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

  439 Units Certified
  226 Projects Certified (Total)

  Multi-Family Projects (Low-Rise) Registered but not yet Certified – 24
  Multi-Family Units (Low-Rise) Registered but not yet Certified – 639
  Multi-Family Projects (Hi&Mid-Rise) Registered but not yet Certified – 6
  Multi-Family Units (Hi&Mid-Rise) Registered but not yet Certified – 413
  Single-Family Projects Registered but not yet Certified – 211

Introductions

- **Laureen 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
- 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/Article/Real-Estate-Is-Local;-So-Are-Price-Amenities/149659

(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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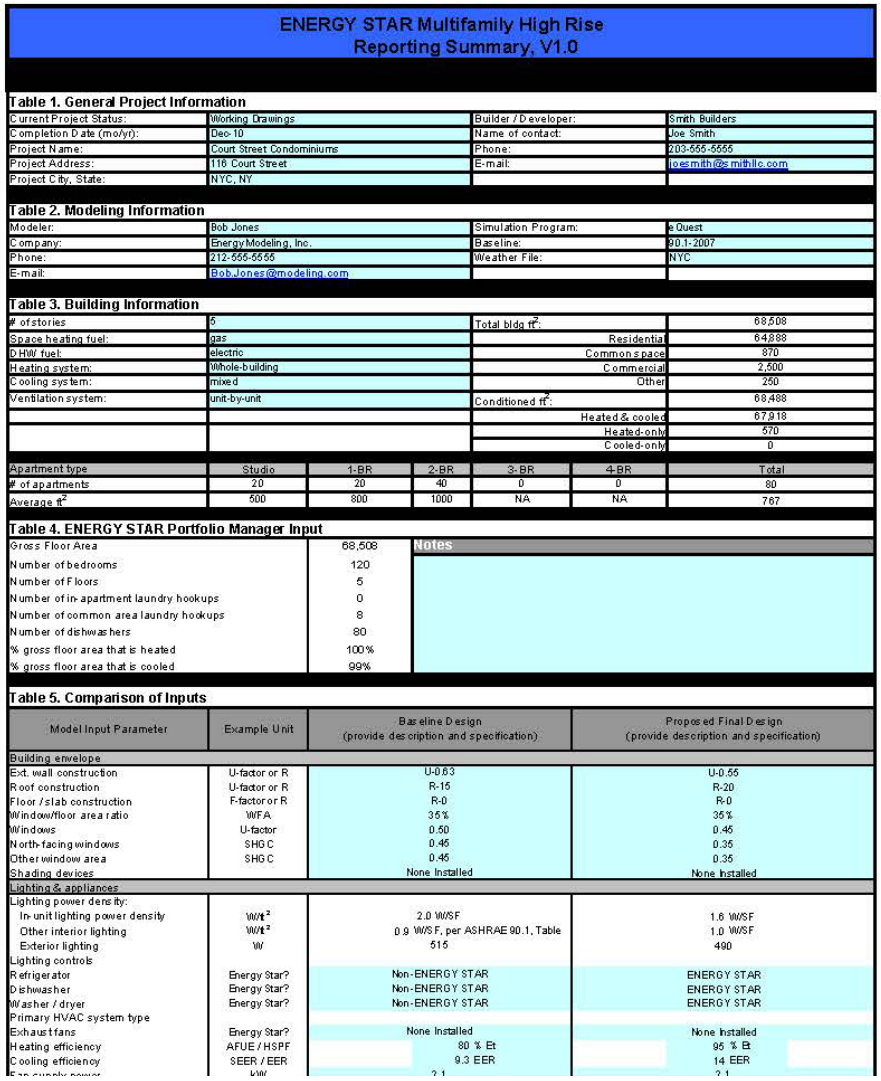
ESMFHR Program



ENERGY STAR Multifamily High Rise
Reporting Summary, V1.0

Table 1. General Project Information

Current Project Status:	Working Drawings	Builder / Developer:	Smith Builders
Completion Date (mo/yr):	Dec-10	Name of contact:	Joe Smith
Project Name:	Court Street Condominiums	Phone:	203-555-5555
Project Address:	116 Court Street	E-mail:	joesmith@smithllc.com
Project City, State:	NYC, NY		

Table 2. Modeling Information

Modeler:	Bob Jones	Simulation Program:	eQuest
Company:	Energy Modeling, Inc.	Baseline:	90.1-2007
Phone:	212-555-5555	Weather File:	NYC
E-mail:	Bob.Jones@modeling.com		

Table 3. Building Information

# of stories	5	Total bldg ft^2:	68,508
Space heating fuel:	gas	Residential	64,888
DHW fuel:	electric	Common space	870
Heating system:	Whole-building	Commercial	2,500
Cooling system:	mixed	Other	250
Ventilation system:	unit-by-unit	Conditioned ft^2:	68,488
		Heated & cooled	67,918
		Heated-only	570
		Cooled-only	0

Apartment type	Studio	1-BR	2-BR	3-BR	4-BR	Total
# of apartments	20	20	40	0	0	80
Average ft^2	500	800	1000	NA	NA	767

Table 4. ENERGY STAR Portfolio Manager Input

Gross Floor Area	68,508
Number of bedrooms	120
Number of Floors	5
Number of in-apartment laundry hookups	0
Number of common area laundry hookups	8
Number of dishwashers	80
% gross floor area that is heated	100%
% gross floor area that is cooled	99%

Notes

Table 5. Comparison of Inputs

Model Input Parameter	Example Unit	Baseline Design (provide description and specification)	Proposed Final Design (provide description and specification)
Building envelope			
Ext. wall construction	U-factor or R	U-0.63	U-0.55
Roof construction	U-factor or R	R-15	R-20
Floor / slab construction	F-factor or R	R-0	R-0
Window/floor area ratio	WFA	35%	35%
Windows	U-factor	0.50	0.45
North-facing windows	SHGC	0.45	0.35
Other window area	SHGC	0.45	0.35
Shading devices		None Installed	None Installed
Lighting & appliances			
Lighting power density:			
In-unit lighting power density	W/ft^2	2.0 W/SF	1.6 W/SF
Other interior lighting	W/ft^2	0.9 W/SF, per ASHRAE 90.1, Table	1.0 W/SF
Exterior lighting	W	515	490
Lighting controls			
Refrigerator	Energy Star?	Non-ENERGY STAR	ENERGY STAR
Dishwasher	Energy Star?	Non-ENERGY STAR	ENERGY STAR
Washer / dryer	Energy Star?	Non-ENERGY STAR	ENERGY STAR
Primary HVAC system type			
Exhaust fans	Energy Star?	None Installed	None Installed
Heating efficiency	AFUE / HSPF	80 % Et	95 % Et
Cooling efficiency	SEER / EER	9.3 EER	14 EER
Fan supply power	kW	2.1	2.1

ESMFHR Program

T&V Protocol Number and Description	*T&V Worksheet*	Potential Inspection Schedule Categories
Protocol 1.1 - ENERGY STAR Certified Appliances	1.1 - APPLIANCES	Post-Completion
Protocol 2.1 - Central DHW Systems (Serving 5+units/spaces)	2.1-2.2, 5.1, 5.3 - HEATING&DHW	Finishes
Protocol 2.2 - Distributed DHW (Individual Apartment or Common Space) Systems	2.1-2.2, 5.1, 5.3 - HEATING&DHW	Finishes
Protocol 3.1 - Wall Construction/Insulation, R-value	3.1 - ENV_BELOW GRADE WALL	Pre-Drywall
	3.1 - ENV_ABOVE GRADE WALL	Pre-Drywall
	8.1 - INF_EXT AIR BARRIER	Pre-Drywall
Protocol 3.2 - Roof Construction/Insulation, R-value	3.2 - ENV_ROOF	Pre-Drywall
Protocol 3.3 - Floor Construction/Insulation, R-value	3.3 - ENV_FLOORS	Pre-Drywall
Protocol 3.4 - Window Selection, U-value, and SHGC	3.4 - ENV_WINDOWS	Pre-Drywall
	8.1 - INF_EXT AIR BARRIER	Pre-Drywall
Protocol 3.5 - Exterior Door Selection, Entranceway Design, Use of Vestibules, Weather-stripping, and Air Leakage	3.5 - ENV_EXTERIOR DOORS	Post-Completion
	8.1 - INF_EXT AIR BARRIER	Pre-Drywall
Protocol 4.1 – Heating and Compartmentalization	4.1 - GARAGES_CMPTZ & HEATING	Pre-Drywall
Protocol 5.1 - Central Heating Systems (Serving 5+ units/spaces)	2.1-2.2, 5.1, 5.3 - HEATING&DHW	Finishes
Protocol 5.2 - Central Cooling Systems (Serving 5+ units/spaces)	5.2, 5.4 - COOLING	Finishes
Protocol 5.3 - Distributed (Individual Apartment or Common Space) Heating Systems	2.1-2.2, 5.1, 5.3 - HEATING&DHW	Finishes
Protocol 5.4 - Distributed (Individual Apartment or Common Space) Cooling Systems	5.2, 5.4 - COOLING	Finishes
Protocol 6.1 - Common Areas, In-Unit, Garage and Exterior Lighting	6.1, 6.2, 6.3 - LIGHTING	Finishes
Protocol 6.2 – Emergency Lighting (Exit Signs)		Finishes
Protocol 6.3 – Controls		Finishes
Protocol 7.1 - Motors	7.1 - MOTORS	Finishes
Protocol 8.1 - Building Envelope Air Sealing and Compartmentalization Testing	8.1 - INF_EXT AIR BARRIER	Pre-Drywall
	8.1-INF_COMPTZN VIS INSPECTION	Pre-Drywall
	8.1 - INF_BLOWER DOOR TEST	Post-Completion
Protocol 8.2 - Common Area and In-Unit Ventilation (CFM), Fan Efficiency, Central Exhaust Duct Leakage	8.2 - VENT_SCHEDULE&TAB REPORT	Finishes
	8.2 - VENT_DUCT TIGHTNESS	Pre-Drywall
Protocol 9.1 - Metering Configuration	9.1 - METERS	Post-Completion

ESMFHR Program

ENERGY STAR

MULTIFAMILY HIGH RISE PROGRAM

Project Name: ENERGY STAR Condominiums

INFILTRATION - BLOWER DOOR TEST - PROTOCOL 8.1	Date:	Field Verified By:
	MM/DD/YY	John Green

Schedule:
This process begins with the construction documentation. A minimum of 3-5 site visits are recommended to properly inspect air sealing details. Each exterior, common area and in-unit element on the air sealing checklists must be inspected at each of the following stages to ensure use of proper materials and complete seals exist for each juncture or penetration. Fan pressure testing shall be conducted for two purposes: Preliminary testing should be conducted on an initial set of apartments to verify the performance of the air barrier detailing and installation and Final verification testing shall be conducted on a subset of the remaining apartments for quality assurance.

1) Sample apartment inspection and blower door test
2) Post-correction testing of sample apartment
3) Final inspection and testing of apartments post completion

Equipment Needed
1) Camera
2) Measuring Tape or ruler
3) Knife
4) Screwdrivers (Hex, Phillips, Flat)
5) Duct Mask
6) Blue Painter's Tape
7) Metal Tape
8) Floor Plans
9) Riser Diagrams
10) Duct Blaster
11) Manometer

Sampling Requirements:
1) Post-construction, single point blower door testing of apartment units must be conducted following RESNET sampling protocol. The tested units shall be representative of the variety of apartment types in the building, including: end/corner units and inside units; top-floor, middle-floor, bottom-floor units; and at least one unit of each size/type (i.e., studios, 1-bed, 2-bed, etc.). Any apartment that exceeds the allowed leakage rate (0.30 CFM50 per square foot of enclosure), must confirm that all items below have been properly sealed prior to retesting. Per RESNET Section 803.7.8, until the failure is corrected in all identified (failed) apartments in the sample set, none of the apartments shall be deemed to meet the threshold or labeling criteria.

NOTES FOR DRAWINGS AND SPECIFICATIONS	PLAN REVIEW COMMENTS	LOCATION dwg / spec	PLAN REVIEW
• Enclosed apartments must be fan pressure tested as an independent unit in accordance with either ASTM E779-2010 or ASTM E1827. The target maximum air leakage rate is 0.3 CFM per square foot of the enclosure bounding the apartment at an induced pressure difference of 50 pascals. E[A recommends at least two sample apartments are fan pressure tested as soon as they can be scheduled. A subset of the remaining apartments shall be fan pressure tested for quality assurance purposes. See the section on Fan Pressure Testing for details.	Add note to drawings: Enclosed apartments must be fan pressure tested as an independent unit in accordance with either ASTM E779-2010 or ASTM E1827. The target maximum air leakage rate is 0.3 CFM per square foot of the enclosure bounding the apartment at an induced pressure difference of 50 pascals. EPA recommends at least two sample apartments are fan pressure tested as soon as they can be scheduled. A subset of the remaining apartments shall be fan pressure tested for quality assurance purposes. See the section on Fan Pressure Testing for details.	Spec 70244	Yes

PROTOCOL	PATH REQUIREMENT	PLAN REVIEW COMMENTS	LOCATION dwg / spec	PLAN REVIEW	INSPECTION	INSPECTION COMMENTS (Problems, sample details/apt #s, etc.)
Compliance Statement • Assembly is consistent with the project specifications and Proposed Design model or meets or exceeds the requirements listed in the *Prescriptive Path*.	Apartments shall be sealed to reduce air exchange between the apartment and outside as well as the apartment and other adjacent spaces. A maximum air leakage rate of 0.30 CFM50 per square feet of enclosure is allowed. Specific apartment air leakage paths to be sealed are listed in the ENERGY STAR Multifamily High Rise T&V Worksheet 8.1-INF_COMPTZN VIS INSPECTION	Plans match proposed design assumptions	Spec 70244	Yes	Yes	As-built conditions match proposed design assumptions

ESMFHR Program

ENERGY STAR
MULTIFAMILY HIGH RISE PROGRAM – Photo Template

Project Name: ENERGY STAR Condominiums

Use this template as a sample format to comply with the photo documentation requirements outlined in the *ENERGY STAR MFHR Testing and Verification Protocols and Worksheets*. Add, delete or re-size photo boxes and descriptions as necessary.

Tip: Once the cursor is inside the desired photo box select 'Insert'→'Picture'→'From File' from the menu above in order to automatically resize the photos to fit the boxes. Compress all photos to minimize the size of this file, however ensure that the required information can be interpreted.

APPLIANCES – PROTOCOL 1

Include a clear photo of the nameplate of each type of appliance showing appliance is Energy Star qualified.

	
Notes: Refrigerator	Notes: Clothes Washer

	
Notes: Dishwasher	Notes:

ESMFHR Program

Overview

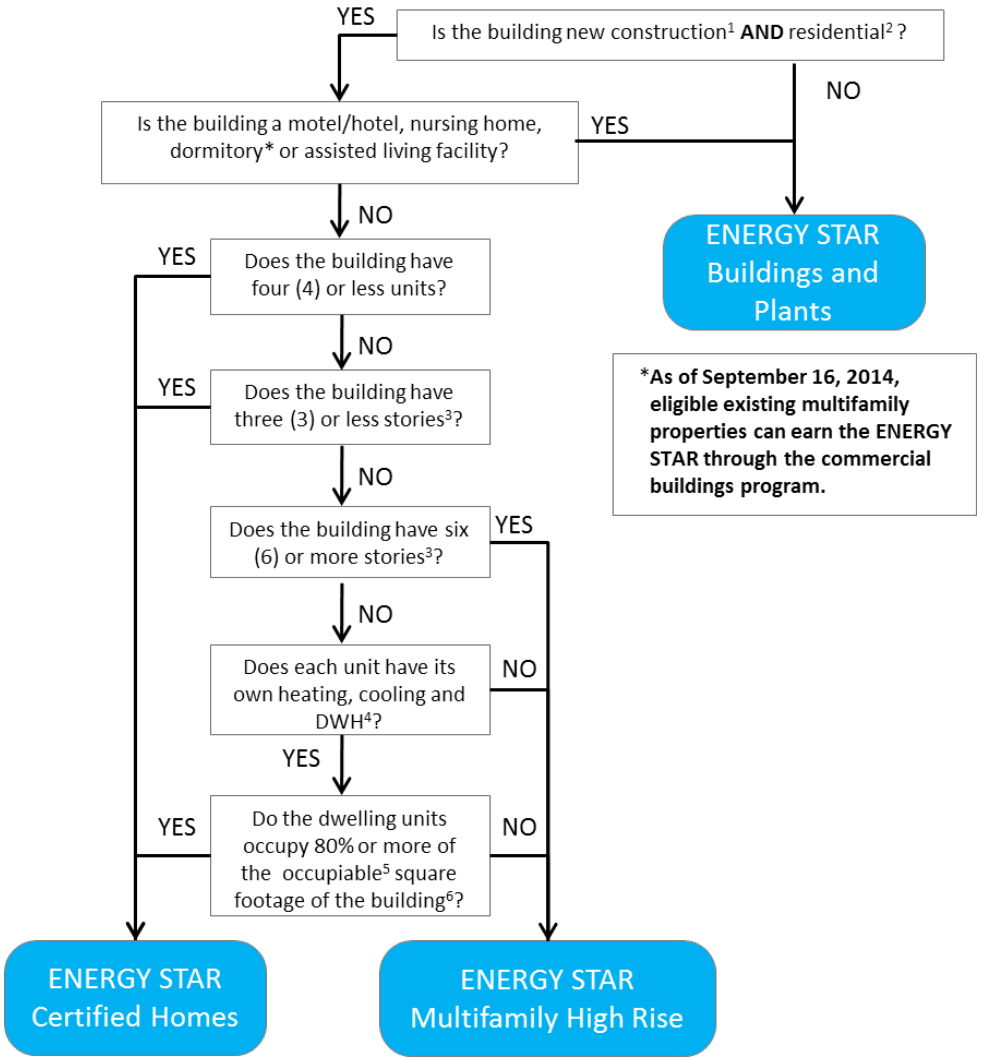
- Administered by the U.S. Environmental Protection Agency (EPA).
- Whole building energy modeling is required and must be done by a licensed professional.
- Documentation is primarily managed through two Excel spreadsheets in one word document.
- The process requires the developer of the project to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

ESMFHR Program

Red Flags!

- Projects that are eligible.

ESMFHR Program



*As of September 16, 2014, eligible existing multifamily properties can earn the ENERGY STAR through the commercial buildings program.

ESMFHR Program

Red Flags!

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

ESMFHR Program

ENERGY STAR

MULTIFAMILY HIGH RISE PROGRAM

Project Name: ENERGY STAR Condominiums

HVAC - DHW SYSTEMS - PROTOCOL 2.1, 2.2	Date:	Field Verified By:
	MM/DD/YY	John Green

Schedule:
1) The quality assurance and verification procedures occur during the pre-construction, construction, and post-construction phases of system installation. Refer to the appropriate standards (eg. NFPA) to determine exact timing of inspections.
2) Commissioning of the system occurs during pre-construction and construction phases of installation. Inspection, testing, and final commissioning are conducted during the turn over/acceptance phase of the installation of the system.
3) Training shall occur following installation of the system and completion of all quality assurance and verification procedures.
4) The developer or GC shall ensure that deliveries are inspected prior to accepting them to verify that product substitutions by the distributor or manufacturer have not resulted in plumbing fixtures with higher flow rates than those in the Proposed Design or required by the *Prescriptive Path*.
5) Minimum of one (1) on-site inspection required, preferably immediately after installation so that corrective action can be taken if necessary. Delivery tickets may be used to verify complete shipments but on-site inspections of a sample of installed plumbing fixtures is required.

Equipment Needed
1) Mechanical Schedule and Floor Plans
2) Camera

Sampling Requirements:
1) 100% of centralized primary equipment (i.e. DHW plants) shall be inspected in the quality assurance and verification process.
2) Individual spaces or apartments containing electric or fossil-fuel DHW systems shall be inspected and tested following the modified RESNET sampling protocol outlined in the *How to Use this Manual* section on page 11 of the *T&V Protocols*, including at least one of each unique type.
3) Spaces containing plumbing fixtures must be inspected following the modified RESNET sampling protocol outlined in the *How to Use this Manual* section on page 11 of the *T&V Protocols*, including at least one of each unique fixture.

4) All spaces with Domestic Hot Water service (i.e. bathrooms, kitchens, etc.) shall be tested for hot water delivery temperature following the modified RESNET sampling protocol outlined in the How to Use this Manual section on page 11 of the *T&V Protocols*, with the additional requirement that, for each central DHW system, the spaces sampled must include the first space supplied by the system and the last space supplied by the longest run of the system.

5) *PHOTOS REQUIRED*
- Provide photos of the domestic hot water system and faceplates to verify proper installation and compliance with proposed design.
- Photograph one (1) representative fixture of each type of plumbing fixture being inspected.

ID -DHW System and Low-Flow Fixtures	DESCRIPTION	LOCATION	QUANTITY	MFR	MODEL #	INPUT (BTU/H) (kW)	OUTPUT (BTU/H) (kW)	EFFICIENCY	GPM / GPF	ENERGY STAR/ Water Sense	LOCATION (dwg/spec)	PLAN REVIEW	INSPECTION	INSPECTION COMMENTS Problems, sample details/apt #s, etc.
WH-1	Condensing Water Heater	Basement	1	Laars	CON200	200000	184000	92%	NA	Yes	M-001	Yes		
	Kitchen Faucet	Apartments	45	Kohler	R12	NA	NA	NA	1.50	Yes	M-001	Yes		
	Bathroom Toilet	Apartments	45	Kohler	R13	NA	NA	NA	1.28	Yes	M-001	Yes		
	Showerheads	Apartments	45	Kohler	R14	NA	NA	NA	2.50	No	M-001	No		
	Bath Faucet	Apartments	45	Kohler	R15	NA	NA	NA	1.50	Yes	M-001	Yes		

PROTOCOL	PATH REQUIREMENT	PROPOSED ERM	ENERGY MODEL	PLAN REVIEW COMMENTS	LOCATION (dwg/spec)	PLAN REVIEW	INSPECTION	INSPECTION COMMENTS Problems, sample details/apt #s, etc.
Compliance Statement • All DHW systems are consistent with the project specifications and Proposed Design model or meets or exceeds the requirements listed in the *Prescriptive Path*.	DHW Domestic water heating systems must comply with ASHRAE 90.1-2007 Sections 7.4 and 7.5.	See below	See below	See below	See below	No		
			MODELING INPUTS					
DHW - Type & Efficiency • Provide Proposed DHW system type, efficiency, capacity, fuel, include number, efficiency and HP of pumps, and whether VFD is specified in the MOTOR section. • DHW equipment efficiency must be verified through AHRI ratings. If not available, OEM-provided performance data must be used, in compliance with ASHRAE 90.1-2007, Section 6.4.1.4.	Domestic water heating equipment shall be ENERGY STAR certified, where applicable, and meet minimum efficiencies below. ENERGY STAR certification must be verified through the ENERGY STAR website. Atmospherically vented gas water heaters, tankless coils and side-arm water heaters shall not be specified. Indirect water heaters, with or without storage, are acceptable. Water Heater Minimum Efficiencies • In-Unit Electric OR Gas Water Heaters (storage or instantaneous) - Gas (EF): 0.69-(0.002 x Tank Gallon Capacity) - Electric (EF): 0.97-(0.001 x Tank Gallon Capacity) • Hot Water Supply Boiler (Oil or Gas): 85% Et.	One central gas condensing boiler (200,000 BTU/H), 92% efficient, in basement, serves apartment units	Baseline HIR=1.25, 394500 BTU/H Proposed HIR=1.087, 300000 BTU/H	Plans match proposed design assumptions	M-200, Spec 15000	Yes		

DRAW YOUR OWN green LINE

INDIVIDUALS UNITED FOR A GREEN 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.

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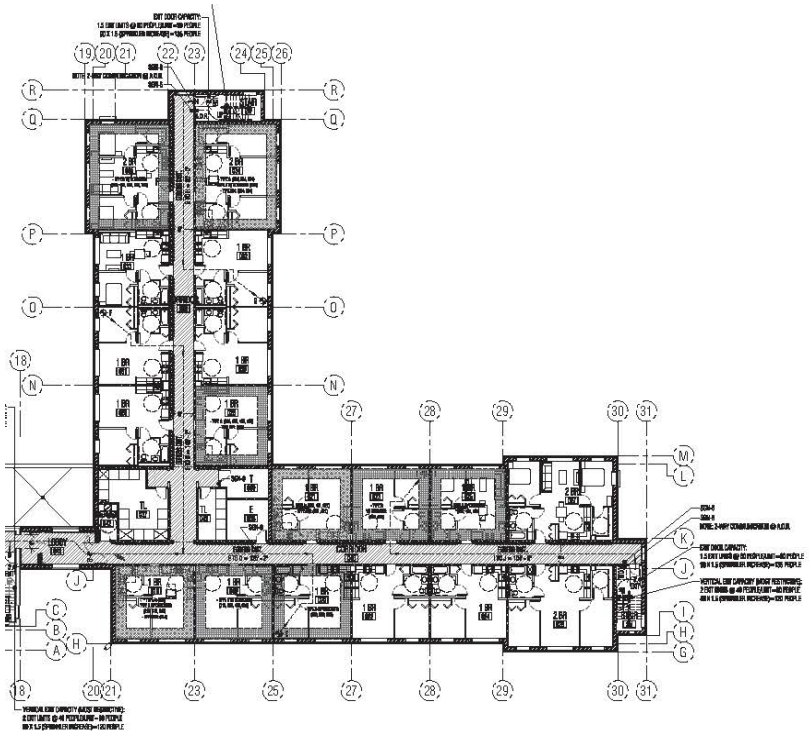
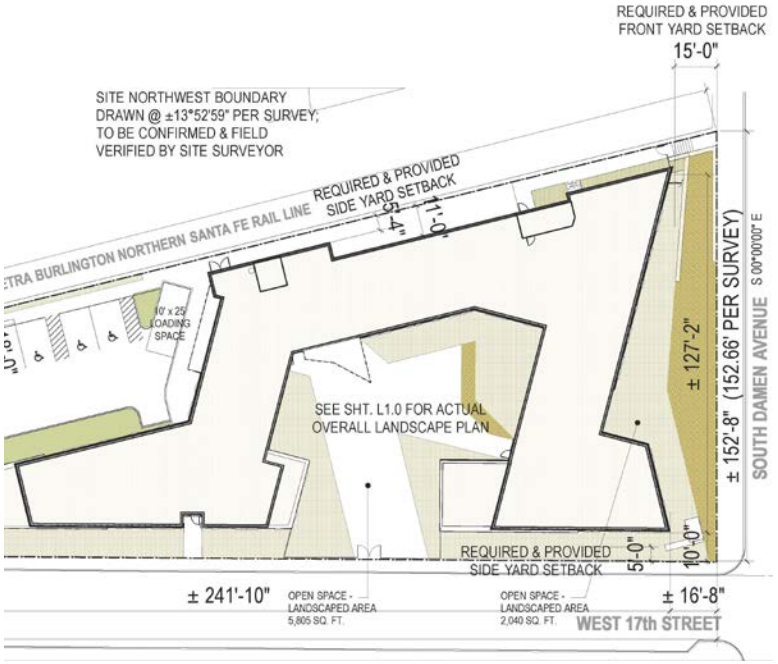
- Things that should be in your contract from the beginning.

ESMFHR Program





ESMFHR Program

Red Flags!

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- 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!

ESMFHR Program

Red Flags!

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

ESMFHR Program

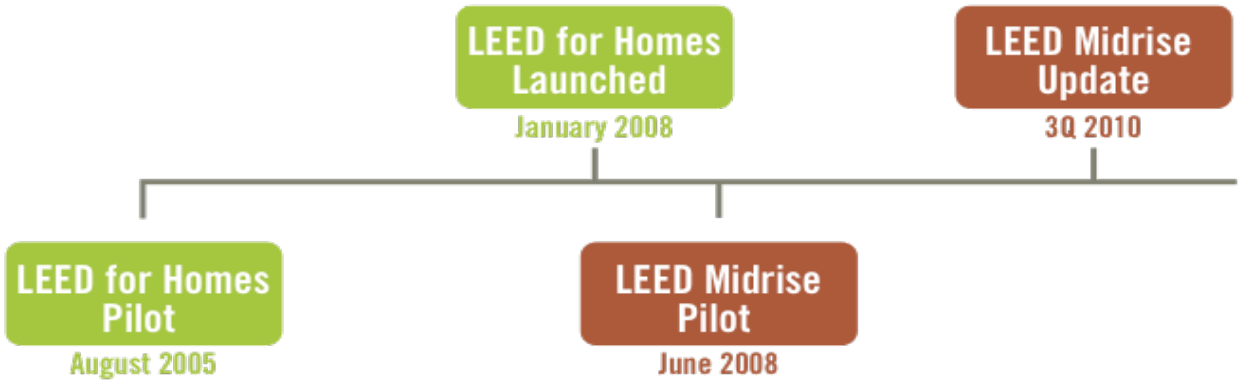
Rater Opportunities

- 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

Program Scope and Eligibility

Single-Family Homes

Mid-Rise

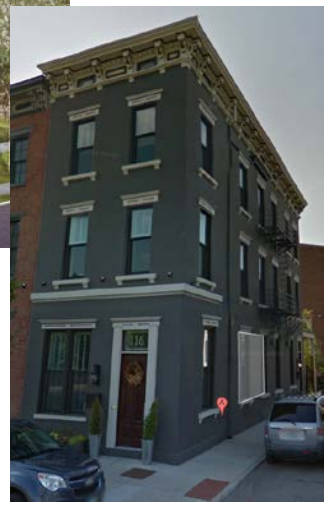
Low-Rise Multifamily

Single-Family Production

Gut Rehab

Low Rise Multifamily Buildings (up to 3 Stories*)

- **Home Size Adjustment**: Based on weighted average size of units
- **Energy Modeling**: Option of worst case unit, or whole building
- **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 90.1-2004
  - EPA Multifamily Building Performance Program Simulation Guidelines
    - LEED Midrise uses As-Built Modeling versus As-Designed
- 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

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

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

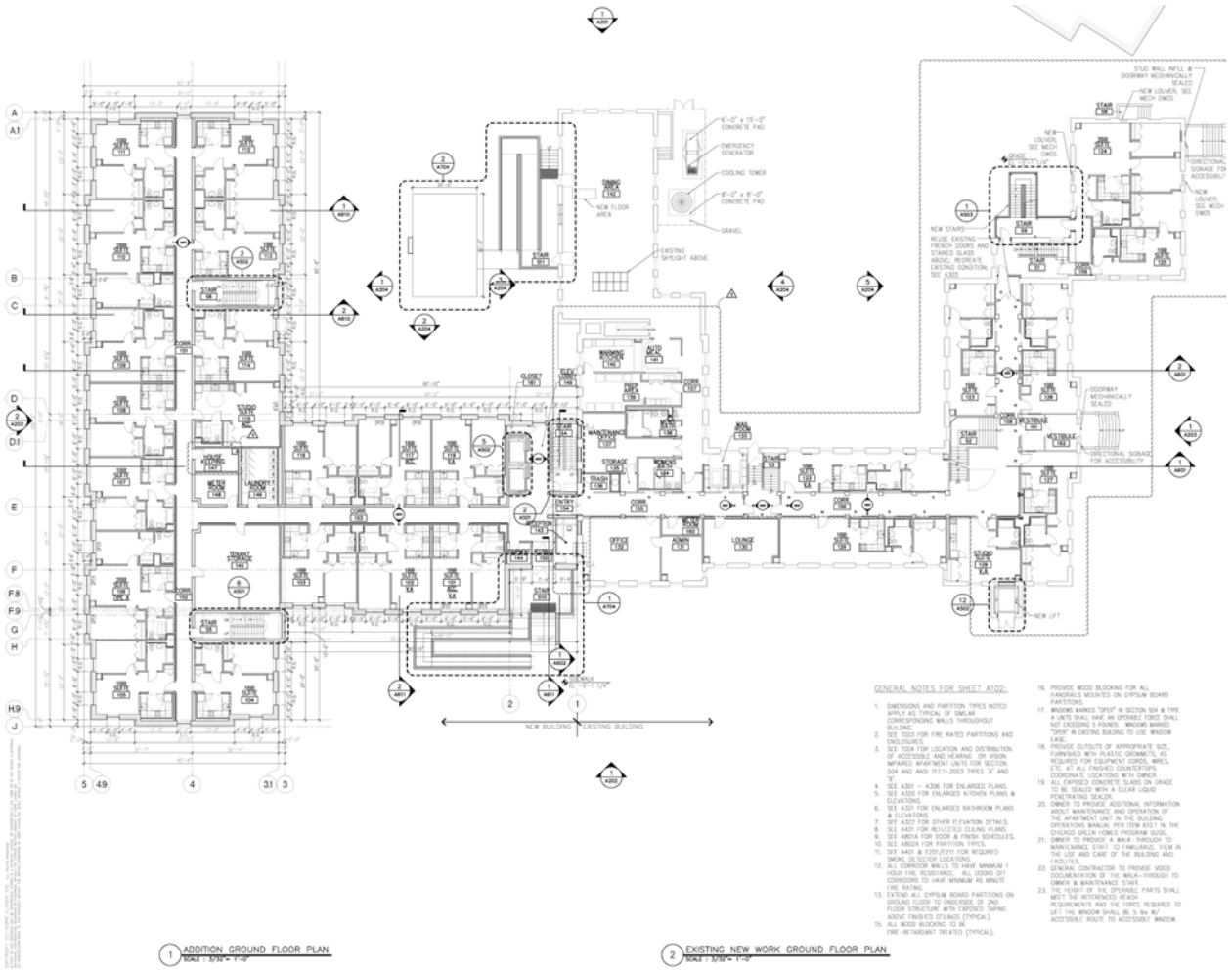
Red Flags!

- 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
- No definition of roles.

LEED for Homes Midrise

http://www.seniorlifestyle.com/property/senior-suites-of-norwood-park

LEED for Homes Midrise



DRAW YOUR OWN green LINE

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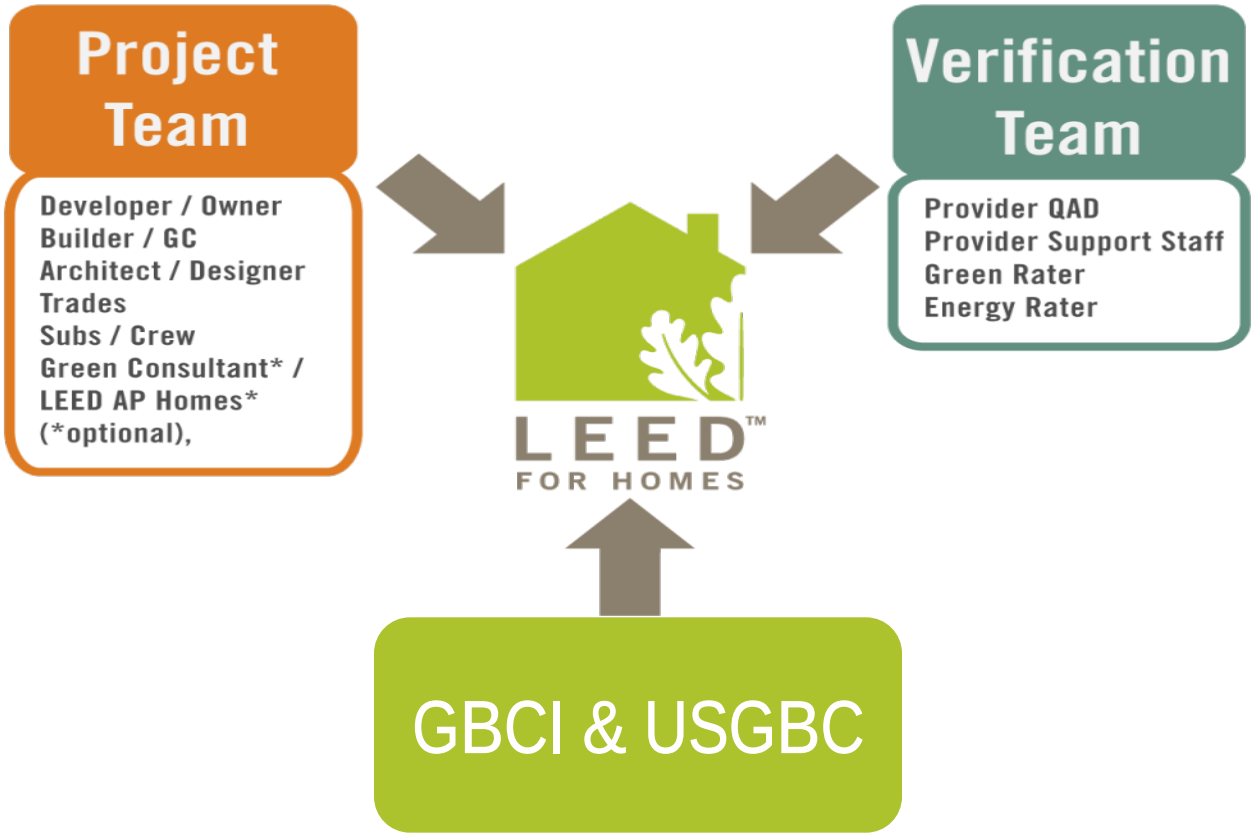
LEED for Homes Delivery Teams



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 • Envelope leakage • Duct leakage • Refrigerant charge test	• Irrigation system • Fireplace backdraft • Ventilation air flow • 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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Red Flags!

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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.
- 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

EGC 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 J/S OR ASHRAE)	5.3	MAY BE REQUIRED	YES	MANDATORY R403.6
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

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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