**Building System: Building Envelope** 

Product	Product Features	Certifications	Product Directory/Service Resources
Doors, windows, and skylights	Look for doors, windows, and skylights with a High R-Value or low U-factor, and Low Air Leakage Value. Several types of window and skylight glazing are gas filled, heat-absorbing tint, insulated (double-glazed, triple-glazed, and quad-glazed), low emissivity (low-E) coatings, reflective coatings, and spectrally selective coatings. Select	National Fenestration Rating Council  ENERGY STAR	National Fenestration Rating Council - Product Directory cpd.nfrc.org/search/searchdefault.aspx  National Fenestration Rating Council. Windows, Doors, & Skylights. http://www.nfrc.org/windows-doors-skylights/  US EPA Energy Star. Certified Products. Energy Efficient Window and Door Performance Criteria https://www.energystar.gov/products/building products/residential windows doors and skyl ights/key product criteria  US EPA Energy Star. Residential Windows, Doors and Skylights https://www.energystar.gov/products/building products/residential windows doors and skyl ights/  Efficient Windows Collaborative. 2018 https://www.efficientwindows.org/  U.S. Department of Energy. Office of Energy Efficiency & Renewable Energy. Design: Windows, Doors, and Skylights https://www.energy.gov/energysaver/design/windows-doors-and-skylights  Consumer Reports. Replacement Window Buying Guide. 2019 https://www.consumerreports.org/cro/replacement-windows/buying-guide/index.htm
Weatherstripping	Weather resistant and durable will last longer and save resources because		Caulking and Weatherstripping <a href="https://www.energy.gov/energysaver/weatherize/air-sealing-your-home/weatherstripping">https://www.energy.gov/energysaver/weatherize/air-sealing-your-home/weatherstripping</a> California Energy Commission - Consumer Energy Center

Product	Product Features	Certifications	Product Directory/Service Resources	
	they are replaced less often.		http://www.energy.ca.gov/	
Insulation	Reflective or radiant barrier insulation with a High R-Value will decrease heat loss.	energy STAR	Energy Star - Do It Yourself Guide to Sealing and Insulation <a href="https://www.energystar.gov/index.cfm?c=home_sealing.hm_improvement_sealing">https://www.energystar.gov/index.cfm?c=home_sealing.hm_improvement_sealing</a> U.S. Department of Energy - Energy Efficiency and Renewable Energy <a href="https://www.energy.gov/energysaver/weatherize/insulation/types-insulation">https://www.energy.gov/energysaver/weatherize/insulation/types-insulation</a>	
Caulk and sealants	Always look for low or no VOC products.	SEAL SEAL	GreenGuard - Product Search SPOT. Caulks and Sealants. GreenGuard Certification <a href="https://spot.ul.com/main-app/products/catalog/?keywords=caulks+and+sealants">https://spot.ul.com/main-app/products/catalog/?keywords=caulks+and+sealants</a>	
		GREENGUARD  PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS ULCOM/GG UL 2818	Green Seal - Product Search <a href="http://www.greenseal.org/Home.aspx">http://www.greenseal.org/Home.aspx</a>	

**Building System: HVAC** 

Product	Product Features	Certifications	Product Directory/Service Resources
Dryer Vent	Install an air-lock dryer vent to release hot moist air produced by the dryer. Installing a vent cap can reduce the heating load in the home by reducing air leakage.		Dryer Wall Vent <a href="https://dryerwallvent.com/">https://dryerwallvent.com/</a> How to Upgrade a Dryer Vent. This Old House. 2019 <a href="https://www.thisoldhouse.com/how-to/how-to-upgrade-dryer-vent">https://www.thisoldhouse.com/how-to/how-to-upgrade-dryer-vent</a>
Range Hood/Kitchen Ventilation	Units that produce 1.5 sones or less (measure of how loud fan is) are best for home use. Choose a range hood with and Energy Starrated fan that uses less energy and is quiet. Kitchen ventilation systems remove moisture and VOCs (volatile organic compounds) that are produced from cooking.	ENERGY STAR	ACEE- Smarter House - Proper Ventilation for Gas Appliances https://smarterhouse.org/cooking/proper-ventilation-gas-appliances  EPA Energy Star Ventilating Fans www.energystar.gov  US EPA. Energy Star. Certified Products. Ventilation Fans. 2019 https://www.energystar.gov/products/heating_cooling/fans_ventilating HVI's Fresh Ideas Home Ventilation & Indoor Air Quality Guide Articles. Home Ventilating Institute. 2019 https://www.hvi.org/publications/VentLivingAreas.cfm  Consumer Reports. Range Hoods. Range Hood Buying Guide. 2016. https://www.consumerreports.org/cro/range-hoods/buying-guide/index.htm
Thermostat	Install a programmable thermostat that meets or exceeds Energy Star standards. The thermostat will save	energy STAR	US EPA. Energy Star. Certified Products. Programmable Thermostats <a href="https://www.energystar.gov/products/heating">https://www.energystar.gov/products/heating</a> cooling/programmable thermostats

Product	Product Features	Certifications	Product Directory/Service Resources
Product	energy and money by reducing wasted cooling or heating when no one is home. The model should be compatible with your system and have features including battery operation and indicator, settings options that allow for vacation overrides and weekends, an energy	Certifications	U.S. Department of Energy. Office of Energy Efficiency and Renewable Energy. Thermostats. Energy Saver. Setting Your Thermostat for Comfort and Savings. <a href="https://www.energy.gov/energysaver/thermostats">https://www.energy.gov/energysaver/thermostats</a>

**Building System: Wall and Ceiling** 

Product	Product Features	Certifications	Product Directory/Service Resources	
Fan shut-off	Automatic shut-off on bathroom fans that can save money, energy and improve indoor air quality. Fans should be on for an hour after a shower or bath to remove moisture preventing mold growth.	energy STAR	US EPA Energy Star. Certified Products. Ventilation Fans. 2019 <a href="https://www.energystar.gov/products/heating_cooling/fans_ventilating">https://www.energystar.gov/products/heating_cooling/fans_ventilating</a> Home Ventilating Institute - Home Ventilation & Indoor Air Quality Guide . 2019 <a href="https://www.hvi.org/publications/VentLivingAreas.cfm">https://www.hvi.org/publications/VentLivingAreas.cfm</a>	
Paint	Paints with natural pigments and oils and with low or no VOC's,	GREENGUARD  PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL COM/CG UL 2818	GreenGuard - Product Search SPOT. Paints. GreenGuard Certification <a href="https://spot.ul.com/main-app/products/catalog/?keywords=paints&amp;filter=Certification:GREENGUARD%2520Certification">https://spot.ul.com/main-app/products/catalog/?keywords=paints&amp;filter=Certification:GREENGUARD%2520Certification</a> Green Seal - Product Search -Paints & Coatings <a href="http://www.greenseal.org/FindGreenSealProductsandServices.aspx?vid=ViewProductDetail&amp;cid=10">http://www.greenseal.org/FindGreenSealProductsandServices.aspx?vid=ViewProductDetail&amp;cid=10</a> Selecting Healthy and Environmentally Sound Finishes <a href="http://www.bayarea.greenhomeguide.com/index.php/knowhow/entry/760/C224">http://www.bayarea.greenhomeguide.com/index.php/knowhow/entry/760/C224</a>	

Product	Product Features	Certifications	Product Directory/Service Resources
Gypsum Board	Products that are moisture resistant, non-paper faced, and mold resistant will improve indoor air quality and prevent premature replacement and repair.		Using Gypsum Board for Walls and Ceilings Section I – Gypsum Association. 2019 <a href="https://www.gypsum.org/about/gypsum-101/gypsum-board/">https://www.gypsum.org/about/gypsum-101/gypsum-board/</a>
Tiles	Look for products with recycled content and that are durable.		Types of Tile Flooring and Walls - The Spruce. 2017. <a href="https://www.thespruce.com/tile-types-for-floor-and-wall-1822635">https://www.thespruce.com/tile-types-for-floor-and-wall-1822635</a> The best tile for floors, counters, and backsplashes. The pros and cons of ceramic, porcelain, stone, cement, and glass. 2015. <a href="https://www.consumerreports.org/cro/news/2015/01/the-best-tile-for-floors-counters-and-backsplashes/index.htm">https://www.consumerreports.org/cro/news/2015/01/the-best-tile-for-floors-counters-and-backsplashes/index.htm</a>
Construction adhesives, grouts, caulking, and sealants	Products with low or no VOC's.	GREENGUARD  PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL COMYCG UL 2818	SPOT. Caulks and Sealants. GreenGuard Certification. 2019 <a href="https://spot.ul.com/main-app/products/catalog/?keywords=caulks+and+sealants">https://spot.ul.com/main-app/products/catalog/?keywords=caulks+and+sealants</a> Green Seal. Find Certified Products and Services. 2019 <a href="https://www.greenseal.org/products-services/?category=368">https://www.greenseal.org/products-services/?category=368</a> Green Seal. Adhesives for Commercial Use. 2019 <a href="https://www.greenseal.org/green-seal-standards/gs-36/">https://www.greenseal.org/green-seal-standards/gs-36/</a>

#### **Building Systems: Floors and Flooring Products**

Product	Features	Certifications	Product Directory/Service Resources
Hard Surface Flooring	Products with Low or no formaldehyde, recycled content, low or no VOC finish, and hard durable surfaces.	FSC  SEAZ  UL  GREENGUARD  ROOUCT CERTING FOR LUC CHARGON'S LUC CHARGON'	FSC – Market – Find Products <a href="http://www.fscus.org/faqs/fsc">http://www.fscus.org/faqs/fsc</a> products.php  GreenGuard - Product Search SPOT. Hard Surface Flooring. GreenGuard Certification. Flooring <a href="https://spot.ul.com/main-app/products/catalog/?keywords=hard+surface+flooring">https://spot.ul.com/main-app/products/catalog/?keywords=hard+surface+flooring</a>
Certified, reclaimed or rapidly renewable flooring products	FSC certified, recycled content, bamboo or other renewable material reduces strain on the environment. Always try to use low or no VOC finishes.	FSC SFI	FSC (Forest Stewardship Council). Market. Find Products.2019 <a href="http://www.fscus.org/faqs/fsc_products.php">http://www.fscus.org/faqs/fsc_products.php</a> Sustainable Forestry Initiative. Find SFI Products. 2019. <a href="https://www.sfiprogram.org/findsfiproducts">https://www.sfiprogram.org/findsfiproducts</a>

Product	Features	Certifications	Product Directory/Service Resources
Finishes	Finishes derived from natural products like plant oils or beeswax are healthier for indoor air quality.	GREENGUARD  PRODUCT CETTING FOR LOW CHANICAL IMPOSORS LIC COMYCE L	Green Building Supply- Non-Toxic Finishes <a href="https://www.greenbuildingsupply.com/All-Products/Non-Toxic-Paints">https://www.greenbuildingsupply.com/All-Products/Non-Toxic-Paints</a>
Carpet	Brominated flame retardants (PBDE) are hazardous for indoor air quality.		Carpet. EWG's (Environmental Working Group) Healthy Living: Home Guide. 2019 <a href="https://www.ewg.org/healthyhomeguide/carpet/">https://www.ewg.org/healthyhomeguide/carpet/</a> Benefits of Carpet. CRI (Carpet and Rug Institute). 2019 <a href="https://carpet-rug.org/carpet-for-business/benefits-of-carpet/">https://carpet-rug.org/carpet-for-business/benefits-of-carpet/</a>
Grout, Caulk, Sealants	Look for low or no VOC products.	GREENGUARD  PRODUCT CETTIFIED FOR LOW CHANICAL IMMSSONS LU, CONVICE LU, 2818  SEA	GreenGuard - Product Search SPOT. Caulks and Sealants. GreenGuard Certification <a href="https://spot.ul.com/main-app/products/catalog/?keywords=caulks+and+sealants">https://spot.ul.com/main-app/products/catalog/?keywords=caulks+and+sealants</a>

**Building Systems: Plumbing** 

Product	Product Features	Certifications	Product Directory/Service Resources
Faucet fixtures and aerators	Low flow faucets or aerators with a flow rate between 1.5 to 2.0 gallons per minute.  WaterSense ® labeled faucets require a maximum flow rate not exceed 1.5 gpm and that the minimum flow rate of .8 gpm.	Water Sense	US EPA Water Sense Program https://www.epa.gov/watersense  H20use – Water Saver Home https://www.h2ouse.org/water-conservation/
Water Filters	The most commonly used filter is a Granulated Activated Carbon (GAC, home carbon filter). More expensive options are Ultra-Violet (UV) filter, Reverse Osmosis.	NSF.	NSF Water Treatment Product Search <a href="http://info.nsf.org/Certified/dwtu/">http://info.nsf.org/Certified/dwtu/</a> Minnesota Department of Health - Water Treatment Using Carbon Filters: GAC Filter Information <a href="http://www.health.state.mn.us/divs/eh/hazardous/topics/gac.html">http://www.health.state.mn.us/divs/eh/hazardous/topics/gac.html</a>
Piping	Use PEX (or cross-linked polyethylene) tubing as a plumbing substitute for copper or rigid plastic piping. Look for products made of non-halogenated plastics that contain no heavy metals or brominated flame retardants.	NSF.	Fact Sheet on the Safety of PEX Plumbing Products. NSF, The Public Health and Safety Organization. 2019. <a href="http://www.nsf.org/newsroom/fact-sheet-on-the-safety-of-pex-plumbing-products">http://www.nsf.org/newsroom/fact-sheet-on-the-safety-of-pex-plumbing-products</a>

Product	Product Features	Certifications	Product Directory/Service Resources
Water Heater	Units with closed combustion or electric ignition. Tankless water heaters may also work depending on the user. Consider purchasing an On-Demand Water Heating Systems or "flash" or "tankless" water heater.	GREENGUARD  PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL.COM/CG UL 2818	US Department of Energy. Tankless or Demand-Type Water Heaters <a href="https://www.energy.gov/energysaver/water-heating/tankless-or-demand-type-water-heaters">https://www.energy.gov/energysaver/water-heating/tankless-or-demand-type-water-heaters</a> US Department of Energy. Selecting a New Water Heater <a href="https://www.energy.gov/energysaver/water-heating/selecting-new-water-heater">https://www.energy.gov/energysaver/water-heating/selecting-new-water-heater</a> US EPA Water Sense — Guide for Efficient Hot Water Delivery Systems <a href="https://www.epa.gov/watersense/guide-efficient-hot-water-delivery-systems">https://www.epa.gov/watersense/guide-efficient-hot-water-delivery-systems</a>

**Building Systems: Equipment** 

Product	Product Features	Certifications	Product Directory/Service Resources
Refrigerator	Select an energy efficient refrigerator that meets or exceeds Energy Star standards. Top-freezer models are the most efficient followed by bottom-freezer models, while side-by-side models are the least efficient.	Energy STAR	American Council for an Energy Efficient Economy. Smarter House. Food Storage. Energy Saving Tips. 2015.  https://smarterhouse.org/food-storage/energy-saving-tips  Energy Star - Purchasing Tips http://www.energystar.gov/index.cfm?c=refrig.pr tips refrigerators  US EPA. Energy Star. Certified Products. Refrigerators. 2019 https://www.energystar.gov/products/appliances/refrigerators  US EPA. Energy Star. Certified Products. Find and Compare. Refrigerators. 2019 https://www.energystar.gov/productfinder/product/certified-residential-refrigerators/results  US Department of Energy. Office of Energy Efficiency & Renewable Energy. Purchasing Energy-Efficient Residential Refrigerators. https://www.energy.gov/eere/femp/purchasing-energy-efficient-residential-refrigerators
Dishwasher	Select a dishwasher that meets or exceeds Energy Star standards.	Energy STAR	US EPA. Energy Star. Buyers Guide. https://www.energystar.gov/index.cfm?c=dishwash.pr_tips_dishwashers  US EPA. Energy Star. Certified Products. Dishwashers. 2019. https://www.energystar.gov/products/appliances/dishwashers
Cooking Appliances (Ovens, ranges)	Self-cleaning ovens are more insulated therefore more efficient. Induction ovens are the most efficient but expensive		US EPA, Energy Star. Certified Products. Appliances. <a href="https://www.energystar.gov/products/appliances">https://www.energystar.gov/products/appliances</a>

convection a	re also	
efficient and	more	
affordable.		

#### **Building Systems: Uses**

Product	Product Features	Certifications	Product Directory/Service Resources
Cleaning Products	Products derived from natural ingredients, plant-based oils, and disinfectants are healthier for home use. Always look for low or no VOC products.	GREENGUARD  PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL 2818	EWG's (Environmental Working Group) Guide to Healthy Cleaning. 2019 <a href="https://www.ewg.org/guides/cleaners">https://www.ewg.org/guides/cleaners</a>

**Building Systems: Laundry** 

Product	Product Features	Certifications	Product Directory/Service Resources
Shut-off Valve	Install a single-throw		Do It Yourself – How to Install Shut Off Valves
	shut-off valve on the		http://www.doityourself.com/stry/installshutoffvalve
	supply line the for hot		
	and cold water. They		
	are a quick and		
	inexpensive way to		
	prevent potential		
	leakage problems		