



# HOUSTON CONSTRUCTION<sup>TM</sup> NEWS

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## F O C U S

This Month

**Green Building Trends**



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### Green design solutions

**W**ith the continuous rise in energy pricing, and air quality issues plaguing Houston, building owners and tenants are more willing to learn about the benefits of green buildings.

According to the United States Department of Energy, office buildings consume more than 30 percent of the nation's total energy and up to 60 percent of our electricity. Buildings account for 49 percent of sulfur dioxide emissions, 25 percent of nitrous oxide emissions, 35 percent of carbon dioxide and 10 percent particulate emissions, all of which contribute hugely to urban air quality issues.

Houston, the nation's energy epicenter, is relatively new to the green building market but has recently begun to embrace the concept of totally "green buildings." For many years, local designers have incorporated sustainable materials into their projects. Today there are several green buildings in the Houston area that are in the process of being Leadership in Energy and Environmental Design (LEED) Certified.

Additionally, the City of Houston recently adopted new green building requirements for new city owned and occupied buildings. As a firm, Barone Design Group often incorporates US Green Building Council – LEED principles into Houston-based and international projects. Regional and international groups are increasingly responsive to environmentally responsible design solutions.

To be successful at green design the designer/architect and construction team must collaborate. Construction strategies are changing to meet the needs and requirements of green design. Contractors are recycling building materials on site and are using more recycled building materials in new construction. From staging strategies to selecting products, the process requires taking a holistic approach to ensure success.

Green building is synonymous with "high-performance buildings." Environmental responsibility, resource efficiency, occupant comfort and community sustainability are all concepts intrinsic to LEED and green building design. Focus is given to the creation of healthy environments and the use of earth-friendly materials and sustainable building systems.

In the last decade it has become much easier to incorporate new techniques and materials into our projects. There are many more "off-the-shelf" products available for designers and contractors. Fluorescent lamps and motion sensors are now widely available and energy efficient heating and cooling systems, which offer 50-60 percent reductions in energy costs, are also accessible.

Recycled building materials that incorporate products from consumer or industrial waste streams are also available and significantly reduce the use of virgin materials. An example of reuse is fly ash, a by-product of coal-burning power plants, used in concrete.

New trends in green design include the use of sustainable building materials and the incorporation of rapidly renewable materials such as composite panels from wheat by-products, bamboo flooring and cotton batt insulation into building design. Under-floor air-conditioning systems that provide individually controlled heating and cooling at the workplace cut down on total energy consumption. Powder coating furniture and millwork surfaces replaces traditional paint and plastic laminate by eliminating sol-

vents, lead or hazardous waste.

An example of sustainable and price-comparable solutions is a demountable drywall system, called Gravity Lock. The demountable partitions are equal in cost of traditional tape-and-float drywall and when reconfigured, are over 80 percent recyclable. We have successfully used this product for over 18 years and estimate that we have reduced the amount of gypsum board that is sent to landfills by several hundred thousand tons.

Additionally the furniture industry continues to develop products that meet U.S. and international green manufacturing processes. As a firm, we do our homework to understand the furniture products we specify for our projects.

The design-and-construction community will continue to educate building owners and tenants of the benefits of green architecture. While initial building costs are approximately 2-5 percent higher than conventional building, payback via energy savings occurs within a few years and can be clearly defined in most cases.

Green buildings have other commercial benefits – they serve as a marketing tool to environmentally conscience tenants.

In the future we anticipate increased legislation further supporting green building; more tenants seeking green space; and greater awareness overall by the general public.

–db