

GREEN BUILDING MATERIALS: MADE IN MINNESOTA

ALISON LINDBURG

DR. JEFF HOWE
KATHRYN FERNHOLZ
DR. JIM BOWYER

MAY 29, 2008



DOVETAIL PARTNERS, INC.



Green Building Materials: Made in Minnesota

Over the past decade, interest in green building and environmentally friendly design has continued to grow. Nearly half of all new homes are expected to incorporate “green” elements by 2010.¹ While the movement has gained significant ground, there is still debate about what defines “green,” which standards should be followed, and how to choose between alternatives.

There are now more than 40 green building standards in the United States. Some green building programs operate at a national scale while others are regional or state specific. Within nearly every green building program, there is at least one common theme – a preference for local materials.

There is widespread recognition that the use of local materials helps to reduce negative environmental impacts by minimizing the transportation of raw materials and finished products.² The use of local resources can also support the regional economy and avoid externalizing environmental impacts to other parts of the world. In most instances, using local is the most environmentally, socially and economically responsible choice.



Certainly, through the lens of history, more building has been done with local materials than with the materials of a global marketplace. Each era of human history and each region of the globe can point to a defining form of shelter that depends on local resources and conditions. Adobe building techniques in the southwest, log cabins of the north woods, or sod houses on the prairie – many generations in many places have depended on local materials for their homes. While in the past locally-produced may have also meant rustic, in the modern era builders benefit from locally-made granite countertops, fine hardwoods, top-of-the-line windows, and other high-quality materials.

This report explores the opportunities for achieving modern day green building goals by focusing on the opportunity to use local materials and locally manufactured products. Using the resources of Minnesota as an example, this report outlines what it might take to build homes without looking much further than one state’s borders.

¹ http://www.nahb.org/news_details.aspx?newsID=4380

² Assumes reasonable local standard for productivity and materials efficiency that is not at wide variance with productivity and materials efficiency in distant regions.

The information included in this report was compiled from personal interviews, as well as through the use of existing reports and directories. References to specific companies offer examples of locally available materials and do not indicate endorsement or preference. Resources used in developing this report include:

- The Thomas Register
- The Minnesota Building Materials Database
- Minnesota Primary and Secondary Wood Products Manufacturer's Directories
- Metafore's Forest Certification Resource Tool
- The Minnesota DNR's Aggregate Source Information Systems
- Iron Range Resources

These resources provide comprehensive listings of manufacturers and suppliers. Information about these sources and others can be found in the Resource section, and additional information regarding mentioned suppliers can be found in Appendix B.

Defining Local

Green building programs and other environmental initiatives, including sustainable food systems, offer a number of definitions for what constitutes locally produced products. Both the LEED program of the United States Green Building Council (USGBC) and the Green Globes program of the Green Building Initiative use a 500-mile radius to define the local source area for a building project. Some local food advocates have the goal of sourcing their foods from within a 100-mile radius. State boundaries, eco-regions, and even domestic-versus-international are other ways to define local.

Green Building Standards

With more than 40 green building programs in the United States, and more operating in other parts of the world, there is more than one way to build green. Here are some examples of how local materials are recognized and given preference in a few green building programs that are used in Minnesota:

Minnesota GreenStar – Remodeling and New Construction Standards

The Minnesota GreenStar³ standard defines “local” materials as materials that are extracted, harvested, salvage/recovered and produced within 500 miles of the project. The program awards points based on the percentage of local materials per total type of component, including structural components, composite products, decorative wall/ceiling coverings, framing components, flooring, cabinets, millwork, doors, and countertops. For example, points are awarded if 50-89% of the total component (i.e., all flooring) in the project is local, and additional points are available for using 90% or more local materials. GreenStar is considering adding “ultra-local” credits (250 miles or less) to enhance the focus on Minnesota-made materials. There is also an Innovation credit for milling and incorporating on-site trees removed for construction into the project.

³ <http://www.mngreenstar.org/>

LEED – Homes

LEED-H⁴ defines “local” materials as products that are extracted, processed, *and* manufactured within a 500 mile radius of the home. In Credit MR 2.2, builders choose from a list of Environmentally Preferred Products, which includes ½ point for each locally sourced building component, including materials used in exterior and interior walls, millwork, flooring, landscaping, ceilings, roofing, foundations, decking, cabinets, insulation, counters, sheathing, windows, aggregate, cement, siding, masonry, doors, and gypsum. Sealants, adhesives, paints, and stains are not eligible for the local credit. See Appendix A for the list of eligible local materials in the LEED-H 2.0 standard.

LEED – New Construction

LEED-NC⁵ also defines “local” materials as products that are extracted, processed, *and* manufactured within a 500 mile radius of the building. Credit MR 5.1 awards one point for using local materials for at least 10% of the total project materials, based on cost. If a product is not 100% comprised of local materials, the actual percentage of local material (by weight) is multiplied by the total material price. The materials included in the project total are permanent fixtures only. Mechanical, electrical, plumbing, elevators, and other specialty equipment are not included when calculating the project materials total. Credit MR 5.2 awards 1 Point in addition to MR Credit 5.1 for using 20% local materials.

GBI – Green Globes

In order to earn points for “local” sourcing of materials under the Green Globes⁶ program, between 1 and 20 percent of products used in a structure must be harvested, recovered, salvaged, or extracted within a radius of 500 miles of a project site and/or shipped primarily by rail or water within a radius of 1500 miles. In addition, at least 70 percent of the constituent materials of a product (by weight) must meet distance requirements as defined by a simple calculation.⁷

Wisconsin’s Green Built Home program

The Wisconsin Green Built Home⁸ program awards points for “regionally produced” and domestic products. For masonry and stone, the definition of “regional” is within 500 miles. The rest of the Green Built Home program does not include a rigid definition of

⁴ <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=147>

⁵ <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=220>

⁶ <http://www.thegbi.org/commercial/>

⁷ If the distance from manufacturing is a combination of rail and/or water/ or other method of transportation, then the calculated extracted combined distance ratio (MCD) must be less than or equal to 1.0: MCD (in IP units) = (MDR /1500) + (MDO/500); MCD (in SI units) = (MDR/2400) + (MDO/800). MDR = manufacturing distance (distance between project and processing and/or manufacturing site) by rail or water in km (miles). MDO = manufacturing distance (distance between project and processing and/or manufacturing site) other than by rail or water in km (miles). Percentage = 100 x A/B, where: A = Total cost or weight of regional materials; B = Total cost or weight of all materials. Cost or weight must be used consistently.

⁸ <http://greenbulthome.org/builder/checklists.php>

“local” in their standards; the builders are free to define how something is “regional”. Typically, this means products from the Great Lakes States, while “domestic” is something that is produced in the USA.

Building a Minnesota House

So, the question has been asked, could one build a home - from foundation to roof and inside and out - with materials and products that are all Made in Minnesota? In the book *The Omnivore's Dilemma*, the author Michael Pollan writes that the “typical item of food on an American’s plate travels some fifteen hundred miles to get there.” How many miles are represented in the typical two-by-four, roofing shingle, or kitchen sink? Let’s break down a home building project and see what can be learned about building a house out of materials available from Minnesota.

The Foundation

In Minnesota, foundations range from full basements to slab-on-grade. Historically foundations were constructed of stone and brick, and today they are typically made of poured concrete. The use of Insulated Concrete Forms (ICFs) for basement walls is a relatively new option that provides insulation as well as structural support. All-weather wood foundation systems also provide insulation and are commonly used by several large volume home builders. In terms of green building, basements need special consideration for preventing moisture problems that can lead to indoor air quality concerns or structural impacts, and for ensuring energy efficiency.

When looking for Minnesota materials to incorporate into a building’s foundation, there are a few options. Aggregate products such as sand or gravel can be sourced locally with suppliers and manufacturers distributed around the state. For example, Barton Sand & Gravel out of Maple Grove, Monticello, and Elk River is a major supplier in the Twin Cities area and sources their aggregate for concrete from Minnesota. Salonek Concrete Plant in Springfield sources their rock and sand from the Bellvue and Springfield areas, and Redwood Falls Ready-mix also sources all sand and gravel from Minnesota. The fly ash used at Redwood Falls is sourced from Xcel Energy out of Minneapolis and other local sources. Not all raw materials in cement are available directly from Minnesota. At this time, it appears that cement powder is not available from Minnesota. The closest known source is Portland Cement out of Mason City, IA. Currently, approximately 17% of the United State’s cement consumption is imported from other countries (Figure 1).

Figure 1. Net U.S. Imports of Selected Materials as a Percent of Apparent Consumption - 2007, and by Major Foreign Sources

Raw Material	% Imported	Country of Origin
Quartz (crystal)	100	Brazil, Germany, Madagascar
Petroleum	60	Canada, Saudi Arabia, Mexico, Venezuela, Nigeria
Peat	60	Canada
Lumber (softwd)	38	Canada, EU, Chile, N. Zealand
Copper	37	Chile, Canada, Peru, Mexico
Gypsum	26	Canada, Mexico, Spain, Dominican Republic
Aluminum	26	Canada, Russia, Brazil, Venezuela
Cement (Port/msry)	17	Canada, China, Thailand, S. Korea
Iron and steel	12	Canada, EU, Mexico, Brazil
Iron and steel slag	7	Canada, France, Italy, Japan

The Building Envelope

The floor, walls, and roof of a home are the building's most basic components and act as shelter from the elements as well as insulation from the extreme high and low temperatures of Minnesota. In green building standards, the way the building envelope is put together is evaluated for the quantity of materials used and wasted, durability, tightness (resistance to air infiltration), and insulating factor. Other considerations often included in the envelope discussion are the use of thermal mass, effect of building orientation on envelope construction, and roof slope. For roofing materials, asphalt shingles are generally the norm in residential construction due to cost and availability. Other materials, such as metal roofing, are also used and may have greater durability. There are a number of options available in Minnesota for sourcing local wall, floor and roof components for the building envelope.

Framing

Minnesota has a wide array of local forest products available (see sidebar). If a house is framed in typical stick frame fashion, both 2" x 4" and 2" x 6" studs as well other dimensional lumber can be sourced within Minnesota with wood from Minnesota's forests. For example, framing materials from Potlatch's Bemidji plant come from Minnesota's forests and are available FSC-certified.⁹ Framing studs are also available from Rajala Timber Company in Deer River, which uses only Minnesota wood. OSB sheathing for the floor, roof, and walls is available from Ainsworth which has three mills in Minnesota that produce FSC-certified products. Products from these mills are harvested, produced, and manufactured in Minnesota.

Using prefabricated panels can reduce total materials used and wasted, and expedite the building process. There are a number of wall panel manufacturers in Minnesota and several that utilize local forest products. Extreme Panel Technologies out of Cottonwood, MN, makes prefabricated panels and uses some of Ainsworth's Minnesota-

⁹ Forest Stewardship Council (FSC), For more information, <http://www.fscus.org>

made OSB panels. Automated Building Components (Lyman Lumber), based in Chanhasen, also makes prefabricated panels, as does Fullerton Building Systems in Worthington.

Structural members can be built either with solid lumber or by utilizing a manufactured product such as glulam or I-joists. Glulam (lumber laminated together) is available from an Alamco plant in Albert Lea and made with wood that is domestic-sourced. Structural Wood Corporation of Vadnais Heights has products available with certified wood as an option. Although currently closed due to market conditions, the Timberstrand-Weyerhaeuser plant in Deerwood provides laminated strand lumber products.

Roofing

Many roof components are manufactured in Minnesota. Roof decking is manufactured by Hedstrom Lumber in Grand Marais and is distributed by Structural Wood Corporation. As mentioned above, Glulam is manufactured in Albert Lea. International Biltrite in International Falls manufactures fiberboard sheathing and fiberboard roof insulation. At least some of their materials come from Minnesota.

Roofing materials are another source of debate in the green building community. Asphalt shingles are readily available but may not be as durable or environmentally friendly as other products. CertainTeed asphalt shingles are manufactured in Shakopee from materials that are not all produced in Minnesota. Wood shingles are one option that can be sourced within Minnesota and may be available from local small wood products companies. Metal roofing or custom made roofing tiles are also options and local or regional suppliers can be found by contacting Iron Range Resources¹⁰ or the online version of the Thomas Register.¹¹ For example, Firestone Building Products (Anoka) manufactures metal roofing systems, soffits, and fascia.

Log Construction

Log siding and log cabins are one way to buy and build local. For example, Lake States Lumber produces log siding at its Aitkin plant, and they are FSC-certified and can specify Minnesota products if requested. Rajala Companies make half-log siding and premanufactured log homes with materials directly from their Minnesota forests in their Big Fork facility. Reclaimed timber framing is available from Manomin Resawn Timbers out of Hugo.

Insulation

There is considerable debate over the best type of insulation to use, from fiberglass to cellulose made from recycled newspaper to closed-cell foam insulation. Many Minnesota plants manufacture expanded and extruded polystyrene board insulation, also known as

¹⁰ <http://www.ironrangeresources.org/>

¹¹ <http://www.thomasnet.com/>

rigid foam insulation, including Diversifoam (Rockford), AFM Corporation (Excelsior) and Styrotech (Brooklyn Center). Making the exterior walls from Structurally Insulated Panels (SIPs) from Minnesota would be possible using foamboard from one of the three plants previously mentioned and using Ainsworth OSB panels.

Windows and Doors

The Midwest is the center of window manufacturing for the nation, and there are many window manufacturers in Minnesota, among them the big names of Andersen Windows (Bayport) and Marvin Windows and Doors (Warroad). It can be difficult to track the sources for window components due to the complexity of the assembly. Lexington Manufacturing has a window and door component manufacturing facility that sources Minnesota materials when they are available. Garage doors can be sourced locally from North Central Door Company (Bemidji), with the aluminum parts manufactured in Alexandria and the polystyrene foam produced in Becker. House doors are also made in Minnesota; for example, Marshall's Workshop in Olivia makes solid custom doors from only Minnesota woods. The Secondary Wood Products Manufacturers Directory can be of help in identifying a comprehensive list of local manufacturers.

Building Interior

Fasteners

Most nails and screws are manufactured overseas but a few can be made custom and obtained locally. Fastenal Co. (Roseville) supplies nails and steel fasteners and manufactures custom parts. Minneapolis Washer and Stamping, Inc, can make custom washers, and purchases its steel locally.

Sources of Local Wood Products



Welcome to True North Woods, your guide to certified local, green, quality products from the cold-forged forests of northern Minnesota.

- Building & Construction Products
- Custom Furnishings
- Unique Decor & Gift Items
- Traditional Products
- Commercial & Industrial Products

<http://www.truenorthwoods.com/>



The Upper Mississippi Certified Forest Product Group is a collection of independent, local companies dedicated to the well being of the forestland and wilderness of Minnesota. All products are 100% FSC Pure, Harvested in North Central Minnesota.

<http://www.mncertifiedwood.com>

Mechanical Systems

Ensuring energy efficiency entails properly orienting the building to take advantage of solar passive heating/cooling, situating vegetation on-site to aid in buffering and shading, building a tight but well-ventilated envelope, and choosing the correct heating and cooling system.

Geothermal heating systems can greatly enhance the energy-efficiency of a home or commercial building and are highly regarded in many green building programs. Geothermal applications differ based on individual site needs. EconAr geothermal systems are commonly used in Minnesota and are manufactured at their Appleton facility.

With proper ventilation and placement, fireplaces can be an efficient and cost-effective way to heat a home. In some situations, fireplaces can serve as the secondary heat source for an off-peak electric system. Central Boiler/Central Fireplace (Greenbush) manufactures fireplaces, boilers, and furnaces with fuel source options that include propane, natural gas, wood, or corn pellets and corn husks. They also make parts for in-floor radiant heating systems.

If a typical HVAC system will be installed, ductwork will be needed. Custom metal workers in Minnesota make ductwork and other architectural metal elements, including Rainville-Carlson (Annandale), which purchases their metal from local distributors. Dalsin Industries (Bloomington) also makes custom metal work and supplies metal for air exchangers. Additional resources for ductwork and other metal building components from Minnesota can be found by contacting Iron Range Resources.

One way to reduce the negative impacts of energy consumption is to look at renewable energy sources. For example, Solar Skies (Starbuck) manufactures solar panels. Also through the Windsource® program of Xcel Energy, Minnesota customers can specify that part or all of their electricity be generated by the wind, some of which may come from Minnesota wind farms.

The Finishing Touches

Choosing finishing materials is often both the most fun and the most frustrating part of building a new home. With options such as rapidly-renewable, recycled-content, and low-VOC, the debate surrounding “what is a green product?” has waged on. When looking at these finish materials from a local materials perspective, many Minnesota-made options are available.

Wall Coverings

If looking for an interior wall covering that is entirely extracted, processed, and manufactured in Minnesota, drywall and gypsum are not available, but there are many Minnesota companies that can supply wood options. For example, Lake States Lumber

(Aitkin) can make Minnesota-supplied tongue-in-groove FSC-certified wall paneling. The Secondary Wood Products Manufacturers Directory (see sidebar, next page) can provide a comprehensive list of local manufacturers of paneling and wall coverings, and the Metafore website can help source local third-party certified options.

Countertops

Countertops are now offered in a wide range of “green” materials, and manufacturers of many different types can be found in Minnesota. For example, ShektaStone (New Prague) produces a recycled-content countertop product where the materials are provided by Minnesota recycling companies and a Minnesota bank (one of their products contains money that is no longer in circulation). Vivendi Nuvo concrete countertops are made at the Apollo manufacturing facility in Minneapolis and Cambria Countertops are manufactured in LeSueur; both products are manufactured locally, but may contain products other than Minnesota-sourced materials. Countertops that are extracted, processed, *and* manufactured in Minnesota include reclaimed wood countertops, which can also be sourced from the ReUse Center or Manomin Forest, and Cold Spring granite countertops, which are all mined from and manufactured in the Cold Spring area.

Cabinets and Millwork

There are over 150 Minnesota producers of cabinets and millwork to choose from, and some will build from local materials if asked. One example is Custom Creations from Tamarack, which is FSC-certified and uses locally harvested materials whenever possible. Millwork is another opportunity to use all Minnesota made materials. One example is Colonial Craft millwork of Mounds View, that is also FSC-certified and can make products from Minnesota if specified.

Flooring

Flooring materials are a place where Minnesota also flourishes in terms of wide selection and local availability. For instance, Root River Hardwoods (Preston) makes hardwood flooring from Minnesota woods, while hardwood flooring from reclaimed lumber is

Minnesota Building Material Directories

The Minnesota Building Materials Database

A vehicle to document, evaluate, and disseminate usable information on sustainable materials, products, systems, and services for the commercial and residential building construction industry in Minnesota.

<http://www.buildingmaterials.umn.edu>

Minnesota Primary Forest Products Producer Directory

Lists sawmills, pulp and paper mills, Oriented Strand Board mills, veneer mills, and dry-kiln facilities in Minnesota.

http://www.dnr.state.mn.us/timber_producer/index.html

Minnesota Secondary Forest Products Producer Directory

Lists wood-product manufacturing companies, including those that make furniture, cabinets, doors, fixtures, and log homes.

http://www.dnr.state.mn.us/timber_producer/index_secondary.html

available from Manomin Resawn Timbers. Snowy Pines Reforestation (Baxter) harvests, mills, finishes and installs flooring from local sustainably-harvested forests. Wood from the Hood (Minneapolis) takes trees from urban areas and turns them into flooring, keeping the local loop as small as possible. Natural Built Home (Minneapolis) is one example of a retailer that sources many local flooring options.

Landscaping and Outdoor Living

Wood decking is one material that can be completely obtained from Minnesota. Lake States Lumber's Duluth facility treats wood that can be used in wood decking. If thinking of using a composite decking, RhinoDeck Brand Composite Decking by Master Mark Plastics is manufactured in Albany, MN. There is a possibility that this product contains Minnesota materials, but they also receive materials from recyclers across the country, so there is no way to track it for sure. They also manufacture landscaping edging and lattice.

Landscaping with plants that are native to the region will reduce the amount of water and maintenance needed for upkeep. It is easy to find listings of plants that are native to Minnesota by looking at the DNR's list of native plant nurseries.¹² There are also many nurseries that can help, including Prairie Moon Nursery (Winona), who specializes in native Minnesota wildflowers and grasses.

The Bottom Line

There are now more than 40 green building standards in the United States and despite their many differences, they have a common recognition that the use of local materials can make environmentally, social and economic sense.

There are opportunities to maximize the benefits of green building efforts by focusing on the use of local materials and locally manufactured products. Using the resources of Minnesota as an example, the possibility of building homes from the resources within our borders is not that far out of reach.

¹² http://files.dnr.state.mn.us/assistance/backyard/gardens/native_plant/suppliers_central.pdf

References and Resources

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(<http://www.dovetailinc.org/reportView.php?action=displayReport&reportID=86>)

GreenSpec Directory. (<http://www.buildinggreen.com/menus/>)

LEED for New Construction.
(<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=220>)

LEED for Homes. (<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=147>)

Metafore, Forest Certification Resource Center Search Tool.
(<http://www.certifiedwoodsearch.org/>)

Michigan DNR Primary and Secondary Forest Products Directories.
(<http://www.michigandnr.com/wood/>)

Minnesota Building Materials Database: A Tool for Selecting Sustainable Materials.
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(http://www.dnr.state.mn.us/timber_producer/index.html)

Minnesota Secondary Forest Products Producer Directory - lists wood-product manufacturing companies, including those that make furniture, cabinets, doors, fixtures, and log homes.
(http://www.dnr.state.mn.us/timber_producer/index_secondary.html)

Wisconsin Primary and Secondary Wood Industry Databases.

(<http://www.woodindustry.forest.wisc.edu/>)

The Thomas Register. *Get supplier information on everything from Actuators to Zirconium and all the parts, components, materials, equipment, composites and services in between.* (www.thomasnet.com)

U.S. Green Building Council. 2008. (www.usgbc.org)

Appendix A
Specifications for Environmentally Preferable Products in LEED-H 2.0

Assembly	Component	EPP Specification (0.5 point per component)	Emissions Specifications (0.5 point per component)	Local Production (0.5 point per component)
Exterior wall	Framing/wall structure	Concrete wall structure: use 30% fly ash or slag. Wood frame: FSC certified or reclaimed or finger-jointed studs.	NA	Eligible
Exterior wall	Siding or masonry	Recycled content, reclaimed, or FSC certified.	NA	Eligible
Floor	Flooring (45% of total floor area)	Linoleum, cork, bamboo, FSC-certified or reclaimed wood, sealed concrete, recycled content flooring, or combination.	Carpet and pad: all carpet and pad complies with Carpet & Rug Institute Green Label Plus Program. Hard flooring: automatic ½ point for using hard surface flooring. Hard flooring: additional ½ point for using product that is SCS Floor Score certified.	Eligible
Floor	Flooring (90% of total floor area)	Meet specifications above to receive additional 0.5 point.	NA	Eligible (additional 0.5 point)
Floor	Framing	FSC certified or reclaimed.	NA	Eligible
Foundation	Aggregate	NA	NA	Eligible
Foundation	Cement	Use 20% fly ash or slag.	NA	Eligible
Interior wall	Framing	FSC certified or reclaimed.	NA	Eligible
Interior walls AND ceilings	Gypsum board	NA	NA	Eligible
Interior wall AND ceilings AND millwork	Paints and coatings	Recycled paint meets GreenSeal standard GS-43.	Use products that comply with all applicable standards in Table 25.*	Not eligible
Landscape	Decking or patio materials	Recycled content, FSC certified, or reclaimed.	NA	Eligible
Other	Cabinets	Recycled content, FSC certified, or reclaimed AND composite materials must contain no added urea formaldehyde resins.	NA	Eligible
Other	Counters (kitchens and bathrooms)	Recycled content, FSC certified, or reclaimed AND composite materials must contain no added urea formaldehyde resins.	NA	Eligible
Other	Doors (not including garage or insulated doors)	Recycled content, FSC certified, or reclaimed.	NA	Eligible
Other	Trim	Recycled content, FSC certified, or reclaimed AND composite materials must contain no added urea formaldehyde resins.	NA	Eligible
Other	Adhesives and sealants	NA	Use products that comply with all applicable standards in Table 26.*	Not eligible
Other	Window framing	Recycled content, FSC certified, or reclaimed.	NA	Eligible
Roof	Framing	FSC certified.	NA	Eligible
Roof	Roofing	Recycled content.	NA	Eligible
Roof AND floor wall	Insulation	Recycled content of 20% or more.	Comply with California “practice for testing of VOCs from building materials using small chambers”	Eligible
Roof, floor, wall (2 of 3)	Sheathing	Recycled content, FSC certified, or reclaimed.	NA	Eligible

Unless otherwise noted, 90% of the selected component must meet the specifications shown – 0.5 credit for each; total credits – 8 maximum.

* See LEED-H Standard.

Appendix B
Products and manufacturers mentioned in this report

Company	Product(s)	Contact Info	Certification
ABC Automated Building Components	Prefabricated Panels	http://www.automatedbuildingcomponents.com/	
AFM Corporation	Rigid insulation	http://www.r-control.com/	
Ainsworth	Structural Floor, Roof, and Wall Sheathing OSB Products, Overlaid Panels, FSC Certified	http://www.ainsworth.ca/	FSC
Arctic Air	Commerical refrigerators	http://www.arcticairco.com/	
Alamco	Large Laminated Beams	http://www.alamcowood.com/	
Anderson Windows	Windows	http://www.andersenwindows.com/	
Barton's Sand and Gravel	Concrete, sand, gravel	http://www.tillercorp.com/bsg/	
Cambria	Countertops	http://www.cambriausa.com/	Greenguard
Central Boiler/Central Fireplace	Fireplaces and boilers	http://www.centralboiler.com/	
Certained	Asphalt Shingles	http://www.certainteed.com/	
Certified Wood Products	Cabinets	http://www.certifiedwoodproducts.net/	FSC
Cold Spring Granite	Countertops	www.coldspringgranite.com	
Custom Creations	Cabinets, millwork	http://iic.gis.umn.edu/finfo/luse/docs/secondary1003.pdf	FSC
Dalsin Industries	Metal sheeting for air exchangers	http://www.dalsinind.com/	
Diversifoam	Rigid insulation	http://www.diversifoam.com/	
EconAr	Geothermal heat pumps	http://www.econar.com/	
Extreme Panel Technologies	Prefabricated Panels	http://www.extremepanel.com/	
Fastenal Co	Nails, fasteners, custom metal work	http://www.fastenal.com/	
Fullerton Building Systems	Prefabricated Panels	http://www.fullertonbldg.com/	FSC
Hallmark	Vivendi Nuvo concrete countertops	http://www.hllmark.com/Consumer/Vivendi.htm	
Hedstrom Lumber Company	Wood framing	http://www.hedstromlumber.com/	
Honeywell	Programmable Thermostat	http://www.honeywell.com/	
International Biltrite	Prefabricated Panels	218-283-3900	
Lake States Lumber	Outdoor Green Treated Lumber, Log Siding, Indoor/Outdoor Wood Paneling	http://lake-states-lumber.com/	
Landscape Alternatives, Inc.	Native landscaping	http://www.landscapealternatives.com/	
Lexington Manufacturing, Inc.	Wood Components for Door and Window Manufacturing	http://www.lexingtonmfg.com/	
Marshall's Workshop	Solid doors	(320) 523-5635	
Marvin Windows	Windows	http://www.marvin.com/	

Master Mark Plastics	Decking	http://www.mastermark.com/	
Manomin	Reclaimed flooring/Countertops/timber framing	http://www.mrtimbers.com/	
Minneapolis Washer and Stamping, Inc,	Custom washers	http://www.minneapoliswasher.com/	
Natural Built Home	Local flooring options and other products	http://www.naturalbulthome.com/	
North Central Door Co	Garage doors	http://www.northcentraldoor.com/	
Potlatch	Wood framing	http://www.potlatchcorp.com/	FSC
Prairie Moon Nursery	Native plants	http://www.prairiemoon.com/	
Rainville Carlson	custom specialty sheet metal	http://www.rainvillecarlson.com/	
Rajala Companies Inc.	Wood framing, log construction	http://www.rajalacos.com/	
Redwood Falls Ready-mix	Concrete	507-637-2437	
ReUse Center	Reclaimed flooring/Countertops/building materials	http://www.thereusecenter.com/	
Root River Hardwoods	Flooring and millwork	http://www.rootrivershardwoods.com/	
Salonek Concrete Plant	Concrete	507-723-4314	
ShektaStone	Countertops	http://www.shetkastone.com/	
Snowy Pines Reforestation	Flooring, siding, wood shingles	http://www.rea-alp.com/~snowpine/	FSC
Solar Skies	solar panels	http://solarskies.com/	
Structural Wood Corp.	I-Joists	http://www.structural-wood.com/	
Styrotech	Insulation	http://www.styrotech.com/	
Wood from the Hood	Flooring	http://woodfromthehood.com/	

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DOVETAIL PARTNERS, INC.

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FOR MORE INFORMATION OR TO REQUEST
ADDITIONAL COPIES OF THIS REPORT,
CONTACT US AT:

INFO@DOVETAILINC.ORG

WWW.DOVETAILINC.ORG

612-333-0430

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This Dovetail Report is made possible through the generous support of the Blandin Foundation and its Vital Forests/Vital Communities Initiative. For more information, visit <http://www.blandinfoundation.org/>.



DOVETAIL PARTNERS, INC.

528 Hennepin Ave, Suite 202

Minneapolis, MN 55403

Phone: 612-333-0430

Fax: 612-333-0432

www.dovetailinc.org