

BOISE CASCADE BUSINESS PRACTICES
TO ENCOURAGE GREEN BUILDING.



Boise Cascade
Engineered Wood Products

Great products are only the beginning.®

BOISE CASCADE BUSINESS PRACTICES TO ENCOURAGE GREEN BUILDING:

A. BOISE CASCADE ENGINEERED WOOD PRODUCTS ARE MADE USING RENEWABLE-RESOURCE WOOD FIBER:

Boise Cascade begins with wood fiber, a renewable resource used to make engineered wood products. By “renewable resource” we mean trees are nourished like any other crop – planted, grown, harvested and re-planted for future generations. Boise Cascade can make engineered wood products using smaller trees than needed to make dimension lumber – which can mean an ever-renewable supply of wood fiber to build homes. And as trees grow, the forest consumes CO₂, a greenhouse gas, which is then encapsulated and stored in the products produced by Boise Cascade.



B. WE DEMAND FULL FOREST CERTIFICATION OF ALL WOOD FIBER USED:

Boise Cascade doesn't own forests, but procures wood fiber in compliance with the principles of forest certification standards like the SFI®, the Sustainable Forestry Initiative®, and FSC®, Forest Stewardship Council™. Boise Cascade's comprehensive Chain-of-Custody tracking system documents sourcing of all wood fiber

purchased, ensuring that none gets into Boise Cascade inventory unless it comes from acceptable sources. Chain-of-Custody is the process of tracking and recording the possession and transfer of wood and fiber from forests of origin through the different stages of production to the end user. It is critical to Boise Cascade to be able to assure customers that the product they are building with is made entirely of wood fiber from sustainable sources. And Boise Cascade products are now available as certified to FSC® Chain-of-Custody certified, SFI® Chain-of-Custody or SFI® Certified Sourcing standards.



C. OUR PRODUCTS ARE ELIGIBLE FOR NATIONAL AND REGIONAL GREEN BUILDING PROGRAMS:

Boise Cascade products are eligible for LEED®, National Green Building Standard™, Energy Star® and other national and regional green building program credits. The availability of FSC® Chain-of-Custody certified Boise Cascade Engineered Wood Products means these products can now help builders achieve LEED® points under USGBC® green building programs including LEED® for Homes and LEED® for New Construction. The entire line of Boise Cascade Engineered Wood Products is also available SFI® Chain-of-Custody or Fiber-Sourcing certified, and eligible for green building credits through the National Green Building Standard™.



D. OUR PRODUCTS ARE ALSO NAHB RESEARCH CENTER GREEN APPROVED:

The entire line of Boise Cascade Engineered Wood Products has also received certification under the NAHB Research Center “Green Approved” program – certificates no. 00080 through 00083. As a service to product manufacturers, the NAHB Research Center pre-approves applicable certification points for products that meet the scoring criteria for specific practices under the National Green Building Standard™. These products can display the Green Approved mark.



E. WOOD AS A BASIC BUILDING MATERIAL IS SUPERIOR TO STEEL AND CONCRETE IN SIX ENVIRONMENTAL IMPACT CATEGORIES:

Using Life Cycle Assessment, a study by the Canadian Wood Council compared life cycle impacts of three 2,400 square foot



homes designed mostly in wood vs. concrete vs. steel. In addition to being the only building material of the three that's renewable and sustainable over the long term, the study showed that wood is

superior to steel and concrete in every one of the six environmental impact categories listed below:

1. Process to manufacture concrete products used to build the primarily concrete home

CONCRETE PRODUCTION:

- Released 47% more air pollution,
- Produced 23% more solid wastes,
- Used 81% more resources,
- Required 57% more energy,
- Emitted 81% more greenhouse gases, and
- Discharged 3.5 times more water pollution than the wood design.

2. Process to manufacture steel products used to build the primarily steel home

STEEL PRODUCTION:

- Released 24% more air pollution,
- Produced 8% more solid wastes,
- Used 11% more resources,
- Required 26% more energy,
- Emitted 34% more greenhouse gases, and
- Discharged 4 times more water pollution than the wood design.

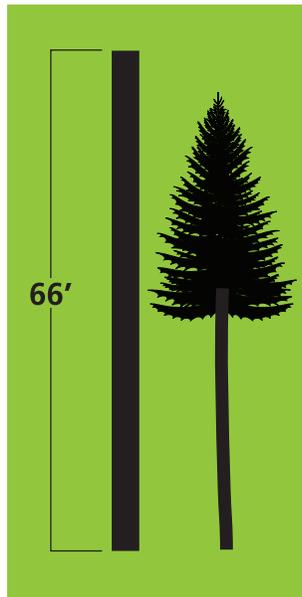
Canadian Wood Council <http://www.cwc.ca/NR/rdonlyres/FBEC3574-62E5-44E0-8448-D143370DCF03/0/EnergyAndEnvironment.pdf>

F. BOISE CASCADE ENGINEERED WOOD PRODUCTS ARE STRONGER THAN DIMENSION LUMBER, SO LESS MATERIAL MAY BE NEEDED:

- Boise Cascade BCI® Joists are about 20% stronger than dimension lumber, so fewer or smaller joists using less wood fiber may be specified. And because of their greater strength, Boise Cascade BCI® Joists can be used to span greater distances.
- VERSA-LAM® laminated veneer lumber (LVL) beams, headers, columns and stair risers are stronger than comparably sized dimension lumber, so smaller-sized products using less wood fiber may work.
- VERSA-STUD® offers at least twice the bending strength and 20% more stiffness than comparably sized #2 SPF studs, so fewer pieces may be specified.

G. OUR GOAL IS TO MAKE LARGER STRUCTURAL MEMBERS FROM SMALLER, NEW-GROWTH TREES:

Boise Cascade can produce up to 66' long, 24" deep beams from younger trees as small as 40' tall and 10" diameter, whereas long lengths of dimension lumber can only come from larger, more mature trees. Using younger trees may also help keep forests thinned, make them healthier and reduce the possibility of calamitous forest fires.



I. PAPERLESS HOME DESIGN PROCESSES CAN SPEED PLANNING AND REDUCE PAPER WASTE:

Boise Cascade has developed paperless design tools that distributors and dealers can use to make home plans more efficient and reduce paper waste, so ultimately fewer trees would be harvested.



J. WITH NEW BC CONNECT™, EVERY DEALER CAN NOW OPTIMIZE JOB PACKS FOR THE LEAST WASTE AND MOST USABLE MATERIAL:

Boise Cascade's revolutionary BC CONNECT™ is the new integrated 1-stop online portal for managing the business of engineered wood products.

With BC CONNECT™ a dealer can batch several jobs, optimize based on inventory and optimization settings and virtually eliminate waste. BC CONNECT™ imports design files from BC FRAMER® and



optimizes based on inventory on hand. This allows a dealer to send optimized results to pull/ship, automated processing or chainsaw cutting, so any Boise Cascade dealer can now optimize job packs. This can result in the best package price and the most usable material.

K. EXACT MATERIAL AND CUT LISTS CAN SAVE TIME AND VALUABLE RESOURCES.

Exact material lists help homebuilders order only what's needed. This can mean an end to "throwing in"

extra material that ends up as waste. And no more

H. TREES ARE PEELED INSTEAD OF SAWN FOR MORE EFFICIENT WOOD FIBER USE:

Instead of cutting the heart out of the tree, as with dimension lumber, Boise Cascade peels each tree, tests every sheet of veneer to assure high

strength, dries the thin veneers to low moisture content and laminates layer upon layer to manufacture highest quality VERSA-LAM® laminated veneer lumber for beams, joists and columns. The result is stronger lumber that uses less actual wood fiber than comparably sized dimension lumber.



Dimension lumber cuts the heart out of the tree, with only about 60% of the tree going to structural "best" use.



Boise Cascade peels the tree into veneers, with nearly all of the wood fiber going to structural "best" use.

Peeling the tree also means nearly all of the wood fiber goes to structural "best" use.

wasted fuel to pick up returns because too much product was ordered, or incorrectly cut at the jobsite and wasted.



L. MORE EFFICIENT CUTTING BY BOISE CASCADE DEALERS CAN FURTHER REDUCE WASTE:

Boise Cascade SawTek™ automated cutting and processing systems help dealers achieve faster, safer, more accurate trimming and processing with very little waste. Dealers with SawTek™ can deliver products to the jobsite error-free-trimmed to 1/16" accuracy and ready to install, with as little as 1/2" waste in a 66' length. This not only helps eliminate cutting errors and waste on the jobsite, it also replaces potentially dangerous hand-cutting and contributes to a safer workplace.



M. FRAMING MEMBERS CAN BE MARKED BY LOCATION IN THE STRUCTURE:

Framing members can be pre-marked and coded to the placement plan for easy reference when



dealers are equipped with SawTek™. This may speed framing and reduce framing mistakes and waste by relating the marked product to the framing placement plan – available with detail drawings in English or Spanish language.

N. LIGHTER WEIGHT MEANS MORE ENERGY-EFFICIENT SHIPPING:

BCI® Joists weigh about 1/3 less than dimension lumber joists, so require less energy per mile to transport and should be less expensive to ship. And SawTek™ processing/cutting equipment can pre-cut framing members to 1/16" accuracy, ready to assemble, eliminating the dead weight of trimmed pieces and further reducing fuel consumption and vehicle emissions including greenhouse gasses.



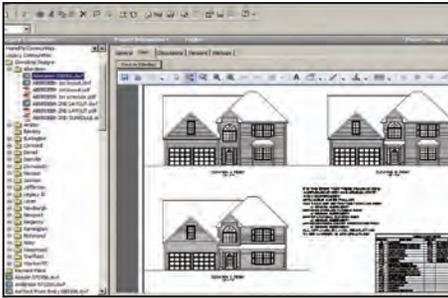
O. NOT HAVING TO CULL OUT AND RETURN BAD PIECES CAN ELIMINATE EXTRA DELIVERY TRIPS AND WASTED FUEL:

Boise Cascade Engineered Wood Products are straight, not warped or random widths like some dimension lumber. These Boise Cascade products have none of the knots, deep cracks, shrinking or twisting that can make dimension lumber hard to work with. This consistently high quality reduces the need for dealers to send trucks out to return defective products, again potentially reducing fuel consumption and vehicle emissions.



P. ONLINE PLANS MANAGEMENT CAN MEAN BETTER COMMUNICATION AND FEWER WASTEFUL ERRORS:

BOISE PlansRoom™ online job management lets homebuilders post projects online and manage throughout construction.



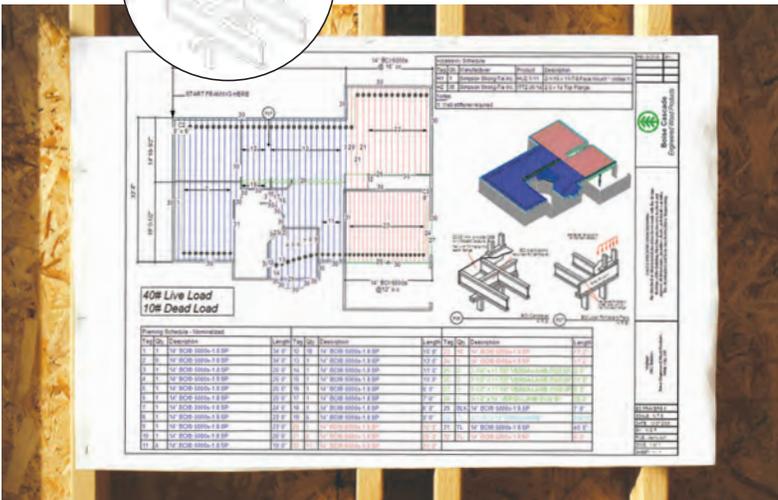
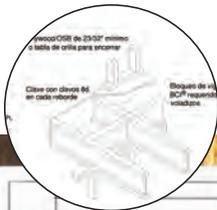
They can save by eliminating driving to hand out plans and revisions. Builders can mark up plans online, and automate bidding. Team members have access to plans and can receive changes instantly, helping prevent mistakes.

Q. ...AND FEWER JOBSITE TRIPS AND LESS WASTED ENERGY:

BOISE PlansRoom™ can mean more work conducted electronically, fewer on-site meetings, less fuel burned and fewer vehicle emissions.

R. FRAMING PLACEMENT PLANS ON THE JOBSITE ARE DESIGNED TO PREVENT WASTEFUL FRAMING MISTAKES:

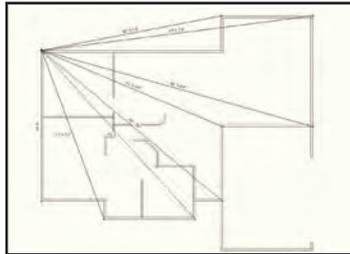
Homebuilders can assure their homes are built correctly and waste is minimized using Boise Cascade framing placement plans that are a product of BC FRAMER® integrated design software. These plans show exact placement of all framing components, eliminate guesswork and can help less-skilled crews frame correctly.



Building inspectors who see framing plans posted on the jobsite should be pleased to know framers are working with full information.

S. SQUARING DIAGRAMS ENABLE PRE-CUT FRAMING PACKAGES AND FASTER FRAMING:

Boise Cascade squaring diagrams can be used to locate foundation and sill plates with precise lineal and diagonal dimensions so homes are built square and accurate. This can enable pre-cutting to $1/16"$ and speed the framing process to eliminate needless trips to the jobsite.



T. PRE-CUT HOLES FOR HVAC CAN SHORTEN THE BUILDING CYCLE:

Pre-cut holes for HVAC can further shorten building cycle time. Dealers equipped with SawTek™ automated sawing and processing equipment can cut the holes automatically vs. hand-cutting them on the jobsite. So the HVAC system may be installed in fewer hours, potentially resulting in fewer jobsite days, less driving and less waste and vehicle emissions.

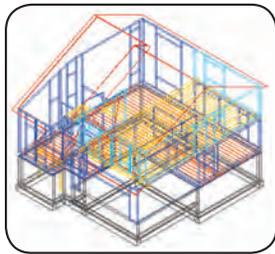


U. BOISE CASCADE POSITIONAL PRINTING CAN MEAN FASTER, MORE EFFICIENT WALL FRAMING:

Boise Cascade positional printing from dealers with SawTek™ equipment can mark wall framing members, scribing their location in the structure and where they intersect with other members. Faster framing equals shorter building cycle time, fewer jobsite trips and less energy consumed. The quality of the framing job can also be checked in a few minutes, digital shots taken and a CD dropped into the job folder to aid the homebuilder's long-term peace of mind.

V. SAVE DESIGN AND FRAMING TIME WITH INTEGRATED BOISE TQ STRUCTURE® WHOLE HOUSE FRAMING:

BOISE TQ Structure® powered by COINS® modern 3-D design and modeling software is used to design floor, wall and roof subassemblies in plain view and 3-D for performance evaluation. BOISE TQ Structure® excels at eliminating waste with super-accurate plans, material lists and cut lists. It also enables pre-cutting, designed to reduce framing time and help eliminate unnecessary jobsite trips.



W. BETTER FRAMING MATERIALS HELP PREVENT THE WASTE OF MULTIPLE TRIPS TO FIX PROBLEMS:

Reducing or eliminating wasteful callbacks to fix framing problems can mean fewer vehicle trips, less wasted fuel and fewer vehicle emissions.

X. ENERGY SAVINGS ARE AVAILABLE FOR THE LIFE OF THE STRUCTURE:

Boise Cascade's "Conditioned Airspace" HVAC framing system including ductwork can reduce energy use and help homeowners save on heating and cooling bills and reduce energy usage for the life of the home. The savings

come from routing HVAC ductwork through Boise Cascade BCI® Joists instead of through unconditioned air in the crawlspace or attic – which isn't even possible with dimension lumber joists. Recent studies estimate up to 40% monthly savings. For a Midwestern family in January, that could potentially reduce a \$300 heating bill to something under \$250.



NAHB: www.toolbase.org/Technology-Inventory/HVAC/hvac-in-conditioned-space

Y. ALL BOISE CASCADE GREEN BUILDING CERTIFICATIONS AND PROGRAM ELIGIBILITIES ARE NOW TOGETHER IN ONE PLACE:

To bring all interested parties into the circle of knowledge regarding the environmental activities by the Company, Boise Cascade Engineered Wood Products has taken the additional step of contracting with the International Code Council® to develop a one-stop listing of all Boise Cascade certifications and eligibilities for national and regional green building program credits.





Z. BOISE CASCADE'S STATED ENVIRONMENTAL POLICY:

To ensure our operations will not pose a significant risk to public health or the environment,

Boise Cascade will:

Comply with the letter and intent of all applicable environmental laws and regulations and with all other environmental requirements subscribed to by the company.

Communicate our environmental policy to our employees.

Train our employees in their responsibilities for environmental compliance and pollution prevention.

Make environmental compliance a priority and emphasize pollution prevention and efficient use of resources in planning and operating our facilities.

Utilize biomass fuels as practical and pursue technically and economically feasible energy conservation measures to limit emissions of greenhouse gases.

Conduct periodic evaluations of our environmental compliance and environmental management systems.

Constructively work with elected bodies, government agencies, trade associations, environmental organizations, and others to develop practical and effective environmental laws and regulations.

Support research on the environmental effects of our raw materials, products, processes, discharges, emissions, and wastes.

All of our employees are expected to be aware of and to comply with this policy, and all environmental laws and regulations relevant to their jobs. Employees are subject to disciplinary action for violating any portion of this policy.

For more information on Boise Cascade's environmental principles, view <http://www.bc.com/environment/index.jsp> or call 800-232-0788



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