

Local Law 97

ARTICLE 321 – PRESCRIPTIVE ENERGY CONSERVATION
MEASURES FOR CERTAIN COVERED BUILDINGS

Template Instructions

For version 1.4, issued 9/4/2024

Article 321 Template Instructions – overview

As noted in [section II\(A\)](#) of the *Article 321 Filing Guide*, four of the thirteen Prescriptive Energy Conservation Measures (“PECMs”) included under the Article 321 Prescriptive Pathway require detailed supporting documentation, one acceptable form of which is a template workbook provided by the Department of Buildings. That workbook, containing four template worksheets, is downloadable [here](#).

This document provides examples for each template to show how they can be successfully completed. Our sample building is a hypothetical multifamily building – mid-size, rent-regulated and pre-war, featuring a two-pipe steam heating system with supplemental electric resistance heaters. Each section of this document corresponds to one or more of the fillable tabs (worksheets) in the workbook:

- **“Submittal Information” tab**
- **“4. Radiator temperature controls” tab**
- **“7. Indoor/outdoor temperature sensors” tab**
- **“8. Steam traps – initial survey” tab**
- **“8a. Steam traps – full building” tab**
- **“9. Master steam system venting” tab**
- **Sample errors**

Comments and questions related to the Article 321 Templates, Template Instructions, and Filing Guide may be sent to the Department at GHGEmissions@buildings.nyc.gov.

“Submittal Information” tab

Report information	
Date completed:	5/31/2024

(please review Instructions tab first)

the Instructions tab is not covered in this document since it is fairly self-explanatory; it should be reviewed before filling in any of the other tabs.

Building/Lot information	
Borough:	1 - Manhattan
Block:	873
Lot:	41
# of buildings on lot:	1
BIN of this building:	1010101
(data validation)	good
Street address:	138-144 East 18th Street New York, NY
Zip Code (5 digits):	10003
(data validation)	good
Facility type:	Multifamily

Each covered building on the lot should have its own BIN and will need its own Template workbook.

Errors will result if the BIN is not 7 digits and/or if the ZIP code is not 5 digits.

Enter primary heating system type:	Two-Pipe Steam	Fill out PECMs 4, 7, 8, and 9.
Enter secondary heating system type (if applicable):	Electric Resistance	Fill out PECM 4.

Only two-pipe steam systems necessitate filling out all templates. Some heating system types do not need to fill out templates at all - refer to the table on page 16 of the *Article 321 Filing Guide* for further guidance.

Comments/notes (e.g. spaces or dwelling units that were not inspected) :
All spaces with radiators were inspected.

Note that not every building has a secondary heating system; the example building here has supplementary built-in baseboard electric heaters in some of the living rooms (portable heaters / radiators do not count).

“4. Radiator temperature controls” tab (p. 1 of 2)

Method of compliance:	Inspection/survey
Date of last documented inspection:	1/16/2020
	<i>(data validation)</i> good
Means of compliance:	Complete this worksheet.

If "Completed utility incentive/rebate program" is selected here, then there is no need to fill out the worksheet. However, the date of final inspection must have been on or after the effective date of LL97 (11/15/2019).

Initial Survey information	
Total # of radiators (in steam and electric resistance systems) and/or existing controls (in hydronic systems):	132
Minimum 20% sample size:	27
How the 20% of radiators/controls to be sampled were selected (up to 3):	Conversations with the facility manager
	Occupant reports on over- and under-heated spaces
	Testing
Date of initial survey:	11/16/2019
	<i>(data validation)</i> good
# of radiators/controls surveyed:	28
Compliant?	Yes
# of radiators with missing / malfunctioning temperature controls:	1
Full survey required?	Yes - fill out the remainder of this worksheet.

The number of radiators inspected during the initial survey must be at least 20% of the total number of radiators in the building.

For hydronic systems, the 20% applies to the total number of **existing** controls; the PECM does not require new controls to be installed in hydronic systems where they are not needed.

If this number is non-zero, then a full survey is required.

“4. Radiator temperature controls” tab (p. 2 of 2)

Full Survey information		
Summary of findings.	Date of final full survey:	1/16/2020
	<i>(data validation)</i>	good
	# of newly installed or repaired temperature controls:	96
Which heating system(s) the radiators in the building are connected to.	System type 1:	Two-Pipe Steam
	System type 2 (if applicable):	Electric Resistance
Enter data for the two-pipe steam system (leave blank if N/A).	# of radiators in two-pipe steam system surveyed (100% required):	100
	# of existing TRVs or insulated radiator enclosures in good working order:	8
	# of newly installed or repaired TRVs or insulated radiator enclosures:	92
	Compliant?	Yes
Enter data for the electric resistance system (leave blank if N/A).	# of dwelling units/spaces served by an electric resistance system surveyed (100% required):	16
	# of existing thermostats in good working order:	12
	# of newly installed or repaired thermostats:	4
	Compliant?	Yes

This date must be on or after the date of the initial survey.

These cells refer back to the drop-downs on "Submittal Information".

The second two numbers must sum to the first number to be considered compliant.

The Electric Resistance section is slightly different from the others. Since one thermostat may control multiple electric resistance radiators, what is needed is working temperature controls in every space.

The sections for one-pipe steam and hydronic systems have been omitted from these instructions, as they do not apply to the example building.

“7. Indoor/outdoor temperature sensors” tab

Date of initial survey:	12/1/2023
<i>(data validation)</i>	good
Date of final survey (if applicable):	2/14/2024
<i>(data validation)</i>	good

Enter data for primary heating system.	Primary system type:	Two-Pipe Steam
	Method of compliance:	Inspection/survey
	Means of compliance:	Complete this worksheet.
If "Inspection/Survey" is chosen as the method of compliance, complete this section.	# of primary heating plants (e.g. boilers):	2
	# of primary heating plants with outdoor reset/setback controls in good working order:	2
	Compliant?	Yes
	For primary steam systems ONLY:	
	Total # of spaces or radiators in building: (for Multifamily, this is the # of dwelling units. For HOW, this is the # total spaces or radiators served by the system):	16
	Total # of spaces or radiators with wireless sensors at radiator that are in good working order:	5
	% of spaces or radiators with wireless sensors at radiator that are in good working order:	31%
Compliant?	Yes	
Enter data for secondary heating system (if applicable).	Secondary system type:	Electric Resistance
	Method of compliance:	Inspection/survey
	Means of compliance:	Complete this worksheet.

If "...utility incentive/rebate program" or "Screenshot(s)...from a digital control system..." is selected here, then there is no need to fill out the worksheet.

All boilers in the heating system should have outdoor reset controls installed.

This section refers to the requirement in 1 RCNY §103-17 that in systems using wireless sensors, at least 25% of spaces must have such sensors.

The secondary heating system section only needs to be filled out when such a system is present.

“8. Steam traps – initial survey” tab (p. 1 of 2)

Method of compliance:	Inspection/survey	← (must be on or after 1/1/2022)
Date of last documented inspection:	5/7/2024	
	(data validation) good	
Means of compliance:	Complete this worksheet.	

If "...utility incentive/rebate program", "LL87 report...", or "...30°F temp difference..." is selected here, then there is no need to fill out the worksheet. However, the date of final steam trap inspection must be on or after 1/1/2022.

Fill out Row 12, then fill out “List of inspected steam traps” below.

		Common area	Non-common owner area	Non-common tenant area	Entire building
Enter the results of the initial survey of steam traps (or orifice plates).	# of discrete spaces of this type in the building	2	4	20	26
	% of spaces required to be surveyed	100%	20%	10%	n/a
	# of spaces required to be surveyed	2	1	2	5
	<i>Survey complete?</i>	Yes	Yes	Yes	
	# of steam traps surveyed (100% in spaces required to be	3	1	8	12
	# of missing / malfunctioning steam traps in sample	0	0	8	8
	% of missing / malfunctioning steam traps in sample	0%	0%	100%	67%

The sample percentages and definitions of space types come from the *Article 321 Filing Guide*.

The rest of this table is auto-populated based on the "List of inspected steam traps" section at the bottom of the tab.

Full-building survey (all steam traps) required?	Yes - complete tab 8a.
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Should any of the percentages of missing or malfunctioning steam traps exceed 20%, then a survey of all radiators in the building must be conducted.

“8. Steam traps – initial survey” tab (p. 2 of 2)

List of inspected steam traps - initial survey						
Floor	Room/space description	# of traps of similar condition	Steam trap condition	Space type	Date of initial survey (must be on or after 1/1/2022)	Date of confirmed correction (if applicable)
Cellar	Gym	2	Functioning	Common area	2/29/2024	
1	Lobby	1	Functioning	Common area	2/29/2024	
Cellar	Compactor room	1	Functioning	Non-common owner area	2/29/2024	
2	Apartment 2B	6	Functioning	Non-common tenant area	2/29/2024	
5	Artist Studio 5C	2	Not functioning / missing	Non-common tenant area	2/29/2024	5/7/2024

If necessary, the data from this list can be copied and pasted directly into the list on the next tab, "8a. Steam traps – full building".

The number of entries under each Space type (Common, Non-common owner, Non-common tenant) should match the "# of spaces required to be surveyed" from Row 14 - otherwise "Survey complete?" in Row 15 will return a "No".

“8a. Steam traps – full building” tab

Have all steam traps that were not functioning or missing been repaired, replaced, or installed?	Yes - compliant
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Note that the number of entries under each Space type should match the "# of discrete spaces of this type in the building" that is entered on the "Steam Traps - initial survey" tab - otherwise "Survey complete?" will return a "No".

		Common area	Non-common owner area	Non-common tenant area	Entire building
Summary of full-building steam trap (or orifice plate) survey.	# of discrete spaces of this type in the building	2	4	20	26
	Survey complete?	Yes	Yes	Yes	
	# of total steam traps surveyed	3	4	104	111
	# of steam traps that were not functioning or missing on initial full survey	0	0	32	32
	# of steam traps that are not functioning or missing on latest survey	0	0	0	0

To be compliant, whenever the initial steam trap condition is "Not functioning / missing", then the corrective action must be "Newly installed / repaired".

List of inspected steam traps - full survey							
Floor	Room/space description	# of traps of similar condition	Steam trap condition (initial survey)	Space type	Date of initial survey (must be on or after 1/1/2022)	Date of confirmed correction (if applicable)	Corrective action (latest survey)
Cellar	Gym	2	Functioning	Common area	2/29/2024		
1	Lobby	1	Functioning	Common area	2/29/2024		
Cellar	Compactor room	1	Functioning	Non-common owner area	2/29/2024		
2	Apartment 2B	6	Functioning	Non-common tenant area	2/29/2024		No action
5	Artist Studio 5C	2	Not functioning / missing	Non-common tenant area	2/29/2024	5/7/2024	Newly installed / Repaired
Cellar	Manager's office	1	Functioning	Non-common owner area	3/1/2024		

“9. Master steam system venting” tab (p. 1 of 2)

Steam system return type:	Atmospheric (non-vacuum / gravity)
Is PECM 9 required?	Yes

As noted in the *Article 321 Filing Guide*, steam systems that use a vacuum pump do not need master venting installed.

Method of compliance:	Inspection/survey
Date of last documented inspection:	5/6/2024
<i>(data validation)</i>	<i>good</i>
Means of compliance:	Complete this worksheet.

If "...utility incentive/rebate program", "LL87 report...", or "Schematic diagram(s)..." is selected here, then there is no need to fill out the worksheet. However, the date of final inspection must have been on or after the effective date of LL97 (11/15/2019).

Date of initial survey:	2/27/2024
<i>(data validation)</i>	<i>good</i>
Date of final survey (if applicable):	5/6/2024
<i>(data validation)</i>	<i>good</i>

Initial Survey information					
Location of vents	Total # of required vents	# found in good working order	# needing repair / replacement	# of missing vents	# of vents not inspected
At mains	2	0	2	0	0
At large horizontal pipe runs	4	0	0	4	0
At risers	6	1	2	0	3
At vertical pipes branching off a main	1	1	0	0	0

"Missing vents" can include those that were mistakenly removed in the past.

"Vents not inspected" can include those that are (or should be) located within spaces that were not viewable during the initial survey. These vents must be inspected and confirmed to be in good working order during the final survey.

Required actions after initial survey	Replace the 4 vent(s) needing repair/replacement. Install the 4 missing vent(s). Inspect the 3 vent(s) not inspected. Conduct final survey.
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This cell can remain orange for submission and still be considered compliant, since it is the final survey results that matter.

“9. Master steam system venting” tab (p.2 of 2)

Required actions after initial survey	Replace the 4 vent(s) needing repair/replacement. Install the 4 missing vent(s). Inspect the 3 vent(s) not inspected. Conduct final survey.
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This cell can remain orange for submission and still be considered compliant, since it is the final survey results that matter.

Final Survey information					
Location of vents	Corrective action or additional inspection needed?	# of vents to be installed or repaired (from Initial Survey)	Have all vents been inspected?	Corrective action taken	# of vents found to be in good working order
At mains	Yes	2	Yes	Newly installed / Repaired	2
At large horizontal pipe runs	Yes	4	Yes	Newly installed / Repaired	4
At risers	Yes	2	Yes	Newly installed / Repaired	6
At vertical pipes branching off a main	No	0	Yes	No action	1

Have all vents found to be missing or not functioning been newly installed or repaired?	Yes - compliant
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To be considered compliant, the following must be true of the data in this table:

- all vents must have been inspected;
- vents that needed to have been installed and repaired have had the appropriate corrective action; and
- the number of vents in good working order must match the total number of required vents.

Sample errors

Data validation errors are for fields that must be correct: dates, ZIP code, BIN, etc. Unlike non-compliances, errors must be fixed before submission of the worksheet. For example, if the last inspection/survey was too far in the past, then an error will be returned and a new inspection/survey must be conducted.

Method of compliance:	Completed utility incentive/rebate program
Date of last documented inspection:	11/14/2019
<i>(data validation)</i>	error
Means of compliance:	Upload documentation into portal; no need to fill out this worksheet.

(must be on or after 11/15/2019)

Date of initial survey:	11/14/2019
<i>(data validation)</i>	error
Date of final survey (if applicable):	11/13/2019
<i>(data validation)</i>	error

(must be on or after 11/15/2019)

The notes in gray will tell you the earliest date possible for these cells; anything before that will trigger a data validation error.

The date of the final survey must be later than the date of the initial survey.