

Energy Code review comments only. bldg/zoning comments issued separately.

Energy code review comments 2-20-15

pwliu (39)



Subject: ECC NO ANALYSIS

Page: Page 1

Status:

Citation: 1 RCNY §5000-01(f)

Date: 2/20/2015 6:23:57 PM

Author: pwliu

Depth:

*insufficient
Ext. opaque
wall Assembly
info.*

1 RCNY §5000-01(f) - Incomplete submission.

Insufficient/Incomplete support documentation for:
ECC 502/ Ashrae 90.1 Section 5 - Building Envelope
ECC 505/Ashrae 90.1 Section 8,9 - Power and Lighting (Interior and Exterior)

Energy Code Compliance review pending until full submission is provided.



Subject: ECC Inspection format

Page: Page 2

Status:

Citation: 1 RCNY §5000-01(g)(7)

Date: 2/20/2015 6:20:55 PM

Author: pwliu

Depth:

OK

Energy Code progress inspections and description not listed on plans (in tabular format as in this rule).

The description shall set forth the standard of construction and the inspection criteria as appropriate for the scope of work in accordance to table I or II of 1 RCNY §5000-01(h), as applicable; simple reference to the citation provided, without such description, is not sufficient.



Subject: ECC Admin

Page: Page 2

Status:

Citation: TR8

Date: 2/20/2015 6:21:27 PM

Author: pwliu

Depth:

OK

TR8 - submit initial and dated form matching required Progress Inspection listed on "EN-" drawing.



Subject: ECC Admin "EN"

Page: Page 2

Status:

Citation: 1 RCNY §5000-01(g)

Date: 2/20/2015 6:22:40 PM

Author: pwliu

Depth:

OK

1 RCNY §5000-01(g) - All energy code related data (including prof. statement, TR8 inspections, EN-1 form and references to supporting data) should be grouped on the sheet (s) labeled "EN" in drawing set. Rename to "EN"

1) Missing EN-1 form for Energy Model.



Subject: ECC Professional Statement

Page: Page 2

Status:

Citation: ECC 101.5.3.1

Date: 2/20/2015 6:22:37 PM

Author: pwliu

Depth:

OK

ECC 101.5.3.1 - Professional statement missing on plans. States compliance with "2011 New York City Energy Conservation Code".



Subject: Building Enevelop Thermal Summary
Page: Page 3
Status:
Citation: 1 RCNY §5000-01(g)
Date: 2/20/2015 6:17:50 PM
Author: pwliu
Depth:

1 RCNY §5000-01(g)-
Provide building thermal envelope summary for each elevation. Summary shall document wall type label, Surface Area and Thermal Performance (U-factor/R-value/SHGC) for all above & below grade wall, slab/floor heat loss conditions, roof, floors/slabs and fenestration types that is part of the exterior thermal envelope for proposed project.

(p.54)

A-200 U-factor calc & Areas not coordinated

- A401 (p.103) detail shows R-13 batt
- A-315 CMU + metal panel
- A-320 "Hybrid wall system"
- Mass Wall shown on A-319/A-320 elevation, not in Areas A-200

The summary information shall be coordinated with provided Energy Analysis reports.

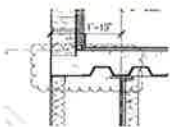
All building envelope components listed shall have a corresponding wall detail/section, window/door schedule specifying thermal performance properties to confirm R-values and U-factors listed in building envelope summary table.

still not coordinated

- OK
- 1) missing Surface area for each elevation. provide window to wall ratio.
 - 2) incomplete bldg envelope types. for ex. 8" CMU wall shown on A-310 missing. Hybrid wall system on A-312 missing, CMU wall on A-315 missing.
 - 3) provide support documentation reference
 - 4) provide support documentation for proposed U-factor for all above grade assemblies, below grade assemblies, roof assemblies.

Doc. doesn't correspond to U-factor calc on A-200.

insufficient support documentation for proposed bldg envelope. review pending.



Subject: Cloud
Page: Page 4
Status:
Citation:
Date: 2/20/2015 4:21:45 PM
Author: pwliu
Depth:

A-310 (p.76) OK

exposed slab edge

modeled as ext. Floor

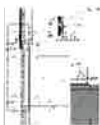


Subject: Cloud
Page: Page 4
Status:
Citation:
Date: 2/20/2015 4:21:59 PM
Author: pwliu
Depth:

A-310 (p.76)

CMU walls

• missing CMU detail



Subject: Cloud
Page: Page 5
Status:
Citation:
Date: 2/20/2015 4:26:05 PM
Author: pwliu
Depth:

missing

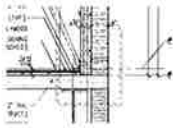
wall type missing in Opaque bldg envelope parameters.



Subject: Cloud
Page: Page 6
Status:
Citation:
Date: 2/20/2015 4:28:22 PM
Author: pwliu
Depth:

missing

different cmu wall type missing in bldg envelope summary on A-200.

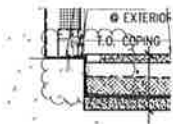


Subject: Cloud
Page: Page 7
Status:
Citation:
Date: 2/20/2015 4:34:57 PM
Author: pwliu
Depth:

missing

Wall type missing on Bldg Envelope parameters on A-200.

Wall type at slab edge missing on Bldg Envelope parameter table on A-200



Subject: Cloud
Page: Page 8
Status:
Citation:
Date: 2/20/2015 4:35:56 PM
Author: pwliu
Depth:

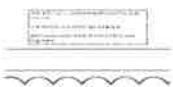
A-320(p.86)

thermal bridge

Detail? ①

• Calling out "Hybrid Wall System" in A-200 but showing mass wall details u-factor

A-200 Areas shows "Hybrid Wall" spandrel glass.



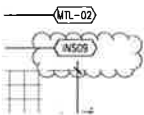
Subject: Deficient Support Documentation
Page: Page 9
Status:
Citation: 1 RCNY §5000-01(g) (1)
Date: 2/20/2015 4:37:15 PM
Author: pwliu
Depth:

Ext Wall

1 RCNY §5000-01(g) (1) - Specify thermal performance for proposed construction.

For all details/sections provided throughout drawing set:

specify R-values, insulation type and thickness to match provided Energy Analysis.



Subject: Cloud
Page: Page 9
Status:
Citation:
Date: 2/20/2015 4:38:26 PM
Author: pwliu
Depth:

OK

note: R-value of insulation should be derated for framing since insulation is installed within frames.



Subject: Deficient Support Documentation
Page: Page 10
Status:
Citation: 1 RCNY §5000-01(g) (1)
Date: 2/20/2015 4:49:38 PM
Author: pwliu
Depth:

A-401 (p.103)

1 RCNY §5000-01(g) (1) - Specify thermal performance for proposed construction.

For all details/sections provided throughout drawing set:

specify R-values, insulation type and thickness to match provided Energy Analysis.

Mass wall detail shows R-13 batt, A-200 U-factor calc shows R-21



Subject: Light Exterior Controls
Page: Page 11
Status:
Citation: ECC 505.2.4 / Ashrae 90.1 - 9.4.1.3
Date: 2/20/2015 5:14:31 PM
Author: pwliu
Depth:

? →

ECC 505.2.4 / Ashrae - 9.4.1.3 - Drawings do not indicate photosensor, time or astronomical controls for exterior lighting.

Specify in Light Schedule

BMS system - clarify location

Subject: Lighting - Exit Signs
Page: Page 11
Status:
Citation: ECC 505.4 / Ashrae 90.1 - 9.4.3
Date: 2/20/2015 5:14:31 PM
Author: pwliu
Depth:

ECC 505.4 / Ashrae 90.1- 9.4.3 - Show compliance with internally illuminated exit signs of maximum of 5 watts per side.

Specify in Light Schedule

Subject: 90.1 Light Schedule
Page: Page 11
Status:
Citation: Ashrae 90.1 - 9.2.2.3
Date: 2/20/2015 5:14:31 PM
Author: pwliu
Depth:

Ashrae 90.1 - 9.2.2.3; §5000-01(g)(3)(i)(A) - Compliance with interior lighting power allowance by either the Building Area Method or the Space-by-Space Method not shown. Lighting schedule should indicate input wattage per fixture and the types of ballasts.

Subject: ECC Multi-family
Page: Page 11
Status:
Citation: ECC 505.5.2; §5000-01(g)(3)(i)(B)
Date: 2/20/2015 5:19:43 PM
Author: pwliu
Depth:

ECC 505.5.2; §5000-01(g)(3)(i)(B) -Values provided in Analysis do not match those on drawings.

Provide Light Fixture schedule to match analysis. Schedule should indicate input wattage per fixture and the types of ballasts.

Insufficient support documentation to confirm energy savings as indicated in Energy Model.

Subject: Auto Lighting controls >5000sf
Page: Page 11
Status:
Citation: ECC 505.2.2.2
Date: 2/20/2015 5:19:14 PM
Author: pwliu
Depth:

ECC 505.2.2.2 - Buildings larger than 5,000 SF shall be equipped with an automatic control device to shut off lighting in those areas. Provide automatic controls per code reference.

Subject: Occ Sensors Lighting controls NYC req
Page: Page 11
Status:
Citation: ECC 505.2.2.2 NYC
Date: 2/20/2015 5:19:16 PM
Author: pwliu
Depth:

ECC 505.2.2.2 - Provide Occupancy Sensors for the following spaces where applicable:

- 1) classrooms
 - 2) conference/meeting rooms
 - 3) employee lunch and break rooms;
 - 4) offices smaller than 200sf
- exception: offices small than 200sf with photosensor lighting controls.

Subject: ECC Light Schedule
Page: Page 11
Status:
Citation: ECC 505.5.2; §5000-01(g)(3)(i)(A)
Date: 2/20/2015 5:14:31 PM
Author: pwliu
Depth:

ECC 505.5.2; §5000-01(g)(3)(i)(A) - Compliance with lighting power density (Watts per square foot) as per Table 505.5.2 not shown. Lighting schedule should indicate input wattage per fixture and the types of ballasts.

Subject: Power & Lights
Page: Page 11
Status:
Citation: ECC 505.7
Date: 2/20/2015 5:19:49 PM
Author: pwliu
Depth:

ECC 505.7 - Specify separate electrical meter or sub-meter for each dwelling unit.



Subject: Ashrae 90.1 Mechanical
Page: Page 12
Status:
Citation:
Date: 2/20/2015 5:37:13 PM
Author: pwliu
Depth:

Mechanical Equipment Compliance comments:

Provide Notes for the following:

✓ Ashrae 90.1 - 6.4.2 - Drawings do not address heating and cooling load calculations for deriving correct equipment size.

Ashrae 90.1 - 6.4.4.1.1 - Drawings shall indicate the type of protection materials used over outdoor insulated areas / pipes.

✓ Ashrae 90.1 - 6.4.3 - Drawings do not specify all applicable required controls including, but not limited to, thermostatic zone control, deadband, off-hour, ventilation systems, heat pump auxiliary, humidification/ dehumidification, snow melt and shutdown controls.

✓ Ashrae 90.1 - 6.4.4.2 - Drawings do not address duct and plenum leakages and sealing.

Ashrae 90.1 - 6.4.3.4 - Mechanical ventilation intakes and exhausts shut off dampers not identified.

✓ Ashrae 90.1 - 6.4.3.4.1 - Motorized dampers are required for both stairs and elevator shaft.

✓ Ashrae 90.1 - 6.4.4.1.2 - Drawings do not address duct and plenum insulation.

✓ Ashrae 90.1 - 6.4.4.1.3 - HVAC piping not in compliance with thermal insulation.

✓ Ashrae 90.1 - 6.5.1, 6.5.2 - Requirements for economizers and hydronic system controls for mechanical system not fully addressed.

Ashrae 90.1 - 6.5.3 - Drawings do not indicate that fan system motors exceeding 5 horsepower are within power limitations and are no larger than the first available motor size greater than fan brake horsepower.

in model

~~Ashrae 90.1 - 6.7.2.4 - Drawings do not include detailed instructions for HVAC systems commissioning.~~



Subject: 90.1 - pipe insulation
Page: Page 13
Status:
Citation: Ashrae 90.1 - 6.4.4.1.3
Date: 2/20/2015 5:37:16 PM
Author: pwliu
Depth:

✓ Ashrae 90.1 - 6.4.4.1.3 - HVAC piping shall be thermally insulated per table 6.8.3

Subject: ECC Light Schedule & Narrative

Page: Page 11

Status:

Citation: §5000-01(g)

Date: 2/20/2015 5:34:55 PM

Author: pwliu

Depth:

§5000-01(g) - Provide Lighting schedule, indicate watt per lamp, lamp per fixture and system input per fixture such that the drawing support the energy analysis. Where applicable, indicate high efficacy lamp, provide lumens per watt.

Mandatory lighting and power controls shall be shown and described, and a narrative provided describing their function and operation.

Subject: 90.1 - pipe insulation

Page: Page 12

Status:

Citation: Ashrae 90.1 - 6.4.4.1.3

Date: 2/20/2015 5:37:16 PM

Author: pwliu

Depth:

Ashrae 90.1 - 6.4.4.1.3 - HVAC piping shall be thermally insulated per table 6.8.3

Subject: Ashrae 90.1 Mechanical
Page: Page 13
Status:
Citation:
Date: 2/20/2015 6:14:48 PM
Author: pwliu
Depth:

Mechanical Equipment Compliance comments:

Provide Notes for the following:

✓ Ashrae 90.1 - 6.4.2 - Drawings do not address heating and cooling load calculations for deriving correct equipment size.

Ashrae 90.1 - 6.4.4.1.1 - Drawings shall indicate the type of protection materials used over outdoor insulated areas / pipes.

✓ Ashrae 90.1 - 6.4.3 - Drawings do not specify all applicable required controls including, but not limited to, thermostatic zone control, deadband, off-hour, ventilation systems, heat pump auxiliary, humidification/ dehumidification, snow melt and shutdown controls.

✓ Ashrae 90.1 - 6.4.4.2 - Drawings do not address duct and plenum leakages and sealing.

✓ Ashrae 90.1 - 6.4.4.1.2 - Drawings do not address duct and plenum insulation.

✓ Ashrae 90.1 - 6.4.4.1.3 - HVAC piping not in compliance with thermal insulation.

Ashrae 90.1 - 6.5.1, 6.5.2 - Requirements for economizers and hydronic system controls for mechanical system not fully addressed.

Ashrae 90.1 - 6.5.3 - Drawings do not indicate that fan system motors exceeding 5 horsepower are within power limitations and are no larger than the first available motor size greater than fan brake horsepower.

✓ Ashrae 90.1 - 6.7.2.4 - Drawings do not include detailed instructions for HVAC systems commissioning.

OK

Subject: 90.1 Missing Efficiency Values.
Page: Page 14
Status:
Citation: Ashrae 90.1 - 6.4.1
Date: 2/20/2015 6:05:47 PM
Author: pwliu
Depth:

Ashrae 90.1 - 6.4.1 - Specify equipment efficiency in Equipment schedule. Values must meet or exceeds code minimum requirements.

Table 6.8.1A - Air Conditioners and Condensing Units

✓ Table 6.8.1B - Heat Pumps

Table 6.8.1C - Water Chilling Packages

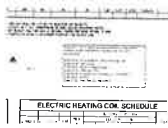
Table 6.8.1D - PTAC and PTHP

Table 6.8.1E - Furnaces, Duct Furnaces, and Unit Heaters

Table 6.8.1F - Boilers

Table 6.8.1G - Heat Rejection Equipment

Drycooler? OK



Subject: 90.1 Missing Efficiency Values.
Page: Page 15
Status:
Citation: Ashrae 90.1 - 6.4.1
Date: 2/20/2015 6:06:34 PM
Author: pwliu
Depth:

*Dry cooler?
OK*

Ashrae 90.1 - 6.4.1 - Specify equipment efficiency in Equipment schedule. Values must meet or exceed code minimum requirements.

Table 6.8.1A - Air Conditioners and Condensing Units
Table 6.8.1B - Heat Pumps
Table 6.8.1C - Water Chilling Packages
Table 6.8.1D - PTAC and PTHP
Table 6.8.1E - Furnaces, Duct Furnaces, and Unit Heaters
Table 6.8.1F - Boilers
Table 6.8.1G - Heat Rejection Equipment



Subject: Ashrae 90.1 Mechanical
Page: Page 15
Status:
Citation:
Date: 2/20/2015 6:14:43 PM
Author: pwliu
Depth:

*Didn't see,
minor*

Mechanical Equipment Compliance comments:

Provide Notes for the following:

Ashrae 90.1 - 6.4.3.4 - Mechanical ventilation intakes and exhausts shut off dampers not identified.

Ashrae 90.1 - 6.4.3.4.1 - Motorized dampers are required for both stairs and elevator shaft.



Subject: Cloud
Page: Page 16
Status:
Citation:
Date: 2/20/2015 5:21:22 PM
Author: pwliu
Depth:

*Coordinate
Mass wall / Hybrid Wall Syst.*

U-factor does not match documentation. Per Opaque Bldg Envelope Parameters on A-200, all of the opaque wall U-factors listed are > .2.



Subject: Cloud
Page: Page 16
Status:
Citation:
Date: 2/20/2015 5:33:10 PM
Author: pwliu
Depth:

*~ 28,000 SF
cellar LV-D
~ 8,000 SF - A-200*

Clarify Wall Area differences in surfaces area between proposed and Existing

LV-I: construction EW-C-CON U-0.11



Subject: Image
Page: Page 16
Status:
Citation:
Date: 2/20/2015 5:59:28 PM
Author: pwliu
Depth:

OK



Subject: Cloud
Page: Page 16
Status:
Citation:
Date: 2/20/2015 5:59:38 PM
Author: pwliu
Depth:

Ashrae 90.1 - Per Table 11.3.1(5)(c) Column B: If the fenestration area for new buildings exceeds the maximum allowed by Section 5.5.4.2, the area shall be reduced proportionally along each exposure until the limit set in Section 5.5.4.2 is met.



Subject: Cloud
Page: Page 16
Status:
Citation:
Date: 2/20/2015 6:00:13 PM
Author: pwliu
Depth:

confirm window to wall ratio for east elevation

OK



Subject: Text Box
Page: Page 17
Status:
Citation:
Date: 2/20/2015 5:30:45 PM
Author: pwliu
Depth:

Energy Model Systems comments:

1. Code Case: Verify ~~water-cooled~~ ^{air} systems (amenity spaces) are mapped against water-cooled condensers using ASHRAE 90.1-2007 Table 11.3.2
2. Design & Code Case: SV-A report for PTACs shows a Heating-EIR, please clarify.
3. Design & Code Case: Explain why DHW systems are not identically modeled – electric load in the design case and not in the baseline
4. Design & Code Case: Reduce unmet hour difference to 50 hours or less.
5. Design & Code Case: Provide PV-A or similar report showing boiler sizing and efficiency



Subject: Cloud
Page: Page 18
Status:
Citation:
Date: 2/20/2015 5:18:44 PM
Author: pwliu
Depth:

- ✓ Provide support documentation for energy savings for Interior and Exterior lighting.

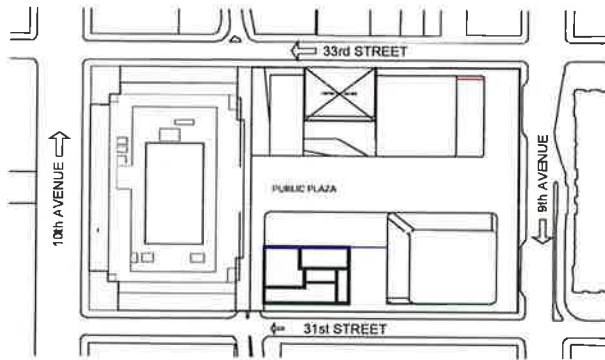
interior apts - OK



Subject: ECC Admin
Page: Page 1
Status:
Citation: PW1, Sec 10
Date: 2/20/2015 6:25:34 PM
Author: pwliu
Depth:

PW1, Sec 10 - Indicate "Energy Model"

KEY PLAN:



PROJECT:

MANHATTAN WEST NEW YORK , NEW YORK

1 RCNY §5000-01(f) - Incomplete submission.

Insufficient/Incomplete support documentation for:

ECC 502/ Ashrae 90.1 Section 5 - Building Envelope

ECC 505/Ashrae 90.1 Section 8,9 - Power and Lighting (Interior and Exterior)

Energy Code Compliance review pending until full submission is provided.

PW1, Sec 10 - Indicate "Energy Model"