



## Austin's Green Building Program Facilitates the Construction of Sustainable Buildings

### City

Austin, Texas

### Population

750,000

### Project Start Date

1991

### Annual CO2 Reductions

15,927 Tons

### Annual Financial Savings

\$2,222,721.60<sup>1</sup>

### Initial Investment

\$1.2 mil annual budget<sup>2</sup>

### Project Status

Ongoing/significant growth

1. Savings are reduced energy costs to consumers. Water savings not included. Substantial avoided cost savings accrue to Austin Energy but are considered proprietary.
2. Program was started in 1991 with \$50,000 grant from U.S. Department of Energy and staff salary for 2 positions from City of Austin.

### SUMMARY

In 1991 Austin Energy Green Building (AE/GB) developed the first city-wide tool for evaluating the sustainability of buildings in the U.S. Initially, the work was confined to single family homes, however, over the years the effort has expanded to include commercial and multi-family buildings as well. Since 1991 AE/GB has rated more than 7,000 single family homes, 60 commercial buildings comprising more than 3 million square feet of space, and 57 multi-family projects containing 8,381 units. Green Building also collaborated with the City of Austin Public Works Department to develop a green building initiative for municipal buildings and other public sector buildings funded with City money. City of Austin municipal buildings have been required to meet USGBC (U.S. Green Building Council) LEED Silver certification since June 2000. Since its inception, Austin's Green Building Program has reduced energy consumption by 142,427 megawatt hours and reduced demand on the utility's generation resources by 82.8 megawatts. These energy savings have resulted in the reduction of power plant CO2 emissions by 90,831 tons (US), NOx by 87.6 tons, and SOx by 17.4 tons. Emissions calculations are based on current Austin Energy fuel mix and dispatch priority.

### WHAT IS IT?

Austin Energy's Green Building Program is a market transformation program that provides technical support to homeowners, architects, designers and builders in the design and construction of the most sustainable homes and buildings possible. Using sustainability/green building rating tools specifically developed for Austin, along with the LEED and Green Globes national rating tools, Green Building's staff assist design teams in establishing green building or sustainability goals for the construction of a building, review plans and specifications, make recommendations for improvements, and rate the final product on its impact to the environment and community.

### HOW DOES IT WORK?

Until 2006, Green Building's services were only available to industry professionals that were 'members.' Today, Green Building Program

no longer has 'members,' simply participating professionals. One becomes a participating professional by rating a project or being listed as a member of the design or construction team working on a rated project. There is no fee for Green Building's services within the Austin Energy service area. However, Green Building does charge a consulting fee for projects outside the service area. The fee depends on the location of the project and the complexity of the work needed.

Austin's Green Building Program is made up of 4 different programs:

- 1) Residential Green Building Program:
  - For homeowners and building professionals.
  - Program rates new and remodeled homes using sustainable guidelines on a scale of 1 to 5 stars: the more stars the more green features the home has.
  - Homes are rated in six areas:
    1. Energy efficiency
    2. Testing
    3. Water efficiency
    4. Materials efficiency
    5. Health and safety
    6. Community
  - Residential Program services include:
    - New home ratings (this is a good marketing tool for homeowners looking to resale their residence)
    - Consultation services for program members and citizens
    - Smart Housing compliance consulting (initiative stimulates the creation of reasonably priced homes in Austin)
    - Technical seminars for members
    - Green by Design Workshops for homeowners (a one-day workshop designed for non-building professionals interested in buying, building or remodeling their home)
    - Directory of Green Building professionals
    - Resource library, including books, periodicals, videos, material samples and presentations
- 2) Commercial Green Building Program
  - For Architects, Designers, Builders, and contractors.
  - Program assists owners and designers with developing sustainable business practices during the construction and operation of commercial facilities.
  - During the building design phase and throughout the construction process, Green Building Program provides consultants to help designers, engineers, and construction professionals do the following:

- Set realistic goals for: energy use, indoor air quality, worker productivity, resource conservation and pollution control
  - Select resource-efficient building materials and systems
  - Reduce construction and operations waste
  - Make financial considerations to reduce costs
  - Make environmental considerations that benefit business, tenants and customers
  - Commercial Green Building Program's Services include:
    - Programming assistance, construction document review
    - Technical seminars, individualized technical assistance
    - Marketing and promoting new project to the community
    - Technical analysis for energy efficiency, natural resource conservation, healthy indoor environments
    - Assistance in coordinating rebates when applicable; including assistance in applying for Sustainability Bonus to assist with design expenses
    - The Commercial Design Checklist and Commercial Rating Tool
    - Continuing education credits
- 3) Multi-Family Green Building Program
- For building professionals, owners and residents
  - It helps building professionals design and build comfortable condominium and apartment homes that are energy, water, and resource efficient.
  - Multi-Family Program services include:
    1. Sustainability consultation and design coordination for developers, designers, owners, and builders for new construction and renovation
    2. Facilitate the process of getting incentives for electric, gas, and water conservation
    3. Marketing assistance
    4. S.M.A.R.T. Housing compliance, consulting, and review (for more information on S.M.A.R.T. please go to <http://www.ci.austin.tx.us/ahfc/smart.htm>).
- 4) Manage It Green
- Manage It Green (MIG) is a consulting firm for utilities and government agencies
  - MIG had been working with Austin for 5 years in developing custom green building programs that meet Austin's needs.
  - Manage It Green Consulting provides:
    1. Green construction and operation guidelines;
    2. Educational materials used to create a market transformation toward higher quality residential,

- commercial and multi-family buildings in the region; as well as to establish a basis for incentives (monetary and other) for increased energy and resource efficiency.
3. Green-rating systems to evaluate the effectiveness of the program and quantify results.
  4. A marketing plan to create strong consumer demand for the benefits of green building and to educate building professionals on how to build green buildings.
  5. World-class experts in the field to assist City staff with implementing “custom” green building program.
- Green Building works primarily with the leaders in the building industry to raise the standards for building energy efficiency, efficient use of water and water quality, indoor environmental quality, efficient use of material resources including planning for construction debris and waste reuse and recycling, and community issues.
  - Green Building is also responsible for bringing new energy codes forward for adoption by the City of Austin. When new systems and technologies have been proven to be cost effective and sustainable, they are incorporated into the City of Austin Energy Code to raise the bar for all new buildings in the City.
  - This process of working with leaders to prove new systems, technologies, and design strategies through the Green Building rating system and then incorporating the best of these technologies and strategies into code creates an ongoing market transformation process.

#### **NEXT STEPS**

- In February of 2007 the Austin City Council passed the Austin Climate Protection Plan resolution that mandates that all new homes constructed in Austin by 2015 shall be Zero Energy Capable Homes and that all non-residential buildings shall be 75% more energy efficient than current city code by 2015.
- A Zero Energy Capable Homes Task Force has been in place since September of 2006. This task force is made up of representatives of the various building trade associations, energy efficiency advocates, and Green Building and other City staff.
- They have defined Zero Energy Capable Homes as being 65% more efficient than homes built to current code. The task force has proposed local amendments to the 2006 International Energy Conservation Code that will make it 15-20% more efficient than current City code.

- In addition, they are developing a process for identifying and evaluating improvements to the energy code through Green Building and incorporating the most promising improvements into the energy code to reach the 2015 goal. A similar process will be put in place for non-residential buildings.

## **APPLICATION**

A program similar to Austin's Green Building can be put in place by any municipality and would be extremely effective in cities that own a municipal electric utility or can establish a collaborative relationship with an investor owned utility. For example, Austin Energy Green Building has consulted with Memphis Light, Gas and Water, to establish a green building program in Memphis, TN, and has worked closely with PG&E in the San Francisco Bay Area to improve or implement 6 green building initiatives that have proven to be very successful.

### **CONTACTS**

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