

## ARTICLE

# The Quiet Revolution Revived: Sustainable Design, Land Use Regulation, and the States

by Sara C. Bronin

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In 1971, *The Quiet Revolution in Land Use Control* inspired numerous scholarly debates about the states' role in land use regulation.<sup>1</sup> In that book, Fred Bosselman and David Callies recognized that localities have long borrowed states' police power to regulate land use.<sup>2</sup> They nonetheless argued that certain land use issues, such as those involving the environment, transcended local government boundaries and competencies.<sup>3</sup> A quiet revolution, the authors claimed, should occur to shift governmental authority from local governments to entities that could more adequately address "extralocal" issues.<sup>4</sup> They turned not to regional authorities or the federal government, but to the states, arguing that states should take back their police power to regulate extralocal issues in a manner that maintained two core values of the quiet revolution: the preservation of the existing land use system and the respect for local autonomy.

Thirty-seven years later, their anticipated transformation has not yet occurred. Carol Rose has noted that since the quiet revolution was first heralded, state and regional governments have not limited—and in fact, may have expanded—local discretion with respect to land use decisionmaking.<sup>5</sup> In 2002, David Callies himself acknowledged that localities

play an increasingly important role in, among other areas, environmental protection.<sup>6</sup>

It is time, however, to revive the call of the quiet revolution for states to become more involved in regulating land use, particularly in light of growing evidence of the negative externalities of conventional construction. As written and enforced, "traditional" local land use laws such as zoning ordinances and design controls hinder efforts to build green. This Article examines this conflict and suggests reforms to our land use regulatory system that would facilitate sustainable design.

Part I defines green building by referencing widely accepted industry standards. It then examines the significant negative externalities of conventional construction. It argues that, as evidence of these negative externalities mounts, landowners, including the government, will gravitate toward green building.<sup>7</sup>

Part II explains how the shift toward green building has already created tension with respect to the administration and enforcement of traditional land use regulation. Those that allow green building often allow it piecemeal, but fail to develop comprehensive rules. And although a handful of communities have attempted to address green building through comprehensive legal regimes, localities are so autonomous, and local laws so varied, that it is difficult to transport best practices across jurisdictional lines. Evidence reveals that the dominant mode of land use regulation nationwide bars the reforms that environmentalists and the building industry have worked together to develop.

Part III asserts that states must take back at least some of their powers to regulate land use and facilitate green building

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*This Article is excerpted from the Minnesota Law Review, 93 MINN. L. REV. 231 (2008), and is reprinted with permission.*

1. FRED P. BOSSELMAN & DAVID L. CALLIES, *THE QUIET REVOLUTION IN LAND USE CONTROL* (1971).
2. *See id.* at 1 ("The *ancien regime* being overthrown is the feudal system under which the entire pattern of land development has been controlled by thousands of individual local governments.").
3. *See id.* ("The tools of the revolution are new laws . . . sharing a common theme—the need to provide some degree of state or regional participation in the major decisions that affect the use of our increasingly limited supply of land.").
4. *Id.* at 3 (arguing that states "are the only existing political entities capable of devising innovative techniques and governmental structures to solve problems . . . beyond the capacity of local governments acting alone").
5. *See* Carol M. Rose, *Planning and Dealing: Piecemeal Land Controls as a Problem of Local Legitimacy*, 71 CAL. L. REV. 837, 842-43 (1983).

6. Carol M. Rose, *New Models for Local Land Use Decisions*, 79 NW. U. L. REV. 1155, 1156 (1985) (focusing entirely on local modes of land use decisionmaking).
7. This view is supported by the finding that governmental actors—which are immune from the land use rules they impose on private actors—have integrated green building into public projects.

as a solution to the significant extralocal negative externalities of conventional construction.

## I. The Extralocal Impact of Conventional Construction

The rapidly growing green building movement challenges the notion that traditional land use regulation should be an exclusively local function. The movement has brought the environmental consequences of conventional construction to the forefront and exposed the inadequacy of local legal regimes to respond to private land use decisions with significant extralocal externalities. This part sets the stage for Part II's analysis of the tensions between green building and existing law by defining green building on the one hand, and conventional construction on the other. Studies underscore the stark differences between these two modes of construction and enumerate the benefits of sustainable design. As these benefits become more widely known, landowners will increasingly seek to build green.

### A. A Green-Building Definition

While there are innumerable innovative ways one can build green, the best and most common definition of green building can be found in the Leadership in Energy and Environmental Design (LEED) program developed by the nonprofit, nongovernmental U.S. Green Building Council.<sup>8</sup> The LEED program evaluates the sustainable features of new construction by giving points in six areas: (1) location and siting; (2) water efficiency; (3) energy and atmosphere; (4) materials and resources; (5) indoor environmental quality; and (6) innovation and design.<sup>9</sup> Property owners can petition the U.S. Green Building Council for certification indicating that their buildings have achieved a certain number of points within each of these six areas.<sup>10</sup>

### B. The Negative Externalities of Conventional Construction

With this definition of green building, it is possible to contrast green building with conventional construction, and consider the ways in which the impact of the construction and operation of conventionally designed buildings extends far beyond local boundaries.

Construction is the nation's largest manufacturing activity, using sixty percent of the nonfood, nonfuel raw materials consumed each year.<sup>11</sup> Worldwide, buildings and the con-

struction of buildings account for one-sixth of the world's freshwater withdrawals, forty percent of the world's material and energy flows, and twenty-five percent of wood cut for nonfuel uses.<sup>12</sup> In conventional buildings, materials are often brought in from long distances, with project managers giving little or no consideration to the availability of local alternatives or to the amount of energy used to transport materials. Sustainable design principles, by contrast, recognize that the use of local materials helps the environment by reducing the number of vehicle miles attributed to a project, and LEED awards points for the use of materials extracted and manufactured within a five hundred mile radius of the registered project.<sup>13</sup> Similarly, few conventional projects incorporate recycled materials to a significant degree—unlike LEED-certified projects, nearly all of which incorporate recycled materials during construction, and all of which must provide recycling facilities to occupants once construction is completed.<sup>14</sup>

Post-construction, conventionally designed buildings consume massive amounts of natural resources. Large buildings require millions of gallons of water to operate basic systems and to meet inhabitants' needs; commercial buildings alone use nearly twenty percent of our nation's drinking water supply annually.<sup>15</sup> Keeping buildings lit, cool, warm, or otherwise habitable takes up thirty-six percent of primary energy use, and two thirds of all electricity use.<sup>16</sup> LEED-certified projects consume substantially less water and energy, which translates into operating savings for the owner: studies have shown that such projects generate utility bills (a reasonable proxy for consumption) thirty to fifty percent less than utility bills for conventional buildings.<sup>17</sup>

In light of such statistics, the value of sustainable design is clear. Green building reduces both the amount of waste that demolition and new construction produce, and the amount of resources consumed over the life of the building.

## II. Local Barriers to Green Building

Despite the need for green building described in Part I, traditional land use laws tend to thwart green building. The vast majority of localities have responded to the nascent sustain-

8. See, e.g., Brian D. Anderson, *Legal and Business Issues of Green Building*, 79 Wis. Law. 10, 10, 12 (2006) ("[T]he U.S. Green Building Council has taken the lead in establishing a formalized green building rating system.").

9. U.S. GREEN BLDG. COUNCIL, GREEN BUILDING RATING SYSTEM FOR NEW CONSTRUCTION & MAJOR RENOVATIONS v-vi (Version 2.1, 2002, rev. 2003), available at [https://www.usgbc.org/Docs/LEEDdocs/LEED\\_RS\\_v2-1.pdf](https://www.usgbc.org/Docs/LEEDdocs/LEED_RS_v2-1.pdf).

10. LEED levels include the basic certification level, then silver, gold, and platinum. *Id.* at vi.

11. JOHN L. SZNOPEK & WILLIAM M. BROWN, MATERIALS FLOW AND SUSTAINABILITY, USGS FACT SHEET FS-068 98 (1998), available at <http://pubs.usgs.gov/fs/fs-0068-98/fs-0068-98.pdf>.

12. See DAVID MALIN ROODMAN & NICHOLAS LENSSEN, WORLDWATCH PAPER #124: A BUILDING REVOLUTION: HOW ECOLOGY AND HEALTH CONCERNS ARE TRANSFORMING CONSTRUCTION, WORLDWATCH INSTITUTE (1995).

13. U.S. GREEN BLDG. COUNCIL, *supra* note 9, at 43-44 (awarding one point if such materials account for twenty percent of the materials used and an additional point if such materials account for fifty percent of the materials used).

14. *Id.* at 37-42 (requiring that builders utilize recycling areas and allowing builders to receive more credits for reusing materials and incorporating recycled material).

15. Energy Star, The First Step to Improving Water Efficiency, [http://www.energy-star.gov/index.cfm?c=business.bus\\_water](http://www.energy-star.gov/index.cfm?c=business.bus_water) (last visited Oct. 16, 2008).

16. STEPHANIE J. BATTLES & EUGENE M. BURNS, TRENDS IN BUILDING-RELATED ENERGY AND CARBON EMISSIONS: ACTUAL AND ALTERNATE SCENARIOS (Aug. 21, 2000), available at <http://www.eia.doe.gov/emeu/efficiency/aceee2000.html> (discussing primary energy use). "Primary energy is the amount of site or delivered energy plus losses that occur in the generation, transmission, and distribution of the energy." *Id.* at n.2; see also Smart Communities Network, Green Buildings Introduction, <http://www.smartcommunities.ncat.org/buildings/gbintro.shtml> (last visited Oct. 16, 2008) (discussing electricity use).

17. See Bureau of Nat'l Affairs, *Green Buildings Helping the Environment, the Bottom Line*, ENVTL. COMPLIANCE BULL., June 18, 2007, at 208.

able design revolution by either explicitly prohibiting certain green technologies, typically on aesthetic grounds, or by ignoring the green building movement in the text of ordinances and making piecemeal decisions on land use applications, creating ambiguity and inconsistency. Only a few municipalities have begun to address climate change and the conservation of natural resources:<sup>18</sup> about seventy-five general purpose local governments (out of 38,967 nationwide) incorporate sustainable design principles into their ordinances.<sup>19</sup>

### A. Barring Green

Communities typically impose zoning and design controls for the purpose of protecting and enhancing property values. Such laws depend, of course, on challenging judgments about what the market will value.<sup>20</sup> Presumably operating on the assumption that modern technologies are unattractive while adding no nonaesthetic value to the property, some communities explicitly use design controls to prevent their installation.

Perhaps the most common sustainable technology barred by design control laws is the photovoltaic panel, which can be placed on or around structures to capture and convert solar energy.<sup>21</sup> Indeed, aesthetic review boards and historic preservation boards, which typically govern structures visible from a public way, regularly reject their installation.<sup>22</sup> Unfortunately, to maximize sun exposure, panels must often be

sited in locations at least partially visible from a public way. The solar panel example highlights the tension between the aesthetic concerns of design control boards and the energy-efficiency concerns of environmental advocates. Rather than celebrating and fully utilizing their energy-efficient technologies, homeowners are forced to hide or dismantle them.<sup>23</sup>

Many green technologies are not nearly as unattractive as design control boards assume, and the manufacturers who produce such technologies are working on ways to better integrate them into conventional building design.<sup>24</sup> Moreover, as green building becomes more popular and as its long-term benefits become clear, it may enhance property values as much as design controls do. It is critical, therefore, that communities maintain sufficient flexibility in their design controls so that they may adjust both to the rapidly evolving range of green technologies and the potentially growing market value of such features.

### B. Ignoring Green

While some localities explicitly ban the installation or use of green technologies perceived to be inconsistent with the community's aesthetic standards, many more localities fail to include any explicit reference to green technologies in their land use regulations. Although undoubtedly less problematic than an outright ban, failure to contemplate green technologies can itself hinder their utilization.

Zoning ordinances often fail to address freestanding, bulky, or noisy green-building technologies. Technologies such as windmills, solar panels, fuel cells, water collectors, and turbines are mentioned in only a handful of the thousands of zoning ordinances in force across the country.<sup>25</sup> Where relevant language does not appear in the ordinance, applicants cannot know in advance whether the installation or modification of green technologies is subject to zoning board review. Applicants may review the ordinance, and, seeing no relevant language, proceed with construction, only to be told later that they must dismantle the structure or pay a fine.<sup>26</sup>

A related problem that occurs in the absence of relevant language is that zoning boards have no standards by which to judge applicants for zoning relief. Instead, the boards engage in ad hoc inquiries leading to uncertainty among applicants seeking to employ innovative techniques and technologies. As Carol Rose has argued, this type of piecemeal decision-

18. See Randall S. Abate, *Kyoto or Not, Here We Come: The Promise and Perils of the Piecemeal Approach to Climate Change Regulation in the United States*, 15 CORNELL J. L. & PUB. POL'Y 369, 384-85 (2006) (describing how 155 mayors signed a statement calling on the federal government to address climate change and 132 mayors representing 29 million citizens have embraced the Kyoto Protocol mandates for their cities); Cinnamon Carlarne, *Climate Change Policies an Ocean Apart: EU and US Climate Change Policies Compared*, 14 PENN ST. ENVTL. L. REV. 436, 445-46 (2006) ("Faced with weak federal efforts to address climate change, states such as California and New York and cities such as Portland and Philadelphia are choosing to follow in the footsteps of the European Union."); John R. Nolon, *In Praise of Parochialism: The Advent of Local Environmental Law*, in NEW GROUND: THE ADVENT OF LOCAL ENVIRONMENTAL LAW 3, 3 (John R. Nolon ed., 2003) ("[Municipalities enact] local comprehensive plans expressing environmental values, zoning districts created to protect watershed areas, environmental standards contained in subdivision and site plan regulations, and stand-alone environmental laws adopted to protect particular natural resources such as ridgelines, wetlands, floodplains, stream banks, existing vegetative cover, and forests.");
19. See U.S. CENSUS BUREAU, U.S. DEPT. OF COMMERCE, GOVERNMENT ORGANIZATION: 2002 CENSUS OF GOVERNMENTS 5 (2002), available at <http://www.census.gov/prod/2003pubs/gc021x1.pdf> (providing the 38,967 figure); Bureau of Nat'l Affairs, *supra* note 17, at 208 (noting that seventy-five local governments have committed to following LEED guidelines). These cities include Chicago, Dallas, Denver, Eugene, Portland, San Jose, Santa Monica, Scottsdale, and Seattle. See Christopher D. Montez & Darren Olsen, *The LEED Green Building Rating System and Related Legislation and Governmental Standards Concerning Sustainable Construction*, CONSTRUCTION LAW., Summer 2005, at 38, 41-42.
20. See Beverly A. Rowlett, *Aesthetic Regulation Under the Police Power: The New General Welfare and the Presumption of Constitutionality*, 34 VAND. L. REV. 603, 622-23 (1981).
21. See generally PETER GEVORKIAN, *SOLAR POWER IN BUILDING DESIGN* (2007) (describing the history, technology, and design of photovoltaic panels).
22. See, e.g., David Collins, *Not So Hot*, SANTA FE NEW MEXICAN, Jan. 8, 2006, at 11 (describing the reluctance of the Santa Fe Historic Design Review Board to allow solar panels); Tom Sharpe, *Solar Collectors to Be Removed From House in Historic District*, SANTA FE NEW MEXICAN, July 23, 2005 (chronicling the experience of one Santa Fe couple forced to remove solar panels worth \$40,000 from their home in a historic district).

23. See, e.g., Lorraine Mirabella, *Marylanders Are Finding Energy Elsewhere*, CHI. TRIB., Jan. 18, 2004, §16, at 5P (describing how a Takoma Park, Maryland homeowner hid thirty-six solar panels on the back of his roof).
24. See, e.g., Sara Schaefer Muñoz, *An Inconvenient Turbine: Conservation vs. Preservation*, WALL ST. J., July 12, 2007, at B6 (providing two examples of companies designing new energy-efficient products that fit in with existing surroundings).
25. See *supra* note 19 and accompanying text (explaining that relatively few localities nationwide address green-building issues).
26. See Sanya Carleyolsen, *Tangled in the Wires: An Assessment of the Existing U.S. Renewable Energy Legal Framework*, 46 NAT. RESOURCES J. 759, 787 (2006) (suggesting that a builder often cannot find information about green technologies, such as solar panels, and consequently "will not know whether . . . he or she can simply confirm that the panels conform to height and setback regulations").



making tends to ignore extralocal effects, exclude low-income outsiders, shift environmental problems to neighbors, and thwart orderly and predictable development.<sup>27</sup>

### C. Isolated Experiments in Local Reform

Only a handful of localities currently promote green building through their land use laws. They do so by issuing mandates, writing optional codes, comprehensively reevaluating certain existing laws, and granting green-building projects certain procedural benefits. While localities are currently testing each of these strategies, and might find some to be successful, adoption in most—or even a substantial minority of—localities across the country seems practically infeasible.

The most aggressive tool for promoting green building is to actually mandate standards in land use laws. The handful of passed mandates set the LEED point system as their goal.<sup>28</sup> The largest city to embrace green-building mandates is Boston: in the summer of 2007, the city amended its zoning ordinance to require that all private construction over fifty thousand square feet meet minimum LEED criteria.<sup>29</sup> Through its Green Points Program, Boulder, Colorado, requires some combination of recycled materials (such as fiber concrete, reclaimed lumber, or recycled roofing materials), green insulation products, energy-efficient windows, radiant floor heating, or other sustainable products in private residential addition and remodeling projects larger than five hundred square feet.<sup>30</sup> Small towns have also experimented with mandates. For example, Babylon, New York, requires new construction of multiple residences, and commercial, office, and residential buildings greater than four thousand square feet, to meet LEED criteria; Babylon officials estimate that this change will reduce greenhouse gas emissions by 1.37 million tons.<sup>31</sup> Meanwhile, Greenburgh, New York, amended its building code to require greater energy efficiency, mandating that homes meet state ratings goals.<sup>32</sup>

Despite the few examples listed above, and despite the undoubted effectiveness of mandates as a tool for minimizing the negative externalities of conventional construction, mandates have never been popular. Developers in particular—whether or not they support green building in principle—are

likely to be the strongest opponents of mandates, because they have the most to lose. Of course, developers might worry about the cost of green building, despite recent studies showing that the cost is lower than commonly perceived.<sup>33</sup>

Optional codes are an alternative to mandates and encounter less constituent opposition because individual landowners might choose to use either the traditional or the optional code. Instead, the major opposition to optional codes comes from overworked local land use officials who must draft, and regulate under, a new legal regime.<sup>34</sup>

In addition to substantive changes to land use laws, localities may consider procedural reforms that favor green building. Such reforms have the least impact of the reforms suggested, but they also meet with the least opposition. Several localities, for example, have waived building permit fees for buildings that incorporate at least one type of sustainable technology.<sup>35</sup> Instead of fee waivers, Scottsdale, Arizona, provides participants in its Green-building Program with public recognition, green-building inspections, and development process assistance for green projects.<sup>36</sup>

27. See Rose, *supra* note 5, at 840-42.

28. See CONN. GEN. STAT. §16a-38k (2007) (requiring that new public construction projects which cost over five million dollars achieve LEED silver standard); S.B. 5509, 59th Leg., Reg. Sess. (Wash. 2005) (requiring all public buildings in Washington receiving state funding to achieve LEED silver standard); Cal. Exec. Order No. S-20-04 (Dec. 14, 2004), [available at](http://www.dot.ca.gov/hq/energy/ExecOrderS-20-04.htm) <http://www.dot.ca.gov/hq/energy/ExecOrderS-20-04.htm> (requiring that grid-based energy usage of public buildings in California decrease twenty percent by 2015 and that all public building construction achieve LEED silver standard).

29. BOSTON, MASS., ZONING CODE arts. 37-3, 37-4, 80B-6(2)(vii) (2007) (stating that any proposed project that is subject to the city's "Large Project Review" must demonstrate that it would meet the appropriate level of LEED certification). In calculating LEED compliance, the city may award a bonus point if the project involves certain historic structures. *Id.* art. 37 app. A.

30. See CITY OF BOULDER, CITY OF BOULDER RESIDENTIAL BLDG. GUIDE, GREEN BUILDING & GREEN POINTS APPLICATION, at 4-9 (2008), [available at](http://www.bouldercolorado.gov/files/PDS/codes/1001_web.pdf) [http://www.bouldercolorado.gov/files/PDS/codes/1001\\_web.pdf](http://www.bouldercolorado.gov/files/PDS/codes/1001_web.pdf).

31. Anthony S. Guardino, *Green Revolution: New Local Regulations Address Global Warming*, N.Y. L.J., July 25, 2007, at 8.

32. See *id.*

33. See, e.g., Jennifer R. DuBose et al., *Analysis of State-Wide Green Building Policies*, 2 J. GREEN BUILDING 2, 161, 173-74 (Spring 2007) ("[D]ocumentation required for LEED certification is sometimes perceived as cumbersome and costly. . . . Cost is one of the biggest inhibitors to green building (with or without LEED certification)."); Rosemary Winters, "Green" Building Products Can Prove Profitable in Salt Lake City, SALT LAKE TRIB., Feb. 24, 2004, at E1 ("One of the largest barriers to popularizing green-building techniques is the perception that such techniques cost more."); NAT'L ASS'N OF HOME BUILDERS, CODES AND STANDARDS, [available at](http://www.nahb.org/generic.aspx?genericContentID=3093&print=true) <http://www.nahb.org/generic.aspx?genericContentID=3093&print=true> (describing the need for cost-effective green-building guidelines as one of the National Association of Home Builders' policy concerns); GREG KATS ET AL., REPORT TO CALIFORNIA'S SUSTAINABLE BUILDING TASK FORCE, THE COSTS AND FINANCIAL BENEFITS OF GREEN BUILDINGS, at 15 (2003), [available at](http://www.usgbc.org/Docs/News/News477.pdf) <http://www.usgbc.org/Docs/News/News477.pdf> (studying thirty-three office and school projects to come up with an average cost premium of 1.84 percent on green buildings); LISA FAY MATTHIESON & PETER MORRIS, DAVIS LANGDON, COSTING GREEN: A COMPREHENSIVE COST DATABASE AND BUDGETING METHODOLOGY 3 (2004), [available at](http://www.usgbc.org/Docs/Resources/Cost_of_Green_Full.pdf) [http://www.usgbc.org/Docs/Resources/Cost\\_of\\_Green\\_Full.pdf](http://www.usgbc.org/Docs/Resources/Cost_of_Green_Full.pdf) (analyzing six hundred projects located in nineteen states and concluding that "many projects achieve sustainable design within their initial budget, or with very small supplemental funding").

34. Cf. Sara C. Galvan, *Rehabilitating Rehab Through State Building Codes*, 115 YALE L.J. 1744, 1771-72 (2006) (describing how building code officials, whose departments are understaffed and underfunded, are among those most resistant to reform in building code texts). The understaffing of city planning departments has been documented only on a city-by-city basis. See, e.g., CITY OF L.A., OFFICE OF THE CONTROLLER, PERFORMANCE AUDIT OF THE DEPARTMENT OF CITY PLANNING'S CASE PROCESSING FUNCTION 24 (2005), [available at](http://www.lacity.org/ctr/audits/ctr/audits1803321010312005.pdf) <http://www.lacity.org/ctr/audits/ctr/audits1803321010312005.pdf> (identifying an eighteen percent vacancy rate in staff positions); S.F. CHAPTER OF THE AM. INST. OF ARCHITECTS & S.F. PLANNING & URBAN RESEARCH ASS'N, PLANNING THE CITY'S FUTURE 8 (2004), [available at](http://www.spur.org/documents/pdf/040301_report_01.pdf) [http://www.spur.org/documents/pdf/040301\\_report\\_01.pdf](http://www.spur.org/documents/pdf/040301_report_01.pdf) (calling the planning department "severely understaffed").

35. See, e.g., Chelsea Phua, *Solar Fee Waiver Mulled, SMUD Proposes Program for Efficient Energy Use and Green Technology*, SACRAMENTO BEE, Feb. 5, 2007, at B1 (describing how the Sacramento Municipal Utility District proposed to waive building permit fees for projects with solar panels, foregoing only five to ten thousand dollars in revenue, and how Elk Grove, California, adopted a similar ordinance); Stephen Wall, *Green Campaign Wins Green Light*, SAN BERNARDINO COUNTY SUN, Aug. 29, 2007 (describing how the San Bernardino County Board of Supervisors waived building permit fees for owners of existing buildings who "install solar panels, wind turbines, tankless water heaters, and energy-efficient air conditioning systems").

36. See CITY OF SCOTTSDALE, ARIZ., GREEN BUILDING PROGRAM, (2004) [available at](http://www.scottsdaleaz.gov/Assets/Public+Website/greenbuilding/ProgramOverview.pdf) <http://www.scottsdaleaz.gov/Assets/Public+Website/greenbuilding/ProgramOverview.pdf>.

Despite examples of successful local reform, very few localities have taken steps to amend existing laws or to create new laws that address green building.<sup>37</sup> Institutional inertia serves as a key obstacle: simply put, local government officials resist change.<sup>38</sup>

### III. The Quiet Revolution Revived Through State Control

In light of the impracticability of national or regional land use schemes, and in light of the failures of localities to enact reforms to address green building, states should reclaim their abilities to regulate land use under the police power to move reforms forward. This Part challenges the long-accepted view that states have no role to play in traditional land use regulation and explains why sustainable design might inspire a renewal of the long-dormant quiet revolution. The major barrier to the revival of the quiet revolution is the potential conflict with local autonomy. Yet as this Part demonstrates, the current land use regime allows the states to make changes without compromising local autonomy.

#### A. Why States

The argument that states should become more involved in land use is controversial but not new: *The Quiet Revolution* sets forth an argument for state involvement that consists of five major components. First, it recognizes that localities have long been the primary level of government involved in land use regulation.<sup>39</sup> Second, it identifies problems of statewide significance, including “social problems as well as problems involving environmental pollution and destruction of vital ecological systems, which threaten our very existence.”<sup>40</sup> Third, it recognizes the ways in which localities cannot (or do not) address the identified problems.<sup>41</sup> Fourth, it analyzes the possibility of extralocal reforms which do not involve state governments.<sup>42</sup> Fifth, it asserts that states could do much more to tackle the problem identified.<sup>43</sup>

This Part finally considers the fifth component of the argument supporting the quiet revolution with respect to sustainable design: why states? In asking this question, this Article does not assert that states—or any other single level of government, for that matter—should address the sustainability dilemma alone; an integrated approach is necessary, and each level of government has something to offer. Instead, this Article aims to focus attention on the inactivity of states relative to their potential and their powers.

States have never fully exercised their land use authority.<sup>44</sup> States can expand or contract localities’ decision-making powers by amending enabling acts or by enacting unrelated legislation. With the power to pass laws, which affect each locality, states have the power to reform the land use regulation system in a significant way to effect change on the wide scale, which the evidence suggests is necessary. Yet no state has demonstrated a willingness to change local land use laws to respond to the mounting evidence against conventional construction.

The states’ unresponsiveness in the land use regulation context does not necessarily reflect an antipathy toward the green-building movement. To the contrary, state lawmakers have demonstrated a willingness to promote green building in other important areas. Approximately a dozen states have undertaken a variety of whole-building sustainable-design initiatives, including green-building tax credits and mandatory design requirements for public buildings.<sup>45</sup> In addition, many states provide financial incentives for the installation or utilization of specific green technologies.

State legislatures should go beyond incentives, however, and enact wide-scale land use reform that does not compromise local autonomy. As a practical matter, localities are already limited in their ability to exercise traditional land use regulatory powers.<sup>46</sup> This Article does not argue that states should limit localities even further by reclaiming all land use regulatory powers. In the absence of local leadership in an area as significant as green building, however, states—which enable localities to enact zoning, aesthetic review, and historic preservation ordinances in the first place—can and should work through the existing land use regime to limit localities’ powers. In crafting such limitations, states must take into account—and even embrace—the structure of the existing land use regime. Indeed, one of the major tenets of the quiet revolution is that states should “relate in a logical manner to the continuing need for local participation.”<sup>47</sup> According to Bosselman and Callies, even if localities’ land use regulatory schemes produce undesirable results, their role must be respected.<sup>48</sup> A land use revolution may only be quiet—and successful—if it protects local autonomy.

37. See Nancy J. King & Brian J. King, *Creating Incentives for Sustainable Buildings: A Comparative Law Approach Featuring the United States and the European Union*, 23 VA. ENVTL. L.J. 397, 415 (2005).

38. See Galvan, *supra* note 34, at 1772-73 (describing a similar concern with code officials’ resistance to rehabilitation building codes, another innovation in coding).

39. BOSSELMAN & CALLIES, *supra* note 1, at 2-3.

40. *Id.* at 3.

41. *Id.*

42. *Id.* at 4.

43. *Id.* at 327.

44. *Id.* at 2-3.

45. See Jennifer R. DuBose et al., *supra* note 33, at 161, (describing how green-building programs in eleven states evolved); Patricia E. Salkin, *Squaring the Circle on Sprawl: What More Can We Do? Progress Toward Sustainable Land Use in the States*, 16 WIDENER L.J. 787, 790-821 (2007) (describing various state programs relating to “smart growth”); Christopher D. Montez & Darren Olsen, *The LEED Green Building Rating System and Related Legislation and Governmental Standards Concerning Sustainable Construction*, CONSTRUCTION LAW., Summer 2005, at 38, 39-41.

46. David J. Barron & Gerald E. Frug, *Defensive Localism: A View of the Field From the Field*, 21 J.L. & POL. 261, 265-66 (2005) (explaining that localities sometimes feel constrained by “large structural forces over which they have little effective power given the limited reach of their jurisdiction”).

47. BOSSELMAN & CALLIES, *supra* note 1, at 320.

48. *Id.* at 3 (“A recognition of the inadequacies of local [control] must not, however, cause the values of citizen participation and local control . . . to be submerger completely in some anonymous state bureaucracy.”).

## B. Experiments in State Reform

A final question remains: how can states push localities to counteract the wide-scale problems created by conventional construction without infringing on local autonomy? In the broader context of land use regulation, several states have enacted legislation that directs localities to prioritize certain factors in decisionmaking, to undertake studies, to designate financial resources, or to manage growth in ways the state approves.<sup>49</sup> In the green-building context, some states, such as California, Connecticut, and Arizona, have already begun experimenting with state-level reforms which preserve the two core values of the quiet revolution: the preservation of the existing land use system and the protection of local autonomy.<sup>50</sup> They do not aim to rewrite existing land use regulations on a locality-by-locality basis, but instead aim to create statewide rules that either influence land use decision-making or address sustainable design techniques that have not been addressed by localities.

The California legislature, for example, prevents local governments from denying solar energy permits on the basis of aesthetics alone.<sup>51</sup> In reviewing a building permit for a solar energy system, a locality may only consider health and safety issues, and if the system “could have a specific, adverse impact upon the public health and safety,” the locality may require the applicant to apply for a use permit in addition to the building permit.<sup>52</sup> This use permit cannot be withheld unless the locality “makes written findings based upon substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact.”<sup>53</sup> This language makes localities’ denial of solar energy systems extremely difficult. As a result of this legislation, most California cities exempt solar panels from the aesthetic review process altogether.<sup>54</sup>

Connecticut, similarly, limits how far historic district commissions can go to regulate solar panels. Its historic district enabling statute, which allows localities to create historic districts, states that a local historic commission cannot block the construction of a solar energy system (or other systems which use renewable resources) unless such a system “cannot be installed without substantially impairing the historic character and appearance of the district.”<sup>55</sup> Connecticut’s

protection of solar panels clearly leaves more to the historic commission’s discretion than does California’s: local commissioners may easily find that a solar panel “substantially impairs” the aesthetics of a historic building. Yet by including this language in its historic district enabling statute, the state has made a significant attempt to address the evolving interplay between green building and design controls.

Finally, Arizona is a leader among the states in accommodating gray water.<sup>56</sup> Most localities fail to address gray water—defined as any untreated household wastewater excluding toilet water—which can be used to water lawns, irrigate crops, or flush toilets. Three or four LEED water efficiency points can be earned by recycling gray water.<sup>57</sup> Despite gray water comprising fifty to eighty percent of domestic wastewater, and despite its reusability after relatively inexpensive treatment, localities often make the recycling of gray water very difficult.<sup>58</sup> Local laws do not always differentiate between gray water and black water (toilet water), which is considered to be sewage and which cannot be used for any reason unless it is thoroughly treated.<sup>59</sup> Arizona provides for three different tiers of gray water users; it does not require permits for household gray water recycling of less than four hundred gallons per day and it specifies performance standards instead of prescriptive rules for the remainder of the users.<sup>60</sup> Through this statute, the state provides guidance on an issue with which localities have not traditionally been involved, presenting an environmentally responsible approach to state regulation that should be replicated elsewhere.

The three preceding examples demonstrate the benefits of state-by-state experimentation—experimentation which could not occur at a federal level, where decisionmaking is both too centralized and too distant from the level at which land use decisions typically occur, or at the regional level, which despite scholars’ support does not really even exist. Many more states should weigh this balance to find innovative ways to preserve both the environment and local autonomy.

## IV. Conclusion

If policymakers find ways to reduce emissions from these future buildings, as well as from the buildings that already

49. John R. Nolon, *Champions of Change: Reinventing Democracy Through Land Law Reform*, 30 HARV. ENVTL. L. REV. 1, 26-29 (2006) (describing, for example, the state of Wisconsin mandate that each city develop a plan which incorporates specific smart growth elements, and the state of Iowa law that conservation districts design and enforce erosion-control measures).

50. See *id.*

51. CAL. GOV’T CODE §65850.5 (West 2007).

52. *Id.* §65850.5(b).

53. *Id.* §65850.5(c).

54. Isabelle Groc, *When the Joneses Go Solar*, HIGH COUNTRY NEWS, July 23, 2007, at 6 (noting that solar panels installed in the 1970s often are not maintained and become dilapidated and unattractive); Todd J. Wenzel, *State LEEDs Way in Green Building Movement*, RECORDER, Mar. 26, 2007, at 16 (describing Marin County as one example which “speeds permit processing and waives some design review” for sustainable technologies).

55. CONN. GEN. STAT. §7-147f(a) (2007).

56. Larry Gallagher, *How Does Your Garden Grow?*, ONEARTH, Fall 2005, at 12 (“At the forefront are Arizona and New Mexico, where reining in water use is an obvious priority.”); ART LUDWIG, OASIS DESIGN, GREYWATER POLICY PACKET 31 (2005), available at <http://oasisdesign.net/downloads/GWPolyPacket.pdf>.

57. U.S. GREEN BLDG. COUNCIL, LEED FOR NEW CONSTRUCTION & MAJOR RENOVATIONS: VERSION 2.2, at 27, 29-32 (2005), available at <http://www.usgbc.org/ShowFile.aspx?DocumentID=1095>.

58. LUDWIG, *supra* note 56, at 3 (calling Arizona’s gray water statute a model for other jurisdictions). Other states have not been as successful as Arizona: although California in 1994 became the first state to incorporate gray water systems into its statewide plumbing code, the law is so restrictive that an underground movement of gray water proponents—as many as two thousand in the Bay Area alone—operate gray water systems illegally. Gregory Dicum, *The Dirty Water Underground*, N.Y. TIMES, May 31, 2007, at F4.

59. See Dean Fosdick, *Recycling Water Is a Gray Area*, [http://www.wral.com/lifestyles/house\\_and\\_home/story/2088188/](http://www.wral.com/lifestyles/house_and_home/story/2088188/) (last visited Nov. 27, 2007) (describing the consequences of prohibiting gray water usage in the southeastern United States).

60. ARIZ. ADMIN. CODE §R18-9-711 to -720 (2007).

exist, then thirty percent of current greenhouse gas emissions might be avoided by 2030, according to the respected Intergovernmental Panel on Climate Change.<sup>61</sup> With the opportunity to make such dramatic progress in such a short period, making our existing eighty-one million buildings and our future building stock more green deserves to be a national priority.

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61. WORKING GROUP III, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: MITIGATION OF CLIMATE CHANGE, SUMMARY FOR POLICY MAKERS 13 (B. Metz et al. eds., 2007).