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The green reincarnation of old New England buildings

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One of the greenest strategies in the building industry's toolbox is to reuse existing stock and give an old structure a second life as a green building. This capitalizes on its embodied energy (the energy it took to build it in the first place) instead of using more energy to tear it down. With New England's large inventory of great old buildings, there are more and more green makeovers underway.

Tony Dematteo, vice president of business Development at Dimeo Construction Co. and USGBC-RI board member, says about 50% of their projects are in existing structures.

"The most important thing in greening an existing building is looking at how the building reacts to the outside environment, how insulation and window systems work and how efficient it is in terms of BTU consumption to reduce the carbon load we're putting into the atmosphere. There is a lot of focus on high efficiency heating and cooling systems and creating window/wall systems that shed the solar load, instead of adding to the cooling load," Dematteo said.

Some green strategies employed include boosting insulation for a tighter building envelope, improving glass coatings to keep heat out in the summer and reduce A/C consumption, and maximizing use of daylight with interior walls that reflect light to reduce the need for electrical light. Dimming controls and motion sensors reduce energy consumption. An easy choice is using a lot of recycled materials and products with low Volatile Organic Compounds (VOCs) for better air quality.

The roof is also an important factor, Dematteo said. Use lighter color rubber membranes that reflect solar gain and control runoff, install rainwater collection and reuse systems, or look into green vegetative roofing to reflect heat and absorb rain.

"We're getting a lot of requests for geothermal and photovoltaics, too," Dematteo said. "People are starting to think of green building as a long range investment with a huge payback. And the construction industry is totally on board. At Dimeo we have 30 LEED Accredited Professionals, and everyone is trained in sustainable construction."

Jack Leyden agrees the green tide has turned. He is a USGBC-RI board member and the RI State Building Code commissioner. Rhode Island adopted new air barrier requirements over and above the national code for tighter building envelopes, which were mandatory on 4/1/09.

"There was no resistance to the new code: architects, engineers, and builders have all been in favor as we travel the state offering educational programs. And not a single person spoke against them at the public hearings," Leyden said.

In some cases, new building codes can help drive increased green behavior. Whether renovation or new construction, if you need a building permit you'll need to meet the state code.

"It starts with the plan review, to make sure they meet the energy code, before they can get their building permit. Then when construction begins, inspections ensure they meet the minimum codes," Leyden said.

Leyden is also on the USGBC-RI Advocacy Committee, advising the Governor to adopt new legislation for energy codes. "There is federal stimulus money available for states who adopt the most recent International Energy Codes from the ICC (International Code Council), which we are in the process of doing anyway. We are in tune with the issues."

Leyden and the Building Code Commission are in the process of reading through the recently published IEC codes to determine exactly what they call for. "It's too early to tell, but I would estimate there's a minimum of 10 - 20% more efficiency built in."

So a year from now, we could be looking at even greener codes and more earth-friendly renovations.

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