



**New Jersey Energy Code Collaborative**  
**Existing Buildings and Retrofits Subcommittee**  
**Meeting Minutes**

**May 08, 2025, 2:00 – 3:00 PM**

**Attendees**

- Abigail Andrews, Rutgers
- Andy Garcia, NJEDA
- Anne-Marie Peracchio, NJNG
- Bruce Turner, AIA NJ
- Cornelia Wu, NEEP
- David Hattis, Rutgers
- Dragana Thibault, NEEP
- Eric DeGesero, EDGE Consulting
- Julianna Rivera, Rutgers
- Helaine Barr, NJDEP
- Jason Kliwinski, Senior Energy Code Researcher for Rutgers
- Jeff Kolakowski, NJBA
- Jennifer Senick, Rutgers
- Jennifer Souder, Rutgers
- Jerry Flach, Rutgers
- Kiran Ghosh, Rutgers
- Kyle Cruz, NJHMFA
- Nicholas Kikis, NJ Apartment Association
- Nicole Miller, MMM Consulting
- Nicole Provost, NJDEP
- Pam DeLos Santos, NJHMFA
- Robert Austin, NJDCA
- Roger Marran, Energy Kinetics
- Scott Majka, Majka & Sons, Inc.
- Stacy Richardson, NJBPU
- Terra Meierdierck, NJIT
- Tim Fagan, PSEG
- William Amann, M&E Engineers, Inc.
- Yousaf Shahid, Rutgers

**1. Introduction**

**Cornelia Wu (NEEP)** opened the meeting by stating a brief antitrust disclaimer. Cornelia introduced the project team: Dragana Thibault (NEEP), Stacey Richardson (NJ Board of Public Utilities), Jennifer Senick and Jennifer Souder (Rutgers Center for Urban Policy Research), and Jason Kliwinski (Industry professional retained as Senior Energy Code Researcher for Rutgers). Then provided background on the mission and roles of the facilitator organizations, including the NJ Board of Public Utilities (NJBPU), Northeast Energy Efficiency Partnerships (NEEP), and Rutgers. Cornelia reviewed the goals of the New Jersey Energy Code Collaborative and its focus on developing a Zero Energy Building Roadmap. [Guiding Principles](#) were presented with an emphasis on principles of collaboration, transparency, and evidence-based decision-making. The meeting summary will be circulated to participants for review before being posted online.

**2. Rehab Subcode**



**Rob Austin (NJPCA)** provided an overview of New Jersey’s Rehabilitation Subcode, which governs construction in existing buildings across the state. Unlike the International Existing Building Code (IEBC), New Jersey’s rehab code is a distinct regulatory tool, though it shares the same goal of facilitating safe, efficient work on existing structures.

Rob explained that the rehab code was first developed in the mid-1990s through a collaborative effort that included a 30-member committee and contributors from institutions like Rutgers. The subcode was finalized in 1997 and officially adopted on January 5, 1998. Since then, it has been maintained as part of New Jersey’s Uniform Construction Code (UCC), working in conjunction with model codes, including energy codes, which serve as ceilings for rehab-related requirements.

The rehabilitation code replaced the outdated and inconsistently applied "25–50% rule," which had previously determined required upgrades based on a project’s cost relative to the building’s value. This system allowed for manipulation of reported costs and outcomes. By contrast, the current rehab code relies on clearly defined categories of work to determine applicable requirements.

Rob outlined four levels of work covered under the subcode:

- Repair: Minor fixes such as patching damaged sheetrock.
- Renovation: Replacement in kind, such as replacing all drywall or updating equipment using similar materials.
- Alteration: Modifying the structure or systems, such as removing walls or extending ductwork.
- Reconstruction: Gut rehabs where buildings are essentially shells and must meet basic and supplemental requirements.

Rob noted that a helpful matrix is included in DCA’s publicly available informational [Rehabilitation Kit](#), which visually maps how code requirements increase as the scope of work expands. The code avoids relying on scoping criteria from model codes, instead applying a “materials and methods” approach focused on the type and extent of work being performed.

He highlighted that new elements introduced during alterations must meet relevant provisions of the current building code to ensure safe integration. In cases of reconstruction, the Uniform Fire Code (specifically the state’s retrofit code) sets the baseline for life safety requirements. Additions, changes in use, and historic buildings are all addressed within the code framework, with specific provisions and matrices laid out for each scenario.

Rob emphasized the foundational philosophy of the rehabilitation code: *“Now is not the perfect time.”* This principle recognizes that when building owners choose to make voluntary improvements, it is not always financially feasible or appropriate to require additional upgrades



beyond what is necessary for safety. The code is designed to avoid discouraging maintenance and improvement projects by limiting scope creep and associated costs.

He closed by acknowledging the challenge of integrating energy code provisions, which while not directly related to life safety, are important for economic and environmental performance. Balancing these priorities remains an ongoing consideration within the state's approach to existing building regulation.

### 3. NJ's Existing Building Stock

**Abigail Andrews (Rutgers)** provided a data-driven overview of New Jersey's existing building stock, highlighting the state's high building density and related energy challenges. She began by noting that New Jersey has over 2.3 million residential buildings. This total includes single-family homes, manufactured housing, and small multifamily properties. The state also contains nearly 20,000 large multifamily buildings with five or more units, along with approximately 112,000 commercial buildings, based on data collected between 2018 and 2020.

Abigail emphasized the age of the state's building stock as a key concern. Approximately 40 percent of residential buildings and 30 percent of commercial buildings were constructed before 1960, with an additional 30 percent in each category built prior to 1980. These dates are significant because New Jersey's energy code was introduced in the mid-1970s. As a result, much of the state's building stock predates the application of minimum energy performance standards. This pattern is especially pronounced in multifamily housing. More than half of all large multifamily buildings were constructed before 1970. Although the data set concludes in 2020, Abigail noted that construction is occurring at a faster pace than demolition, meaning older buildings continue to comprise a growing share of the total stock.

In discussing heating and cooling trends, Abigail explained that natural gas remains the primary heating fuel for both residential and commercial buildings. However, 7 percent of residential buildings and 17 percent of commercial buildings continue to use fuel oil, which is associated with high emissions and environmental impacts. Electric heating is used in approximately 8 percent of residential buildings and 20 percent of commercial buildings, though this often takes the form of inefficient electric resistance heating rather than more efficient heat pumps. Heat pump adoption remains relatively low, with about 9 percent of commercial buildings and 1 percent of residential buildings using this technology.

On the topic of cooling systems, she described a clear divergence between sectors. Many residential buildings are cooled using central air systems or individual window units. In the commercial sector, a high rate of non-responses in the data likely reflects the presence of centralized or mixed system types.



To support the analysis, Abigail referenced several studies conducted by Rutgers and the New Jersey Board of Public Utilities. These included the state’s Energy Code Compliance Study, multiple industry standard practice studies, and an upcoming commercial and industrial baseline study. Together, these efforts provide detailed insights into energy consumption patterns, equipment usage, and building characteristics across different sectors.

She concluded by previewing a new initiative from Rutgers: the development of an interactive building database for the [New Jersey Energy Data Center](#). This platform is intended to enhance the accessibility and usability of building data for policymakers, industry professionals, and other stakeholders across the state.

#### 4. DOE Grant: Building Performance Standard Pilot

**Jennifer Senick (Rutgers)** introduced a new four-year DOE-funded initiative led by Rutgers in partnership with NJBPU, NJIT, Energy Solutions, and various community and industry groups. The project focuses on piloting evidence-based, cost-effective building performance standards (BPS) in New Jersey. Key tasks include policy research and modeling—especially related to the rehab code, developing an incentivized “lead by example” BPS pilot, extensive stakeholder engagement, and producing a playbook and toolkit for use statewide and by other interested states.

**Abigail Andrews (Rutgers)** provided an overview of building performance standards, explaining that BPS aim to reduce energy use and operational costs in existing buildings while improving comfort, durability, and resilience. Unlike prescriptive codes, BPS set outcome-based targets that give building owners flexibility in how to meet them. Abigail highlighted the significant role of commercial and residential buildings in New Jersey’s greenhouse gas emissions, representing roughly 26% of the state’s 2022 net emissions- and noted that building performance standards are gaining momentum nationwide with varied approaches in different states and cities.

#### 5. Discussion

**Jason Kliwinski (Senior Energy Code Researcher for Rutgers)** shared his three decades of experience as an architect working with the New Jersey rehab code, explaining that it allows targeted upgrades tied to specific renovation work rather than requiring full building upgrades. He described how the rehab code balances energy efficiency improvements with cost and practicality, with some exceptions where full upgrades may not be feasible. He invited discussion on how the rehab code and energy efficiency goals might better align.

**Pam DeLosSantos (HMFA)** raised concerns about fragmented incentives for rehab projects, which are often managed separately by individual utilities, creating inconsistency compared to the more unified incentives for new construction.



**Stacy Richardson (NJBPUE)** explained that the board oversees utility energy efficiency programs, aiming for statewide consistency in customer experience, although rebate values and delivery methods can vary. She proposed further conversations to explore better coordination and to map out all existing incentives available through different agencies.

**Tim Fagan (PSE&G)** added that distinctions between incentives for existing buildings and new construction can be unclear, particularly in rehab projects, leading to confusion about which programs apply. He noted complexities around incentives for early replacements versus replacements on failure and how lighting requirements can vary during building use changes, highlighting the need for clearer guidelines and coordination. Tim raised the need to consider special issues related to rehab projects in future discussions.

**David Hattis (Rutgers)** explained that the IECC covers both new and existing buildings and its provisions like insulation requirements, and the new change-of-use rule should inform the rehab subcode in New Jersey. He emphasized that these requirements increase in scope with the building's change in energy intensity and that integration of these into New Jersey's rehab subcode is essential.

**Roger Marran (Energy Kinetics)** argued that energy intensity rankings should use full fuel cycle analysis, cautioning against favoring electrification without considering system efficiency and consumer costs. He suggested incentivizing heat pumps as AC replacements instead of mandating them, noting this could lead to faster and more affordable market transformation. He expressed concern over rising electricity prices and emphasized maintaining energy choice. He also clarified that oil heat has evolved with ultra-low sulfur fuel and biofuel blends, reducing emissions by over 25% in recent years.

**William Amann (M&E Engineers, Inc.)** appreciated the insight that rehab codes aren't meant to add burdens but emphasized the need to integrate efficiency due to the climate crisis. He suggested that gut rehabs should transition out of the rehab code into new construction standards, noting the marginal cost of envelope upgrades is low during such deep renovations.

**Jason Kliwinski (Senior Energy Code Researcher for Rutgers)** agreed with William reinforcing that gut rehabs often present opportunities to significantly improve envelope efficiency. While sometimes structural constraints exist, insulation is generally inexpensive and high-impact. He proposed aligning incentives with these opportunities to raise performance levels. Jason also discussed the challenges surrounding incentive sufficiency for multifamily housing, emphasizing how current programs may not adequately account for the complexity and layering of needs in this sector.

**Nicholas Kikis (NJ Apartment Association)** expanded on this, highlighting that incentives are especially complex and limited in the multifamily context. While split incentives are often cited as a major barrier, he argued the issue is somewhat overstated. Tenants often consider the



total cost of living (rent plus utilities), and improved energy performance from capital investments by building owners can positively affect overall affordability. In his view, tenants and landlords tend to navigate and resolve these challenges through market-based interactions.

**Jennifer Senick (Rutgers)** offered closing thoughts, referencing a related conversation from the previous day about new construction and the fragmented nature of incentives. She suggested it might be worth exploring whether consolidating incentives across agencies could serve as an alternative to stretch codes or otherwise help push performance beyond base code requirements. A similar line of thinking may apply to existing buildings: streamlining and rationalizing incentives could support greater participation and performance improvements. While some participants expressed skepticism about the efficiency of current incentive structures, she noted that utilities and clean energy programs have made efforts—largely successful—to align offerings. Jennifer concluded by emphasizing the importance of sufficient, coordinated incentives and streamlined delivery (including workforce training support) in any future pilot for incentivized building performance standards.

## 6. Next Steps

**Cornelia Wu (NEEP)** concluded the meeting by sharing that draft meeting minutes will be circulated to all participants for review prior to being published on the website. There will be a follow up email to determine whether an additional meeting is needed before reporting out to the larger group at the NJ Energy Code Collaborative.

## ZOOM Chat Discussion Notes

### Introductions made in the chat

- Pam DeLosSantos, Director of Technical Services, NJHMFA
- Eric DeGesero, propane heating oil hvac
- Tim Fagan, PSE&G
- Robert Austin, NJDCA, Codes
- Helaine Barr, Assistant Director Climate, Clean Energy & Sustainability, NJDEP
- Bill Amann, M&E Engineers and US Green Building Council
- Scott Majka Jos A Majka & Sons, Licensed NJ Master Plumer and HVAC Licensed Professional
- Jerry Flach, Rutgers CUPR, Project Manager
- Andy Garcia, Clean Energy Product Officer - NJEDA
- David Hattis consultant to Rutgers Center for Green Building/Center for Urban Policy Research (CUPR)
- Roger Marran, president of Energy Kinetics, high efficiency boiler manufacturer in Lebanon, NJ



- Kiran Ghosh, Rutgers CUPR, Research Specialist

### Chat Discussion

**Dragana Thibault (NEEP):** Guiding principles: <https://njenergycodecollaborative.org/about/>

**Dragana Thibault (NEEP):** [New Jersey Rehabilitation Code Information Kit: Rehab kit.pdf](#)

**Robert Austin (NJDCA):** Other Rehab info...background - <https://www.nj.gov/dca/codes/codreg/rehabbackground.shtml>.

**Tim Fagan (PSEG):** Do we know the exact split between electric resistance heat and heat pump?

**Dragana Thibault (NEEP):** Studies can be accessed here: Program Evaluations, Market Analysis and TRMs | NJ OCE Web Site

**Dragana Thibault (NEEP):** New Jersey Energy Data Center: NJ Energy Data Center | Sponsored by the New Jersey Board of Public Utilities

**Helaine Barr (NJDEP):** When will the stakeholdering for the DOE grant happen?

**Jerry Flach (Rutgers):** Hi we are in the process of preparing our Stakeholder ID and Development plan and will have that ready for the DOE by the end of June, and from there prepping for our first Project Advisory Committee, expected to be held Sept. 25.

**Helaine Barr (NJDEP):** Will NJDEP be invited to be part of that effort?

**Jerry Flach (Rutgers):** Yes! Thank you.

**Robert Austin (NJDCA):** But one is NOT required to pull the sheetrock off the walls -- the permit applicant SETS the project.

Homeowner/building owner do not know how good/bad their structure is doing "energy-wise".

This is when the State could offer building/home assessments -- building thermal envelope could be focus.

Yes Jason -- energy audit ... and let the building owner decide what they would like to update.

**Pam DeLosSantos (NJHMFA):** What are some utility incentives for envelope/insulation upgrades?

**Robert Austin (NJDCA):** Low income program - <https://www.nj.gov/dca/dhcr/offices/wap.shtml>



## Acronyms and Abbreviations

**AIA NJ** – American Institute of Architects New Jersey

**ASHRAE** – American Society of Heating, Refrigerating and Air-Conditioning Engineers

**BPS** – Building Performance Standards

**BPU (NJBPU)** – New Jersey Board of Public Utilities

**CUPR** – Center for Urban Policy Research (Rutgers)

**DCA (NJDCA)** – New Jersey Department of Community Affairs

**DOE** – U.S. Department of Energy

**EDA (NJEDA)** – New Jersey Economic Development Authority

**EDGE** – EDGE Consulting (Energy Distributors and Gas Equipment)

**GBC** – Green Building Center

**HVAC** – Heating, Ventilation, and Air Conditioning

**ICC** – International Code Council

**IEBC** – International Existing Building Code

**IECC** – International Energy Conservation Code

**IgCC** – International Green Construction Code

**MMM** – MMM Consulting (Nicole Miller’s firm)

**NEEP** – Northeast Energy Efficiency Partnerships

**NJBA** – New Jersey Builders Association

**NJDEP (DEP)** – New Jersey Department of Environmental Protection

**NJECC** – New Jersey Energy Code Collaborative



**NJHMFA** – New Jersey Housing and Mortgage Finance Agency

**NJIT** – New Jersey Institute of Technology

**PAC** – Project Advisory Committee

**PHIUS** – Passive House Institute U.S.

**PSE&G** – Public Service Electric and Gas Company

**RECI** – Resilient & Efficient Codes Implementation

**UCC** – Uniform Construction Code

**USGBC** – U.S. Green Building Council

**ZERH** – Zero Energy Ready Homes

## Feedback & Action Item Recommendations

### By Subcommittee Members

**David Hattis, IBTS:** In the subcommittee minutes which were sent to us last week, there is a statement in the discussion of the rehab subcode which said that reconstruction is basically gut rehab. This statement is misleading and should be modified. The term gut rehab is not used in the rehab subcode nor is it defined. The problem is that for some people this may mean that reconstruction requires full compliance with new building code requirements. This is not the case.

Reconstruction is defined as work that is so extensive that the work area cannot be occupied during the work, with several exceptions such as refinishing the floor or lead paint mitigation. The code establishes Basic Requirements and Supplemental Requirements for reconstruction work. The Basic Requirements that apply in the work are. The Supplemental Requirements are triggered by the extent of the work area and may apply beyond the work area. The triggers are when the work area is an entire floor, when it is at least 205 OF THE BUILDING AREA, AND WHEN IT IS AT LEAST 505 of the building area. There may be a trigger which is larger, but I could not find one.



There seems to be no requirements triggered for full compliance of the building code throughout the buildings. For example, in reconstruction where the work area is the entire building, if the exterior envelope is not touched, requirements of the energy code are not triggered for the envelope.

Attached are some relevant quotes from the rehab subcode.

““Reconstruction” means any project where the extent and nature of the work is such that the work area cannot be occupied while the work is in progress and where a new certificate of occupancy is required before the work area can be reoccupied. Reconstruction may include repair, renovation, alteration or any combination thereof. Reconstruction shall not include projects comprised only of floor finish replacement, painting or wallpapering, or the replacement of equipment or furnishings. Asbestos hazard abatement and lead hazard abatement projects shall not be classified as reconstruction solely because occupancy of the work area is not permitted.”