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Commercial GREEN Gains Ground

by Harold D. Hunt

Recessions come and go, but the green revolution in commercial real estate marches on. Or does it? Tim Murray, sustainable design leader at Houston-based WHR Architects, offered his perspective in this interview. Murray has led the green certification process for several dozen projects involving the LEED new construction, commercial interiors, healthcare, and core and shell rating systems. He is also a LEED-accredited professional with specialty (building design and construction), a certified sustainable development professional and a certified Green Professional Building Skills Training Program (GPRO) instructor. Murray is currently chair of the Greater Houston Partnership's green building subcommittee and previously served as chair of the United States Green Building Council's (USGBC) Texas Gulf Coast chapter.

Is demand for green commercial space still growing?

Absolutely. There are several reasons for the increase, but the most common one here in Houston involves

employee recruitment and retention. This is especially true with our energy companies.

Today's college grads have been raised on a mantra of reduce, reuse, recycle. They expect to work in a healthy environment. The competition for talent in the energy sector has been so strong that companies are looking for any advantage to acquire or hold on to their people. The driver is not so much energy efficiency as it is creating a healthy work environment.

It all goes back to quality of life, especially with the younger generation. Even if they were born and raised here, young people don't feel like they have to stay here. They can relocate anywhere. So a desirable quality of life plays into their decision to stay or go.

Is the increase in demand market-driven or a result of green energy mandates?

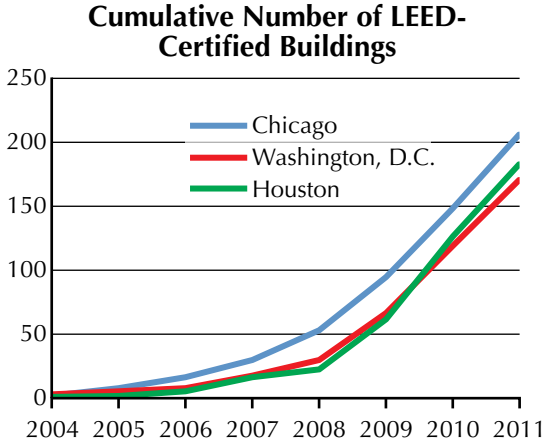
I recently compared the growth trend of LEED-certified projects in the cities of Washington, D.C., Chicago and Houston since 2004 (see graph). Although Houston began at a slower pace, the growth of LEED-certified projects has increased dramatically since 2008.

Chicago's early demand for green buildings has been driven by local government incentives. Washington, D.C., mandates LEED for commercial buildings over a certain size, and the federal government requires LEED-certified buildings. Houston's growth has been almost exclusively market-driven.

Increasing population growth and job opportunities in Houston created the environment for the commercial building sector to shift the market toward greener practices. An increasing number of private and public tenants are now requiring LEED-certified buildings if they are available.

The bottom line is higher occupancies and lease rates for Houston's green buildings. That has resulted in virtually the same growth trend in green building as cities employing mandates or offering incentives. So, the market works.

LEED-certified buildings in the City of Houston total more than 82 million square feet in 275 buildings (see table). That puts Houston third nationwide after New York and Chicago. Statewise, Texas is second behind California with 213 million square feet in 925 buildings.



Top Texas Cities for LEED-Certified Projects as of July 15, 2013
Includes Confidential Projects

City	Number of Projects	National Ranking	Square Feet in Millions	National Ranking
Houston	275	5	82.68	3
Dallas	136	13	30.02	12
Austin	105	16	13.25	22
San Antonio	83	21	16.14	19
Fort Worth	42	37	7.17	30
El Paso	13	52	2.47	44
Arlington	9	N/A	0.8	N/A

Source: Green Building Information Gateway

What sector of commercial real estate has experienced the greatest acceptance of green building?

By far, the office sector, where green buildings have become a significant market driver. Office building owners now feel confident that they can command higher rents and resale values by incorporating green features and obtaining green certifications.

The retail sector has also begun to see the financial advantages of implementing green building practices. The remaining commercial sectors are still lagging because they haven't yet seen the economic advantage.

The multifamily sector can't really be blamed for its slow acceptance. For quite a while, LEED offered no rating system for multifamily properties. The USGBC tried a hybrid that was a combination of their commercial and residential certifications. LEED for homes is quite different than the commercial certifications. They just didn't have the guidelines available to them as early as the other commercial sectors. Multifamily developers also seem to look at costs harder.

When did we make the transition from the perception that green building was too expensive to the realization that it would pay for itself in lower operating costs?

The return on investment has always been there, but it was hard for some developers to buy into the initial cost increase. The last time I looked, the construction cost premium to build a LEED-certified building in Houston averaged about 1.5 percent. The payback period for total return of the extra investment in green features is about three to five years.

A big factor in Houston was when Hines, a major developer, decided to go green with its projects. Once Hines made the move, more developers started to follow. So there was a bandwagon effect where developers said, "It's okay if it costs more for me as long as it costs more for everybody else." They were okay with going green as long as they felt like the playing field was level.

Has the LEED certification lost a bit of its luster even if environmental responsibility hasn't?

LEED is definitely the standard today and by far the biggest rating system. However, a couple of others are starting to make headway. One is Green Globes, which is slightly easier to obtain than a LEED certification because it has fewer prerequisites and less stringent minimums such as building size. Many unique projects that won't qualify for LEED certification are looking at Green Globes.

A rating system specifically designed for schools, Collaborative for High Performance Schools (CHPS), is also available. CHPS offers the option of no third-party reviews. As a result, the cost to certify a project is lower. A number of school districts are opting to go that route.

A real cutting-edge certification is the Living Building Challenge. Unlike LEED, every credit is mandatory. Developers can't choose from a menu of credits like they can when pursuing a LEED certification. Living Building Challenge requires net-zero energy and net-zero water use, so it's difficult to attain.

Is net-zero the new buzzword in commercial green building?

The future of green construction is in net-zero buildings (see "Net-Zero Building in San Diego"). The American Institute of Architects (AIA) has established a program called AIA 2030. The goal is to attain incremental carbon emission reductions over time so that by the year 2030, we will be building net-zero buildings by standard.

Net zero doesn't mean that the building uses no energy. The buildings generally combine energy consumption reductions with renewable energy sources, such as wind turbines, solar panels or fuel cells. They are producing their own energy along with using less energy. There are a few dozen net-zero buildings in the United States, including the Lady Bird Johnson Middle School in Irving.

The larger architecture firms that have signed on to AIA 2030 report their buildings' energy metrics directly to the AIA on an ongoing basis. In that way, their intermediate reductions in energy usage can be tracked year by year.

How are we doing in the push to recycle building materials in structures that are demolished?

First of all, a big discussion occurring today involves levels of *embodied energy*, the total amount of energy it took to produce the materials in an existing building.

When you tear down an existing structure and construct a new building in its place, it can take 50 to 70 years to break even in terms of the embodied energy you had tied up in the old structure. So it's important to reuse materials from existing buildings if they can be saved. It really reduces the carbon footprint of a project.

Developers continue to get better at recycling unused construction materials. One of the LEED criteria is construction waste management, which involves diverting construction site debris and waste away from landfills. It is measured as a percentage.

I have worked on projects where we diverted 90 percent of materials away from landfills, either through recycling or reuse in the project itself. I've actually heard of rates as high as 95 percent. The recycling of building materials has become mainstream with general contractors today.

Any final thoughts?

I'm really excited about how commonplace green building has become in Houston commercial development. The vast majority of new commercial buildings going up right now are pursuing LEED certification.

Dr. Hunt (hhunt@tamu.edu) is a research economist with the Real Estate Center at Texas A&M University.

THE TAKEAWAY

Commercial real estate, particularly the office and retail sectors, continues to embrace green building. Despite higher construction costs, owners and tenants are reaping rewards in the form of higher occupancies and lease rates, higher resale values and employee recruitment and retention.

Net-Zero Building in San Diego

In December, Hines, a privately owned international real estate firm, together with equity partner J.P. Morgan Asset Management, announced that the 13-story, 415,000-square-foot building under construction at La Jolla Commons in San Diego will be the largest "net-zero" energy office building developed for lease in the United States.

No universally agreed upon definition of a net-zero energy building is recognized. However, the consensus is that a net-zero building should produce at least as much power as it consumes on an annual basis.

The building will be fully occupied by LPL Financial LLC, a wholly owned subsidiary of LPL Financial Holdings Inc. Construction should be completed by mid-2014.

Net-zero energy usage will be achieved through a combination of high-performance building design and on-site fuel cells that will generate more electricity than the building uses each year. The surplus electricity will be fed back into the electrical grid and credited against the building's traditional energy charges.

The fuel cells will generate enough electricity to power 1,000 San Diego homes, using methane (natural gas) in a noncombustion process. The methane will be purchased from carbon-neutral sources, such as landfills and wastewater plants, and then transported with the natural gas supplied from conventional sources through commercial pipeline networks.

Hines estimates the fuel cells will pay for themselves in five to six years. Generating power with fuel cells will make the building eligible for financial incentives offered by the California Public Utility Commission. Federal investment tax credits will also provide significant tax benefits to the project's bottom line.

The building will incorporate a number of energy-efficient design features, such as under-floor air distribution, efficient chilled water usage and state-of-the-art building control systems.

In the past, net-zero buildings have been attempted by first designing a net-zero building and then determining whether it could actually be constructed, financed and leased. Hines has turned this model on its head, taking a Class-A, financially viable project and exploring whether it could also be transformed into a net-zero building.

Hines is committed to applying what is being learned about constructing a new net-zero building to existing buildings. In this way, a much larger impact can be made on the energy efficiency of the U.S. commercial building stock.

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Most of the Center's funding comes from real estate license fees paid by more than 135,000 professionals. A nine-member advisory committee appointed by the governor provides research guidance and approves the budget and plan of work.

Learn more at www.recenter.tamu.edu

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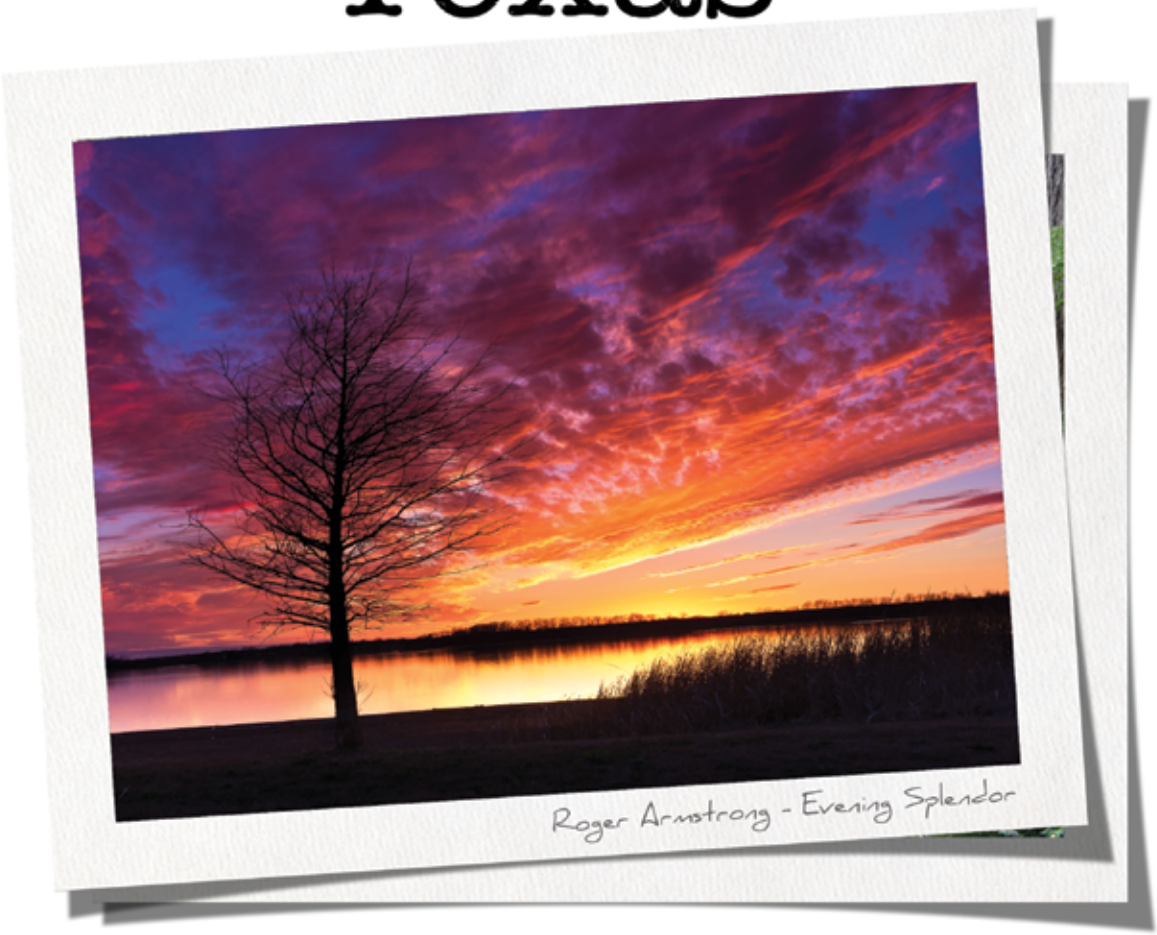

As Center staff perused the pictures entered in our photo contest, we were struck by Texas' diverse beauty. It wasn't easy picking winners, but after much discussion and enthusiastic lobbying for our personal favorites, we reached an agreement.

The best of the best photos (including the one shown here) will be featured on our website (recenter.tamu.edu/photocontest/) and in our 2012–13 Annual Report and 2014 Calendar, available in mid-November.

WINNERS

Roger Armstrong	Scott Everett	Steve Henderson
Joan Shepack	Barbara Thomas	David Norman
Georgette Smith	Kimberly Kothman	Christine Carr

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