

Multi-Family Certifications: Learning The Hard Way



Introductions

• **Barb Yankie**

RESNET Board Member, HERS Rating Provider, LEED for Homes Provider, Enterprise TA Provider, HERS Rater, LEED Green Rater, LEED AP Homes

839 Units Certified
300 Projects Certified (Total)

Multi-Family Projects (Low-Rise) Registered but not yet Certified – 25
Multi-Family Units (Low-Rise) Registered but not yet Certified – 1253
Multi-Family Projects (Hi&Mid-Rise) Registered but not yet Certified – 7
Multi-Family Units (Hi&Mid-Rise) Registered but not yet Certified – 413
Single-Family Projects Registered but not yet Certified – 246



Introductions

• **Lauren Blissard**

Technical Director of the Green Builder® Coalition, Licensed Architect, HERS Rater, LEED Green Rater, LEED AP Homes, LEED AP BD+C, IECC 2012 Residential Energy Inspector & Plans Examiner

76 Units Certified
10 Projects Certified (Total)

Multi-Family Projects (Low-Rise) Registered but not yet Certified – 3
Multi-Family Units (Low-Rise) Registered but not yet Certified – 207
Multi-Family Projects (Hi&Mid-Rise) Registered but not yet Certified – 5
Multi-Family Units (Hi&Mid-Rise) Registered but not yet Certified – 428
Single-Family Projects Registered but not yet Certified – 19



Agenda

- The Situation & Response
- ENERGY STAR Multifamily High Rise Program (New Construction)
- LEED for Homes Midrise
- Enterprise Green Communities
- Other Opportunities & Tips from the Field
- Questions and Answers



The Situation & Response

- In a study done by Property and Portfolio Research (PPR), a subsidiary of CoStar, it was discovered that having some kind of certification was the second most important feature to the apartment renter. This was only second to a central business district location.⁽¹⁾
- One of the green home certification programs in the forefront, LEED for Homes, has seen a significant increase in the demand for their product for multi family buildings.
- *LEED for Homes Growth*⁽²⁾:
 - 2009: 4,000 Units
 - 2013: 111,000 Units – 90% as multi-family = 10% of ALL new multi-family in the market



(1) <http://www.costar.com/News/Articles/Real-Estate-In-Local-So-Are-Price-Americans/149269>
 (2) <http://www.usgbc.org/articles/costar-finds-higher-value-leed-certified-apartment-buildings>



The Situation & Response

- Developers of market rate multifamily housing continue to pursue certification.
- Many affordable projects are tied to some kind of certification.
- Raters should become familiar with:
 - LEED for Homes



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 - Energy Star Multifamily High Rise



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 - LEED for Homes
 - Energy Star for Homes
 - Energy Star Multifamily High Rise
 - Enterprise Green Communities



ENERGY STAR Multifamily High Rise Program



- ESMFHR New Construction Overview
- “Red Flags” / Stories From the Field
- Rater Opportunities



ESMFHR Program

Overview

- Administered by the U.S. Environmental Protection Agency (EPA).



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- Whole building energy modeling is required and must be done by a licensed professional.



ESMFHR Program

**ENERGY STAR
MULTIFAMILY HIGH RISE PROGRAM - Photo Template**
Project Name: ENERGY STAR Condominiums

Use this template as a guide to help you comply with the photo documentation requirements outlined in the ENERGY STAR Green Source Training and Distribution Protocol and Distributor. All labels or tags on photos must be legible and identifiable as necessary.

Tip: Check the camera to make the correct photo size when "shoot" or "picture" if you are familiar with the camera. To ensure the photo is not automatically cropped to the wrong size, remember the size of the file, however ensure that the required information can be identified.

APPLIANCES - PROTOCOL 1
Include a photo of the exemplar of each type of appliance showing appliance Energy Star label.

Appliance Type	Photo Description	Notes
Refrigerator	[Placeholder for Refrigerator Photo]	Notes: Refrigerator
Clothes Washer	[Placeholder for Clothes Washer Photo]	Notes: Clothes Washer
Dishwasher	[Placeholder for Dishwasher Photo]	Notes: Dishwasher

WHAT DOES GREEN MEAN TO YOU? INDIVIDUALS UNITED FOR A GREENER FUTURE

ESMFHR Program

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WHAT DOES GREEN MEAN TO YOU? INDIVIDUALS UNITED FOR A GREENER FUTURE

ESMFHR Program

Overview

- Administered by the U.S. Environmental Protection Agency (EPA).
- Whole building energy modeling is required and must be done by a licensed professional.
- Documentation is primarily managed through two Excel spreadsheets in one word document.
- The process requires the developer of the project to apply to the energy star multifamily high-rise program. As of December 31, 2014, all applicants need to comply with ASHRAE 90.1-2010.

WHAT DOES GREEN MEAN TO YOU? INDIVIDUALS UNITED FOR A GREENER FUTURE

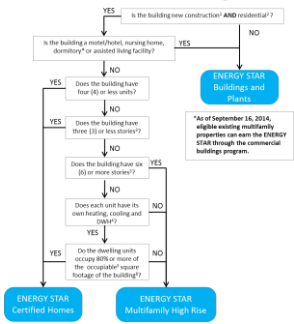
ESMFHR Program

Red Flags!

- Projects that are eligible.



ESMFHR Program



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- Design team should complete the T & V spreadsheets to the best of their ability.



ESMFHR Program



WHAT GREEN MEANS TO YOU?



ESMFHR Program

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- Make sure that the developer does the application and includes you on the communication.



WHAT GREEN MEANS TO YOU?



ESMFHR Program

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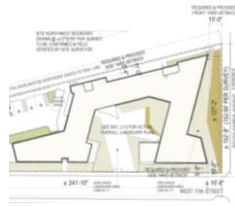
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- Things that should be in your contract from the beginning.



WHAT GREEN MEANS TO YOU?



ESMFHR Program



WHAT DOES GREEN LEAF MEAN TO YOU?



INDIVIDUALS UNITED FOR A GREENER FUTURE

ESMFHR Program

Red Flags!

- Projects that are eligible.
- Design team should complete the T & V spreadsheets to the best of their ability.
- Make sure that the developer does the application and includes you on the communication.
- Things that should be in your contract from the beginning.
- Sampling Nightmares: exhaust & ventilation shafts. Know what you are getting yourself into!



WHAT DOES GREEN LEAF MEAN TO YOU?



INDIVIDUALS UNITED FOR A GREENER FUTURE

ESMFHR Program

Red Flags!

Exhaust & ventilation shafts:
Know what you are getting yourself into!



WHAT DOES GREEN LEAF MEAN TO YOU?



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ESMFHR Program

Rater Opportunities

- Energy modeling if a licensed professional.
- REQUIRED testing and inspections to be completed by a qualified energy rater, or a Home Energy Rating System Rater (HERS Rater).
 - Inspections (multiple of each)
 - Framing
 - Water management & exterior envelope details
 - Insulation
 - Systems
 - Testing
 - Compartmentalization
 - Ventilation (ASHRAE 62.2)
 - Exhaust
 - Ductwork



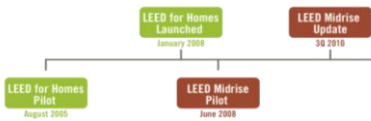
LEED for Homes Midrise



- LEED for Homes Overview
- LEED for Homes with an ESMFHR Twist
- “Red Flags” / Stories From the Field
- Rater Opportunities



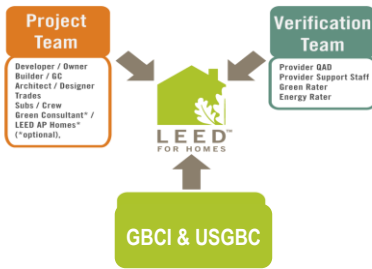
LEED for Homes Timeline



Credit Categories



LEED for Homes Delivery Teams



Roles and Responsibilities: Green Rater

- Provide field verification services
 - If Green Rater is not a qualified energy rater, a **qualified energy rater is needed to perform various performance tests**
- Review and submit the project submittal package to the Provider QAD
- Communicate with project team and Provider on LEED-related issues



Verification Team vs. Project Team

LEED for Homes Green Rater cannot:

- Provide design or construction services on projects on which they are rating
 - OK to provide education
- Verify work if their company does installation (e.g. installs insulation)
- Sign accountability forms as a project team member

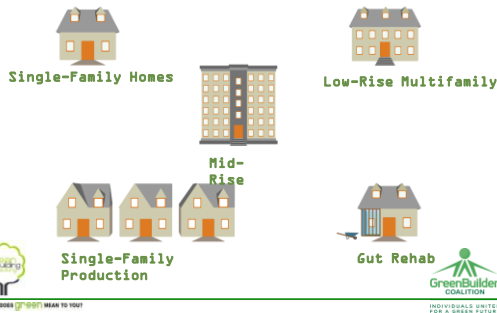


Roles and Responsibilities: Green Rater

- Can be employee of Provider or independent contractor
 - May contract directly with project team, but Provider oversight is still required
- May get involved in a project before or after preliminary rating



Program Scope and Eligibility



Low Rise Multifamily Buildings (up to 3 Stories*)

- **Home Size Adjustment:**
Based on weighted average size of units
- **Energy Modeling:** Weighted average of all unit types (worst case)
- **Whole building is certified** (not individual units)
- All units must have same LEED measures



Mid-Rise Multifamily Buildings (4 to 12 Stories)

- **Same considerations as Low Rise Multifamily**
- ENERGY STAR Multi-Family High-Rise Testing & Verification Protocol
- Major differences include:
 - SS 7: Alternative Transportation
 - EA 1: Performance measured relative to ASHRAE Standard 90.1
 - EQ 11: Environmental Tobacco Smoke
 - EQ12: Compartmentalization of Units



Mid-Rise Energy

- ASHRAE 90.1
 - Current version – minimum of 15% greater than ASHRAE 90.1-2007
 - V4 – Minimum of 5% greater than ASHRAE 90.1-2010
 - Approximately 10% increase in efficiency
- EPA Multifamily Building Performance Program Simulation Guidelines
- Reduced Envelope Leakage
- Tests focus on individual units – not whole building



Mid-Rise IEQ

"Biggest Construction Change"

Air Sealing (Unit Compartmentalization)

- Properly seal units to prevent excessive air leakage between units. Focus areas:
 - Gypsum board joints, transitions and penetrations
 - Exterior, interior and demising walls
 - Different strategies for wood, metal and masonry construction

Blower Door Test

- Units are tested for air compartmentalization



Documentation Requirements

- Preliminary Energy Model ("as designed")
- Final Energy Model ("as built")
- LEED Mid-rise Submittal Package (compiled by Green Rater)
 - Final Project Checklist
 - Excel Spreadsheet
 - Accountability Forms
 - Durability Management Plan



LEED for Homes Midrise

Red Flags!

- Design team selecting the wrong LEED version.



LEED for Homes Midrise

Red Flags!

- Design team selecting the wrong LEED version.
- Contracting the verification team or replacement verification team late.



LEED for Homes Midrise

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- Design team selecting the wrong LEED version.
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- LEED for Homes Provider not contacted soon enough



LEED for Homes Midrise

Red Flags!

- Design team selecting the wrong LEED version.
- Contracting the verification team or replacement verification team late.
- LEED for Homes Provider not contacted soon enough
- Design team has no previous Mid-rise knowledge



LEED for Homes Midrise

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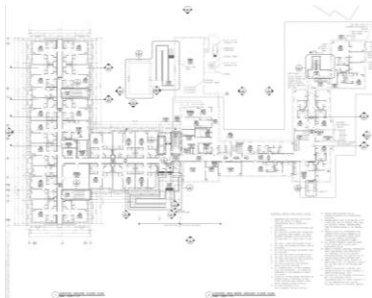
- Design team selecting the wrong LEED version.
- Contracting the verification team or replacement verification team late.
- LEED for Homes Provider not contacted soon enough
- Design team has no previous Mid-rise knowledge
- No definition of roles.



LEED for Homes Midrise



LEED for Homes Midrise



3rd party In-field Verification and Testing

- Green Raters verify measures
- Energy Raters complete required performance testing
- During and post-construction
- Credit based on “as-installed” not “as-designed”

Mandatory	Optional
Insulation installation	Irrigation system
Envelope leakage	Fireplace backdraft
Duct leakage	Ventilation air flow
Refrigerant charge test	Exhaust air flow
	Heating / cooling supply air



LEED for Homes Midrise

Rater Opportunities

- LEED for Homes requires testing and inspections to be completed by a qualified energy rater, or a Home Energy Rating System Rater (HERS Rater).
- Many Green Raters (their specialized verifier for the LEED program) are also qualified Energy Raters (HERS Raters) and can provide both the onsite verification and performance testing services.



Enterprise Green Communities



- EGC Overview
- “Red Flags” / Stories From the Field
- Rater Opportunities



Enterprise Green Communities

Overview

- Program is specifically for affordable projects.
- Program requires modeling, testing, and inspections to be completed by a qualified energy rater, or a Home Energy Rating System Rater (HERS Rater).
- Program is an overlay on Energy Star for Homes or Energy Star Multi Family High Rise.



Enterprise Green Communities

Red Flags!

- Oftentimes affordable housing funding is tied to certification or even multiple certifications.



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- Rater may have to sign an affidavit.
- Certain testing is optional if the project falls under Energy Star for Homes v3 whereas if ESMFHR it is required.



Enterprise Green Communities

Red Flags!

- Oftentimes affordable housing funding is tied to certification or even multiple certifications.
- Rater may have to sign an affidavit.
- Certain testing is optional if the project falls under Energy Star for Homes v3 whereas if ESMFHR it is required.
- Documentation is different if the project is ESMFHR verses Energy Star for Homes.



Enterprise Green Communities

Rater Opportunities

- Energy modeling if a licensed professional for ESMFHR
- REQUIRED testing and inspections to be completed by a qualified energy rater, or a Home Energy Rating System Rater (HERS Rater).
- Multi-Cert analysis



Other Opportunities & Tips

Rater Opportunities

- Multi-Cert Analysis



Multi-Cert Analysis

ITEM	COMPONENT	EGC	DCEO**	V3	IECC 2012
1	PERFORMANCE COMPLIANCE- ENERGY STAR V3	5.1	X	REQUIRED	R405
2	HERS TESTING OR ENERGY MODEL	5.2	IF CUSTOM PROJECT	OPTIONAL	R405
3	EQUIPMENT SIZING (ACCA, JIS OR ASHRAE)	5.3	MAY BE REQUIRED	YES	MANDATORY R404
4	FENESTRATION U-FACTOR	5.1 - E*V3	30 OR ENERGY STAR RATED	0.3	0.32
5	SKYLIGHT U-FACTOR	5.1 - E*V3	X	0.55	0.55
6	WOOD-FRAME WALL-R-VALUE	5.1 - E*V3	R-21 TOTAL WITH AT LEAST R-5 CONTINUOUS	MEET OR EXCEED IECC 2009 AND ACHIEVE GRADE 1 INSTALLATION	R-20 OR R-13+5 CONT.
7	FLOOR R-VALUE	5.1 - E*V3	X	MEET OR EXCEED IECC 2009 AND ACHIEVE GRADE 1 INSTALLATION	R-30
8	BASEMENT WALL-R-VALUE	5.1 - E*V3	R-15	MEET OR EXCEED IECC 2009 AND ACHIEVE GRADE 1 INSTALLATION	R-15 / R-19
9	ACH50	5.1 - E*V3	4.0	4.0	3.0



Other Opportunities & Tips

Rater Opportunities

- Multi-Cert Analysis
- Other OP??
- Other OP??
- Tips
 - Are you Ready?
 - Where am I?
 - "Breaker, Breaker"
 - Our Work is Done Here



Final Thoughts

- Expand your knowledge of the multi-family green building programs serviced in your area.
- Market your services to align with multi-family green building programs.
- Learn your liability & modify your business tools.



Q & A



Thank You!





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