Residential Energy: Architectural Plan Review Checklist

Information on Construction Documents

☐	A continuous building thermal envelope is represented on the construction drawings
☐	Typical cross sections clearly indicate insulation R-value, type, and material for each unique assembly type
☐	Compliance path is clearly noted on the plans or accompanying documentation. Otherwise, assume prescriptive.
☐	Notes indicate the *Air Barrier and Insulation Installation Checklist* will be completed by an approved party
☐	Notes indicate the *Duct and Envelope Testing Certificate* will be completed by an approved party

Indicate the compliance path selected by the applicant and complete the appropriate section below

☐ Prescriptive | ☐ Total UA (RES*check*) | ☐ Performance | ☐ Energy Rating Index | ☐ Above Code Program

Prescriptive Path (with no tradeoffs)

☐	R-values and U-factors on plans meet Table 402.1.2 for Climate Zone 4 for each assembly

Total UA Alternative: RES*check* Reports

☐	Compliance field says "PASSES"
☐	Verify correct code edition
☐	Address matches the plans
☐	REScheck version 4.6.5 or higher
☐	Each unique assembly type is listed (including cantilevered floors, floors over garages, and bump-out ceilings)
☐	Listed R-values and U-factors match plans
☐	Cavity insulation R-values are not listed in the Continuous R-value column
☐	Signed by the person completing the report

Simulated Performance Alternative Reports

☐	For IRC-scope buildings, 2015 IECC Performance Report is present
☐	For IBC/IECC [RE] buildings, 2018 IECC Performance Report is present
☐	Annual Energy Cost of Design Home ≤ IECC Home in the "SubTotal – Used to Determine Compliance" line (Note: Report may fail, provided the only non-compliant item is the *Home Infiltration Check* and the design infiltration value is ≤ 5.0 ACH50)
☐	Energy Code Inspection Checklist is present
☐	Report contains the name of the individual completing the report
☐	Report contains the name and version of the software tool (REM/Rate or Ekotrope)
☐	Address matches the plans
☐	Each unique assembly type is listed (including cantilevered floors, floors over garages, and bump-out ceilings)
☐	Conditioned floor area matches plans
☐	Listed R-values and U-factors match plans

Energy Rating Index Reports

☐	For IRC-scope buildings, 2015 IECC Energy Rating Index Report is present
☐	For IBC-scope residential buildings, 2018 IECC Energy Rating Index Report is present
☐	ERI ≤ 62 (Note: The 2015 ERI Report may fail provided the only non-compliant items are: (1) *The Home Infiltration Check* where the design infiltration value is ≤ 5.0 ACH50, and (2) the ERI score provided it is ≤ 62.)
☐	Energy Code Inspection Checklist is present
☐	Report contains the name of the individual completing the report
☐	Report contains the name and version of the software tool (REM/Rate or Ekotrope)
☐	Address matches the plans
☐	Each unique assembly type is listed (including cantilevered floors, floors over garages, and bump-out ceilings)
☐	Conditioned floor area matches plans
☐	Listed R-values and U-factors match plans

Above Code Program

☐	Preliminary HERS report and statement indicating project will receive ENERGY STAR certification or PECO New Home Rebates report and statement indicating project will meet all program requirements

Residential Energy: Mechanical Plan Review Checklist	
HVAC Equipment Design Form	
☐	*HVAC Design Worksheet* is present and completed (both sides)
HVAC System Sizing and Selection (Page 1)	
☐	Address matches construction documents
☐	Design heating and cooling loads match the Manual J report
☐	Cooling system make and model match specs
☐	Cooling system output capacity is ≤ 1.15X (1.25X for heat pumps) the design cooling load or next nominal size
☐	Heating system make and model match specs
☐	Heating system output capacity is ≤ 1.40X the design heating load or next nominal size
☐	Air handler specs contain manufacturer's designation of ≤ 2% air leakage (ASHRAE 193)
Whole-House Mechanical Ventilation Design Worksheet (Page 2)	
☐	Address matches construction documents
☐	Conditioned floor area and number of bedrooms match plans
☐	The correct ventilation rate has been circled based on the floor area and number of bedrooms
☐	Intermittent fans only – Required ventilation airflow has been multiplied by the appropriate factor
☐	Rated fan airflow meets or exceed required air flow
☐	HVI-rated fan efficacy is ≥ 1.4 cfm/watt for fans with < 90 cfm maximum airflow
	HVI-rated fan efficacy is ≥ 2.8 cfm/watt for fans with ≥ 90 cfm maximum airflow
☐	Rated fan airflow and HVI-rated fan efficacy match specs
Additional Information on Construction Documents	
☐	Construction documents indicate whether any portion of the HVAC system will be outside the building thermal envelope. If yes, notes indicate that:
☐	Duct leakage testing will be performed and DET form will be submitted to the inspector
☐	Ducts ≥ 3" diameter will be insulated to ≥ R-8 in attics and ≥ R-6 elsewhere
	Ducts < 3" diameter will be insulated to ≥ R-6 in attics and ≥ R-4.2 elsewhere
☐	Programmable thermostat is specified
☐	Building cavities are not used as ducts (IBC-scope buildings only)
☐	Notes indicate HVAC pipe insulation is specified, R-3 minimum (e.g. hydronic systems, refrigerant lines)

Plumbing Energy Code Requirements
R-3 pipe insulation is required if any of the following conditions exist (excludes Simulated Performance and ERI path):
• Piping ¾” or greater in nominal diameter (piping > ” for IBC buildings)
• Piping serves more than one dwelling unit
• Piping is located outside the conditioned space
• There is piping from a water heater to a distribution manifold
• Piping is buried or located under a floor slab
Circulation systems (where present):
• System is provided with a pump (no gravity or thermosyphon systems)
• Controls installed to start and stop the pump based on demand for hot water within the occupancy

Residential Energy: Electrical Plan Review Checklist	
☐	≥ 75% of lamps in permanently installed fixtures are high-efficacy (CFL, LED, or T-8 or lower fluorescent tube), or
	≥ 75% of permanently installed lighting fixtures contain only high-efficacy lamps
☐	Fuel gas lighting systems do not have continuously burning pilot lights