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## Hitchcock Center embraces the ‘living’ building challenge

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To get local readers to address climate change, the Pioneer Valley Relocalization Project produces this monthly Bulletin and Gazette column to spark radical planning to densify downtowns, develop bike paths and shared transportation, lower consumption, strengthen conservation, and relocalize agriculture. This month, we introduce new member Julie Johnson, the Hitchcock Center’s executive director.

The Living Building Challenge (LBC) is a transformative new way of designing and building with ecological integrity and intelligence. Born out of the most progressive thinking in architecture, engineering, landscape design, planning and policy, the approach challenges us to ask: What if every single act of design and construction made the world a better place?

It’s a challenge with a capital “C.” It’s not an easy task to achieve what is considered the highest standard for sustainable development in the built environment. It’s rigorous, hard work that challenges individuals, organizations and institutions contemplating this form of building to think hard about their commitment, time and resources.

There are only five fully certified LBC buildings in the world. The good news is that one is in the Pioneer Valley — Smith College’s Bechtel Environmental Classroom — and two more are on their way at the Hitchcock Center for the Environment and Hampshire College.

The LBC consists of seven performance categories called Petals: Site, Water, Energy, Health, Materials, [Social] Equity and Beauty. Each Petal has a series of imperatives, including net zero energy, water and waste. Certification is awarded only after 12 months of continuous occupancy. This distinguishes the LBC from LEED (Leadership in Energy and Environmental Design). Whereas LEED is points-based, LBC is performance-based with the goal being to create buildings that can “function as efficiently and as elegantly as a flower.”

It all starts with the Site Petal. A project’s location is as important as the building itself. Urban sprawl threatens our remaining wild places and our capacity to feed ourselves. Therefore, new projects cannot be built on prime agricultural land or on land that has

not already been significantly disturbed by human activity. Moreover, an equal exchange of developed land must be placed into permanent conservation restriction keeping the scales of developed and undeveloped land in balance.

Construction materials cannot contain any of the “worst in class” materials known to pose serious health risks to humans and ecosystems. To find building materials that are nontoxic is one of the biggest challenges, largely due to the market itself. Very little data is provided to back-up manufacturer claims of safety and consumers have little ability to make informed decisions. This changes with the LBC. We’ve made great strides in labeling what goes into our food, now we can advocate for greater transparency in our building products.

Other certification requirements include: Materials must be sourced locally to contribute to the expansion of the regional economy and adhere to standards for sustainable resource extraction.

The total footprint of embodied carbon from construction to completion must be accounted for through a one-time carbon offset.

Construction waste must be diverted from landfills according to strict thresholds.

Walkable, pedestrian-oriented communities must be promoted.

Indoor air quality must be monitored and meet rigorous standards for occupant health and safety.

Note above that “sourced locally,” “expansion of the regional economy” and “pedestrian-oriented communities” reference the broad philosophy of relocalization.

All of these are central to achieving full LBC certification but two imperatives mentioned earlier are key — net zero energy and net zero water. While net zero energy is perhaps becoming more commonplace in the building industry, net zero water is not.

In New England water is considered abundant, but water — no matter where you live — must be respected as a precious resource. The impact of climate change, highly unsustainable water use and the continued drawdown of major aquifers foreshadow significant problems ahead. The way we treat and deliver our potable water is not only wasteful of the resource itself, it is also energy intensive, a factor often ignored when thinking about our energy budget.

The Water Petal competes with the Materials Petal as one of the most challenging. One hundred percent of the building’s water use must come from captured rainwater or closed loop water systems that are appropriately purified without the use of chemicals. Designing and implementing such water delivery systems are often noncompliant with

building codes. Achieving this goal means educating our permitting and regulatory agencies to challenge outdated attitudes and technology.

Education is perhaps the easiest imperative, but one of the most important. Projects must share what they have learned, show how their buildings operate, and motivate others to make change.

Since it was launched in 2006, the LBC has inspired and motivated rapid and significant change: hundreds of projects have now sprouted up all over North America and beyond; the regulatory environment has embraced a series of reforms, and most importantly, a new sense of what is possible has permeated design communities. We are lucky to have three pioneering projects — Smith College, Hitchcock Center and Hampshire College — to bring this new standard of building to our region and to champion ways to make it easier for others to follow.

For more information on the LBC, visit [www.living-future.org](http://www.living-future.org).

*Julie Johnson is executive director of the Hitchcock Center for the Environment, founded in Amherst in 1962. She's a member of the Pioneer Valley Relocalization Project, and welcomes feedback at: [pvrelocal@gmail.com](mailto:pvrelocal@gmail.com).*