



## Green Building Technology from the Start

In 1980, 12-22 North became Burlington's first solar office building handcrafted by efficiency pioneers Moose Creek Restoration . After years of overheating due to a dramatic change in the interior layout, the building was purchased in 2004 by Draker Solar Properties who renovated the upstairs space to capture and redistribute the heat. In 2005 it added Burlington's first commercial PV array. The building tested the city's first microgrid in 2012, added a heat pump for testing and continues innovation with the Industrial Internet of Things. We are currently implementing a LoRa network hub and the vision of a MQTT control network.

Over the past 15 years it's been home to over 20 companies, engineers, architects, and artists including Draker Labs, DC Energy Innovations, Vermont Community Garden Network, Geotech Engineering, Richard Gliech Translator, Women of Color Alliance, Siemens, Solar Power Partners, Resourceful Renovators, Common Sense Energy, Juliet Landler Architect, Smart Resource Labs, Tamarack Media and TLC Nursing. Today 12-22North welcomes the newest members [IoT Conduit](#), Smart Resource Labs and [Laboratory B](#).

- Under the management of Draker Solar Properties, the following green improvements have been implemented:
- Continuous lighting upgrades - Lights converted from incandescent to fluorescent lighting to LEDs as technologies emerged
- 4.2kW Photovoltaic Solar Array installed in 2005
- Renovation of office space using green products and recycled materials
- Low VOC paints used throughout interior by local paint provider
- Four reclaimed doors including custom-milled doorjambs and trim from recycled Douglas Fir timber acquired from ReSource
- Construction waste management grant awarded by Vermont ANR which tracked and documented waste during renovations
- Refinished concrete flooring using Bioshield non-petroleum floor covering made from natural oils, waxes, and lead-free driers
- Sustainable carpeting tiles throughout building
- Daylighting for improved hallway lighting using recycled doors
- Thermal blinds on all external windows
- Phase I of Solar Furnace for low-impact HVAC on second floor
- Heating zone breakout for Conference Room with BTU sub metering
- Smart thermostats replaced programmable ones that replaced manual ones
- Flexible stormwater management infrastructure to contain site runoff
- Vermicomposting on site
- Covered bike rack in peaceful back yard.

## **Technical Infrastructure**

- Campbell Scientific Weather Stations
- eGauge network for microgrid submetering
- Electro Industries Shark revenue grade meters
- Philips Hue Lighting network
- Schneider Smart Struxure
- Samsung SmartThing
- Amazon Alexa
- Nest HVAC controls
- General Electric Outdoor Smart Switch
- Netatmo air quality monitors
- Samsung smart TVs
- LoRa Gateway and TTN
- Old fashioned low voltage theater lighting wiring in ceilings