Hitchcock Center

EDUCATION FOR A HEALTHY PLANET

Our Living Building

SITE
Restoring a healthy interrelationship with nature

ENERGY
Relying only on renewable forms of energy

WATER
Operating within the water balance of our place & climate

MATERIALS
Creating a materials economy that is non-toxic

HEALTH
Creating environments that optimize health and happiness

EQUITY
Supporting a just, equitable world

BEAUTY
Promoting beauty as a precursor to caring, preserving and conserving

Welcome to our Living Building Challenge (LBC) building. It may look typical but it is far from it. LBC represents a fundamental change in how we construct our cities, neighborhoods and buildings.

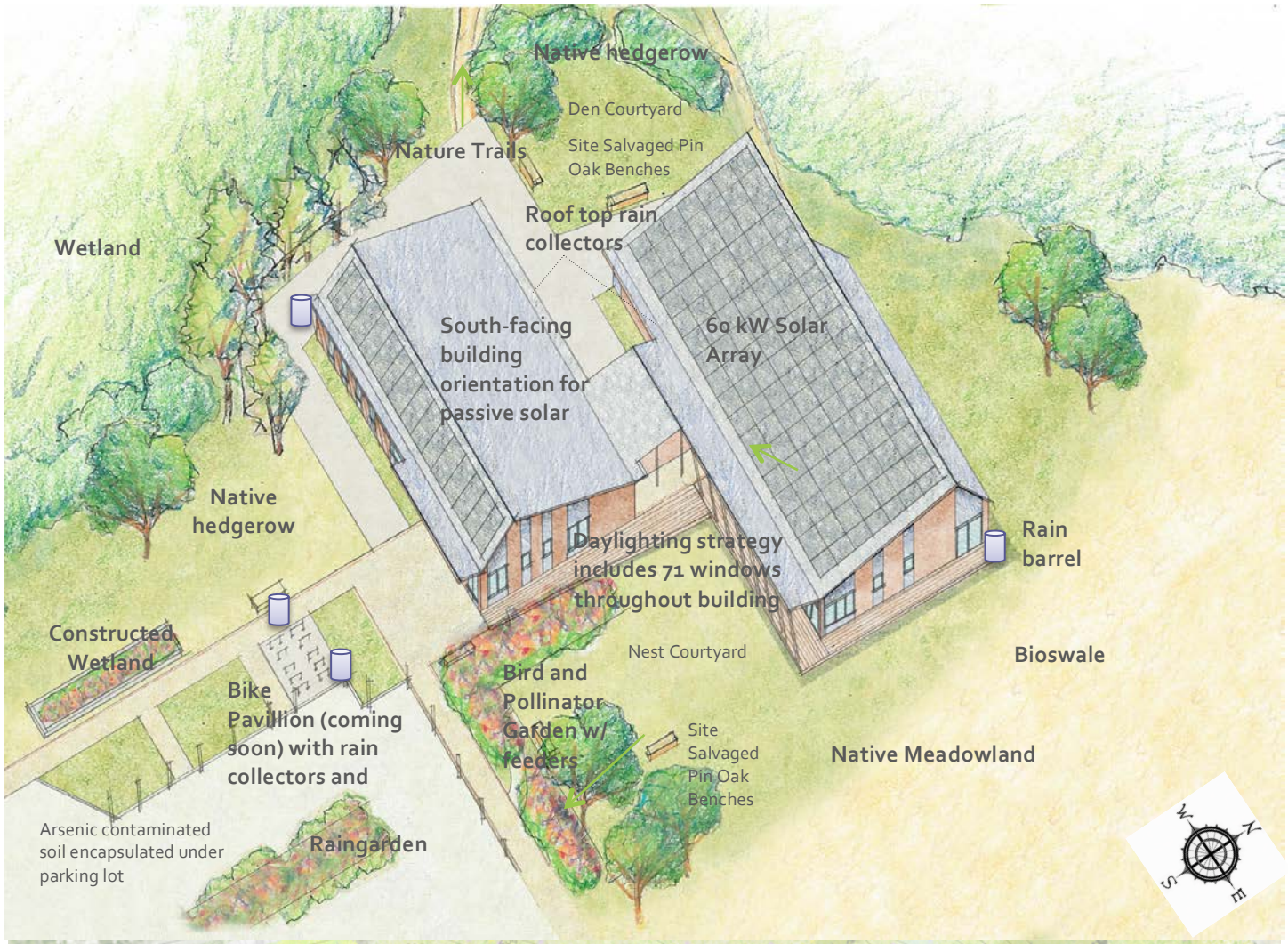
The Hitchcock Center has created a new home that is informed by its bioregion, generates all its own energy with renewable resources, captures and treats all its own water, and is constructed of locally and responsibly sourced non- toxic materials.

Our building is designed efficiently and beautifully and demonstrates how we can not only do less harm but also be regenerative. Nothing short of this is necessary to address climate change and our 7 billion and counting human population.

Our species depends on how well we can manage the effects we cause on the natural systems of our planet.

Our new home represents a great leap forward in creating new ways of living and building on this planet.

"The Living Building Challenge is a philosophy, certification and advocacy tool committed to catalyzing the transformation toward communities that are socially just, culturally rich and ecologically restorative." – International Living Future Institute (ILFI)


Native hedgerow
Den Courtyard
Site Salvaged Pin Oak Benches
Nature Trails
Roof top rain collectors
Wetland
South-facing building orientation for passive solar
60 kW Solar Array
Native hedgerow
Rain barrel
Daylighting strategy includes 71 windows throughout building
Constructed Wetland
Nest Courtyard
Bioswale
Bird and Pollinator Garden w/ feeders
Bike Pavilion (coming soon) with rain collectors and
Site Salvaged Pin Oak Benches
Native Meadowland
Arsenic contaminated soil encapsulated under parking lot
Raingarden
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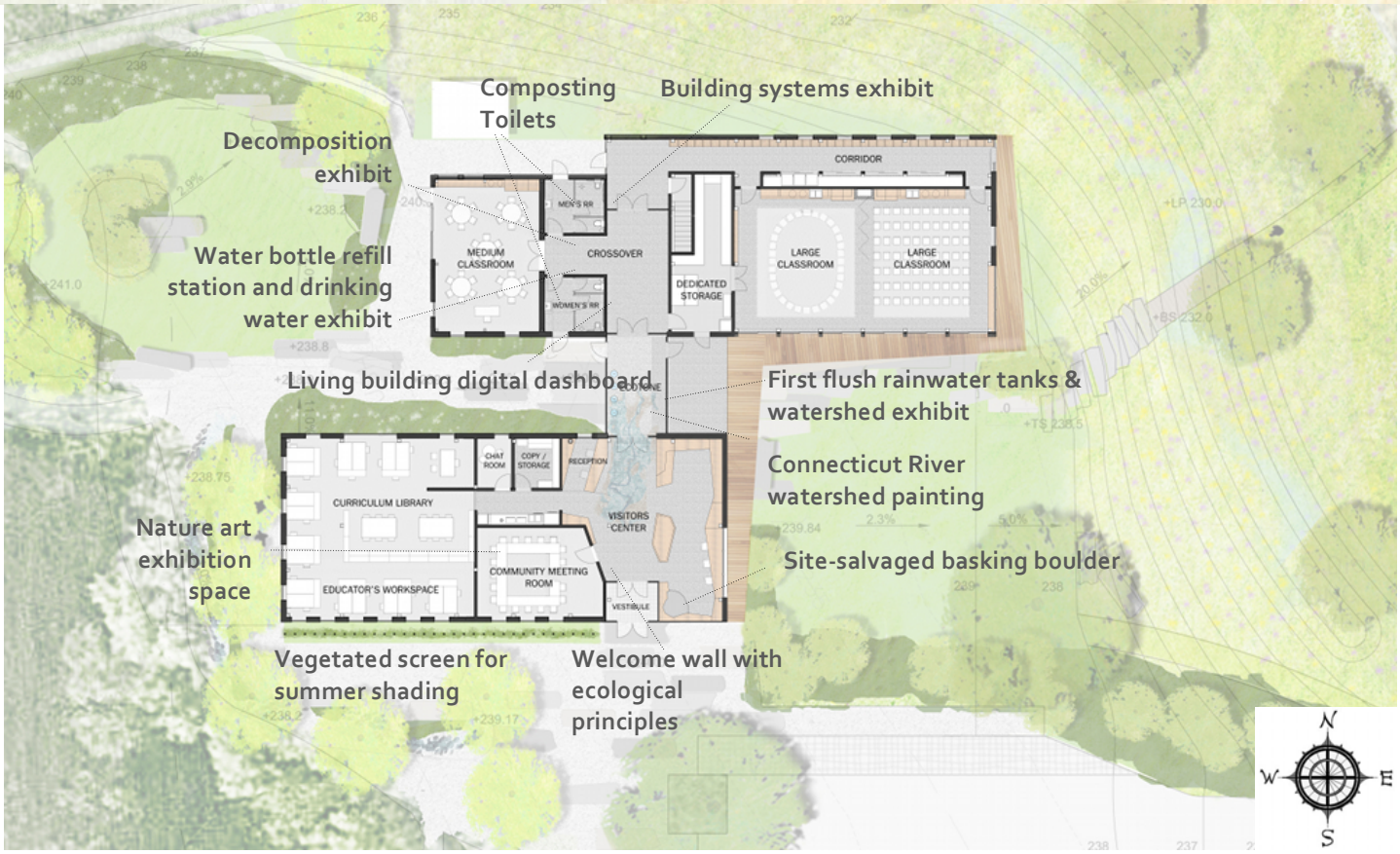
Composting Toilets
Building systems exhibit
Decomposition exhibit
CORRIDOR
MEN'S RR
MEDIUM CLASSROOM
CROSSOVER
LARGE CLASSROOM
LARGE CLASSROOM
DEDICATED STORAGE
WOMEN'S RR
Water bottle refill station and drinking water exhibit
Living building digital dashboard
First flush rainwater tanks & watershed exhibit
CHAT ROOM
COPY / STORAGE
RECEPTION
CURRICULUM LIBRARY
VISITORS CENTER
Connecticut River watershed painting
Nature art exhibition space
COMMUNITY MEETING ROOM
EDUCATOR'S WORKSPACE
VESTIBULE
Site-salvaged basking boulder
Vegetated screen for summer shading
Welcome wall with ecological principles
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SITE

Restoring a healthy interrelationship with nature

LOCATION. Our **s**ite falls in an area once covered by a glacial lake, Lake Hitchcock. Our building, which we own, sits on land owned by Hampshire College and secured by a 95-year ground lease.

LIMITS TO GROWTH. For full LBC certification, projects can only be built on greyfields or brownfields or previously developed land that is not classified as on or adjacent to sensitive ecological habitats, including prime agricultural land. Ours is a unique site. It was remnant apple orchard established in the late 1800s and contaminated by years of pesticide use. It is also adjacent to a sensitive wetland habitat.

RESTORATION. Lead arsenate pesticides were banned in Massachusetts in the late 1950s, yet even after 60+ years our soil retained higher than normal levels of lead and arsenic from the apple orchard, a reminder of how profoundly we can alter our landscape. With the aid of professional health and safety engineers, we removed the top 7-9 inches of soil and encapsulated it under our parking area. We replaced the contaminated soil that we removed with healthy topsoil to support a richly diverse landscape.

NATIVE LANDSCAPING. Our landscaping uses only native plants to promote biodiversity and respect the natural hydrology and nutrient needs of the site. No petrochemical fertilizers or pesticides will be used for the operation and maintenance of our landscape.

HABITAT EXCHANGE. The Hitchcock Center will replace 2.44 acres, the area of our site, with an equal exchange of land that will be put into permanent conservation to ensure balanced development.

ENERGY

Relying only on renewable forms of energy

ENERGY INDEPENDENCE. We have eliminated our energy dependence on fossil fuels by generating 100% of our annual electricity needs through our rooftop photovoltaic (PV) panels. No combustion energy of any kind is being used in our building.

SOLAR ENERGY. Our energy demand is estimated at 57,000 kWh annually, which is being met by a 60 kW roof-mounted solar array using the Sunpower SPR-E20-327-COM modules, a Cradle-to-Cradle certified product and by far the most efficient collector on the market.

BUILDING ENVELOPE. It is widely accepted in New England that very high insulating values in building walls and roofs are needed for greatest energy efficiency. Our building uses moderate insulation values of R40 combined with a tight building envelope with virtually no thermal breaks, a larger sized PV array, six inches of reclaimed rigid PolyIso insulation and energy-recovery ventilation to successfully achieve zero net energy.

LIGHTING. Lighting can account for 20% of a building's energy use. Our building has been designed with many windows (a total of 71 in fact!) to take advantage of natural daylighting. When we do use lights, we use LED (light-emitting diodes) lights that use 75% less energy and last 25 times longer than incandescent lighting.

HEATING, VENTILATION & COOLING (HVAC). Air source heat pumps cool and heat our building. They can deliver one-and-a-half to three times more heat energy than the electrical energy they consume.

WATER

Operating within the water balance of our place and climate

WATER INDEPENDENCE. Today, our fresh water supplies even in New England are at severe risk due to climate change impacts, unsustainable water use patterns, the continued drawdown of major aquifers and contamination. Our building and site have been engineered to harvest only the water we need while respecting the natural hydrology of the land and the water needs of the ecosystem we inhabit. We are not tied to a municipal water supply (except for fire suppression) or storm water management system. In fact, we are an independent certified public water supply, just like the Quabbin Reservoir!

RAINWATER COLLECTION. Our building is a watershed, capturing rainwater (220 gallons for every 1/16th inch of rain) on sloping roofs that send water to our 6,000 gallon underground reservoir. To learn more about how our system works, visit our Ecotone where you can view our first flush tanks (active during any rain event) and displays describing how our building's water system mimics nature.

DRINKING WATER FILTRATION. A 7-step chemical-free natural filtration and UV treatment process delivers our drinking water. As a public water supply, our system is monitored and tested by an independent certified public water system operator on a regular basis to ensure its safety just like our municipal water supply.

COMPOSTING TOILETS. Our Clivus Multrum composting toilets radically reduce the amount of energy and water used by conventional toilets and municipal wastewater treatment systems. Waste is composted on-site using microbes in specially made bins in our basement. A few drops of water are mixed with a drop of an environmentally safe soap to "flush" the toilets, also know as "foam flush composting toilets." You have to flush one of our toilets approximately 127 times to use the same amount of water that a regular low-flow toilet uses for a single flush.

CONSTRUCTED WETLAND. Our grey water (the water from our sinks) is treated on-site using a constructed wetland located outside the main entrance of our building. Using plants, rocks, sand and soil to filter water leaving the building, we demonstrate the vital role wetlands play in purifying storm water run-off before entering our streams, lakes, rivers, and oceans.

STORM WATER MANAGEMENT. Rainwater that falls on our site stays on our site as it would if we were an intact, undisturbed natural ecosystem. Our site has been designed to prevent unnecessary storm water run-off and to conserve water through landscaping, rain gardens and bioswales that support a diverse array of plant and animal life, as well as to naturally recharge underground water reserves.

MATERIALS

Creating a materials economy that is non-toxic, ecologically restorative, transparent, and socially equitable

TOXIC FREE. Materials used throughout the building promote human and environmental health. To ensure that the building is healthy, all building and site materials were extensively vetted against a Red List of worst-in-class chemicals and ingredients most commonly used in the building trades. For example, our building uses little or no materials containing formaldehyde, poly-vinyl chloride (PVC), or volatile organic compounds (VOC) ingredients.

LOCALLY SOURCED. Our building incorporates place-based solutions to contribute to the expansion of a regional economy rooted in sustainable practices, products and services. Nearly all materials were sourced within a 300 mile radius of our building.

ECOLOGICALLY RESTORATIVE Our building materials selection process eliminates chemicals from the development and manufacturing supply chains, ensuring protection of air, water and the environment at all stages of a product's life cycle.

HEALTH

Creating environments that optimize physical and psychological health and well-being

Breathe deep. Do you smell a new building? We hope not. There is minimal off-gassing of materials in our building and the HVAC system circulates fresh air for ideal occupant comfort. Every regularly occupied space has operable windows that provide access to fresh air and daylight. The building promotes visual and physical connection to the outdoors through its windows, doors, courtyards, decking, landscaping and trails.

EQUITY

Supporting a just, equitable world

We are open to all through our free and accessible building, trails and gardens. We strive toward an inclusive sense of community that is just and equitable. Access to nature is increasingly becoming privatized and exclusive. We believe all deserve access to healthy air, water and soil and work daily to promote this connection. We strive to keep our programs free and low-cost and work extensively in underserved communities.

BEAUTY

Recognizing beauty as a precursor to caring, preserving and conserving.

Our space has been designed to include elements that nurture the innate human connection to nature. We are deeply informed and reflective of our place in the bioregion. Visit the Connecticut River Valley watershed floor painting in the Ecotone. Enjoy and try to identify our life-sized bird silhouettes that help prevent bird strikes on our windows. Sit on one of our site-salvaged Pin Oak benches and take in the views of the Pelham Hills to the east and the Mount Holyoke Range to the south.

The LBC is a performance standard. The Hitchcock Center will achieve "Living" status only if it proves its performance after a 12-month continuous occupancy period.

Some content for this brochure has been adapted from the 2.1 LBC Handbook. For further information about the Living Building Challenge, please visit **https://living-future.org/lbc.**

We give special thanks to our Living Building Tour Sponsors:

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