STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

Washington State Energy Code Development

Standard Energy Code Proposal Form

May 2018

Log No. 19-WSEC-R10
Proponent Revision 4 5/30/19
TAG Revision 5/31/19

Code being amended: ☐ Commercial Provisions ☒ Residential Provisions

Code Section # _Table 406.2_____

Brief Description: Provide option to earn a 0.5 energy credits in the prescriptive table for advanced framing and raised heel trusses or rafters.

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

Under option column of table: TBD

Under description column of table: ADVANCED FRAMING AND RAISED HEEL TRUSSES OR RAFTERS.

~~EFFICIENT BUILDING ENVELOPE~~
~~Prescriptive compliance is based on Table R402.1.1 with the following modifications:~~
~~Vertical fenestration U = 0.28~~
~~Ceiling and single-rafter or joist-vaulted R-49 advanced~~

~~Truss systems where attic insulation is placed directly on top of the ceiling shall provide a minimum of 10" free space for insulation along exterior walls.~~

~~Under option credits of table: 0.5~~

U-0.28 Glazing and,
R-49 Advanced (U-0.020) as listed in section *A102.2.1, ceilings below a vented attic* and,

R-49 vaulted ceilings with full height of uncompressed insulation extending over the wall top plate at the eaves.

0.5 Credits

Purpose of code change:

Standard roof trusses and rafters reduce space for insulation along exterior walls to near zero. Trusses or rafters built with a raised heel provide free space at exterior walls for insulation, increasing the overall insulating effectiveness of the roof assembly.

Proposal modified per discussion with Codes Consultant TAG member and incorporates suggestion from Small Business TAG member made during May 10th meeting.
June 3, 2019~~May 31, 2019~~

Your amendment must meet one of the following criteria. Select at least one:

- ☐ Addresses a critical life/safety need.
- ☐ The amendment clarifies the intent or application of the code.
- ☒ Addresses a specific state policy or statute. (Note that energy conservation is a state policy)
- ☐ Consistency with state or federal regulations.
- ☐ Addresses a unique character of the state.
- ☐ Corrects errors and omissions.

Check the building types that would be impacted by your code change:

- ☒ Single family/duplex/townhome
- ☒ Multi-family 1 – 3 stories
- ☐ Multi-family 4 + stories
- ☐ Commercial / Retail
- ☐ Institutional
- ☐ Industrial

Your name	Alan Nolan	Email address	alan@509.design
Your organization	Spokane Home Builders Assoc.	Phone number	509-847-4651
Other contact name	Kieran Sprague, 360-791-7462		

Instructions: Send this form as an email attachment, along with any other documentation available, to: sbcc@des.wa.gov. For further information, call the State Building Code Council at 360-407-9278.

Economic Impact Data Sheet

Briefly summarize your proposal's primary economic impacts and benefits to building owners, tenants and businesses.

Provide your best estimate of the construction cost (or cost savings) of your code change proposal? (See OFM Life Cycle Cost **Analysis tool** and **Instructions;** use these **Inputs**. **Webinars on the tool can be found Here and Here**)

$0/square foot (For residential projects, also provide $0/ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

Adding similar free space for rafter systems is less than 5% cost difference. Cost estimate in LCCA shown for truss-style construction.

Provide your best estimate of the annual energy savings (or additional energy use) for your code change proposal?

0.267 KWH/ square foot (or) Click here to enter text.KBTU/ square foot

(For residential projects, also provide 588 KWH/KBTU / dwelling unit)

Show calculations here, and list sources for energy savings estimates, or attach backup data pages

See attached document showing 5.3% saving gained with raised heel truss and U=0.28 windows.

See attached excel document showing calculations for 2200 Sq Ft, gas heated single family residence on u-value improvements for wall and roof assemblies. Calculations adapted from 2015 WSEC Total UA worksheet and values drawn from 2015 WSEC Appendix.

Other sources include US Department of Energy, which estimates Advanced Framing can reduce heating and cooling requirements by up to 5%. A typical 2,200 Sq Ft home built per 2015 WSEC standards is assessed to use 11,762 kWH of energy per year. At 5% savings, Advanced Framing would yield saving in excess of 500 kWH per year or about 0.25 kWH per Sq Ft.

List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application:

Due to the limited use, there will be some additional time for plans review and inspections when building officials are first encounter advanced framing to gain familiarity with the practice. After initial spin up/review, no additional enforcement time is required plans review or framing inspections. Changes to truss/rafter would not increase plan review or inspection requirements.

Attachments

LCCA Executive Report.pdf

LCCA Baseline scenario.pdf

LCCA Alternative 1.pdf

LCCA Expenditure Report.pdf

Raised Heel Truss and .28 windows.pdf

All questions must be answered to be considered complete. Incomplete proposals will not be accepted.