



GREENWORKS LENDING FUNDS EFFICIENCY, RENEWABLE AND MICROGRID IMPROVEMENTS USING COMMERCIAL PACE

SOLUTION OVERVIEW

In 2016, Becker and Becker used commercial property-assessed clean energy (CPACE) financing provided by Greenworks Lending to implement energy efficiency, renewable energy, and resiliency solutions at its 777 Main Street property in downtown Hartford, Connecticut. As part of a larger redevelopment to provide mixed-use housing and retail space, the project included the installation of a microgrid and rooftop solar photovoltaics (PV), along with fuel cell energy storage, HVAC, and lighting upgrades. This was the first-ever microgrid project financed with CPACE. The resulting upgrades allow the building to “island” itself, operating independently from the grid in the event of natural disaster—an example of a broader trend toward using PACE financing to improve reliability, resiliency, and performance in the built environment. Since the project’s completion, the building has been operating with significantly reduced energy demand, saving \$316,927 in the first year. The resiliency solutions combined with lowered utility bills have been a boon for commercial and residential tenants. This implementation model is part of the [Better Buildings Commercial PACE for Resiliency Toolkit](#).

LOCATION

Hartford, Connecticut

CHALLENGE

Becker and Becker was looking to redevelop an iconic downtown building and needed a financing solution for energy efficiency equipment and upgrades.

FINANCING SOLUTION

Greenworks Lending provided the upfront capital for the project through CPACE financing. PACE is a financing structure in which a building owner borrows money for energy efficiency or renewable energy projects and makes repayments via an assessment on the building’s property tax bill.

AMOUNT INVESTED

<https://betterbuildingssolutioncenter.energy.gov/implementation-models/greenworks-lending-funds-efficiency-renewable-and-microgrid-improvements-using>

For more information, visit <https://betterbuildingssolutioncenter.energy.gov>

\$1 million

PROJECT DATES

Fall 2016 - Fall 2017

PROJECT STATUS

The renovation is fully completed

PROJECT PARTNERS

Greenworks Lending (PACE lender), Becker and Becker (building owner), Connecticut Green Bank (PACE program administrator), Eversource (utility)

POLICIES

Connecticut passed PACE-enabling legislation in 2011, and there is one active PACE program in the state: CT CPACE. Any municipality in Connecticut may join the program and any eligible financial institution can fund PACE projects within the program. The application to become a qualified capital provider, as well as additional information about the program, can be found at www.cpace.com.

In Connecticut, the savings to investment ratio (SIR) of any project financed with CPACE must be 1.0 or greater. This can make it challenging to finance resiliency projects, unless they generate significant energy savings or are bundled with energy efficiency or renewable energy projects that do. For this project, the combination of measures achieved an SIR of greater than 1.0 and therefore qualified for CPACE financing.

BUILDING DESCRIPTION

Originally built in the 1960s as the headquarters of Hartford National Bank, the 26-story 777 Main Street was renovated as a certified LEED Platinum building with 285 mixed-income apartments and commercial space on the ground floor. It occupies an enviable location in the state's capital city, which is experiencing population growth and attracting more young urban professionals.

FINANCING

Greenworks Lending provided a \$1 million capital loan to Becker and Becker that will be repaid over 20 years via a CPACE finance agreement. The overall renovation of this property included capital secured from tax credits, bank loans, and member equity in addition to CPACE financing.

CPACE is a financing structure that allows a property owner to fund an entire project upfront and repay the cost incrementally as a line item assessment on the property tax bill. Since the financing arrangement is tied to the property rather than the owner, providers can usually offer better rates

over longer terms, and the financing contract can transfer easily upon sale of the property.

Increasingly, CPACE financing is being used to fund resiliency improvements. It is one of the fastest-growing forms of financing in the U.S., and its ability to support long-term investments makes CPACE an attractive option for improving the reliability, resiliency, and efficiency of the built environment. To learn more about using CPACE financing for resiliency projects, see the Better Buildings Commercial PACE for Resiliency Toolkit. For more information about CPACE in general, see the [CPACE Fact Sheet](#).

PROCESS

In order to meet energy codes and space redevelopment requirements, Becker and Becker, a sustainable development firm that seeks projects for social and environmental impact, needed a financing solution for necessary energy efficiency equipment and upgrades at 777 Main Street. The building was an iconic—but dated and inefficient—fixture in downtown Hartford. Becker and Becker wanted to differentiate the property and position both the residential and commercial spaces for lease-up, with the goal of maintaining the external feel of an old bank building while creating a state-of-the-art, highly efficient interior. Becker and Becker also wanted to position the property as a building that could island itself from the grid and generate its own power in the face of increasing storms and power outages throughout the region.

Becker and Becker reached out to Greenworks Lending in spring 2015 to inquire about PACE financing. It ultimately selected CPACE to finance the clean energy portions of the upgrades due to the long-term payback period, which matched the useful life of the equipment. Most of the capital for the renovation was secured before CPACE was introduced as an option, which allowed Greenworks Lending to slot into, rather than anchor, the capital stack.

This illustrates a key consideration for building owners and financiers: CPACE financing does not need to be the only or even the primary source of financing for a given project. In many instances, PACE has been used as an additional source of capital to complement other funding sources. It can also be used to finance a specific set of energy or resiliency improvements that other funding sources would not normally cover or that might be seen as optional. This approach can be applied to a renovation project, as it was here, or to new construction projects seeking to incorporate energy efficiency or resiliency measures.

By having CPACE available to slot into the capital stack—particularly during a capital intensive exercise such as construction—the developer or property owner is able to conserve capital and generally lower its cost of funds compared to mezzanine finance and private equity. In addition, the longer-term repayment period for efficiency and renewable energy measures, and the 100% financing of such elements, allows for the annual carrying cost of CPACE-financed infrastructure to be far lower. This allows cash to be conserved upfront and improves overall cash flows. The net effect is that energy efficiency, renewable energy, and resiliency measures don't need to be “value-engineered” out of a property's development.

The deal closed in August 2016 with construction completed the following year.

TECHNOLOGIES APPLIED

The energy efficiency, renewable energy, and resiliency improvements installed as part of this project include:

- **A multi-measure microgrid system:** Microgrids are localized grids that can disconnect from the traditional grid to operate autonomously. A microgrid generally operates while connected to the grid, but it can break off and operate on its own using local energy generation in times of crisis like storms or power outages. Because they are able to operate while the main grid is down, microgrids strengthen resiliency for the buildings they support and help mitigate grid disturbances. 777 Main Street's system is powered by a combination of distributed generation, fuel cell, and solar PV.
- **Rooftop Solar PV:** A 92.7kW rooftop solar photovoltaic array was installed to generate power for the building and support the microgrid.
- **Upgrades to HVAC and lighting,** including NEST thermostats in each residence and lighting in common areas and parking.

PARTNERSHIPS

Greenworks Lending: Greenworks Lending is a Connecticut-based commercial PACE company that was founded in 2015 by the architects of the Connecticut Green Bank's commercial PACE program. Greenworks facilitates clean energy investment for property owners and their contractors across the nation.

Becker and Becker: Becker and Becker is a planning, architecture, and development firm that seeks projects that are social and environmental game-changers, restoring underutilized historic buildings and transforming urban sites to enrich and revitalize communities. The firm was founded in 1950.

OUTCOMES

The 777 Main Street project was completed in early 2017 and commissioning was celebrated with a ribbon cutting that included the Governor and local elected officials. The upgrades and new technologies resulted in \$316,927 saved on energy costs during the first year. This included 131 MWh of electricity produced during the same timeframe by the rooftop solar PV system. Tenants of the building, whose spaces are individually submetered, also saw reduced utility bills.

In the year since the project's completion there have been no events in which the building has needed to "island" itself using the installed microgrid resiliency solutions. The building owners liken it to an insurance policy: ideally they will not have to "island" the building in response to a disaster very often, but it is reassuring to tenants and other stakeholders that the measures are in place if needed.

