Living Building Challenge

By Erika Zekos Associate AIA

At the recent opening of the Smith College Bechtel Environmental Classroom at the MacLeish Field Station in Whatley, architect Bruce Coldham FAIA said that the building met the highest standard for sustainability that exists today. He was referring to the Living Building Challenge, a program of the International Living Future Institute (a non-governmental organization committed to sustainability issues).

Just what is the Living Building Challenge (LBC)? With only three projects certified as “Living” buildings in the world, there aren’t many examples to point to, however, since its inception in 2006, the program has been growing. There are nearly 90 projects in the LBC pipeline (either in design, construction or in the occupation phases). We are fortunate to have Coldham&Hartman’s project (currently awaiting official status) included in that group as a case study in our region.

Like other high-bar building performance measurement programs, such as LEED Green Building Rating System and Passive House, LBC measures a project’s sustainability according to a system designed to categorize and quantify key factors. In the LBC, in order to be certified as ‘Living’, a building must meet the full list of 20 requirements (‘Imperatives’) after 12 months of full building occupancy. The program involves the architect, as well as owners and occupants in the design and operation of the building. Imperatives are distributed across seven categories.

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Where did you go this summer?

Ray Kinoshita Mann and her family traveled to France and Spain.

Right, Queribus, the last stronghold of the Cathars (liberal, free-thinking Christians of the 13th century), perched on one of the many steep peaks of the eastern Pyrenees in southern France.

Below, views of Antoni Gaudi’s sumptuous Barcelona interiors (left: Casa Batló and right: Sagrada Familia)
**Get Out the Vote**

As a member of WMAIA you are also a member of AIA New England. Nominations for AIANE officers and bylaw changes that will be voted at the AIA New England annual meeting in October can be found here for your review: [http://www.aianewengland.org/news.html](http://www.aianewengland.org/news.html) (second item).

**SAVE THIS DATE**

December 14th

for

WMAIA’s Annual Meeting

2:30 – 4:30 pm

at the Smith College Alumnae House

(33 Elm Street, Northampton)

followed by

2012 Design Awards Reception

at the A.P.E. Gallery

(126 Main Street, Northampton)

This year we’re switching things up a bit! We are planning an afternoon program for our annual meeting, presentation of 2012 Design Awards, and slides of the submitted projects.

We’ll follow that up with a reception for WMAIA’s “BE LOCAL • BUILD LOCAL” exhibition at the A.P.E. on Arts Night Out.

We hope you can join us!
Design Before BIM: When Talk Still Mattered
by Dorrie Brooks

I'm a late bloomer. I came to architecture after doing something else for twenty years. I've been wondering if this delay might explain my naiveté on today's job market. I thought that because my grad school professors appreciated my "well-rounded" background, employers would too. Quite the opposite, when I graduated from school I was dismayed to discover that architecture firms were primarily interested in one thing, my drafting skills. Phone calls to architects typically ended the same way.

Firm: "We aren't hiring at the moment but, if a person walked through the door with the right set of skills, we might be tempted."

Me: "What skills are those, exactly?"

Firm: "Building Information Modeling. We need interns to be ready to produce in 3D from day one. Send in your portfolio and we'll see how you measure up."

A less stubborn person would have taken the hint and buffed up their 3D modeling. Instead, I flipped the problem on its head and asked the bigger question. How did architecture come to be held hostage by digital software like Revit? How did the profession of Frank Lloyd Wright devolve to such a state that architects could do nothing without an army of BIM technicians rolling out ever more dense drawing packages?

BIM was originally advertised as a way of improving efficiency and communication, but rather than reduce the time spent on drawing, contemporary drafting tools seem to have strapped architects ever more tightly to their drawing tables, virtual though they may be. I wondered why, if this preoccupation with Revit skills was a sign of progress, all the architects I spoke with sounded so thoroughly depressed about the impact transitioning to Revit was having on their offices?

The answer, discovered after weeks abusing my alumni library privileges, came as a surprise. I discovered that the same forces that brought us Modernism in the early 20th century also spawned the technological dependence of today's architectural practice. The "Revit monkey" of today is the just the latest chapter in the gradual process of standardization of architecture that has been underway for centuries. We have steadily moved from "design by empirical experience" to "design by drop-down menu," leaving us not only hostage to our computers, but also less intuitive and collaborative thinkers.

In Engineering and the Mind's Eye, historian Eugene Ferguson points out that architects have not always used drawings as their primary means of communication. The earliest designers relied instead on physical models and verbal communication. During the Renaissance, for example, architects learned to design by building. They became "masters" only after apprenticing in areas like masonry, metallurgy and glassworks. As a result, Renaissance architects developed an ability to collaborate directly with the craftsmen who would carry out their designs. While called Master Builders, architects were also Master Collaborators.

The codification and separation of architectural design from these empirical and verbal traditions took centuries to accomplish. Louis XIV funded the first polytechnical college for the study of geometry and engineering in the late 17th century. This precursor of today's architecture and engineering colleges codified many of the drafting conventions of contemporary architecture. But the big leap forward came in the Victorian Era when architects figured out a way to systematize the design process in drafting rooms in order to meet the demands of

Architecture and the Lost Art of Drawing

Michael Graves recently published an opinion piece in the New York Times Sunday Review in which he shares some of Dorrie's sentiments. Graves, who has been practicing since 1964, has witnessed the transition from buildings conceived, presented and built from drawings all done by hand to the 'computer era' where his students and employees rarely pick up a pen. He decries the loss of the iterative process - the piles of yellow trace paper - and the ability to, "daydream a little" while making connections between one idea to another.

Graves feels that his drawings are an expression of his love of creating. While he has embraced technology as a recording tool, he feels that true design happens on paper, not on the screen. Visit http://www.nytimes.com/2012/09/02/opinion/sunday/architecture-and-the-lost-art-of-drawing.html for the full article.
industrialists. It was a pivotal moment, the final breakaway from architecture’s working class roots towards the white collar culture most of us think of today’s profession.

The 20th century saw an explosion in building materials and technologies. Drafting tools and methods evolved at a similar pace from pencil to CAD to BIM and parametrics. Revit is the logical end result of this relentless forward motion of both building materials and digital technology. Revit is designed to get architects past the dithering generalities of 2D lines as quickly as possible. It isn’t designed to encourage deliberation or to exploit ambiguities. What it does very well is enable the drafting person to select and insert prefabricated assemblies and widely available construction materials as quickly as possible. Working in Revit, especially under deadline, it becomes too easy to skip the unresolved moment and jump into a committed relationship with a digital model just met on the internet.

This isn’t a mistake that seasoned architects with more experience might make. But for people like me, emerging architects and recent grads with the rudimentary knowledge of Revit and no extended history in paper architectures, it is a mistake we are bound to make over and over again. In our increasingly faceless and placeless digital design studios real buildings and the skilled tradesmen who put them together are more remote than ever. Do we want it this way? Not really. But even if we wanted to be less reliant on Revit or its BIM cousins, digital simian jobs are pretty much the only jobs available to us as architectural graduates. Even when every instinct warns us to do otherwise, we do what young architects have done for the last hundred years. We enter the drafting room and hope for the best.

Dorrie Brooks started writing this piece in March before being hired by Margo Jones Architects. She finished it last week after long day of Revit work. Whenever she can she visits the job site to see how closely it compares to the design on her desktop.

The Materials petal includes five imperatives, including consideration of "embodied carbon footprint", avoiding toxicity in materials (the "red list"), and "appropriate sourcing", while the Energy petal has just one, "net zero energy".

Projects fall into one of four Typologies (Renovation, Landscape or Infrastructure, Building, and Neighborhood) and each Typology addresses the Imperatives based on scale of the project.

It is possible to achieve recognition for less rigorous levels of the LBC. ‘Net Zero’ certification is available for projects that prove they consume zero as much or less energy than they produce. ‘Petal Recognition’ requires projects to meet the imperatives of three Petals, as long as one of them is Water, Energy or Materials.

Passive House Institute US sets another high standard sustainability measure. Passive House focuses on building tightness and heating energy consumption. The emphasis is on designing a building that relies on the sun for heating and does not rely on photovoltaics or mechanical heating systems. It does address indoor air quality, but does not address the same range of concerns as LBC (water, material and site choices, among others) and does not demand net-zero energy.

Like LBC, the USGBC’s LEED Green Building Rating System also promotes a whole-building approach, but provides a system for accumulating points (or credits) across a menu of options in key areas of concern. 100 points (weighted to reflect their potential environmental impacts) are available in seven categories: Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials & Resources, Indoor Environmental Quality, Locations & Linkages, Awareness & Education. Ten “bonus points” are available in two additional categories: Innovation in Design and Regional Priorities. While there are LEED programs that measure actual building performance, Silver, Gold or Platinum Certification is awarded based on energy predictions or models.

What does an LBC look like ‘on the ground’? The Bechtel Environmental Classroom building is a 2300 sf structure set amid 240 acres of fields and forest. The building is tucked into a hill and opens up to views of the mountains to the south. The program includes a seminar room, classroom / lab and support spaces. It achieves net-zero energy with a photovoltaic array and by limiting energy consumption...
through a super insulated envelope, daylighting and efficient lighting and mechanical systems. Net-zero water is also achieved through the use of an on-site well and composting toilets. These are impressive accomplishments, but to meet the LBC standard, the building also had to meet the Imperatives of the remaining Petal categories. In Materials, the requirement to avoid the Red List, was a challenge -- all building materials, from the studs to the duct silencers, to the paint on the walls had to comply with extremely low toxicity requirements. Coldham&Hartman, with consultant Lorin Starr Interiors, took the Red List one step farther than requirements by also applying it to the interior furnishings to the extent possible. Embodied carbon for all materials had to be accounted for and materials had to be sourced within a local radius.

Health Petal Imperatives were met by providing healthy air and operable windows to provide access to fresh air, views and daylight.

It is possible to receive exemptions from certain imperatives. For example, one LBC Site imperative is to build on a grey or brownfield. In the case of this project, Bruce explained that the site is (literally) a green field, but since the purpose of the building is to interpret the site and use the building and environment as a teaching tool, they have applied for the equivalent of a ‘special permit’. The design team also limited their site impact by building on a previously logged part of the 240 acre site. Other imperatives in this category were met by severely limiting parking (the College focused on van transportation from the main Smith campus in lieu of individual cars), eliminating all paved surfaces, and using local plantings. Smith College will pursue a habitat exchange to comply with another imperative of the Site Petal.

Additional Petals of Equity and Beauty may be less quantifiable, but are equally important to the LBC. Imperatives such as “Democracy and Social Justice” (ensuring that people can enjoy the project regardless of background) and Inspiration and Education” (ensuring that the project is used as a teaching tool for future) were important to both Smith and Coldham&Harman. They worked to ensure student participation in the design process, programming and ongoing monitoring of the building’s performance.

Smith has also worked on outreach and programming beyond the environmental studies department. Reid Bertone-Johnson is a Landscape Studies professor and the building manager. His enthusiasm for the building and its potential as a teaching tool is palpable. He explained at the opening ceremony that already students from the geology, landscape, architecture, art, dance and English departments have visited the site and used the building.

At the ceremony Smith student, Lisbet Portman read a piece by the poet Archibald MacLeish, for whom the field station is named. Titled, “New England Weather”, the poem captures in words, the sense of the whole that the Living Building Challenge embodies. One stanza reads:

He meant, no man can tell the weather anywhere but where he's from; you have to have the whole of it together, bred in your bones—the way the wind-shifts come,

Reid Bertone-Johnson explained MacLeish’s sentiment another way, “By participating in the Living Building Challenge we have ensured that every detail of the building, the landscape, and the design and construction process included thoughtful consideration of the impacts such a project will have on the environment and the people, plants, and animals within its reach.”

At this time, Bruce Coldham has completed the initial submission requirements which include building documents (drawings and specifications) and narratives to address the response to all 20 imperatives. The final audit will take place in September 2013 and Bruce expects the building to become another of just a handful of “Living” buildings.
USGBC West Branch

October 10, 4:30 - 6:00pm
Meet and Greet with a focus on LEED Homes
1 AIA CEU credit

Co-presented by The Center for EcoTechnology and the West Branch of the MA Chapter of the USGBC.

The event will begin with a walking tour by Wright Builders, Inc. of the LEED® Homes™ at the Village Hill development in Northampton. We will meet at the corner of Olander Drive & Village Hill Rd, there is parking on Village Hill Road and Prince Street.

Then we will move to the Community Room at Forbes Library for a presentation by CET and a Q&A with LEED Home owner, Marie Stella. Light refreshments will be provided.

The program is free and open to the general public, although a $10 donation requested.

Please RSVP at http://usgbcma.org/civicrm/event/register?id=231&reset=1

October 24, 7:00am - 1:00pm
LEED for Subcontractors Workshop

National Grid Worcester Office,
939 Southbridge St., Worcester, MA

$100 for USGBC MA Members; $125 for Non-Members (fee includes lunch)
Credit: 3 hours GBCI credits pending
RSVP: pavlovagillham@gmail.com

The workshop will focus on particular areas where subcontractors must participate in the LEED process. This workshop will look in detail at the on-the-job requirements affecting various trades. There will be hands-on practice with material information sheets. Small groups will provide an opportunity for discussion, questions and feedback among subcontractors, designers, and general contractors.

November 8, 4:00 - 6:00pm
Meet and Greet with a focus on Cohousing
120 Pulpit Hill Rd., Amherst

Laura Fitch AIA from Kraus Fitch Architects will give a presentation on cohousing at Pioneer Valley Cohousing. Laura Fitch planned and developed this community (the first East Coast cohousing project) and now resides there.

December 4, 4:30 - 6:00pm
Webinar: PRACT 204: The Greenest Building: Quantifying the Environmental Value of Building Reuse

(This is an in-person Webinar)
UMass Amherst Physical Plant Bldg., Conference Room A

A new report by the National Trust for Historic Preservation finds that it can take 10-80 years for a new, energy-efficient building to overcome the negative climate change impacts that were created during the construction process. Where are the intersections with LEED for Existing Building? How does this fit into LEED 2012?

AIA New England Conference and Design Awards

October 19-21
Burlington, VT

AIA Vermont is proud to host the AIA New England Conference & Design Awards Program.

This year's location - Burlington - is frequently recognized as one of the best small cities in the country to live, work, and visit. The conference site, the Hilton Hotel, overlooks the shores of gorgeous Lake Champlain, and is walking distance to a vibrant downtown.

- Hear Keynote Patricia Patkau, Patkau Architects, Vancouver, BC.
- Earn up to 14 AIA Learning Units
- Take part in tours: college campus, historic Burlington, waterfront development, & more
- Participate in workshops & lectures
- See the 2012 project entries at the “People’s Choice” Awards Cocktail Reception
- Enjoy the Awards Reception & Dinner on Saturday evening

For details about the conference visit http://www.aiavt.org/aiane_conf/.
UMass Historic Preservation Offerings

November 16, noon
Fine Arts Center, Room 456
Bill McCrea, North Carolina Museum of History
“Saving Solomon’s House”

UMass Art History graduate Bill McCrea describes the process of saving, moving, and restoring a 1750 yeoman farmer’s house.

November 30, noon
Fine Arts Center, Room 456
Richard Miller
“Maxwell Street and Other Preservation Struggles in Chicago”

Miller is the founder of the Landmarks Preservation Council of Illinois and has been involved in many of the key preservation battles in Chicago and Illinois.

Conway School

The Conway School of Landscape Planning + Design sponsors a free lecture series at the Sunderland Public Library at 20 School St. in Sunderland.

October 24, 7:00 - 9:00pm
James Howard Kunstler: Too Much Magic

“Too Much Magic” is what Kunstler sees in the overly optimistic visions of a future world. Kunstler analyzes various technologies (vertical farms, fracking, corn ethanol) suggested as overnight solutions to the energy crisis and suggests his own solutions.

November 7, 7:00 - 9:00pm
Charles Mann: 1493: Uncovering the New World Created

From the author of 1491—the best-selling study of the pre-Columbian Americas—1493 is a deeply engaging new history that explores the most momentous biological event since the death of the dinosaurs.

Lectures at the Clark

October 23, 5:30 pm
Robert Sterling Clark Visiting Professor Erika Naginski
"Rococo Vision and the 'Sonorous Body' of Architecture"

In this lecture, Naginski considers particular aspects of architecture’s relation to vision in French Rococo aesthetics. The point of departure here is the challenge posed by the architect Charles-Etienne Briseux to classically derived analogies, based on numerical ratios, between architectural proportion and musical harmony.

Mount Holyoke Designer’s Lecture Series

Mount Holyoke College Architectural Studies Program invites you to attend. All events are free and open to the public. Pizza and drinks provided.

October 10, 6:00 - 7:00pm
Art Building, Media Lab
1st meeting of the Architecture Club & the Green Group

October 19, 6:00 - 7:00pm
Art Building, Room 220
Senior’s Lecture: Haibei Peng & Lusha Sun: “3 Years of Design”

October 28, 6:00 - 7:30pm
Art Building, Room 220
“Dirt, the Movie!”

Gingerbread Challenge

You are invited to participate! Call for entries open through November 9
Exhibit: November 23 - December 30
Springfield Science Museum

Design and build your edible dream house! The gingerbread houses will be displayed against festive holiday trees and a colorful backdrop of murals that represent scenes from beloved fairy tales. For more information, contact lscott@springfieldmuseums.org.
UMass Amherst Architecture+Design Lecture Series

Location: UMass Amherst, Herter Annex, Room 231 (except as noted)

October 2, 5:30pm
New Faculty Panel with Caryn Brause, Naomi Darling, Carey Clouse

This panel of new faculty at UMass / Five College discuss their work and strategies regarding sustainability, community engagements and architectural education.

October 16, 5:30pm
Susan Lowance, Kohn Pedersen Fox

Susan joined KPF in 2000 and has over 15 years of experience as an architect in the programming, planning and design of a variety of education projects, including professional schools and science research buildings.

November 15, 5:00pm,
Goodell Hall, Bernie Dallas Room
Patrick Tighe, Tighe Architecture

Patrick Tighe FAIA is a principal of Tighe Architecture in Santa Monica CA. He earned a BFA in Architecture from UMass Amherst and a MArch from UCLA. He has won numerous awards including a Progressive Architecture Design Award, AIA Young Architects Award and the Rome Prize.

December 4, 5:30pm
David Dillon Memorial Lecture
Christopher Hawthorne, LA Times

Christopher is the architecture critic for the Los Angeles Times, and has written for Slate, Metropolis, The New York Times, and Architectural Record.

Travel and Study in Bangladesh

January 3 – 17, 2013
Winter Intensive Travel Study Program to Bangladesh / Architecture and Environment: Challenges in Sustainability

Learn more about this Travel/Study opportunity to consider how architecture, art, and design can address the contemporary plight of sustainability in the urban & rural areas of Bangladesh. If you would like to know more about the trip please email Professor Joseph Krupczynski: josephk@art.umass.edu.

NESEA Green Buildings Open House

October 13, all day.

This event is the biggest sustainable energy event in the northeastern US. In 2011, nearly 11,000 people toured 500 homes, businesses, and public buildings showcasing energy-efficient design, systems, and products, as well as renewables. http://www.nesea.org/gboh/
Berkshire Ghosts

October 20, 3:00 – 5:00 pm
Ventfort Hall, 104 Walker St., Lenox
“Berkshire Ghosts, Legends & Lore”

Who’s haunting your mansion? Join Ventfort Hall for a lecture and Victorian Tea.

abx 2012

November 14 - 16
Boston Convention and Exhibition Center

With a new site and a new brand, this year’s abx (formerly known as Build Boston) promises 400 exhibitors and 150 workshops. Network your heart out! http://www.abexpo.com/

Green Design and Historic Preservation

A Workshop Exploring the Historic Building Envelope

October 19, 1:00 - 5:30pm
UMass Amherst Campus Center, Room 165-169
4 HSW/SD (approval pending)

Examine the tension between historical integrity & the quest for greater energy efficiency. This workshop, presented by UMASS Historic Preservation Program, is free & open to the public, however, if you want WMAIA to record LUs, register at www.wmaia.org/continuinged & submit the administrative fee.

Tour the EcoBuilding Bargains Store

October 24, 5:00 - 7:00pm
83 Warwick St., Springfield
1.5 HSW/SD (approval pending)

EcoBuilding Bargains in Springfield is the Center for Ecological Technology’s upgraded RE-Store. Join us for a tour of the building and info on CET’s building materials reuse program. Architecture by Sitelab and Stephen Jablonski (architect of record).

To register visit www.wmaia.org/continuinged.

CONGRATULATIONS TO THE 2012 myMARVIN ARCHITECT CHALLENGE WINNERS

James Estes
Estes/Twombly Architects Inc.
Block Island, Rhode Island

Donald Giambastiani
Solomon+Bauer+Giambastiani Architects Inc.
Tyringham, Massachusetts

BE INSPIRED! Visit www.marvin.com/inspired to see the gallery of winning projects.
WMAIA’s Architecture Through Film Series

WMAIA’s Architecture Through Film series (co-sponsored with the Five College Architectural Studies program) resumes with a series of films about cities. Visit Paris, Milan and Brooklyn from the comfort of your seat at Amherst College for this always enjoyable series of film and discussion. **All films screened at 113 Fayerweather Hall, Amherst College at 6:30pm.** For more information visit [http://www.wmaia.org/films.html](http://www.wmaia.org/films.html).

**October 3: GRAND PARIS: The President & The Architect (2009)**
This documentary follows architects who were invited by French President Sarkozy to develop plans for the future of Paris. Director Bregtje van der Haak shows “the other side of architects and architecture: the process of reflecting, negotiating, thinking, waiting, trying, talking, listening. Everything else but drawing and building.”  **1.5 HSW/SD**

**October 17: HANDS OVER THE CITY (1963)**
Francesco Rosi’s film reveals how real-estate speculation and politics impacted Naples, Italy in the mid-20th century. The film begins with a building collapse that foreshadows the political and economic drama that follows. A work of stark social realism, the film won the 1963 Venice Film Festival Golden Lion. **1.5 LUs**

**November 7: MY BROOKLYN (2011)**
Director Kelly Anderson’s film is a first-person account of her experience as a Brooklyn “gentrifier.” When low rents and a burgeoning art scene beckoned in the late 1980s, many moved to the city, and in the years since, it has changed dramatically. Anderson examines the forces that have changed Brooklyn and whether the qualities that once made it inviting can endure. She writes, “it seems that no less than the city’s soul is at stake.”  **1.5 LUs**