Latest Version TREAT 3.5 Key Changes and Features

TREAT 3.5.1 Updates:

Features:

- Sort Visual Inspection Improvements alphabetically on the Home Performance Report.
- TREAT BAS Calcs are now visible in the model inspector.
- Set Default Financial Terms in the TREAT Preferences.
- We've added new LED lighting options in the lighting library!

HPXML Changes:

- Support for Dehumidifiers
- ECM Motor savings are now packaged with heat plant savings (NYSERDA Data Requirement)

TREAT 3.5 Updates:

Features:

- Air handler motors added to appliance library
- Cape cod attic support in building wizard and in HPXML export
- Calculator for average efficiency of multiple cooling systems

HPXML Changes

- Fix return duct areas
- Fix problem with unknown foundation types

Older TREAT 3.4 Updates:

Improvements

TREAT 3.4.7.5 HPXML Updates:

- Fix Year Manufactured sometimes 0 when left blank
- Fix fluorescent tube translation
- Split attics so each attic surface is represented by its own attic

TREAT 3.4.7 HPXML Updates

- Reports with implicit base building data cannot be run unless base building has valid calculations
- Fixed bug where improved window UValue could overwrite base value
- Scroll wheel no longer crashes in measurement/inspection wizards
- Fixed some crashes when applying distribution defaults
- Hydronic Distribution Systems now default with the correct piping area.
- Inspections and measurements are now connected explicitly to an assembly (either the base building or a package) and do not rely on dates matching.
- Inspection and measurement wizards default to no inspections or measurements selected.

Features

- HPXML 2.1 - NYSERDA report added with NYSERDA specific change
- Ability to specify attached on one or two sides in house type drop down
- Room AC efficiencies should be entered as EER
- Added siding and radiant barrier inputs under advanced surface properties
- Restored NY Home Performance Report
- Allow multiple visual inspections/measurements of type 'other'
- Updated CFM50 to ACHn conversion following ASHRAE 62.2-2013.
- New daily weather import tool with over 2,000 additional weather stations.
- New and Improved TREAT Billing Data Import Tool!
- Ability to add detailed appliance information including Third Party Certifications (I.e. Energy Star).
- Pool pumps are now included in the appliance library.
- Supports reporting of Storm Doors
- Collect window shades and screens details required in Arizona
- Appliances can now be marked as located on the "exterior" of the building in order to refine internal gains.
- Improved Health and Safety Inspections

- o Use the visual inspection or measurements wizard to select from various project milestone dates.
- Our new Home Performance Report has been reimagined and restyled to help you sell more jobs!
- TREAT 3.4.7 now includes the Building Airflow Standard in the **Home Performance Report**! Look for this value in the Air Sealing section of the report.
- Updated home health and safety pages allow you to include information about jobs that may not strictly deal with energy efficiency.
- Improved and fully customizable workscope details in each improvement category helps explain the importance of particular types of improvements to customers or field technicians.
- Added a count of Temperature Initiated Shower Flow Valves to Water Fixture Details. These are for reporting only and do not affect energy modeling.
- Equipment information including manufacturer, model, and year can be recorded for HVAC and DHW equipment and appliances.
- Improved default duct size and leakage estimation.

Improved Default Values

- Cooling Latent Load now defaults to 0%. The default can be changed in the TREAT Preferences.
- Duct leakage default settings have been updated for better accuracy in calculating distribution losses.
- Default DHW pipe insulation is now set to R-0.
- Regular shower flow rate default to 2.5 GPM.
- Low-flow shower default set to 2.0 GPM.
- Regular flow and low flow faucet fixtures set to 2.2 and 1.5 GPM, respectively
- Updated defaults for ducted distribution systems – more details below.

Reports

- The default report generation format can now be specified in the Options.
- The new Energy Savings Summary Report has been added.
  - o This internal report can help you calculate the total energy usage and savings for a package in both percent savings and native fuel units.
  - o Generate in Microsoft Excel for even further data manipulation.
- Package Comparison Report
  - o Easily compare the savings results of multiple packages side-by-side.
  - o Run this report with one package for a summary view of the costs and savings of a package.
- Home Performance Report
  - o Our new Home Performance Report has been reimagined and restyled to help you sell more jobs!
  - o Use in conjunction with our Package Comparison report to create a compelling narrative for your customers.
  - o Show customers multiple options while highlighting and focusing on one specific project to maximize your sales process.
  - o Updated home health and safety pages allow you to include information about jobs that may not strictly deal with energy efficiency

- o Improved 'General Information' details in each improvement category helps explain the importance of particular types of improvements
- o Now includes a Building Airflow Standard calculation in the Home Performance Report! See this value in the Air Sealing section of the report.
- o

HPXML 2.1

An industry standard report used to communicate modeling details to energy efficiency programs or between software packages.

- Improved surface assembly descriptions
- BPI2400 Information
- Window SHGC
- Pool pumps
- Health and safety now present on non-audit packages as well as audit. Health and safety measurements and inspections are associated with a package based on date.
- Temperature initiated shower flow valves appear on the HPXML 2.1 report.
- Third party certifications for equipment, and lighting technologies are now included in the export.
- Appliance Manufacturer, Model, Year, included in output
- Changed logic determining fan whole building ventilation status
- Window area is now total window area for the node
- Lighting with 'fluorescent' in the description that is not otherwise categorized is assumed to be CFL
- Added spaces and associated walls with spaces
- Fixed invalid HPXML resulting from combinations of attics and cathedral ceilings
- Low Flow improvements now only replace showers if shower fraction or flow rate has been changed; similar for faucets
- Improved detection of basements - conditioned spaces with only short walls adjacent to ground will not be detected as basements.
- HPXML 2.1 - NYSERDA report added with NYSERDA specific changes -
  - o New distributions installed with new HVAC systems are not included as InstalledComponents
  - o Shower nodes always have FuacetAerator node with value of false
  - o Adjusted insulation installation types to align more closely with NYSERDA guidelines
  - o Include HousePressure node for air infiltration even when leakage is specified as ACH
  - o Don't include AtticFloorInsulation if there are no improvements that affect that AtticFloorInsulation. Same for AtticRoofInsulation

Visual Inspections and Measurements

- The inspection wizard makes it easy to add multiple Visual Inspections and Measurements to your model at the same time. Within the Measurement Wizard and Inspection Wizard users should select the HPXML dataset to work with the most comprehensive list of options.
- Audit and package dates are available in the wizard to make it easy to associate observations with the date of the correct visit to the home.
- Each inspection or measurement must be unique for a given date, for example there can only be one "Combustion Appliance Zone CAZ – Depressurization Limit" reading assigned to the date of the audit.

Dates

- The Audit/Test In date is entered on the Project Description screen.
- Dates can be added for various phases of the construction process by first adding and configuring packages of improvements appropriate for each phase.
- Visual Inspections and measurements are assigned to the available dates for reporting purposes.

Package Types

- Packages can now be assigned a type including: proposed workscope, approved workscope, construction-period testing, job completion testing, and quality assurance/monitoring.
- Packages can now be assigned a date which Visual Inspections and Measurement entries can be associated with.
- Package type and date are included in the HPXML 2.1 export.

Energy Modeling Details

Ducted Distribution Changes

- Default duct leakage values have been updated to 100 CFM25 for supply leakage and 100 CFM25 for return leakage.
- Duct area is calculated based on the number of stories, and the conditioned area (CA) of the model.

Ducted Distribution Area Calculation

	One Story	Two Stories or more
Supply Duct Area (ft^2)	0.27 * Conditioned Area	0.2 * Conditioned Area
Return Duct Area (ft^2)	0.1 * Conditioned Area	0.04 * (Stories +1) * Conditioned Area

- Duct % area distribution and duct insulation defaults are determined based on the space type of the location selected for the HVAC system, and the number of stories.
- The user should select the space with the most ductwork in it to be the location for the HVAC system.
- If more than one conditioned space is present in the model, ducts will be distributed evenly between them.
- If a Central Air Conditioner cooling system is modeled after a ducted furnace, the distribution systems will automatically be linked and identical. This can be changed within the Primary Distribution System or Cooling Distribution System screens.
- **Resetting Duct Defaults** can be accomplished using the Reset Distribution to Defaults button within the Edit Distribution System screens.
  - This will reset the Insulation R-Value, Total Duct Surface Area, and the % distribution of ductwork.
  - User entered Duct Test Leakage and Duct Test Area values will not be overwritten.

Ducted Distribution Allocation and Insulation

Selected HVAC Location Space Type	# Stories	Duct Distribution	Duct Insulation
Any Conditioned Space Type	N/A	100% Conditioned	R-0
"Unheated Low ACH"	1	80 % Unconditioned, 20% Conditioned	R-0
	2+	60 % Unconditioned, 40% Conditioned	R-0
"Unheated High ACH"	1	80 % Unconditioned, 20% Conditioned	R-4
	2+	60 % Unconditioned, 40% Conditioned	R-4

Update to ACH natural calculations (ASHRAE 62.2)

Blower door inputs in TREAT in CFM50 are converted to Air Changes Per Hour under natural conditions (ACHn) using an n-factor before being interpreted for energy modeling calculations. The n-factor is calculated based on pre-determined defaults and is informed by the user selected long-term weather site.

Third Party Certifications

Third party certifications can be entered for a variety of building systems in TREAT including:
- Doors
- Windows
- HVAC Plants
- Hot Water Systems
- Appliances

Certifications for all of these systems, except for appliances, are controlled using the golden certifications button on the appropriate screens:

Appliance certifications are determined through the inclusion of the certification within the name of the appliance. Certification in appliance names are not case sensitive.

Text String in Appliance Name	becomes	Certification in HPXML 2.1 Export
energy star	→	Energy Star
energy star most efficient	→	Energy Star Most Efficient
cee tier 1	→	CEE Tier 1
cee tier 2	→	CEE Tier 2
cee tier 3	→	CEE Tier 3

Lighting Types

The lighting technology of fixtures can be identified in the HPXML 2.1 export through the inclusion of the technology within the description/name of the lighting fixture. This feature works only for the list of technologies below. The text string in the lighting name is not case sensitive.

Text to Include in Fixture Description	becomes	Fixture type in HPXML 2.1
t4, t5, t8, t9, t10, or t12	→	Fluorescent tubes with corresponding tube type
led	→	Light Emitting Diode
cfl	→	Compact Fluorescent