Steven Winter Associates, Inc.
Improving the Built Environment Since 1972

QUESTIONS & ANSWERS FOR MODULE 8.2: NET ZERO MECHANICAL, ELECTRICAL, AND PLUMBING

OCTOBER 6, 2020: DAY 2 QUESTIONS

Question	Who Asked	Answered Y/N	Answer
Mike, what is your background? Are you a construction manager by training? Thanks.	Matthew Brubaker	**Y**	
Slide 37, if you are seeking PHI certification, you WILL need PHI certified ventilation unit(s), because uncertified ventilation units get their performance de-rated to a minimum default level that will make it very difficult for the building to achieve a passive house level of performance. The derating of non-certified units is because the testing done in N. America is done to a different protocol that	Christina Snyder	Y	
To remove a sub-contractor from a construction project, how long did that take? Did it delay the overall project? Who was the primary advisor to the owner on this decision? CM, Designer? Engineer? CxA, PHa?	Matthew Brubaker	Y	
When sizing a central ERV, is it better to size it to provide neutral air to the space? I've seen some projects where ERV systems provide air at 55 F.	Juan Luengas	Y	
can you talk about the separation requirement of intake and exhaust especially in an outside corner condition as shown in one of the depicted examples and in unitized examples	Andrew North	Y but will follow up	See snip below from a project for reference (page 3).
Are there any concerns with cross-contamination for modern ERVs/HRVs?	Byron Felske	Y	
What can be done in publicly bid projects where we cannot have a proprietary spec for Aeroseal?	Megan Smailer	Y	

DHW pipe insulation. would it NOT be economically feasible, or offer payback to just insulate all the pipe at 1.5-inches of pipe insulation, regardless of pipe size?	Matthew Brubaker	Y	
p 108 - what is best practice re: roof drain insulation on roof replacement projects where drain body is not being replaced?	Megan Smailer	Y	
how long can lighting controls systems be expected to last before needing upgrading or replacement?	Megan Smailer	Y but follow up?	Kirk Beaudoin, territory facilities manager of North America retail operations for Nike, says that the question of whether controls are aging depends on the product they are controlling. "A light switch could last as long as the building itself, while any controls tied to computers or software often are obsolete in five years," Beaudoin says. "From a strictly obsolescence standpoint, controls are generally due for a face lift about every 10 years or so," says Althoff. However, less proprietary controls may provide another five years of functionality, because they are more flexible. Sinopoli agrees. "Anything beyond 10 to 12 years is aging." Building controls, like all things electronic, tend to go through generations on a fast-track basis. "If there have been four upgrades in your building controls, it's like using Windows 98 now that Windows 7 is out," says Sinopoli. "You may run into problems trying to integrate with newer controls or getting a holistic view of your energy management use." https://www.facilitiesnet.com/buildingautomation/article/Determining-and-Stretching-the-Useful-Life-of-Controls--12177
how do you tell if the elevator cab lights and ventilation are in fact de-energized in standby mode?	Megan Smailer	Y	

A pre-consideration is required for a new building which is a 8 story mixed use. It has a retail (about 500 sq. ft) on the first floor and other spaces are R-2 (UG2) with 101 dwelling units. Fully sprinklered.

[redacted] is designed to be a high performance affordable apartment building that will lower energy consumption and be more resilient against storm events. To meet this goal the design project has been designed and is anticipated to meet Passive House Institute US Standards. One of the innovative sustainable system is the use of compartmentalized Energy Recovery Ventilator (ERV), which will intake and exhaust environmental air from each dwelling unit. ERVs reduce energy consumption on the heating and cooling system and provide increased fresh air and comfort level for residents.

Currently, the NYC Mechanical code section 501.2.1.6.2.4 requires occupancy group R-2 to be individually exhausted directly to the outdoors and be ten feet (10'-0") from any outdoor air intake opening. However, section 501.2.1.6.2.1 allows exhaust to be located two feet (2'-0") from any operational window or door serving the same dwelling unit and 501.2.1.6.2.2 allows exhaust to be located three feet (3'-0") from any operational window or door serving an adjoining dwelling unit. An operable windows or door is essentially providing intake air for the dwelling units and is a required form of ventilation for habitable spaces per NYC Building code Section 1203.1. If these low volume exhausts are permitted to be 3'-0" away from operable windows, we believe exhaust to intake should also be permitted at the same distance, to allow for greater energy efficiency and healthier indoor environment.

In addition, the current code standard is written for larger commercial size ERVs which have higher flow rates, more than 5,000 CFM, and require more separation distance to reduce cross contamination. The size of an EVR unit for an apartment building is 90 CFM. The lower flow rate reduces the potential for cross contamination and the separation it requires. The recommended manufactures' minimum separation between the systems' exterior intake and exterior exhaust ports is six feet (6'-0") (based on information from Ultimate Air, Venmar, Lennox, Fantech, and Panasonic).

For this project, the most efficient layout of the intake and exhaust is to have one port below the ceiling and one port above the floor. The floor to floor for this project is nine feet four inches (9'-4"), which would make the distance between intake and exhaust eight feet (8'-0"), less than the required ten feet (10'-0") but is greater than the manufacture recommended distances and the distances required for operable windows.

As this is an affordable housing project, we are looking to provide the most beneficial and cost efficient design. To comply with the current mechanical code, we would need increase the amount of ductwork, which means more air friction and higher energy consumption for the mechanical fans, and increase square footage and material for soffits and ducts.