



**AIA Newark &
Suburban Architects**

:: General Meeting 2 Webinar ::



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BD+C
2020 AIANS President*

ENERGY STAR Multifamily New Construction & NJ Clean Energy Program Changes

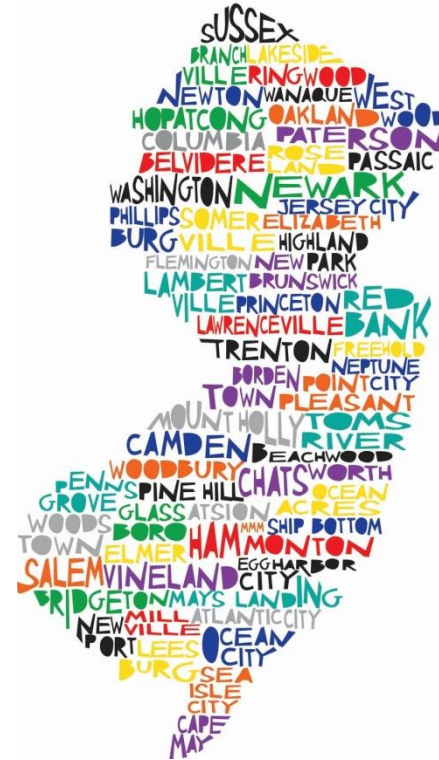


AIA Newark &
Suburban Architects



Agenda

- Introductions
- ENERGY STAR MFNC
 - Eligibility
 - Timeline
 - Pathways
 - Requirements
 - Key Takeaways
- NJCEP Updates



Introduction



Brian Stanfill
Operations Manager,
New Construction



James Ball
VP of Business
Development



Projects in Newark



Photo courtesy of L + M Development Partners

Walker House

ENERGY STAR
Multifamily HighRise



Photo courtesy of L + M Development Partners

The Hahne Building
ENERGY STAR Multifamily HighRise

Projects in Newark



Rendering courtesy of Mid-Atlantic Alliance

Lofts at Lincoln Park
ENERGY STAR V3.1



Rendering courtesy of Buzzbuzzbuzzhome.com

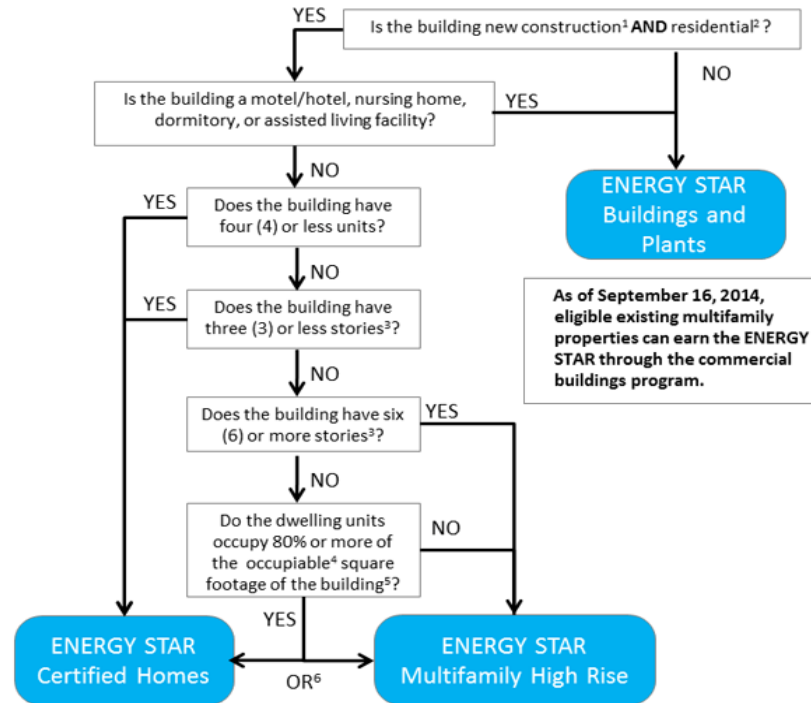
City Hall Apartments
LEED for Homes Midrise & ENERGY
STAR Multifamily HighRise

Let's get started



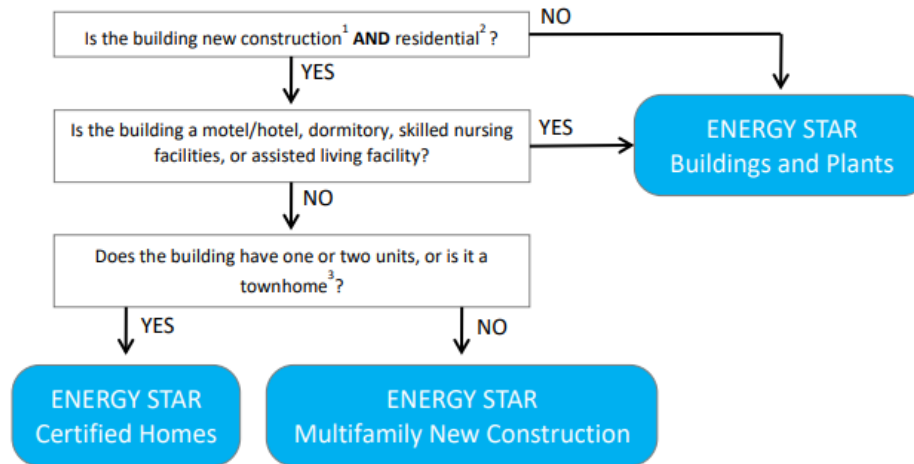
ENERGY STAR MFNC: Eligibility (Old)

EPA ENERGY STAR Multifamily New Construction Program Decision Tree, Version 1.3



ENERGY STAR MFNC: Eligibility (New)

EPA ENERGY STAR Multifamily New Construction Program Decision Tree, Version 2.0

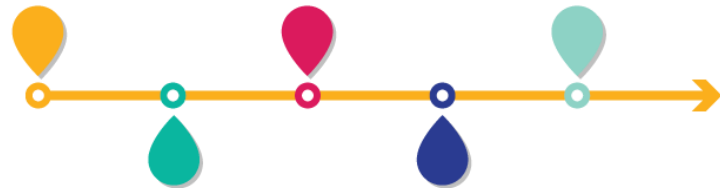


ENERGY STAR MFNC: Eligibility

- Single family = detached homes, two-family dwellings, townhomes (IRC definition)
- A townhome is a single-family dwelling unit constructed in a group of three or more attached units, each unit extends from foundation to roof and with open space on at least two sides.
- Townhomes may choose to use the Multifamily New Construction Checklists as well, but they must use the ERI Path and Certified Homes Reference Design.

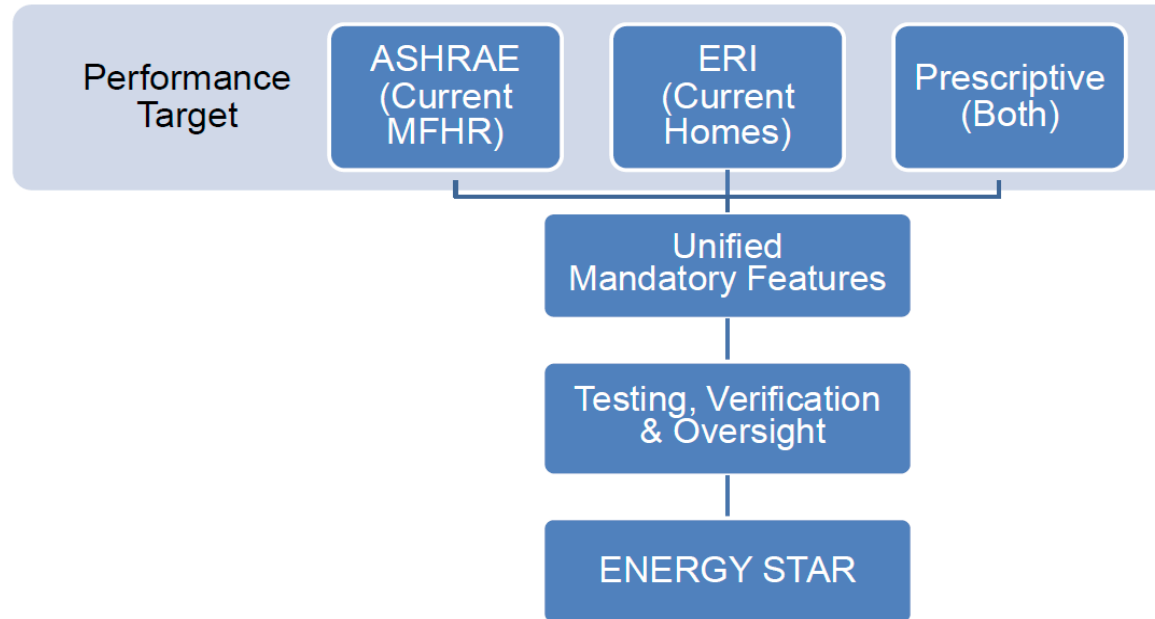
ENERGY STAR MFNC: Timeline

- Jan 2019: MFNC **available** for use
 - A building that complies with all MFNC requirements, regardless of construction permit date, can be certified
- Jan 2021: MFNC **required** for buildings with permit dates of January 1, 2021 and later



ENERGY STAR MFNC: Pathways

Multifamily New Construction Requirements Overview



ENERGY STAR MFNC: Requirements

- HVAC Design Report
- Rater Design Review Checklist
- Rater Field Checklist
- HVAC Functional Testing Checklist
- Water Management System Requirements

ENERGY STAR MFNC: Requirements

- Continuous wall insulation – 4 stories or more
- Projected Balcony / Elevated Slab Insulation
- Compartmentalization test
- Common Areas
 - Windows
 - Envelope
 - HVAC
 - Lighting
 - Hot Water
- Heated plenums in garages
 - R10 top, R13 bottom, R5 sides



ENERGY STAR MFNC: Key Takeaways

- There are more options until 2021
- Continuous Insulation is main concern for our climate zone
- Choose pathway based on other energy modelling needs
- Ensure paperwork is in scope of work



NJCEP Residential New Construction Incentives

	Single Home (i.e., 1&2 family)	Multi-Single (Townhouse)	Rater Incentive	Multifamily	MFHR
ENERGY STAR	\$1,000 + \$30/ MMBtu	\$500 + \$30/ MMBtu	N/A	\$500 + \$30/ MMBtu	\$500 + \$30/MMBtu
ZERH	\$4,000 + \$30/MMBtu	\$2,500 + \$30/MMBtu	\$1,200 (single & multi-single only)	\$1,500 + \$30/MMBtu	N/A
ZERH + RE	\$4,000 + \$30/MMBtu+ \$2,000	\$2,500 + \$30/MMBtu +\$1,500	\$1,200 (single & multi-single only)	\$1,500 + \$30/MMBtu +\$750	N/A
UEZ Bonus	+\$500 (add to any level above)	+\$500 (add to any level above)	N/A	N/A	N/A

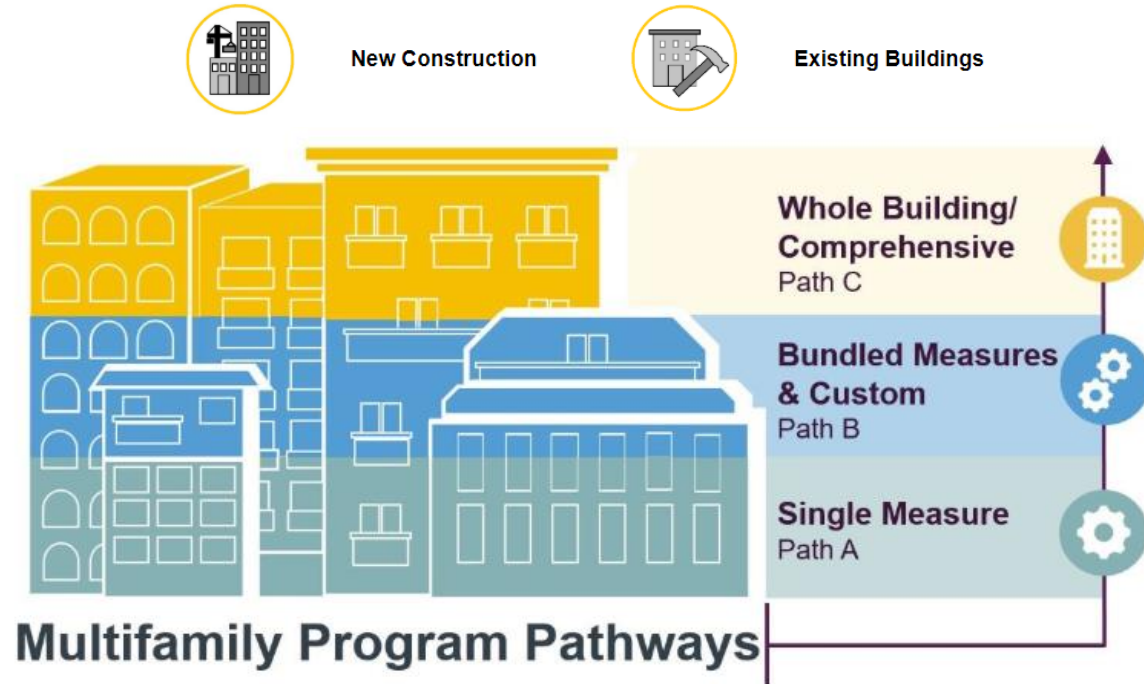
Source: <https://www.njcleanenergy.com/files/file/Residential%20Programs/NJ%20ENERGY%20STAR%20Homes/FY2020/R%20Y%20RNC%20Incentive%20Table.pdf>

NJCEP Updates to Current Structure

- \$30/MMBTU is based on savings **before any savings from Renewable Energy.**
- Transition to **the new Multifamily Program** currently on hold.
- Once Path C of the new Multifamily Program is fully implemented
 - **new multifamily buildings with five (5) or more Dwelling Units will be eligible to participate only in that Multifamily Program**
 - while new multifamily buildings having less than five (5) Dwelling Units will continue to be eligible for this RNC Program.



NJCEP Updates: The New “One-Multifamily” Program



NJCEP Rebates: ZERH Higher Incentives

	Single Home (i.e., 1&2 family)	Multi-Single (Townhouse)	Rater Incentive	Multifamily	MFHR
ENERGY STAR	\$1,000 + \$30/ MMBtu	\$500 + \$30/ MMBtu	N/A	\$500 + \$30/ MMBtu	\$500 + \$30/MMBtu
ZERH	\$4,000 + \$30/MMBtu	\$2,500 + \$30/MMBtu	\$1,200 (single & multi-single only)	\$1,500 + \$30/MMBtu	N/A
ZERH + RE	\$4,000 + \$30/MMBtu+ \$2,000	\$2,500 + \$30/MMBtu +\$1,500	\$1,200 (single & multi-single only)	\$1,500 + \$30/MMBtu +\$750	N/A
UEZ Bonus	+\$500 (add to any level above)	+\$500 (add to any level above)	N/A	N/A	N/A

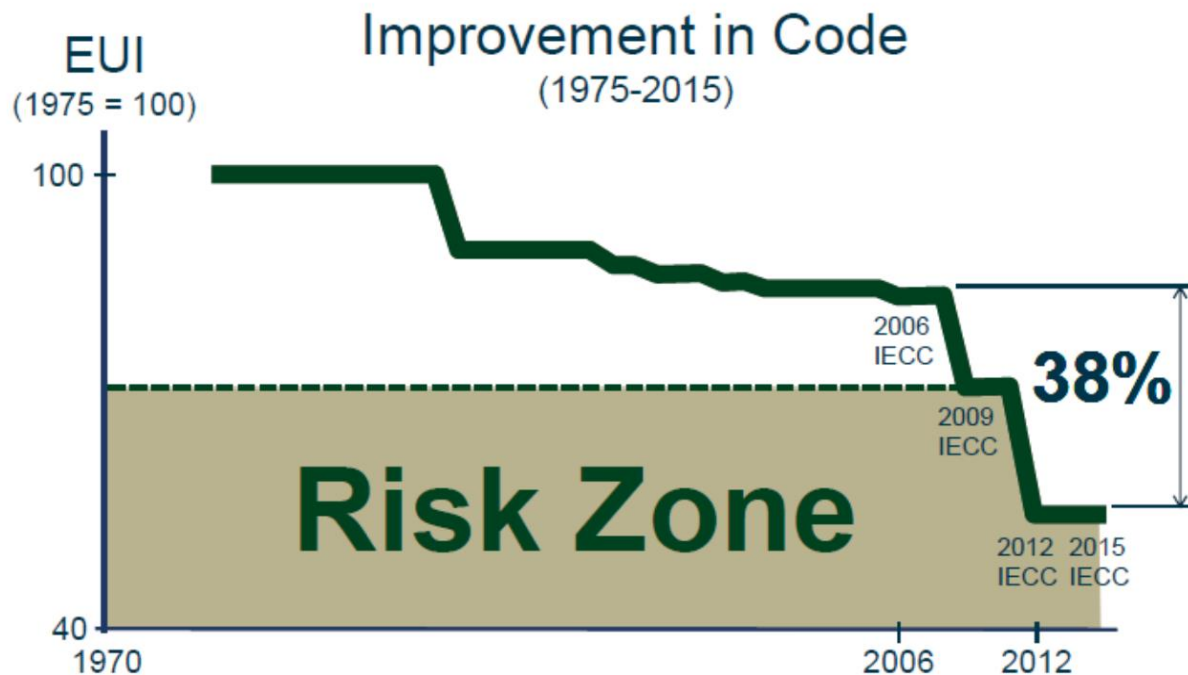
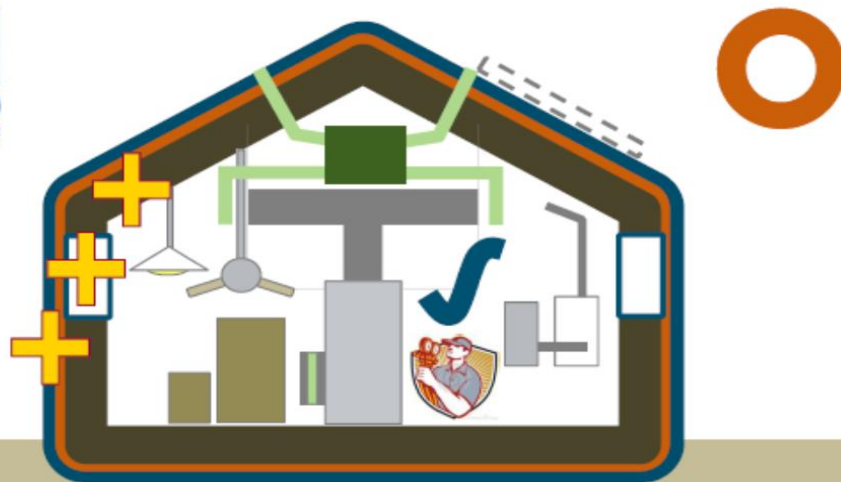


Image Basis: Building Energy Codes Program: National Benefits Assessment, 1992-2040,
https://www.energycodes.gov/sites/default/files/documents/BenefitsReport_Final_March20142.pdf

ZERH



Optimized Enclosure	Efficient Components	Water Protection	Ensured Comfort	Indoor Air Quality	Solar Ready
Energy Efficiency		Performance			0 Ready

ZERH

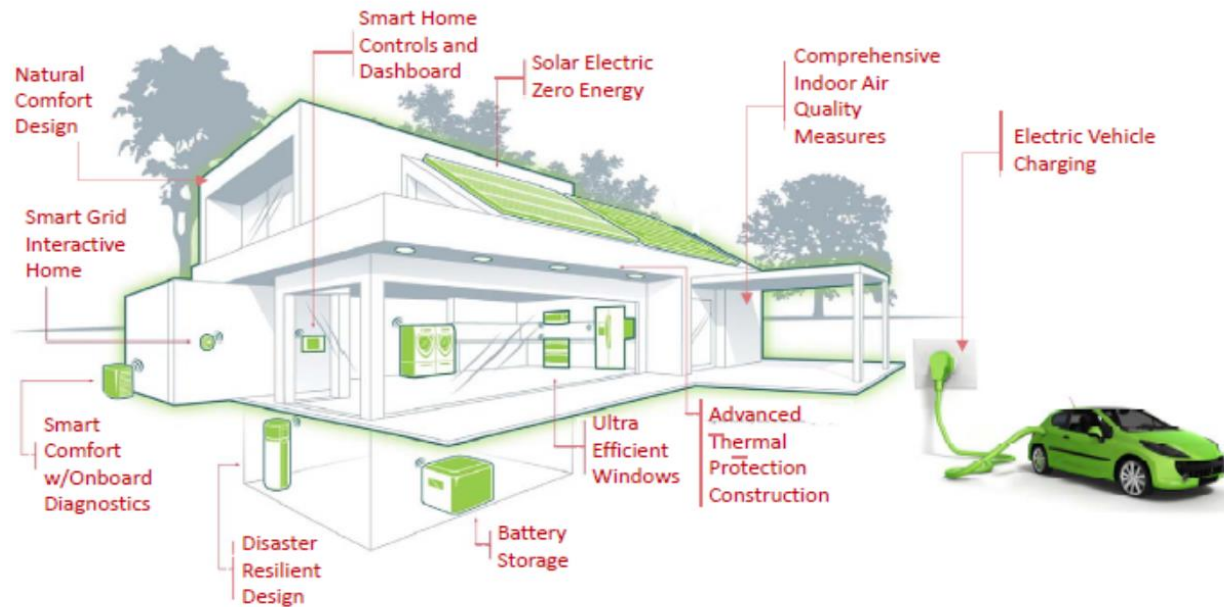


Exhibit 1: DOE Zero Energy Ready Home Mandatory Requirements for All Labeled Homes

Area of Improvement	Mandatory Requirements
1. ENERGY STAR for Homes Checklist	Confirms and ENERGY STAR Qualified Home Version 2 or 3.1.1.1.1.1
2. Envelope ¹	Preservation of all existing structural ENERGY STAR requirements^{15,16} Ceiling, wall, floor, and sub-floor or shall meet or exceed ASHRAE 90.1-2010 (ICC code) 4.1.1.1.1.1 — Excl. distribution system located within the heated, cooled and conditioned boundary or enclosure to meet the corresponding performance¹⁷
3. Duct System	— Hot water delivery systems shall meet efficient design standards¹⁸ — All existing air delivery, distribution and control systems shall meet ENERGY STAR qualified¹⁹
4. Water Efficiency	— All existing fixtures shall meet the ASHRAE 90.1-2010 (ICC code) 4.1.1.1.1.1 — All existing fixtures shall meet the ASHRAE 90.1-2010 (ICC code) 4.1.1.1.1.1
5. Lighting & Appliances ²⁴	— All existing lighting fixtures shall meet the ASHRAE 90.1-2010 (ICC code) 4.1.1.1.1.1 — All existing lighting fixtures shall meet the ASHRAE 90.1-2010 (ICC code) 4.1.1.1.1.1
6. Indoor Air Quality	— Confirms and EPA Indoor Air Quality²⁵
7. Renewable Ready	— Provides the DOE Zero Net Energy Ready Home PV Ready Checklist and Compliance (Note: This is a voluntary requirement for the Zero Net Energy Ready Home)²⁶

Exhibit 2: DOE Zero Energy Ready Home Target Home

HVAC Equipment ¹			
	Hot Climate (2012 IECC Zones 1,2) ²	Mixed Climate (2012 IECC Zones 3, 4 except Marine)	Cold Climate (2012 IECC Zones 5, Marine 5.6,7,8)
A/C Unit	95%	90%	94%
CEFC	16	15	17
SEER	12	9	13 ³
AIRSIDE FAN MOTOR (1/2 HP) (1/2 HP, 22.7 inchediameter motor, variable speed)			
	1.4 inchediameter (1/2 HP, fixed speed)	1.5 inchediameter (3/4 HP, fixed speed)	1.7 inchediameter (1 HP, fixed speed with IECC-616)
MAINTENANCE REQUIREMENTS			
• Insulation levels shall meet the 2012 IECC and achieve Grade 1 installation, per RESNET standards. • Infiltration ⁴ (ACH50): 3 in GZs 1-2 2.5 in GZs 3-4 2 in GZs 5-7 1.5 in GZs 8			
FINISHES ⁵			
	Hot Climate (2012 IECC Zones 1,2)	Mixed Climate (2012 IECC Zones 3, 4 except Marine)	Cold Climate (2012 IECC Zones 5 & Marine 5.6,7,8)
SHGC	0.29	0.27	any
U-Value	0.4	0.3	0.27
Homes qualifying through the Prescriptive Path with a total window-to-floor area greater than 15% shall have adjusted U-values of 0.35% ⁶			
Water heater			
ENERGY STAR minimum for heating all water heaters use EF = 0.60			
Effective for Homes Prescriptive Schedule 4/1/2012		Revised 07/01/2012	

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Exhibit 3: Benchmark Home Size²⁸

Strooms in Home to be Built	1	2	3	4	5	6	7	8
Conditioned Floor Area	1,000	1,600	2,200	2,800	3,400	4,000	4,600	5,200

ZERH

Optimized
Enclosure System

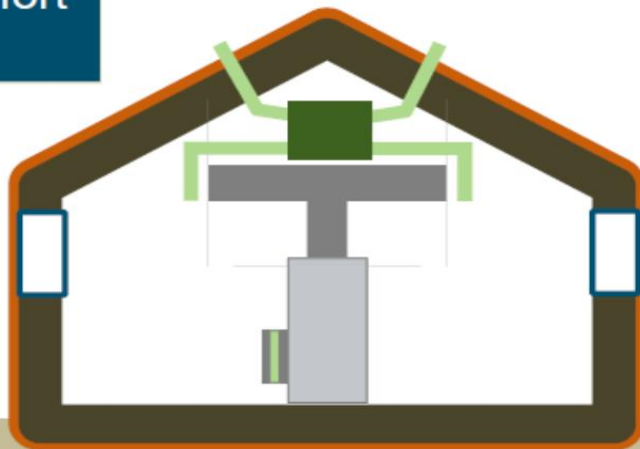


+ 2012 / 2015 IECC
Envelope Insulation
Levels

+ High Performance
Windows

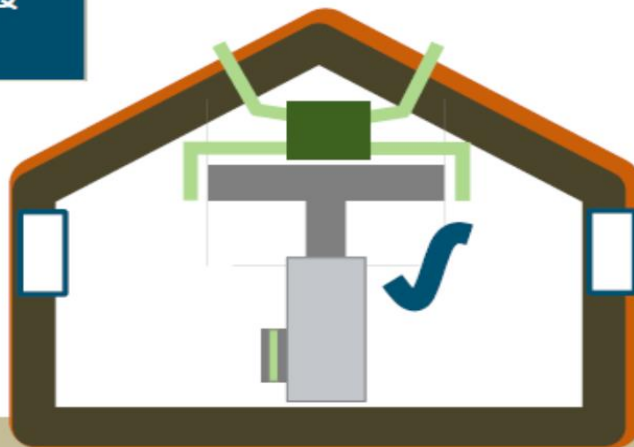
ZERH

Optimized Comfort
System



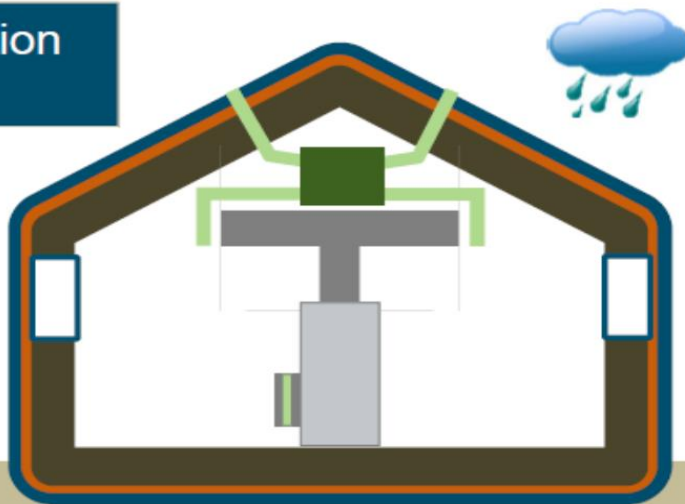
- Optimized Duct Location
- RH Control In Hot/Humid

Complete IAQ
System



- Radon
- Low emission materials
- Combustion safety
- Better filtration

Water Protection System



- Sump Pumps
- Flooring Materials
- Sub-Slab Aggregate

Efficient Components System



- Appliances
- Exhaust Fans
- Ceiling Fans
- Lighting (80%)
- Water Heating (target)



- Efficient Hot Water Distribution

Solar Ready
System



DOE ZERH PV-Ready Checklist

Key Takeaways

- More options in 2020 to determine a compliance path
- MFNC full implementation January 2021
- For our region, continuous insulation biggest concern for projects, 4+ stories
- Common area requirements
- NJCEP new multifamily program on horizon
- ZERH is a great option for your project to max. incentives
- Find a trusted source, like us, to help you navigate all this!

Thank you!

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