

How Standards are evolving to better address 'Multifamily' Ratings

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Session Overview

Part I - Evolution

- Background (Feb 2012 – Feb 2017)
- What's Happened since last February
- What Happens Next

Part II – What makes it 'better' for Multifamily?

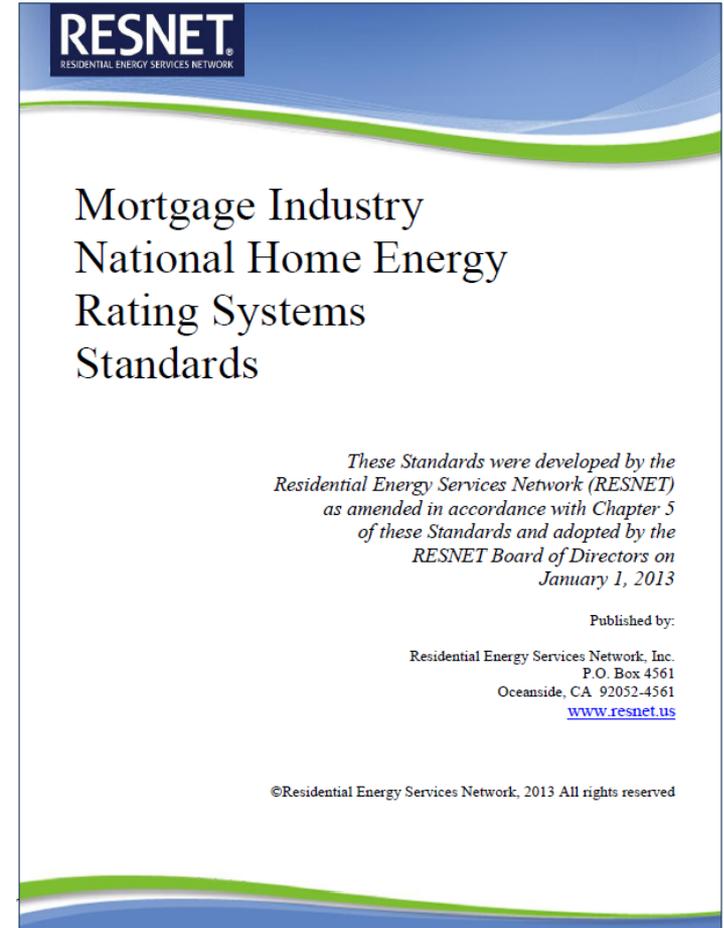
- Specific Technical Changes in the draft of 301-201x
- Specific Technical Changes in the draft of 380-201x
- Other changes coming soon for Inspections & Sampling!

Part III

- Q&A

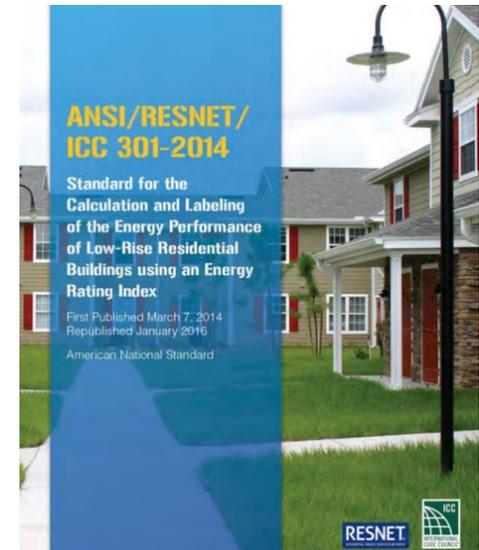
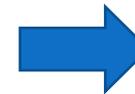
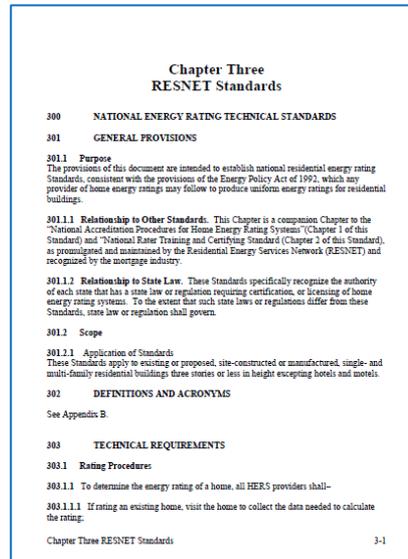
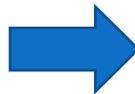
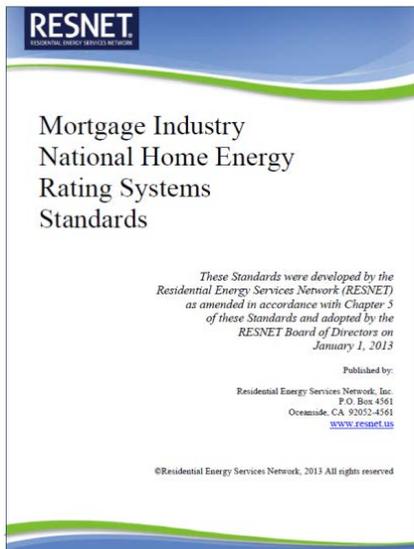
Background

- A long time ago, we just had the RESNET Mortgage Industry National Home Energy Rating System 'Standards' (aka MINHERS). Written for 'homes' but allowed for MF under 3 stories; stretched to ES in 4 & 5
- It covered everything, from how to calculate a HERS Rating, do a blower door test, do inspections, sampling, maintain your Rater credential, QA stuff
- Good, but not an ANSI Standard, and not great for MF



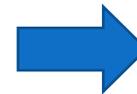
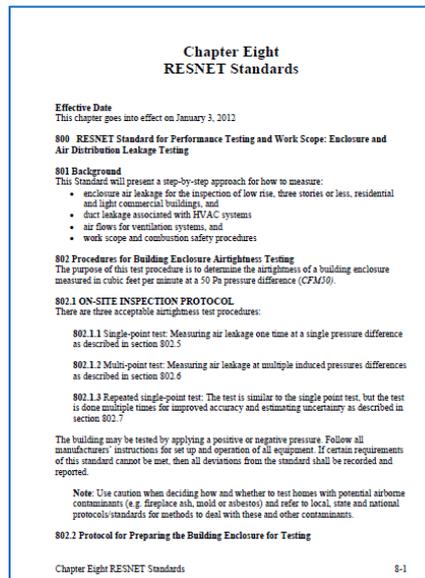
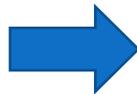
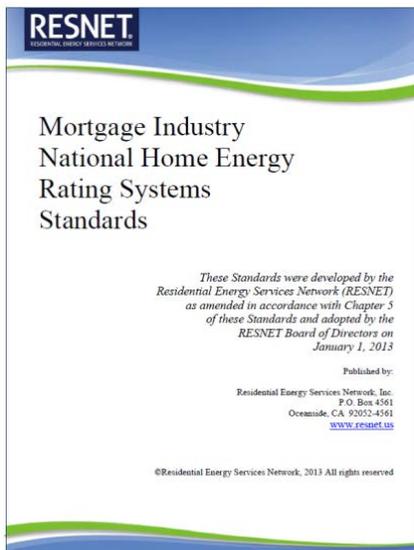
MINHERS Chapter 3 >>> ANSI 301-2014

- Somewhere in 2011, RESNET began the process of taking chapters from MINHERS and developing them into ANSI Standards, with the goal of them being part of the IECC



MINHERS Chapter 8 >>> ANSI 380-2016

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How did that pan out?

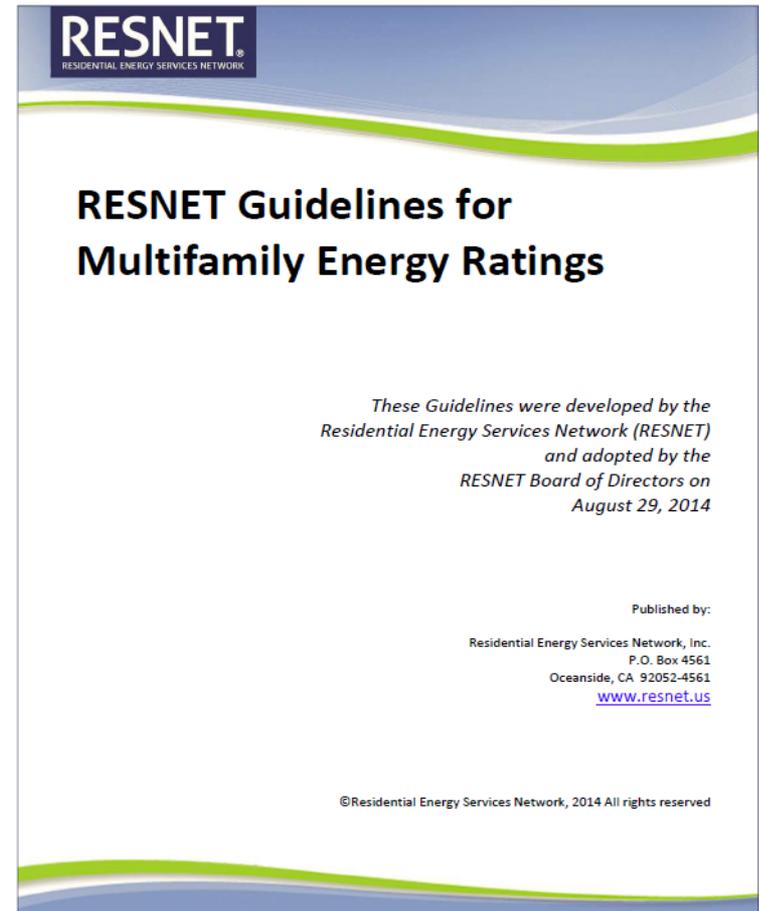
- 2015 IECC was the first time an “ERI” path was offered as an alternative performance path (but ANSI 301-2014 was not published in time to be referenced)
- 2018 IECC, RESNET successfully was able to have ANSI 301-2014 referenced as the standard that should be used when calculating an “ERI”
- 2018 IECC, RESNET also successfully was able to have ANSI 380-2016 referenced as one of the standards that should be used for blower door testing (but unfortunately, was not successful for duct leakage testing)
- RESNET MINHERS now references these two ANSI Standards, instead of the previous Chapters 3 & 8

...meanwhile, in a parallel universe...

- Multifamily Working Group (MFWG) was formed here in Orlando, 5 yrs ago (February 2013). Volunteers included:
 - Ben Adams, MaGrann
 - James Brauer, TexEnergy
 - Brian Christensen, AEC
 - Krista Egger, Enterprise
 - Dave Epley, DC DCRA
 - Pat Fitzgerald, NYSERDA
 - Asa Foss, USGBC
 - Bruce Harley, CSG
 - Abe Kruger, SK Collaborative
 - Scott Lee, Southface
 - Ted Leopkey, EPA
 - Ken Owens, Franklin Energy
 - Matt Root, CSG
 - Rob Salcido, AEC
 - Brian Stanfill, MaGrann
 - Gayathri Vijayakumar, SWA
 - Meghan Walsh, USDA
 - Li Ling Young, VEIC

How did that pan out?

- **February 2013-2014:** MFWG developed guidelines that addressed shortcomings in MINHERS for testing, sampling, inspections, & modeling
- **February 2014:** Presented the Guidelines at the Atlanta RESNET Conference
- **August 2014:** RESNET published the Guidelines and they were available for use, but not required or enforced.



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What Happened Next?

- **June 2016:** RESNET Standards Development Committee (SDC300) created a Multifamily Sub-Committee to take those Guidelines and create a draft of an ANSI standard dedicated to Multifamily.

Volunteers included, some old MFWG and some new:

Thiel Butner, Pando Alliance

Rebecca Hudson, EPA

Brian Christensen, NORESO Matthew Root

Sean Denniston, NBI

Robert Salcido, Ekotrope

Asa Foss, USGBC

Brian Stanfill, MaGrann

Paul Gay, US Ecologic

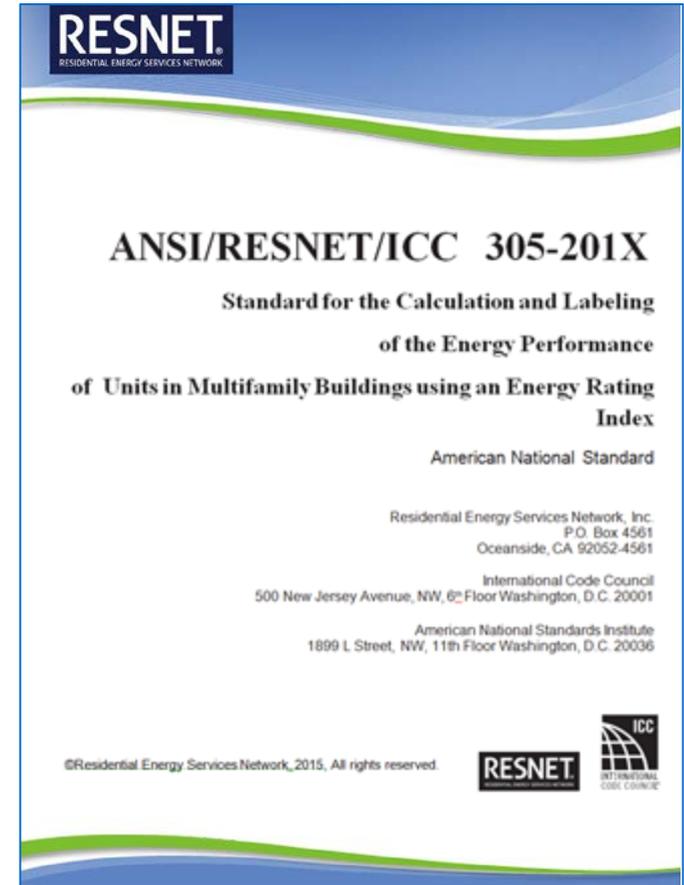
Gayathri Vijayakumar, SWA

Bruce Harley

...then what happened??

....a crazy amount of work, that's what!

- **June 2016 – February 2017:**
 - Created 4 Task Groups:
 - Modeling, Testing, Inspections, Sampling
 - After LOTS of debate, agreed to develop ANSI 305, as a “sister” standard to ANSI 301-2014
- **February 2017:** Presented the concept of ANSI 305 at RESNET Conference in Arizona as a standalone standard for Multifamily (modeling, inspections, sampling), with testing being added to ANSI 380



What's Happened Since February 2017?

- **February 2017 – August 2017:** Continue to develop the standard, adding/improving upon the Guidelines
- **August 2017:** Completed 305 draft to provide to SDC300



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What's Happened Since February 2017?

- **February 2017 – August 2017:** Continue to develop the standard, adding/improving upon the Guidelines
- **August 2017:** Completed 305 draft to provide to SDC300
- **September 2017:** Ditched the concept of ANSI 305 (!!!!)
 - **Why?**
 - ANSI 301 had just barely been successful at getting into the 2018 IECC. Getting a whole new standard (ANSI 305) into 2021 IECC could be difficult
 - Trying to keep ANSI 301 and ANSI 305 in sync was going to be a logistical nightmare
 - ANSI 301-2014 was due for its 5 year update (2019 version) anyway, sooooo.....

What's Happened Since September 2017?

- **Sep-Nov 2017:** Merged 305 into the 2019 draft of 301-2014, along with other updates slated for 2019 version; MF SC/TG members were 'adopted' into other SDC300 sub-committees (Modeling went to Calculations SC, Testing went to Equipment SC, Inspections went to Enclosures SC)
- **But, what about Sampling????**
- **November 2017:** Developed a Task Group under SDC900 to review our Multifamily Sampling Appendix and also tasked them with developing a standalone standard for Sampling, for single family AND multifamily. This results in removal of the Multifamily Sampling Appendix from draft 301-2019. (Have questions? Ask Thiel!)

What's Happened Since November 2017?

- **Nov-Dec 2017:** PDS-01 of 380-201x released for public comment with MF procedures developed by MF SC Testing Task Group & Equipment SC
- **Nov-Dec 2017:** MF SC Inspections Task Group works with Enclosures SC to develop Working Draft of an Appendix B for the Inspection of Minimum Rated Features for 301-2019
- **Nov-Dec 2017:** Calculation SC reviews and “approves” Working Draft of 301-2019
- **January 2018:** SDC300 approves as Committee Draft
- **February 2018:** SDC300 votes to approve PDS-01 of BSR/RESNET/ICC 301-201x; preview copy released
- **February 2018:** Present at RESNET Conference

What Happens Next?

- **March 20:** 2pm webinar on the overall changes in 301
 - **March – April 2018:** 1st round of public comment*
 - **April – June 2018:** Respond & revise draft
 - **July - August 2018:** 2nd round of public comment
 - **August – October 2018:** Respond & revise draft
- If all goes well....
- **December 2018:** RESNET approves 301-2019
 - **Spring 2019:** ANSI approves 301-2019; MINHERS adopts & proposes for 2021* IECC; HERS software work to incorporate;
 - **January 2020:** Available for use for HERS Ratings
 - **January 2021:** Part of 2021* IECC for ERIs

Part II – What makes it ‘better’ for MF?

- Specific Technical Changes in the draft of 301-201x
- Specific Technical Changes in the draft of 380-201x
- Other changes coming soon for Inspections & Sampling!

Multifamily stuff in draft Std 301-2019

- Today's topic:
What you'll want to study in draft Std 301-2019
- This is your MF homework during the comment period.
 - After all, we want it to be workable!
- Note – this Standard also serves as a spec document for what rating software tools must be able to do.

New expanded Scope

Scope: Dwelling Units & Sleeping Units,

*except hotels and motels. Not whole buildings with multiple units.**

- Townhomes
- Duplexes
- College dorms & Assisted Living
- Apt buildings
- Dwelling units in mixed commercial/residential

*** Composite ERI for residential portions of a building is described in section 5.1.5.**

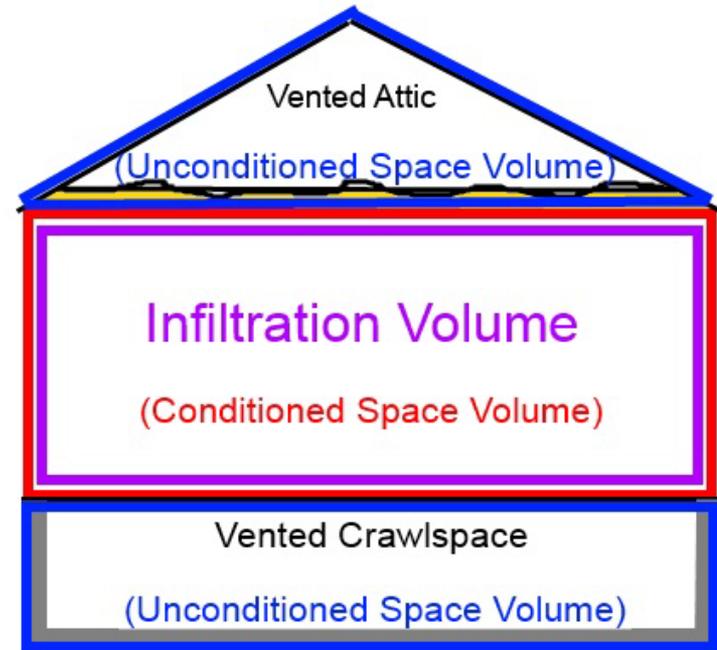
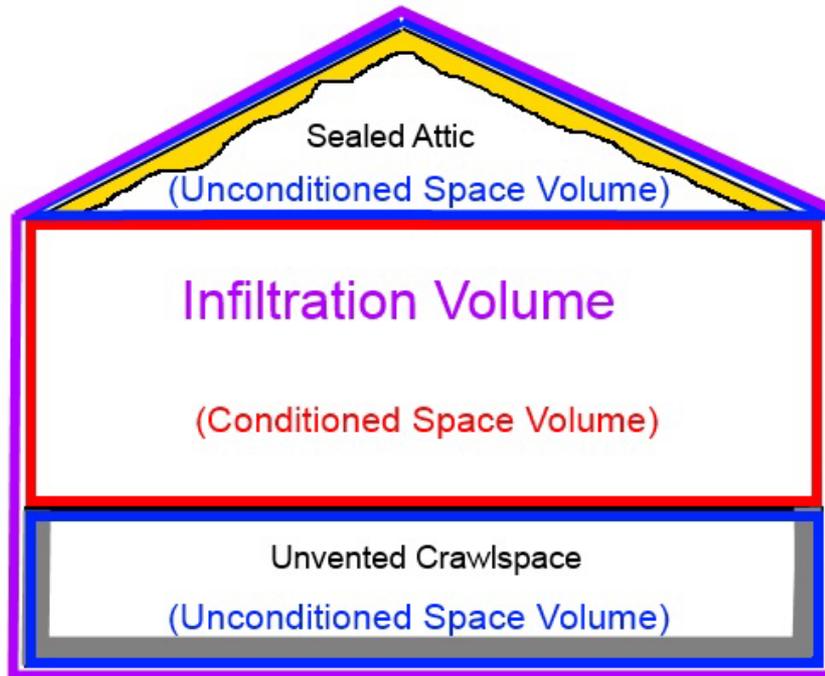
Get your terminology right!

New definitions & refinements on old definitions

-- So review them!

- Bedroom refinements for MF
 - e.g., egress window not always realistic!
- Updated definitions on MF Qualifying Light Fixture Locations
 - (FYI – also new Tier definitions for efficient lighting)
- Dwelling-Unit Mechanical Ventilation
 - refined Supply and Balanced definitions to ensure fresh air comes directly from outdoors

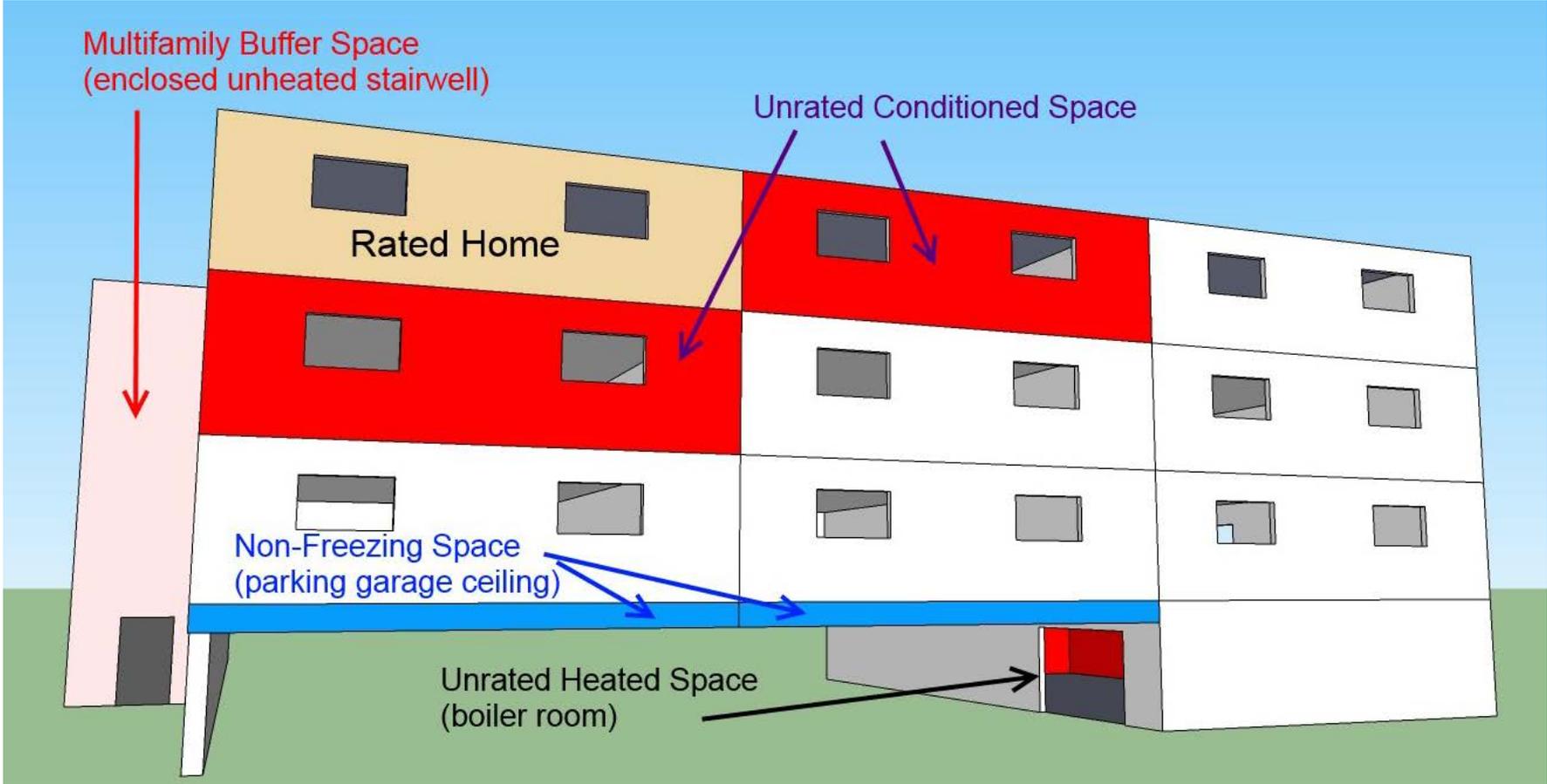
More new & revised definitions



Compartmentalization Boundary

is the outside surface of the
Infiltration Volume.

Definitions – on a roll!



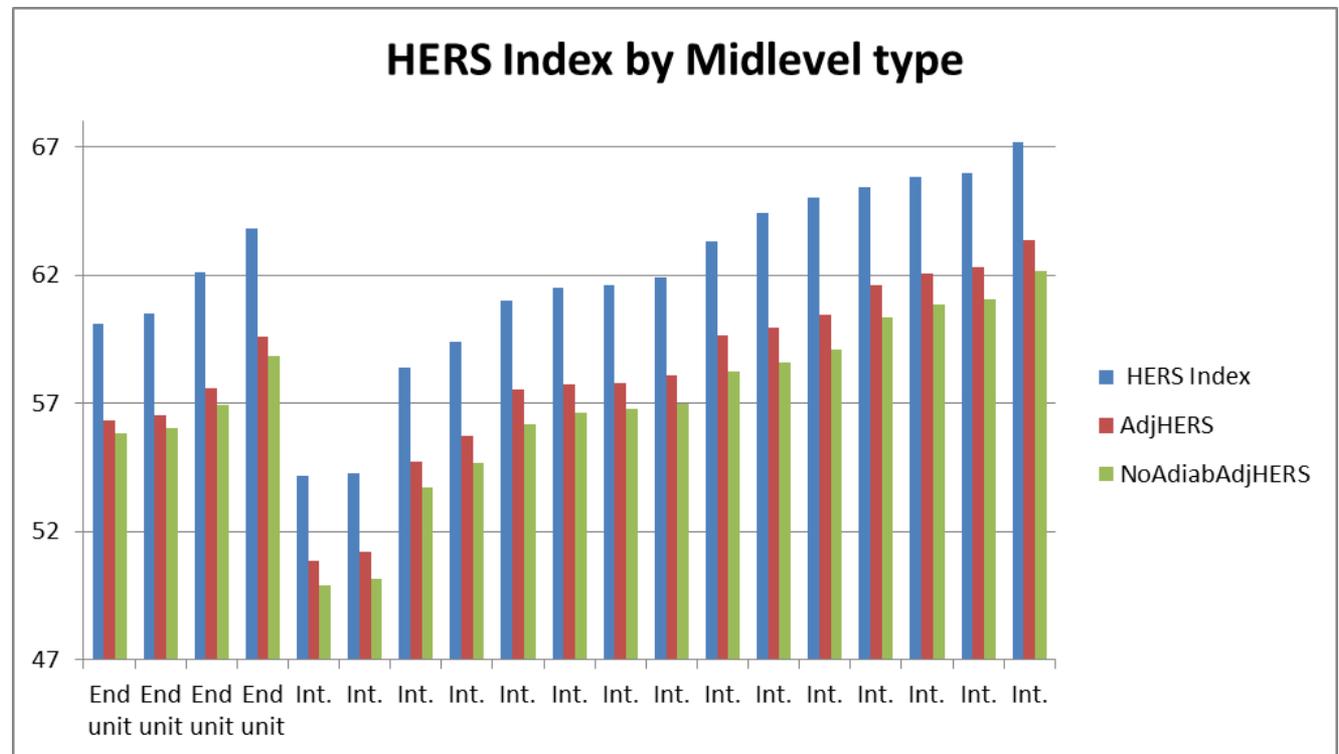
The end of CFA bias in HERS Index

- The IAF (Index Adjustment Factor) is now built-in.

$$\text{Energy Rating Index} = \text{PEfrac} * (\text{TnML} / (\text{TRL} * \text{IAF}_{RH})) * 100 \quad (\text{Eq. 4.1-2})$$

Remember this slide from last year?

This test of IAF applied to MF reduced HERS Index by 4-6 pts



The ONE Table...

4.2. Energy Rating Reference Home and Rated Home Configuration

4.2.1. General Requirements. Except as specified by this Section, the Energy Rating Reference Home and the Rated Home shall be configured and analyzed using identical methods and techniques.

4.2.2. Residence Specifications. The Energy Rating Reference Home and Rated Home shall be configured and analyzed as specified by Table 4.2.2(1).

Table 4.2.2(1) Specifications for the Energy Rating Reference and Rated Homes

Building Component	Energy Rating Reference Home	Rated Home
Above-grade walls:	Type: wood frame Gross Area: same as Rated Home U-Factor: from Table 4.2.2(2) Solar Absorptance = 0.75 Emittance = 0.90	Same as Rated Home Same as Rated Home Same as Rated Home Same as Rated Home Same as Rated Home
Conditioned basement walls:	Type: same as Rated Home Gross Area: same as Rated Home U-Factor: from Table 4.2.2(2) with the insulation layer on the interior side of walls	Same as Rated Home Same as Rated Home Same as Rated Home
Floors over	Type: wood frame	Same as Rated Home

Deep dive: MF and Air Exchange

from **Table 4.2.2(1)** Specifications for the Energy Rating Reference and Rated Homes

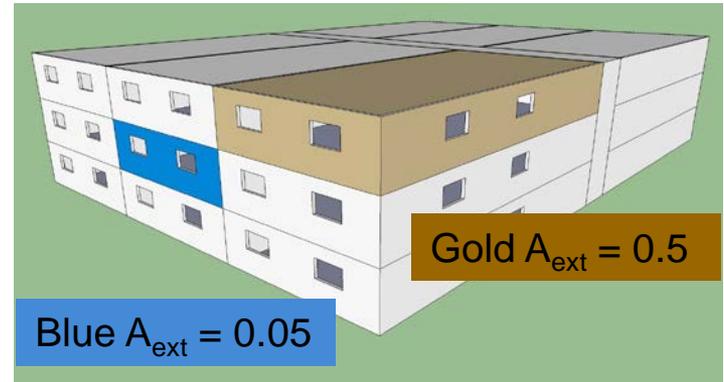
	Energy Rating Reference Home	Rated Home
Air Exchange Rate	Specific Leakage Area (SLA) ^(d) = 0.00036 assuming no energy recovery, supplemented as necessary to achieve the required Dwelling-Unit Mechanical Ventilation rate. ^{(f), (g)}	<p>In accordance with Standard ANSI/RESNET/ICC 380, obtain airtightness test results for:</p> <ul style="list-style-type: none">• Building enclosure (for Detached Dwelling Units)• Compartmentalization Boundary (for Attached Dwelling Units). <p>For Attached Dwelling Units with airtightness test results ≤ 0.125 cfm50 per ft² of ...</p>

Compartmentalization Boundary – The surface area that bounds the Infiltration Volume.

Deep dive: MF and Air Exchange

from **Table 4.2.2(1)**

	...	Rated Home
Air Exchange Rate (continued)	...	<ul style="list-style-type: none"> Compartmentalization Boundary (for Attached Dwelling Units). <p>For Attached Dwelling Units with airtightness test results ≤ 0.125 cfm50 per ft² of Compartmentalization Boundary, the test results shall be modified by reduction factor $A_{ext}^{(r)}$.</p> <p>For residences without ...</p>



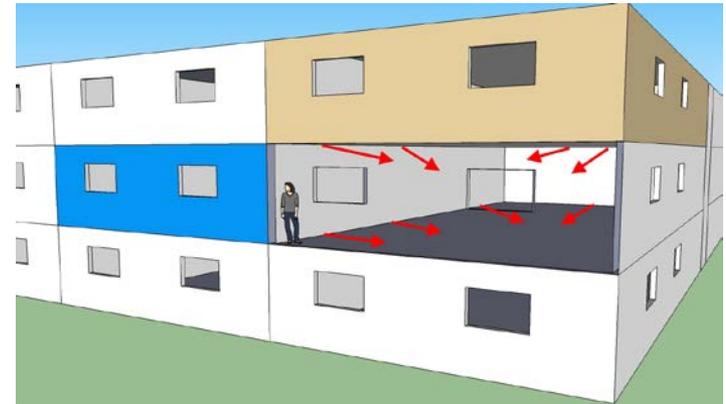
(r) Reduction factor A_{ext} (used only for Attached Dwelling Units) shall be the ratio of exterior envelope surface area to Compartmentalization Boundary.

(Informative Note) Does not include the area where attached to garages or other Dwelling Units.

Deeper dive: MF and Air Exchange

from **Table 4.2.2(1)**

	...	Rated Home
Air Exchange Rate (continued)	...	<p>...factor $A_{ext}^{(r)}$.</p> <p>For residences without Dwelling-Unit Mechanical Ventilation systems, or without measured airflow, or which draw excessive ventilation air from adjacent Dwelling Units,^(u) the Infiltration rate ^(e) shall be as determined above, but not less than 0.30 air exchanges per hour (ach).</p> <p>For residences with ...</p>



(u) For Attached Dwelling Units, for the purpose of determining air exchange rate in the Rated Home, an **Exhaust System (unpaired with one or more Supply Systems)** shall be considered as drawing excessive ventilation air from adjacent Dwelling Units, if the value of reduction factor $A_{ext} < 0.5$.

Still diving: MF and Air Exchange

from **Table 4.2.2(1)**

	...	Rated Home
Air Exchange Rate (continued)	...	<p>... than 0.30 air exchanges per hour (ach).</p> <p>For residences with Dwelling-Unit Mechanical Ventilation systems, the total air exchange rate shall be the Infiltration rate^(e) in combination^(g) with the time-averaged Dwelling-Unit Mechanical Ventilation system rate^{(f), (t)} which shall not be less than</p> $Q_{tot} = 0.03 \times CFA + 7.5 \times (Nbr+1) \text{ cfm}$

Insights from endnote (f) :

$$Q_{fan} = Q_{tot} - \Phi (Q_{inf} \times A_{ext})$$

[infiltration credit]

$\Phi=1$ for Balanced Ventilation Systems and Q_{inf} / Q_{tot} otherwise
[unbalanced ventilation is less effective !!]

Exception: A ventilation fan is not required when Q_{fan} is less than 10 cfm (5 L/s)

Deepest point: MF and Air Exchange

from **Table 4.2.2(1)**

	...	Rated Home
Air Exchange Rate the time-averaged Dwelling-Unit Mechanical Ventilation system rate, ^(f) , ^(t) which shall not be less than $Q_{tot} = 0.03 \times CFA + 7.5 \times (Nbr+1)$ cfm

More insights from endnote (f) :

Where ... the **Rated Home mechanical ventilation rate** [...is adjusted into compliance...], and where the **ventilation air is pre-conditioned as part of a shared ventilation system** shared by multiple Dwelling Units, the software shall make **corresponding adjustments** to the shared preconditioning **equipment energy consumption** assigned to the Rated Home.



Ascending: MF and Air Exchange

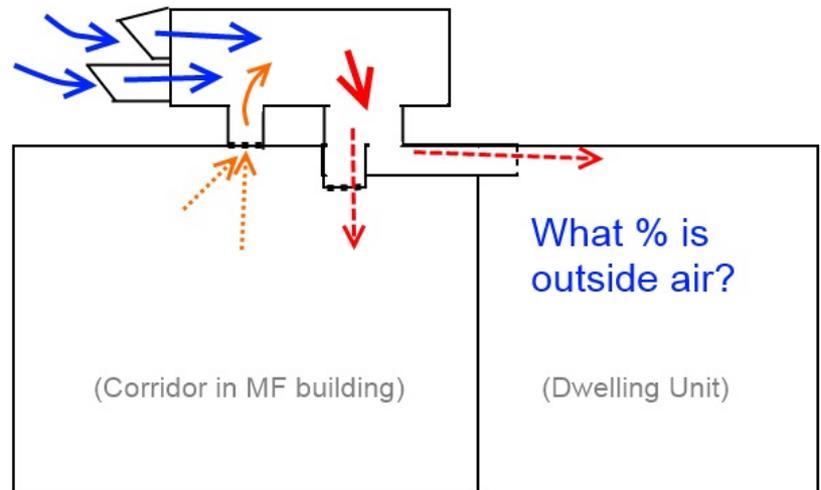
from **Table 4.2.2(1)**

	...	Rated Home
Air Exchange Rate the time-averaged Dwelling-Unit Mechanical Ventilation system rate, (f) , (t) which shall not be less than $Q_{tot} = 0.03 \times CFA + 7.5 \times (Nbr+1)$ cfm

Now, from endnote **(t)** :

[For...] a **shared mechanical ventilation system** [...] the following shall be used to determine the ventilation airflows in the Rated Home.

1. Where **shared ventilation supply systems** provide a **mix of recirculated and outdoor air**, the **supply ventilation airflow shall be adjusted to reflect the percentage of air that is from outside.**



(Whew !): MF and Air Exchange

from **Table 4.2.2(1)**

	...	Rated Home
Air Exchange Rate the time-averaged Dwelling-Unit Mechanical Ventilation system rate, ^(f) , ^(t) which shall not be less than $Q_{tot} = 0.03 \times CFA + 7.5 \times (Nbr+1)$ cfm

...continued, from endnote **(t)**:

[...] **the following shall be used to determine the ventilation airflows in the Rated Home.**

3. Where the [...] Mechanical Ventilation system is a **Balanced System** or a **combination of systems**, **the system airflows shall be analyzed separately**, in accordance with the previous steps.

For software that does not explicitly model multiple, separate Supply and Exhaust Systems, the ... system shall be modeled as a **Balanced System**, where the ventilation rate of the Rated Home is **the sum of either the exhaust airflows** measured in the Dwelling Unit or the **sum of the supply airflows** measured in the unit, whichever is greater.

Fan Energy for MechVent

from **Table 4.2.2(1)** Specifications for the Energy Rating Reference and Rated Homes

	Energy Rating Reference Home	Rated Home
Dwelling-Unit Mechanical Ventilation fan energy:	None, except where a mechanical ventilation system is specified by the Rated Home and airflow is measured , in which case [...] <ul style="list-style-type: none"> supply only or exhaust-only... $0.35 * \text{fanCFM} * 8.76 \text{ kWh/y}$... balanced without energy recovery or a combination of Supply and Exhaust Systems... $0.70 * \text{fanCFM} * 8.76 \text{ kWh/y}$... balanced with energy recovery... $1.00 * \text{fanCFM} * 8.76 \text{ kWh/y}$ And where fanCFM is the minimum continuous Dwelling Unit Mechanical Ventilation system fan flow rate ^(f) of the Rated Home ^(y) .	Same as Rated Home (x) <div style="background-color: yellow; padding: 10px;"> <p>(x) Where the ventilation system ... serve[s] the ventilation needs of more than one Dwelling Unit, the Rated Home kWh/y fan energy shall be calculated as a proportion of the entire system fan energy, using the system airflow, ventilation type, fan run time and the rated fan power²⁶ of the shared system... [details]</p> </div>

Htg/Clg interacts w MF MechVent ...

from **Table 4.2.2(1)** Specifications for the Energy Rating Reference and Rated Homes

	Energy Rating Reference Home	Rated Home
Heating [& Cooling] systems ^{(i), (j)}	[...] Capacity: sized in accordance with Section 4.4.3.1.	[...] Same as Rated Home (s)

(s) When the Rated Home is [...a MF unit...], and where ...Mechanical Ventilation supply air is pre-conditioned by a shared system before delivery to the Dwelling Unit, that shared pre-conditioning system shall be [...modeled...] as a separate HVAC system, in addition to the primary space conditioning system serving the Dwelling Unit. The supply airflow delivered to the Rated Home is the only conditioning load that shall be assigned to that shared equipment, [...].

(Normative Note) “Delivery” includes supply air ducted into the Dwelling Unit, or ducted into the Dwelling Unit’s air distribution system, or indirectly through the door undercut or other intentional opening. Where the supply airflow cannot be measured, it shall be equal to the measured exhaust airflow or fanCFM, whichever is greater.

Ducts !! Should we test?

from **Table 4.2.2(1)** Specifications for the Energy Rating Reference and Rated Homes

	[...]	Rated Home
Thermal distribution systems	[...]	<p>For forced air distribution systems:</p> <ul style="list-style-type: none">• Detached Dwelling Units shall test duct leakage to outside;• Attached Dwelling Units requiring testing^(v) shall test total duct leakage; <p>All duct leakage tests shall be in accordance with requirements of Standard ANSI/RESNET/ICC 380 ^(m) and the energy impacts [...] calculated [...] with the ducts located and insulated as in the Rated Home^(w).</p> <p>[...]</p> <p>For untested distribution systems in Attached Dwelling Units:</p> <ul style="list-style-type: none">• located entirely within Conditioned Space Volume: DSE=0.88• located entirely within the Infiltration Volume of the Rated Home: DSE=0.92

Ducts – (shallow dive)

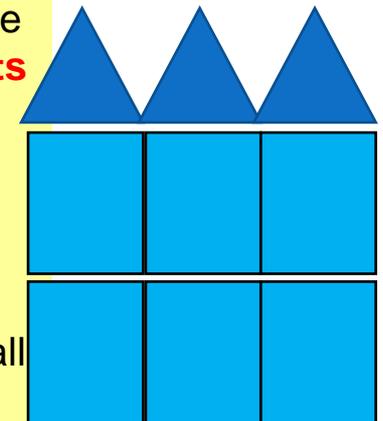
from **Table 4.2.2(1)** Specifications for the Energy Rating Reference and Rated Homes

	[...]	Rated Home
Thermal distribution	[...]	[...] Attached Dwelling Units requiring testing^(v) shall test ...

(v) Most duct systems in Attached Dwelling Units **do not require leakage testing**, but are permitted to use total duct leakage results in Rated Home inputs if collected for other purposes. **Total duct leakage testing is required** for any Dwelling Unit **that occupies more than one floor**. Total duct leakage testing is also required for any Dwelling Unit **where any portion of the ducts or air handler are located outside of Conditioned Space Volume**.

Measurements of duct leakage to outside shall not be used for Ratings of Attached Dwelling Units.

(Informative Note) In most Attached Dwelling Units, space conditioning is a small part of the total energy consumption, and duct leakage in turn is a small part of the space conditioning load. This standard requires duct leakage testing only where it is likely to contribute significantly to the ERI.



Ducts (dive over)

from **Table 4.2.2(1)** Specifications for the Energy Rating Reference and Rated Homes

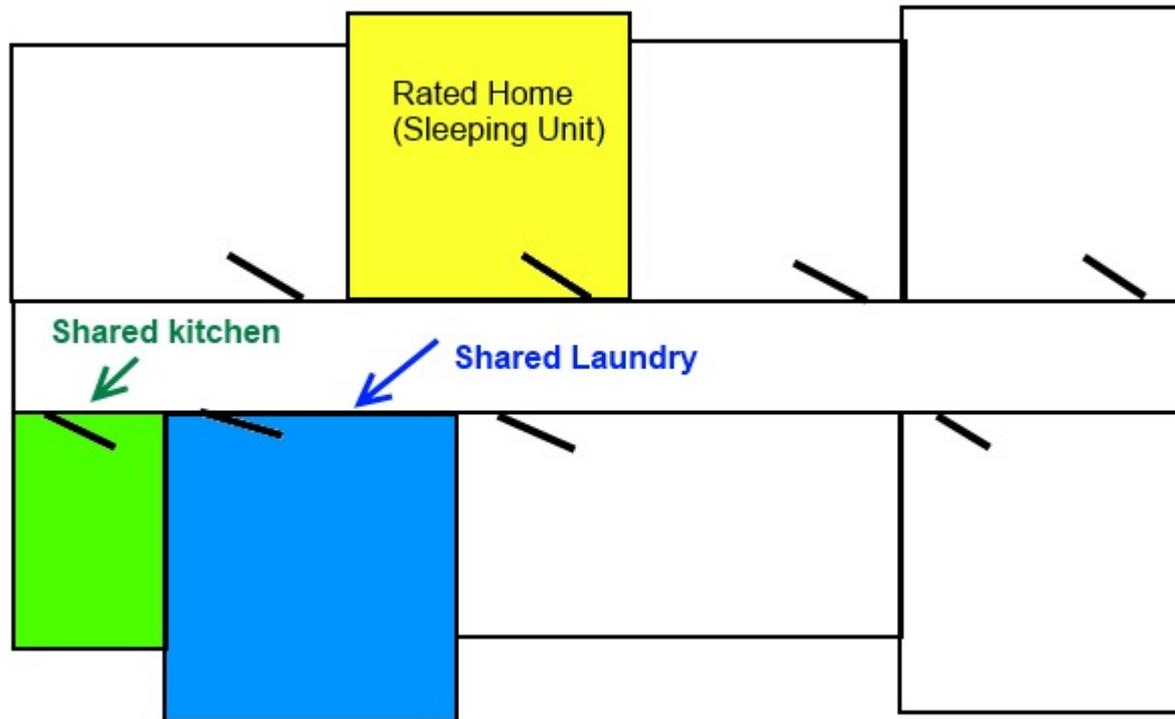
	[...]	Rated Home
Thermal distribution systems	[...]	... shall test total duct leakage; [...] Home ^(w) ...

(w) For Attached Dwelling Units only: ...calculate the energy impact of total duct leakage results by counting leakage only from duct surface area that is not in [...] Conditioned Space Volume,

plus a contribution from the associated air handler if located outside the Rated Home Conditioned Space Volume. When located outside the Rated Home Conditioned Space Volume, the air handler contribution shall be a minimum of 2% of the supply airflow for air handlers less than 5 years old and 5% of the supply airflow for all other air handlers; however, the sum shall not exceed the measured duct leakage from the entire duct system.

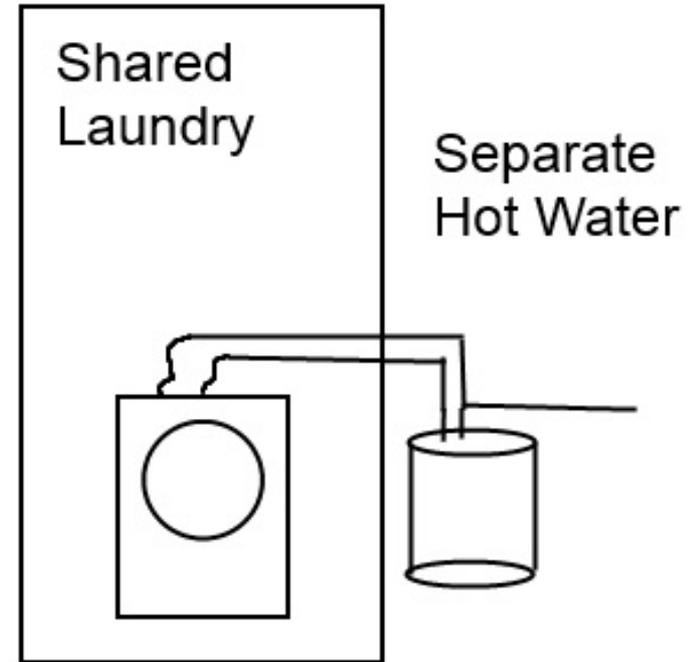
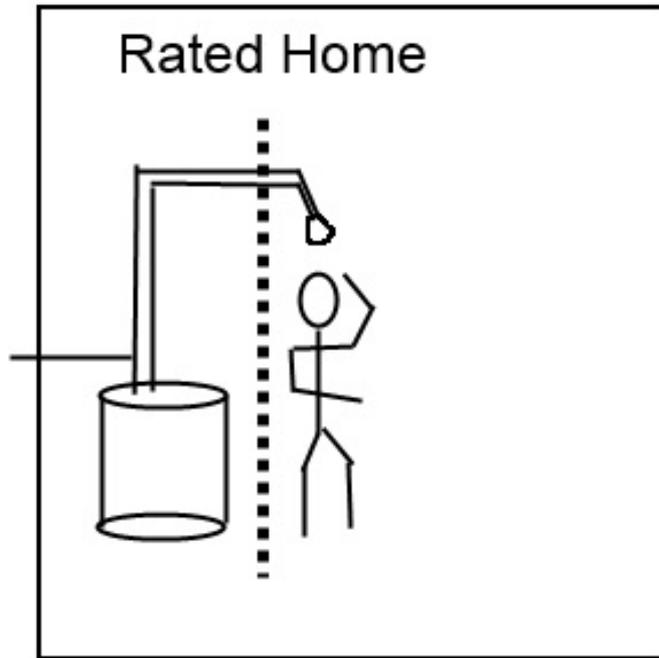
“There’s no _____ in this dwelling unit!”

- “Internal Gains” (i.e. waste heat) from appliances located beyond the dwelling unit... are not counted in the Rated nor Reference homes.



Now we're in (MF) hot water...

- Do collect data from the water heater serving a shared laundry. It must be included separately in the rating. (Section 4.2.2.5.2.11)



MinRated Features must be modeled!

Laundry refinements for MF:

- If washer or dryer not in Dwelling Unit, assess the equipment in the nearest shared laundry on-site.
- Use the worst equip present (worst dryer CEF, worst washer LER)
- If ratio of Dwelling Units to shared dryers exceeds 8:1, Rated Home shall use the Reference Home dryer.
- Likewise for clothes washers.

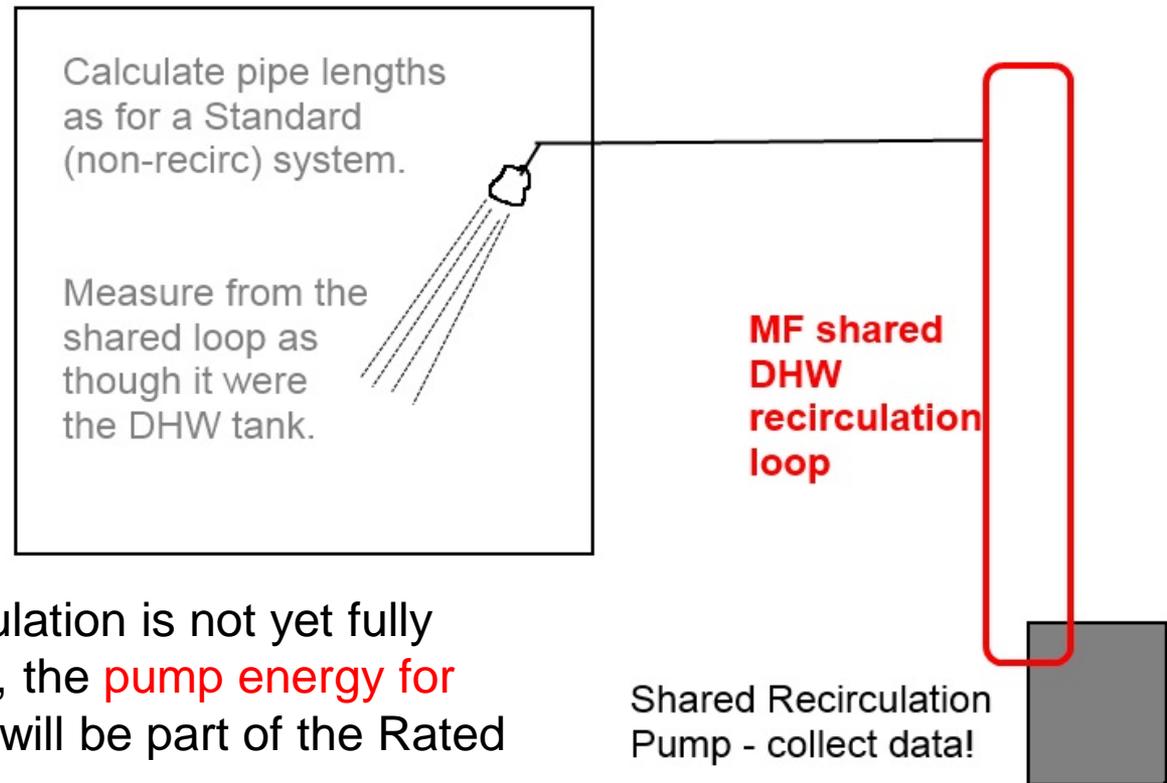
Yes, even dishwashers

Dishwasher refinements for MF:

- If the Dwelling Unit has no dishwasher,
 - assess the nearest shared kitchen in the building, if available for daily use by the Dwelling Unit occupants.

Are we loopy yet?

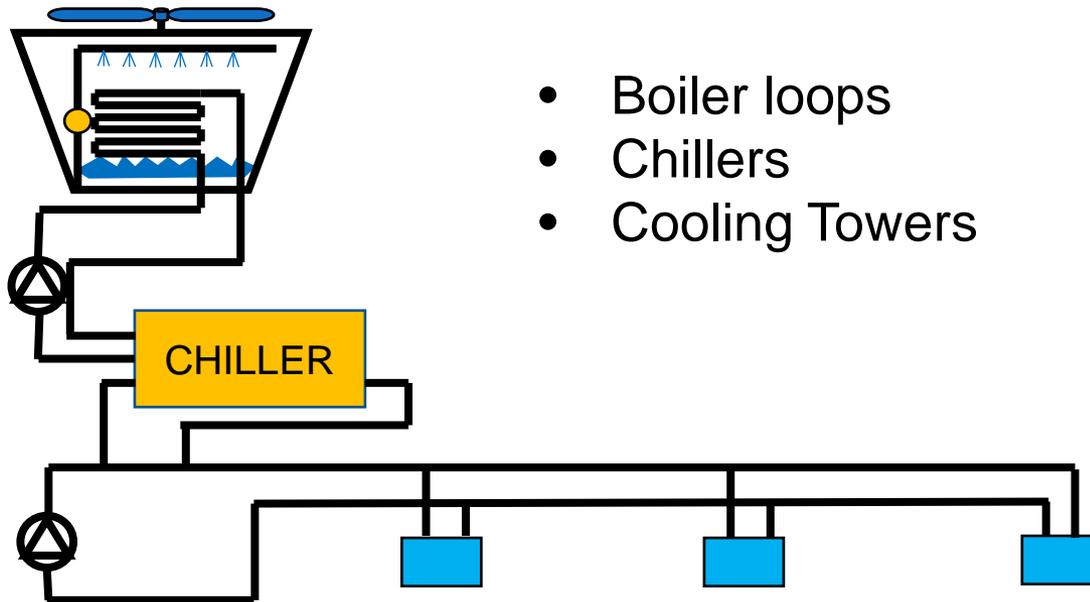
Service Hot Water Distribution - MF refinements



Shared central recirculation is not yet fully figured out. However, the **pump energy for shared recirc system** will be part of the Rated Home.

BIG, long loops.

What about the shared central space conditioning equip?



- Boiler loops
- Chillers
- Cooling Towers

... and water loop HPs, radiators, fan coils?

See sections 4.4.4 – 4.4.7

Comment period is near... Std 301-2019

- **It is not perfect.**
 - It will never be perfect. But is it good enough?
- Can you write something that will work better?
 - Please, do! Submit it in the comment period.
- This is **your MF homework** during the comment period.
 - Make sure you think this is workable!

Part II – What makes it ‘better’ for MF?

- ✓ Specific Technical Changes in the draft of 301-201x
- Specific Technical Changes in the draft of 380-201x
- Other changes coming soon for Inspections & Sampling!

What about testing for Multifamily?

- Guidelines for Multifamily Ratings had 4 blower door test options, a duct leakage test exemption (if less than 10 ft), stringent tests for non-ducted returns, HVAC & DHW test procedures, etc

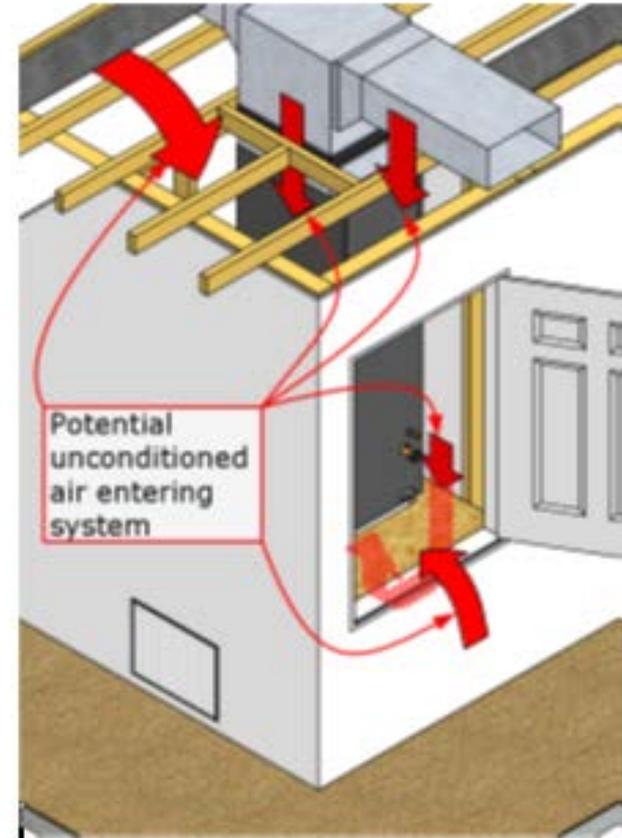
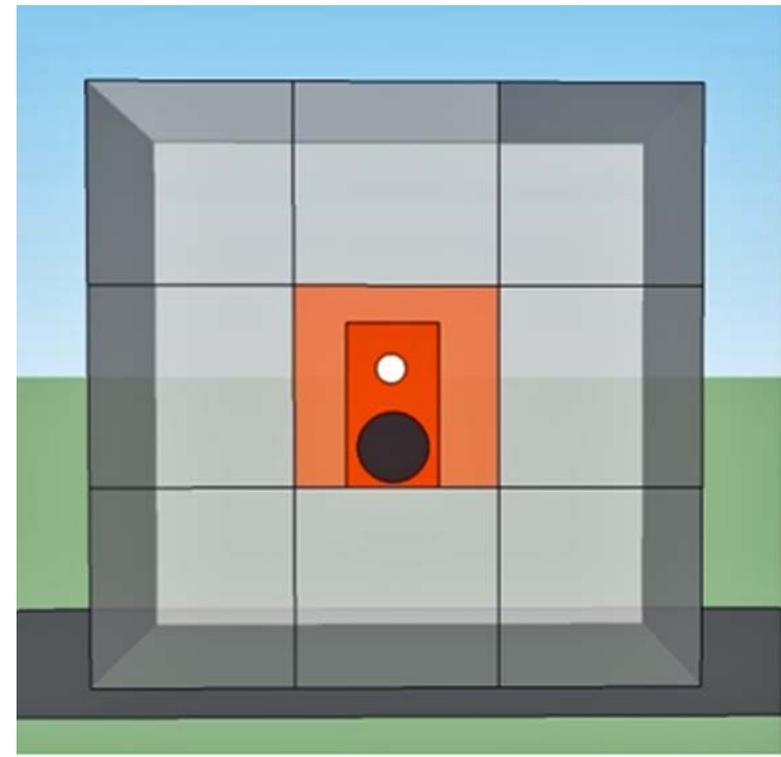


Image from DOE Measure Guideline: Air Sealing Mechanical Closets in Slab-On-Grade Homes

What about testing for Multifamily?

- Guidelines for Multifamily Ratings had 4 blower door test options, a duct leakage test exemption (if less than 10 ft), stringent tests for non-ducted returns, HVAC & DHW test procedures, etc
- Based on 380's current title & scope, the RESNET MF SC Testing Task Group didn't add HVAC & DHW tests, didn't change duct tests & just focused on blower door tests



Compartmentalization testing

What about testing for Multifamily?

- Dec draft of 380-201x still has a SFD BD test + a compartmentalization test procedure for attached units, w/140 CFM50 added if no doorsweep
- Currently, refers to ABAA for guarded tests & whole-building tests; minor edits to the DB & Ventilation sections.
- 1st public comment of PDS-01 BSR/RESNET 380-201x ended in January & is currently being revised.
- 2nd round of public comment is soon!
- Wed., 1:30-3pm in Grand Salon I



What about inspections for Multifamily?

Addendum F; Appendix A Insulation Grading and Assessment (SF & MF)

- **November – Dec 2016:** 1st round of public comment
- **March 2018:** 2nd round of public comment

Addendum N; Appendix B Inspection Procedures for Minimum Rated Features (SF & MF)

- Is it like RESNET MINHERS Appendix A?
- **April 2018:** 1st round of public comment

Q: What's the difference between an Addendum and an Appendix?



What about sampling for Multifamily?

- The Guidelines for Multifamily Ratings used Chapter 6 of MINHERS as a starting point, but revised the sampling process for modeling, inspections and testing to work better for multifamily.
- At the RESNET Conference last year, we (Thiel) presented our MF SC's concept for a Sampling Appendix for 301-2019 for multifamily (single-family would keep using Chapter 6 of MINHERS).
- In November, a RESNET SDC900 Sampling Task Group was formed to develop a standalone Sampling Standard.
- The Sampling Appendix for Multifamily inspections and testing was subsequently removed from the draft of 301-2019, leaving just the portion related to modeling.

Wrap-up

- Public comment period for PDS-01 301-201x starts in March (but, PLEASE attend March 20th webinar FIRST!)
- If all goes well*, it could be available for use in HERS ratings/software by January 2020 and part of 2021* IECC
 - Scope covers dwelling/sleeping units in any height building
 - Central systems handled much better IN the software
 - Better addresses MF situations (shared laundry, solar, etc)
- It will include all approved addenda to date (DHW, IAF, LED lighting, Appendices on Insulation and Inspections)
- Public comment period for PDS-02 380-201x and the two Appendices above should start in March/April
- TBD: MF Rater Training, credentials, MF Provider, etc

Q&A

