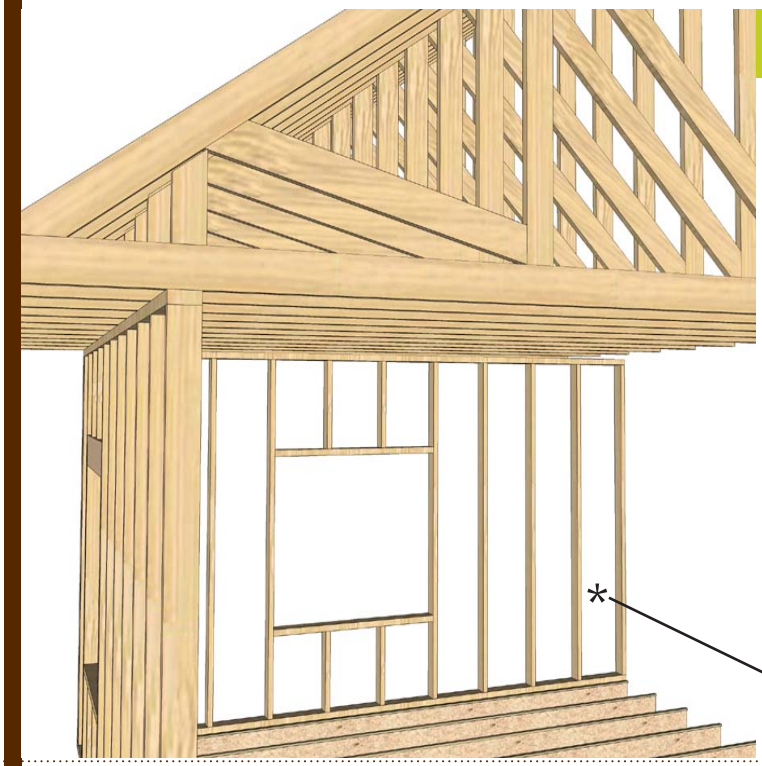
Advanced Methods and Materials AMM400

Advanced Framing

This **Advanced Method and Material** was developed jointly by the City of Bellingham and Sustainable Connections to reduce the amount of building materials used on a project while increasing the thermal efficiency of a home all without compromising structural integrity.



Advanced framing uses studs 24" on center with siding, sheathing, and drywall that is rated for 24" spans. Images courtesy City of Seattle.

BENEFITS

Advanced Framing can significantly increase a buildings performance while reducing the overall material cost for a project. Additional benefits include:

- Increased thermal efficiency
- Increased energy savings
- Reduced material costs
- Lower demand on natural resources
- Faster build time (lower labor costs)
- Contribute LEED® points for your project

Advanced framing (also known as Optimum Value Engineering) refers to a series of building strategies that combine to create structurally sound wood framed houses that use less material, reduce labor costs, decrease the amount of material disposed and increase energy efficiency. A primary principle of advanced framing is to design buildings with conventional lumber and sheet good sizes to reduce lumber use. By designing buildings on a 24 inch grid and stacking structural members vertically, wood use can be greatly reduced and insulation values increased. Considering the environmental impact of harvesting, transporting, manufacturing and disposing of lumber, framing strategies that use wood more efficiently and thoughtfully result in better performing, more environmentally responsible structures.

POLICY/CONDITIONS

Advanced Framing may be installed when the following conditions are met:

- Buildings meeting conventional design provisions and being within the Washington State limitations not requiring a professional architect or professional engineer, may be designed by anyone.
- Portions of buildings not meeting prescriptive design requirements may be professionally designed without requiring the entire building to be professionally designed.
- Designers and builders may choose which advanced framing components they wish to include in their project but may not qualify for various incentive programs unless all advanced framing elements are incorporated.

SCOPE

All one or two story wood framed buildings meeting prescriptive requirements of IBC Section 2308 or IRC Chapters 5-8, or professionally designed one and two story wood framed buildings designed in compliance with ASCE 7-05, or professionally designed using other nationally recognized standards.

DEFINITIONS

ASCE 7-05: American Society of Civil Engineers Minimum Design Loads for Buildings and other Structures, 2005 edition.
IBC: The current edition of the International Building Code as adopted by the State of Washington and the City of Bellingham.
IRC: The current edition of the International Residential Code as adopted by the State of Washington and the City of Bellingham.

PERMIT REQUIREMENTS

Listed and tabular values and limitations for wood framing intended to resist live and dead loads both axial and lateral.

Sustainable Connections

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Advanced Framing

COMPLIANCE WITH THESE STANDARDS

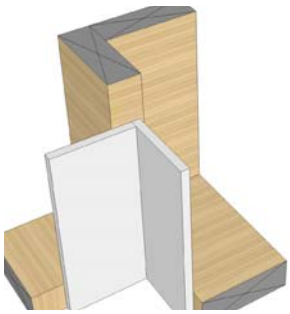
- Current edition of the IBC
- Current edition of the IRC
- ASCE 7-05 (optional)
- American Forest and Paper Association (AF&PA) Wood Frame Construction Manual (WFCM)

INCENTIVES

City of Bellingham

Use of Advance Framing techniques are one method for achieving LEED and BuiltGreen certified projects. The City of Bellingham currently offers a "Bin-Bump-Up Program" for projects that meet this criteria. The Bin-Bump-Up supports green building projects by reducing building permit review time for certified green projects and assigning them to a new Green Project Review Team.

- Residential projects that qualify for BuiltGreen 4&5 Star or LEED Gold equivalent will be bumped to a seven-day review
- Commercial projects that qualify for LEED Gold equivalent will be bumped to the earliest review bin
- Technical Assistance provided from City Green Review Team
- Integrated Review from City staff



Images courtesy City of Seattle

ADDITIONAL RESOURCES

Department of Energy
Department of Energy Advanced Framing Fact Sheet
http://www.eere.energy.gov/buildings/info/documents/pdfs/26449.pdf

Building Science Corporation
http://www.buildingscience.com

Lstiburek, Joe. "The Future of Framing is Here."
Fine Homebuilding, October/November 2005

Forest Stewardship Council
Promoting environmentally appropriate, socially beneficial, and economically viable management of the world's forests.
http://www.fsc.org

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