Sustainability Design Assessment Report

For Grovers Mill Residential Development

Block 4201.01, Lot 33.03
Lawrence Township
Mercer County, NJ

Project # 21-210

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Introduction

This report is intended to address Lawrence Township Ordinance Section 523: Energy Conservation and outlines the sustainable design features to be included in the design for the Grover Mills Multifamily & Townhome project.

The project will comply with the 2021New Jersey Energy Subcode (NJAC 5:23-3.16); and the 2021 International Energy Conservation Code (IECC-R)

The project contains 100 residential dwelling units consisting of apartments, garden apartments and townhouse units.

The site is located along Mall Access Road at the intersection of Grovers Mill Road.

1. Compliance and Energy Performance Goals

This project confirms its strategy to meet and **significantly exceed** the minimum energy efficiency standards of the **New Jersey UCC Energy Subcode (2021 IECC)**, as required by Lawrence Township Ordinance § 523 Energy Conservation.

The project is committed to achieving the **ENERGY STAR MFNC certification**, guaranteeing a minimum of **15% energy cost savings** compared to the code baseline.

2. Energy Conservation Measures (§ 523 Requirement)

The project incorporates energy savings through high-efficiency systems and advanced controls:

Component	Final Specification	Energy Conservation Impact
Appliances	All eligible appliances, including ventilation fans.	Must be ENERGY STAR Certified.
Dwelling Unit HVAC	15 SEER 2 / 7.8 HSPF2 (High-Efficiency Heat Pumps/VRF systems)	Meets or Exceeds **ENERGY STAR MFNC** requirements.
Dwelling Unit HVAC	A 7-day electronic, digital, programmable thermostat with high and low limit set points for each heat pump system	Minimizes energy use during low-occupancy hours
Water Heating	Natural Gas Tankless Water Heaters with a minimum 0.82 UEF.	High-efficiency appliance with reduced standby loss.
Lighting: Interior Controls	100% LED lighting controlled by Motion Sensors inside dwelling units, lobbies, passages, and common areas.	Eliminates energy wastage from lights left on in unoccupied spaces.
Lighting: Exterior Controls	100% LED lighting on Timers set to Dim at 10 PM.	Minimizes energy use during low-occupancy hours while reducing light pollution.
Building Envelope	Will meet or exceed the requirements of the current (2021) International Energy Conservation Code, New Jersey Edition, for wall and roof insulation, window and door efficiency.	Improves insulation and reduces energy requirements.

Roof	The roofing will be made of white “cool roof” material.	Reduces heat island effects and reduces cooling energy loads.
Insulation: Roof	R-38 Continuous Insulation (CI) over the roof deck.	Significantly exceeds R-30 minimum, enhancing thermal integrity.
Insulation: Walls	R-20 Mineral Wool Batt Insulation in the cavity	Meets 2021 IECC Prescriptive Path minimum for Climate Zone 4.
Fenestration **Windows**	**U-factor of 0.30** **U-factor of 0.40**	High-performance, Low-E, Argon-filled windows.

4. Water Conservation & Waste

The project incorporates low flow plumbing features to conserve water usage.

Feature	Commitment	Significance for Sustainability
Water Efficiency	Shower heads and tub faucets will have a maximum flow of 2.5 GPM @ 80 psi	Reduces potable water demand by approximately 20-30%.
	Kitchen faucets will have a maximum flow of 1.5 GPM @ 60 psi.	
	Bathroom faucets will have a maximum flow of 1.2 GPM @ 60 psi	
	Toilets will have a maximum usage of 1.28 GPF	

3. Indoor Environmental Quality (IEQ) & Quality of Life

Design features are focused on natural lighting, air quality, and resident well-being:

Feature	Design Commitment	IEQ and Energy Impact
Daylighting Infiltration	Passages and common areas on each floor utilize windows for natural light. All end units have windows on two sides.	Maximizes daylight, reducing the need for artificial lighting during the day.
Outdoor Views	All apartments and townhouses include balconies.	Provides essential outdoor views, enhancing tenant satisfaction, and maximizing daylight exposure.
Ventilation	All dwelling units will have operable windows to provide natural ventilation as needed	Allows for natural ventilation, controlled by the occupants.
Cross Ventilation	All end units are designed with windows on multiple sides.	Allows for natural cooling and superior air exchange, reducing mechanical ventilation load.
Air Quality	Use of low or zero VOC paints, primers, carpets, and adhesives.	Ensures superior indoor air quality and minimizes chemical exposure.
Recreation Space	Total area is **50% larger** than the required minimum, including a **pool, clubhouse, dog run, and play area**.	Supports resident health, wellness, and community engagement.

5. Sustainable Site Development,

The project utilizes advanced Low Impact Development (LID) techniques and comprehensive management practices:

Feature	Commitment	Significance for Sustainability
Grass Pavers	Used for townhouse driveways	Reduces impervious coverage and improves water quality
Water Quality / Low Impact Development	Detention Basin 1 and 2 are Bio-Retention basins	Provides superior water quality treatment and enhanced ecological function without mechanical equipment.
Stormwater/Infiltration	Basin 3 is a stormwater detention and sand infiltration basin.	Maximizes groundwater recharge to comply with DEP recharge requirements.
Wetlands/Buffers	NJDEP LOI and Buffer Averaging Permit secured.	Ensures compliance and permanent protection of ecologically sensitive areas.
Waste Management	Recycling facilities are provided in each townhouse and the apartment building.	Facilitates high diversion rates from landfills for both operational and construction waste.
EV Readiness	Provides 21 EVSE-make ready spaces	Promotes low-carbon transportation.
Tree Canopy	Provide continuous coverage over street sidewalks	Reduces heat for pedestrians.
Recreation	A community center is included along with open space	Provides source of recreation and community engagement.