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Re: Project #6771337-CN

Correction Notice #1

Review Type ENERGY, MECHANICAL
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Date November 19, 2021
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Applicant Instructions

You will not be able to upload corrected plans until all reviews are completed and the project's review status is "Corrections Required".

*** Respond by providing a **written response to each correction AND identify changes to drawings since initial review.** ***

Drawings shall be **legible**, with sheets **oriented correctly**, on an appropriate **sheet size**, with all revisions/changes **clouded or circled**, with **no missing sheets**, and uploaded in a **single PDF file**.

Link for detailed steps: ["How to Respond to a Correction Notice"](#). If the 3-step process outlined in this document is not followed, your response could be **rejected**, permit issuance could be **delayed**, and **penalty fees** could be assessed.

Codes Reviewed

This project has been reviewed for conformance with the following codes: 2018 Seattle Mechanical Code (SMC); 2018 Seattle Energy Code (SEC); 2018 Seattle Fuel Gas Code (SFGC); and 2018 Seattle Building Code (SBC).

Corrections

1. Mechanical Drawings:
The mechanical engineer's signature and stamp shall be on all mechanical drawings.
2. Plumbing Drawings:
Since a separate plumbing permit by King County is required, FOR REFERENCE ONLY shall be indicated on all plumbing drawings.
3. Pipe Insulation Schedule/ M001:
The pipe insulation requirements for the split system HP and VRF refrigerant line shall be revised to comply with SEC Table C403.10.3. The code reference on the schedule shall also be updated.
4. Load Calculations/ M003 & M004:
The load calculations shall be updated to show the residential heating equipment sizing (unit by unit) for all dwelling units.

5. Whole House Ventilation Criteria/ M001:

Residential dwelling units shall include supply and exhaust fans and be a balanced whole house ventilation system in accordance with SMC 403.4.6.3 per SMC 403.4.4.1. The system shall also include a heat or energy recovery ventilator with a sensible heat recovery effectiveness as prescribed in SEC C403.3.6 per SMC 403.4.4.1. The whole house supply fan shall provide ducted outdoor ventilation air to each habitable space within the residential unit. The outdated whole house ventilation criteria on the drawing shall be revised.

6. Equipment and System Sizing:

The output capacity of heating and cooling equipment and systems shall not exceed the loads calculated per SEC C403.3.1. The cooling and heating load calculations for Fitness, Community Room and Offices shall be submitted for verification.

7. Split System Fan Coil Unit Schedule/ M002:

Air economizers shall be provided on all new cooling systems per SEC C403.5. If any of the exceptions is applicable, it shall be noted in the equipment schedule.

8. Split Air Conditioner Schedule/ M002:

The outdated air economizer exception (SEC C403.3 exception 10) shall be updated.

9. Fan Schedule/ M002:

a. Each stair pressurization system shall be equipped with two smoke detectors located in the duct in accordance with NFPA 72 arranged to automatically shut down the fan system only when both smoke detectors activate per Seattle Building Code (SBC) 909.20.5.2. The detectors shall be located downstream of the fan and shall be connected to the fire alarm as a supervisory signal. The required smoke detectors shall be indicated on the drawings and in the fan schedule.

b. The outdoor air intake for the stairways and the elevator hoistways pressurization shall be provided with Class 1 motorized dampers. The required motorized dampers shall open upon activation of any fire alarm initiating device of the building's fire alarm system or interruption of power to the damper per SEC C403.7.8.1 & SEC C403.7.8.4. The required motorized dampers shall be indicated on the drawings and in the fan schedule.

10. Electric Heaters Schedule and Electric Duct Heater Schedule/ M002:

HVAC heating energy shall not be provided by electric resistance or fossil fuel combustion appliances per SEC C403.1.4. If any of the exceptions is applicable, it shall be noted in the equipment schedule.

11. HVAC Floor Plans:

Room names and room numbers shall be shown on the HVAC floor plans for reference.

12. Drawing M200:

a. The scope of work shall be indicated on the drawing. If the HVAC equipment and distribution are not included with this construction permit (mechanical included), the intent shall be indicated on the drawing (typical for all floors).

b. Electric wall heaters are indicated on the drawing. However, HVAC heating energy shall not be provided by electric resistance heaters per SEC C403.1.4. If any of the exceptions is applicable, it shall be noted on the drawing.

c. Fire dampers, smoke dampers or combination fire/smoke dampers shall be provided at the locations prescribed in SMC Sections 607.5.1 through 607.5.7 (i.e. rated barriers/ partitions etc.) per SMC 607.5. Appropriate dampers shall be provided for the ductwork penetrating the floor above.

d. 1 cfm per sq. ft. exhaust shall be provided for the Janitor 015 per SMC Table 403.3.1.1.

e. DOAS is required for the offices per SEC C403.3.5. This requirement shall be indicated on the drawing.

f. The kitchen hood exhaust in the Community Room shall be independent of all other exhaust systems per SMC 501.2 and SMC 505.3.

g. The type of kitchen hood required for the Community Room shall comply with SMC 507.1.2. The type of cooking corresponding to the kitchen hood provided in compliance with the SMC Table 507.1.2 shall be indicated on the drawing.

13. Drawing M201:

a. The transformer vault exhaust termination shall comply with the SMC 501.3.1 item 7. An elevation plan shall be provided to show compliance.

b. Residential dwelling units shall include supply and exhaust fans and be a balanced whole house ventilation system in accordance with SMC 403.4.6.3 per SMC 403.4.4.1. The system shall also include a heat or energy recovery ventilator with a sensible heat recovery effectiveness as prescribed in SEC C403.3.6 per SMC 403.4.4.1. The whole house supply fan shall provide ducted outdoor ventilation air to each habitable space within the residential unit (typical for all floors).

3. Local exhaust shall be provided for bathrooms and kitchens per SMC 403.4.7 (typical for all floors).

14. Drawing M205:

Electric duct heater for SF-R is indicated on the drawing. However, HVAC heating energy shall not be provided by electric resistance heaters per SEC C403.1.4. If any of the exceptions is applicable, it shall be noted on the drawing.

15. Drawings M300 and M301:

- a. It is not apparent which typical layout is applicable to which dwelling units. Notes shall be added to the HVAC floor plans and/or typical plans for reference/ clarification.
- b. All environmental air exhaust outlets shall be minimum 3 ft. from operable openings into the building per SMC 501.3.1 #3. The exhaust outlets and the operable openings shall be shown on the elevation plans in compliance with SMC 501.3.1.
- c. The scale for the typical HVAC plans shall be indicated on the drawing. The Not To Scale typical plans are not acceptable.
- d. The O.A. intake and the exhaust outlet for the ERV shall be minimum 10 ft. apart per SMC 501.3.1. This requirement shall be dimensioned on the HVAC floor plan.
- e. Exhaust wall cap with screen and backdraft damper are noted on the drawing (Note #4). However, screens shall not be installed at the duct termination for the clothes dryer exhaust per SMC 504.4.
- f. The exhaust air flow rates in the Typical Live/Work shall be indicated on the drawing.
- g. The exhaust air flow rates in the Typical Studio shall be indicated on the drawing.
- h. The equipment tags shall be provided for the ERVs.

16. Seattle Energy Code Compliance Forms:

- a. The complete Seattle Energy Compliance Forms including the C406 Additional Efficiency Package Option Summary shall be submitted.
- b. Prescriptive/ Component Performance shall be selected in the General Compliance Path Section on page 1 of the Project Summary.
- c. The SEC U value reference tables shall be indicated on the Envelope UA Calculations or the U value Calculations shall be provided.
- d. The proposed Total UA shall not exceed the Target UA. Since the proposed UA exceeds the target UA as indicated on the Envelope UA Calculations, the proposed building does not comply with the Seattle Energy Code.

17. Roofs, Envelope UA Calculations:

Roof RC-1 with R-30 batt + R-20 C.I. is indicated in the UA Calculations. When the insulation is tapered, separate assembly U-factors shall be calculated for each four-foot section of tapered insulation. Alternatively, SEC Table A102.2.6(1), (2) & (3) may be used. The minimum and maximum roof insulation R-values shall also be indicated on the roof plan or in the roof assembly.

18. Walls, Envelope UA Calculations:

- a. U value of 0.054 for Wall 4E1 is indicated in the UA Calculations. U value of 0.054 in SEC Table A103.3.1(5) is for intermediate framing. Headers consist of double 2x material with R-10 insulation & etc. are required for intermediate framing per SEC A103.2.2. R-10 insulated headers and intermediate framing shall be indicated in the wall assembly.
- b. Mass wall 1F0 is indicated in the UA Calculations. However, wall 1F0 assembly cannot be located on drawing A0-10. The UA calculations and/or drawing A0-10 shall be updated.

19. Slab on Grade, Envelope UA Calculations:

FC-3 is indicated in the slab on grade section of the UA Calculations. However, the floor FC-3 assembly with R-30 CI as indicated on drawing A0-11 appears to be a floor assembly above unconditioned space. The UA calculations shall be revised.

20. Fenestration, Envelope UA Calculations:

U value of 0.40 for the metal entrance doors is indicated in the UA Calculations. Window NFRC CPD (Certified Products Directory) number is not required during plan review where simply meeting the prescriptive U-value in the code. However, the NFRC CPD number is required where the U-value claimed is lower (better) than the maximum allowable U-value, and that lower U-value is used for area-weighted average or UA tradeoff. The NFRC CPD number, the NFRC simulation report or the NFRC CMA Bid report shall be indicated in the door schedule on drawing A0-20.

21. Drawing G3-10:

- a. Both prescriptive path and the Total Building Performance path per SEC C407 are indicated in the Energy Code Requirements on the drawing. However, the Seattle Energy Code Compliance Forms per SEC C402.1.5 are submitted. Thus, this reviewed is based on the Component Performance compliance path (i.e. Target UA Calculations). The Energy Code Requirements on the drawing shall be revised.

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- b. The maximum U value for the below grade walls shall be 0.070 per SEC Table C402.1.4 in lieu of 0.10 as indicated on the drawing.
- c. The fenestration U-factor requirements shall be revised to comply with SEC Table C402.4.
- d. The maximum building air leakage rate shall be 0.25 cfm per sq. ft. per SEC C402.5.1.2 in lieu of 0.40 cfm per sq. ft. as indicated on the drawing.

22. Drawing G7-21:

The completed building shall be tested and the air leakage rate of the building envelope shall not exceed 0.25 cfm/ft² at a pressure differential of 0.3 inches water gauge at the upper 95 percent confidence interval in accordance with ASTM E 779 per SEC C402.5.1.2. A report that includes the tested surface area, floor area, air by volume, stories above grade, and leakage rates shall be submitted to the building owner and the code official. If the tested rate exceeds that defined here by up to 0.15 cfm/ft², a visual inspection of the air barrier shall be conducted and any leaks noted shall be sealed to the extent practicable. An additional report identifying the corrective actions taken to seal air leaks shall be submitted to the building owner and the Code Official and any further requirement to meet the leakage air rate will be waived. If the tested rate exceeds 0.40 cfm/ft², corrective actions must be made and the test completed again. A test above 0.40 cfm/ft² will not be accepted. The air barrier notes on the drawing shall be revised.

23. Door Schedule/ A0-20:

The U value and SHGC for the exterior glazed doors shall be indicated in the door schedule. Whether the U value and SHGC are NFRC certified, shall also be noted.

24. Window Schedule/ A0-30:

The window schedule shall include:

- a. all vertical glazing
- b. the manufacturer and model number for all products
- c. the product type, size, number of each type, the U-factor and the SHGC
- d. the NFRC CPD numbers or NFRC simulation report numbers
- e. the vertical fenestration area (not including opaque doors and opaque spandrel panels) relative to the gross above grade wall area

25. Drawing A2-10:

- a. Elevator shafts and stair enclosures are considered as conditioned spaces for the purposes of the building thermal envelope requirements per SEC C202. The exterior walls in Stair 2 shall be included in the Envelope UA Calculations and the exterior wall type shall also be identified on the drawing (typical for all floors).
- b. The separation between the heated space and unheated space (i.e. Elec 013) shall be included in the Envelope UA Calculations. The insulation R-values shall also be indicated in the wall assemblies.
- c. The wall types for the exterior walls along Grid 3.9 shall be identified on the drawing.

26. Drawing A2-11:

- a. The entrance to Lobby 104 shall be protected with an enclosed vestibule per SEC C402.5.7.
- b. The wall type for the exterior walls in Trash 111 shall be identified on the drawing and shall be included in the Envelope UA Calculations. If Trash 111 is not a heated space, the separation between the heated space and the unheated space shall be included in the Envelope UA Calculation. The air barrier diagram on drawing G7-21 shall also be updated.
- c. The exterior walls in Stair 1 shall be included in the Envelope UA Calculations. The wall type for the exterior walls shall also be identified on the drawing.
- d. The exterior wall types shall be identified on the drawings (typical for all floors).

27. Drawing A2-18:

PV System Calculation on the drawing which does not comply with SEC C412 and SEC C406.5, shall be revised.

28. Renewable Energy:

The proposed building shall include a renewable energy generation system in accordance with SEC C412.1. The outline of the proposed solar panels, the capacity of each panel and the required capacity calculation shall be indicated on the drawings to show compliance.

29. Solar Readiness:

In addition to the requirements of SEC C412 (renewable energy), a solar zone in compliance with SEC C411.2 through C411.8 shall be indicated on the roof plan or on another structure elsewhere on the site per SEC C411.1. The PV (photovoltaic) interconnection provisions for solar readiness in compliance with SEC C411.8 shall also be indicated on the drawings.

30. Drawing A3-10:

Where a closet is designed for the installation of a clothes dryer, an opening having an area of not less than 100 sq. inches shall be provided in the closet enclosure or makeup air shall be provided by other approved means per SMC 504.6. The door schedule shall be updated to indicate the required laundry closet door opening.

31. Drawing A5-20:

The transformer vault exhaust termination less than 10 ft. from unprotected openings as indicated on D/ A5-20 does not comply with SMC 501.3.1 item 7.

32. Drawing A7-10:

- a. RC-2 roof in Level 6 as indicated in Wall Section 1 & 4/ A7-10 shall be included in the Envelope UA Calculations. The RC-2 roof assembly shall also be shown on the drawing.
- b. Soffit FC-7 in Level 3 as indicated in Wall Section 1/ A7-10 shall be included in the Envelope UA Calculations.
- c. Floor FC-3.1 above the SCL Vault as indicated in Wall section 4/ A7-10 shall be included in the Envelope UA Calculations.
- d. The peripheral edges of intermediate concrete floor in Level 2 as indicated in Wall section 4/ A7-10 shall be included in the Envelope UA Calculations (typical).
- e. The soffit in Level 2 as indicated in Wall section 4/ A7-10 shall be included in the Envelope UA Calculations.

33. Drawing A7-11:

- a. RC-2 roofs in Level 6 as indicated in Wall Sections shall be included in the Envelope UA Calculations.
- b. The peripheral edges of intermediate concrete floor in Level 2 shall be included in the Envelope UA Calculations (typical).
- c. Soffit FC-7 in Level 3 as indicated in Wall Section 6/ A7-10 shall be included in the Envelope UA Calculations.
- d. The soffit in Level 3 as indicated in Wall section 8/ A7-10 shall be included in the Envelope UA Calculations. The soffit type shall also be identified in the wall section.

34. Additional Energy Efficiency Credit Requirements:

The proposed building shall comply with sufficient packages from SEC Table C406.1 so as to achieve a minimum number of 8 credits per SEC C406.1. Please note on the drawings which options will be incorporated for the additional efficiency credit requirements. The detailed requirements for each option shall also be documented on the drawings.