

November 16, 2021

Mr. Ray Burger
Director of Planning
Town of Dryden
93 East Main Street
Dryden, NY 13053

**Re: Tompkins County Energy Recommendations - Knickerbocker
Hunt Project: 5697-003**

Dear Mr. Burger:

We are pleased to submit to you a response to the Tompkins County letter dated November 10, 2021, with regards to their review and comment for the special use permit for the Knickerbocker Bed Frame Company. Per that letter we were asked to consider the four energy elements for new construction or major renovation projects outlined in the Tompkins County Energy Recommendations for New Construction (2018). Our response and design approach for these four elements are as follows:

- 1) ENERGY STAR® products include a wide range of **equipment and appliances** that are independently certified to save energy without sacrificing features or functionality. Water saving fixtures can reduce energy needed for hot water. Recommendations:
 - Require that water fixtures meet EPA's Water Sense requirements.
 - Require that permanent appliances (apartment refrigerators, restaurant cooking equipment, etc.) be ENERGY STAR rated.

RESPONSE:

The project will involve the complete renovation of Toilet Rooms, Locker Rooms, and Employee Break Rooms. It's intended that these spaces receive new low flow fixtures that meet EPA's Water Sense requirements in order to conserve water usage. The Break Room will have appliances such as refrigerators and microwaves that are ENERGY STAR rated. The HVAC system serving these areas may also be ENERGY STAR rated due the system size.

- 2) Recent advances in **heat pump** design have reduced installation costs and made them more cost-effective than electric resistance heat, propane, and oil, and close in life cycle costs to natural gas. Use of electric heat pumps allows elimination of fossil fuels as they can be powered by renewable energy sources such as solar photovoltaic. Recommendations:
 - Utilize electrically-powered heat pump systems (ground- or air-source heat pumps); avoid boiler-assisted heat pump systems, avoid systems that burn fossil fuels.
 - Utilize air-source heat pump hot water heaters.

RESPONSE:

The project will involve the complete renovation of Office's with associated business type spaces such as Conference Rooms and Showrooms. It is intended that these spaces will be served by a heat pump HVAC system with digital controls.

- 3) The state has a goal that 50% of NYS electricity will be generated by **renewables** (solar, wind, hydropower, and biomass) by the year 2030. Recommendations:
 - Design roofs to be "solar receptive": Maximize area available for solar collection systems. For pitched roofs, place roof-mounted components (plumbing vents, exhaust fans, etc.) on north-facing roof surfaces, to keep south-facing surfaces available for solar collection systems. Orient one roof surface to the south, plus/minus 30 degrees, to maximize potential for solar energy.
 - Maximize solar collection systems on available roof areas and consider using high-production solar panels to maximize solar production for a given roof area, especially for medium-rise and high-rise buildings.

RESPONSE:

The project involves renovations to an existing building and at this time there are no plans to renovate or redesign the existing roof. Our design approach is to place rooftop equipment in a way as to not impede the placement of roof-mounted solar panels in the future. We also intend to remove any rooftop equipment that is no longer being used.

- 4) Energy-efficient building design begins with the **building envelope** – the walls, windows, foundations, and roof. Recommendations:
 - Design to window-to-wall ratio less than 25% (the new energy code requires 30% or less). Keep large windows on south-facing surfaces and important facades; minimize windows on north-facing surfaces and in spaces that see low occupancy (stairwells, corridors, utility rooms, etc.).
 - Avoid unusually complex building shapes.
 - Use 20% more insulation R-value than required by the energy code.
 - Use best practices for minimizing infiltration and stack effect and require inspection/commissioning of these elements: vestibules at entrance doors, air sealing around window and door frames, sealing at exterior wall/floor junctions, and guarded blower door testing of individual spaces or entire building floors.

RESPONSE:

The project involves renovations to an existing building and existing building envelop and at this point there are no plans on altering the shape of the building. The design approach is to replace existing widows and doors with new energy efficient windows and doors. New windows will serve areas of higher occupancy such as Offices, Conference Rooms and Showrooms. A new entrance design that allows for an airlock type vestibule. There is hope to change, paint, or replace areas of the exterior siding in order to make the exterior of the building more appealing. If by doing so we alter the exterior wall construction, there will be consideration given on increasing the R-value for the new portion of wall.

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SUMMARY:

Both the Owner and Design Team has considered the recommendations set forth by Tompkins County. As the project design continues, we hope to be able to incorporate even more energy efficiency elements as outlined above. The Project Team has also recently reached out to Tompkins County Business Energy Advisors Program and anticipate receiving consultation for additional energy saving options. Please feel free to reach out to me with any questions you may have.

Sincerely,

HUNT ENGINEERS, ARCHITECTS & LAND SURVEYORS, PC



Michael Saglibene
Project Manager

Cc: J. Robbins, HUNT
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