on builders (or anyone, for that matter) challenging the imposition of green

comparable non-green buildings based on three elements of project management: the cost attributable to green-specific standards of construction, the costs of green buildings compared to similar non-green buildings, and the ability of green projects to meet budgetary expectations. *Id.* at 3. The conclusions favor green buildings: “[T]here is no significant difference in average costs for green buildings as compared to non-green buildings.” *Id.*

²²⁶ See KATS, *supra* note 118, at 13.

²²⁷ See BDC WHITE PAPER, *supra* note 6, at 10–15 (discussing the transition in the financial sector toward seeing the “new reality”). Of course, the development of green building should be distinguished from free-market environmentalism. As Barton Thompson states, “The principal purpose of [regulatory] markets is to reduce the cost of environmental regulation by providing the regulated community with greater flexibility.” Barton H. Thompson, Jr., *Markets for Nature*, 25 WM. & MARY ENVTL. L. & POL’Y REV. 261, 262 (2000). In the case of green building, while it is clear that market factors influenced the direction and speed of success in the movement, the intended direction of green building codes is not toward a free market in building codes. See generally BDC WHITE PAPER, *supra* note 6, at 10–15 (providing examples of the financial community’s involvement in the development of green building).

²²⁸ BDC WHITE PAPER, *supra* note 6, at 5 (emphasis added). In a survey by Jones Lang LaSalle, it was reported that

70% of survey respondents globally stated that they were prepared to pay a premium rental for sustainable real estate, 62% that this premium would be in the region of 1–10% more, and a further 8% stating that they would be prepared to pay a double digit premium for appropriate, sustainable solutions. In contrast, and critically, a quarter of respondents maintained that they were not prepared to pay any more for a sustainable solution, irrespective of their views on the costs of delivering such product to the market.

JONES LANG LASALLE, GLOBAL TRENDS IN SUSTAINABLE REAL ESTATE: AN OCCUPIER’S PERSPECTIVE 5 (2008), available at http://www.joneslanglasalle.com/ResearchLevel1/Global_Trends_in_Sustainable_Real_Estate_-_Feb_2008_EN.pdf.

building standards through local laws.²²⁹ In large part, green building laws have been palatable to the building industry because they were voluntary and because the development of green building codes has been collaborative.²³⁰ In the final analysis, however, early green building laws have likely been a success because green goals and methods have changed the character of our interaction with nature, and have enabled green to converge with economic benefit.²³¹

²²⁹ Surely this cannot last forever. Indeed, there are a handful of cases proceeding that involve (to varying degrees) green building laws or green buildings. *See, e.g.*, *Air Conditioning, Heating & Refrigeration Inst. v. City of Albuquerque*, Civ. No. 08-633 MV/RLP (D.N.M. Oct. 3, 2008), available at <http://www.nmcourt.fed.us/Drs-Web/view-file?full-path-filename=%2Fdata%2Fdrs%2Fdm%2Fdocuments%2Fcadd%2F2008%2F10%2F03%2F0001884303-0000000000-08cv00633.pdf> (seeking to enjoin enforcement of City of Albuquerque's green building code based on the federal preemption of energy standards in certain heating, ventilating, air conditioning, and water heating products). *See also* Counter-Complaint at 4, *S. Builders, Inc. v. Shaw Dev., L.L.C.*, No. 19-C-07-011405 (Md. Cir. Ct. filed Jan. 16, 2007), available at http://www.greenbuildinglawupdate.com/uploads/file/Southern%20Builders%20v._%20Shaw%20Development.pdf (alleging negligence and breach of contract in a complaint against builders after the building failed to meet LEED standards that would have resulted in state tax credits). Also, it might be interesting to note that while the greenness of a building may provide some mitigation to health and environmental impacts, green buildings will not be immune from "not in my backyard" suits as a matter of mere virtue. *See, e.g.*, Aaron Boyd, *Neighbors File Article 78 Against 132 North Main Project; Claim Review Process Flawed*, HAMPTONS.COM, Feb. 3, 2009, <http://www.hampton.com/detail.html?id=6270&apid=12801&sid=35&cid=133&hm=0&iv=0&townflag=> (last visited July 19, 2009) (detailing a lawsuit filed over the approval of a commercial building which obtained LEED certification, but that neighbors alleged would tarnish the neighborhood).

²³⁰ Jeff Witt, AICP, who manages the green building program in Frisco, Texas, took some humor at my inquiry into any voiced objections to Frisco's green building laws. Frisco's program, which relies on EnergyStar Compliance, was developed as a collaborative effort among builders, engineers, politicians, and agency personnel, and initially required all subdivisions platted after 2003 to comply with green requirements. Telephone Interview with Jeff Witt, Comprehensive & Envtl. Admin., City of Frisco, in Frisco, Tex. (Jan. 31, 2008). According to Mr. Witt, the only challenge from the building industry came from one builder who did not participate in the development of Frisco's program, and reportedly objected only on principle; after having secured an exemption from the program requirements, the objector then built to green standards anyway. *Id.*

²³¹ The early success of green buildings also suggests that what is important is that "green building" is not merely an extension of the informational approach seen in other environmental laws. In making this distinction, it seems reasonable to recognize that the administration of environmental regulations has been open to criticism as an opportunity to politicize the scientific process of inquiry and the value of scientific insights in the policy making and regulatory process. *See, e.g.*, Wendy E. Wagner, *The Science Charade in Toxic Risk Regulation*, 95 COLUM. L. REV. 1613, 1617 (1995) (asserting that agencies disguise controversial policy decisions as science). This is a consequence of the design of environmental regulations, which are in large part built upon a need for environmental information as an essential element of the prima facie case for entitlement. Alyson Flournoy suggests that certain informational environmental regulations can be classified as either "information demand" or "information supply" regulations: Demand regulations rely on an agency's consideration of information, either as a procedural step or to apply a particular substantive standard in environmental decision making; supply regulations, on the other hand, relate more specifically to the submission of information for consideration in the regulatory process. Alyson C. Flournoy, *Supply, Demand, and Consequences: The Impact of Information Flow on Individual Permitting Decisions Under Section 404 of the Clean Water Act*, 83 IND. L.J. 537, 558-61 (2008). Flournoy argues that one defect in informational regulations is discretion, where agencies may be

IV. MOVING INTO MANDATORY GREEN BUILDING LAWS AND NAVIGATING THE TRADITIONAL DIVIDE BETWEEN LAND USE RESTRICTIONS AND LAND USE RIGHTS

The steps that governments across the country have taken—and continue to take—demonstrate that the green building movement is no longer a fringe concept espoused solely by environmentalists. . . . Those who are quickest to acquire the necessary expertise to assist in this transition to “green” will have earned a distinct advantage.²³²

Even if only for progress in the development of green building methods, it was expected that the voluntary green building program would eventually incorporate mandatory standards.²³³ As has been argued, “[a]ll first-generation assessment methods are voluntary in their application—an emphasis that significantly compromises both their comprehensiveness and rigor.”²³⁴ It should not be surprising, then, that participating state legislatures and local governments have proceeded with confidence to build upon the accomplishments of the informational green building laws in their local regulations and ordinances. Specifically, in many jurisdictions green building is surfacing in mandatory regulatory schemes applicable to the private sector. There are several approaches,²³⁵ of course, suggesting that the

relatively unchecked if inclined to permit actions that cause otherwise unacceptable environmental degradation. *Id.* at 570–71. The critique leveled by Wendy Wagner, who argues that the informational process of environmental laws is a charade, seems to converge with Flournoy’s by suggesting that an explanation for the correlation between discretion and environmental degradation is found in the manner in which information is used in the regulatory process: Where control of information is causally linked to entitlement in the permitting process, all parties have an incentive to distort, mischaracterize, and even short-shrift the information gathered in a competitive process in which the control of information arguably determines the plausibility of our values. *See* Wendy E. Wagner, *Commons Ignorance: The Failure of Environmental Law to Produce Needed Information on Health and the Environment*, 53 DUKE L.J. 1619, 1691–95 (2004). Green building laws are distinguishable from the place and purpose of information in this description of environmental regulations. Of course, green building laws often employ both information supply and demand schemes, largely made necessary by the shift to performance, rather than prescriptive, codes to accommodate innovative building practices. *See generally supra* notes 86–91 and accompanying text (describing performance and prescriptive codes). However, at least in the early efforts, green building laws did not construct a regulatory process in which the informational contingencies determine the policies at issue. *See generally supra* Part III.A.1 (describing the historical lack of information on green building). That is, in green building, in a manner contrary to other environmental laws, information itself has not been the battleground.

²³² Abair, *supra* note 180, at 632.

²³³ *See* Raymond J. Cole, *Environmental Performance of Buildings: Setting Goals, Offering Guidance, and Assessing Programs*, in *RESHAPING THE BUILT ENVIRONMENT: ECOLOGY, ETHICS, AND ECONOMICS*, *supra* note 98, at 276, 292.

²³⁴ *Id.*

²³⁵ It should be noted that although the evolution in this regard is industry-wide, the International Code Council (ICC) took a bit more time in the project of adopting more stringent energy standards for some time and has recognized that much of the current conventional building codes are already or can be adopted to incorporate green standards. *See generally* BILKA, *supra* note 28, at 7 (“Some green and sustainable principles have direct impact on or virtually duplicate existing code provisions. In such cases, the greening of the codes may simply be a matter of raising the bars which are already in place in the codes.”). Notably, however,

trajectory of green building laws has been strongly influenced by the applicability of traditional police power authority, the identification of the accumulated information and expertise acquired in earlier green building laws, and the palatability of such laws to those regulated in the various schemes. However, in this paradigm, in which green building concepts become regulatory mandates instead of voluntary aspirations, the pressing question is not whether the local government can *offer* the opportunity to build green, but whether the local government can *require* builders to meet high performance building standards.²³⁶

A. Requiring Green Building Practices in the Built Environment

The most plain and common method of imposing mandatory green construction standards has been through the adoption of mandatory green building codes as a supplement in the building and site plan review process. Among the local laws requiring builders to meet high performance standards, most local green building programs either refer to or require certification through the LEED program.²³⁷ However, not all programs have relied on LEED.²³⁸ Several local and competing green building standards have surfaced throughout the country, and depending on the palatability of such programs to local politics, there have been varying degrees of

local governments have driven into the heart of green building ideas with or without the guidance of the ICC. *See generally id.* at 2 (noting that “a handful of local jurisdictions have developed their own green building criteria or rating systems”). On January 29, 2009, the American National Standards Institute (ANSI) approved ICC-700, called the “National Green Building Standard,” in a joint effort of the ICC and NAHB. *See National Green Building Standard ICC-700 Approved*, HOUSINGZONE.COM, Feb. 3, 2009, <http://www.housingzone.com/article/CA6634369.html> (last visited July 19, 2009); Press Release, Nat’l Ass’n of Home Builders, NAHB Applauds ANSI Approval of National Green Building Standard (Jan. 29, 2009), http://www.nahb.org/news_details.aspx?sectionID=0&newsID=8533 (last visited July 19, 2009). The National Green Building Standard is the first rating system to be approved by ANSI. *Id.*

²³⁶ Although virtually all of these mandatory programs contain enforcement mechanisms or are made subject to existing building code enforcement, there seems to be little experience at this point in exercising such authority. *See* BILKA, *supra* note 28, at 3.

²³⁷ For instance, Montgomery County, Maryland enacted Green Building legislation on November 28, 2006. Montgomery County, Md., Bill No. 17-06 (Nov. 28, 2006), *available at* http://www.montgomerycountymd.gov/content/council/pdf/SCANNED_DOCS/20061128_17-06.pdf. The county’s program applies through all zoning designations and to all new covered buildings exceeding 10,000 square feet, as well as significant structural modifications to such buildings. *Id.* Construction of public buildings must meet LEED Silver Certifications, and private buildings are required to be LEED certified, with some exceptions. *Id.* Apparently, to avoid antitrust and nondelegation issues, the legislation vests the county’s permitting agency with both approval authority and waiver powers. *See also* Gaithersburg, Md., Ordinance O-11-08 (Sept. 15, 2008) (requiring LEED certification for all buildings equal to or larger than 10,000 square feet, and LEED Silver certification for buildings larger than 99,999 square feet).

²³⁸ In several of the programs in which a local, independent rating system has been adopted, applicants are offered the ability to substitute compliance with LEED certification. *See, e.g.,* West Hollywood, Cal., Ordinance 07-762, § 6 (July 16, 2007), *available at* <http://www.weho.org/media/File/GreenbuildingOrdinance.pdf>.

participation and concentration in the elements of green building.²³⁹ Moreover, many of these programs have combined the incentives of the informational green building laws with a mandate for certification.²⁴⁰ Others venture to exceed current green standards, such as the announcement in Austin, Texas that all new homes would be “zero energy capable” by 2015.²⁴¹

Given the systemic approach to minimizing the impact of the building environment, it may not be surprising that green building is also evolving to expand the scope of green building aspirations. As LEED and other programs have matured and expanded, the applicability of green building standards has moved beyond construction materials, energy efficiency, indoor air quality, water conservation, and waste recycling, and into and throughout green neighborhoods.²⁴² LEED for Homes, for instance, encourages development in a characteristically “smart growth” fashion, favoring reuse, redevelopment, infill development, and sites close to existing infrastructure.²⁴³ Similarly, in light of the desire that buildings serve a longer

²³⁹ For example, the City of Novato, California currently requires all residential construction and renovation to accomplish a minimum score of “Green Building Points.” See Novato, Cal., Ordinance 1503, § 4-13.3 (Sept. 27, 2005), available at <http://www.ci.novato.ca.us/Modules/ShowDocument.aspx?documentid=457>. Novato’s system contemplates a graduating scale over time. *Id.* The applicable criteria are derived from a rating system known as the “New Homes Green Building Points Calculator,” developed and published by the Alameda County Waste Management Authority in January, 2004. *Id.* § 4-13.1. It may be notable that Novato’s ordinance contains no exemptions, exceptions, or variance procedures on its face. See *id.* Among other things, the consideration of several green rating systems in a single program may be intended to overcome the problems that might be encountered by specific designs or in specific locations, given the availability of materials, regional climate factors, and so on.

²⁴⁰ In 2006, Eagle County, Colorado, implemented the Eagle County Efficient Building Code (ECObuild), which purports to apply to all new residential construction and residential expansions exceeding 50% of existing square footprint, as well as nonresidential and mixed-use construction and reconstruction. EAGLE COUNTY, COLO., LAND USE REG. art. 4, §§ 4-810 to -820, 910 to -920 (2008), available at [http://www.eaglecounty.us/uploadedFiles/commDev/Planning/Article%204%20-%20Site%20Development%20Standards\(2\).pdf](http://www.eaglecounty.us/uploadedFiles/commDev/Planning/Article%204%20-%20Site%20Development%20Standards(2).pdf). ECObuild implements its own point-based rating system (encompassing prescriptions in siting, water conservation, materials, energy efficiency, renewable energy, and indoor air quality), including minimum points required for size and type of construction. *Id.* §§ 4-820 to -830. The prescriptive components of the ECObuild program are supplemented by financial incentives, including possible rebates of 25% (up to \$5000) on permit fees as an award for high scores on the rating system, and additional 10% rebates in increments above the minimums, and in part finances these incentives by offering the opportunity to pay a fee in lieu of compliance with the minimum point requirements. See *id.* §§ 4-820, -920.

²⁴¹ Although “zero energy homes” are equipped to draw from the utility grid, they are intended to produce the energy needed for consumption. Memorandum from the Zero Energy Capable Homes Task Force to the Mayor and Council of the City of Austin, Tex. 1–2 (Sept. 5, 2007), available at http://www.ci.austin.tx.us/news/2007/downloads/zeh_final_report.pdf.

²⁴² See, e.g., LEED FOR HOMES, *supra* note 29 (providing a LEED building program for residential buildings).

²⁴³ For instance, LEED for Homes will incorporate credits for implementing LEED for Neighborhood Development, which is presently in the pilot stage. See *id.* at 25 (Locations and Linkages); U.S. Green Building Council, LEED for Neighborhood Development, <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=148> (last visited July 19, 2009) (“The pilot program, during which nearly 240 pilot projects tested a pilot version of the rating system, began in the summer of 2007 and is now wrapping up.”).

duration of high performance, some mandatory green building laws include provisions requiring builders to meet continuing compliance schedules.²⁴⁴

Notably, although green building standards were initially designed for incorporation into building codes, federal, state, and local governments have not confined green building to the building review process.²⁴⁵ Rather, local governments are understandably looking more broadly to the development process and have found existing non-building code methods to impose green building standards, such as during regulatory review of major land use developments²⁴⁶ (including subdivision or planned-unit development approvals), in preconstruction environmental review (arising as mitigation), and in development agreements between local governments and developers.²⁴⁷ In such cases, due to the benefits of green building to public welfare interests, high performance building standards might reasonably be identified as suitable *mitigation* for the impacts of new development.²⁴⁸

One example of a regulatory scheme that is potentially adaptable to the idea of using green building as mitigation is the National Environmental Policy Act (NEPA).²⁴⁹ NEPA provides a flexible and accessible model for incorporating green building benefits, as NEPA requires that decision-making agencies consider such a wide array of environmental impacts and mitigation techniques.²⁵⁰ NEPA litigation has reached the dilemma of greenhouse gas emissions, and courts have required agencies to take a hard look at the types of long-term contributions that particular actions have on

²⁴⁴ The City of Pleasanton, California, recently extended its experimental program to residential construction, requiring mandatory compliance with its green certification program. See Pleasanton, Cal., Ordinance 1873 (Dec. 3, 2002), available at <http://www.ci.pleasanton.ca.us/pdf/greenbldg.pdf>. Although Pleasanton's program also relies on the rating system developed by Alameda County's Waste Management Authority, it diverges significantly in its scope and impact. See PLEASANTON, CAL., MUN. CODE § 17.50.030 (2006), <http://qcode.us/codes/pleasanton> (last visited July 19, 2009). In contrast to Novato's ordinance, which also adopts the Alameda program, see *supra* note 239, Pleasanton's scheme delegates discretionary authority to the building official to award exemptions for projects for which green methods cannot be incorporated. PLEASANTON, CAL., MUN. CODE § 17.50.080 (2006), <http://qcode.us/codes/pleasanton> (last visited July 19, 2009). More importantly, Pleasanton's ordinance institutes ongoing enforcement of green building standards by requiring building review at the issuance of an occupancy permit, and then again after one year, and again after five years. *Id.* § 17.50.070(D); see also *infra* Part IV.B and note 267.

²⁴⁵ See, e.g., WEST HOLLYWOOD, CAL., MUN. CODE § 19.20.060(B)(1)(a) (2009), http://qcode.us/codes/westhollywood/view.php?topic=19-19_3-19_20-19_20_060&frames=on (last visited July 19, 2009) ("A preliminary green building plan shall be submitted as part of an application for a discretionary land use or development permit."); see also LIVERMORE, CAL., MUN. CODE § 15.76.040.A (2009), available at http://www.codepublishing.com/ca/LivermorePDF/Livermore_fullcode0309.pdf (providing site plan, conditional use review, or design review under a downtown-specific plan).

²⁴⁶ See, e.g., WEST HOLLYWOOD, CAL., MUN. CODE § 19.20.060(B)(1)(a) (2009).

²⁴⁷ *Id.* § 19.20.060(B)(1)(b).

²⁴⁸ But see J.B. Ruhl, *Cities, Green Construction and the Endangered Species Act*, 27 VA. ENVT'L L.J. (forthcoming 2009) (inquiring into whether green construction standards will be required as mitigation for adverse urban and development impacts to species' habitats).

²⁴⁹ National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370e (2006).

²⁵⁰ *Id.* §§ 4331–4332.

global environmental needs.²⁵¹ Several states have adopted “little NEPAs” in their statutory schemes.²⁵² Among them, it is notable that the Massachusetts scheme already requires agencies to address greenhouse gases (GHGs) in environmental impact statements.²⁵³ The next step, even if it presents only a partial mitigation for both urban densities and growth outside urban areas, would be corresponding analysis of and mitigation measures aimed at reductions in water, energy, and materials use in new construction, calculated either on a project-specific basis or relative to the needs of communities in comprehensive planning.

Finally, with the growing trend of Supplemental Environmental Projects (SEP) as an alternative in the enforcement of environmental regulations, green building standards are being considered as a suitable exchange for penalty waivers in cases of regulatory violations and enforcement.²⁵⁴ EPA envisions SEPs as an opportunity to achieve benefits that would otherwise be unavailable, but that arise as “an environmentally beneficial project that a defendant . . . agrees to undertake in settlement of a civil penalty action.”²⁵⁵ After toying with the idea, in 2004 EPA established the basic framework for allowing parties to engage in green building projects at contaminated properties in exchange for credit toward the mitigation of penalties.²⁵⁶ The

²⁵¹ *Border Power Plant Working Group v. U.S. Dep’t of Energy*, 260 F. Supp. 2d 997, 1021 (S.D. Cal. 2003) (finding carbon dioxide emissions appropriate for analysis under NEPA for construction of transmission lines); *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 508 F.3d 508, 550 (9th Cir. 2007) (“The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct.”), *vacated on other grounds*, 538 F.3d 1172 (9th Cir. 2008); *Natural Res. Def. Council v. Kempthorne*, 506 F. Supp. 2d 322, 370 (E.D. Cal. 2007) (rejecting the U.S. Fish and Wildlife Service’s biological opinion for a water diversion project that relied on historical hydrological patterns rather than considering possible hydrology changes due to impacts from climate change).

²⁵² See generally Daniel P. Selmi, *Themes in the Evolution of the State Environmental Policy Acts*, 38 URB. LAW. 949, 952 (2006) (examining state environmental policy acts (SEPA) by identifying ten themes in the development of those laws).

²⁵³ MASS. GEN. LAWS ANN. ch. 30, §§ 61–62H (West 2001); MASS. EXECUTIVE OFFICE OF ENERGY & ENVTL. AFFAIRS, MEPA GREENHOUSE GAS EMISSIONS POLICY AND PROTOCOL 1 (2007), available at <http://www.mass.gov/envir/mepa/pdf/files/misc/ghgemissionspolicy.pdf>; see also Madeline June Kass, *Little NEPAs Take on Climate Goliath*, NAT. RESOURCES & ENV’T, Fall 2008, at 40, 41 (discussing the advances made in Massachusetts, California, and Washington in integrating climate change analysis into “little NEPA” procedures).

²⁵⁴ See U.S. ENVTL. PROT. AGENCY, *supra* note 17, at 1.

²⁵⁵ *Id.*

²⁵⁶ EPA first considered the notion of incorporating green building benefits into the remediation of contaminated properties:

Green Building/Rehabilitation of Contaminated Properties—Green Building Projects may address one or several sources of pollution generated by a building or construction project. A green building project may involve the use of green building technologies at the redevelopment of a nearby contaminated property and could include activities such as:

- Purchase energy efficient materials/systems or low VOC emitting materials for the redeveloper;
- Construction of a ‘greywater’ recycling system;
- Provision of superior stormwater management for a redevelopment project;

most fundamental criterion for using green building projects in SEPs and as an offset for penalties is that there must be a sufficient nexus between the violation and the green building project relied upon as an SEP.²⁵⁷ EPA has offered three factors in determining whether a green building project can be considered in an SEP: first, the proposal must be designed to reduce likely violations in the future; second, there must be a relation between the impacts mitigated by the proposal and those caused by the violation; and third, the proposal must reduce the overall risk to public health caused by the violation.²⁵⁸ Where these elements are met, the notion of integrating green building standards into the SEP process is promising, and states are watching the EPA's SEP project with interest.²⁵⁹

The foregoing developments are not particularly novel; although innovative, these developments were logical areas of experimentation in green building standards. However, it is reasonable to predict that, eventually, both the benefits of green building and the impacts of construction will be more accurately incorporated into local land use planning, including comprehensive planning documents.²⁶⁰ At the level of

-Purchase of recycled construction materials;

-Recycle construction or demolition waste at the site.

-Development and implementation of large-scale integrated green design and procurement for a nearby cleanup and redevelopment project.

U.S. ENVTL. PROT. AGENCY, PROJECT IDEAS FOR POTENTIAL SUPPLEMENTAL ENVIRONMENTAL PROJECTS 7-8 (2004), *available at* <http://www.epa.gov/compliance/resources/policies/civil/seps/projectsideas42004.pdf> (emphasis omitted).

²⁵⁷ U.S. ENVTL. PROT. AGENCY, *supra* note 17, at 4.

²⁵⁸ *Id.*

²⁵⁹ *See, e.g.*, TEX. WATER CODE ANN. § 7.067 (Vernon 2008). Texas allows SEPs as voluntary mitigation efforts, but does not allow a party to use an SEP to meet otherwise required environmental laws, including laws relating to remediation of violations or prior obligations incurred under a preexisting agreement with a governmental agency, and does not allow an SEP project which would directly benefit the violator (or with only limited offset of penalty). *Id.*; TEX. COMM'N ON ENVTL. QUALITY, SUPPLEMENTAL ENVIRONMENTAL PROJECTS (SEPs): PUTTING FINES TO WORK CLOSER TO HOME 3-4 (2009), *available at* http://www.tceq.state.tx.us/files/gi-352.pdf_4470808.pdf.

²⁶⁰ One notable example in this trend concerns the resolution of a recent California suit filed by the state attorney general under the California Environmental Quality Act (CEQA), CAL. PUB. RES. CODE §§ 21,000-21,176 (West 2007). The County of San Bernardino prepared an Environmental Impact Report (EIR) in conjunction with its General Plan update in March of 2007. Settlement Agreement at 1, *California v. County of San Bernardino*, No. CIVSS 0700329 (Cal. Super. Ct. Aug. 28, 2007), *available at* http://ag.ca.gov/cms_pdfs/press/2007-0821_San_Bernardino_settlement_agreement.pdf. Included in the General Plan update were goals related to improvement of air quality and human health impacts. *Id.* In its EIR, however, the county concluded that an in-depth study was unwarranted based on the absence of a prevailing methodology for determining the significance of environmental impacts resulting from the General Plan amendments. *Id.* The attorney general of California sued the county. *Id.* The attorney general settled with the county in an agreement that requires the county to supplement its comprehensive planning scheme with an inventory of GHG emissions, emission reduction goals, and possible mitigation measures. *Id.* at 2-4. Although the settlement agreement does not address green building as mitigation, the attorney general has publicly suggested that the preferred analysis could include green building standards as mitigation. *See id.*; Press Release, Office of the

abstraction and vision typical of comprehensive planning, local governments can inventory emissions, energy and water needs, indoor air quality induced illnesses, and other consumptive and waste-generating activities.²⁶¹ At this level, the notion of controlling our built ecological footprint is more conceivable, and state and local governments can more fully explore innovation in development codes to match the resource efficiency efforts of green building. We might imagine this form of imposition in comprehensive planning theories to incorporate the lessons of cap-and-trade or transferable development rights that have been tried in other contexts.²⁶² Whichever the direction that such laws travel, however, the trend toward mandatory green building laws suggests that green building has established a solid presence in the building process.

B. Will the Imposition Go 'Too Far'? Property Rights and Green Building

As suggested above, green building laws have developed in a manner that might be viewed as exemplary; the informational approach to the development of green building practices has excited consumers and builders and created a market (no longer limited to a niche market) for a product that might have been seen as a political ideal, or a personal preference, or simply as an otherwise benign lifestyle choice. It is arguable, in this sense, that green building is distinct from those prior environmental or land use regulations that have defined the property rights battleground ever since the Supreme Court's first application of takings principles to the regulation of property use in *Pennsylvania Coal v. Mahon*.²⁶³ Yet, the transition to green building as an imposition, rather than merely a good idea, may place at risk the advancements made in the movement by putting green building into conflict.²⁶⁴ The question, then, is whether these distinctions will affect the

Attorney Gen., State of Cal., Brown Announces Landmark Global Warming Settlement (Aug. 21, 2007), <http://ag.ca.gov/newsalerts/release.php?id=1453> (last visited July 19, 2009).

²⁶¹ See, e.g., West Hollywood, Cal., Ordinance 07-762, § 5 (July 16, 2007), available at <http://www.weho.org/media/File/GreenbuildingOrdinance.pdf> (recognizing that the city's green building ordinance implements specific goals in its general plan, to "ensure optimal use of scarce energy and water resources").

²⁶² See generally Robert W. Hahn & Robert N. Stavins, *Incentive-Based Environmental Regulation: A New Era From an Old Idea?*, 18 *ECOLOGY L.Q.* 1, 7 (1991) (discussing various forms of incentive-based environmental policies).

²⁶³ 260 U.S. 393, 393 (1922).

²⁶⁴ Although infrequent (or, at least not out loud), there have been some grumblings in the building industry suggesting that the turn to mandatory green building schemes may be premature or unwise. See, e.g., BDC WHITE PAPER, *supra* note 6, at 55 (referring to mandatory green building laws as "the growing danger of 'LEED creep'"). The objection has not yet been well articulated, but the feeling might be captured in the recognition that a mandatory scheme would effectively reallocate control over the choice of innovation, impetus, and direction of green building away from the building industry. Of course, mandatory green building laws would also be likely to neutralize any competitive advantage gained in the project experience of early green builders. Aside from the more self-serving undertones of this reaction, it should be noted that the shift from voluntary to mandatory green building schemes could effect a shift in the social mechanisms that might support the ultimate normative success of green building. In the move from voluntary, incentive-based green building programs to mandatory green building

validity of green building laws as they are implemented in state and local governments across the country. Here, we ask whether limitations in the authority of state and local governments prevent, inhibit, or prohibit governments from impeding on the choice of the use, or manner of use, of land: Will green building laws survive land use litigation?

Even the most cursory understanding of green building will drive some confusion from this question. As a practical matter, what might such challenges look like? If green buildings were simply subject to the conventional land use framework—such as habitat setbacks, vegetation clearing ordinances, or use restrictions under zoning—then we might look to the usual suspects: regulatory takings, nondelegation,²⁶⁵ constitutional controls on local government authority,²⁶⁶ and others.²⁶⁷ Yet, there have been

requirements, there ought to be a searching and significant dialogue on the effect of this shift in the creation and replication of social norms. For purposes here, it might suffice to point out that the excitement demonstrated by consumers to the various voluntary programs and emerging market would lend some support to the social proof theory of norm capture. “Social proof” is a notion from social psychology that explains one manner in which we make decisions in instances of uncertainty:

We view a behavior as more correct in a given situation to the degree that we see others performing it. Whether the question is what to do with an empty popcorn box in a movie theater, how fast to drive on a certain stretch of highway, or how to eat chicken at a dinner party, the actions of those around use will be important in defining the answer.

ROBERT B. CIALDINI, *INFLUENCE: HOW AND WHY PEOPLE AGREE TO THINGS* 117 (1984). Even in jurisdictions where green building standards are not required of builders, it is becoming more commonplace to hear that builders cannot avoid building green: “I don’t think I would build a new building right now that’s not green, because in five years I may be at a competitive disadvantage.” BDC WHITE PAPER, *supra* note 6, at 13.

²⁶⁵ For instance, in some programs, certification is required not from building officials, but through the private code developers, such as the USGBC. *See, e.g.*, Beverly Hills, Cal., Ordinance 08-O-2555 (May 14, 2008), *available at* <http://www.beverlyhills.org/civica/filebank/blobdload.asp?BlobID=3530#page=> (requiring applicants to retain a LEED certified consultant to verify compliance with the green building standards). There may be an open question about nondelegation in this context. It could be argued that expedited review and permit fee waivers allocate special privileges to green developers.

²⁶⁶ Green building grants and forgivable loans might raise an understandable (even if difficult) challenge based on the constitutionality of gifts to private parties. Local government incentives in many states are burdened with constitutional prohibitions on loans or gifts to private persons or corporations. *See, e.g.*, WASH. CONST. art. VIII, § 7 (prohibiting gift of money or property or loan of credit). Of course, the use of federal funds in these assistance projects could avoid such state constitutional difficulties, but the source of federal funds will have its own requirements. For example, Community Development Block Grants are generally for community redevelopment projects, even where the projects are undertaken for communities in need by private parties. U.S. Dep’t of Hous. & Urban Dev., Community Development Block Grant Program, <http://www.hud.gov/offices/cpd/communitydevelopment/programs> (last visited July 19, 2009). Such challenges could conceivably be brought by those builders unwilling to implement green building codes, under the suspicion that the incentives provide an unfair advantage to green builders. However, in *Lloyd v. Pennsylvania Public Utility Commission*, 904 A.2d 1010 (Pa. Commw. Ct. 2006), plaintiffs challenged the Sustainable Energy Fund, which is funded by a surcharge on power sold to all customers and is intended “to promote the development and use of renewable energy and clean energy technologies, energy and conservation and efficiency which promote clean energy.” *Id.* at 1024 n.22 (quoting the “Joint Petition for Full Settlement of PPL’s Restructuring Plan”). The appellant challenging the

no reported challenges so far.²⁶⁸ Building officials in green building municipalities have reported that, even in the most unlikely settings, builders have cooperated with mandatory green building laws, compelled by the underlying fear of being the only builder in town with “brown” buildings for sale.²⁶⁹ Nevertheless, even if a slight increase in the cost of seeking building permit approval seems *de minimis*, it might nonetheless be considered an avoidable financial cost (compared to conventional building standards), and could become considerable for larger projects or, in the case of retrofitting inefficient buildings, in any case in which home additions or other reconstruction projects trigger green building laws.

What is interesting is that, in light of the foregoing, takings claims against green building laws may not be recognized as viable per se.²⁷⁰ The

Sustainable Energy Fund alleged that the fund failed to provide demonstrable benefits to ratepayers, and that the fund was a cloaked means to finance private ventures. *Id.* at 1025. The court affirmed a decision of the public utility commission that the various expenditures of the fund did provide a demonstrable benefit based on several specific fund projects, including the energy savings at LEED certified public buildings, grants to the Green Building Association of Central Pennsylvania to build energy efficiency capacity, and energy management software developed with the help of the fund. *Id.* at 1026–27.

²⁶⁷ Incentive programs might be vulnerable on several fronts. For example, density incentive programs have been subject to scrutiny on grounds that express enabling authority is needed to justify the exercise. At the same time, however, courts have been willing to find the authority in enabling acts. In *Friends of Lagoon Valley v. City of Vacaville*, 65 Cal. Rptr. 3d 251 (Cal. Ct. App. 2007), for instance, the court approved a density bonus “higher than the maximum amount set forth in the applicable statute,” finding that the expressed maximum was not a ceiling. *Id.* at 264. In any event, the means by which such bonuses are secured has resulted in closer scrutiny as a method of spot or contract zoning. In *Municipal Art Society v. New York*, 522 N.Y.S.2d 800 (N.Y. Sup. Ct. 1987), the court invalidated a density bonus exchanged for subway improvements and cash payments, finding that:

[T]he major portion of the benefit which the purchaser is willing to pay for the right to construct a building of greater density than is permitted “as of right” is to be paid to the City to be employed for purposes other than local improvements. A proper *quid pro quo* for the grant of the right to increase the bulk of a building may not be the payment of additional cash into the City’s coffers for citywide use.

Id. at 803–04. It certainly could be argued that density bonuses secured for developments that employ green building standards suggest a species of contract zoning. The “amenities” secured by developers employing green building practices may provide public benefits, but those benefits may not be directly related to the *impacts* of higher densities.

²⁶⁸ See, e.g., *supra* note 264 (discussing the trend for builders to build green, whether or not they are required to do so). This is easily explainable by the fact that the majority of early green building laws were not *regulatory*; generally speaking, private action was neither required nor dictated. See, e.g., Circo, *supra* note 139, at 753–54. As a result, few (if any) could claim injury from the early laws. On the other hand, the early, voluntary green building laws were not (and still are not) completely immune from legal challenges. See, e.g., *supra* note 267 (discussing challenges to green building standards).

²⁶⁹ Jeff Witt described the isolated instance of a single builder that objected to the adoption of green building standards, contested their application to his development project, and then engaged green building practices to avoid being the only one in town constructing less healthy, less durable, and more costly buildings. Telephone Interview with Jeff Witt, *supra* note 230.

²⁷⁰ To be sure, it appears that some local governments have learned lessons from past land use regulatory models and have incorporated variance and exception procedures into green building laws to avoid undue hardship claims. For instance, the green building program in

lynchpin of takings theory has always revolved around the difficulty of quantifying the Court's "average reciprocity of advantage" rationale for land use regulations.²⁷¹ Clearly, green building laws provide public benefits in the form of lower public health costs, reduced natural resource consumption, and minimized impacts on climate change.²⁷² At what point might green buildings fail to provide a reciprocal return? Or, more specifically, on what basis might we find that the burden on the individual to build green exacts a public benefit at too unwieldy an individual expense? What injury might be claimed? The advantage that green building laws have over other land use regulatory schemes is that, given the nature of the information gathered in the development of green building ideas, it will be difficult for property owners to make a convincing demonstration that the imposition of green building standards interferes with property rights, much less economic value of the property. Compliance with green building standards provides durable

Pleasanton, California, allows an applicant to receive an exemption upon a showing that green compliance is a hardship or otherwise infeasible. PLEASANTON, CAL., MUN. CODE § 17.50.080 (2009), <http://qcode.us/codes/pleasanton> (last visited July 19, 2009). Applicants may be granted an exemption under adverse circumstances in the "availability of markets for materials to be recycled, availability of green building materials and technologies, and compatibility of Green Building requirements with existing building standards." *Id.* § 17.50.080(B); see also ROHNERT PARK, CAL., MUN. CODE § 14.50.080 (2008), <http://www.municode.com/resources/gateway.asp?pid=16586&sid=5> (last visited July 19, 2009) (infeasibility exception). As suggested above, feasibility considerations recognize the youth of green building markets and materials, locational factors, and other building-specific challenges that might be encountered. However, these measures could be characterized as being overly careful; green building codes are (at least currently) premised on the idea that flexibility is needed to foster the types of innovative thinking that will result in higher performing buildings. The green building codes, such as LEED, Build It Green, and Green Globes measure "shades of green" by weighing green attributes, but are ultimately based on a performance-based system of standards that allows builders to achieve higher green levels in ways that are appropriate to the particular project. Green goals are in mind, but how to achieve those goals is flexible. So, under the traditional takings analysis, a claim may conceivably never be ripe, at least until the claimant has exhausted the scheme and available methods of reaching the stated performance goals. In contrast, the Calabasas, California program has no variance process. See Calabasas, Cal., Ordinance 2003-185 (Jan. 7, 2004), available at <http://www.cityofcalabasas.com/pdf/green-building-ordinance.pdf>.

²⁷¹ Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 147 (1978) ("Even where the government prohibits a noninjurious use, the Court has ruled that a taking does not take place if the prohibition applies over a broad cross section of land and thereby 'secure[s] an average reciprocity of advantage.'" (quoting *Pa. Coal Co.*, 260 U.S. 393, 415 (1922))); *Keystone Bituminous Coal Ass'n. v. DeBenedictis*, 480 U.S. 470, 491 (1987) ("While each of us is burdened somewhat by such restrictions, we, in turn, benefit greatly from the restrictions that are placed on others.").

²⁷² Davis, California, expressly integrated human needs and standards into its consideration of conservation measures in its sustainability ordinance:

Based upon climatic conditions including the need to reduce energy use during times of peak demand (usually hot weather), to help minimize the number of rolling blackouts, and the need to mitigate the effect of further development on the City's water supply, increasing the energy efficiency and water conservation in buildings is not only "reasonably necessary," but cost-effective.

DAVIS, CAL., MUN. CODE § 8.20.010(B) (2008), <http://cityofdavis.org/cmo/citycode/detail.cfm?p=8&q=2676> (last visited July 19, 2009).

economic advantages to builders and end users, including marketing opportunities that, in many cases, correspond to increased property values, safer, healthier homes, and decreased utilities and maintenance costs over the lifetime of the building.²⁷³ The exaction is, at least theoretically, offset by the benefits of compliance.

To the extent that green building laws tread more heavily, two potential conflicts to monitor, which may require a reorganization of property for our evolving public welfare needs, will be 1) the enforcement of green building codes on existing buildings and 2) the regulations relating to the durability of green buildings and continuing application of green building standards. The more benign (even if unsettled) aspect of the relation between the police power and green building may be the question of whether our growing knowledge about building sickness, GHG emissions, climate change, and habitat loss places green building laws within the scope of the police power authority.²⁷⁴ Clearly, climate change raises issues that fall within the purview of the public health, safety, and welfare,²⁷⁵ even if we have yet to fully understand how grave of a threat that we face or how to

²⁷³ Take, more generally, the question of whether there is any *incentive* to challenge green building laws. At least where green buildings are mandatory, the only competitive advantage among builders in the market will be the experience gained from participating in green projects. A more experienced builder will be able to minimize costs and maximize the benefits of the project. This is likely complemented by the market advantages in the product itself. Green buildings are attracting consumers who otherwise might not be looking for new homes or even considering renovations based on preferences for older homes and homes with older features. Green building is making newer homes (and energy efficient homes) more attractive to potential purchasers. Of course, such an analysis will not account for the interests of all affected parties. For instance, the current focus on green building materials is likely to displace certain products from the market, providing some industries with a strong reason to garner opposition to green building laws.

²⁷⁴ Local governments are generally authorized to adopt ordinances regulating the erection, repair, alteration, reconstruction, and use of buildings within their jurisdiction. Included in this authority is the power to adopt building codes and ordinances as a reasonable means to regulate buildings. *See, e.g.,* LaBay v. Town of Paris, 659 A.2d 263, 266 (Me. 1995); City of Kansas City v. Jordan, 174 S.W.3d 25, 48 (Mo. Ct. App. 2005); Village of Hempstead v. SRA Realty Corp., 617 N.Y.S.2d 794, 795 (N.Y. App. Div. 1994); West Virginia *ex rel.* State Line Sparkler of WV, Ltd. v. Teach, 418 S.E.2d 585, 591 (W. Va. 1992). Although the police power of the state is not without limitation, it is "very broad and comprehensive, and can be exercised to promote the health, comfort, safety, and welfare of society." *Bennett v. Hope*, 161 S.W.2d 186, 188 (Ark. 1942) (quoting *City of Helena v. Dwyer*, 42 S.W. 1071 (Ark. 1897)). However, a likely challenge in states following the so-called "Dillon's Rule," under which local governments are considered mere subdivisions of the state and entirely rely on enabling legislation for their source of authority, is that green building may come under attack in states where enabling legislation has not yet been modified to encompass green building regulation. *See generally* *Williams v. Town of Hilton Head Island*, 429 S.E.2d 802, 804 (S.C. 1993) (applying and describing "Dillon's Rule").

²⁷⁵ For example, in *Okeson v. City of Seattle*, 150 P.3d 556 (Wash. 2007), ratepayers challenged an electric utility's scheme of charging ratepayers for its GHG offset purchases. *Id.* at 559. Although the court found that the utility could not pass on the costs of offsets, it was not without announcing that reducing GHG emissions and avoiding climate change impacts was a governmental purpose. *Id.* at 558.

combat that threat.²⁷⁶ Likewise, healthier homes, sustainable forests, surface and groundwater allocation, water quality, air quality, and endangered species raise issues that invoke traditional governmental functions justifying intervention.²⁷⁷

Of course, the power to adopt regulations governing the erection and use of buildings is generally accompanied by the authority to enforce, whether express or implied.²⁷⁸ The potential dilemma facing green building laws is therefore not whether local governments are empowered *to adopt* ordinances regulating the indoor health, or water use, or energy consumption, or materials used in construction within their jurisdiction. Rather, as local governments turn to mandatory green building codes, there may be some struggle over the authority needed to enforce them: the authority needed to abate building code violations is generally found in the nature of the violation, such as whether the circumstances of certain buildings present an *actual* danger to the public health and safety.²⁷⁹ Will the inability of a single inefficient residential structure to meet efficiency

²⁷⁶ The most significant decision in recent litigation is, of course, the Supreme Court's decision in *Massachusetts v. EPA*, 549 U.S. 497 (2007). The State of Massachusetts was joined by several states, local governments, and nonprofit organizations in challenging EPA's failure to regulate GHG emissions. *Id.* at 505. One of the hotly contested issues concerned the question of standing to pursue the case. *See id.* at 516–26. The plaintiffs submitted affidavits and relied on reports asserting a relationship between GHGs and global warming, and that sea level rise was associated with global warming. *Id.* The Court recognized injuries to the Massachusetts coastline and further rebuked the defendants, finding that the EPA's regulation of GHG emissions from new motor vehicles would constitute an adequate remedy to confer standing. *Id.* at 526. The Court held:

While it may be true that regulating motor-vehicle emissions will not by itself *reverse* global warming, it by no means follows that we lack jurisdiction to decide whether EPA has a duty to take steps to *slow* or *reduce* it. . . . Because of the enormity of the potential consequences associated with man-made climate change, the fact that the effectiveness of a remedy might be delayed during the (relatively short) time it takes for a new motor-vehicle fleet to replace an older one is essentially irrelevant. Nor is it dispositive that developing countries such as China and India are poised to increase greenhouse gas emissions substantially over the next century: A reduction in domestic emissions would slow the pace of global emissions increases, no matter what happens elsewhere.

Id. at 525–26. The Court found that EPA was statutorily authorized to regulate GHG emissions from new automobiles, and that a determination against regulating carbon dioxide emissions from automobiles must be expressed clearly and supported. *Id.* at 532, 534; *see generally* Clean Air Act, 42 U.S.C. § 7521(a)(1) (2000) (stating that EPA shall regulate the emission of substances which may “cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare”).

²⁷⁷ *See, e.g.,* Donald C. MacIntyre, *The Prior Appropriation Doctrine in Montana: Rooted in Mid-Nineteenth Century Goals—Responding to Twenty-First Century Needs*, 55 MONT. L. REV. 303, 318 (1994); David S. Caudill et al., *The Politics of Legal Doctrine: A Case Study of Texas Land Use Planning Under the Shadow of Lucas*, 5 HOFSTRA PROP. L.J. 11, 19 (1993).

²⁷⁸ *See Teach*, 418 S.E.2d at 589 (“[E]ven in the absence of an express grant of authority, the power to punish by a pecuniary fine or penalty is implied from the delegation by the legislature of the right to enforce a particular police power through ordinances or regulations.”).

²⁷⁹ *See, e.g., Bennett*, 161 S.W.2d at 188 (“A city may regulate the construction of buildings . . . but it cannot prevent construction unless the proposed construction is per se dangerous to the public health and safety.”).

standards justify abatement of the code violation? Although a police power justification for green building laws *need* not focus efforts on climate change mitigation or GHG emissions reduction, the shared difficulties and justification between the onslaught of climate change litigation and green building laws suggests that close attention should be paid. This raises not the more general question of whether climate change, by itself, causes concern about the propriety of governmental intervention and protection. Rather, the question involves the case that might be made on a project-specific basis against a poorly performing building, measured on green standards.

A second interesting claim might concern the competition between the notion of durable building performance—a fundamental component of green building principles²⁸⁰—and the concept of vested rights. In this instance, local governments implement the high performance principles in green building goals by extending the regulatory compliance timelines in the building permit process to insure that buildings permitted under such a scheme continue to perform as expected.²⁸¹ Of course, to the *regulated* entity, this means that the regulatory permitting process does not seem to end. For instance, the City of Pleasanton, California’s green building ordinance envisions an extension of the regulatory process in an unusual, but entirely consistent fashion.²⁸² The city’s ordinance contains four stages of review for compliance with green building standards: 1) the applicant submits application materials and completes “pre-permitting review” concurrently with the review process for either building design or planned unit design review; 2) the green building official is permitted to review the construction prior to issuance of an occupancy permit; 3) the green building official then re-inspects the premises after one year; and 4) the green building official re-inspects again after five years, to insure that the building remains in compliance.²⁸³

²⁸⁰ See Del Percio, *supra* note 9, at 129.

²⁸¹ This is distinguished from ordinances which require builders to post bonds to secure long-term performance, or from incentive-based ordinances, in which local governments reserve the right to reimbursement of grants and loans from construction projects that do not meet green building standards. In both of these types, the regulatory period ends, and the security rests in an extraregulatory mechanism. The District of Columbia adopted an ordinance that combines incentives with insurance, requiring applicants seeking incentives to post a performance bond to ensure that construction projects properly and successfully implement green building elements. See 54 D.C. Reg. 3019 (Apr. 6, 2007). The “Green Building Act of 2006” provides that bonds shall be posted for all privately owned buildings, subject to verification of green performance within two years of occupancy, with additional bonding requirements for commercial projects seeking incentives offered in the green building program. D.C. CODE §§ 6-1451.05–.06 (Supp. 2009). The difference between Washington D.C.’s bonding requirement and Pleasanton’s continuing regulatory requirement is the absence in Washington D.C.’s ordinance that the two-year period is intended to demonstrate long-term performance of the green building elements of the structure. See *id.*; see also *supra* note 244 (discussing Pleasanton’s regulatory regime).

²⁸² PLEASANTON, CAL., MUN. CODE § 17.50.070 (2006), <http://qcode.us/codes/pleasanton> (last visited July 19, 2009).

²⁸³ *Id.* § 17.50.070(D)(1)–(3).

During the regulatory period at issue in Pleasanton's scheme, the application process continues after issuance of the building permit and certification of the structure for occupancy. The ordinance states that, at the timeline pressure points, the "applicant shall submit to the green building compliance official documentation detailing conformance with the operation, efficiency, and conservation related credits from the pre-permitting documentation."²⁸⁴ Although the extent of the building official's enforcement authority after five years of occupancy is not entirely clear, the ordinance seems to authorize the imposition of additional mitigation for any finding of unexcused noncompliance with the applicable green building standards.²⁸⁵

Clearly, the ideas behind continuing regulatory schemes implement the sustainability principles of green building, at least to the extent that long-term building performance is central to sustainability and common to all of the various green building schemes. Post-occupancy monitoring serves numerous purposes, including (but not limited to) enhancing our ability to ensure building performance through maintenance, and also by providing an information-gathering mechanism for the consideration of the effectiveness of certain green strategies.²⁸⁶ Moreover, continuing compliance schemes are even consistent with the purposes of conventional building codes in general to the extent that they require property owners (particularly landlords) to keep buildings from falling into disrepair and endangering the health and safety of occupants.²⁸⁷ The challenge, however, is determining whether and when the permitting system ends, and when a permittee can rely on the issuance of a permit in making investments, improvements, leasing the premises, and so on. Specifically, it is arguable that Pleasanton's continuing regulatory approach expands the authority of a local government to enforce green building regulations; in effect, by keeping green buildings within a permitting scheme, the burden continues to lie in the property owner to comply with the regulatory requirements, rather than shifting to the city to enforce the code against an alleged code violation.²⁸⁸

²⁸⁴ *Id.* § 17.50.070(D)(3).

²⁸⁵ *Id.* § 17.50.070(E)(2).

²⁸⁶ *See, e.g.,* Smith, *supra* note 193.

²⁸⁷ For instance, fire code compliance is typically subject to inspection and regulatory authority to abate violations under the police power for the lifetime of the building. The same applies to electrical, earthquake, and other codes, and even (in some cases) in habitability laws applying to landlords. In each, the condition of a structure is relevant to the public health, safety, and welfare, and where a condition causes a threat, building code enforcement is the mechanism enjoyed under the police power. *See generally* City of Edmonton, About Fire Rescue Services, http://www.edmonton.ca/for_residents/emergency_services/about-fire-rescue-services.aspx (last visited July 19, 2009).

²⁸⁸ Of course, conventional building codes envision continuing compliance. The difference is that the issuance of a building permit for conventional codes is usually a final *regulatory* decision (and, in many states, triggers vested rights). In the typical enforcement scenario, after a final decision has been issued, future enforcement authority does not arise from the permitting process, but arises out of the more general police power to abate building code violations, which has traditionally been subject to scrutiny over the relationship between the violation and the impact on the violation on the public health, safety, and welfare. At least, the more dramatic of local building code abatement authorities are limited to circumstances in which

Where green building laws continue the trend toward mandatory permitting schemes, local governments may be put to the task of justifying green building principles under these and similar scenarios. Of course, to say that a legal challenge lies on the horizon for green building is not to say that green building schemes are contrary to law. Rather, as is often proposed, “[p]roperty law . . . adjusts to new knowledge—for example, about natural capital and ecosystem services—by arriving at new configurations of the relative balance of rights within the property system.”²⁸⁹ As Justice Sutherland wrote in *Village of Euclid v. Ambler Realty Co. (Euclid)*²⁹⁰ almost a century ago, there is “no inconsistency” in applying background property rules differently in different contexts, “for, while the meaning of constitutional guaranties never varies, the scope of their application must expand or contract to meet the new and different conditions which are constantly coming within the field of their operation.”²⁹¹ Law adapts, as it must, to changing norms and fashions (which adapt, as they must, to changing circumstances and challenges). Whether law must adapt to an explosion in technology (such as the invention of the automobile and the elevator), shifting social norms (such as abolition), emerging markets (for example, the fast food restaurant), or developments in our understanding of natural processes (groundwater), a static, monistic approach to property rights would likely fail to provide a coherent property system. As a result, evolution in property—away from a system of allocation that was never interested in the value of “nature” in natural resources²⁹²—may very well accommodate the aims of resource efficiency, human health, and climate change mitigation, in the same way that property has accommodated nuisance avoidance,²⁹³ zoning,²⁹⁴ historic preservation,²⁹⁵ and environmental

buildings can be found to have caused a public nuisance. See, e.g., 6A EUGENE MCQUILLIN, THE LAW OF MUNICIPAL CORPORATIONS § 24.74 (3d ed. 2007) (discussing a municipality’s right to summarily destroy property, as determined by public necessity and emergency).

²⁸⁹ J.B. Ruhl, *The “Background Principles” of Natural Capital and Ecosystem Services—Did Lucas Open a Pandora’s Box?*, 22 J. LAND USE & ENVTL. L. 525, 538 (2007). I have developed this point elsewhere in Keith H. Hirokawa, *Property Pieces in Compensation Statutes: Law’s Eulogy for Oregon’s Measure 37*, 38 ENVTL. L. 1111, 1164–65 (2008), but it should be noted that this point is not particularly novel. See, e.g., *Kline v. 1500 Mass. Ave. Apartment Corp.*, 439 F.2d 477, 481 (D.C. Cir. 1970) (recognizing the duty of a landlord to use reasonable care to protect tenants from foreseeable criminal conduct due to “the conditions of modern day urban apartment living”); *Hilder v. St. Peter*, 478 A.2d 202, 207–08 (Vt. 1984) (creating an implied warranty of habitability and diverging from caveat lessee due to changes in the circumstances and expectations of lessees in urbanized world). It is worthwhile to note, however, that the question of the manner of evolutionary forces in property rules is open to further debate.

²⁹⁰ 272 U.S. 365 (1926).

²⁹¹ *Id.* at 387.

²⁹² See John G. Sprankling, *The Antiwilderness Bias in American Property Law*, 63 U. CHI. L. REV. 519, 520 (1996).

²⁹³ E.g., *Hadacheck v. Sebastian*, 239 U.S. 394, 394 (1915).

²⁹⁴ E.g., *Euclid*, 272 U.S. at 365, 387.

²⁹⁵ See, e.g., *Penn Cent. Transp. Co.*, 438 U.S. 104, 105–06 (1978).

planning²⁹⁶ as a means to neutralize the negative environmental impacts and other externalities of new technological and social developments.

V. REFLECTIONS ON GREEN BUILDING AS A NEW IDEA: PUTTING HUMANS BACK INTO NATURE, AND PUTTING ANTHROPOCENTRISM TO WORK

Most of our serious environmental problems start right here, at home, and if we are to solve those problems, we need an environmental ethic that will tell us as much about *using* nature as about *not* using it.²⁹⁷

It is difficult to deny that green building is (and will continue to be) important. The nascency of the movement has not been a hindrance, and the growth of green building has not been contentious.²⁹⁸ Given the inevitability of green building, the task for this section is to consider the conceptual effects of green building: Is the success of green building so significant as to mark a paradigm shift in the way that we understand and interact with nature? The short answer, which will be worthy of discussion for some time to come, seems to be that green building has the potential to launch a new phase in environmental law that promises to reconnect humans with ecosystems. While green building may not be *entirely* unique by suggesting that we rethink the manner in which we allocate, value, and interact with nature, what is special about green building is its ease in relying on the anthropocentric benefits in its principles, negotiation, and ultimate popularity.²⁹⁹ Due in large part to the characteristically pragmatic development of green building laws, the movement has managed to move forward by avoiding the more difficult questions over whether or to what extent humans and the built environment “interfere” with nature and natural processes.³⁰⁰ Green building reconceptualizes the built environment by

²⁹⁶ See, e.g., *Tahoe-Sierra Pres. Council v. Tahoe Reg'l Planning Agency*, 535 U.S. 302, 303–04 (2002).

²⁹⁷ William Cronon, *The Trouble with Wilderness; or, Getting Back to the Wrong Nature*, in *UNCOMMON GROUND: TOWARD REINVENTING NATURE* 69, 85 (William Cronon ed., 1995).

²⁹⁸ See Del Percio, *supra* note 9, at 127.

²⁹⁹ It is telling that this recent trend in encouraging and, in some cases, requiring “green building” has also been labeled “high performance building.” See, e.g., WASH. REV. CODE § 39.35D.020(2) (2008) (defining “high-performance public buildings” as those built to applicable green standards). Moreover, because green building comes at a time in which duration, efficiency, and overall cost are as significant to the consumer as ever, the economic component of green building can be understood as a primary driver behind green building practices. Beyond the economics of green building as merely a marketing benefit, cost and efficiency are intertwined and inseparable from the impacts that building practices have on natural processes. In the meantime, green building should put to rest the broader question of whether pragmatism has anything to offer law, and environmental law in particular. See, e.g., Joel A. Mintz, *Some Thoughts on the Merits of Pragmatism as a Guide to Environmental Protection*, 31 B.C. ENVTL. AFF. L. REV. 1, 2 (2004) (questioning whether and how pragmatism can aid in formulating environmental policy).

³⁰⁰ The difficulty in answering this question has largely underlain environmental rhetoric, generally without regard for the inaccessibility of any universally applicable answers. See generally Mark A. Michael, *How to Interfere with Nature*, 23 ENVTL. ETHICS 135, 154 (2001)

removing the barriers between humans and nature, and does so in a manner that all interests—property and economic, ecological and ethical—are finding common ground. The picture of nature embedded in green building, then, is arguably distinct from the idea of nature that pervades prior environmental and natural resource laws. Green building is not just inclusive of humans and other ecosystem needs, but also aligns those needs for purposes of identifying *value*.

Of course, the collective environmental consciousness, as illustrated in our array of environmental laws, has come far. The explosions of deep environmental thinking in the latter half of the twentieth century, together with a fear that our past actions will have long-term, irreversible environmental effects, have changed the manner in which we approach the subjects of both development and landscape.³⁰¹ When combined with the felt occurrences of burning rivers and industry-induced health concerns, the American public discovered a self-preservation incentive to rethink practices that, by themselves, cause significant adverse impacts to the environment.³⁰² In the process, our perspective transformed, slowly but inevitably, toward a recognition of certain needs that derive from the circumstances of nature. In this sense, environmental law has been revolutionary, taking as its first principle the importance of making informed, long-term decisions as an element in our very survival.³⁰³

As we began to modify our land use practices, however, we realized that the otherwise impressive array of initial environmental laws had merely scratched the surface of our environmental circumstances, and that something more than a shallow investigation and understanding of natural systems would be necessary to embrace an authentic relationship with our surroundings.³⁰⁴ For instance, as the initial environmental policies matured,

("[I]nstead of issuing vague admonitions to act naturally and not to interfere with nature, environmentalists would do better to examine whether and under what conditions the purposive manipulation of ecosystems and species is wrong. Interference should be left out altogether."); Robert R.M. Verchick, *Steinbeck's Holism: Science, Literature, and Environmental Law*, 22 STAN. ENVTL. L.J. 3, 6 (2003) ("Given human connectedness with other elements of nature, it is fruitless to speak of what is 'natural' and what is not; we may never plot the boundary between these ideas.").

³⁰¹ David B. Spence, *Paradox Lost: Logic, Morality, and the Foundations of Environmental Law in the 21st Century*, 20 COLUM. J. ENVTL. L. 145, 146 (1995) ("[T]he new consensus in favor of environmental protection has changed the logic of environmental regulation.").

³⁰² See, e.g., National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370e (2000).

³⁰³ At least since the publication of the "Brundtland Report" (named after Gro Brundtland, Prime Minister of Norway), there has been growing concern that our commercial practices and natural resource uses would lead to irreversible catastrophes and were not sustainable—where "sustainable" means development that "meets the needs of the present without compromising the ability of future generations to meet their own needs." See generally WORLD COMM'N ON ENV'T & DEV., OUR COMMON FUTURE 8 (1987).

³⁰⁴ Mark Sagoff describes the initial array of environmental laws as premised on public expectations of four normative issues: compassion for the individual victim of pollution, protection of rights against the intrusion from the ill-effects of pollution, the protection of cultural values, and a sense of community that deliberates over common goals in a manner that incorporates the individual's freedoms. See Mark Sagoff, *The Principles of Federal Pollution Control Law*, 71 MINN. L. REV. 19, 24–26 (1986).

we realized that the prevailing policy of dealing with only the larger, more obvious actions that impacted the environment resulted in a piecemeal understanding of environmental impacts.³⁰⁵ Actions that may not have previously appeared to be worthy of regulation have been found to cause significant adverse impacts cumulatively, over time, and in context³⁰⁶—heading us toward a certain death by a thousand cuts. Of course, state and local governments have adopted an array of laws governing the impacts of “smaller” projects on groundwater recharge, loss of open space, wetlands, forest resources, and habitats, among others.³⁰⁷ The “local environmental laws” were intended to operate at the needed micro scale, in part to fill in the gaps in the federal scheme. The resulting regulatory systems have demonstrated a wide variety of approaches, from top-down planning mandates to individual permitting systems, from local discretion over natural resources and planning visions to interjurisdictional habitat identifications.³⁰⁸ The federal government has meanwhile preserved thousands of acres for wildlife and aesthetic uses, protecting these lands from human consumption and degradation.³⁰⁹ Nevertheless, even these efforts have been understood by many as incomplete.³¹⁰

In large part, environmental law appeared neither comprehensive nor principled due to an unwavering conception of nature as a collection of capturable “things.”³¹¹ Hence, many have continued to seek the evolution of a workable and pervasive environmental ethic in law, guided by a hope that the law will expressly incorporate a new, environmentally protective ethic.³¹² Given the starting point, this project has proven to be a challenge. When we contemplated our identity as a species and as individual humans in the past, we constructed an array of human-centered narratives, including our self-realization of man as conqueror, of human superiority over other living

³⁰⁵ See John R. Nolon, *In Praise of Parochialism: The Advent of Local Environmental Law*, 26 HARV. ENVTL. L. REV. 365, 410 (2002) (noting that environmental laws of the 1970s and 1980s addresses serious pollution from point sources, but today’s problems include the cumulative effects from the small-scale development of land).

³⁰⁶ See *id.* at 410–11.

³⁰⁷ See *id.* at 386–410 (assessing the broad array of local environmental initiatives in this emerging area of law).

³⁰⁸ See *id.*

³⁰⁹ U.S. GEN. ACCOUNTING OFFICE, LAND OWNERSHIP: INFORMATION ON THE ACREAGE, MANAGEMENT, AND USE OF FEDERAL AND OTHER LANDS (1996) (“[T]he number of acres managed . . . primarily for conservation increased . . . to about 272 million acres [by 1994].”).

³¹⁰ See, e.g., EDWARD O. WILSON, *THE FUTURE OF LIFE* 42–43 (2002) (describing the decline in forest and marine ecosystems internationally).

³¹¹ See, e.g., Troy L. Payne, Comment, *Cartesian Eco-Femdarkanism: She Comes from the Earth, Therefore We Are*, 37 ENVTL. L. 202, 208 (2007) (“Continued study allowed humans to manipulate natural processes, harness energy, and develop technology. With a perceived cognitive superiority to nature and as the creators of energy-hungry machines, humans mechanized their conceptions of nature.”).

³¹² Although the latter is not intended to be made of straw, it has been recognized that much of contemporary environmental ethics is difficult to translate into a legal program. *Id.* at 233 (arguing that law should take an intuitionist approach to regulating the environment, but recognizing that a legal doctrine representing that approach would “likely [be] the most complicated piece of legislation ever”).

things based on a capacity to reason, and so on.³¹³ The ontological question has since been thrown into a variety of rhetorical constructions—for example, against a legal system that subjugates the functions and performance of ecological processes to the priority of uniquely human needs, or against an allocation of the world to individual human control, or against the degree to which human consumption and population have managed to avoid becoming the subjects of legal scrutiny—and yet, at base, the general tenor of the debate suggests that the law has remained disinterested in the potential moral worth of others in our surroundings. It is arguable, at least, that our current regulatory system adopts, rather than replaces or improves upon, a distinctly anthropocentric (in the pejorative sense of the term) understanding of the environment.³¹⁴

From this perspective, it is evident that as environmental ethics developed, both in direction and reach, the trends in ethical theory have merely emphasized the *divide* between environmental law and ethics.³¹⁵ One way to illustrate this divide is by characterizing environmental ethics as a battle over “nature at the lost and found.” The nature that we have lost typically concerns our conception of humans as citizens of a larger community, and the loss is our sense of place in that community: every extinct species, contaminated property, or clear-cut forest emphasizes a relationship that we, as humans, have lost and may be unable to share again.³¹⁶ In stark contrast, the nature that is found concerns the manner in which nature is continually reconstructed through our systems of belief, legal and social conventions, and technology, among others; every new structure, applied technology, or even partitioning of a nature preserve creates a new nature and requires us to redesign our understanding of the environment. Of course, both are, in a real sense, effective descriptions of the state of nature. The problem with nature at the lost and found has been

³¹³ See Michael Tobias, *Introduction* to DEEP ECOLOGY, at v, v–viii (Michael Tobias ed., 1985).

³¹⁴ See generally Richard Delgado, *Our Better Natures: A Revisionist View of Joseph Sax's Public Trust Theory of Environmental Protection, and Some Dark Thoughts on the Possibility of Law Reform*, 44 VAND. L. REV. 1209, 1211 (1991) (critiquing Joseph Sax's public trust theory and suggesting normative change toward more eco-centric theories).

³¹⁵ See, e.g., Alyson C. Flournoy, *In Search of an Environmental Ethic*, 28 COLUM. J. ENVTL. L. 63, 65–66 (2003).

³¹⁶ This is not to say that either of these approaches is fundamentally wrong or misguided for its own purposes. For instance, the general appeal to our past, typical of a lost nature approach, is exemplified in the pleas from Troy Payne and Janet Neuman:

Rivers are drying up. Water tables are falling. Regions that once supported forest ecosystems are barren, and people are abandoning them as inhospitable. Clean water is wasted by some as if it were a right to water a garden with Evian (“naïve” spelled backwards). This is not hyperbole—these are stories about forgetting rain. . . . We must move ahead to the past.

Troy L. Payne & Janet Neuman, *Remembering Rain*, 37 ENVTL. L. 105, 107 (2007). The lost approach is intuitively comfortable and conceptually powerful, drawing upon our critical, neo-Marxian tendencies to think outside of the box in separate, divergent worlds and circumstances. The dilemma is that such an appeal to lost nature might persuasively be thought to have evolved away or even intentionally overcome (for deficiencies that might not appear in the appeal).

that, whether nature was described in literature that reminisced the essential sublimity that we have lost, or in literature pointing to the individual sense of self that might be found, the environmental ethics debate raged around an unfortunate common feature; in both conceptions, humans are enticed to act due to a detachment from nature, yet, environmental law is intended to govern human interaction *with* the natural environment.

The debate has been fruitful, in that each side has been compelled to refine and shore up their foundations, particularly with respect to principles that might represent intellectual progress.³¹⁷ Nevertheless, the debate remains deadlocked because, for the most part, neither has been willing to concede ground on the character and moral significance of "nature."³¹⁸ In the fray, ethics arguably adopted a superficial role in the formulation of environmental policy.³¹⁹ What was needed to support environmental law was the emergence of an ethic that governed human use *and* nonuse of nature as participants, rather than a conception of nature that excluded or displaced humans;³²⁰ what was needed was an ethic that recognized the vocabulary of an economic and rights-based ordering of social values, but in a way that did not rely on that hierarchy for its legitimacy.

This is where green building is significant. Of course, for those viewing green building from the perspective of the need for nonhuman, nonuse value as a monistic basis for ethics, green building may be conceptually limited. Clearly, green building is unready to support the more significant claim that an ethic of nature must dissolve the role that economics plays in valuing worth and establishing rights and duties.³²¹ Not surprisingly, for instance, the

³¹⁷ See, e.g., Flournoy, *supra* note 315, at 83 ("[T]he terminology derived from Environmental Ethics may help orient us, and the theories advanced by philosophers may serve as useful beacons, marking out points on the ethical landscape in relation to which we can locate our position and consider our next steps.").

³¹⁸ Paul B. Thompson, *Pragmatism and Policy: The Case of Water*, in ENVIRONMENTAL PRAGMATISM 187, 205 (Andrew Light & Eric Katz eds., 1996) ("Environmental debates over habitat for endangered species are showing signs of a similar pattern, as those who countenance any standing for economic considerations are characterized as greedy and corrupt, while those who advocate for nature are portrayed as uncaring and disrespectful of human needs.").

³¹⁹ See Flournoy, *supra* note 315, at 109 ("The language of the law and substance of public debate over environmental law both reveal scant attention to its ethical content."). But see Lee M. Talbot, *Does Public Policy Reflect Environmental Ethics? If So, How Does it Happen?*, 37 U.C. DAVIS L. REV. 269, 279 (2003) ("The one constant in all these environmental policy-making procedures is that ethics are a powerful motivation for the key individual or individuals who initiate and drive the process.").

³²⁰ See Holly Doremus, *The Rhetoric and Reality of Nature Protection: Toward a New Discourse*, 57 WASH. & LEE L. REV. 11, 66 (2000) ("[T]he rhetoric of nature protection must include people in the picture. It cannot simply rely on the wilderness vision of nature necessarily isolated from humanity, unable to bear even the lightest human touch. Putting people in the picture means acknowledging people as part of nature and emphasizing human connections to nature."). In part, the debate itself uncovered such divergent views of ethical duties that law might be said to have failed to incorporate ethics for its failure to adopt one. On the other hand, a credible argument might be made that environmental ethics has developed in a manner that prevents dialogue between ethics and law.

³²¹ As Daniel Farber points out, "[e]conomic growth is not something we are prepared to abandon in the name of environmental protection." DANIEL A. FARBER, *ECO-PRAGMATISM: MAKING SENSIBLE ENVIRONMENTAL DECISIONS IN AN UNCERTAIN WORLD* 200 (1999).

higher cost green building materials and methods are less frequently implemented (although this does not distinguish green building from conventional building methods and codes).³²² Nevertheless, in a manner starkly divergent from other laws that have provided an environmental benefit, green buildings can be asserted as a pro-development, pro-economic, and pro-property rights doctrine, while also championing sustainability and conservation. Moreover, even where upfront construction costs have been an *influential* factor in green building decisions, in many cases, cost has not prevented builders from seeking high green ratings in LEED Silver, Gold, and Platinum certified buildings.

By recognizing the availability of green building to moral analysis, it is intended that green building be recognized as theory friendly—but it is also noteworthy that no particular theory can lay an exclusive claim as the basis and justification for green building. Clearly, green building champions the idea that we must integrate a new relationship with nature into the manner in which we build. Charles Kibert issued such a mandate: “The creation of the built environment must . . . be consistent with these values by respecting nature and responding to the imperative that we are utterly dependent on the earth’s systems for survival.”³²³ The questions that survive the mandate, however, concern whether green building could remain plausible absent a concurrent transformation to “respecting nature” in those occupying green homes, or alternatively, whether green building would remain popular if the economic benefits of green building fell short of expectations. What is apparent is that a decision to build green need not be burdened with an exclusive categorical imperative; it might be *nice* for all to agree that healthy homes, sustainable practices, and minimal carbon footprints are essential to the survival of the planet and species, perhaps, but only in the same way that it would be preferable to an eco-centrist that all adopt a Gaia perspective of nature, or in the way that a market proponent would prefer that we all adopt an economic approach to assessing values in the environment.³²⁴ In other words, perhaps we need not wait for a sea change in the collective consciousness to an acceptance of eco-centric value structures, simply so

³²² Few projects strongly pursue energy and atmosphere credits, likely due to the level of focus, or incorporate innovative wastewater technologies, likely due to the cost. LANGDON, *COST OF GREEN REVISITED*, *supra* note 138, at 15–16.

³²³ Kibert, *supra* note 99, at 37.

³²⁴ This pluralistic exercise may not, of course, make every advocate feel vindicated. Indeed, sharing the table may make one feel as though there is not enough to go around. Stephen Kellert, for example, expressed his grave concerns about “an overemphasis on material benefits” in approaches to sustainable design. Stephen R. Kellert, *Ecological Challenge, Human Values of Nature, and Sustainability in the Built Environment*, in *RESHAPING THE BUILT ENVIRONMENT: ECOLOGY, ETHICS, AND ECONOMICS*, *supra* note 98, at 39, 48. While recognizing that “[a]meliorating the environmental crisis will certainly require more efficient and effective consumption and production systems,” Kellert called for more emphasis on the critical “mental and intellectual well-being reflected in the experience of meaning, beauty, companionship, creativity, imagination, inspiration, spiritual wholeness, and more” that can be found in a built environment that is integrated into the natural environment. *Id.* at 48–49.

that we can move forward in pursuing the benefits of green building.³²⁵ We can instead recognize that by focusing our dialogue on nature with a causal connection between the built environment and its impacts, and by openly receiving the variety of disciplinary analyses of the strengths (and weaknesses) of green building, green building has invited an authentic, but inclusive dialogue on the need to think seriously about environmental quality in the built environment.

Even at this early point in the movement, the developments in green building can help sketch an emerging environmental ethic, as it is clear that green building is premised on several important notions of ethical significance.³²⁶ First, green building recognizes that the character of our ecological footprint is, for the most part, within our control, and as such, is intentional.³²⁷ This divergence from the prior, economic rationalizations behind legal protection of human intended uses of natural resources (e.g., humans need to eat, therefore we are entitled to spray pesticides to eliminate the potential of insects to damage food supplies; humans have uses for trees, and therefore are entitled to cut them all down; humans have market value in domesticated herds, and therefore are entitled to eradicate predatory species) attributes moral duties to actions that have far-reaching impacts on the environment, even if the object of those duties varies.

Second, green building is built upon an increasing body of research about whether and how human actions adversely affect ecosystems and the ecosystem services on which we depend.³²⁸ From this knowledge, green

³²⁵ The problem is, first, that environmental policies are not made in such monistic ways, and second, that the theory or hope embodied in moral monism may be unattainable. Moral monism considers "one metaphysics of morals: one concept of the nature of morality . . . one concept of human nature . . . one moral psychology." J. Baird Callicut, *The Case Against Moral Pluralism*, 12 ENVTL. ETHICS 99, 123-24 (1990). Assuming there even can be such a close, causal relationship between foundational principles and the identification of actions that are compelled by those principles (a claim that is always under contention), moral monism would of course prevent inconsistent and contradictory actions or programs. *Id.*

³²⁶ This Article merely seeks hints from the movement to identify the foundational and ethical commitments that can be expected (if any). See Flournoy, *supra* note 315, at 102 (looking for "patterns of values that consistently appear" in environmental laws to find the ethical implications of the regulatory scheme); see also James P. Karp, *Aldo Leopold's Land Ethic: Is an Ecological Conscience Evolving in Land Development Law?*, 19 ENVTL. L. 737, 746 (1989) (seeking an emerging land ethic in law on the assumption that "law is a reflection of social development"). Karp argues that any conclusion that a land ethic is appearing in law must be based on two separate findings: first, that "we have expanded our horizons to include other-than-human economic interests in making decisions about the land"; second, "that decisions regarding the land are being made through a balancing process that involves the weighing of ethical (ecological), aesthetic and economic factors." *Id.*

³²⁷ It is recognized that this claim may invoke an otherwise sticky moral analysis of identifying the mechanism through which intent might be transferred from the intended consequences to the unintended consequences of construction. For purposes here, it is assumed that explorations into the concept of causality in environmental matters is arguably collapsing the distinction, based in large part on both the gravity of the consequences and the amount of knowledge we have gathered about causation in environmental impacts. This contentious point, however, must be left to be developed elsewhere.

³²⁸ See, e.g., OFFICE OF THE FED. ENVTL. EXECUTIVE, THE FEDERAL COMMITMENT TO GREEN BUILDING: EXPERIENCES AND EXPECTATIONS 9-14 (2003), available at www.ofee.gov/sb/

building internalizes the notion that every building causes *avoidable* adverse impacts—that, for instance, our use of natural resources, such as water, wood, metals, fossil fuels, and others has been done in a way that may contribute to irreversible losses and impair the abilities of nature to regenerate and provide these resources in the future. Additionally, we have come to realize that our construction practices affect our ability to live well in the built environment, as our practices determine the level of indoor air quality. The pull of the environmental identity in green building, it seems, is to draw us away from the notion that nature is “out there,” and toward the realization that we are part of what is natural (whether that nature is a “natural order” or a chaotic state of nature makes no difference). Hence, green building represents a reconstruction of nature and our place in it.³²⁹

Third, green building reformulates the range of actions that have moral significance. By excluding and exempting small and “minor” actions from the scope of environmental regulations,³³⁰ prior environmental laws have essentially excused those actions from culpability for environmentally destructive action; such actions could be undertaken free from moral worth. Not surprisingly, the appearance of development projects as “minor” was considered an economically achievable asset, resulting in “piecemealed” and “segmented” projects and project review at the federal, state, and local level.³³¹ Although green building is new, and in some instances applies only to larger structures,³³² the tenor of green building laws is to recognize that every aspect of the built environment, no matter how large or small, contributes in a cumulative manner to a sustainable relationship with the natural environment.

A fourth point, which bears an unmistakable relation to the others (in varying degrees), is based on the observation that the inclusion of green principles in green building is not objectionable to the construction industry, and that the economic valuation and support for green building is not

fgb_report.pdf (detailing the significant impact on the environment caused by buildings in the United States).

³²⁹ It should suffice here to note that the circumstance of scarcity appeals to an anthropocentric analysis by rejoining environmental regulation with the Millian “harm principle,” without stating the need to identify and defend more foundational values in and about nature. In contrast, the method of the green building ethic was based on the presupposition that value systems *can* be grounded in fundamentally anthropocentric aims, and that anthropocentric goods sought in the market can, if correctly understood, compel us to take an active interest in ecosystem integrity.

³³⁰ Obvious examples would include exemptions from environmental review under the National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370e (2006), and state equivalents, such as the categorical exemptions under the Washington State Environmental Policy Act, WASH. ADMIN. CODE § 197-11-800(1)(b) (2009) (exempting “minor new construction,” including location or construction of up to four residential units, certain parking lots, and other structures). *See also* Categorical Exclusion, 40 C.F.R. § 1508.4 (2008); Environmental Assessments, 23 C.F.R. § 771.119 (2008).

³³¹ *See generally* Nolon, *supra* note 305, at 365, 413, 415 (discussing the relationship between federal, state, and local environmental laws).

³³² *See, e.g.*, BOSTON, MASS., ZONING CODE § 37-1, 80B-2 (2007), *available at* <http://www.cityofboston.gov/bra/pdf/ZoningCode/Article37.pdf> (providing green building requirements applicable to “major building projects”—buildings over 50,000 square feet).

offensive to environmentalists. Although this might seem to be an overstatement, we might consider whether its apparent overbreadth is based on reasons that are relatively trivial. Of course, advocates of the “nature lost” position could decry the green building movement based on the notion that green building innovations merely adopt the technocratic hope that humans are capable of inventing our way out of environmental crisis, or alternatively, that reliance on market forces to guide the pace of the transformation to regulatory controls merely maintains the status quo, business as usual.³³³ Similarly, advocates of the “nature found” narrative might oppose green building on grounds that the principles of the movement are indistinguishable from its parent—sustainability—and therefore adopt a framework that places nonhuman and nonexistent interests on an equal footing with present needs, which tilts the market away from efficiency in favor of beneficiaries who are not participants in the market.³³⁴ Yet, in green building, the two perspectives of nature at the lost and found appear to converge; entry into the markets for green building is intended to re-establish a place for humans in nature and in ecosystems. Similarly, use of innovation in green building relies on our knowledge of natural science and technological developments to serve the human needs for and use of ecosystem services.³³⁵ Stated otherwise, the green building approach provides a model *for* building, and is not a means of *curtailing* building.

Such a convergence arguably distinguishes green building from the traditional genealogy of environmental laws, the reach of which has frequently been determined by a relatively arbitrary choice of whether ethics or economics would play the most important role in formulating policy.³³⁶

³³³ See, e.g., James L. Huffman, *Protecting the Environment from Orthodox Environmentalism*, 15 HARV. J.L. & PUB. POL’Y, 349, 361–69 (1991) (identifying and arguing against the notion that markets are necessarily flawed means of natural resource allocation); CHRISTOPHER MANES, GREEN RAGE: RADICAL ENVIRONMENTALISM AND THE UNMAKING OF CIVILIZATION 247–48 (1990) (discussing the notion that environmental protection should be considered a moral imperative, such that no consideration of economic efficiency can enter into the debate on environmental policy). For a different perspective on an orthodox environmentalist’s objection to incentive-based regulation, see Hahn & Stavins, *supra* note 262, at 34 (“Environmental groups will tend to avoid or disfavor policy instruments that make the costs of environmental protection highly visible to consumers.”).

³³⁴ See, e.g., Hahn & Stavins, *supra* note 262, at 34 (“Private industry typically is reluctant to endorse any environmental policy mechanism for fear of implicitly endorsing the related environmental goal.”).

³³⁵ What, then, would be the extent to which green building would retain its popularity if climate change turned out to be a farce? In all likelihood, there would be little effect on green building. The “whole systems approach” embodied in green building, which is not distinct from the ecosystem approach of sustainability, relies less for its credibility on the potential disaster of climate change than on scarcity, fairness, and uncertainty as factors in the ability of our environment to provide for the needs of our species. Accordingly (although it takes a deeper analysis to get there), the same would result if the economic benefits of green building could not be verified.

³³⁶ Compare Wilderness Act, 16 U.S.C. §§ 1131(c) (2006) (describing wilderness as a place “untrammelled by man” and prohibiting most economic activities), with National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370e (2006) (laying out a framework for environmental analysis but allowing economic considerations to trump environmental concerns).

Green building requires us to recognize, on the one hand, that neither alone provides a sufficient foundation for a workable environmental policy,³³⁷ and on the other, that the two can be commensurable, coordinated, and collaborative. Hence, Mark Sagoff has identified the main obstruction to environmental law as one of overcoming the notion that the two must be placed into conflict:

In environmental law, as in other forms of social regulation, there are those who interpret legislation as an expression of public values and ethical principles and those who, instead, view legislation as a means to promote economic efficiency by regulating markets. The obstacle that threatens to stall the nation's efforts to combat pollution is the failure to reconcile these two approaches.³³⁸

The perspective advocated here—focusing on the pluralism embodied in sustainability—is a pragmatic one. Like all pluralistic perspectives, of course, sustainability is notoriously difficult to define.³³⁹ Additionally (and for much the same reasons), the normative force of sustainability remains open to debate.³⁴⁰ What, then, does a discussion on sustainability add to the dialogue on environmental ethics, or more importantly, what does sustainability add to the task of bridging the gap between environmental ethics and environmental law? An intuitive response might charge that sustainability does not bear on environmental ethics due to its failure to incorporate a nonhuman moral subject, and may be seen as limited because it “does not expand the community of morally valued entities beyond humans.”³⁴¹ Moreover, because sustainability “is consistent with a calculus of utility like that employed under many laws today,” it arguably falls short of an “appeal to any inchoate non-anthropocentric intuitions that members of the public may possess.”³⁴² Yet, notwithstanding its inclusion of anthropocentric values, sustainability has attributes “that endow it with the

³³⁷ Sagoff, *supra* note 304, at 23 (“Both the ethical and economic approaches to pollution control law are important, and both have legitimate roles to play in the formation of environmental policy. Although each approach may make a significant contribution, neither by itself suffices as a conceptual basis for regulatory policy.”).

³³⁸ *Id.* at 95.

³³⁹ Alyson Flournoy provides some insight on the basic principles of sustainability, as follows:

Decisions or policies are deemed sustainable only if they incorporate consideration of three co-equal factors: ecology, economics and social equity. Because of the explicit focus on human needs, the concept is compatible with anthropocentrism. On its face, sustainability values the environment and economic activity, not intrinsically but for their utility to humans. The explicit valuing of equity among humans in the allocation of environmental and economic benefits seems to introduce a complementary rights-based approach.

Alyson C. Flournoy, *Building an Environmental Ethic from the Ground Up*, 27 ENVIRONS: ENVTL. L. & POL’Y J. 53, 72–73 (2003).

³⁴⁰ Charles Kibert notes that “[s]ustainability may in fact be a grand illusion. . . . Some would say that we have already surpassed the earth’s limits to support today’s mass of humanity and that we in the industrialized countries simply have not as yet been able to clearly see the evidence of catastrophic breakdowns.” Kibert, *supra* note 99, at 36.

³⁴¹ Flournoy, *supra* note 339, at 73.

³⁴² *Id.*

potential to expand public discourse and to help us confront problems that must be addressed if any environmental philosophy is to take root.”³⁴³ From the pragmatic perspective, inclusion and pluralism is more effective than dogmatism.³⁴⁴ Therefore, as Anthony Weston notes, “non-anthropocentrism should not become anti-anthropocentrism: the aim should not be to push humans out of the picture entirely, but rather to open up the possibility of reciprocity between humans and the rest of nature.”³⁴⁵

In this vein, it must be the nicest irony with which architect Tom Spector points out that nonanthropocentric environmental ethics are, at least on their face, incompatible with the very purposes of architecture (whether green or otherwise).³⁴⁶ Spector asks: “Is it possible to even imagine a nonanthropocentric architecture when the modification of the environment for the sake of humans is the very reason for architecture’s existence?”³⁴⁷ The interesting question, of course, is not whether the project of green architecture is doomed to ethical regret, but whether the multiple, overlapping and often competing needs of humans and ecosystems can be served by principled building methods. That is, whatever our ethical commitments may demand, or our ontological insights might inspire, the built environment is at least bound to service within an anthropocentric framework.³⁴⁸

Spector’s insight gives us at least some reprieve in the ongoing challenge to anthropocentrism in environmental ethics and policy, in which it has been apparent that a new approach to our use of natural resources, a new understanding of nature itself, a new identity among others, is needed to prevent further destruction of the ecosystem on which we rely. One of the principal threads of debate seems to be whether the problem lies in anthropocentrism and the “anthropomorphic, anthropocentric man [who] seeks not unity with nature but conquest,”³⁴⁹ or whether the solution more simply requires a refocusing of anthropocentrism and a revised

³⁴³ *Id.*

³⁴⁴ Kelly A. Parker, *Pragmatism and Environmental Thought*, in ENVIRONMENTAL PRAGMATISM, *supra* note 318, at 21, 33 (“Denying that one or the other sphere is worthy of consideration may appear to prevent potentially moral conflict from arising, but only at the risk of serious moral blindness. Blind anthropocentrism has deplorable consequences for the non-human world, but a blindly misanthropic *ecocentrism* is no less deplorable.”).

³⁴⁵ Anthony Weston, *Before Environmental Ethics*, in ENVIRONMENTAL PRAGMATISM, *supra* note 318, at 139, 153.

³⁴⁶ Tom Spector, *Does the Sustainability Movement Sustain a Sustainable Design Ethic for Architecture?*, 28 ENVTL. ETHICS 265, 280 (2006).

³⁴⁷ *Id.* Spector argues: “Thus, for architecture at least, one of the most important props of radical environmentalism, nonanthropocentrism, would seem to be at least paradoxical and at worst, nonsensical. Paradoxical because it attacks the very reason for building in the first place—nonsensical because ennobling the human experience seems to already include a respect for the environment.” *Id.* at 282–83.

³⁴⁸ Kelly Parker distinguishes these approaches as follows: “Anthropocentrism maintains that value is of or for human beings. Biocentrism maintains that all forms of life, as such, are valuable. Ecocentrism emphasizes that value of ecological systems as a whole, including natural processes, relationships and non-living parts of the environment.” Parker, *supra* note 344, at 32.

³⁴⁹ IAN L. MCHARG, DESIGN WITH NATURE 24 (1969).

understanding of which policies and actions actually serve human needs. As to the latter, what is clear in green building is that human needs are not *only* served by immediate use of a particular resource (regardless of whether “use” means conservative use or consumption).³⁵⁰ Green building embodies the idea that, so long as we recognize that our legal system governing buildings should be compatible with human needs, whatever else might be accomplished is up to our willingness to continually refine our understanding of human needs and accept that human needs do correspond to ecosystem needs.

Green building provides this understanding by reconstruction and redescription of the ethical values and moral duties at stake. Hence, Bryan Norton argues that “[w]hat we need is more attention on the poverty of currently available languages and models for relating environmental values and goals to the physical dynamics that will determine the ecological character of the world we have to leave to subsequent generations.”³⁵¹ As with any new vocabulary, matters that were previously perceived to be amoral or insignificant may suddenly appear significant.³⁵² The values embedded in the emerging vocabulary of sustainability and ecosystem services require us to ask different questions than those that drew our attention in the past, and likewise compel us to accept an answer of an altogether different quality and character.³⁵³ What green building asks is that we recognize that the road toward collective acceptance of new, nonuse

³⁵⁰ What is arguably problematic about the role of environmental ethics in this debate—whether conceived as nature at the lost and found, or as a core unit of value, etc.—is that the debaters themselves offer few available directions for policy making. Hence, as Norton has repeatedly pointed out, only two options exist for those who do not concede an intrinsic value of nature: “[A]ccept and use the specialized language of economics . . . or break out of the misleading characterization of the problem as one choosing . . . between the moralisms of the anthropocentrists and the simplistic utilitarian framework of the economists.” Bryan Norton, *Which Morals Matter? Freeing Moral Reasoning from Ideology*, 27 ENVIRONS: ENVTL. L. & POL’Y J. 81, 92 (2003). That is, we can either adopt an economic perspective, which rejects the value system asserted in bio- and eco-centric moral theories, or we can recognize (or, perhaps, pretend) that we need not definitively identify the “true” character of nature as a precondition to adopting a policy that helps avoid a felt environmental crisis.

³⁵¹ *Id.* at 90 (“We need language and interpretive models that are sufficiently nuanced and context-sensitive—to scale and local place—to allow reasonable discussion and deliberation of goals.”).

³⁵² See generally Doremus, *supra* note 320, at 13–14 (discussing how environmental law has been shaped by the rhetoric of environmentalists).

³⁵³ In large part, the manner in which we previously valued some subject of emerging interest will seem irrational. For example, Salzman (and others) notes that “[g]iven their significance, one might expect that ecosystem services would be prized by markets and explicitly protected by the law. With few exceptions, however, neither has been the case.” James Salzman et al., *Protecting Ecosystem Services: Science, Economics, and Law*, 20 STAN. ENVTL. L.J. 309, 311 (2001). Under a traditional analysis, the nonuse of a resource might have failed to provide any value recognizable as such. The ecosystem services approach, which conceives of values as codependent and complementary, might ask whether the benefits of nonuse (e.g., allowing water to flow downstream, rather than be captured and consumed at some upstream location) outweigh the costs on a broader sphere; if the proposed use would result in water quality problems, water quantity and habitat concerns downstream, and the use value of these downstream ecosystem services is significant, then the value of nonuse may very well be more valuable than the upstream use.

values may be served by a multifaceted approach, only one element of which is centered on the merits of the particular proposed use, economic, or nonuse value.³⁵⁴ In the employment of a pluralistic approach, green building illustrates that economic value can adapt to ecological needs; the mere fact that resource efficiency (or put differently, resource nonuse) was not allotted economic value under the traditional property paradigm need not compel the conclusion that it is inherently valueless.

That the convergence of nonuse and use values of natural resources can be an effective method in formulating environmental policy is apparent in green building. Green building principles champion a *direct* improvement on the human quality of life by providing cleaner air and improving the standards of human health inside buildings, by cutting utility costs, and also by focusing on providing more durable economic worth in our homes,³⁵⁵ while transforming our building practices from representing a human victory over nature, toward the representation of humans in nature. To put it another way, green building accomplishes a pluralistic approach to construction by relocating the idea of “property” to a place and relevance within ecosystem needs, and correspondingly advances “green” as the subject of economic advantage,³⁵⁶ recognizing that “positioning

³⁵⁴ This argument has been echoed numerous times among the calls for sustainability in environmental law. For instance, individuals discussed this argument in a well-known collaborative essay:

How can we spur this transition and realize the full potential of an ecosystem services approach? Part of the challenge is educational. Most people realize neither the critical role ecosystem services play in their lives nor the threats to service provision. Part is scientific. We need to understand better the linkage between ecosystem function and provision of services so we can appropriately weigh the ecosystem management options. Part is legal, since we have little experience with institutional design and regulatory instruments to protect services. And part is economic. We need to better value services and identify the institutional barriers to their commodification.

Id. at 327.

³⁵⁵ See *supra* notes 31–76 and accompanying text (discussing the multiple LEED certifications for water quality, air quality, and energy use, for example).

³⁵⁶ We do not have to search too deeply to find these stated values. Local government resolutions and ordinances typically address ecological, social, and economic benefits of green building practices, such as in Anaheim’s finding that green building, which “can result in significant cost savings” for occupants, will also “provide returns on those investments and deliver economic and environmental benefits” to the broader community. Anaheim, Cal., Res. 2006-187 (Aug. 8, 2006), *available at* http://www.anaheim.net/utilities/adv_svc_prog/green_power/GrnConnectResolution.pdf. EPA’s Energy Star program provides another excellent example. Implemented in 1992 as a voluntary means to utilize the market in controlling greenhouse gas emissions by promoting energy efficiency, Energy Star has grown substantially, including a labeling program benefiting products and buildings that achieve the program’s strict energy-efficiency standards. See *generally* U.S. ENVTL. PROT. AGENCY, ENERGY STAR AND OTHER CLIMATE PROTECTION PARTNERSHIPS: 2007 ANNUAL REPORT 14 (2008), *available at* http://www.energystar.gov/ia/news/downloads/annual_report_2007.pdf. Publicity for Energy Star projects and programs is characteristically and notably pluralistic, combining the rhetoric of emissions reductions with the financial advantages of efficient building systems. For example, see EPA’s marketing for the “Change the World, Start with Energy Star” campaign, proclaiming that “[i]n 2007 alone, Americans, with the help of Energy Star, saved more than \$16 billion on their utility bills while reducing greenhouse gas emissions equivalent to those from 27

environmental issues that reflect tangible value to building owners, and ideally at low cost, will dictate their overall character and emphasis.”³⁵⁷

This is not to say that the green movement has already accomplished the task of transforming our relational identity in nature.³⁵⁸ Without too much fanfare, it could be agreed that most major transformations in thinking appear quite slow, piecemeal, and incremental to those seeking change.³⁵⁹ Green building remains young and largely untested, at least against the traditional challenges leveled against land use control regulations.³⁶⁰ Yet, when Davis Langdon’s report identifies the challenge—“we continue to see project teams conceiving of sustainable design as a *separate* feature”³⁶¹—the tone of the apology is evidence of the evolution at hand. Two decades ago, the ideas of sustainable design were in fact separate, external features to the building process which did not fit well into then-prevailing conventional building codes.³⁶² Today, it is notable to find builders who have not caught up with green building, and the reasoning behind their complacency is considered defective.³⁶³ Green building is quickly becoming the norm, and the objectives that it embraces are becoming the foundational principles in the practice of building construction.³⁶⁴ As reported by Jones Lang LaSalle, “Sustainability is not a passing fad – it is rapidly being mandated as a business imperative.”³⁶⁵

million vehicles.” *Id.* at 1. To access information about EPA’s “Change the World, Start with Energy Star” campaign, among others, see U.S. Env’tl. Prot. Agency, Change the World, Start with Energy Star, <http://www.energystar.gov/changetheworld> (last visited July 19, 2009).

³⁵⁷ Cole, *supra* note 233. In this sense, green building illustrates a development in the environmental movement in using the language of economics to provide an effective platform for change.

³⁵⁸ Of course, many of the legal issues in green building laws remain untested, such as liability concerns of builders, whether green building standards will ultimately become the standard for judging construction defects, and so on. These are important questions, of course—the popularity of green building is so promising that we might legitimately expect that green standards will rise to the level of industry standards for purposes of construction defect liability. Simply put, as green building becomes more pervasive and common, the benefits of green building may become part of the expectation in home buyers.

³⁵⁹ Charles P. Lord et al., *Natural Cities: Urban Ecology and the Restoration of Urban Ecosystems*, 21 VA. ENVTL. L.J. 317, 320 (2003) (“A revolution in science viewed in real time . . . is like watching the tide come in. Usually, the events are slow to unfold, and we need a marker from which to gauge the change.”).

³⁶⁰ William A. Van Vactor, Jr., *The Backlash to Land Use Regulation Continues: An Analysis of Oregon’s Measure 37*, 26 J. LAND RESOURCES & ENVTL. L. 221, 222–24 (providing a background of the property rights movement opposition to land use regulation).

³⁶¹ LANGDON, COST OF GREEN REVISITED, *supra* note 138, at 3 (emphasis added).

³⁶² See *supra* notes 92–100 and accompanying text.

³⁶³ Langdon’s report concludes that “[u]ntil design teams understand that green design is not additive, it will be difficult to overcome the notion that green costs more, especially in an era of rapid cost escalation.” LANGDON, COST OF GREEN REVISITED, *supra* note 138, at 3.

³⁶⁴ See BDC WHITE PAPER, *supra* note 6, at 9 (“As James M. Wright, AIA . . . put it, ‘Given some time . . . eventually such practices will become the norm for most building site selection, design, construction, and operation.’”).

³⁶⁵ JONES LANG LASALLE, *supra* note 228, at 7.

VI. CONCLUSION: THE CONTRIBUTION OF GREEN BUILDING TO ENVIRONMENTAL LAW

Amid global warming concerns, the increasing cost of fossil fuels, and the decreasing cost of green building materials, the momentum behind the “green building” movement continues to grow.³⁶⁶

Because of its youth, it might be premature to assess the sustainability of green building as a concept, method, or movement. Although the informational successes of early green building programs are impressive, we are early in the process of exploring what green building concepts are capable of achieving.³⁶⁷ Much work is yet to be done, and green building is likely to progress, adapt, and evolve.³⁶⁸

Still, we can recognize that the history of green building laws represents an enormous success in discovery. The principal strategies of green building laws have included voluntary standards and market-based incentives, encouraging green building in public and private construction, in education, and through leading by example. The principal payoff of the informational strategy has been an explosion of interest. Among other things, rather than litigating the authority to force people to live in healthy homes, initial green building efforts allowed for collaboration on a vision of a qualitatively different built environment while we explored much of the needed information about *why* we build green. What we are discovering is that green building is not just “green”; green building is about property value and property development, *and* it is about conservation of our precious natural resources, *and* it is about healthy homes and the health of this generation and the next. Green building advances human interests, including, but not limited to, economic interests.

In an important sense, green building may not be expected to be the ultimate solution to our environmental problems, in that we will likely not wake up to find that our green homes and offices have resolved civilization’s more significant adverse impacts on nature.³⁶⁹ We should be realistic about our hopes for a revolutionary reduction in environmental impacts from each building, one building at a time. On the other hand, the green building movement has been enormously significant, due at least to

³⁶⁶ Abair, *supra* note 180, at 623.

³⁶⁷ Hence, in the important area of indoor air quality, usable data is still lacking in large part. See Del Percio, *supra* note 9, at 152–53. Del Percio suggests that the preservation and reporting of such data should be awardable in LEED credit systems, *id.*, and to some extent, that idea has taken form in the LEED rating systems. See, e.g., LEED NC, *supra* note 29, at 74 (awarding points for verification of thermal comfort, although expressly not intended as a continuous monitoring requirement).

³⁶⁸ See Bronin, *supra* note 207, at 242 (identifying various criticisms and recommendations for improvement in LEED).

³⁶⁹ It has been suggested that, as green building becomes more pervasive and data on green building efficiency becomes more available, the positive impacts will exceed these more moderate expectations. See, e.g., ROB WATSON & ELIZABETH BALKAN, GREEN BUILDING IMPACT REPORT 2008, at 15 (2008), available at <http://stateofgreenbusiness.com/files/GreenBuildingImpactReport2008.pdf>.

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its growing success in applying the principles of sustainability to reconceptualize nature in a way that accommodates the needs of others in the environment, rather than placing humans at odds with, in competition with, or even as the savior of nature. Green building refocuses the foundations of the built environment from a circumstance that must be overcome, into a place within which we must live, and it is accomplishing this task with the acquiescence of the regulated.