



University of Pennsylvania

Climate Sensitive Residence Hall

Project Name: University of Pennsylvania—New College House

Project Location: Philadelphia, PA

Project Size: 354 sets

Building Type: Multi-use Residence Hall

Project Team: Penn, BCJ, DCI

Product List: Adjustable height bed, Stackable 2-drawer under-bed storage, Two-door wardrobe, Desk with data port, Built-in horizontal and vertical shelving, and Dining tables.

BACKSTORY

Founded in 1740 by Benjamin Franklin, the University of Pennsylvania is one of the oldest institutions of higher education in America—an Ivy League university and one of the original nine colonial colleges.

Penn was one of the first schools to embrace the European model of multidisciplinary studies and created the first graduate schools of medicine and business.

As one of the top research Universities in the world, Penn has 28 Nobel Laureates associated with it and is responsible for major breakthroughs, discoveries, and innovations in several fields of science and the humanities.



Penn is also a leader when it comes to sustainability. Indeed, Penn's leadership in this area is one of the main reasons why DCI partnered with the University to furnish their climate conscious residence hall, New College House (more on that below).

In 2007, the University signed the President's Climate Commitment, setting in motions what it describes as a:

...university-wide effort to build on Penn's strengths, identify opportunities for progress, and bring together passionate students, faculty, and staff to develop environmental strategies that will impact our local community, our nation, and the world. The Environmental Sustainability Advisory Committee (ESAC) produced Penn's first Climate Action Plan in 2009 and set ambitious goals for achievement by 2014.

In the nine years since its original Climate Commitment, Penn has launched its Climate Action Plan 2.0, which includes an ambitious array of new goals and initiatives led by its Sustainability Office. Here's how the comprehensive Plan is organized:

The Climate Action Plan 2.0 is organized around the following topic areas, with each section including a Mission, Five-Year Summary, and Recommendations.

- Academics

- Utilities & Operations
- Physical Environment
- Transportation
- Waste Minimization & Recycling
- Purchasing
- Outreach & Engagement

[This video](#), produced in 2014 at the conclusion of Penn's original Climate Action Plan, gives you a quick overview of the school's vision for responding to climate change.

Green Roofs & Sustainability at NCH

This year (2016), Penn will open its first new residential structure since 1972. It's called New College House (NCH) and true to Penn's environmental commitment, this new state of the art multi-use complex will feature a number of sustainability innovations.

Probably the most impressive of these environmental considerations is NCH's extensive green roofs feature, which helps to combat climate change. According to the [Daily Pennsylvanian](#):

The NCH will feature mostly green eco-roofs that have 95 percent water retention, Dunn said, "which is quite a task for a 200,000 square foot building." Standard low water-usage appliances will be installed alongside efficient lighting that depends on natural daylight and also new heat-recovery systems. "We're even making environmentally sustainable furniture selections," Dunn added.

How can green roofs help with climate change? Scientific American wrote an extensive article on [green roofs](#) and highlighted an important 2014 study published in the [Proceeding of National Academy of Sciences](#) which evaluated the efficacy of green roofs on climate change:

Our results quantify how judicious choices in urban planning and design cannot only counteract the climatological impacts of the urban expansion itself but also, can, in fact, even offset a significant percentage of future greenhouse warming over large scales

Additionally, both the architects and builders for the project are local. In fact, the architectural design team from Bohlin Cywinski Jackson (BCJ) also designed the The Liberty Bell Center on Independence Mall.

Originally the building was aiming for LEED Silver certification but is now on track to receive Gold certification. The complex also boasts a large open lawn and a central courtyard to serve residents and accommodate outdoor events, concerts, barbecues and more. NCH's large and ubiquitous windows look out on the courtyard and blur the perceptual boundaries between indoors and outdoors.

PROCESS & APPROACH

In 2014, DCI was invited by the team at BCJ to compete for the NCH project. In total, four companies vied for the opportunity to furnish NCH. Each company set up a sample room where students and faculty rotated through and evaluated what they liked.



After competing with 3 other furniture manufacturing companies, DCI won the bid. Penn loved DCI's sample room and selected our furniture based on our samples. From that point forward, Penn has looked to DCI as a partner for sustainable residence hall furniture.

Why did we win the bid? There were a number of things that went in our favor but two things stood out.

First, as NCH's Senior Project Manager Dave Dunn mentioned, [environmentally sustainable](#) furniture was a priority for Penn.

Furthermore, all of our furniture is made with [FSC-controlled](#) solid hardwood harvested locally in New England. In the case of Penn, all of the furniture was made with locally source solid oak.

Second, a previous [sustainability partnership with Dartmouth](#)—where we sourced wood for their furniture from the University's own land—impressed the team at Penn.

During that project, we collaborated with the Residence Life Director at Dartmouth College. Now he was working at Penn and endorsed DCI for the contract.

Locally Sourced Lumber



The New College project required almost 100,000 board feet of Red Oak lumber. That translates to approximately 16 truckloads of logs or 8 truckloads of lumber. All of that wood was sourced locally.

The lumber was harvested with the oversight of New Hampshire state foresters near our factory in New Hampshire from the Russel Abbott State

Forest and the NERR Wildlife Reserve in Durham. The Wildlife Society recognizes NH state forests for their work in creating a diverse habitat for wildlife.

Healthy forest methods included culling out less desirable grades of trees for firewood (this includes diseased trees, excessive bending, trees with too many defects or knots), and leaving the best large straight trees for seed trees. We also only ran the job on frozen ground to minimize erosion and runoff.

Healthy wildlife methods included leaving large piles of brush and scrap to protect the [threatened Cottontail Rabbit](#) in Durham, and several small “patch cuts” in Russell Abbott. There, several one-acre clear cuts encouraged rapid new growth and allowed the deer and moose populations to thrive on the new saplings.

Several other species of birds and mammals benefited from the cut. In general, small “patch cuts” promote a healthy forest because it opens up the canopy and forces the trees to want to stand up tall and straight.

In addition, the new growth promotes great CO₂ conversion. In contrast, an older forest uses almost as much carbon dioxide as the oxygen it produces. New growth uses incredible amounts of CO₂ and leaves a very positive “green” footprint.

Zero Waste Furniture

All the furniture we built for Penn created zero waste. You can't get a lighter environmental footprint than that. For over 40 years, we've refined our green manufacturing process, and now it's completely waste-free.

All wood waste byproducts from our manufacturing process are used to make steam and/or electricity for our factory. That means we collect all the sawdust and burn it in our wood boiler.



When our boiler is in use, the factory doesn't consume any gas or oil (even during cold New Hampshire winters).

By using a wood boiler to run our kilns and heat our factory and offices, we are saving an average of 68 gallons of oil an hour. That's 200,000 gallons of heating oil that we we're offsetting every year by burning our own wood waste.

Do you know how many pounds of CO₂ that is? We're keeping nearly 4.5 million pounds of CO₂* out of the atmosphere annually.

The truth is, you can't do anything like that with other furniture raw materials. Most of them are just too saturated with chemical treatments, glues, and resins. Burning them creates toxic fumes.

In contrast, using sustainable wood for our furniture allows us to maximize the resource at every stage. From cradle to grave, nothing goes to waste.



For these reasons, Penn's climate sensitive New College House project and DCI's singular commitment to creating the highest quality green furniture yielded a successful partnership.

(*We determine CO2 saved through the following calculations. 1 gallon of heating oil = 138,500 Btu. 1 million btus = 161.3LBs CO2. Therefore: (((200,000 x 138,500)/1,000,000)x161.3.)

To set up an order today or to talk with one of our representatives, you can write to us here or call: (800) 552-8286.

You can also learn more about our industry-leading FSC CoC [certification](#), our [MAS certification](#), and our green materials [sourcing](#), sustainable [manufacturing](#), and our unique zero waste Vertical Integration [Process](#) (VIP).

Download the DCI Sustainability overview [here](#).

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