Top Ten for 2021 WA State Energy Code: Residential code review priorities: (1/30/25 version)
Spend the same amount of time you already spend on energy code issues, but prioritize these:

It's mostly about the R406 additional energy credits selected by the builder		
	Plan Review Requirements	**Inspection**
1. R406 Credits R406.3	Note on plans listing: 8 credits for 1,500 – 5,000 sf dwelling 5 credits for smaller, 9 for larger house 2 credits for additions 150 – 500 sf 5 credits for additions 501 – 1500 sf	Check that each credit claimed was actually installed
2. Energy Equalization R406.2	Check credits for heating system efficiency, from 0.0 for fossil fuel to 3.0 for all heat pump, with partial electric resistance types in between. (These are added to R406.3 credits.)	Did they use the heating system type shown on plans?
3. Certificate R401.3	Note on plans to complete and post certificate	Use certificate information for quick code compliance check
4. Air leakage R402.4, possibly plus R406.3 options 2.1 – 2.3	Note saying air barrier test is required, max 4.0 ACH, lower rate if R406 credits are taken for tight air barrier	Certified test results showing that dwelling passed at required rate
5. HRV R406.3 options 2.1 – 2.3	Required with some air tightness credits	Check that HRV is installed if Option 2 credits taken
6. Heating system type R406.3 options 3.1 – 3.11	Show system type (check R406 credits)	Installed system type and efficiency matches plans
7. Water heating system R406.3 options 5.2 – 5.8	Show system type (check R406 credits)	Installed system type and efficiency matches plans
8. Window Table R402.1.1 R406.3 options 1.1 – 1.4	Max U-factor 0.30 (or lower if selected envelope credits)	Check window sticker U-factors vs. plans & R406 credits
9. Typ wall insulation Table R402.1.3 (R-values) Table R402.1.2 (U-factors)	R-values for each wall assembly. R-20 + 5 c.i. <u>or</u> R-13 + 13 c.i. (Or U-factor 0.56)	**At cover inspection:** Check insulation and continuous insulation in a typical wall
10. Ducts & Pipes R403.3, R403.4, R403.5	Note saying ducts will be pressure tested. R 8 insulation if in attic or crawl space. Domestic hot water pipes R-3, hydronic pipes R-6 (first 200' of hydronic pipe only needs ½" insulation)	Check duct test certificate **At cover inspection:** Check duct & pipe insulation thickness

Example (fairly common) R406 credit package for medium-size house:

Credit No	**Credit Value**	**Description**
System 4	3.0	Energy Equalization Credits (System 4 is heat pump heating)
3.6	1.0	Air-source, centrally ducted heat pump 9.4 HSPF2 (11.0 HSPF) - or central "cold-climate" heat pump 8.5 HSPF2 (10 HSPF)
5.6	2.0	NEEA Tier III HPWH
2.1	1.0	2.0 ACH air barrier tightness & 65% efficient HRV (Heat Recovery Ventilation)
1.1	0.5	U-0.22 windows
4.1	0.5	Ducts and air handler inside conditioned space
	8.0	**Total**

Envelope Cheat Sheet OK to use either insulation R-value or assembly U-factor			
Assembly	**Min R-value** Insulation only	**Max U-factor** **(or F-factor at slab edge)** Full assembly – Appendix A	**Notes**
Roof/ceiling **Typical truss**	R-60 Insulation tapered at truss edge	U-0.024	
Roof/ceiling **Raised heel truss**	R-49 Full depth to outside of wall	U-0.024	See R402.2.1
Roof/ceiling **Single-rafter or joist-vaulted clg**	R-38 Full depth to outside of wall	U-0.024	
Wall – wood framed	R-20+5 c.i. or R-13+10 c.i.	U-0.056 This U-factor code error permits R-21 batt w/ no c.i.	c.i. = cavity insulation
Floor over unconditioned space	R-30	0.029	Cavity insulation *not* required to touch deck above, except at perim
Below-grade wall **R-value method**	R-10 cont. outside R-15 cont. inside R-21 int + R-5 TB	--	Int = intermediate TB = Thermal Break – rigid board
Below-grade wall & slab perimeter **U-factor method**	--	2' depth: Wall U-0.042, Slab F-0.59 3.5' depth: Wall U-0.040, Slab F-0.56 7' depth: Wall U-0.035, Slab F-0.50	These wall U-factors are much more stringent than the R-values
Slab on grade perimeter	R-10 for 4 ft	F-0.54	
Insulating existing slab	R-7.5 over entire slab instead of perimeter insul		If foam insulation, check rules for "thermal barrier" cover See Res Code R316.4
Heated slab	R-10 under slab		
Fenestration	--	U-0.30	
Skylight	--	U-0.50	
Access hatches through thermal envelope	Same as their wall, floor, or ceiling assemblies	Same as wall, floor, or ceiling assembly in which they're located	Weatherstripped. Insulation permanently secured to hatch
Steel-framed assemblies	None	Comply with U-factors	See Table R402.1.2

NOTE: Applicants must still read and comply with the entire code, not just this brief summary.

Corrections, questions or suggestions? Please contact duane.jonlin@seattle.gov