



Rising Above the Water: New Orleans Implements Energy Efficiency and Sustainability Practices Following Hurricanes Katrina and Rita

On August 29, 2005, Hurricane Katrina, the single largest catastrophe in U.S. history, struck the Gulf Coast, flooding 80% of New Orleans, Louisiana, and causing \$89.6 billion in damages. Three weeks later, the city was flooded again by Hurricane Rita.

Beginning in 2007, the U.S. Department of Energy, through its National Renewable Energy Laboratory (NREL), provided technical assistance that helped the city incorporate energy efficiency into its rebuilding efforts for K-12 schools and homes, as well as technical support and analysis on energy policy efforts.

Using the integrated design approach recommended by DOE/NREL, the New Orleans Public School district was able to achieve multiple goals—including sustainability, energy efficiency, and operations efficiency—to build high-quality facilities while maintaining control of costs and schedules.

K-12 Schools

In August 2007, DOE/NREL and the Louisiana Department of Education signed a Memorandum of Understanding to work together to reduce school energy costs and improve the learning environment. Technical assistance included using the American Society of Heating, Refrigeration, and Air Conditioning Engineers Advanced Energy Design Guide for K-12 School Buildings series to build more than 40 new K-12 schools that are 30% more efficient than energy code requirements. Technical assistance also included conducting a workshop for the Recovery School District on high-performance schools, participating in the District's design charrette to

With technical assistance from DOE and NREL, the New Orleans Public Schools district has:

- Utilized energy modeling that demonstrated annual energy savings potential of more than \$310,000 at four schools, with one design indicating a 25% savings potential; other designs are at least 31% above code requirements
- Conducted energy performance monitoring in Langston Hughes Elementary School, the first new school completed, identifying strategies to reduce current energy consumption by approximately 30%, or \$50,000 per year
- Developed new heating, ventilation, and air conditioning system performance standards for new schools and renovations
- Completed energy audits of more than 50 existing K-12 schools identifying energy savings opportunities to be included in school renovations.



Langston Hughes Elementary School incorporated passive daylighting into its classrooms, which has been shown to improve student performance and increase attendance while reducing the cooling and electric lighting energy use of the school. *Photo by Joe Ryan, NREL/PIX 19423*



This home, part of Green Coast Enterprises' Project Home Again, was built in the Gentilly neighborhood of New Orleans and meets the DOE Builder's Challenge level of energy efficiency. Photo by Phil Voss, NREL/PIX 19426

develop conceptual designs for four new schools, and providing recommendations for renovating more than 35 existing schools to achieve 25% above code over the next 10 years. These efforts will impact more than 53,000 students.

Homes

DOE and NREL partnered with two of the largest builders in the area—Green Coast Enterprises and Habitat for Humanity—to develop cost-neutral energy-efficient design recommendations that encourage home builders to cost-effectively meet efficiency goals in the city's hot-humid climate and largely low-income residential areas.

Green Coast Enterprises

In conjunction with the Building Science Corporation, DOE/NREL provided technical assistance to Green Coast Enterprises for Project Home Again to achieve DOE's Builders Challenge efficiency levels in more than 100 new homes.

Habitat for Humanity

DOE/NREL worked with Florida Solar Energy Center to assist the New Orleans Area Habitat for Humanity, the largest builder in the greater New Orleans area, to achieve ENERGY STAR® efficiency levels while also improving moisture resistance and home sealing. Since Hurricane Katrina, New Orleans Area Habitat for Humanity has completed more than 60 ENERGY STAR-certified homes each year.

Energy Policy

Working with the New Orleans City Council, Energy Policy Advisory Committee, and Mayor's Office, DOE/NREL provided expert input into the Energy Smart New Orleans

(ESNO) Plan, an energy efficiency program aimed at minimizing ratepayer impact while maximizing energy efficiency.

City Council

DOE/NREL participated in numerous energy policy activities with the New Orleans City Council to develop the ESNO Plan and other aspects of an energy efficiency program, including:

Prepared a next steps document for the City Council, which provided near-term opportunities to move suggested programs forward following the passage of an Energy Efficiency Resolution in December 2007

Provided analysis and comments on a draft green power program proposed by local utility Entergy New Orleans

Guided the City Council Utility Committee on strategic planning processes and how to develop a stakeholder-driven long-term community energy plan.

Energy Policy Advisory Committee

DOE/NREL assisted the more than 100-person Energy Policy Advisory Committee—comprised of stakeholders from the business, academic, government, utility, community and nonprofit sectors—with how to measure the impacts of suggested measures in a proposed comprehensive energy plan in a comparable way, including net metering, a rate restructuring proposal, and an evaluation of green building ordinance options. The Advisory Committee created and presented a variety of policy and program options to the City Council Utility Committee, which were considered when developing the ESNO and the wider community energy program.

Although the comprehensive energy plan did not materialize, elements of it were used in programs that are currently being implemented.

The ESNO Plan has been implemented by the utility and focuses on residential energy audits, energy efficiency incentives, low-income weatherization, commercial and industrial programs, photovoltaic and solar domestic hot water pilot projects, and education and outreach programs.

Mayor's Office

DOE/NREL also provided insight and guidance on a draft of a green building ordinance introduced by the Mayor's Office in 2007 that included suggestions for balancing costs incurred by the city and consumers and potential energy savings benefits for the community. In October of that year, the City Council passed the ordinance.

Front page photos (l-r) by Joe Ryan, NREL/PIX 19691; Phil Voss, NREL/PIX 19427; Joe Ryan, NREL/PIX 19646

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