LEED LOCALLY: HOW LOCAL GOVERNMENTS CAN EFFECTIVELY MANDATE GREEN BUILDING STANDARDS

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Leadership in Energy and Environmental Design (LEED) standards are third-party benchmark assessment tools that promote sustainable design and construction principles that are applicable to all building types. In an effort to reduce adverse environmental impacts associated with conventional construction practices, several municipalities in the United States have moved toward requiring LEED standard compliance for new buildings. Questions have arisen, however, regarding the effectiveness of LEED standards, as well as the appropriateness of allowing local governments to mandate such standards.

This Note examines how several municipalities have chosen to implement green building codes, and how LEED mandated codes compare to similar programs that promote sustainable design, including the Green Globe System and the Energy Star rating system. This Note analyzes the effectiveness of local governments that mandate LEED certification for their buildings, as well as whether state or federal control would be a preferable level of governance. Ultimately, this Note recommends that local municipalities should create different standards for public and private building development that would incorporate the LEED Green Rating System, thus maximizing the effectiveness of the initiatives, while preventing some of the increased cost associated with such programs.

I. INTRODUCTION

"The green building revolution is sweeping across not only the United States but most of the world. It's a revolution inspired by an awakened understanding of how buildings use resources, affect people,

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and harm the environment."[1] Over the past few years, concerns over the decreasing amounts of natural resources available have risen dramatically.[2] Globally, buildings are responsible for approximately forty percent of raw material consumption.[3] Buildings within the United States account for twelve percent of potable water use, "38 percent of greenhouse gas emissions, 39 percent of the total energy used, and 68 percent of electrical consumption."[4] Traditional buildings have caused "52% of total sulfur dioxide emissions, 19% of nitrous oxide emissions, and 12% particulate emissions, all of which degrade air quality."[5] Because buildings largely depend on heating and energy consumption while occupied, this has led to larger pollution and waste generation problems, such as climate change, acid rain, and harmful health effects on local populations.[6]

To combat these negative environmental impacts, lawmakers, architects, and engineers began a large movement during the 1970s to clean up the environment and seek alternative energy solutions.[7] Despite these initial efforts, the green building movement was actually, in part, triggered by the increasing dependence on nonrenewable, inefficient fossil fuels used for building energy consumption starting in the 1970s.[8] Surprisingly, the federal government only allocates approximately 0.20% of its total research and development budget toward green building, even with the large amount of energy buildings use.[9]

1. SAM KUBBA, LEED: PRACTICES, CERTIFICATION, AND ACCREDITATION HANDBOOK, at xvii (2010) (quoting JERRY YUDELSON, GREEN BUILDING REVOLUTION 1 (2008)); *see also* Adam J. Sulkowski, *From the Environment*, 39 REAL EST. L.J. 192, 192–93 (2010) (discussing how a "2009 . . . survey of corporate executives found that 35% believe that green buildings are 'becoming mainstream' . . . and 25% said they were 'becoming a requirement'").

2. Eileen D. Millett, *Green Building for Dummies: What Is a LEED Certification?* 25 PRAC. REAL EST. LAW. 41, 41 (2009); *see also* U.S. ENERGY INFO. ADMIN., ANNUAL ENERGY OUTLOOK 2012 EARLY RELEASE OVERVIEW 6–7 (2012), *available at* http://www.eia.gov/forecasts/aeo/er/pdf/0383er(2012).pdf.

3. Keith H. Hirokawa, *At Home with Nature: Early Reflections on Green Building Laws and the Transformation of the Built Environment*, 39 ENVTL. L. 507, 511 (2009); *see also* U.S. ENVTL. PROT. AGENCY, BUILDINGS AND THEIR IMPACT ON THE ENVIRONMENT: A STATISTICAL SUMMARY 2 (2009), *available at* http://www.epa.gov/greenbuilding/pubs/gbstats.pdf (noting that buildings used 38.9% of U.S. energy consumption in 2005).

4. Millett, *supra* note 2, at 41; Hirokawa, *supra* note 3, at 511.

5. Edna Sussman, *Reshaping Municipal and County Laws to Foster Green Building, Energy Efficiency, and Renewable Energy*, 16 N.Y.U. ENVTL. L.J. 1, 8 (2008).

6. Hirokawa, *supra* note 3, at 511; *see also* U.S. ENVTL. PROT. AGENCY, *supra* note 3, at 5 (noting harmful indoor air contaminants can cause cancer and trigger asthma attacks).

7. KUBBA, *supra* note 1, at xviii (noting that the Clean Air Act, the National Environmental Policy Act, and the Water Pollution Control Act are all examples of legislation passed in the 1970s that all had a significant impact to the green building movement); JUDITH A. LAYZER, THE ENVIRONMENTAL CASE: TRANSLATING VALUES INTO POLICY 25–51 (2002) (summarizing the Clean Air Act and Clean Water Act); RUTHEFORD H. PLATT, LAND USE AND SOCIETY: GEOGRAPHY, LAW, AND PUBLIC POLICY 401–45 (1996) (discussing landmark federal environmental acts during the 1970s).

8. KUBBA, *supra* note 1, at xviii.

9. *Id.* at 6 (stating that the largest part of the federal research and development budget is allocated to national defense (57.24%), health research (23.06%), and "other energy, general science, natural resources & environment (8.03%)").

Green buildings are "high performance buildings that (1) use energy, water, and materials more efficiently and (2) use measures relating to sitting, design, construction, operation, maintenance, and removal to reduce the building's impacts on . . . the environment."[10] For buildings to be built in a more sustainable manner, the roles of participants early in the design and building phases need to be redefined and reevaluated to align with the sustainable objectives.[11] The United States Green Building Council (USGBC) was one of the primary organizations that created an assessment tool that accounts for "regional and national environmental, economic and social equity conditions," which led to the creation of the most widely accepted benchmark system, the Leadership in Energy and Environmental Design (LEED) Green Building Rating System.[12]

LEED, introduced by the USGBC in 1998, is an approach to sustainable development designed to promote efficient allocation of resources and minimize production of waste and degradation of the environment.[13] LEED certification encompasses the entire building process from the design phase all the way to the long-term operation of the building.[14]

LEED has become the most widespread green building program at the local level through mandated zoning ordinances requiring LEED certification,[15] but concerns are growing that this may not be the most effective tool for local governments to implement sustainable building standards or that local sustainable efforts are too segmented on a piecemeal basis to be effective.[16] In addition to LEED, various third-party green rating systems have also been implemented by local governments, such as Green Globes, to make conventional construction standards more sustainable and buildings more energy efficient.[17]

Because current green building codes have not effectively implemented uniform sustainable development standards to a level that would reduce adverse environmental impacts of conventional construction

10. Sussman, *supra* note 5, at 8; *see also* OFFICE OF FED. ENVTL. EXEC., THE FEDERAL COMMITMENT TO GREEN BUILDING: EXPERIENCES AND EXPECTATIONS 8 (2010) (defining green building as "the practice of (1) increasing the efficiency with which buildings and their sites use energy, water, and materials, and (2) reducing building impacts on human health and the environment, through better siting, design, construction, operation, maintenance, and removal—the complete building life cycle").

11. KUBBA, *supra* note 1, at xxii.

12. *Id*. at xxiii.

13. U.S. GREEN BLDG. COUNCIL, LEED REFERENCE GUIDE FOR GREEN BUILDING DESIGN AND CONSTRUCTION, at xi (2009) [hereinafter U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE]; Millett, *supra* note 2, at 42.

14. Millett, *supra* note 2, at 42.

15. Katherine A. Trisolini, *All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation*, 62 STAN. L. REV. 669, 704 (2010); Sarah Fox, Note, *A Climate of Change: Shifting Environmental Concerns and Property Law Norms Through the Lens of LEED Building Standards*, 28 VA. ENVTL. L.J. 299, 300–03 (2010).

16. *See infra* Parts III.B.1, III.C.1.

17. *See infra* Part III.B.

practices, the issue of whether local governments should mandate the use of LEED Green Rating System for public and private development remains disputed.[18] This Note examines this debate, ultimately recommending that local governments require public buildings to meet minimum LEED standards without requiring LEED certification, but municipal programs should also be supported by state financial incentives to encourage public projects to actually achieve LEED certification by defraying certification costs. This Note also recommends that local governments incentivize private developers to meet LEED minimum standards by providing locally tailored financial and administrative benefits. Part II gives an overview of land-use regulation and its application to green building codes. Part II also provides background information on LEED and how a building achieves LEED certification. Part III analyzes whether the most effective approach to sustainable development is to have local governments mandate LEED certification. Finally, Part IV provides recommendations for this issue.

II. BACKGROUND

In 2012, LEED initiatives existed in 442 localities, and local governments had 1449 certified LEED projects with 3026 projects pursuing certification.[19] Green building code implementation deeply relies on a government's ability to regulate land use. This Part explores how local governments can mandate sustainable design through the use of the police power, as well as how a building actually achieves LEED certification. To begin, Section A examines the early history of land-use regulation and identifies the strong precedent for state and local governments' ability to regulate land use. It is important to understand land-use regulation because green building ordinances are, in essence, land-use regulations. Then, Section B introduces zoning as the modern land-use tool, discussing how states enabled local governments to regulate land use through the use of the police power. Next, Section C examines efforts made by government entities to adopt uniform buildings codes. Section D discusses what actions federal, state, and local governments have taken to minimize adverse environmental impacts created by human activity. Finally, Section E details the LEED certification process.

18. *See infra* Part III.A.

19. *Policy and Government Resources*, U.S. GREEN BLDG. COUNCIL, http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1779 (last updated May, 4, 2012).

A. Early Land-Use Regulation

Land-use regulation in America dates back to the Spanish settlements in the sixteenth century.[20] These early forms of ordinances were set in place to ensure the development of new cities followed a grid that would allow for growth and leave adequate spacing for transportation.[21] City planning followed Spanish urban planning concepts, which considered not only the characteristics of the developing town, but also the climate and geography.[22]

As the first settlers from England were granted land from a public entity, public authority often mandated affirmative use conditions with the belief that an active property use would be better for the colony than a nonuse, which might harm the community.[23] Nevertheless, as the American colonies developed, individuals challenged the ability for a state to regulate land on the belief that individuals should have strong control over their own land.[24] Colonies tended to use conditions placed on specific land titles conveyed by the public authorities rather than relying on government regulation.[25] Many German and English settlements in colonial America planned their layouts to reflect the layout of the villages of their home countries.[26] The use of public planning regulations remained very scarce and could only be found in cities such as Savannah and Boston, for example.[27] By the eighteenth century, early colonial laws began to dictate the appearance of buildings, including their use and how they affected the surrounding occupants.[28] Colonies started to control land use to stop common-law nuisances, through the use of building laws or regulations monitoring the aesthetics of landscape on one's property.[29]

With the 1791 ratification of the Tenth Amendment, the Constitution reserves to the states full police powers, allowing the state to decide how to regulate private land only subject to the federal regulations of interstate commerce and enforcement of international treaties.[30] By the beginning of the nineteenth century, many U.S. cities passed building or-

20. ROBERT H. FREILICH ET AL., 21ST CENTURY LAND DEVELOPMENT CODE 1–2 (2008) (noting that Spanish settlements were regulated by spatial development laws, setting forth specific requirements detailing where buildings, places of worship, stores, and other uses could be placed in the layout of new towns).

21. *Id.* at 2.

22. JOHN R. NOLON & PATRICIA E. SALKIN, LAND USE IN A NUTSHELL 1 (2006).

23. John F. Hart, *Colonial Land Use Law and Its Significance for Modern Takings Doctrine*, 109 HARV. L. REV. 1252, 1259 (1996) (noting that affirmative requirements might include building a house or clearing a portion of their land).

24. NOLON & SALKIN, *supra* note 22, at 3.

25. *Id.*

26. FREILICH ET AL., *supra* note 20, at 2.

27. *Id.*

28. Sara C. Bronin, *The Quiet Revolution Revived: Sustainable Design, Land Use Regulation, and the States*, 93 MINN. L. REV. 231, 236 (2008).

29. DAVID L. CALLIES ET AL., CASES AND MATERIALS ON LAND USE 3 (5th ed. 2008).

30. U.S. CONST. amend. X; NOLON & SALKIN, *supra* note 22, at 4.

dinances to prevent the spread of fire and enacted building height and bulk restrictions out of a concern for the general public welfare.[31] Sparked by the creation of the City Beautiful Movement by landscape architect Frederick Law Olmstead, great architects such as Daniel Burnham and Louis Sullivan focused on city planning as a tool to beautify cities, emphasizing "open space, boulevards, statues, fountains, and parks."[32] The 1893 Columbian Exposition in Chicago ultimately showcased these virtues as part of the City Beautiful Movement.[33]

At the start of the twentieth century, the majority of land-use control still relied on nuisance laws and private restrictive covenants.[34] Nuisance laws gave landowners a right of action against those who "created a substantial, unreasonable interference with their private use or enjoyment of their land."[35] Even so, nuisance actions were not only expensive and lacked uniformity of rules, they did not adequately solve the many land-use problems experienced by communities as they grew because nuisance claims were brought and decided on a case-by-case basis.[36]

B. Zoning As a Modern Land-Use Control

In an effort to protect the economic welfare of the city and property values as well as the general public health and safety, New York City implemented the first comprehensive zoning ordinance in 1916.[37] The New York City Building Zone Resolution split the city into different land-use zones, which allowed private owners to use their land only in ways permitted within the applicable zone.[38] The resolution, which regulated and separated New York City into districts, height districts, and area districts, was upheld by the New York Court of Appeals in 1920.[39] From 1916 to 1926, state courts either followed suit and held zoning to be constitutional or rejected zoning altogether.[40] In 1922, Secretary of Commerce Herbert Hoover released a draft Standard State Zoning Enabling Act.[41] According to Hoover, "[t]his standard act endeavors to provide, so far as it is practicable to foresee, that proper zoning can be undertaken under it

31. Bronin, *supra* note 28.

32. FREILICH ET AL., *supra* note 20, at 2; *see, e.g.*, CARL SMITH, THE PLAN OF CHICAGO: DANIEL BURNHAM AND THE REMAKING OF THE AMERICAN CITY 19, 29–30 (2006).

33. *See* WILLIAM H. WILSON, THE CITY BEAUTIFUL MOVEMENT 53–74 (1989).

34. FREILICH ET AL., *supra* note 20, at 2.

35. Bronin, *supra* note 28, at 236–37.

36. *Id.* at 237; *see also* CALLIES ET AL., *supra* note 29, at 6.

37. NOLON & SALKIN, *supra* note 22, at 5; *see* New York, N.Y., Building Zone Resolution (July 25, 1916).

38. NOLON & SALKIN, *supra* note 22, at 5.

39. Lincoln Trust Co. v. Williams Bldg. Corp., 128 N.E. 209, 211 (N.Y. 1920).

40. *See* CALLIES ET AL., *supra* note 29, at 20–21; FREILICH ET AL., *supra* note 20, at 3.

41. *See* Ruth Knack et al., *The Real Story Behind the Standard Planning and Zoning Acts of the 1920s*, LAND USE L. & ZONING DIG., Feb. 1996, at 5, *available at* http://www.planning.org/growingsmart/pdf/LULZDFeb96.pdf.

without injustice and without violating property rights."[42] The Standard State Zoning Enabling Act aimed to create districts that separated incompatible uses with a broad set of goals that established regulations based on a comprehensive plan.[43] In 1922, the U.S. Supreme Court held in *Pennsylvania Coal Co. v. Mahon* that "while property may be regulated to a certain extent, if a regulation goes too far it will be recognized as a taking."[44] For the first time, this created a new constitutional limit on land-use control through the Fifth Amendment of the U.S. Constitution.[45]

In 1926, the U.S. Supreme Court upheld the constitutionality of zoning in *Euclid v. Ambler Realty Co*.[46] The village of Euclid, Ohio, had enacted an ordinance through the police power delegated to it by the state, as the state constitution allowed the state legislature to create laws to protect the "public health, safety, morals, or general welfare."[47] The plaintiff, a landowner in Euclid whose land had been zoned such that his original land use became a violation under the ordinance, objected to the zoning ordinance adopted by Euclid, which separated the village into residential, commercial, and industrial districts through a comprehensive zoning plan.[48] Analogizing to nuisance law to examine the scope of the police power, the village was able to prove that health and safety dangers existed to the public when commercial, industrial and residential uses were mixed.[49] Thus, local zoning was upheld as a valid use of the police power.[50]

Also in 1926, the federal government officially published the Standard State Zoning Enabling Act, and states that adopted it gave localities exclusive zoning power by regulating "the height, size, floor to area ratio, yards, open spaces, density, location, and use of individual structures" in accordance with a comprehensive zoning plan.[51] Every state has adopted some version of the Standard State Zoning Enabling Act, and localities have used it to draft their ordinances.[52] A comprehensive plan is "a general plan to control and direct the use and development of property in a municipality or a large part of it by dividing it into districts according to the present and potential use of the properties," and the zoning ordi-

42. Herbert Hoover, *Foreword to* ADVISORY COMM. OF ZONING, U.S. DEP'T OF COMMERCE, A STANDARD STATE ZONING ENABLING ACT UNDER WHICH MUNICIPALITIES MAY ADOPT ZONING REGULATIONS, at iii (1926), *available at* http://www.planning.org/growingsmart/pdf/SZEnablingAct1926.pdf.

43. FREILICH ET AL., *supra* note 20, at 3.

44. 260 U.S. 393, 415 (1922).

45. U.S. CONST. amend. V; CALLIES ET AL., *supra* note 29, at 4.

46. 272 U.S. 365, 397 (1926).

47. *Id.* at 379–80, 394–95.

48. *Id.* at 380–84.

49. *Id.* at 387–95.

50. *Id.* at 397.

51. Bronin, *supra* note 28, at 237; *see* ADVISORY COMM. OF ZONING, *supra* note 42, § 1, at 4–5.

52. Bronin, *supra* note 28, at 237.

nance, which must promote the public health, safety, morals, and welfare and be in accordance with the plan, provides the means of giving effect to the principles embodied in the comprehensive plan.[53]

After *Euclid*, the adoption of uniform building use standards within segmented use districts became the most popular method used by local governments to control private land use and create safe and economically efficient communities. This process was coined "Euclidean Zoning."[54] In the 1928 case of *Nectow v. Cambridge*, the Supreme Court accepted a landowner's argument that a zoning law like the one in *Euclid* as applied to his land did not accomplish any legitimate public purpose. After *Nectow*, the Court did not rule on any significant local land-use decisions for nearly forty years.[55] In the 1990s, states began efforts to modernize outdated zoning enabling acts since Euclidean Zoning was not adequate to meet challenges arising in creating sustainable communities.[56] While Euclidean Zoning created sprawling problems due to separation of land uses, the American Planning Association, through a Growing Smart Initiative, pushed for change within land-use development and the production of mixed-use, sustainable communities that focused on the health, welfare, and economic well-being of the community.[57]

C. Building Codes

Building codes aim "to protect the health, safety, and welfare of inhabitants."[58] These codes prescriptively mandate various methods, materials, and designs within the construction process to ensure uniformity of the structural integrity of buildings.[59] In 1927, the Uniform Building Code (UBC) was created to provide both states and localities uniform

53. Bartram v. Zoning Comm'n of Bridgeport, 68 A.2d 308, 310 (Conn. 1949) (quoting Bishop v. Bd. of Zoning Appeals, 53 A.2d 659, 661 (Conn. 1947)); Fasano v. Bd. of Cnty. Comm'rs of Washington Cnty., 507 P.2d 23, 27 (Or. 1973); *see also* Edward J. Sullivan, *Recent Developments in Comprehensive Planning Law*, *in* AT THE CUTTING EDGE 2010: LAND USE LAW FROM THE *URBAN LAWYER* 105, 105–16 (Dwight H. Merriam ed., 2011) (analyzing modern developments in comprehensive planning).

54. NOLON & SALKIN, *supra* note 22, at 78.

55. Nectow v. City of Cambridge, 277 U.S. 183, 188–89 (1928) ("The governmental power to interfere by zoning regulations with the general rights of the land owner by restricting the character of his use, is not unlimited, and . . . such restriction cannot be imposed if it does not bear a substantial relation to the public health, safety, morals, or general welfare."); NOLON & SALKIN, *supra* note 22, at 78.

56. 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, 788 (2007).

57. *Id.* A Growing Smart Guidebook is intended to assist communities respond to growth change effectively and provides a range of model planning and management statutes to fit varying needs that states can adopt. Patricia E. Salkin, *Zoning and Land Use Planning, Implementation of the APA Growing Smart Legislative Guidebook: Beginning to Benchmark Success*, 33 REAL EST. L.J. 339, 340 (2004) (examining Growing Smart and the early impact it had on efforts in land use reform).

58. Hirokawa, *supra* note 3, at 519.

59. *Id.* at 520.

standards to use in building regulations.[60] Approximately twenty states, primarily in the Midwest and West, adopted building codes created by one of three separate building code organizations that all encompass components of the UBC.[61]

In order to focus on regional concerns, eastern states primarily followed the Building Officials and Code Administrators International, Inc. (BOCA).[62] National Codes and the Southeast typically adopted the Southern Building Code Congress International (SBCCI) Standard Building Code.[63] In order to develop national unity among the BOCA Code, the UBC, and the Standard Building Code, the three organizations collectively agreed to merge their organizations into the International Code Council in 2003.[64] Regardless, no federally mandated building code exists, but federal buildings do follow federally created standards.[65] These codes create standards for "construction, reconstruction, alteration, and repair of buildings, including structural materials, design and construction materials, fire protection, health, sanitation, and safety" and concern "structural, engineering, and safety standards in the construction process [that differ] qualitatively from the regulation of land use within . . . [zoning] districts. . . ."[66] Zoning regulations can still be enforced through the permitting process created in building codes.[67] State governments can create and choose which building code standards to enact. Even so, local governments may only adopt their own building codes should the state grant them the power to do so as part of their police powers through a zoning enabling act.[68]

Building codes also address requirements for related building systems, such as mechanical, plumbing, fire suppression, gas, electricity, and conservation of energy.[69] Many building codes rely on the standards created by specialized professional building associations to address the requirements necessary for building related systems. The American National Standards Institute (ANSI) facilitates voluntary national consensus building and conformity assessment standards to help encourage all developers and manufacturers to meet minimum building safety and efficiency standards.[70] Similarly, the American Society for Testing and Materials (ASTM) also creates voluntary consensus standards appli-

60. 4A PHILIP L. BRUNER & PATRICK J. O'CONNOR, JR., BRUNER & O'CONNOR ON CONSTRUCTION LAW § 13:17 (2009).

61. *Id.*

62. *Id.*

63. *Id.*

64. 5 BRUNER & O'CONNOR, *supra* note 60, § 16:2 (Supp. 2012).

65. *Id.* (2009).

66. 13 AM. JUR. 2D *Buildings* § 2 (2011).

67. *See* Fleming v. Moore Bros. Realty Co., 251 S.W.2d 8, 16 (Mo. 1952).

68. NOLON & SALKIN, *supra* note 22, at 5.

69. 5 BRUNER & O'CONNOR, *supra* note 60, § 16:2 (Supp. 2012).

70. *See Overview of the U.S. Standardization System*, AM. NAT'L STANDARDS INST., http://www.ansi.org/about_ansi/introduction/introduction.aspx?menuid=1 (last visited Mar. 10, 2013).

cable to building construction and energy efficiency.[71] Other prominent organizations include the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), Illuminating Engineering Society (IESNA), the American Institute of Steel Construction, the American Society of Mechanical Engineers, and Underwriters' Laboratories.[72]

D. Implementation of Green Zoning Ordinances

Sustainability is defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs."[73] Sustainable buildings use resources such as water, materials, land, and energy much more efficiently than traditional buildings, reducing harm caused to the environment.[74] To understand the effectiveness of a green building ordinance, one must know what actions have been taken at the federal, state, and local level. Efforts on the state level may be preempted by federal efforts to mandate energy efficiency standards.[75] Local governments must also receive power from the state through legislation to enact green building ordinances.[76] Localities as a whole have increasingly utilized land-use regulations to enact smart growth policies in both building codes and transportation regulation.[77]

1. "Green" Federal Government Action

One of the first pieces of federal legislation targeting energy efficiency was the National Energy Policy Conservation Act of 1978, which required an energy efficiency standard for various appliances if they were able to be justified economically.[78] Due to the lack of cooperation from the Department of Energy in setting energy efficiency standards for ap-

71. *ASTM Overview*, AM. SOC'Y TESTING & MATERIALS (2011) http://www.astm.org/ABOUT/overview.html (last visited Mar. 10, 2013); *see, e.g.*, U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at 12.

72. 5 BRUNER & O'CONNOR, *supra* note 60, § 16:2 (Supp. 2012); *see, e.g.*, Larry Schnapf, *Green Building Leasing Issues*, 25 PRAC. REAL EST. LAW. 29, 34 (2009) (discussing how energy codes will refer to established standards by professional organizations, such as ASHRAE and IESNA).

73. U.S. GREEN BLDG. COUNCIL, GREEN BUILDING AND LEED CORE CONCEPTS GUIDE 75 (1st ed. 2009) [hereinafter U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS] (quoting Brundtland Commission).

74. KUBBA, *supra* note 1, at 1.

75. Ann E. Carlson, *Energy Efficiency and Federalism*, 1 SAN DIEGO J. CLIMATE & ENERGY L. 11, 16 (2009).

76. *See* ADVISORY COMM. OF ZONING, *supra* note 42, at 4–5.

77. Trisolini, *supra* note 15, at 717. Smart growth policies aim to "promote compact development; protect natural resources and environmental quality; create transportation options and walkable neighborhoods; supply affordable housing; generate net positive fiscal impacts; encourage community collaboration and facilitate transparent and effective development decision making processes." GREGORY K. INGRAM & YU-HUNG HONG, LINCOLN INST. OF LAND POLICY, EVALUATE SMART GROWTH: STATE AND LOCAL POLICY OUTCOMES 5–6 (2009), *available at* https://www.lincolninst.edu/pubs/dl/1572_860_Smart_Growth_Final_PFR.pdf.

78. Carlson, *supra* note 75, at 15.

pliances, the National Appliance Energy Conservation Act was implemented in 1987 to set statutory appliance standards for many residential appliances without relying on the Department of Energy.[79]

Unfortunately, these standards have been difficult to implement because federal energy regulations tend to preempt any previous state energy efficiency standards.[80] The federal standards tend to be much lower than state standards and can cause confusion among manufacturers on which standard to follow, which leads to higher manufacturing prices.[81] At the federal level, the Environmental Protection Agency (EPA) implemented ENERGY STAR in 1992, a voluntary program that identifies and promotes the use of energy-efficient products.[82]

The federal government also sets minimum air quality standards for sources of pollution, such as industrial factories and power plants, under the Clean Air Act.[83] Additionally, the Energy Independence and Security Act of 2007 requires automobile manufacturers to increase the standard set in the "Corporate Average Fuel Economy" to thirty-five miles per gallon by the year 2020.[84]

The federal government has also been active in preserving water from hazardous pollutants, which has a direct effect on the construction, operation, and maintenance of buildings.[85] Beginning in 1977, the Clean Water Act made it illegal to discharge pollutants from any point source, such as pipes or man-created ditches, into navigable waters without a permit, and it also regulated surface water quality standards through the EPA.[86] The EPA implemented pollution control programs to set wastewater standards and water quality standards for contaminants in surface waters and administers the National Pollutant Discharge Elimination System permit program.[87] Many of these federal standards have been the basis of the formation of green building rating systems, including LEED.[88]

To ensure all states adopted energy-efficient codes, the U.S. Department of Energy required every state to enact commercial energy

79. *Id.* at 16.

80. *Id.*

81. *Id.*

82. Alexandra B. Klass, *State Standards for Nationwide Products Revisited: Federalism, Green Building Codes, and Appliance Efficiency Standards*, 34 HARV. ENVTL. L. REV. 335, 344 (2010).

83. *Id.* at 337.

84. Trisolini, *supra* note 15, at 708.

85. *See* U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at 161–63.

86. While known as the Clean Water Act through the amendment process in 1977, the majority of the Clean Water Act was actually implemented in 1948 under the Federal Water Pollution Control Act, and the Act was greatly expanded in 1972. *Summary of the Clean Water Act*, U.S. ENVTL. PROTECTION AGENCY (Aug. 23, 2012), http://www.epa.gov/regulations/laws/cwa.html

87. *Id.*

88. *See, e.g.*, U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at 161–63. For a list of federal green building programs, see OFFICE OF FED. ENVTL. EXEC., *supra* note 10, at 20–21.

codes that are at least as stringent as the ASHRAE standard by 2004.[89] The U.S. General Services Administration has also begun to require that all federal government buildings that are newly constructed or that are being substantially renovated achieve LEED certification.[90]

2. "Green" State Government Action

While states normally delegate all land-use regulation to local governments, states retain the power to increase or decrease local governments' power by amending the zoning enabling act or by adopting legislation unrelated to the enabling powers.[91] States, however, have been unwilling to modify local land-use regulations to respond to the concerns of energy waste in building and construction.[92] Instead, states have responded to energy concerns and sustainable measures in different ways.

First, almost all states offer tax incentives for using renewable energy, and some states have also implemented grants, loan programs, and tax incentives for energy efficiency.[93] Due to global warming concerns, many governors recognize the need for emissions reductions. In response, several states implemented comprehensive climate control plans, advisory commissions, or regional plans to lower the amount of greenhouse gas emissions.[94]

3. Implementation of "Green" Building Codes

Green building goals are adopted in green building codes "that seek to modify the prescriptions in conventional building codes . . . taking into account building location, materials, design, construction methods, and building operating systems."[95] Cities that have addressed green building principles have employed various incentives for building green buildings, "such as fee waivers or reimbursements, subsidized LEED fees, discounted energy star appliances, property tax abatement, awards, green loan funding, training, and permit fee reductions."[96] Although local governments have long held the traditional role of land-use regulator, and many localities enact ordinances incorporating sustainable-design principles based on aesthetics, many localities have not addressed green building at all.[97]

89. Sussman, *supra* note 5, at 13.
90. U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 4.
91. Bronin, *supra* note 28, at 268.
92. *Id.*
93. Salkin, *supra* note 56, at 828.
94. *Id.*
95. Hirokawa, *supra* note 3, at 514.
96. Trisolini, *supra* note 15, at 705.
97. Bronin, *supra* note 28, at 249 (stating that about seventy-five percent of local governments have incorporated some sort of sustainable-design principles within their ordinances).

To capitalize on the all the benefits green building offers, many local governments have begun to issue mandatory regulations. Mandatory zoning ordinances may require public buildings, private developments, or both to obey the regulations.[98] Localities normally decide which projects must comply with green building standards based on a minimum square footage, construction cost requirements, or a combination of both.[99] As an alternative to mandatory green ordinances, some instead offer incentives to developers to follow sustainable standards. These incentives may take the form of economic tax incentives, permission to deviate from the established code, or expedited permit process approval.[100]

E. United States Green Building Council and LEED

Founded in 1993, the United States Green Building Council (USGBC) is a nonprofit organization comprised of more than 10,000 member companies and organizations, which include government agencies, universities, builders, and other various nonprofit organizations.[101] USGBC's mission is "[t]o transform the way buildings and communities are designed, built, and operated, enabling an environmentally and socially responsible, healthy, and prosperous environment that improves the quality of life."[102] USGBC provides educational programs about green design, construction, and operations for all personnel in the building industry.[103]

As the primary leader within the green building movement, USGBC created the LEED Green Building Rating System in 1998 as a benchmark tool for promoting sustainable design and construction principles with an understandable standard that can be applied to all buildings.[104] LEED measures building design and sustainability success following a triple bottom line approach focusing on environmental stewardship, economic prosperity, and social responsibility.[105] While various LEED Green Rating Systems exist depending on the type of building,[106] the primary rating system followed in LEED ordinances is LEED

98. MARISA ROMERO, A REVIEW OF MUNICIPAL ORDINANCES FOR SUSTAINABLE DEVELOPMENT 48 (2006), *available at* http://consensus.fsu.edu/FBC/GBW/Municipal_Ordinances.pdf.

99. DENNIS BOOTHE ET AL., LEED BUILDING ORDINANCES FOR LOCAL GOVERNMENTS 1, 5–6 (2007).

100. ROMERO, *supra* note 98, at 48.

101. Millett, *supra* note 2, at 42; *About USGBC*, U.S. GREEN BLDG. COUNCIL, http://www.usgbc.org/DisplayPage.aspx?CMSPageID=124 (last visited Mar. 10, 2013).

102. U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 15.

103. *About USGBC*, *supra* note 101.

104. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at xi–xii; Fox, *supra* note 15, at 306.

105. U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 16 fig.4.

106. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at xii (explaining the nine rating systems include: "LEED for Core & Shell, LEED for New Construction, LEED for Schools, LEED for Neighborhood Development, LEED for Retail, LEED for Healthcare, LEED for Homes, and LEED for Commercial Interiors," and LEED for Existing Buildings: Operations & Maintenance).

for New Construction and Major Renovations, as the ordinances typically apply to newly constructed buildings or large renovation projects.[107]

1. LEED Certification Process

Before analyzing the effectiveness of LEED green building ordinances, it is important to understand how buildings can achieve LEED certification. In 2007, the Green Building Certification Institute (GBCI) was created to administer both the LEED Certification Program and the LEED Professional Accreditation program.[108] USGBC continues to provide educational programs tailored around LEED and sustainable-design principles.[109] Depending on how many points a project earns, a building can earn four different levels of LEED certification: Certified, Silver, Gold, and Platinum.[110]

For a building to become LEED certified, it must earn a designated amount of points by fulfilling specific criteria in the following credit categories: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Innovation in Design, and Regional Priority.[111] Each LEED category consists of prerequisites and credits. All buildings that wish to become LEED certified must meet all prerequisites, which are not worth any points, and must earn the minimum amount of credits of the level desired.[112] The number of points allocated to each credit is based on the importance of the building-related impact it specifically addresses.[113] In addition to prerequisites and credits, projects must also meet all Minimum Program Requirements to be certified.[114] All projects trying to become LEED certified must: (1) comply with environmental laws; (2) be a complete, permanent building or space; (3) use a reasonable site boundary; (4) comply with minimum floor area requirements; (5) comply with minimum occupancy rates; (6) commit to sharing whole-building energy and water us-

107. *See id* at xiv.

108. U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 17; *New Credentialing Organization Launched for Green Building Professionals*, BUILDINGONLINE.ORG, (Nov. 20, 2007), http://www.buildingonline.com/news/viewnews.pl?id=6602.

109. U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 15.

110. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at ix.

111. KUBBA, *supra* note 1, at 52.

112. GREEN BLDG. CERTIFICATION INST., LEED CERTIFICATION POLICY MANUAL 6 (2011), *available at* https://www.leedonline.com/irj/go/km/docs/documents/usgbc/leed/config/terms/Legal_Documents_Download/rating_system_doc_june_20_2011/June2011_Cert_Policy_Manual.pdf.

113. U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 19. For an overview of the different impact categories and corresponding importance assigned to them, see *id.* at 20 fig.2.

114. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at xiv.

age data; and (7) comply with a minimum building area to site area ratio.[115]

The first step in the LEED process involves a project team submitting a registration form and paying a fee to GBCI, and then the team will receive the necessary information and documentation to help guide them through the certification process.[116] Teams may submit the documentation for the credits they are pursuing in two ways through LEED-Online, a data collection website that allows teams to upload documentation for their projects.[117] Option one allows a project to submit all documentation for design and construction credits pursued together after project completion.[118] Option two allows projects to first submit the design credits before completion for a preliminary review, then submit the remaining construction documents after the project is finished.[119] Should a project fail to earn the required number of points for LEED certification, its organizers they may appeal any decision on individual credits for an extra fee.[120] For LEED 2009 for New Construction, Core and Shell, and Schools, the point system is based on 100 base points, with 6 additional points available for Innovation in Design and 4 points available for Regional Priority credits.[121] The required points for each level of certification vary: Certified (40–49 points), Silver (50–59 points), Gold (60–79 points), and Platinum (80 points and above).[122]

To assist projects achieving LEED certification, GBCI allows professionals involved in a LEED project, such as an architect, construction manager, or engineer, to become a LEED Accredited Professional.[123] A LEED Accredited Professional (LEED AP) must pass a standardized exam that "measures your ability to understand and support green design, construction, . . . operations. . . .and your ability to facilitate the certification process."[124] The exam itself costs $550 for nonmembers and, upon passing the exam, the LEED AP credential is valid for two years.[125] Projects that incorporate a LEED AP automatically also receive one point toward LEED certification.[126]

115. *Supplemental Guidance to the Minimum Program Requirements*, U.S. GREEN BUILDING COUNCIL, 1–4 (last updated Sept. 1, 2011), *available at* http://www.usgbc.org/ShowFile.aspx?DocumentID=6473.

116. GREEN BLDG. CERTIFICATION INST., *supra* note 112, at 9.

117. *Id.*

118. U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 23.

119. *Id.*

120. *Id.*; *see* GREEN BLDG. CERTIFICATION INST., *supra* note 112, at 18–20.

121. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at ix.

122. *Id.*

123. *Id.* at 597–99.

124. *LEED AP Exam*; U.S. GREEN BLDG. COUNCIL, http://new.usgbc.org/leed/credentials/leed-ap/exam (last visited Mar. 10, 2013).

125. *Id.*

126. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at 597.

2. LEED Credit Categories

Each LEED rating system contains five main categories with two additional categories for superior performance. Since LEED green building ordinances almost always will apply to new buildings or major renovations, it is helpful to analyze the credit categories under LEED 2009 for New Construction, Core and Shell, and Schools.

a. Sustainable Sites

The Sustainable Sites category addresses environmental issues arising from a building's exterior, landscape, and surrounding hardscape, such as site development, transportation, stormwater management, and sustainable site design.[127] First, successful site selection can protect natural habitats, restore degraded areas or brownfields, and increase density.[128] Next, addressing sustainable modes of transportation not only will decrease the amount of greenhouse gas emissions created by vehicles, but also reduce the length and amount of vehicle trips.[129] Third, implementing stormwater management policies will help decrease soil erosion and sedimentation occurring in waterways as well as reduce the amount of harmful chemicals in water used for aquatic life and recreational water activities.[130] Finally, sustainable site design will cause less light pollution, minimize the amount of heat absorbed by buildings that increases energy costs, and decrease water usage.[131]

b. Water Efficiency

Water Efficiency addresses the amount of water needed for a particular use compared to the amount of water actually used with hopes of reducing the total amount of potable water used in landscaping, process functions, and wastewater.[132] Potable water (water that is safe to drink) can be saved by using low-flow fixtures in bathrooms and kitchens or by using graywater, captured rainwater, or municipal reclaimed water within the flush fixtures.[133] To reduce potable water use in landscaping, choosing native or adapted plants and using nonpotable water to water plants are some strategies implemented under this category.[134] Finally, the use of potable water in process water, or water used for building systems or

127. *Id.* at 1–2.
128. U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 30.
129. *Id.* at 27.
130. *Id.* at 33.
131. *Id.* at 32.
132. KUBBA, *supra* note 1, at 54; *see* U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at 161–63.
133. U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 38–39.
134. *Id.* at 40.

industrial uses, can be reduced by using nonpotable water and installing submeters to track water consumption.[135]

c. Energy and Atmosphere

Energy and Atmosphere credits promote the use of renewable energy, eliminating ozone depleting refrigerants, and energy reduction.[136] First, energy reduction can be accomplished by sizing the building correctly, taking advantage of free energy, such as solar and wind, and monitoring energy consumption.[137] Energy derived from renewable sources, which include "solar, wind, wave, biomass, and geothermal power," not only will protect the environment but also reduce the consumption of and reliance on nonrenewable fossil fuels.[138] Finally, eliminating hazardous refrigerants, most specifically chlorofluorocarbon refrigerants, will reduce the amount of global warming hazards and ozone depleting substances found in traditional buildings.[139]

d. Materials and Resources

Materials and Resources credits promote responsible waste management through material reuse and recycling and the selection of sustainable materials.[140] This section also encourages projects to utilize materials and resources "from a long-term, life-cycle perspective" by developing a construction purchasing policy and specifying green materials, interiors, and electronic equipment.[141]

e. Indoor Environmental Quality

Indoor Environmental Quality addresses issues affecting a building user's health, safety, and comfort; consumption of energy; management of air contamination; and ventilation.[142] These strategies aim at enhancing the life of building occupants through cleaner indoor air as well as reducing liability for owners of buildings from air contamination problems.[143]

135. *Id.* at 41.

136. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at 213–15; *see* U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 43–51.

137. U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 45.

138. *Id.* at 49.

139. *Id.* at 48–49.

140. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at 335–37; U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 53–57; *see, e.g.*, ARI MEISEL, LEED MATERIALS: A RESOURCE GUIDE TO GREEN BUILDING (2010).

141. U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 53, 56.

142. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at 402; *see* U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 59–63.

143. *See* U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 59.

f. Innovation in Design and Regional Priority

To encourage projects to go beyond the minimum standards set in each credit, projects can earn a maximum amount of six points by either substantially surpassing the requirements set in designated credits, called exemplary performance, or by implementing innovative sustainable strategies not yet covered by existing credits, such as an educational outreach program.[144]

When a project addresses an issue specifically important in the region, they may earn up to four points.[145] An example of this is addressing water conservation strategies in the Southwest.[146]

III. ANALYSIS

Efforts to encourage sustainable design and construction practices have been accomplished in three different ways. First, Section A analyzes how local municipalities have mandated the use of the LEED Green Building Rating System as part of a city's zoning ordinance or building code. Second, Section B introduces how some municipalities have chosen to rely on alternative green building programs other than LEED to promote sustainable building practices and mandate these alternative green building programs through ordinances. Finally, Section C illustrates how some believe that no action should be taken at the local level, and efforts to promote sustainable design should be handled at the state or federal level.

A. Mandating LEED at the Local Level

At the local level, many municipalities have recently enacted green legislation to promote green building by requiring buildings to achieve LEED certification. As previously discussed, the LEED Green Building Rating System is a benchmark tool that integrates sustainable development principles.[147] A typical LEED mandated green building ordinance may require city owned and operated buildings to achieve "Silver" LEED certification and all private buildings that receive financing from the city to achieve "Certified" LEED certification.[148] Ordinances that establish green building programs may be designed to apply to only city or county owned or funded developments, only to private developments, or

144. *Id.* at 65–66.

145. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at xxii.

146. *See, e.g.*, Meghan A. Douris, *LEEDing the Way*, WESTERN REAL ESTATE BUSINESS, Feb. 2011, http://www.westernrebusiness.com/articles/FEB11/feature1.html.

147. *See supra* Part II.E.1. While various LEED Green Building Rating Systems exist, the applicable rating system implemented by local municipalities is LEED 2009 for New Construction, Core and Shell, and Schools. *See* U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at ix.

148. *See, e.g.*, 1C MATTHEWS MUNICIPAL ORDINANCES § 37:65 (2009).

may apply to both public and private projects equally.[149] LEED standards have been implemented in Boston, Seattle, Portland, and Atlanta, to name a few cities.[150]

1. Mandating LEED Certification for Public and Private Projects

Implementation of LEED certification in both public and private projects creates several benefits both for local governments and the buildings that achieve LEED certification. From the local government's perspective, these efforts not only promote energy efficiency and other green practices, but also help lower adverse environmental impacts associated with conventional building construction, such as reducing greenhouse gas emissions and dependence on nonrenewable energy sources.[151]

Boston was the first major city to include a green building standard in its municipal zoning requirements, aiming "to minimize adverse environmental impacts; to conserve natural resources; to promote sustainable development; and to enhance the quality of life in Boston."[152] The ordinance requires all new and rehabilitated construction projects larger than 50,000 square feet to be LEED certifiable, including minimum LEED Silver certification for all government and city-supported projects.[153] This approach can improve overall public health, mitigate the effects of climate change, and save taxpayers money and resources with the increased efficiency.[154] Boston's Green Building Task Force recommended specifically adopting LEED to follow a uniform national standard used to develop sustainable, high performance buildings that "allow[s] Boston to be in the mainstream of green policies and program."[155] The largest advantage is obviously an increase in the number of LEED-certified and certifiable projects, which directly reflects an increase in energy efficiency.

Next, LEED is the most prominent third-party green rating system implemented both in public and private projects.[156] Even for localities

149. PLANNING ADVISORY SERV., GREEN BUILDING POLICIES AND PROGRAMS 2 (Am. Planning Ass'n 2011).

150. Trisolini, *supra* note 15, at 704–05.

151. *Id.* at 706.

152. BOSTON, MASS., CODE art. 37 (2007); Press Release, Boston Redevelopment Authority, Mayor Menino Announces New Green Building Standards for Boston (Dec. 19, 2006), *available at* http://bostonredevelopmentauthority.org/press/PressDisplay.asp?pressid=346.

153. Press Release, Boston Redevelopment Authority, *supra* note 152.

154. *Greening Municipal Operations*, CITY OF BOSTON, http://www.cityofboston.gov/environmentalandenergy/buildings/greening_municipal_operations.asp (last visited Mar. 10, 2013).

155. MAYOR MENINO'S GREEN BUILDING TASK FORCE REPORT, EXECUTIVE SUMMARY 9 (2004), *available at* http://www.cityofboston.gov/Images_Documents/GBTF_Exec_Summary_tcm3-16409.pdf.

156. Trisolini, *supra* note 15, at 704–05. For a list of national and international green building rating systems, see STEELCASE, UNDERSTANDING LEED VERSION 3 add. II (2010), *available at* http://www.steelcase.com/en/company/sustainability/documents/white%20papers/understanding%20leed%20version%203.pdf (noting that LEED is the de facto standard for builders in North America).

that do not choose to mandate LEED certification, almost all incorporate LEED criteria, as it "represents an established, consensus-based framework with which many commercial developers are already familiar."[157] Overall, mandating LEED certification remains the most prominent green rating system, and, if required for both public and private projects, would achieve the greatest environmental benefits and energy effiefficiency savings.[158]

Following Boston's success, LEED mandated codes in both public and private projects have also seen success in other larger cities. For example, Pasadena, California, requires public buildings, any commercial buildings larger than 25,000 square feet, and residential projects larger than four stories to meet at least the LEED-certified level.[159] Washington D.C., which has the most LEED-certified commercial and institutional green buildings per capita,[160] also now requires LEED certification for both publicly and privately owned and financed buildings.[161]

Although LEED certification mandates in publicly owned or financed projects have achieved great success, requiring LEED certification in privately owned or financed commercial and residential projects poses many difficulties for private developers. First, penalties imposed on private projects for not achieving the level of LEED certification required may be onerous. For example, in addition to achieving LEED certification, Washington D.C.'s Green Building Act of 2006 requires commercial applicants, or the developer of a private project, to submit a performance bond to ensure the project becomes LEED certified.[162] It will be difficult for applicants to comply with the performance bond requirement because a performance bond is not meant to ensure compliance of a regulation but instead is a contractual instrument to ensure a contractor who fails to build according to specified plans will have to pay the owner so that the owner can complete the project.[163]

157. ENVTL. L. INST., MUNICIPAL GREEN BUILDING POLICIES: STRATEGIES FOR TRANSFORMING BUILDING PRACTICES IN THE PRIVATE SECTOR 7 (2008).

158. *See, e.g.*, Thomas Frank, *In U.S. Building Industry, Is It Too Easy to Be Green?*, USA TODAY (Oct. 24, 2012, 5:46 PM), http://www.usatoday.com/story/news/nation/2012/10/24/green-building-leed-certification/1650517/.

159. *Local Leaders in Sustainability: Green Building Policy in a Changing Economic Environment*, AIA UPDATE (Am. Inst. of Architects, Wash., D.C.), 2009, at 66; *see* PASADENA, CA., CODE §§ 14.04.504, 14.04.566.

160. Press Release, U.S. Green Building Council, List of Top 10 States for LEED Green Buildings Released (Jan. 19, 2012), *available at* http://www.usgbc.org/Docs/News/Top%2010%20States_Jan2012_FINAL.pdf.

161. CHRIS CHEATHAM, WHITE PAPER: REVISIONS TO PERFORMANCE BOND REQUIREMENT OF THE D.C. GREEN BUILDING ACT 1 (2011), *available at* http://www.greenbuildinglawupdate.com/uploads/file/DC%20White%20Paper%20FINAL%20PDF.pdf.

162. D.C. MUN. REGS. tit. 12, § 1301A (2012).

163. Cheatham, *supra* note 161 (noting that starting January 1, 2012, nonresidential, privately owned buildings greater than 50,000 square feet must achieve at a minimum LEED certification at the certified level).

Next, mandatory green building requirements in private construction remain rare because of the additional burdens and costs imposed on developers.[164] While localities attempt to resolve this by only requiring projects over a certain square footage to achieve LEED certification, private mandated LEED certification codes still lack in popularity because they decrease the ability of a developer to receive benefits from local governments in exchange for the implementation of the sustainable features.[165]

Finally, many municipalities remain reluctant to mandate LEED certification in both public and private projects because this would involve delegating oversight to a third party instead of the municipality directly handling it.[166] For a project to be LEED certified, it must be reviewed and approved by GBCI, the third-party organization responsible for administering the LEED certification process.[167] This not only complicates timing for the approval of building permits but also makes the projects pay third-party certification fees.[168] Thus, many municipalities instead opt for a mandatory approach where projects must be LEED certifiable but do not actually have to become LEED certified.[169] Pasadena requires private developers to complete LEED forms and make them available for city review.[170] Although Pasadena does not require private-sector projects covered within the ordinance to obtain LEED certification, the projects must still register with the USGBC in addition to achieving at least the LEED-certified level.[171] Nevertheless, requiring third-party certification would decrease the burden of municipal resources needed to check compliance with LEED criteria.

2. Mandating LEED Certification for Public Projects

The incorporation of LEED into public project requirements at the local level has several advantages. First, using a point-based system such as LEED on public projects alleviates the burden of having local policy makers create sustainable building standards and allows policy makers the ability to address regional environmental concerns without impeding private development. Next, the LEED Green Rating System is the most common green building standard that local governments adopt.[172] Finally, it allows municipalities to require higher standards for publicly owned or funded buildings as opposed to worrying about economic burdens that

164. Klass, *supra* note 82, at 344.
165. *Id.*
166. ENVTL. L. INST., *supra* note 157, at vii.
167. *See supra* Part II.E.1.
168. ENVTL. L. INST., *supra* note 157, at vii.
169. *Id.*
170. *Id.* at 9.
171. *Id.* at app. A.
172. BOOTHE ET AL., *supra* note 99, at 1.

would be placed on private developers to even achieve the lowest level of LEED certification. USGBC encourages green building in the public sector to "promote local market transformation by using best practices in construction, operation and maintenance of government owned or leased buildings."[173] LEED also decreases costs of operation and maintenance over a building's lifecycle, reduces costs associated with relocating employees, and increases overall staff satisfaction with working conditions due to improved air quality and increased natural light.[174]

In 2001, Portland, Oregon adopted this approach as part of the city's Green Building Policy. Portland requires all newly constructed city-owned facilities to register their project with USGBC and achieve LEED certification at the Gold level.[175] Additionally, the city requires all occupied, city-owned existing buildings that meet specific square footage criteria to pursue Silver LEED certification.[176] Portland hopes to "provide environmental benefits, create local jobs, improve employee health, productivity and the quality of workspace, and generate lifecycle financial savings for the City" while encouraging the voluntary application of green building standards in the private sector as well.[177]

Mandating LEED certification in public projects is still criticized for various reasons. First, the certification and commissioning costs of LEED projects may be too expensive for local governments to afford. Portland, Maine, requires "all new construction and renovation projects to be owned, or occupied by the city of Portland that are of 2,000 square feet in floor area or greater" to achieve LEED Silver certification.[178] Most recently, the Portland City Council formed the Green Building Incentive Task Force to find ways to encourage green building within the city.[179] In lieu of a strictly mandated LEED requirement for publicly funded projects, the Task Force recommended, in part, that any third-party certification system be allowed for publicly funded projects, and that publicly funded buildings "perform better than ASHRAE Standard 90.1 by 30% for new construction, 20% for existing buildings, and 10% for historic buildings."[180] Ultimately, the Portland City Council adopted a green building code that requires "all new construction and renovation projects to be funded in whole or in part by the city of Portland that are of 10,000 square feet in floor area or greater" to demonstrate either

173. U.S. GREEN BUILDING COUNCIL, ROADMAP TO GREEN GOVERNMENT BUILDINGS 3 (2011).

174. *Id.*

175. Portland, Or., Res. No. 36700 (Apr. 29, 2009).

176. *Id.* (noting that existing buildings must follow certification under LEED for Existing Buildings Operation and Maintenance standards instead of LEED New Construction standards).

177. *Id.*

178. PORTLAND, ME., GREEN BUILDING CODE ch. 6, art. VII, § 6-167 (2012).

179. *Sustainable Portland*, PORTLAND, ME., http://www.portlandmaine.gov/sustainableportland/default.htm (last visited Mar. 10, 2013).

180. Memorandum from the Green Bldg. Incentive Task Force to the Energy and Envtl. Sustainability Comm. 3 (Jul. 7, 2011), *available at* http://www.portlandmaine.gov/greenbuilding/gbitftaskforcerecommendations.pdf.

compliance with a third-party certification system, or under a certain percentage improvement with the "proposed energy performance of the building compared to the baseline performance rating per ASHRAE Standard 90.1 or equivalent standard if the ASHRAE Standard 90.1 is not applicable to the project."[181] The change for publicly funded buildings to be able to use ASHRAE 90.1 was done to avoid the expensive costs associated with LEED certification.[182] Today, ASHRAE Standard 90.1 "addresses the building envelope; heating, ventilation and air-conditioning (HVAC) systems; water heating; power; lighting; other equipment; and boiler efficiency improvements."[183] Since LEED heavily relies on ASHRAE Standard 90.1 to determine energy efficiency calculations,[184] municipalities may choose to directly rely on ASHRAE as a guide to regulating sustainable development. Mandatory LEED certification would not be omitted from the code but simply amended to include an alternative way to achieve green building principles.[185] Many municipalities still place a larger weight on initial construction costs drawn from public funds even with the long term economic savings that a building may achieve following the LEED Green Rating System.[186]

Next, LEED certification has been criticized for improperly awarding buildings credits toward certification for energy savings based on energy efficiency predictions before verification of such savings.[187] Once a project achieves LEED certification, LEED does not mandate renewing its status by reporting actual energy findings. Some energy experts criticize USGBC, claiming the estimated amount of energy saved by LEED-certified buildings over conventional buildings is actually inaccurate.[188] For example, reports conducted by USGBC do not take into account off-site energy used to generate and transport electric energy to the LEED-certified buildings, thus making LEED-certified and conventional buildings statistically equal in terms of energy usage.[189] Commentators have

181. The actual percentage improvements required under the code are greater than recommended by the Task Force. PORTLAND, ME., GREEN BUILDING CODE ch. 6, art. VII, § 6-167 (requiring "percentage improvement [to] be thirty percent (30%) for new construction, twenty-five percent (25%) for existing buildings, and twenty percent (20%) for historic buildings").

182. Emily Parkhurst, *Portland City Council May Change 'Green' Building Rules*, FORECASTER (Jan. 17, 2012, 8:40 AM), http://www.theforecaster.net/content/p-portland-city-council-advance-green-building-requirements-011812.

183. John R. Nolon, *Land Use for Energy Conservation and Sustainable Development: A New Path Toward Climate Change Mitigation*, 27 J. LAND USE & ENVTL. L. 295 (2012).

184. *See, e.g.*, U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at 237–50.

185. *See, e.g.*, PORTLAND, ME., GREEN BUILDING CODE, ch. 6, art VII § 6-167.

186. *See* Douglas Reiser, *Is LEED Too Expensive?*, THE BUILDERS COUNSEL BLOG (Feb. 22, 2011), http://www.builderscounsel.com/2011/02/is-leed-too-expensive-cities-skip-the-plaque-build-their-own-metrics/.

187. Franklyn Cater, *Critics Say LEED Program Doesn't Fulfill Promises*, NPR (Sept. 8, 2010, 4:28 PM), http://www.npr.org/templates/story/story.php?storyId=129727547.

188. *See, e.g.*, John H. Scofield, *Do LEED-Certified Buildings Save Energy? Not Really. . .*, 41 ENERGY AND BUILDINGS 1386, 1386 (2009).

189. *Id.*

noted that LEED certification is too easy to attain because the standards for the lowest level of LEED certification are too low to be effective.[190]

Finally, the costs of relying on a third-party green rating system, even one as prominent as LEED, may be too expensive for municipalities to mandate for city-owned or financed buildings. Although evidence exists that green buildings typically produce higher rents and occupancy rates when compared to nongreen buildings in addition to qualifying for many tax credits,[191] the initial economic costs associated with qualifying for LEED certification can burden municipal budgets too extensively. For example, Edina County, Minnesota chose not to adopt LEED standards because of the extensive LEED documentation costs and the necessity to rely on third-party verification.[192] Certification costs alone may cost a project up to twenty-five percent more than a normal project.[193] While municipalities may try to alleviate this by only requiring buildings larger than a certain square footage to be LEED certified or only require the project to meet LEED standards without mandating certification, other problems still arise.[194] Without having LEED to verify that a project has met all certification requirements, mandating a project to meet minimum LEED standards without certification will place additional administrative paperwork and expenses on local governments to prove the buildings actually met LEED standards.[195] Thus, even if LEED is the most popular third-party verification system used by municipalities mandating green building, the expenses alone associated with LEED may deter localities that are more concerned with initial investment rather than output savings.

B. Mandating Alternative Green Building Programs at the Local Level

Some local governments opt for an alternate third-party green rating system in order to mandate or encourage sustainable design and construction. Rather than relying on the LEED Green Rating System, each program designed incorporates similar design principles without the need to rely on LEED certification. Municipal codes that adopt alternative third-party rating systems may apply to city or county-owned or financed public buildings or may be encouraged in private development.

190. Bronin, *supra* note 28, at 242.

191. SUSTAINABLE ATLANTA, LAND USE/GREEN BUILDING 2 (2009).

192. Mary Jane Smetanka, *Cities Pass Up Green Stamp of Approval, Say It Costs Too Much*, STAR TRIB. (Minneapolis), Feb. 21, 2011, http://www.startribune.com/local/west/116632678.html?retrieve=y.

193. Ross Sorensen, Comment, *Illinois's First Attempt at Sustainable Building Is Green for All the Wrong Reasons*, 35 S. ILL. U. L.J. 163, 178 (2010).

194. *See id*. at 179.

195. *Id.* at 178.

1. Green Globes

The Green Globes assessment and rating system, operated by the Green Building Institute, is a benchmark rating system that assesses newly constructed or existing commercial buildings in the following areas: energy, indoor environment, site, water, resources, emissions, and project/environmental management.[196] Unlike LEED, whose benchmark standard is to compare a project's design to ASHRAE 90.1 energy efficiency standards of a hypothetical building, Green Globes compares its data against the EPA's Target Finder, which reflects actual building performance.[197] For a building to achieve Green Globes certification, the project must achieve at least thirty-five percent of 1000 points available under Green Globes and successfully complete a third-party assessment process, which encompasses extensive document review, on-site visit walkthrough, and interviews of key team members involved in the design and construction process.[198] The Green Globes rating system has four levels of certification depending on what percentage of the 1000 possible points a project earns: one globe (thirty-five percent to fifty-four percent), two globes (fifty-five percent to sixty-nine percent), three globes (seventy percent to eighty-four percent), and four globes (eight-five percent to one hundred percent).[199] A typical green building ordinance using Green Globes normally requires buildings to achieve at minimum two globes.[200]

Several advantages exist for municipalities that choose to use Green Globes. First, municipalities can decrease certification costs by using this program rather than LEED.[201] As of 2011, LEED registration and certification costs averaged to around $13,000, whereas Green Globes self-assessment and certification costs ranged from $5000 to $7000.[202] Green Globes is cheaper than LEED because Green Globes charges a project a flat fee no matter the size of the project, whereas LEED fees vary depending on the square footage of a building.[203] Also, because Green Globes and LEED both focus on many of the same overall categories,

196. *About Green Globes*, GREEN BUILDING INITIATIVE, http://www.thegbi.org/green-globes/ (last visited Mar. 10, 2013).

197. *Frequently Asked Questions*, GREEN GLOBES, http://www.greenglobes.com/about-faq.asp (last visited Mar. 10, 2013).

198. *About Green Globes*, *supra* note 196.

199. *Id.*

200. *See, e.g.*, U.S. Dep't Energy, *Status of State Energy Codes: South Dakota*, BUILDING ENERGY CODE PROGRAMS (Aug. 21, 2012), http://www.energycodes.gov/adoption/states/south-dakota (noting that a two-globe rating on the Green Globes scale is approximately equal to a LEED Silver certification rating).

201. Jeffrey W. King, *An Overview of Green Construction Rating Systems*, 2011 WL 6740838, at *4 (2011).

202. BD. OF CNTY. COMN'RS, ALACHAS CNTY, FL., COMPARISON OF LEED VS. GOLDEN GLOBES 3 (2011).

203. Ken Edelstein, *The Case for Green Globes Versus LEED*, GREEN BUILDING CHRONICLE (Feb. 14, 2011), http://greenbuildingchronicle.com/2011/02/14/case-for-green-globes-versus-leed/.

such as indoor environment and energy use,[204] Green Globes-certified buildings can focus on the actual benefits of building "green" without such large registration expenses. Green Globes employs a user-friendly interactive guide to assess and integrate green design principals, which can be completed by any team member with basic knowledge of the building, whereas LEED's assessment system involves a much more complicated structure requiring expert knowledge in several areas.[205] Finally, Green Globes allows a project more flexibility than LEED when earning points toward certification.[206] A project can be excused for not gaining points in a specified area by marking it "nonapplicable," such as when a criterion relates to elevators and the building seeking certification does not have an elevator.[207] Overall, Green Globes is a viable option for local governments with small budgets who wish to still promote energy efficiency with a standard similar to LEED.

One of the largest disadvantages is obviously the lack of popularity of third-party green rating systems other than LEED. If one of the goals of a municipality is to encourage sustainable development practices and educate the public about green building principals, a more noteworthy and nationally recognized program, such as LEED, will be able to accomplish this on a larger scale. The number of LEED-certified projects also greatly surpasses the amount of Green Globes projects. As of February 2011, about 7500 projects achieved LEED certification whereas only 119 projects in the United States were Green Globes certified.[208] Overall, the greatest weakness of this program is playing second fiddle in popularity for green rating systems.[209]

2. ENERGY STAR

ENERGY STAR certification is another option for municipalities to implement in lieu of LEED certification. ENERGY STAR is a benchmark system that assesses the energy efficiency of a building relative to similar buildings nationally.[210] On a 100-point scale, "a rating of

204. TIMOTHY M. SMITH ET AL., GREEN BUILDING RATING SYSTEMS: A COMPARISON OF THE LEED AND GREEN GLOBES SYSTEMS IN THE U.S. 3 (2006).

205. *Id.*

206. *Id.* at 4.

207. Victoria Markovitz, *The Differences Between Green Globes and LEED*, PROSALES MAGAZINE (Aug. 27, 2008), http://www.prosalesmagazine.com/green-building/the-differences-between-green-globes-and-leed.aspx.

208. Edelstein, *supra* note 203.

209. The debate between LEED and Green Globes has been characterized as similar to the Coke and Pepsi debate because eighty to eighty-five percent of the credits available in the two programs overlap. Markovitz, *supra* note 203; Smith et al., *supra* note 204, at 3.

210. *How the Rating System Works*, ENERGY STAR, http://www.energystar.gov/index.cfm?c=evaluate_performance.pt_neprs_learn (last visited Mar. 10, 2013).

50 indicates average energy performance, while a rating of 75 or better indicates top performance."[211]

As the nationally recognized energy standard backed by the U.S. Department of Energy and the EPA, ENERGY STAR offers several benefits. If a municipality's main goal includes saving money while focusing exclusively on energy efficiency and reducing greenhouse gas emissions, then this option would be the most advantageous to pursue. Many municipalities and over forty states have enacted ordinances requiring buildings to be ENERGY STAR certified.[212] These requirements can apply to all new construction and major renovations in existing city-owned and operated buildings and also require the building to be benchmarked annually in EPA's Portfolio Manager.[213] Similar to Green Globes, implementing only ENERGY STAR will avoid expensive registration and certification costs.[214] Cities that choose this program will also be able to improve the project's sustainable features with the money saved from avoiding LEED certification costs.[215] Additionally, ENERGY STAR is the nationally recognized standard for energy efficiency used at the federal level with the majority of states also adopting this standard.[216]

Some drawbacks do exist if a municipality only chooses to mandate ENERGY STAR. ENERGY STAR is not as comprehensive as other green rating systems, as it exclusively focuses on energy efficiency.[217] Both Green Globes and LEED take into account other factors, such as indoor air quality and water efficiency, to provide a more cohesive approach to sustainability.[218] ENERGY STAR is also already incorporated into the LEED Green Rating System.[219] Thus, many cities, such as Denver, Colorado, choose to require both LEED and ENERGY STAR standards for newly constructed and major renovations to city-owned buildings that meet minimum square footage requirements.[220] While ENERGY STAR does not suffer from the lack of familiarity associated with Green Globes, only around 2500 ENERGY STAR certified buildings existed as of 2009, compared to over 1,300,000 office buildings

211. *Id.*

212. Klass, *supra* note 82, at 344.

213. *See* U.S. ENVTL. PROT. AGENCY, FEDERAL, STATE, AND LOCAL GOVERNMENTS LEVERAGING ENERGY STAR (2011), *available at* http://www.energystar.gov/ia/business/government/State_Local_Govts_Leveraging_ES.pdf.

214. *See* Bronin, *supra* note 28, at 242.

215. *Id.*

216. Klass, *supra* note 82, at 344–45.

217. *See How the Rating System Works*, *supra* note 206.

218. *See Comparison of LEED vs. Green Globes*, *supra* note 202.

219. U.S. GREEN BLDG. COUNCIL, CORE CONCEPTS, *supra* note 73, at 44.

220. U.S. ENVTL. PROT. AGENCY, *supra* note 209, at 1; *Public Policies Adopting or Referencing LEED*, USGBC, http://www.usgbc.org/displayPage.aspx?CMSPageID=1852 (last visited Mar. 10, 2013).

achieving LEED certification.[221] Even though ENERGY STAR certification shows increasing popularity,[222] the fact that ENERGY STAR is already incorporated into the LEED Green Rating System may push municipalities to mandate higher requirements by requiring LEED certification. Therefore, ENERGY STAR may lack the requisite strength alone to truly have an impact on green building should a municipality solely require this option.

3. City-Specific Program: A Hybrid Approach

Instead of solely opting for a third-party green rating system, local governments may implement green building policies by having local policy makers craft a plan that directly focuses on sustainable measures the city wishes to emphasize. Policy makers should "(1) consider the extent to which existing municipal building requirements already establish green building measures, (2) identify priority green building measures that are not yet incorporated into municipal policy, and (3) ensure that these priorities are addressed when establishing minimum green building requirements or incentives."[223] These policies may apply to public projects, private developments, or both.[224] Even when ordinances solely mandate green building requirements for public projects, cities often provide administrative and technical incentives for private developers to also partake in green building.[225] Cities commonly allow green buildings expedited review to save developers money, provide tax credits or rebates, or provide technical assistance to help developers obtain green certification.[226]

Tailoring a green ordinance to meet a city's specific sustainable needs and goals provides many benefits. First, those in favor of locally tailored green building programs believe they will better address environmental and local building-related concerns.[227] Proponents believe a municipality that solely adopts LEED standards, "in reality, . . . [only] sticks a band-aid on a major wound, calls the process successful, and stops there."[228] Next, a city has more control to determine whether or not a third-party green standard will be mandatory or only act as an alternative to the proposed city sustainable measures implemented. To illustrate, Evanston, Illinois adopted a green building ordinance that im-

221. Eugene Choi, *Green on Buildings: The Effects of Municipal Policy on Green Building Designations in America's Central Cities*, 2 J. SUSTAINABLE REAL EST. 1, 7–8 (2010).

222. *Id.* (noting a ten percent increase from the first quarter of 2001 to the second quarter of 2009 in the number of ENERGY STAR certified buildings).

223. ENVTL. L. INST., *supra* note 157, at vii.

224. *Id.* at 1.

225. *Id.* at 18; Choi, *supra* note 221, at 6.

226. Choi, *supra* note 221, at 6.

227. Sarah B. Schinder, *Following Industry's LEED: Municipal Adoption of Private Green Building Standards*, 62 FLA. L. REV. 285, 293 (2010).

228. *Id.*

plements locally designed sustainable measures while also adopting LEED as an alternative to the local guidelines. Under the Evanston Green Building Ordinance, city-owned or financed projects and commercial buildings over a proscribed square footage must either achieve LEED Silver certification or employ Evanston's Sustainable Design Measures.[229] Evanston chose to amend its ordinance by adopting its own measures because private developers found LEED certification requirements located within the code to be too expensive.[230] Normally, a city's measures address topics also covered in LEED, such as stormwater management, water use, lighting, mechanical, building enclosure, and materials and resources.[231] Instead of relying on a point system, which may not address environmental concerns appropriate to the municipality, a city's measures will help ensure the strongest success for policies implemented. This will also allow projects to avoid the expensive paperwork and certification costs associated with LEED.

The main disadvantage of a municipality creating its own code is the amount of economic and labor resources local governments must utilize to properly draft, execute, and ensure code compliance. Normally, mandatory codes require numerous case studies of other municipal green building policies, municipal staff with specialized training responsible for implementing the green building policy, and monetary incentives, such as green building grants, to further public support for the green building policy.[232] Also, for municipalities that choose to incentivize private developers to build green, research has shown that while expediting the permit building process and plan review has increased support for private green development, financial incentives, such as tax credits, have not been as successful in encouraging green development of office buildings.[233] Tax incentives offered by municipalities may not be enough to offset the costs of green construction. Finally, many cities who create their own green building codes normally tend to allow meeting LEED certification as an alternative to satisfy code requirements.[234] Going one step further, Chicago, Illinois; Portland, Oregon; and Austin, Texas, revised or amended their codes to require LEED certification for city-owned buildings instead of solely relying on city-created standards.[235]

229. Evanston, Ill., Ordinance 124-O-09 (Jan. 29, 2010).

230. *See GFS Marketplace Breaks Ground, Is Set to Open Next Summer*, CHI. TRIB. (Nov. 29, 2011), *available at* http://web.archive.org/web/20111203222032/http://articles.chicagotribune.com/2011-11-29/news/ct-x-1130-n-triblocal-roundup-20111129_1_ice-rink-coco-key-water-water-resort (archived Dec. 3, 2011).

231. *See* Evanston, Ill. Ordinance 124-O-09.

232. ENVTL. L. INST., *supra* note 157, at vi–viii.

233. Choi, *supra* note 217, at 17–18.

234. *See, e.g.*, Evanston, Ill., Ordinances tit. 4 ch. 75 (2008).

235. Will Baker, et al., Benchmarking Municipal Green Buildings Programs 9–10 (May 11, 2010) (unpublished capstone project, Columbia University) (on file with School of International and Public Affairs, Columbia University).

Overall, municipalities that choose to implement alternate third-party green rating systems into their codes may do so to save money or because they doubt the criteria LEED uses to measure a building's energy efficiency performance.[236] Localities may choose to use Green Globes to save expenses associated with certification but may be deterred by the lack of national recognition of the program.[237] Next, while ENERGY STAR may be a well-known national standard and save local governments certification expenses, it does not provide as comprehensive of a green building program outside of setting energy efficiency and greenhouse gas emission standards.[238] Finally, while a locally created municipal code allows for flexibility and locally tailored goals responsive to regional needs, the economic and personnel costs necessary to establish a successful green building code may be too much of a burden for municipalities with tight budgets to handle.[239]

C. Alternatives to Local Action

The phenomenon of the green building movement has affected every level of government from local municipalities to the federal government. Nevertheless, local governments may not be the best level of government to mandate green building standards. Local land-use regulations addressing energy conservation may be challenged on *ultra vires* claims, stating that the local government exceeded its authority, or state and federal law may preempt local regulations.[240] Although states primarily designate land-use regulatory authority to localities,[241] some argue that green building is a statewide concern and should be dealt with on the state level.[242] Others believe that the federal government should be in charge of mandating national policies that directly deal with green building in order to maintain national uniformity in sustainable practices.[243] Finally, some experts promote a multilevel governmental approach combining all levels of government in a comprehensive manner to address local, regional, and national environmental concerns.[244]

1. State Level Approach

As local governments have been criticized for their inadequate measures for responding to the environmental consequences of traditional construction practices, arguments to mandate green building

236. *See supra* Part III.B.
237. *See supra* Part III.B.1.
238. *See supra* Part III.B.2.
239. *See supra* Part III.B.3.
240. Nolon, *supra* note 183, at 22.
241. *See supra* Part II.B.
242. *See infra* Part III.C.1
243. *See infra* Part III.C.2
244. *See infra* Part III.C.3

standards at the state level are more common.[245] The use of a third-party rating system, such as LEED, would be more beneficial to address concerns arising from conventional construction practices that impact at a level larger than the jurisdictional limits of a local government. LEED supports this by directly addressing these topics. For example, LEED implements credits that directly deal with regional issues, such as mandating that a certain percentage of materials used be "extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site" to earn up to two points toward certification.[246]

Next, many states have already implemented LEED standards statewide. For instance, some require that all state government buildings meet the criteria set out in the LEED Green Building Rating System.[247] In 2005, Washington enacted a law that requires all state-funded building larger than 5000 gross square feet to earn at least 50 out of 100 points to obtain LEED Silver certification.[248]

States may also be in a better position to mandate green building standards because the majority of local governments either have not addressed green building within their ordinances or have only addressed sustainability concerns on a segmented basis that creates inconsistencies in application.[249] States have already begun to create rules that address sustainable-design techniques, which local governments have not specifically mandated within their own codes. For example, California prevents municipalities from denying permits for solar energy due to aesthetic concerns.[250] With over seventy-one million Americans living in a jurisdiction with some form of green building program, state control will help ensure that sustainable techniques are used on a larger scale.[251]

Finally, states will be able to tailor their policies to address these regional priorities directly. Minnesota adopted its own statewide guidelines called Sustainable Building 2030.[252] The program seeks to reduce new buildings' fossil-fuel energy consumption to sixty percent below regional building type averages and to eliminate use of fossil fuel energy completely by 2030.[253] Approaching sustainable design at the state level, as opposed to leaving it up to municipalities, will lead to uniformity and a

245. *See* Bronin, *supra* note 28, at 240 (criticizing local governments for not responding to local conventional problems that have caused larger environmental problems outside their jurisdiction).

246. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at 379.

247. Klass, *supra* note 82, at 343.

248. Sorensen, *supra* note 193, at 168.

249. *See* Bronin, *supra* note 28, at 250 (discussing how most municipalities reject sustainable-design ordinances on aesthetic grounds).

250. CAL. GOV'T CODE § 65850.5 (West 2005).

251. Trisolini, *supra* note 15, at 704.

252. *See* CTR. FOR SUSTAINABLE BLDG. RESEARCH, UNIV. OF MINN., *Sustainable Building 2030 Compliance and Reporting Instructions* (Nov. 1, 2010), *available at* http://www.mn2030.umn.edu/download/SB2030TrackingReport.pdf.

253. *The 2030 Challenge*, ARCHITECTURE 2030, http://architecture2030.org/2030_challenge/the_2030_challenge (last visited Mar. 10, 2013).

larger impact on environmental problems caused by conventional construction.

A state-level approach will be difficult to actually achieve, however, due to practical considerations. First, states historically have explicitly delegated land-use regulation to local government.[254] While states may pass laws that restrict a local government's ability to regulate land use,[255] no state has directly changed land-use laws to directly prevent local governments from implementing their own mandated green building guidelines.[256] Overall, it would be more beneficial and practical to encourage state and local governments to work together in order to have a more unified effort to encourage and mandate green building standards instead of just relying on one level alone. While states may address regional issues and provide uniformity among local governments, municipalities still have long been delegated the authority to regulate land use.[257]

Statewide initiatives would require large-scale capital improvements that would not result in short-term returns for projects and might lead to litigation and discourage development.[258] Litigation has already arisen criticizing LEED's claims regarding energy and economic savings.[259] While initial lawsuits against LEED have been dismissed, more litigation is expected to arise.[260] Maine Governor Paul Le Page recently signed an executive order that bans the use of LEED green building standards in state-owned buildings.[261] To be successful, statewide efforts would need to show that the benefits of energy savings outweigh the burdens on capital costs and strict regulations.

254. *See supra* Part II.B.

255. *See, e.g.*, Efraim Ben-Zadok, *Consistency, Concurrency and Compact Development: Three Faces of Growth Management Implementation in Florida*, 42 URB. STUD. 2167–68 (2005) (noting how the Florida Growth Management Act granted the state ultimate authority to intervene in local and regional land development decisions to encourage coordination and continuity between all three levels of government); Gerrit-Jan Knapp & John W. Frece, *Smart Growth in Maryland: Looking Forward and Looking Back*, 43 IDAHO L. REV. 445, 447 (2007) (discussing how Maryland enacted the Economic Growth, Resource Protection and Planning Act of 1992, which required local governments to revise their comprehensive zoning plans to be in accordance with the state's vision of how future development should take place).

256. *See* Bronin, *supra* note 28, at 268.

257. *Id.* at 267–68.

258. Nolon, *supra* note 183, at 13.

259. *See* Maura K. Anderson et al., *Hidden Legal Risks of Green Building*, 84 FLA. B.J. 35, 35 (2010) (discussing various legal risks of green building that owners, architects, and contractors may face in private development); Judy Greenwald, *Despite Dismissal, More LEED Certification Litigation Expected*, BUS. INSURANCE (Aug. 23, 2011, 2:37 PM), http://www.businessinsurance.com/article/20110823/NEWS07/110829960.

260. *See* Greenwald, *supra* note 259; Sulkowski, *supra* note 1, at 202.

261. Sarah Laskow, *Maine Bans LEED in State Buildings at Timber Industry's Behest*, GRIST (Dec. 21, 2011, 11:14 PM), http://grist.org/list/2011-12-21-maine-bans-leed-in-state-buildings-at-timber-industrys-behest/.

2. Federal Approach

The federal government has a long history of implementing environmental laws and policies.[262] Under the Constitution's Supremacy Clause, if a conflict were to arise between the federal government's exercise of its powers and the state's power to regulate land use through the police power, the result would favor the federal government.[263] Although the federal government normally does not get involved in land-use regulation and building codes due to the Standard State Zoning Enabling Act, it has remained a strong force in regulating appliance energy efficiency, water quality, and air quality.[264] Nevertheless, the federal government is unlikely to be involved directly with land-use regulation.

Some evidence suggests that a federally enforced policy directly implementing green building standards beyond the federal level would be beneficial, albeit improbable. Proponents for a federal approach argue that the federal government can mitigate climate change nationwide by making stronger use of the federal spending and regulatory powers.[265] A top-down approach implementing LEED or another similar standard "could more widely eliminate barriers to cost-effective energy efficiencies than locally implemented plans by affecting a broader population."[266] The federal government has developed national construction standards designed to encourage sustainable practices in the past.[267] Although no single comprehensive federal green building standard exists, federal buildings must incorporate certain green building aspects in accordance with various federal policies.[268] Nationally mandated policies also will reduce building fossil-fuel energy consumption on a larger scale.[269] Current federal initiatives have also shown support for action on the federal level.[270] The federal government currently has over 875 LEED-certified projects, over 3900 projects pursuing certification, and fourteen federal agencies or departments mandate LEED requirements.[271]

Even with the success of implementing green building standards in federal buildings, it is unlikely that a federal initiative will be successful

262. *See supra* Part II.D.1.

263. Bronin, *supra* note 28, at 261.

264. Klass, *supra* note 82, at 342.

265. Rachael Rawlins & Robert Paterson, *Sustainable Buildings and Communities: Climate Change and the Case for Federal Standards*, 19 CORNELL J.L. & PUB. POL'Y 335, 336 (2010).

266. Trisolini, *supra* note 15, at 738.

267. *See* Bronin, *supra* note 28, at 263.

268. OFFICE OF FED. ENVTL. EXEC., *supra* note 10, at 15–17 (discussing various federal policies that apply to green building, including the Resource Conservation and Recovery Act, The Energy Policy Act of 1992, and various executive orders).

269. The Department of Energy estimates that by 2035, buildings will use 76.5% of the total electricity consumed nationally. *U.S. Residential and Commercial Buildings Total Primary Energy Consumption*, DEP'T OF ENERGY, http://buildingsdatabook.eren.doe.gov/TableView.aspx?table=1.1.1 (last visited Mar. 10, 2013).

270. *See Policy and Government Resources*, *supra* note 19.

271. *Id.*

at the local level primarily because local governments have been the traditional level of government to handle land-use regulation. Even more controversial, both houses of Congress passed a bill prohibiting funding LEED Gold or Platinum certification for any Department of Defense building starting in 2012.[272] This places a large dent in efforts to mandate LEED policies on the national level. While those in favor of federal regulation argue that this approach results in centralized resources to research and disseminate technical information nationwide, thus leading to greater uniformity and ease in application of a green building standard, local governments already greatly rely on USGBC and other private codes that are continually updated based on continuing research.[273] Overall, while a federal approach would have the largest and most uniform impact on green building standards, it likely would require too much money and take away too many issues normally dealt with at the local level to be effective if implemented.[274]

3. Multilevel Government Approach

Some believe the best approach to enacting sustainable development measures includes an integration of efforts at the local, state, and federal level. John Nolon, a law professor at Pace University, suggests implementing federal and state policies that encourage local governments to rezone areas capable of creating district energy systems and transit-oriented neighborhoods as Energy Conservation Zoning Districts.[275] Under this approach, state and federal support for Energy Conservation Zoning Districts can help assist local governments in recovering capital costs associated with green buildings and create district-wide programs to provide incentives to mandate this program.[276] Another approach encourages reducing greenhouse gas emissions through regulation by federal, state, and local governments "from the top down and bottom up" approach to "create useful regulatory redundancies" and capitalize on a "local government['s] tools for influencing downstream emissions."[277]

A multilevel approach may trigger more effective regulatory initiatives and create additional opportunities for innovative regulations that use a third-party green rating system as a standard or a more flexible ap-

272. H.R. 1540, 112th Cong. (2011) (enacted).

273. Trisolini, *supra* note 15, at 738.

274. OFFICE OF FED. ENVTL. EXEC., *supra* note 10, at 30 (noting that the major barrier to greater federal adoption of green building practices include: "financial and budgetary structure challenge[s], education needs, limited research, [and] lack of clear federal policy").

275. Nolon, *supra* note 183, at 41. A district energy system "produces energy in the form of steam, hot water, or chilled water, which are transported through an underground closed-loop piping system to buildings connected to the district's network." *Id.* at 37.

276. *Id.* at 41.

277. Trisolini, *supra* note 15, at 677.

proach which tailors to the complex structures within the various forms of government.[278] An effective multilevel approach would use state and federal standards only as a floor and not a ceiling.[279] Nevertheless, the power of the local government would need to be greatest out of all three levels for this type of approach to be effective. The application of a multilevel building code would create large administrative burdens costing substantial amounts that would be unmanageable at any level other than the local level.[280] This approach would also cause long delays in the permitting process and waste too much money to be useful.

D. The Complete Picture

Local governments that implement green building standards to minimize the adverse effects of traditional construction practices typically follow one of three approaches. First, local governments that incorporate LEED standards in building codes normally require public projects to meet LEED minimum requirements, but also may require private projects to meet minimum LEED standards.[281] This approach is appealing because LEED is the most prominent third-party green rating system,[282] it alleviates the burden of relying on local policy makers to create sustainable building standards, and it promotes energy efficiency and other important green practices in a comprehensive benchmark program.[283] The burdens of economic costs of LEED certification and reliance of delegating oversight to a third party may deter localities from adopting this approach.

In the second approach, local governments rely on alternatives to LEED, such as Green Globes or ENERGY STAR, to promote sustainable building practices. Alternative third-party green rating systems or locally tailored programs tend to be cheaper to implement and allow more flexibility in responding to regional environmental problems.[284] These programs, however, may not be as popular as LEED (Green Globes), or may only address energy efficiency without taking into account other environmental concerns (ENERGY STAR).

In the third approach, no action is taken at the local level, and sustainable-design efforts are handled at the state or federal level. While state mandated programs allow more uniformity across jurisdictions and

278. *Id.* at 738.

279. *Id.* at 736; *see also* Kathryn A. Foster, *A Region of One's Own*, *in* REGIONAL PLANNING IN AMERICA: PRACTICE AND PROSPECT 53, 78 (Ethan Seltzer & Armando Carbonell eds., 2011) (noting that a "multijurisdictional enterprise involves multiple actors who have independent authority to make, act on, and enforce decisions for some, but not all, aspects of the regional space").

280. Trisolini, *supra* note 15, at 736.

281. *Id.* at 703.

282. *Id.* at 704.

283. ENVTL. L. INST., *supra* note 157, at vi.

284. *See supra* Part III.B.

the ability to respond to regional issues more effectively, states historically have delegated land-use regulation responsibility to local governments.[285] A federal or multilevel government program would allow coordination among the various levels of government with the added benefit of uniformity in green building standards, but this may cause unnecessary duplicate efforts found at the local level resulting in wasted economic resources and unnecessary delays in the construction process.

IV. RESOLUTION

Local governments have attempted to implement green building standards to address problems arising out of conventional construction standards and achieve the greatest beneficial environmental impact. This Note demonstrates that simply relying on a third-party green rating system without carefully structuring a green building code to address the local environmental concerns will not be the most effective measure localities can implement. As more local governments choose to mandate green building standards, local governments must not only address environmental impacts of conventional construction within their own jurisdiction but also consider regional impacts caused by buildings.

Although mandating LEED certification in both public and private construction would achieve uniformity among various local green building standards, municipalities would be burdened with expensive certification costs whereas it would be more effective to use this money to improve buildings to include sustainable standards. Furthermore, while alternative benchmark green building programs, such as Green Globes, may reduce certification costs, it would be harder to use these programs to educate the public about the importance of building sustainably than relying on a nationally recognized program, such as LEED. Finally, while national programs that aim to reduce greenhouse gas emissions, like ENERGY STAR, may be well known, they fail to incorporate a comprehensive approach to green building that encompasses other aspects in addition to energy use, such as water efficiency, indoor air quality, and site selection.

This Part presents a two-part solution to ensuring more successful and effective green building codes. Local governments must create separate standards for public and private buildings. First, Section A advocates for local governments to mandate LEED requirements for publicly owned or funded buildings. Second, Section B promotes local governments to use financial and administrative incentives to encourage private projects to achieve LEED certification.

285. *See supra* Part II.B.

A. Mandating LEED Requirements for Public Projects

While many municipalities chose to adopt LEED standards for city-owned or financed buildings, these efforts have only largely occurred in Western states or in large metropolitan areas on a piecemeal basis.[286] Local governments are the best level of government to implement green building standards because states have enabled local governments to regulate land use through the use of the police power.[287]

To be most effective, local governments need to require all publicly owned and publicly financed buildings over 20,000 square feet to meet LEED Silver standards without actually mandating certification. This standard applies to newly constructed buildings as well as major renovations occurring in existing publicly owned or financed buildings. Local governments should refer to LEED for New Construction and Major Renovations, version 3, as the appropriate standards to meet.[288] LEED Silver level requires achieving a minimum of 50 out of 100 possible points.[289] A project may apply for a waiver under appropriate circumstances if meeting LEED requirements jeopardizes a project's ability to otherwise achieve a building permit. A project should be required to meet with a city appointed LEED Accredited Professional and city chief engineer before receiving a waiver. As a guide, local governments should review the recommendations given by Boston's Green Building Task Force to encourage community participation, educate the public, and update related health codes to have the most effective sustainable results.[290]

This mandated standard resolves many concerns normally associated with LEED building codes. First, this approach mandates sustainable measures without mandating LEED certification costs, which means a municipality will have more economic resources to be able to educate the public, train staff, or improve buildings. With that said, LEED-certified buildings will allow the public to learn about sustainable methods from a nationally recognized standard. State participation is also necessary to achieve overall uniformity and effectiveness. States should adopt appropriate financial initiatives, such as grants, tax rebates, or other tools a state decides that can incentivize municipalities to go one step further and achieve LEED certification. States can take advantage of LEED's four-level rating system by increasing incentives for local governments to achieve LEED certification at the Silver, Gold, and Platinum levels.[291]

286. *See* Klass, *supra* note 82, at 343–44.

287. *See supra* Part II.B.

288. OFFICIAL OF FED. ENVTL. EXEC., *supra* note 10, at 46.

289. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at xix.

290. MAYOR MENINO'S GREEN BUILDING TASK FORCE REPORT, *supra* note 155, at 8.

291. *See, e.g.*, Philip Proefrock, *Greenburg KS to Rebuild As LEED Platinum City*, GREEN BUILDING ELEMENTS, Jan. 28, 2008, *available at* http://greenbuildingelements.com/2008/01/28/greensburg-ks-to-rebuild-as-leed-platinum-city/.

Moreover, this will allow states to help coordinate local efforts to respond to regional environmental issues without usurping the local government's role as land-use regulator.

By adopting LEED mandated codes, local governments will also be meeting many goals associated with green buildings. These goals normally include minimizing adverse environmental impacts, promoting sustainable development, conserving natural resources, promoting sustainable development, educating the public about sustainability, and enhancing the quality of life for all citizens.[292] The LEED Green Rating System provides the most comprehensive benchmark system for improving conventional construction standards, focusing on site selection, water efficiency, materials and resources, and indoor air quality. This resolution addresses any concerns that LEED implemented measures are not effective enough by requiring standards higher than LEED-Certified level.

Mandating LEED standards also guarantees more uniformity and greater effect of minimizing adverse environmental impacts. Since LEED specifically addresses regional issues and awards points for responding to these issues,[293] municipalities can still be innovative regarding how they approach green building standards at the local level while maintaining an overall uniform structure in which to apply these measures.

Furthermore, LEED Accredited Professionals employed by municipalities can adequately educate municipal staff on the LEED Green Rating System and be a resource for public projects achieving LEED certification. Because any person with experience working on a LEED project can become a LEED AP, local governments could require city engineers or municipal staff to pass the LEED AP examination. Therefore, the only added expense for a municipality would be paying for the employee to take the test, which costs $550 per exam.[294] Projects that incorporate a LEED AP also automatically receive one point toward LEED certification.[295] The addition of a LEED AP on staff allows for a smoother transition to the LEED Green Rating System. It will also help more public projects meet LEED standards more efficiently and result in less projects applying for waivers to the green building requirements. While LEED implementation measures may require local governments to invest upfront, the long term economic and environmental benefits clearly outweigh the small, upfront cost of this resolution.

292. *See, e.g.*, BOSTON, MASS., CODE art. 37 (2007).
293. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at ix, 607.
294. *LEED AP Exam*, *supra* note 124.
295. U.S. GREEN BLDG. COUNCIL, REFERENCE GUIDE, *supra* note 13, at 597.

B. Incentivizing LEED Requirements for Private Development

In contrast to requirements for publicly funded projects, local governments should not mandate LEED on privately funded and owned projects. Instead, municipalities should rely on financial and administrative incentives to encourage private projects to achieve LEED certification. Private projects should only be encouraged to meet LEED "Certified" requirements, or achieve at least 40 out of 100.[296] It is most effective to only incentivize private developers to achieve LEED certification instead of mandating requirements not only to draw public support toward green measures but also to encourage developers to gradually adopt sustainable measures without overburdening a project's construction budget. Cities will be able to use the LEED mandated measures on public projects as models to encourage private development to also partake in LEED certification.

Each municipality may choose which incentives to implement and tailor standards for private development to best meet their needs. While uniformity is important in mandating LEED requirements for public projects, incentivizing LEED measures in private projects requires more flexibility to be effective.[297] Given the various types of construction projects in private development, such as industrial or commercial, a local government will be able to more effectively tailor incentives than relying on state incentives for private green development. Structural incentives may include expedited review of permitting processes, which would alleviate the concern of LEED certification delaying the construction process.[298] Local governments may also award projects with tax credits or abatements, fee waivers, grants, or resolve loan funds.[299] The municipality may also offer technical assistance for private projects achieving LEED certification.[300] While this list is not exhaustive, municipalities can be innovative in how they encourage private developers to achieve LEED certification. These efforts will benefit the overall quality of life of all citizens even stretching outside the municipality.

296. *Id.* at xix.

297. *See* Fox, *supra* note 15, at 306–07 (noting "cities like Seattle, Washington and Portsmouth, New Hampshire are offering density bonuses to private developers that meet a certain degree of LEED Certification," but Princeton, New Jersey, encourages "'the use of LEED' through provision of tax breaks and other non-mandatory incentive[s]").

298. *Green Building Incentive Strategies*, U.S. GREEN BLDG. COUNCIL, http://www.usgbc.org/DisplayPage.aspx?CMSPageID=2078 (last visited Mar. 10, 2013).

299. *Id.*

300. *Id.*

V. CONCLUSION

Conventional buildings consume almost sixty-five percent of all energy used nationally and cause many adverse environmental conditions through dependence on nonrenewable energy sources.[301] To combat these issues, the U.S. Green Building Council created the LEED Green Rating System, a benchmark tool that minimizes production of waste and environmental degradation and promotes the efficient resource allocation.[302] While local governments have increasingly started to implement green building standards for both public and private projects by relying on either LEED or a similar third-party green rating system, this piecemeal effort alone is ineffective on a larger scale without creating a more uniform approach to green building.[303] Relying on other third-party green rating systems will also not be as effective as incorporating LEED into a green building code. Green Globes is not well known enough to be able to use certification to educate the public and promote sustainable design.[304] ENERGY STAR also avoids the expensive certification costs associated with LEED but does not comprehensively address other environmental standards besides energy efficiency and greenhouse gas emissions.[305] LEED also covers the same comprehensive sustainable categories as Green Globes and incorporates ENERGY STAR standards into the rating system.[306] Finally, green building initiatives should occur at the local level because states normally delegate land-use regulation to local governments.[307]

Therefore, local governments should mandate all publicly owned and financed buildings over 20,000 gross square feet meet LEED Silver standards without actually requiring LEED certification. This reduces the costs a municipality will face when incorporating a green building standard, provides uniformity among localities to address regional concerns, and most effectively minimizes adverse effects that buildings cause on the environment. To have the greatest overall effect, states should create financial incentives for public projects to certify their projects.

As for private development, local governments should incorporate financial and administrative incentives into codes to meet LEED-Certified standards so private development also has a lower impact on the environment. This also encourages larger community participation in green building efforts. These standards will help ensure efforts to protect the environment from the damage caused by conventional building practices do not go to waste.

301. Hirokawa, *supra* note 3, at 511.
302. *See* Sussman, *supra* note 5, at 8–11.
303. *See* Kloss, *supra* note 82, at 343–44.
304. *See* notes 196–209 and accompanying text.
305. *See* notes 210–22 and accompanying text.
306. *See supra* Part III.A–B.
307. *See supra* Part II.B.