

The Faircliff

Excellence in Low Income Multifamily Construction

Chris Fuller – Jon Jensen

Staengl Engineering – MaGrann Associates



Team



Jon Jensen
Sustainability Director



Jonathan Rose
Companies



Chris Fuller
PE



AGENDA

1. Project overview
2. Standards
3. Cool things we did
4. Mistakes were made
5. Testing
6. Current perspective



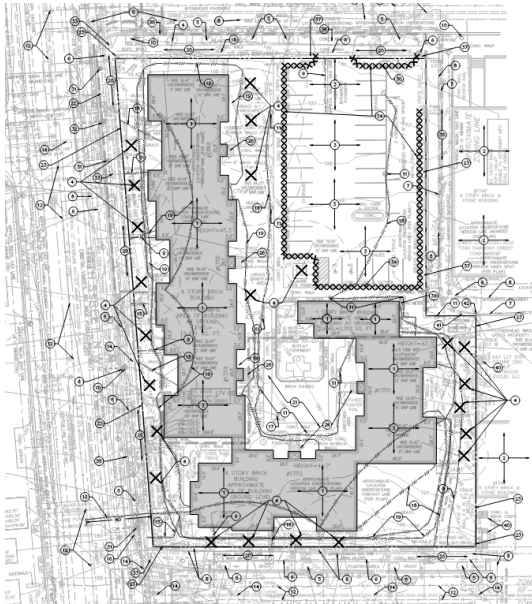
The Faircliff

- 8 Stories
- 125 apartments
- All Affordable @ 60%-30% AMI



Before: Faircliff Plaza East

- 80 units
- Garden Style
- Entire 1.3 acre site



After: The Faircliff & Novel on 14th



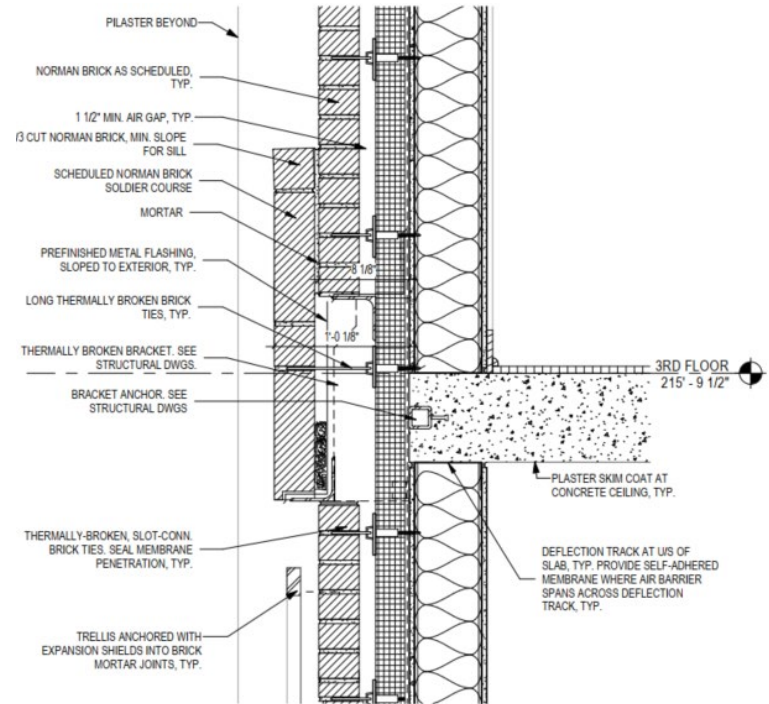
Adds another 45 affordable & 197 market rate units!

The Programs



Phius Strategy: Envelope

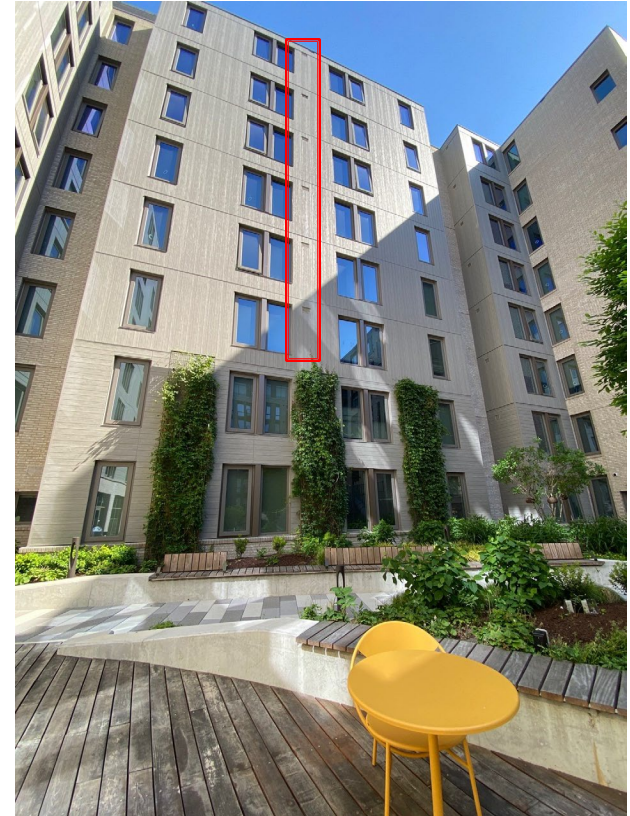
- 3" Mineral Wool c.i. + R21 batts in steel studs
- Dual Glazed Intus Windows: U 0.25 & SHGC 0.17
- 7" Polyiso c.i. @ roof
- 3" Polyiso c.i. @ floor over garage



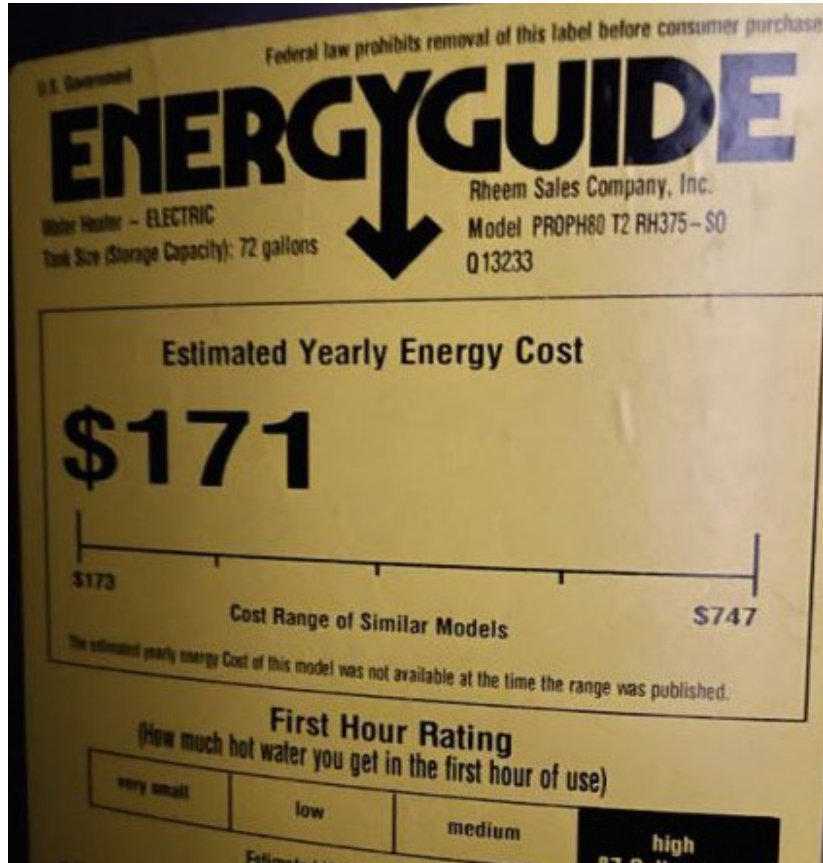
4 SECTION DTL - SOLID WALL AT 30" BRICK BAND - W
1 1/2" = 1'-0"

Phius Strategy: HVAC

- VRF with Ducted Indoor Units
- Swegon ERV
- Direct Vent Kitchen Exhaust



Phius Strategy: DHW



Integrated heat pump water heaters keep it cool.

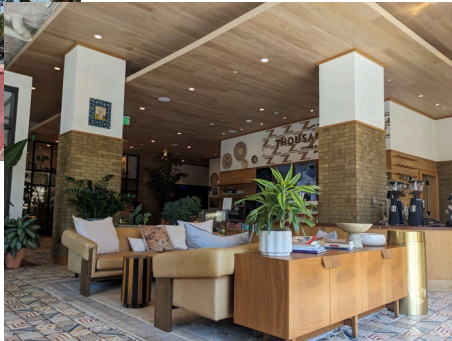


Re-engaging the 14th St corridor

- Create a building that engages the pedestrian street life
 - Active ground floor of amenity space, offices and coffee shop.



Activity



Blank walls
& fences



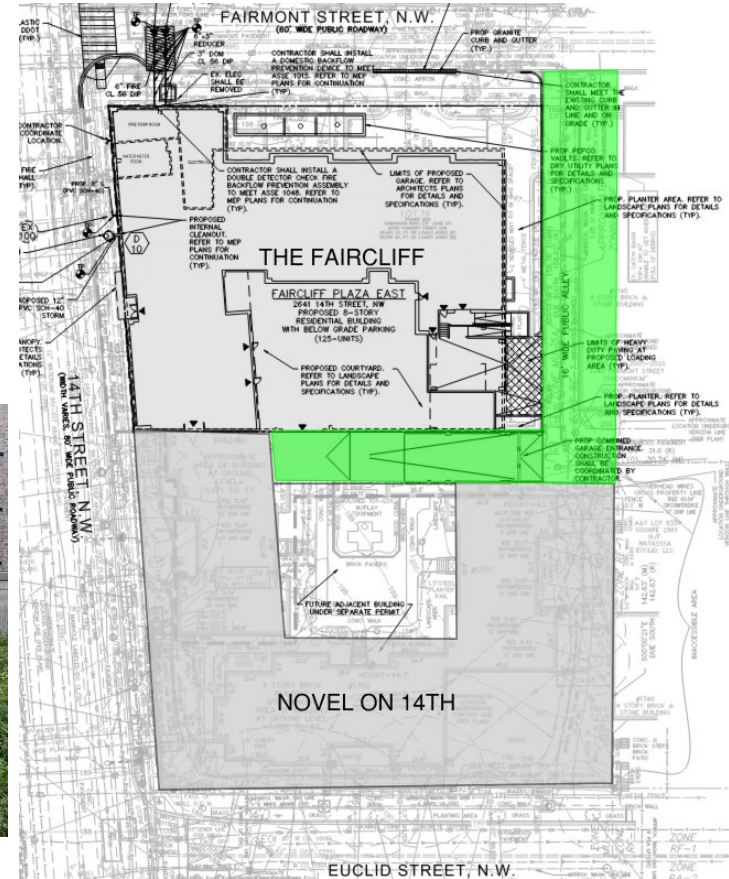
Versus

A part of the neighborhood



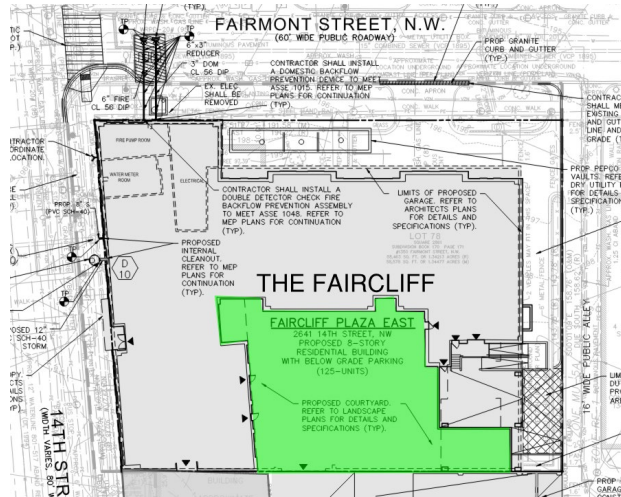
Stacking Functions: Site

- Shared alley and green roofed parking ramp for both buildings



Stacking Functions: Site

- Courtyard Amenities for the residents over the underground parking garage



Stacking Functions: Useful Roofs

- DC's roof regulations make green roofs with solar almost mandatory if you want rooftop amenities.



Constraint into Innovation: Building Height

- Ventilation
- Initial Design: Single Packaged Rooftop DOAS with ERV
- 45 tons



Constraint into Innovation: Building Height

- Ventilation
- 2nd Design: Two Packaged Rooftop DOAS units with ERVs
- 44 tons



Constraint into Innovation: Building Height

- Ventilation
- 3rd Design: 2 Swegon Gold RX ERVs with VRF conditioning
- 42 tons



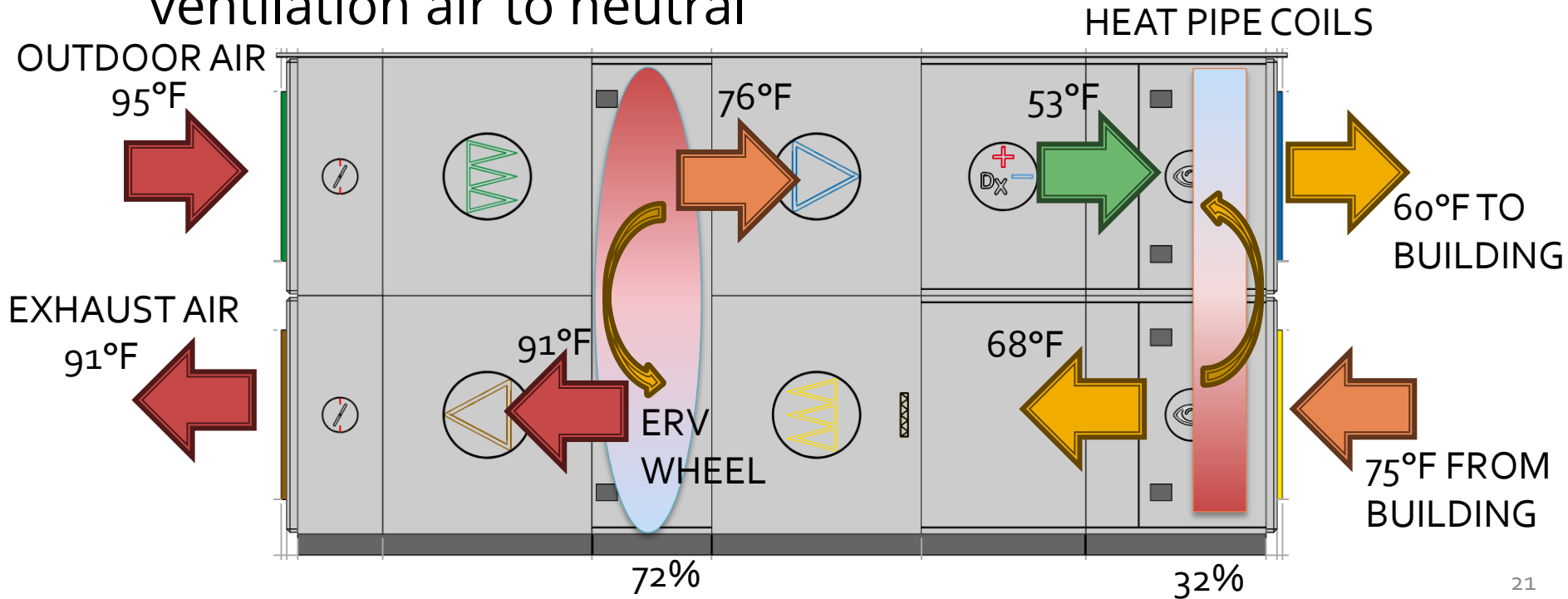
Constraint into Innovation: Building Height

- Ventilation
 - Final Design: Singe Swegon Gold RX with VRF conditioning **& Heat Pipe Coils**
 - Drop cabinet size
 - **36 tons**
-
- Boo-ya!



“Passive” Heat Pipe Coils

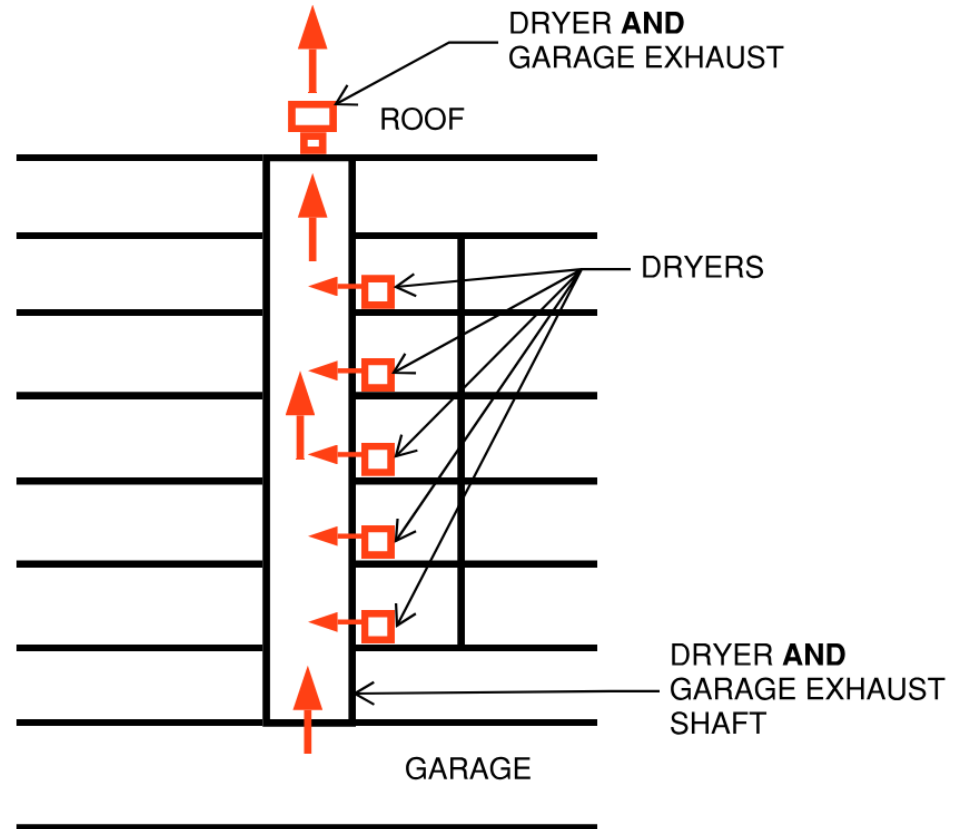
- A second layer of heat recovery when re-heating ventilation air to neutral



Stacking Functions: Exhaust

- Stacked laundry exhaust fan also serves constant Garage exhaust

*Make sure that the garage is still getting the code minimum exhaust when dryers are running



Cool Ideas In Action

Q: What is desperate for heat?

A: A heat pump water heater.

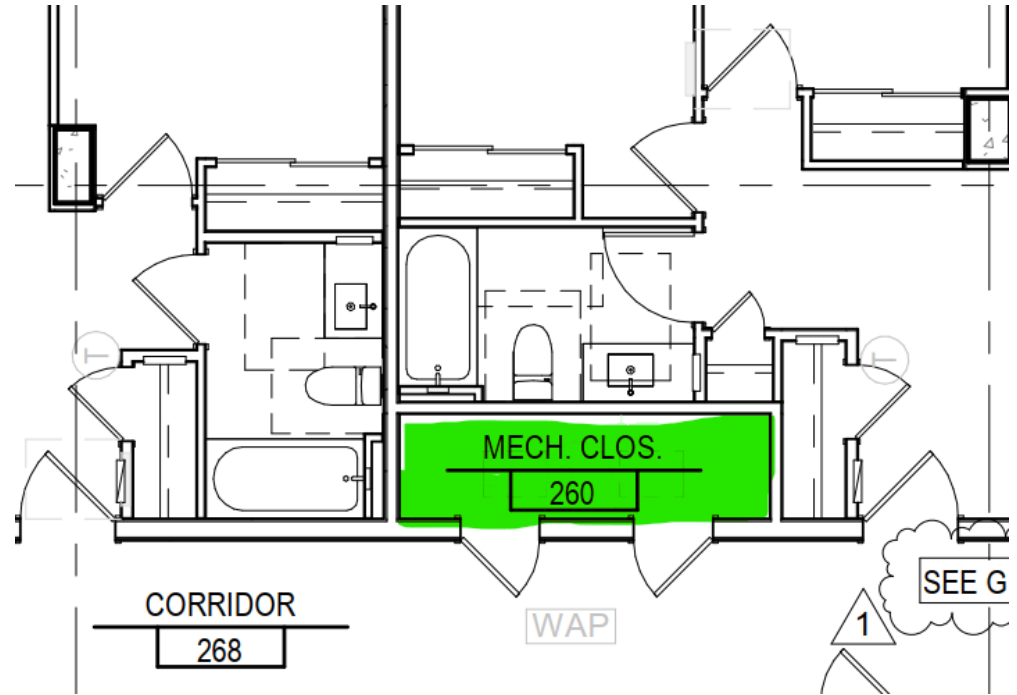
Q: What is desperate to reject heat?

A: A Phius MF building in CZ 4.



Built for Ease of Maintenance

No filters in the
apartments!!!



Cool Ideas In Action

Concrete – it's an embodied carbon problem!



Mineralized CO₂ is no excuse to skimp on Pozzolans!!!

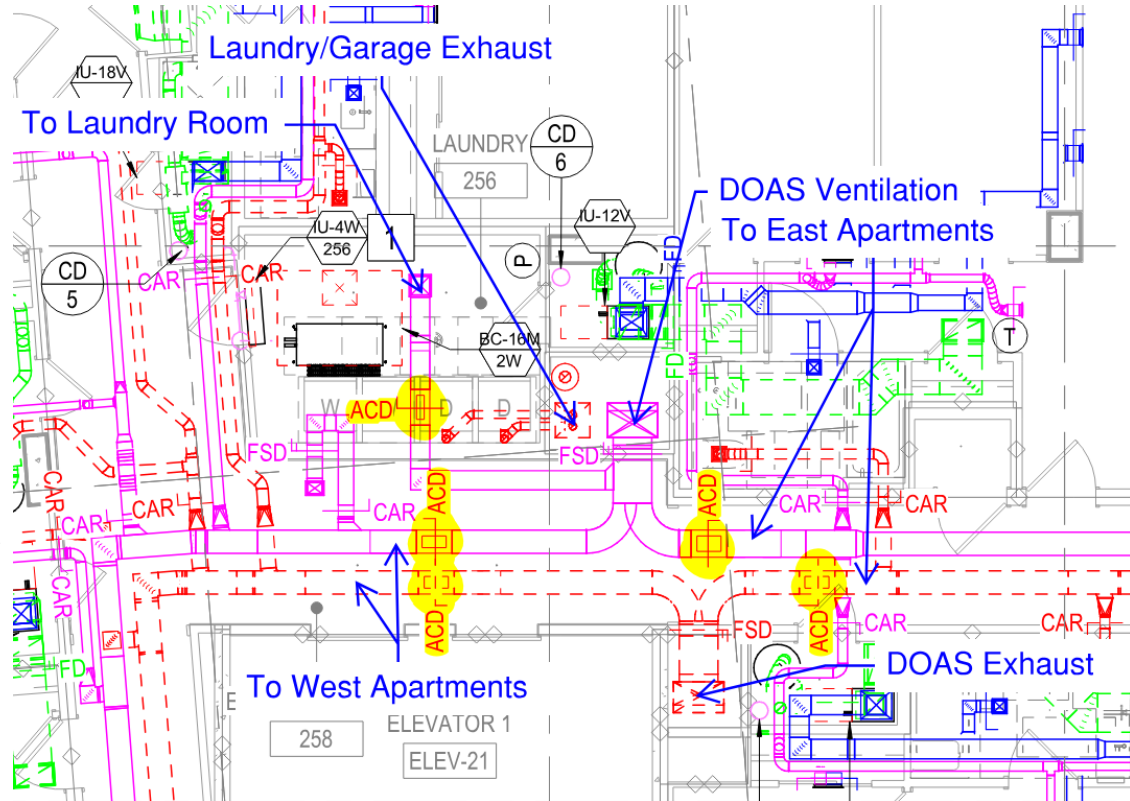
Kitchen Ventilation



The good, the bad
and the microhood

Air Control & Laundry Make Up

- Constant Control Dampers on Ventilation and Exhaust
- Variable Control Dampers on laundry makeup & common areas



Testing



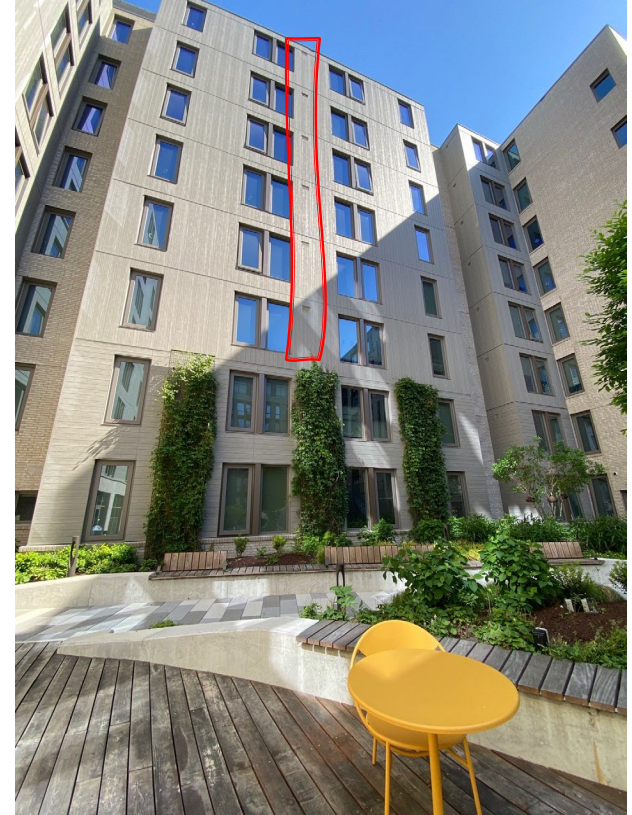
Testing



Testing & Retesting



0.109 to 0.064 CFM50/sfbe



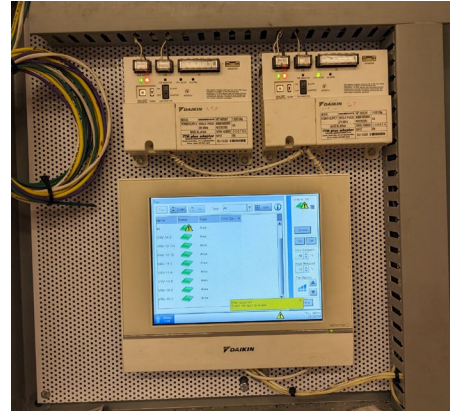
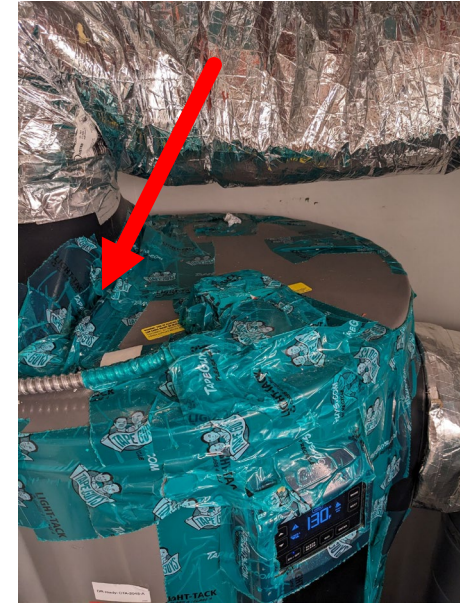
Testing



- Laundry REACT dampers... didn't

On a recent visit

- Make sure that all equipment control panels are in a maintenance room
- Don't forget about Heat Pump water heater filters
- Trim wild plants shading PV panels



Conclusion

