



EA CREDIT 1.3: OPTIMIZE ENERGY PERFORMANCE HVAC

All fields and uploads are required unless otherwise noted.

This static sample form has been modified for offline access. All sections of the form are visible. Sample forms are for reference only.

Tip: A general summary of the tenant space HVAC and lighting/electrical systems is required in the Project Information Forms. Consider contextual overlaps when documenting compliance with EAc1.3.

Select one of the following:

- ☐ **Option 1: Prescriptive Path:** The project team will document Equipment Efficiency and/or Appropriate Zoning & Controls.
- ☐ **Option 2: Performance Path:** The project team will document reduction of design energy cost by comparing it to the energy cost budget of regulated energy components as described in ASHRAE Standard 90.1-2007.

EQUIPMENT EFFICIENCY AND/OR APPROPRIATE ZONING AND CONTROLS

Choose one OR both of the following:

- ☐ The project team has installed HVAC systems which comply with the efficiency requirements outlined in the Advanced Buildings Core Performance Guide sections 1.4, 2.9, & 3.10.
- ☐ All project spaces meet Appropriate Zoning and Control Requirements.

EQUIPMENT EFFICIENCY

CRITERIA 1.4: MECHANICAL SYSTEM DESIGN

Total project space load (heating):	<input type="text"/>	<input type="text"/>
Total project space load (cooling):	<input type="text"/>	<input type="text"/>
Total project space capacity (heating):	<input type="text"/>	<input type="text"/>
Total project space capacity (cooling):	<input type="text"/>	<input type="text"/>
Total tenant space fan & pump sizing:	<input type="text"/>	<input type="text"/>

Upload EAc1.3-1. Provide a summary of mechanical system design calculations. Include the following calculations, as applicable to the project, and maintain consistency with requirements from Criteria 1.4 of the Advanced Buildings Core Performance Guide.

- Load calculations
- Fan-sizing and zone-by-zone load calculations
- Critical path supply duct pressure loss calculations
- Part-load condition calculations.

As applicable to the project, each of the following calculations have been documented accurately and are consistent with Advanced Buildings Core Performance requirements.

- Load calculations
- Fan-sizing and zone-by-zone load calculations
- Critical path supply duct pressure loss calculations
- Part-load condition calculations

Signatory	
Initial Here :	

CRITERIA 2.9: MECHANICAL EQUIPMENT EFFICIENCY

The mechanical equipment in the project space (package unitary equipment, gas unit heaters, package terminal air conditioners & heat pumps, boilers, electric & absorption chillers, and other equipment) meets the efficiency requirements from section 2.9 of the Advanced Buildings Core Performance Guide.

Signatory	
Initial Here :	

CRITERIA 3.10: VARIABLE SPEED CONTROL

Complete Table. Variable Speed Control for all individual pumps serving variable flow systems and VAV fans having a motor horsepower of 5hp or larger.

Table. Variable Speed Control

Pump/fan type	Pump/fan location	System served	Design wattage demand of pump/fan motor at 50% of design flow (%) *	Design wattage demand of pump/fan motor at 100% of design flow (%)

* The Core Performance Guide requires a fan motor demand of no more than 30% design wattage at 50% of design flow.

APPROPRIATE ZONING AND CONTROLS

TIP: The HVAC narrative description from PI Form 4 should describe the HVAC system serving the project space as well as the building-level system. The narrative should explain how the zones were determined, the control logic, and the potential energy savings.

- ☐ Every solar exposure has a separate control zone.
- ☐ Interior spaces are separately zoned.
- ☐ Private offices and specialty occupancies (conference rooms, kitchens, etc.) have active controls capable of sensing space use and modulating HVAC system in response to space demand.

Plans, specifications and/or an HVAC equipment schedule that shows the equipment within the space and lists the type and function of controls is required to document compliance with Appropriate Zoning and Controls.

Upload L-3. Provide schedule(s) for any mechanical systems within project scope (Optional).

Upload L-4. Provide mechanical plans and/or drawings.

Select one of the following;

- ☐ The schedule(s) and/or plans/drawings above shows the equipment within the space and lists the type and function of controls in the project space.
- ☐ A different document is better suited to satisfy this requirement.

Upload EAc1.3-2. Provide plans, specifications and/or an HVAC equipment schedule that shows the equipment within the space and lists the type and function of controls.

HVAC SYSTEM ENERGY MODEL

TIP: The HVAC narrative description from PI Form 4 should describe the HVAC system serving the project space as well as the building-level system. The narrative should explain how the zones were determined, the control logic, and the potential energy savings.

Upload EAc1.3-3. Provide the

Complete the following HVAC energy use tables for both the design and baseline cases.

Plans, specifications and/or an HVAC equipment schedule that shows the equipment within the space and lists the type and function of controls is required to document compliance with Appropriate Zoning and Controls.

Upload L-4. Provide mechanical plans and/or drawings.

Upload L-3. Provide schedule(s) for any mechanical systems within project scope (Optional).

Select one of the following;

- ☐ The schedule(s) and/or plans/drawings above shows the equipment within the space and lists the type and function of controls.
- ☐ A different document is better suited to satisfy this requirement.

Upload EAc1.3-4. Provide plans, specifications and/or an HVAC equipment schedule that shows the equipment within the space and lists the type and function of controls.

Table. Design Case

HVAC Energy Uses	Energy Type	Units	Energy Use	Design Energy Cost (\$)
Space Heating				
Space Cooling				
Fans and Pumps				

HVAC Energy Uses	Energy Type	Units	Energy Use	Design Energy Cost (\$)
Total (Mbtu)				

Select one of the following:

- ☐ Baseline Model: The project uses the ASHRAE Standard 90.1-2007 mandatory and prescriptive requirements in the project area and the existing conditions in the balance of the modeled building segment.
- ☐ Alternative Baseline Model: The project uses the ASHRAE Standard 90.1-2007 mandatory and prescriptive requirements in the project area and in the balance of the modeled building segment.

Table.Baseline Case

HVAC Energy Uses	Energy Type	Units	Energy Use	Baseline Energy Cost (\$)
Space Heating				
Space Cooling				
Fans and Pumps				
Total (Mbtu)				
Project area (sf)				
Project segment area (sf)				
Reduction (%) Note: 15% reduction is required for 5 points; 30% reduction is required for 10 points.				

Table. Alternate Baseline Case

HVAC Energy Uses	Energy Type	Units	Energy Use	Baseline Energy Cost (\$)
Space Heating				
Space Cooling				
Fans and Pumps				
Total (Mbtu)				

Describe the assumptions and calculations made and methodology used in HVAC energy use calculations.

Upload EAc1.3-4. Provide the summary input and output reports from the simulation program used.

ADDITIONAL DETAILS

- ☐ Special circumstances preclude documentation of credit compliance with the submittal requirements outlined in this form.

SPECIAL CIRCUMSTANCES

Describe the circumstances limiting the project team's ability to provide the submittals required in this form. Be sure to reference what additional documentation has been provided, if any. Non-standard documentation will be considered upon its merits.

- ☐ The project team is using an alternative compliance approach in lieu of standard submittal paths.

ALTERNATIVE COMPLIANCE PATH

Describe the alternative compliance path used by the project team. Include justification that this path meets the credit intent and requirements. Be sure to reference what additional documentation has been provided, if any. Non-standard documentation will be considered upon its merits.

SUMMARY

EA Credit 1.3:Optimize Energy Performance - HVAC Points Documented:

EA Credit 1.3:Optimize Energy Performance - HVAC Exemplary Performance Points Documented:

☐ The project team reserves one point in the Innovation in Design credit category for exemplary performance in EA Credit 1.3.