



2010

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Recommended Citation

Darren A. Prum, *Green Buildings, High Performance Buildings, and Sustainable Construction: Does It Really Matter What We Call Them*, 21 Vill. Envtl. L.J. 1 (2010).

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VILLANOVA ENVIRONMENTAL LAW JOURNAL

VOLUME XXI

2010

NUMBER 1

GREEN BUILDINGS, HIGH PERFORMANCE BUILDINGS, AND SUSTAINABLE CONSTRUCTION: DOES IT REALLY MATTER WHAT WE CALL THEM?

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“Just definitions either prevent or put an end to disputes.”

– Nathaniel Emmons¹

I. INTRODUCTION

When observing the sheer number of new structures entering our built environment, each claiming to be more ecologically sound than the last, the vocabulary chosen to describe these projects is extremely important. When choosing specific words to describe these structures, the very root of each expression helps determine the structure’s meaning and context.² Moreover, while some of the descriptors date back to the 1970s, most tend to come from modern vernacular.³ Without properly determining the meaning and context of a given word, a person interpreting a particular message must attempt to decipher the intentions of the communicator. Applying this reality to the green building movement begs the question: Does it really matter whether these structures are called green buildings, high performance buildings, or sustainable construction buildings?

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1. THE FORBES SCRAPBOOK OF THOUGHTS ON THE BUSINESS OF LIFE 145 (Triumph Books 1995) (1992).

2. For a further discussion of different sources for determining a term’s definition, see *infra* notes 11-16 and accompanying text.

3. JOHN L. HOWARD, JR., THE FEDERAL COMMITMENT TO GREEN BUILDING: EXPERIENCES AND EXPECTATIONS, OFFICE OF THE FEDERAL ENVIRONMENTAL EXECUTIVE (2003) [hereinafter U.S. OFEE STUDY], available at <http://ofee.gov/sb/fgb.asp> (assessing Federal government’s efforts to make its buildings more environmentally sustainable).

The various terms used to describe these buildings often do not effectively describe the building's impact on the natural environment.⁴ Many scholars and sources appear to use these terms interchangeably without regard to whether the descriptor is proper.⁵ As disputes occur over contracts involving development of buildings that use these terms, this question will inevitably become an obstacle that a court or arbitrator must reconcile when determining whether performance or breach actually occurred.⁶

With these observations in mind, this article examines these seemingly interchangeable terms to determine if they have similar or different meanings.⁷ Part II of this investigation explores the diverse sources of these definitions, including publications, legislation, Executive Orders, regulations, official publications by federal, state, and local governments, and several organizations that provide third-party verification.⁸ Part III of this article determines whether the various definitions have a sufficient impact on environmental architecture.⁹ Finally, Part IV provides guidance on the proper usage of the different descriptors and gives suggestions on which definitions are appropriate.¹⁰

4. For a further discussion offering a more effective way to use these terms, see *infra* notes 197-214 and accompanying text.

5. CHARLES K. KIBERT, *SUSTAINABLE CONSTRUCTION: GREEN BUILDING DESIGN AND DELIVERY* (John Wiley & Sons 2007) (2008) [hereinafter Kibert 1] (providing an in-depth discussion of design and construction of "high performance buildings").

6. See generally, Darren A. Prum & Stephen Del Percio, *Green Building Claims: What Theories Will A Plaintiff Pursue, Who has Exposure, and a Proposal for Risk Mitigation*, 37 REAL EST. L. J. 243, 245-48 (2009) (focusing on theories that may occur in litigation as well as preventative measures). One of the proposals put forward includes the need for the contracts and promotional materials to precisely define any expectations when involving the many stakeholders to these types of projects. *Id.* This need became a reality in the case of *Shaw Dev. v. S. Builders*, which many consider the first case in green building litigation, where the lack of a clearly defined contract in conjunction with other factors like the mutual waiver of consequential damages provision showed the direct need for the parties to use precise language with definitive meanings in contracting documents. No. 19-C-07-011405 (Somerset Cty. Cir. Ct. Md. 2007).

7. For a further discussion of how to determine terms' definitions, see *infra* notes 11-16 and accompanying text.

8. For a further discussion of different sources for determining a term's definition, see *infra* notes 11-168 and accompanying text.

9. For a further discussion of consequences resulting from different definitions, see *infra* notes 169-98 and accompanying text.

10. For a further discussion on diversity of explanations, see *infra* notes 197-214 and accompanying text.

II. SOURCES OF DEFINITIONS

A. The Dictionary and Related Online Resources

Often, the first resource for determining a term's definition is the dictionary. The dictionary presently fails to include the terms green buildings, high performance buildings, or sustainable construction buildings and, therefore, offers limited assistance in this inquiry.¹¹ The compound nature of these terms is the primary difficulty in employing the dictionary to uncover a clear meaning.¹² The dictionary provides some guidance regarding the individual components comprising these words, but not of the term itself.

For example, the dictionary's seventh alternative definition for "green" states "[a] supporter of a social and political movement that espouses global environmental protection, bioregionalism, social responsibility, and nonviolence."¹³ While this may suffice if the term used includes "building green," often these words are reversed and "green" becomes the modifying adjective of "building." Under such situations, the dictionary's twelfth definition uses "favoring or supporting environmentalism."¹⁴ Moreover, the term "sustainable," when used as an adjective, is defined as "[c]apable of being continued with minimal long-term effect on the environment: sustainable agriculture."¹⁵ Although this definition provides a more descriptive basis for defining green buildings, it does not contain any reference to the uniqueness of a construction project, which includes creating a structure, its lifecycle, its occupants, and economic factors affecting its development. Accordingly, the dictionary provides only nominal insight into the definitions of these terms. It fails to consider the current usage by those involved in these types of projects and is completely devoid of certain relevant terms, including high-performance buildings.

Another contemporary resource for defining terms is the website Wikipedia.org (Wikipedia). Wikipedia is an online encyclopedia updated by users, and therefore may or may not contain citations supporting definitions. Wikipedia supplies a definition of "green building."¹⁶ The entry for this term includes an analysis of a

11. *But see* AMERICAN HERITAGE COLLEGE DICTIONARY 608, 1390 (4th ed. 2004) (giving separate definitions for "green" and "building").

12. *See id.* (noting obstacles in reaching unambiguous interpretations).

13. *See id.* (giving alternative definition of term "green").

14. *Id.* (defining term "green" as adjective).

15. *See id.* (defining term "sustainable" as adjective).

16. *See* Wikipedia, Green Building, available at http://en.wikipedia.org/wiki/Green_building (last visited Apr. 21, 2009) (defining "green building").

variety of sources used in deriving this definition. While Wikipedia's frequent user updates provide fluid definitions, its scholarly validity is questionable when the definition contains few appropriate citations.

B. Charles J. Kibert, Ph.D.

Dr. Kibert was one of the first authors to attempt to define the various terminology associated with green buildings. His writings set forth distinctions between the terms used to describe these types of buildings.¹⁷ Dr. Kibert explains that some scholars use the terms "sustainable construction, sustainable architecture, ecological architecture, ecologically sustainable design, and ecologically sustainable development" interchangeably.¹⁸ According to Kibert's definition of sustainable construction, derived from the Conseil International du Bâtiment, the expression that describes these buildings encompasses "creating a healthy built environment based on ecologically sound principles."¹⁹ This definition applies to a life cycle as applied to the built environment.²⁰ Moreover, usage of the materials, land, energy, and water are considered under a rubric that sets forth the guiding principles for use of the label "sustainable construction."²¹

A strict definition of "sustainable green building" requires that the structure completely depend on renewable energy sources, use closed material loops, and fully integrate its existence into the landscape.²² Kibert concludes that the term "green building" applies

17. See generally Kibert 1, *supra* note 5, at 9; Charles J. Kibert, *Policy Instruments For A Sustainable Built Environment*, 17 J. LAND USE & ENVTL. LAW 379 (2002) [hereinafter Kibert 2]; Charles J. Kibert, *Green Buildings: An Overview of Progress*, 19 J. LAND USE & ENVTL. LAW 491 (2004) [hereinafter Kibert 3]. Dr. Kibert is a Professor and Director of the Powell Center for Construction and Environment at the University of Florida with numerous publications and editorial positions pertaining to sustainability in addition to the preceding citations. See Dr. Charles J. Kibert, Univ. of Fla., <http://web.dcp.ufl.edu/ckibert/Bio.html> (last visited May 8, 2009).

18. See Kibert 1, *supra* note 5, at 12 (demonstrating interchangeable use of terms); Kibert 2, *supra* note 17, at 383 (noting various substitutes used).

19. See Kibert 1, *supra* note 5, at 12 (elaborating on definition of sustainable construction); Kibert 2, *supra* note 17, at 383 (elaborating on definition of sustainable construction).

20. See Kibert 1, *supra* note 5, at 12 (defining term in relation to life cycle as applied to built environment); Kibert 2, *supra* note 17, at 383 (defining term). Dr. Kibert further clarifies that the lifecycle of the built environment includes: "planning, design, construction, operation, renovation and retrofit, and the end-of-life fate of its materials." See Kibert 1, *supra* note 5, at 12; Kibert 2, *supra* note 17, at 383.

21. See Kibert 1, *supra* note 5, at 12 (setting forth guiding principles for use of term); Kibert 2, *supra* note 17, at 383 (considering resources of construction).

22. See Kibert 1, *supra* note 5, at 13; Kibert 3, *supra* note 17, at 492 (discussing entire life-cycle of sustainable construction built environment).

only to structures that adhere to the philosophy and practices of sustainable construction.²³ Green building, reasons Kibert, is a subset of the more general category of sustainable construction.²⁴ Kibert thus defines a “green building” as “healthy facilities designed and built in a resource-efficient manner, using ecologically based principles.”²⁵

Kibert labels high performance buildings as those “facilities designed, built, operated, renovated, and disposed of using ecological principles for the purpose of promoting occupant health and resource efficiency and minimizing the impact of the built environment on the natural environment.”²⁶ From this definition, he clarifies that the term high performance only reflects on the use of best practices within a particular project while trying to achieve the ultimate goal of a strictly compliant sustainable green building structure.²⁷ Kibert also references the Whole Building Design Guide’s definition of high performance commercial building. High performance commercial buildings under this definition “use[] *whole-building design* to achieve energy, economic, and environmental performance that is substantially better than standard practice.”²⁸ The concept of whole-building design requires collaboration by all disciplines throughout the construction process.²⁹ The synthesis of these definitions shows that a high performance build-

23. See Kibert 1, *supra* note 5, at 12; Kibert 3, *supra* note 17, at 492. Dr. Kibert asserts the process as one of “trial and error” that incrementally begins to encompass more principles of sustainability in an effort that strives to attain a completely sustainable development that respects the environment in all aspects of its life cycle. See Kibert 1, *supra* note 5, at 12.

24. See Kibert 3, *supra* note 17, at 492 (identifying green building as falling under umbrella of sustainable construction).

25. See Kibert 1, *supra* note 5, at 12 (describing green buildings).

26. See Kibert 3, *supra* note 17, at 491-92 (explicating high performance buildings).

27. *Id.* (clarifying limitations on projects included under high performance category).

28. See Kibert 1, *supra* note 5, at 12 (defining term). In the text of his book, Dr. Kibert states that this definition comes from the U.S. Department of Energy’s Office for Energy Efficiency and Renewable Energy; however, his endnote actually cites the Whole Building Design Guide’s website, which is maintained by the National Institute for Building Sciences. *Id.* at 13, 23. See Whole Building Design Guide, About the WBDG, <http://www.wbdg.org/about.php> (last visited Apr. 15, 2009); United States Environmental Protection Agency, Green Building, <http://www.epa.gov/greenbuilding/index.htm> (last visited Apr. 8, 2009).

29. See Kibert 1, *supra* note 5, at 13. Moreover, he cites the Rocky Mountain Institute’s (RMI) definition to explain that “*whole-systems thinking* is a process through which the interconnections between systems are actively considered, and solutions are sought that address multiple problems.” See Kibert 1, *supra* note 5, at 12. By using this approach, the developer can usually achieve cost savings, which often are reinvested in cutting edge building technologies. *Id.*

ing only represents the current state of construction technology and demarcates the progress the industry has made towards achieving the larger goal of a sustainable built environment.³⁰

C. The Urban Land Institute

The Urban Land Institute (ULI) defines the phrase “green office building” by explaining the terms and examples of a green office building’s characteristics.³¹ First, the ULI states that a green building is unlike a conventional one because it requires a highly integrated approach of the different people involved in its construction.³² Furthermore, a green building incorporates certain characteristics that give rise to environmentally sustainable outcomes.³³ These attributes include recognition of its environment and setting, efficient use of resources, preferences towards environmentally friendly materials, and features that positively affect occupants’ comfort and health.³⁴

The ULI affirms that a green building respects its surroundings and the environment on many levels.³⁵ First, it uses resources efficiently and contains environmentally friendly products.³⁶ The resource usage manifests as conservation in energy, water, and waste.³⁷ This approach may include efforts such as: (1) reducing the scale of mechanical systems; (2) monitoring details such as the orientation of the structure; (3) installing better insulation; and (4)

30. See Kibert 1, *supra* note 5, at 13; Kibert 3, *supra* note 17, at 491-92 (observing confluence of confluence of definitions).

31. See ANNE B. FREJ, GREEN OFFICE BUILDINGS: A PRACTICAL GUIDE TO DEVELOPMENT, 1-23 (ULI 2005) (referring to ULI’s definition of “green office building”).

32. *Id.* at 4 (explaining that this collaborative method often produces results unconceivable under the traditional development practices).

33. *Id.* (contrasting different approaches).

34. FREJ, *supra* note 31, at 4-8 (listing positive characteristics of green buildings).

35. *Id.* at 4 (discussing positive effects of green buildings on surrounding environment). The author gives examples of a building in Pittsburgh located on a brownfield site (land used previously for industrial purposes) and another development in Illinois where the project included rehabilitation of wetlands and the indigenous surroundings. *Id.*

36. *Id.* at 4 (highlighting green buildings’ contribution to environment).

37. *Id.* at 5 (discussing resource conservation). According to the GreenSpec Directory, green products should meet one of the following six criteria:

“[1] Be made from salvaged, recycled, or agricultural waste content; [2] Conserve natural resources; [3] Reduce environmental impacts during construction, demolition, or renovation; [4] Save energy or water; [5] Contribute to a safe, healthy indoor environment; and [6] Avoid toxic or other emissions.”

Id. at 8.

using natural light with the strategic placement of windows.³⁸ Moreover, computers maximize performance throughout the life of the building by modeling, monitoring and managing the development from its conception to its operational energy usage phase.³⁹

On another level, ULI's definition considers the human element in defining a green building.⁴⁰ Under this definition, a green building contains features that improve occupants' lives, such as the use of natural light, the ability to individually control the building's climate, and the absence of materials that release harmful chemicals into the air.⁴¹ By including these features, the developers create better comfort and health for the building's occupants and increase workplace productivity.⁴² In sum, the ULI defines a green building as one that emphasizes holistic performance of design, engineering, and construction to create a building that respects the environment⁴³ while conserving materials, efficiently utilizing resources,⁴⁴ and positively influencing the comfort and health of its occupants.⁴⁵

D. The Federal Government

When considering the federal government's definitions, three recent events play a significant role. First, the Energy Policy Act of 2005 directed the National Institute of Building Sciences (NIBS) to investigate whether the current voluntary standards adhere to cut-

38. FREJ, *supra* note 31, at 5 (discussing possible efforts used in approach). The authors cite an example in Zimbabwe where African termite mounds inspired cooling systems that use air cooled underground to force hot air out of chimneys in the structure; and a heat exchange approach in San Francisco where the water in the bay provides a natural chill for the building's cooling system. *Id.* at 8.

39. *Id.* at 8 (discussing role of computers in development of building). Among the many technological innovations that promote efficiency, the structure may include occupancy sensors for maximum usage of natural light through window and blind control and dual system HVAC units that allow for either electricity or natural gas power to take advantage of pricing differences. *Id.*

40. *Id.* (taking building users' livelihood into account when defining green office building).

41. *See* FREJ, *supra* note 31, at 8 (outlining how features unique to green office buildings affect occupants).

42. *Id.* (discussing effects of green building features on tenants' and users' health and productivity).

43. *Id.* (reviewing definition of green building). Aspects that take into account respect for the environment include siting, design, construction, operation, maintenance, and removal of materials.

44. *Id.* (discussing resources utilized). These resources include but are not limited to water and energy. *Id.*

45. *See generally* FREJ, *supra* note 31 (determining health and comfort influences for green building occupants). The definition may or may not include sustainable construction or high performance attributes. *Id.*

ting edge technology.⁴⁶ The Energy Policy Act also recommended that NIBS analyze actions that would hasten the adoption of an elevated benchmark.⁴⁷

Second, Executive Order (EO) 13423⁴⁸ strengthened a January 2006 memorandum that brought together nineteen different agencies as envisioned by the Office of the Federal Environmental Executive (OFEE).⁴⁹ In this EO, signed by President George W. Bush on January 24, 2007, the governmental agencies received direct guidance to adhere to the Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding (MOU).⁵⁰ This compelled all parts of the federal executive branch to abide by high performance and sustainable building standards.⁵¹

Lastly, Congress tried to codify many of the objectives of EO 13423 through the Energy Independence and Security Act of 2007.⁵² This act launched energy management goals, as well as requirements and revised sections of the National Energy Conservation Policy Act (NECPA).⁵³ The Energy Independence and Security Act gave specific directives to the General Services Administration (GSA) and the Department of Energy (DOE) regarding high performance and green buildings.⁵⁴

46. Energy Policy Act of 2005, Pub. L. No. 109-058, § 914 (2005) (requiring NIBS to study whether voluntary compliance standards were in harmony with state-of-the-art technological standards).

47. *See id.* (recommending further analysis). NIBS explains that this is a combined effort with the U.S. Department of Energy and other standards organizations to fulfill this directive from Congress. NAT'L INST. OF BLDG. SCI., CURRENT NIBS PROGRAMS & PROJECTS, <http://www.nibs.org/projhp.html> (last visited Apr. 14, 2009).

48. Exec. Order No. 13423, 72 Fed. Reg. 3919 (January 26, 2007) (announcing that it is U.S. policy for federal agencies to conduct their environmental, transportation, and energy-related activities in environmentally sound ways that are "continually improving").

49. GEN. SERV. ADMIN., SUSTAINABILITY MATTERS, at 13 (2008) [hereinafter GSA Sustainability Matters] (discussing interagency effort to incorporate sustainability into construction projects).

50. *See* Exec. Order No. 13423, *supra* note 48 (ordering that agencies comply with MOU for agency building construction and renovation).

51. *Id.* (requiring that agency building construction and major renovation comply with NOU).

52. *See* GSA Sustainability Matters, *supra* note 49, at 13 (discussing governmental efforts to encourage sustainable building).

53. Energy Independence and Security Act of 2007, Pub. L. No. 110-140, § 437, 121 Stat. 1492, 1619-1620 (2007) (ordering that Comptroller General conduct study analyzing effectiveness of implementing section 305(a)(3)(D) of Energy Conservation and Production Act).

54. *Id.* (outlining specific areas for Comptroller General's review).

1. NIBS

After passage of the Energy Policy Act of 2005 (Act), the DOE, in conjunction with NIBS, received direction with respect to developing requirements that identify the performance standards of a “high performance building.”⁵⁵ In the Act, Congress defined a high performance building as “a building that integrates and optimizes all major high-performance building attributes, including energy efficiency, durability, life-cycle performance, and occupant productivity.”⁵⁶ This language traces its roots to the Whole Building Design Guide.⁵⁷ In the mid-1990s, the Sustainable Building Industry Council worked with various parts of the government to develop sustainability principles.⁵⁸ To further its efforts, it formed the Whole Building Coalition, which successfully lobbied Congress to use a definition of high performance buildings in a consistent manner with the Whole Building Design Guide and to require further studies of the standards by the NIBS.⁵⁹

When Congress subsequently passed the Energy Independence and Security Act of 2007, it used an expanded definition of a high performance building.⁶⁰ At that time Congress defined a high performance building as “a building that integrates and optimizes on a life cycle basis all major high performance attributes, including energy conservation, environment, safety, security, durability, accessibility, cost-benefit, productivity, sustainability, functionality, and operational considerations.”⁶¹ The NIBS formed an ad hoc committee to assist in the task of defining high performance build-

55. See Energy Policy Act of 2005, Pub. L. No. 109-058, § 914 (outlining standards for NIBS and Department of Energy assessment).

56. *Id.* (providing working definition for “high performance building”).

57. See Sustainable Buildings Industry Council, Our Organization: Mission and Vision [hereinafter SBIC], <http://www.sbicouncil.org/displaycommon.cfm?an=1&subarticlenbr=92> (last visited Apr. 20, 2009). The “Whole Building” Design Guide was developed by the NIBS to provide government and industry practitioners with “one-stop access to up-to-date information on a wide range of building-related guidance, criteria and technology from a ‘whole buildings’ perspective.” See Whole Building Design Guide, About the WBDG, <http://www.wbdg.org/about.php> (last visited Oct. 9, 2009).

58. *Id.* (discussing relationship with government). This included the General Services Administration, the Department of Defense, the Environmental Protection Agency, and the Department of Energy. *Id.* The effort later turned into the Whole Building Design Guide, which became the first internet website to provide free access to all government building related criteria and guidance as well as best practices. *Id.*

59. *Id.* (discussing history of SBIC).

60. See Energy Independence and Security Act of 2007, Pub. L. No. 110-140, § 401 (defining “high performance building”).

61. *Id.* (defining “high performance building”).

ings.⁶² In its December 2008 report to Congress, the committee noted that both of the legislative definitions support the conclusions that a high performance building must maximize all attributes because trade-offs become necessary to garner superior outcomes as a whole.⁶³ Moreover, the committee surveyed the various private and governmental programs available and discovered that many standards promoted one attribute over another so as to prevent an all-inclusive and harmonious approach for a high performance building.⁶⁴ The committee adopted the following definition: “high performance buildings, which address human, environmental, economic and total societal impact, are the result of the application of the highest level design, construction, operation and maintenance principles—a paradigm change for the built environment.”⁶⁵ The NIBS explained that competing interests in the building community needed balance.⁶⁶ This revised definition takes into account the whole building in the context of greater human, environmental, and economic concerns while understanding the progress technology brings to a building’s performance and delivery.⁶⁷

The committee also discussed sustainability.⁶⁸ They pointed out that sustainable building standards provide leadership for environmental progress, which they define as “taking a holistic, systems approach to defining preferred performance; pushing the science of life cycle assessment; defining strategies for dramatically better energy efficiency and decreased aggregate energy usages; asking the tough questions about chemicals of concern; and most importantly, balancing environmental, economic, and social considerations.”⁶⁹ The committee concluded that those in charge of creating sustainable building benchmarks must view the process inclusively,

62. NAT’L INST. OF BLDG. SCI., ASSESSMENT TO THE US CONGRESS AND U.S. DEPARTMENT OF ENERGY ON HIGH PERFORMANCE BUILDINGS, 1-6 (2008) [hereinafter Assessment on High Performance Buildings].

63. *Id.* at 4 (recognizing individual improvements are often in conflict with one another).

64. *Id.* at 5 (finding that many high performance standards often clash with one another).

65. *Id.* at 6 (announcing Council’s adopted definition of “high performance building”).

66. *Id.* at 7 (recognizing that building community is faced with several different, and often competing, concerns, including green building movement and post-9/11 safety and security concerns).

67. *See id.* at 7-8 (discussing many factors in past few decades influencing new definition).

68. *Id.* at 11 (outlining efforts of NIBS’ Sustainability Committee).

69. *Id.* at 12 (discussing how sustainable building efforts apply to overall environmental movement).

so that open dialogue will foster lasting change in the industry.⁷⁰ The NIBS approach defines sustainable construction as a subset of principles encompassing a high performance building that require a holistic approach to balance all interests for the greater good of the entire project.

2. General Services Administration

Taking the lead for many years on this subject,⁷¹ the General Services Administration (GSA) operates an Environmental Program that works in conjunction with its other initiatives in Sustainable Design and Energy.⁷² In addition to these efforts, the GSA now mostly works in conjunction with the Sustainable Building Industry Council and other parts of the executive branch to keep the Whole Building Design Guide current while promoting the whole building approach for projects within its jurisdiction.⁷³

In accordance with the Energy Independence and Security Act of 2007 (EISA), the Government Accountability Office (GAO) recently issued a report detailing the GSA's efforts to comply with EISA.⁷⁴ In its report, the GAO noted GSA's creation of the Office for High Performance Green Buildings, which would identify and determine standards for "high performance green buildings."⁷⁵ By giving the office such a name, the GSA appears to classify "high performance" as a type of green building. From a grammatical perspective, "high performance" is the adjective describing the next adjective "green" which modifies the noun "buildings."⁷⁶ This allows one to preliminarily infer that the GSA considers high per-

70. *Id.* (identifying several performance indicators in assessing sustainable building standards).

71. See GSA Sustainability Matters, *supra* note 49, at 6-19 (revealing GSA's integral role).

72. See Gen. Serv. Admin., Environment Program Overview, http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_OVERVIEW&contentId=8571 (last visited Apr. 16, 2009) (providing overview of GSA Environmental Program).

73. See GSA Sustainability Matters, *supra* note 49, at 12 (explaining GSA's partnership with NIBS).

74. Letter from Government Accountability Office, Status of GSA's Implementation of Selected Green Building Provisions of the Energy Independence and Security Act of 2007 (Oct. 31, 2008) [hereinafter GAO Letter] (highlighting GAO's observations).

75. *Id.* (discussing role of Office for High Performance Green Buildings). The report explained that the GAO provided an advance copy to the GSA for review and comment but made no recommendations for changes regarding the name of the office or its mission. *Id.*

76. *Id.* (describing how high performance alters other terms).

formance as a subset category for “green” when applied to buildings.⁷⁷

Moreover, the GAO report discussed the GSA’s decision to assess its sustainable design achievements through the United States Green Building Council’s Leadership in Energy and Environmental Design.⁷⁸ This program also uses the term “high performance green building” in its indirect definition, while using the term “sustainable” separately as well.⁷⁹ Likewise, in its Sustainable Design Program, the GSA explains that “sustainable design seeks to reduce negative impacts on the environment, and the health and comfort of building occupants, thereby improving building performance.”⁸⁰ While this definition does not encompass the construction aspect, it does provide relevant insight into the building component of sustainability from the GSA.⁸¹ Notably, this definition makes no mention of high performance or green building in defining the term. In further explaining its goals, however, the GSA notes that the agency intends to make sustainability a seamless yet integral part of both the design and construction aspects of its projects.⁸² The GSA follows the United States Green Building Council by distinguishing between the terms in creating an office with a mission that uses “high performance” to modify “green building” while leaving sustainable design with its own unique definition.⁸³

3. Department of Energy

In 1998, the Department of Energy (DOE) created a High Performance Building Program to develop a twenty-year plan for research and creation of energy efficient technologies for buildings.⁸⁴

77. *Id.* (providing basis for GSA’s consideration).

78. *See id.* (noting reasons behind GSA’s determinations); GSA Sustainability Matters, *supra* note 49, at 14; U.S. GEN. SERV. ADMIN., SUSTAINABLE DESIGN PROGRAM, http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_OVERVIEW&contentId=8154 (last visited Apr. 16, 2009) (outlining GSA’s Sustainable Design Program).

79. For further discussion of the program’s use of the term, see *infra* note 80-83 and accompanying text.

80. *See* Sustainable Design Program, *supra* note 78 (discussing GSA’s Sustainable Design Program)

81. *See id.* (noting that sustainable design principles apply to several components of building process).

82. *See id.* (discussing future impact of sustainable design on current building design and construction process).

83. *See id.* (outlining various aspects of Sustainable Design Program). For further information concerning the United States Green Building Council, see *infra* note 144 and accompanying text.

84. *See* Int’l Ass’n of Certified Home Inspectors, High Performance Buildings, <http://www.nachi.org/highperformancebuilding.htm> (last visited Apr. 16, 2009)

Until August 2008, the DOE's Energy Efficiency and Renewable Energy section maintained a High Performance Building Program website. Thereafter, it launched a replacement program called the Net-Zero Energy Commercial Building Initiative.⁸⁵ Under the new program, the DOE defers to the definitions promulgated by the NIBS in connection with the Whole Building Design.⁸⁶

One DOE laboratory, however, published its own documentation that explains the design process, and concerns related to it, for energy efficient buildings as well as the benefits of sustainable design.⁸⁷ The *Los Alamos National Laboratory Sustainable Design Guide* ("Guide") contains definitions for sustainable development and high performance building as the organization looks to replace many of the first generation structures at the Los Alamos National Laboratory (LANL).⁸⁸ The LANL believes sustainable development is a key ingredient to creating an exceptional work environment.⁸⁹ The Guide defines sustainable development as "developing the built environment while considering environmental responsiveness, resource efficiency, and community sensitivity."⁹⁰ It further explains that sustainable development includes the materials used in construction and maintenance, operating needs such as energy and water, and the human factor of productivity and health.⁹¹ The Guide goes on to state that other terminology like "climate-sensitive design, whole-building design, or high-performance buildings" often become synonyms.⁹² The Guide, nevertheless, later puts for-

(highlighting efforts involved in high performance building construction and renovation).

85. See U.S. Dep't of Energy, DOE to Pursue Zero-Net Energy Commercial Buildings (Aug. 5, 2008), <http://www.energy.gov/print/6454.htm> (announcing launch of Department of Energy's Zero-Net Energy Commercial Building Initiative).

86. See Off. of Energy Efficiency & Renewable Energy, About the Commercial Building Initiative, http://www1.eere.energy.gov/buildings/commercial_initiative/about.html (last visited Apr. 16, 2009) (discussing deferential relationship).

87. See Off. of Energy Efficiency & Renewable Energy, Commercial Building Design Guides, http://www1.eere.energy.gov/buildings/commercial_initiative/guides.html (last visited Apr. 16, 2009) (explaining concerns arising from design process of energy efficient buildings).

88. See LOS ALAMOS NAT'L LAB., SITE AND PROJECT PLANNING, LANL Sustainable Design Guide 1-9 (2003) [hereinafter LANL], available at http://apps1.eere.energy.gov/buildings/publications/pdfs/commercial_initiative/sustainable_guide_ch1.pdf (detailing LANL's mission, vision, purpose and organization).

89. *Id.* at 2 (discussing LANL's attempt to form and foster exceptional work environment).

90. *Id.* (noting LANL's interpretation of sustainable development).

91. *Id.* (elaborating on what constitutes sustainable development).

92. *Id.* (observing terms that are used interchangeably).

ward a specific definition for a high performance building.⁹³ It states, “high-performance buildings are designed and built to minimize resource consumption, to reduce life cycle costs, and to maximize health and environmental performance across a wide range of measures – from indoor air quality to habitat protection.”⁹⁴

While the Guide equates the sustainable development and high performance buildings, distinctions appear between the two when looking at their individual definitions. The most obvious is that a sustainable development merely considers several factors, whereas the high-performance building tries to positively maximize the impact of specific features. Despite the Guide alluding to the equivalence of the terms, the DOE provides distinctions in the definitions as well as in their ultimate goals through the *LANL Sustainable Design Guide*.

E. Environmental Protection Agency

Interestingly, the Environmental Protection Agency (“EPA”) does not generally view green buildings as a regulatory issue, so no official definition exists at this time.⁹⁵ The EPA nevertheless publishes a pamphlet and maintains a website on the subject.⁹⁶ The EPA recognizes that not only do buildings fulfill one of our basic needs for shelter, they also shape our physical and natural surroundings.⁹⁷ As a result, it sets forth a definition in these publications that is a derivation from a task force report written for the OFEE in the White House.⁹⁸

In 2002, the OFEE issued *The Federal Commitment to Green Building: Experiences and Expectations* report.⁹⁹ In this report, one of the

93. LANL, *supra* note 88, at 5. (noting LANL’s need for its own interpretation).

94. *Id.* (elaborating on purposes behind high performance buildings).

95. E-mail from Ken Sandler, Co-Chair, United States Environmental Protection Agency’s Green Building Workgroup, to Darren A. Prum, Visiting Lecturer, University of Nevada (April 2, 2009, 1:37 PM PDT) (discussing EPA view that green buildings are generally not regulatory issue). The EPA does regulate buildings with respect to lead, asbestos, and construction storm-water runoff controls. *Id.*

96. See U.S. Envtl. Prot. Agency, <http://www.epa.gov/greenbuilding/> (last visited Sept. 27, 2009) (explaining definition of “green building” and why they are advantageous).

97. *Id.* (acknowledging integral role of buildings).

98. E-mail from Ken Sandler, *supra* note 95 (noting basis for EPA’s definition despite green buildings not being classified regulatory issue).

99. US OFEE STUDY, *supra* note 3, at 8. In this groundbreaking White House report, the federal government evaluated and assessed its commitment, through policy and practice, to further enhance its portfolio of buildings with regard to environmental sustainability issues. *Id.* No other central source of information has conveyed a complete picture of the federal government’s efforts with respect to

fundamental issues the authors tackled was a definition for “green building.”¹⁰⁰ They defined 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.”¹⁰¹

In refining this definition, the EPA’s website explains that a “green building is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building’s life-cycle from siting to design, construction, operation, maintenance, renovation and deconstruction.”¹⁰² The literature goes on to state that sustainable and high performance buildings are synonymous with green.¹⁰³ Hence, the EPA does not distinguish between the different terms when describing a green building, a high performance building, and sustainable construction.

F. Federal Trade Commission

Recently, the Federal Trade Commission (FTC) began reviewing its “Green Guides” in relation to buildings and the products used in their construction in order to avoid unfair or deceptive marketing claims.¹⁰⁴ While these original guidelines were first published in 1992, they were updated in 1996 and 1998.¹⁰⁵ After soliciting input from the public through three scheduled workshops in 2008, the Agency expects to put forward a new revision of “Green Guides” to better define these terms for consumers and sellers.¹⁰⁶

Clearly, the federal government does not have a cohesive definition for each of the terms. Many agencies appear to have created

environmental sustainability efforts in relation to buildings. *Id.* Thus, through their recommendations, the report’s authors hope to begin such a comprehensive activity while commencing a dialogue amongst the numerous stakeholders that may provide leadership and generate prospects for greater federal stewardship. *Id.*

100. *Id.* (noting central focus of report).

101. *Id.* (describing OFEE’s definition of green buildings).

102. See U.S. Envtl. Prot. Agency, Green Buildings Basic Information, <http://www.epa.gov/greenbuilding/pubs/about.htm> (last visited Oct. 9, 2009).

103. *Id.* (explaining why EPA uses green building, high performance building and sustainable construction interchangeably).

104. See Fed. Trade Comm’n, Reporter Resources: The FTC’s Green Guides, <http://www.ftc.gov/opa/reporter/greengds.shtm> (last visited Apr. 8, 2009) (explaining that Green Guides are intended “to help marketers avoid making environmental claims that are unfair or deceptive under Section 5 of the FTC Act”).

105. *Id.* (pointing out subsequent amendments).

106. *Id.* (addressing public’s concerns through opportunities for comments).

their own definition or borrowed one to suit its needs based on its jurisdictional mandate; however, the NIBS efforts in the Whole Building Design Guide may succeed in bringing many of the federal agencies together for a possible unified term descriptors in the future.¹⁰⁷

G. State and Local Governments

In addition to the federal government, several state and local governments have defined some of these terms. While none have the same scale of impact as the efforts undertaken by the federal government, an examination of these smaller and more nimble jurisdictions can provide some additional insight on the proper usage of terms from a localized and grassroots basis.

At the state level, many states encourage or require the construction of buildings that conform to one of the three terms.¹⁰⁸ Often, as discussed later, a third-party verification system defines the term; however, various states such as Washington, Minnesota, and Pennsylvania have already put forward their own definitions.

1. Washington

Depending on the agency, the State of Washington offers either a very general or a more specific definition for a “green building”.¹⁰⁹ The Washington State Department of Ecology takes a broad base approach by defining the term as one that “refers to both the practice and product of creating buildings which are better for our health, environment, and economy.”¹¹⁰ The Washington State Department of General Administration, however, utilizes

107. See Nat'l Inst. of Bldg. Sci., Whole Building Design Guide (WBDG), <http://www.nibs.org/index.php/wbdg/> (last visited Sept. 28, 2009) (explaining that WBDG incorporates federal and private sector definitions and criteria to encourage integrated thinking).

108. See Darren A. Prum, *Creating State Incentives for Commercial Green Buildings: Did the Nevada Experience Set an Example or Alter the Approach of Other Jurisdictions?* 34 WM. & MARY ENVTL. L. & POL'Y REV. (forthcoming 2009-2010), available at <http://elpr.org/journal-articles/volume-34/> (comparing approaches to green building incentives in various states).

109. Compare Washington State Dep't of Ecology, Green Building, <http://www.ecy.wa.gov/programs/swfa/greenbuilding/> (last visited May 5, 2009) [hereinafter WA DEC], with Washington State Dep't. of Gen. Admin., Green Building, <http://www.ga.wa.gov/EAS/green/aboutGB.htm> (last visited May 5, 2009) [hereinafter WA GA].

110. WA DEC, *supra* note 109. The Department of Ecology further explains: Definitions of green building vary, but the green building movement has three main goals:

- Ensure a healthy, productive indoor environment for occupants to work and live

a slightly more precise explanation and defines a green building as “a holistic approach that minimizes environmental impact, reduces maintenance, and creates a more desirable workspace for the building occupants.”¹¹¹

These two definitions basically create the same description; but the Department of General Administration takes a rather generalized version from the Department of Ecology, and adds a few more specifics.¹¹² The Department of Ecology also precedes its definition by explaining that sustainable construction and green building both mean the same thing.¹¹³ Similar to statutory construction analysis for the combined term, “high performance green building” previously discussed in the GSA section, the Department of Ecology uses the expression on its own Green Building webpage.¹¹⁴ This indicates that the Department also looks at high performance characteristics as a type of green building.

Washington State’s definition and explanations, therefore, indicate that a green building and sustainable construction generally mean the same thing, but may or may not necessarily include high performance attributes.

2. Minnesota

Similarly to Washington, the state of Minnesota, through its administrative agency, Minnesota Planning, applies the same definition to all three terms: “green buildings,” “high performance buildings,” and “sustainable construction buildings.”¹¹⁵ Minnesota also expands the “green building” definition to include the terms, “green architecture,” “green design,” and “whole buildings” as synonymous expressions.¹¹⁶ The agency then defines these terms as “a comprehensive and integrated approach to buildings that strives

-
- Prevent negative impacts to our environment and improve its health
 - Reduce operating costs and increase profitability for building owners through energy and resource conservation.

Id.

111. WA GA, *supra* note 109 (providing more accurate description of green buildings).

112. See WA DEC, *supra* note 109 (defining “green building” broadly); see also WA GA, *supra* note 109 (building on WA DEC’s definition of “green building”).

113. *Id.* (equating sustainable construction with green building).

114. See WA DEC, *supra* note 109 (drawing parallels between statutory construction methods employed).

115. See Minnesota Planning, *Return on Investment: High Performance Buildings*, PERSPECTIVES 3, Jan. 2002 [hereinafter MN Planning] (discussing Minnesota’s approach to high performance buildings).

116. *Id.* (including other terms under umbrella of green buildings).

to enhance human comfort and productivity while minimizing the building's lifetime economic and environmental costs, including siting, water, energy and materials use, indoor environmental quality and solid and hazardous waste impacts."¹¹⁷ Furthermore, the agency points out that there are many different viewpoints as to what is considered a high performance building due to the lack of a uniform standard.¹¹⁸ As a result, Minnesota Planning observed and grouped the following distinguishing features that these buildings possess:

- Sometimes lower investment costs;
- Less expensive and easier to operate and maintain over their useful lifetimes;
- More energy efficient, potentially saving between seventy and ninety percent of traditional energy use;
- More durable and adaptable to future uses
- More efficient in their use of materials and water;
- Less waste produced and overall more environmentally friendly;
- Often built on existing infrastructure and connected to a range of transportation options;
- Healthier, more productive spaces, stimulating average labor productivity gains of between six and 16 percent.¹¹⁹

Thus, the State of Minnesota believes that all of the terms, plus a few more, deserve the same definitions and represent the same type of building but provide something different than those offered through standard practices.¹²⁰

3. *Pennsylvania*

Finally, the Commonwealth of Pennsylvania sets forth definitions for "green buildings" and "high performance green buildings" through the Governor's Green Government Council. The Governor's Green Government Council seeks to "help state agencies lead the Commonwealth towards a goal of zero emissions to air, land, and water by having all employees routinely consider the environmental effects of their policies, practices and daily actions at all

117. *Id.* at 5 (elaborating on definition of green buildings).

118. *Id.* at 4 (acknowledging existence of various interpretations of what constitutes high performance building).

119. *Id.* (listing characteristics of high performance buildings).

120. *Id.* (concluding Minnesota's treatment of green building terms).

levels of decision making.”¹²¹ Their first definitions appeared in the 1999 publication, *Guidelines for Creating Green Buildings*.¹²²

Here, Pennsylvania started with a multifaceted and lengthy explanation of a “high performance green building” that provided an extended yet informative characterization, while placing a dual emphasis on both the basic tangible requirements and the need for a collaborative approach by all stakeholders.¹²³ See Figure 1. Moreover, this publication also uses the compound expression of a “high performance green building,”¹²⁴ which again indicates that “high performance” occurs as a classification of a green building using the statutory construction method previously discussed.¹²⁵

121. Governor’s Green Government Council, www.gggc.state.pa.us/gggc/site/default.asp (last visited Nov. 14, 2009) (describing mission of Governor’s Green Government Council).

122. GOVERNOR’S GREEN GOV’T COUNCIL, GUIDELINES FOR CREATING GREEN BUILDINGS iii (1999), available at <http://www.gggc.state.pa.us/gggc/lib/gggc/documents/1intro.pdf> (familiarizing decision-makers and others involved in the design, construction and development of communities and buildings with the concept of sustainability).

123. *Id.* (explaining PA’s approach to characterization of high performance buildings).

124. *Id.* (noting publication’s combined terminology).

125. *Id.* (associating high performance with green buildings).

FIGURE 1. PENNSYLVANIA'S DEFINITION FOR A HIGH PERFORMANCE GREEN BUILDING FROM *GUIDELINES FOR CREATING GREEN BUILDINGS*¹²⁶

What is a High performance green building?

- A project created via cooperation among building owners, facility managers, users, designers and construction professionals through a collaborative team approach.
- A project that engages the local and regional communities in all stages of the process including design, construction and occupancy.
- A project that conceptualizes a number of systems that, when integrated, can bring efficiencies to mechanical operation and human performance.
- A project that considers the "true costs" of a building's impact on the local and regional environment.
- A project that considers the "life cycle costs" of a product or system. These are costs associated with its manufacture, operation, maintenance and disposal.
- A building that creates opportunities for interaction with the natural environment and defers to contextual issues such as climate, orientation and other influences.
- A building that uses resources efficiently and maximizes use of local building materials.
- A project that minimizes demolition and construction wastes and uses products that minimize waste in their production or disposal.
- A building that is energy and resource efficient.
- A building that can be easily reconfigured and reused.
- A building with healthy indoor environments.
- A project that uses appropriate technologies, including natural and low tech products and systems, before applying complex or resource intensive solutions.
- A building that includes an environmentally sound operations and maintenance regimen.
- A project that educates building occupants and users to the philosophies, strategies and controls included in the design, construction and maintenance of the project.

126. *Id.* (illustrating PA's definition of high performance buildings).

Recently, the Council acknowledged that many definitions exist for “green building” with varying levels of sophistication.¹²⁷ Consequently, the Council set a higher bar for a “green building,” which is now defined as a building that “preserves and restores habitat that is vital for sustaining life and becomes a net producer and exporter of resources, materials, energy and water rather than being a net consumer.”¹²⁸

As a result, the Council set forth a new condensed definition of “green building,” which includes “one whose construction and lifetime of operation assure the healthiest possible environment while representing the most efficient and least disruptive use of land, water, energy, and resources.”¹²⁹ Accordingly, the Commonwealth of Pennsylvania views a “high performance building” as a type of green building with a constantly evolving definition.

4. *Triangle J Council of North Carolina and New York City*

On a local level, the Triangle J Council of Governments in North Carolina and the City of New York provide similar definitions for “green” and “high performance buildings.”¹³⁰ In the New York City guidelines set forth/established by the Department of Design and Construction, the authors preface their definition by pointing out that the terms “green,” “sustainable,” or “high performance” are interchangeable.¹³¹ The characteristics of a high performance building include “from project outset, these building owners, designers, and contractors actively committed to maximizing operational energy savings, providing healthy interiors, and limiting the

127. GOVERNOR’S GREEN GOV’T COUNCIL, WHAT IS A GREEN BUILDING? FUNDAMENTAL PRINCIPLES OF GREEN BUILDING AND SUSTAINABLE SITE DESIGN (2002), available at <http://www.gggc.state.pa.us/gggc/lib/gggc/documents/whatis041202.pdf>. The council points out that a continuum exists for defining a green building with a building that is “not as bad” as the average building in terms of its impact on the environment or one that is “notably better” than the average building, to one that may even represent a regenerative process where there is actually an improvement and restoration of the site and its surrounding environment.

Id.

128. *Id.* (explaining reasons for higher expectations).

129. *Id.* (resulting in further diluted definition).

130. TRIANGLE J COUNCIL OF GOV’TS, HIGH PERFORMANCE GUIDELINES: TRIANGLE REGION PUBLIC FACILITIES I (Sept. 2001) [hereinafter NC Triangle J]. The Triangle J Council of Governments encompasses the counties of Chatham, Durham, Johnston, Lee, Orange, and Wake in North Carolina, which is over 3,300 square miles and includes a population base of over one million people.

131. CITY OF NEW YORK DEP’T OF DESIGN & CONSTRUCTION, HIGH PERFORMANCE BUILDING GUIDELINES 14 (1999) [hereinafter NYC DDC] (providing principles set forth to govern high performance development).

detrimental environmental impacts of the buildings' construction and operation."¹³²

Encompassing many of the same aspects included in the New York City definition, the Triangle J Council of Governments focuses more on three different principles—sustainability, a multidisciplinary integrated approach, and feedback and data collection.¹³³ See Figure 2. By taking this approach, the Council indirectly categorized a “high performance building” as a subset of sustainable construction.

FIGURE 2. NORTH CAROLINA'S TRIANGLE J COUNCIL OF GOVERNMENT'S HIGH PERFORMANCE BUILDING DEFINITION¹³⁴

What is High Performance?

High performance entails designing, constructing, and operating facilities with a strong focus on the following principles:

- *sustainability*, which is a long-term view that balances economics, equity, and environmental impacts;
- *an integrated approach*, which engages a multidisciplinary team at the outset of a project to work collaboratively throughout; and
- *feedback and data collection*, which quantifies both the finished facility and the process that created it and serves to generate improvements in future projects.

Curiously, the New York City and Triangle J definitions both emphasize the collaborative process needed to accomplish their goals, but give little guidance as to what physically constitutes com-

132. *Id.* (listing various features of high performance buildings).

133. See NC TRIANGLE J, *supra* note 130, at 1. The Triangle J Council defines high performance as:

High Performance entails designing, constructing, and operating facilities with a strong focus on the following principles:

sustainability, which is a long-term view that balances economics, equity, and environmental impacts;

an integrated approach, which engages a multidisciplinary team at the outset of a project to work collaboratively throughout; and

feedback and data collection, which quantifies both the finished facility and the process that created it and serves to generate improvements in future projects.

Id.

134. *Id.* (illustrating NC's interpretation of what constitutes high performance).

pliance.¹³⁵ Furthermore, the North Carolina Green Building Technology Database notes that the three different terms are frequently used in lieu of the other.¹³⁶ This website defines “green buildings,” “high performance buildings,” and “sustainable construction buildings” as buildings where “energy, water, and materials are used efficiently during the construction and lifetime of the structure; the health and productivity of occupants is supported; and the impact of the structure on the local and global environment is minimized.”¹³⁷ Hence, both local governments promote the notion that there is no difference in meaning amongst the terms. The Triangle J Council, however, seems to suggest indirectly that a sustainable construction may include high performance buildings in its scope.¹³⁸

State and local governments that put forward their own definitions tend to view high performance as a type of green building or sustainable construction. They tend to focus, however, more on the process to achieve a desired result that complies within their regulatory framework, rather than describing the term first and subsequently setting standards for compliance.¹³⁹

I. Programs from Third-Party Verification Organizations

Major third party programs that evaluate and award achievement levels for compliance with their standards are another set of sources that may shed light on the difference between “green buildings,” “high performance buildings,” and “sustainable construction buildings.” Many jurisdictions choose to embrace all or part of these programs set forth by the third-party verification organizations to assist in setting their own standards.¹⁴⁰ Reasons for this

135. *Id.* at I-10-G84 (illustrating emphasis on collaborative process and goals orientation); see also NYC DDC, *supra* note 131, at 12, 14, 17 (demonstrating emphasis on collaborative process and need for unified effort).

136. See North Carolina Solar Center, North Carolina Green Building Database, <http://www.ncgreenbuilding.org/site/ncg//index.cfm?> (last visited May 7, 2009). The Triangle J Council of Governments sponsors this website. *Id.*

137. *Id.* (defining terms).

138. NC TRIANGLE J, *supra* note 130, at P1-P5 (suggesting concept of sustainable construction includes use of green buildings, utilizing measures including use of renewable resources).

139. For a discussion of local and state governments' focus on ultimate goals of plan at expense of providing clear description of terms, see *supra* note 135 and accompanying text.

140. Prum, *supra* note 108. Nevada originally adopted in whole the USGBC's LEED program as its standard to receive very lucrative tax abatements that met their criteria. When a new administration took office in 2006, the Office of Energy immediately put forward alternative regulations that again embraced the LEED system but allowed projects to still qualify for the preferential tax treatment so long

include convenience, lack of funding, or the absence of expertise in the relevant agency to adequately tackle these issues.¹⁴¹

In providing this service, these organizations deal directly or indirectly with the various terms when drafting their documents.¹⁴² Accordingly, their treatment may also provide guidance on any differences between the terms because so many stakeholders depend on their seal of approval for recognizing the project's accomplishment of a specific standard.¹⁴³

1. *Leadership in Energy and Environmental Design*

One of the most popular building rating systems associated with high performance green buildings in the U.S. comes from the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED). The USGBC does not directly define the term.¹⁴⁴ It does, however, explain that LEED is "a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high performance green buildings."¹⁴⁵ Moreover, the organization clarifies that the program uses a holistic approach to sustainability when applied to a building and its performance.¹⁴⁶

In considering the LEED definition, it appears that the USGBC classifies high performance as a type of green building by using the statutory construction method.¹⁴⁷ Similar to the GSA and other state and local governments, this set of descriptors allows one to deduce that the USGBC also places "high performance" as an inclusive subset of buildings when applied to the term "green."¹⁴⁸ Additionally, the later statement that the LEED program tries to assist

as the only reason why a building failed to meet a LEED standard occurred due to the lack of compliance with the nonsmoking requirement. *Id.*

141. *Id.* (discussing reason jurisdictions adopt programs created by third-party verification organizations).

142. *Id.* (discussing term use in drafting regulations).

143. See NAT'L ASS'N OF HOME BUILDERS, NAHB MODEL GREEN HOME BUILDING GUIDELINES 121 (2006), <http://www.nahbgreen.org/About/default.aspx> (discussing third party inspections as useful in providing proof to homeowners that home is more energy efficient).

144. See U.S. GREEN BLDG. COUNCIL, LEED NEW CONSTR. VERSION 2.2 REFERENCE GUIDE (2005) (illustrating lack of clearly defined terms).

145. See United States Green Building Council (USGBC), LEED Rating Systems, <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=222> (last visited Apr. 8, 2009) (defining LEED).

146. *Id.* (discussing whole-building approach advanced by LEED).

147. *Id.* (discussing whole-building approach advanced by LEED).

148. See *id.* at 4 (discussing how green design enhances productivity and creates sustainable communities).

projects seeking a sustainable solution demonstrates that the USGBC considers each of the three terms to have different meanings.¹⁴⁹ Under the LEED program, therefore, the USGBC indirectly uses language to differentiate these terms leaving “high performance” as a type of “green building” which tries to help those attempting to achieve a “sustainable” solution on their project.¹⁵⁰

2. *Green Globes*

Green Globes provides another popular building rating system linking environmental performance and sustainability through computer software in order to determine levels of achievement.¹⁵¹ Originally based on the United Kingdom’s Building Research Establishment’s Environmental Assessment Method (BREEAM) system, the current North American version is widely used in Canada and endorsed by its government and trade organizations under the name Go Green Plus.¹⁵² In the United States, the Green Building Institute (GBI) owns and operates the Green Globes system.¹⁵³

Similar to LEED, this program also indirectly makes distinctions and explains the Green Globes systems as “a revolutionary green building guidance and assessment program that offers an effective, practical and affordable way to advance the overall environmental performance and sustainability of commercial buildings.”¹⁵⁴ From this explanation, the third-party rating system distinguishes “green building” from “environmental performance,” and “sustainability.”¹⁵⁵ Here, the GBI uses the term green building in a very broad manner that includes both environmental performance and

149. *Id.* (illustrating use of high performance inclusively when describing green buildings).

150. *See* USGBC, *supra* note 145, at 4 (highlighting how USGBC ascribes different meanings to three terms).

151. *See id.* (showing inclusion of high performance as type of green building); *see also* Green Building Initiative, Green Globes Tools, <http://www.thegbi.org/green-globes-tools/> (last visited Apr. 8, 2009).

152. *See* Green Globes Initiative, Green Globes, <http://www.greenglobes.com/about.asp> (last visited Apr. 8, 2009) (describing purpose of Green Globes Initiative); *see also* Green Building Initiative, *Green Globes Tools*, *supra* note 151 (explaining mission of, and approach to, promoting credible and practical green building approaches).

153. *See* Green Globes Initiative, *supra* note 152 (describing system’s adoption in Canada).

154. *Id.* (explaining in U.S., Green Globes is owned and operated by Green Building Initiative).

155. *See* Green Building Initiative, *supra* note 151 (explaining Green Globes system).

sustainability.¹⁵⁶ Moreover, by its sentence construction, the definition also leads one to believe that environmental performance and sustainability have different meanings, but gives no further guidance. Interestingly, unlike many other sources, the GBI uses the word “environmental” instead of “high performance.”¹⁵⁷

Accordingly, the language for the Green Globes program makes a distinction between the three terms in a very implicit manner but seems to indicate that a green building may describe a structure’s environmental performance and sustainability features without giving further details.¹⁵⁸

3. National Green Building Program

Recently, the National Association of Home Builders (NAHB) unveiled its latest initiative to provide green building guidelines for homes across the country.¹⁵⁹ Distinct from other third-party rating systems, the NAHB program allows for different levels of achievement, while also providing a builder with a checklist in order to self-certify.¹⁶⁰ The NAHB premises its program on the fundamental beliefs that the builder needs to think about environmentally friendly alternatives from the onset and that when making choices within the guidelines, the best outcome for the entire home should receive primary consideration.¹⁶¹

In putting together its guidelines, the NAHB explains that “green homes incorporate environmental considerations and resource efficiency into every step of the building and development process to minimize environmental impact.”¹⁶² The NAHB uses the term “green homes” very broadly in conjunction with direct statements of its general components.¹⁶³ It mentions environmental considerations and resource efficiency as components of a green home but chooses to use neither the word “sustainable” nor “high

156. *Id.* (using Green Building Initiative’s explanation to illustrate differentiation between terms).

157. *Id.* (emphasizing GBI’s broad and inclusive use of term “green building”).

158. *Id.* (highlighting GBI’s use of word “environmental” over term “high performance”).

159. See NAT’L ASS’N OF HOME BUILDERS, NAHB MODEL GREEN HOME BUILDING GUIDELINES (2006), available at <http://www.nahbgreen.org/About/default.aspx> (elaborating on NAHB’s efforts to spread sustainability).

160. *Id.* at 7 (describing checklist provided to builders).

161. *Id.* (offering rationale behind NAHB guidelines).

162. See NAT’L ASS’N OF HOME BUILDERS, WHAT IS GREEN HOME BUILDING?, <http://www.nahbgreen.org/About/greenhomebuilding.aspx> (last visited Apr. 8, 2009).

163. *Id.* (offering rationale behind NAHB guidelines).

performance” in its definition.¹⁶⁴ The description does mention minimizing environmental impact in lieu of sustainability and resource efficiency instead of high performance.¹⁶⁵ This means that an NAHB green home includes components that reduce environmental impact through carefully chosen alternatives that take the surroundings into account, and through effective use of the means available.¹⁶⁶

Thus, the NAHB seems to aspire for a home with minimal environmental impact, but uses the term “green” very broadly while avoiding the other terms of high performance and sustainable.¹⁶⁷ Accordingly, all of these third-party verification programs appear to acknowledge some type of underlying meaning for these terms; yet they avoid direct definitions and concentrate their efforts on the process of awarding recognition for the various different levels of accomplishment projects achieve.¹⁶⁸

III. ANALYSIS

In reviewing the authority, it appears that with the exception of the ULI, the FTC, the State of Minnesota, the two local governments, and the NAHB, sources, directly or indirectly, define at least two of the terms distinctly.¹⁶⁹ Dr. Kibert, the GSA, the EPA, the State of Minnesota, the USGBC, and the GBI cover all three in some manner.¹⁷⁰ Nevertheless, the EPA, the State of Minnesota, and the local governments unequivocally state that all three terms mean the same thing.¹⁷¹

164. *See id.* (explaining what it means to build green).

165. *See id.* (mentioning alternative terms).

166. *Id.* (discussing components of NAHB green homes).

167. *Id.* (using term broadly).

168. For further discussion concerning the avoidance of direct definitions by third-party verification programs, see *WHAT IS GREEN HOME BUILDING?*, *supra* note 162 and accompanying text.

169. *See generally* FREJ, *supra* note 31; Reporter Resources: The FTC’s Green Guides, *supra* note 104; MN Planning, *supra* note 115; NYC DDC, *supra* note 131; NC Triangle J, *supra* note 130; What is Green Home Building?, *supra* note 162; Kibert 1, *supra* note 5; Kibert 2, *supra* note 17; Kibert 3, *supra* note 17; Sustainable Design Program, *supra* note 78; EPA Green Building Strategy, *supra* note 28; LANL, *supra* note 88; Assessment on High Performance Buildings, *supra* note 62; GSA Sustainability Matters, *supra* note 49; WA DEC, *supra* note 109; WA GA, *supra* note 109; PA Governor’s Green Government Council, *supra* note 121; USGBC, *supra* note 145; Green Globes Tools, *supra* note 151.

170. *See generally* Kibert 1, *supra* note 5; Kibert 2, *supra* note 17; Kibert 3, *supra* note 17; Sustainable Design Program, *supra* note 66; EPA Green Building Strategy, *supra* note 28; MN Planning, *supra* note 120; USGBC, *supra* note 145; Green Globes Tools, *supra* note 151.

171. *See* EPA Green Building Strategy, *supra* note 28; MN Planning, *supra* note 115; NYC DDC, *supra* note 131; NC Triangle J, *supra* note 130.

Curiously, the third-party rating programs discussed use all, or, most of the terms but generally choose not to actually define them directly.¹⁷² At a basic level, they do at least distinguish between them in an implicit manner so analyzing their indirect approach proves less useful other than providing a basic answer to the question of whether the terms are interchangeable.¹⁷³

Moreover, two of the terms come from distinct origins while the third tends to be a subset of the other two.¹⁷⁴ “Sustainable construction” originates from the Consiel International du Bati-ment,¹⁷⁵ while “high performance building” stems from the U.S. government.¹⁷⁶ Often, however, “high performance building” is used as descriptor for a green building.¹⁷⁷ In contrast, the “green building” term appears to be either a general descriptor or a specific type of sustainable construction depending on the user.¹⁷⁸

A. Sustainable Construction

Starting with the definition of sustainable construction, none of the sources defined the term in a similar or identical manner.¹⁷⁹ Dr. Kibert builds his definition on the Consiel International du Bati-ment,¹⁸⁰ while the U.S. government contains a mixed bag of descriptions depending upon the given agency, followed then by virtually no treatment at the state and local levels.¹⁸¹

One similarity between all the sources is that they all take the environment into account. The GSA program looks for ways to reduce damaging impacts to the environment through design,¹⁸² the LANL makes the environment one of its considerations,¹⁸³ and the

172. See EPA Green Building Strategy, *supra* note 28; MN Planning, *supra* note 115; NYC DDC, *supra* note 131; NC Triangle J, *supra* note 130.

173. For a further discussion of third-party verification systems, see *supra* notes 143-71 and accompanying text.

174. *Id.* (relating distinctions made by third-party verification programs).

175. See Kibert 1, *supra* note 5, at 12; Kibert 2, *supra* note 17, at 383.

176. See Energy Policy Act of 2005, *supra* note 46.

177. See *id.* (promulgating term “high performance building”).

178. For a discussion of varying definitions of “green building,” see *supra* notes 11-168 and accompanying text.

179. For a discussion of the varying definitions of “sustainable development,” see *supra* notes 11-168 and accompanying text.

180. See Kibert 1, *supra* note 5, at 12; Kibert 2, *supra* note 17, at 383 (explaining origins of term “sustainable construction”).

181. For a discussion of the various descriptions ascribed by the federal, state and local governments, see *supra* notes 46-139 and accompanying text.

182. See Sustainable Design Program, *supra* note 78, at 5 (prioritizing environmental health by setting goals such as reducing energy usage and eliminating air pollution released).

183. See *id.* (discussing importance of environment in LANL).

NIBS tries to balance the environmental concerns with others in its holistic, systems approach for top performance.¹⁸⁴ In contrast, Dr. Kibert's description focuses on ecologically sound principles for developing a healthy environment.¹⁸⁵ Consequently, Dr. Kibert asserts a very broad definition whereas the GSA and LANL give a more specific description with the NIBS, providing a very detailed designation for the term "sustainable construction."¹⁸⁶

B. High Performance Building

In contrast to the other terms, "high performance building" is defined consistently among the various sources, with the minor exception of the state and local descriptions. As mentioned before, the modern use of this term seems to originate from the U.S. government. Accordingly, Dr. Kibert defers to a governmental source,¹⁸⁷ while some groups, such as the Whole Building Coalition, take credit for creating the definition used in the Energy Policy Act of 2005.¹⁸⁸

Since 2005, Congress and the NIBS have created further refinements.¹⁸⁹ In doing so, the NIBS put together a committee of both government and industry leaders.¹⁹⁰ This approach gave all parties an opportunity to develop a cohesive definition that did not supply too much clarity or too little uncertainty to the term while balancing competing interests.¹⁹¹

Curiously, third-party verification organizations like the USGBC and GBI, the State of Minnesota, and the Triangle J Council of Government in North Carolina, use this term as a modifier for green buildings or sustainable development in their program descriptions.¹⁹² This indirectly suggests that a high performance

184. See generally Assessment on High Performance Buildings, *supra* note 62 (outlining measures taken to satisfy competing goals of efficiency and environmental safety).

185. See generally Kibert 1, *supra* note 5, at 12 (outlining sustainability in context of green movement).

186. See Kibert 2, *supra* note 17, at 383 (describing principles involved in greening of built environment).

187. For further discussion regarding Dr. Kibert's use of a government source, see *supra* note 24 (citing Department of Energy as source of definition).

188. See SBIC, *supra* note 57 (defining high performance and adoption of its view by other organizations).

189. See Assessment on High Performance Buildings, *supra* note 62, at 5 (outlining definition of high-performance buildings).

190. See *id.* (citing joint effort between LANL and NREL).

191. See *id.* (balancing competing interests).

192. See generally MN Planning, *supra* note 115 (using term "high performance buildings" in lieu of "green buildings").

building may become a green building based on its achievement of a specific standard. Hence, the NIBS's latest definition in its 2008 assessment provides a good balance including all interested parties, and should receive uniform adoption by both the government and industry.

C. Green Building

As the most complicated term, green building provides the most diversity on one hand, and the most used identifier in a broader sense. The ULI, the State of Washington, the State of Minnesota, the City of New York, and the Triangle J Council of Governments in North Carolina explain that a green building incorporates a holistic approach within the development process while taking into consideration the surroundings, the materials used and their effect on the environment, and its occupants.¹⁹³ Likewise, the NAHB and the EPA define a green building in accordance with the ULI description, but both choose wording that fails to include a human component.¹⁹⁴ Furthermore, the EPA, the City of New York, and the Triangle J Council of Governments in North Carolina place an emphasis on the practice and process of the development.¹⁹⁵

Alternatively, Dr. Kibert suggests that green buildings actually occur as a subset of sustainable development.¹⁹⁶ Since he explains that a true sustainable development remains aspirational in almost all circumstances, a green building occurs as a step towards achieving that end goal.¹⁹⁷ Dr. Kibert's approach, therefore, may be reconciled with the other sources when considering a green building

193. See FREJ, *supra* note 31; see WA GA, *supra* note 109 (describing multi-layered definition of "green building"); see generally MN Planning, *supra* note 115 (making liberal use of the green terminology); see NYC DDC, *supra* note 131, at 15 (giving overview of "high-performance" buildings).

194. See EPA Green Building Strategy, *supra* note 28 (using green in context of construction, maintenance, and operation); What is Green Home Building?, *supra* note 162 (discussing green as incorporating environmental considerations and resource efficiency).

195. See EPA Green Building Strategy, *supra* note 28 (outlining components of green building); see generally NYC DDC, *supra* note 131 (emphasizing process and deemphasizing human component); see NC Triangle J, *supra* note 130, at P1 (focusing on high performance and sustainability in the development of green building).

196. See Kibert 3, *supra* note 17, at 492 (stating that sustainable construction encompasses notion of green building and also address, social and economic issues of habitat).

197. See *id.* (discussing aspiration element of sustainable development).

in the context of sustainability.¹⁹⁸ As a result, many people may use green building in a nonspecific manner; it provides a stage in the evolution of sustainable construction that fits within a condensed version of the ULI's definition.

IV. GUIDANCE FOR USAGE AND SUGGESTED DEFINITION FOR THE TERMS

Given the diversity of explanations for “green buildings,” “high performance buildings,” and “sustainable construction buildings” by so many sources, some appear to provide better descriptions for a given term than others.¹⁹⁹ A very broad classification encompasses more areas and leaves room for interpretation, while a narrow explanation precisely states what is included in an attempt for clarity. Generally, a middle ground provides the best of both worlds.²⁰⁰ Thus, the suggestions provided try to reconcile and incorporate as many of the different sources as possible to offer both cohesiveness and clarity.²⁰¹

As a model example, the NIBS definition of “sustainable construction” provides a great amount of detail, which may support its mission in defining high performance building standards, but which misses the point on causing the least harm to the environment.²⁰² Conversely, Dr. Kibert focuses on “ecologically sound principles” and the creation of an environment built to be healthy.²⁰³ In this explanation, Dr. Kibert concentrates on the environmental aspects but fails to recognize the economic trade-offs faced by someone using this term.²⁰⁴ Accordingly, I propose a hybrid of the GSA and LANL descriptions, which could read as follows: sustainable construction seeks to reduce negative impacts on the environment and the health and comfort of building occupants

198. *See id.* (elaborating on theory of green buildings as sustainable development).

199. For a review of various definitions, see *supra* notes 11-168 and accompanying text.

200. For an analysis of the similarities and differences among definitions, see *supra* notes 169-98 and accompanying text.

201. For background discussion on the process of formulating “middle ground” definitions, see *infra* notes 199-214 and accompanying text.

202. For a discussion of the NIBS's definition of sustainable construction, see *supra* notes 55-70 and accompanying text.

203. *See* Kibert 1, *supra* note 5, at 12 and accompanying text (detailing Kibert's definition of sustainable construction). For a further discussion of Dr. Kibert's depiction of sustainable construction, see Kibert 2, *supra* note 17, at 383 and accompanying text.

204. For a complete discussion of Dr. Kibert's definition of sustainable construction, see *supra* notes 17-30 and accompanying text.

while considering environmental responsiveness, resource efficiency, and community sensitivity.

As explained above, the term “high performance building” originates from the U.S. government²⁰⁵ even though many state and local jurisdictions define it too.²⁰⁶ Since Congress directed the NIBS to assess the situation and put forward recommendations, the organization created a committee of both public and private officials to study the standards.²⁰⁷ In doing so, they refined the definition from the one contained in the legislation to create a balance amongst the competing interests.²⁰⁸ In addition, many other sources of authority already defer to the government.²⁰⁹

Hence, I recommend the following for use with connection with a “high performance building”: These are buildings “which address human, environmental, economic and total societal impact, are the result of the application of the highest level design, construction, operation and maintenance principles—a paradigm change for the built environment.”²¹⁰

In considering the meaning of the term “green building,” the earlier analysis shows that a green building fits within the context of sustainable development as proposed by Dr. Kibert.²¹¹ Moreover, the explanations from the ULI, NAHB, the specific version from Washington State, the Minnesota Planning guideline, and the later edition put forward from Pennsylvania’s Governor’s Green Government Council fit very well together with the EPA despite its omission of the human element.²¹² While the refined version of the EPA definition did not include the human element, it was included

205. See Energy Policy Act of 2005, *supra* note 46 and accompanying text (explaining NIBS’s duties under Act).

206. See, e.g., NYC DDC, *supra* note 131; NC Triangle J, *supra* note 130. For a full discussion of state and local definition, see *supra* notes 108-39 and accompanying text.

207. See Assessment on High Performance Buildings, *supra* note 62, at 1 (describing Congress’s direction to NIBS to study high performance buildings).

208. See *id.* at 6 (providing NIBS’s definition of high performance buildings). For a discussion of the report’s definition of high performance buildings, see *supra* notes 55-70 and accompanying text.

209. See Kibert 1, *supra* note 5 (discussing government’s influence on Dr. Kibert’s definition of high performance building).

210. See Assessment on High Performance Buildings, *supra* note 62 and accompanying text (explaining NIBS’s formulation of its definition of high performance buildings).

211. For a discussion of Dr. Kibert’s definition of green buildings, see *supra* notes 17-30 and accompanying text.

212. For an explanation of the EPA’s definition of green buildings, see *supra* notes 95-103 and accompanying text.

in the OFEE version, which was used by the EPA as a starting point.²¹³

With this in mind, and using the different sources as inspiration, I offer that a green building be defined in the following manner: a development that stresses the holistic practice of creating structures so as to produce, operate, and maintain a building that brings together respect for the environment, conservation of materials, efficient utilization of resources, and provides positive influences on its occupants while aspiring to sustainability. Thus, the NIBS provides an excellent descriptor for a high performance building while sustainable construction and green buildings require an approach that combines the common aspects of the different authorities but focuses on the middle ground to provide a definition with an even amount of generalities and specifics.²¹⁴

V. CONCLUSION

While some people may use the terms “green buildings,” “high performance buildings,” and “sustainable construction buildings” interchangeably, they are in fact not synonyms. The implications of each term are simply too complex and the differences between them are far too meaningful. Despite some authorities claiming the terms are the same, the vast majority of sources either directly or indirectly distinguish between them.²¹⁵ A green building can be considered aspiring to achieve sustainability but not necessarily a sustainable construction.²¹⁶ These are two different concepts, but language is fluid and can change over time. In view of the foregoing, when drafting a contract for a stakeholder involved in one of these developments or when using these terms for other endeavors, like legislation or a third-party verification program, the author must take care to either create a unique definition for the document or ensure that the use of the word conforms with the current meaning as used in the common vernacular.

213. For a comparison of the EPA and OFEE’s definitions of green buildings and a discussion of how the EPA integrates the OFEE’s definition into its own, see *supra* notes 95-103 and accompanying text.

214. For a full review of the various sources of green building definitions, see *supra* notes 11-168 and accompanying text.

215. For a discussion of the tendency to use the terms interchangeably, see *supra* note 18 and accompanying text.

216. For a discussion of the definitional difficulties that result from using the terms interchangeably, see *supra* notes 169-98 and accompanying text.

