Renovation of The Millwright Office Building

By Maple & Moss Design

Vermont State University ARE-4720

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Vermont State students collaborate with Stowe Electric Department (SED) to develop renovation ideas for the Moscow Mills Campus. This renovation will honor the site’s historic nature while intertwining its history with future technologies, standards, and integrating renewable energy production and passive building design with communal and office spaces. Creating sustainable systems serves vulnerable citizens while retaining a sense of place.

Moscow Mills is a 4-acre parcel of land purchased by Stowe Electric in 2016. The campus contains a garage and office building constructed by Stowe Electric in 2019 and two historic buildings, a non-operational sawmill and the Millwright Office building. Renovation ideas from the VTSU students center around the Millwright Office, originally constructed in 1950 as a drying kiln for the mill, the building was used for file storage but is now half empty and suffering from age and lack of contemporary upkeep and renovation. Proposed renovations reinvigorate the building into a community space for the public and office space for Stowe Electric. SED has secured funding for the project using federal solar Investment Tax Credits (ITC) and Commercial Property Assessed Clean Energy (C-PACE) programs. The funding for the project allows for a budget of between $550K and $700K, roughly $250 per square foot.

Stowe Electric’s plan for the Millwright Building is to celebrate Stowe’s historic reliance on rivers and nature for the goods and services for improved quality of life. In doing so, the first floor is converted into a general-purpose community center. Inviting locals in to learn more about the green energy powering
their homes while connecting with their neighbors and enjoying a scenic view of the river from the Millwright building and its deck.

To ensure that this space is as inviting on the outside as the inside, sitework will be done to significantly improve the lighting distribution and accessibility of location.

The building’s new office space provides SED employees with ample and flexible spaces to ensure the continuous operation of their grid. SED is partnered with HireAbility Vermont to provide and fulfill employment for Vermonters with disabilities. The renovation includes ADA compliant designs to ensure that all employees and visitors can safely and easily access all areas of the building.

Along with providing new communal and office space, modern technologies and construction practices convert the Millwright Building into a green, self-sustaining structure. The project is designed to meet or exceed the Vermont energy code and maintain compliance with appropriate applicable building codes. The renovated building utilizes renewable resources in construction and operation to minimize the site’s carbon footprint.

The revitalized building will have the important distinction and role as the emergency command center for the electrical department for the Stowe community, so it needs to be resilient to natural disasters and self-sufficient for extended periods of time. Through solar power, battery backup, and hydropower from the nearby dam, the building is not dependent on grid supplied electricity. SED also moves critical server infrastructure into the renovated building. The resilience of the battery backup systems and integration of onsite renewable energy production ensure that SED digital infrastructure stays operational under all conditions.

The Millwright Building has a geothermal water heat pump using a ductless system. This system provides both heating and cooling during the winter and summer season. Since the command center has extra electrical loads, creating more heat, there are double indoor units in the space to ensure a comfortable setting for the SED employees during normal and emergency operations.