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Editorial: Valley provides crux leadership in green building projects

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Since the green building movement took off in the United States in the past two decades, Massachusetts has become a leading state in embracing the practice of environmentally friendly, energy-efficient construction. And the Pioneer Valley demonstrates the success of green building in an array of residential, commercial and institutional projects.

The roots of contemporary green building practices are found in the environmental movement of the 1960s and more formal guidelines were developed with the creation of the U.S. Green Building Council in 1993, which introduced its Leadership in Energy and Environmental Design (LEED) program in 1998.

LEED is now an internationally recognized standard for measuring the sustainability of a new or renovated building designed to use less energy and water and to reduce carbon emissions. Certification is earned through a point system. These points are awarded for using sustainable materials, reducing water consumption and promoting better indoor air quality and access to daylight and views.

The Green Building Council this month released its annual list recognizing the top 10 states for LEED, and Massachusetts placed fifth behind Illinois, Colorado, Maryland and Virginia. The per-capita rankings are based on the number of square feet contained in LEED projects certified in 2014. “LEED-certified spaces use less energy and water resources, save money for families, businesses and taxpayers, reduce carbon emissions and create a healthier environment for residents, workers and the larger community,” the Green Building Council noted in recognizing the leading states.

Massachusetts had 99 LEED projects certified last year, including the new University of Massachusetts Amherst Football Performance Center at McGuirk Alumni Stadium — with its high-performance insulation, recycled construction materials and state-of-the-art cooling system — and the improved U.S. Fish & Wildlife headquarters on Westgate Center Drive in Hadley, which added sustainable building space.

Many residential projects are following suit as homeowners seek the environmental benefits and energy savings resulting from green buildings. Among them is Easthampton Meadows, off Park Street in Easthampton, with 33 single-family, zero-energy homes designed by Transformations Inc. of Townsend. Those houses — designed to produce as much energy as they use over a year's time — feature 12-inch walls, triple-pane windows, a combination of closed-cell foam and rigid insulation and solar-ready heating systems. Transformations hopes to build 85 solar-powered homes at Village Hill in Northampton.

Already there on the site of the former Northampton State Hospital is a new neighborhood of energy-efficient homes. It includes 56 units — single-family homes, condominiums and flats — built or planned by Wright Builders Inc. of Northampton. All of the Wright Builders homes are LEED-certified in an effort to create the first sustainable neighborhood development in the state, according to its president, Jonathan Wright.

Wright has embarked on an even more ambitious project — constructing a state-of-the-art campus hub at Hampshire College in Amherst which will house the admissions office and provide teaching and exhibition space. The goal for the R.W. Kern Center is to meet the standards under the Living Building Challenge, an advanced international sustainable-building certification program created in 2006 by the nonprofit International Living Future Institute. It is "like LEED on steroids," said Wright, an alumnus of Hampshire.

A "living building" must generate all of its own energy with renewable sources, capture and treat all of its wastewater and use only materials that are entirely sustainable, nontoxic and sourced from within a 300-mile radius.

Also on the Hampshire campus, the new home of the Hitchcock Center for the Environment will meet the Living Building Challenge goals — making this college a true hub of change in building practices. The standards are so rigorous that only six buildings in the United States so far have achieved full certification, including the 2,300-square-foot Bechtel Environmental Classroom in Whately owned by Smith College, which serves as a field station for the surrounding 240 acres of forest and pasture. That building includes solar panels and composting toilets.

It is fitting that the two projects at Hampshire, a school known for innovative approaches, aspire to the highest mark in sustainable building. These structures will have a lot to teach us all.