

# Introduction

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Local political leaders across the country have pushed ahead on sustainability and green building issues in recent years, passing several laws and initiatives to green their communities. *Local Leaders in Sustainability: A Study of Green Building Programs in Our Nation's Communities* is an AIA effort which examines the current state of green building laws in American communities as of 2007.

Buildings account for the largest source of energy consumption in America, an estimated 43 percent of all greenhouse emissions compared to 32 percent for transportation and 25 percent for industry.<sup>1</sup> In light of these numbers, the design and construction of green buildings presents an opportunity to rectify this imbalance.

Green buildings are currently revolutionizing the design and construction industry. Sustainable design has the potential to transform the built environment from its energy intensive past toward an energy-efficient, green future. Ultimately policies that promote this kind of development are good for architects. Buildings are lasting features of the physical environment and they should be designed to meet human needs. The technology now exists to make green buildings that are modern and attractive as well as financially viable. The confluence of factors, from high energy costs to global warming to a strong business case for green buildings, has created an environment in which political leaders have an opportunity to lead America toward a sustainable future.

And this is what is happening in communities across America, as local elected officials have picked up the

mantle of leadership on this issue. Elected officials have been working with planning departments and other dedicated civil servants to craft green building and sustainability legislation in response to the groundswell of support from citizens who are pushing for laws that begin to tackle climate change. As the federal government continues to sit on the sidelines rather than take action on the important issues of the day, mayors, city councils, and other local government officials are taking the lead for a greener future.

Although no municipal program is perfect, the leadership exhibited by local officials over the years has been impressive. The local level is where change is currently taking place on a wide array of issues, from green buildings to other sustainability initiatives. All levels of government should examine these policies to better understand the current and future state of green building in America.

The AIA is focusing its energy as an organization on promoting sustainable design in our nation's communities by advocating for positive change at the state, local, and federal levels. The Institute is currently undertaking multiple green building and sustainability initiatives, examples of which include the following:

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<sup>1</sup> Pew Center on Global Climate Change (2005 June). *Towards a Climate Friendly Built Environment*. Arlington, Va.: Pew Center on Global Climate Change.

- *AIA 2030 goals* advance the goal of carbon-neutral buildings by 2030. This goal will be reached by immediately cutting carbon output of buildings by 50 percent, then subsequently raising this number by 10 percent from 2010 onward every five years, reaching carbon neutrality in 2030.
- *Green Cities Toolkit* provides a resource for local governments on how they can make their communities green. This toolkit was originally distributed in conjunction with the U.S. Conference of Mayors in 2006 and is currently being revised and updated with a planned winter 2007 release. It provides resources that address such questions as Why architects and green buildings? What are other mayors currently doing? What makes a building green? What can my city do to get started?
- *50to50* provides 50 technical recommendations on what architects can do to reduce energy use in buildings by 50 percent.
- *Sustainable Design Assistance Teams (SDATs)*, a community assistance program, focuses on the principles of sustainability. SDATs bring teams of volunteer professionals (such as architects, urban designers, planners, hydrologists, economists, attorneys, and others) to work with community decision-makers and stakeholders to help them develop a vision and framework for a sustainable future.
- *Sustainability Discussion Group (SDiG)* is an AIA Board-level sustainability discussion group.
- *AIA Committee on the Environment (COTE)*, as part of its effort to celebrate current best practices, runs its flagship program, the Top Ten Green Projects awards on an annual basis. Started in 1997 by Gail Lindsey, this is now recognized as one of the most holistic design awards programs in the United States, and many of these projects have been featured in this report. COTE also runs programs to green the AIA Honors and Awards, the AIA convention, and other aspects of AIA operations. The COTE Network consists of 60 local and state chapters and their members.

The AIA is also continuously working with the U.S. Conference of Mayors and the National Association of Counties to spread the sustainability message. Both organizations have adopted resolutions supporting the 2030 Challenge, with the mayors passing a resolution in summer of 2006 and the counties in summer of 2007.

These organizations represent the local elected officials across the country who have been making a difference, and the AIA spoke with these officials and the valuable staff who work for them in order to complete this report. The purpose of the green building study and this report is to be a resource for local officials, architects, and others who want to understand the current landscape of green building laws throughout the country. This includes what is out there, the best practices, and where communities are going next. Green building is the future of building, and architects are helping to make this possible by creating exceptionally designed, energy-efficient, water-conserving, green buildings.

## Methodology

*Local Leaders in Sustainability: A Study of Green Building Programs in Our Nation's Communities* is an examination of green building laws in the United States. The study identifies cities with green building programs, provides an overview of current laws and ordinances, and shares pertinent information on these programs in order to give the reader a clear idea of the current state of green building in our nation's municipalities.

The AIA noticed a lack of comprehensive data on green building programs. We thought the availability of this information would be invaluable, not only for our own sustainability advocacy efforts, but for the numerous communities across the country that are currently thinking about or in the planning stages of their own green building programs.

To feasibly execute this study we identified the survey group as all American cities with populations greater than 50,000, or 661 cities and towns.<sup>2</sup> This represents a total population of 107,918,963 Americans, or a little

<sup>2</sup> U.S. Census Population Estimates for All Places—2005. Retrieved from [www.census.gov/popest/cities/SUB-EST2005-4.html](http://www.census.gov/popest/cities/SUB-EST2005-4.html).

more than one-third of the country. We then formulated multiple survey instruments in order to measure the current number of green building programs and ascertain the current level of green building in cities that have instituted green building laws. Out of the sample of 661, the AIA spoke to representatives from 606 communities, for a response rate of 92 percent. The non-responding communities tended to be smaller cities and towns, leading to a total responding population of 102,178,010.

The AIA research team contacted all the communities first with a short survey to get basic information on whether the city has a green building program; how long the green building program has existed; whether it applies to government, commercial, or residential buildings; whether it employs a rating system; and whether the program provides incentives to build green.

After the initial survey was answered and cities with green building programs were identified, the AIA sent a more in-depth survey. The more extensive survey asked detailed follow-up questions of the municipalities, including

- Has an analysis been performed to demonstrate the effectiveness and/or cost impact of the program?
- What incentives and mandates exist in the green building program?
- Are all of a particular kind of building, e.g., government buildings, required to conform to a green building standard or are there size and other threshold requirements?
- Was the development community engaged in the process of creating the incentives in their community?
- What is an estimate of how many green buildings are in the city/town?
- Have they noticed any trends toward an increase or decrease in the number of green buildings being proposed or under construction?

- How many buildings are certified by a third-party certification program?
- How many buildings are awaiting certification and under which standard?
- Does the community incorporate green building standards into its local building code?
- What challenges or barriers to green building programs exist within current codes and what has the city done to overcome or address them?
- Are there countywide or state-codified green building programs that exist?
- Is the program adopted from a county or state program?
- Did an architect help develop the green building program?
- Are they familiar with the AIA/U.S. Conference of Mayors 2030 Challenge and did it influence the program?

The amalgamation of this information created a clearer picture of the current state of green building throughout the country. Regional strengths and weaknesses became apparent, and the number of years that green building programs have existed, the extent of the program, whether it applies to just public buildings or all buildings, types of incentives offered by communities, and many other exciting data points informed the analysis.

One of the ultimate purposes in collecting this information is to create quantifiable best practices that other communities can use as they begin or strengthen their own green building programs. These best practices are represented through the case study component of the report.

We recognize there are clear leaders in municipal green building in America that can positively inform the overall study. These leaders help establish achievable benchmarks for other communities that have either just recently started their own green building

program, are just now starting down the path toward creating a green building program, or that may have heard about green building programs happening in other parts of the country and would like to find out more information.

The programs that were chosen for the case studies provide an excellent cross-section of American green building programs. The current state of green building laws is not consistent but instead is a good representation of the American federal system of government. Local communities have the authority to choose their own laws and, although they have taken many ideas from others, on the whole they have been quite inventive at creating unique aspects in many of their green building programs. The following communities reflect this diversity and, because many of these programs have also been established for several years, these communities have had the opportunity to see what works well and make adjustments as needed. These cities are also regionally diverse, providing examples of programs in different parts of the country. Although this list of case studies is by no means exhaustive, these communities provide a good overview of the best practices of green building on the local level:

Portland, Ore.	San Francisco
Scottsdale, Ariz.	Chicago
Austin	Atlanta

## Definitions

The following definitions are used throughout the report and have therefore been defined below to further the reader's understanding:

### Green Building Program

A green building program is a law or regulation that mandates or offers incentives for the construction of green buildings within a community. It can focus on public, residential, and/or commercial buildings.

### Sustainability

The concept of meeting present needs without compromising the ability of future generations to meet their own needs.

### Sustainable design

Design that seeks to avoid depletion of energy, water, and raw material resources; prevent environmental degradation caused by facility and infrastructure development over their life cycle; and create environments that are livable, comfortable, and safe and that promote productivity.

### Green

A subset of sustainability, the focus of which is lifecycle environmental impacts of materials, i.e., "reduce, recycle, reuse."

### Lifecycle Analysis

Examines total environmental impact and business cost/benefit assessment through each stage of a product's existence, from raw materials acquisition through manufacturing, packaging, shipping, installation, IAQ, and performance, as well as end-of-use resource recovery.