

A vibrant, abstract background featuring a large, horizontal rainbow brushstroke that transitions from red on the left to yellow in the center and green on the right. Below the rainbow, there are additional brushstrokes in shades of purple, blue, and pink, creating a textured, artistic feel. A dark gray rectangular box with a thin white border is centered on the page, containing the main text.

SUMMER INTERNSHIPS

Project Recaps



COST ANALYSIS:

ENERGY STAR MULTIFAMILY NEW CONSTRUCTION

Ella Ricketts - Bloomberg Harvard City Leadership Initiative

ENERGY STAR Multifamily New Construction (MFNC) vs ASHRAE 90.1

Looked at the cost implications of these two standards for multifamily buildings

Analyzed:

- HVAC
- Water heating,
- Windows
- Doors
- Lighting, Appliances, and fixtures

Comparing ENERGY STAR to ASHRAE

Insulation

ENERGY STAR v ASHRAE Requirements

Insulation Type	ENERGY STAR Requirement	ASHRAE Requirement
Ceiling Insulation	U-0.021~ R-49	Insulation above Deck U-0.048 Metal Building U-0.049 Attics & Other: U-Factor 0.027
Wall Insulation	U-0.051	Mass U-0.071 Metal Building U-0.069 Steel-Framed U-0.064 Wood-Framed and Other U-0.051
Frame Floor	U-0.033 ~ R30	R-30
Mass Floor	U-0.057	U-0.057
Slab Insulation	R-15 2ft	R-15 2ft
Basement Wall Continuous	R-7.5	R-7.5

Highlighted cells/words indicate a match between the ENERGY STAR and ASHRAE code

Assumptions: Frame floor comparison assumes a wood-framed or other non-steel-joint floor. Type of ceiling insulation is not specified in ENERGY STAR and ASHRAE does not have an explicit ceiling category. In this case, the "Roofs" insulation section of ASHRAE is being compared to the ENERGY STAR ceiling insulation section.

Analysis

There is little to no difference in requirements between ENERGY STAR and ASHRAE regarding insulation. Even though ASHRAE is not explicit regarding ceiling standards, the 2009 International Energy Conservation Code (IECC) states that ceilings in Climate Zone 6 must be minimum R-49—same as ENERGY STAR.⁹ Overall, developers should not expect a cost burden to meet ENERGY STAR insulation standards.

Net Cost Differential: Minimal

Findings

Energy saving from ENERGY STAR multifamily buildings must exceed state's energy code by 10% under the Energy Rating Index (ERI) score, ASHRAE 90.1-2010 model, or the EPA's prescriptive energy efficiency features.

Developers are incentivized to reach MFNC standards because they can earn \$2,500 in federal tax credits per dwelling unit that is certified and occupancy ready by June 2026 through the Inflation Reduction Act

Cost Summary Differential

One Bedroom ~750 sq/ft

Section	Additional Cost
Insulation	\$0
Windows and Doors	\$275
HVAC — Spilt AC	\$0
Gas Furnace	\$500
Gas Water Heater	\$250
Lighting	\$0
Appliances	\$200

Total: \$1,225

Note: This summary does NOT include the additional common space cost shared in the building. It also uses a larger furnace and water heater than what is necessary for a one bedroom. In this case, it makes more sense to "cluster" those pieces of equipment—meaning they are shared between two or more units.

Assumptions: Assumes an opaque door, three 3ft x 5ft fixed windows and two 3ft x 5ft operable windows at a conservative cost estimate of +\$55/window. It uses a split AC unit and a gas furnace. It also utilizes a gas water heater, fully LED lighting, a dishwasher and fridge—it does not include a washer and dryer. Assumes that developers are paying retail prices for products.



SUSTAINABLE PURCHASING POLICY

Emma Seaberg – AASPIRE Internship

Current Policies:

APM 1-4:
Purchasing Policies
& Procedures
(2009)

APM 6-4: Policy to
Include Energy
Efficiency in Capital
Projects (2010)

APM 4-9: Policy for
the Acquisition of
Energy Efficient &
Safe Vehicles (2009)

APM 4-5: Policy for
Purchasing [Office
Supplies] (2021)

APM 4-6: Policy for
a Sustainable Green
Cleaning Program
(2007)



Sustainable Purchasing

SPP IP
DRAFT V4

An Implementation Plan

City of Middleton, WI

Process

- Review existing policy
- Meet and collaborate with department heads
- Research peer cities, attend ICLEI learning cohort on sustainable purchasing
- Brainstorm applicability to Madison
- Identify current gaps
- Draft policy and implementation plan
- Gather feedback
- Redraft

Capital Facilities Projects

New Buildings

Must:

1. LEED Gold
2. Incorporate renewable energy systems
3. Choose energy-efficient products
4. Water conservation
5. Salt Wise
6. Waste management
7. Rebates

Should:

- Aim for better
- Prioritize decarbonization
- EPDs
- Avoid over-design

Renovations

Must:

1. LEED Silver
2. Waste management
3. Choose energy-efficient products
4. Water conservation
5. Rebates

Should:

- Aim for better
- Prioritize decarbonization
- Reuse materials
- Renewable energy systems
- EPDs
- Avoid over-design



GREEN VEHICLES & EQUIPMENT



Clean Green Cleaning Products

- Must have **at least one** of these certifications:
 - **Green Seal**
 - **UL ECOLOGO**
 - **EPA Safer Choice**
- Recycled/able packaging
- Avoid aerosols
- Documentation of certification(s)

Sustainable Paper, Printers, and Toner

PAPER

Option 1:

- ✓ Green Seal
- ✓ Blue Angel

Option 2: One from each

- ✓ TCF
- ✓ PCF
- ✓ ECF
- ✓ FSC
- ✓ PEFC
- ✓ UL ECOLOGO
- ✓ EPA CPG

PRINTERS AND TONER

1. Duplex-capable printers
2. Energy Star or EPEAT Gold printers
3. Refillable or high-yield cartridges



Single-Use Plastics

1

Avoid single-use plastic products.

- If single-use products are unavoidable, purchase biodegradable and/or compostable whenever possible.

2

Communicate disposal instructions & provide correct disposal bins.

3

Limit event swag.

- Avoid plastic-based items.
- Prioritize compostable, recyclable, and sustainably-sourced materials.
- Ensure swag items align with the City's sustainability goals.



NEXT STEPS

- Continue to refine document
- Gather alder support
- Ordinance/resolution change around LEED Gold Buildings
- Update APMS to reflect new changes

City of Madison Sustainable Purchasing Policy

Policy Statement

The City of Madison ("the City") recognizes its responsibility to protect human health and support a strong, diverse, and fair community and economy. The City understands that what it purchases affects people's health, the environment, and the economy. Because of this, the City will use its purchasing power to make sustainable choices that support long-term environmental health, social equity, and economic growth.

In this context, the City of Madison defines *sustainability* as meeting the current environmental, social, and economic needs of our community without compromising the ability of future generations to meet theirs. It reflects a commitment to leave the world as good, or better, than we found it.

Purpose

This Policy establishes standardized procedures, guidelines, and responsibilities for City purchases of goods. It ensures purchasing decisions support sustainability, protect human health, promote social equity, and strengthen the local economy.

By following this Policy, the City will save energy, reduce its carbon footprint, protect natural resources, and use financial resources wisely. It will also make purchasing processes more consistent and efficient.

Scope

Applicability

This Policy applies to all City-funded goods and capital procurements by all City departments, employees, and contractors. Specific roles, responsibilities, and expectations are further described within this policy.

All City agencies are expected to follow the Sustainable Purchasing Policy ("the Policy"). The Finance Department and Sustainability Program will provide guidance regarding these purchases to ensure they follow the policies and guidelines in this document.