



## Sustainable Real Estate Alliance

### Green MLS Glossary

**Active Solar Heating** – A space heating system in which heat from the sun is absorbed by collectors and transferred by pumps or fans to a storage unit for later use or to the house interior directly. Controls regulating the operation are needed.

**Active Solar Water Heater** – A water heating system in which heat from the sun is absorbed by collectors and transferred by pumps to a storage unit. The heated fluid in the storage unit conveys its heat to the domestic hot water of the house through a heat exchanger. Controls regulating the operation are needed.

**AFUE - Annual Fuel Utilization Efficiency.** Indicated as a percentage, your furnace's AFUE tells you how much energy is being converted to heat. For example, an AFUE of 90 means that 90% of the fuel is being used to warm your home, while the other 10% escapes as exhaust with the combustion gases.

**Air Barrier** – A physical layer of material designed to restrict air movement through the walls of a building envelope.

**Air Infiltration** - Infiltration is a term that relates to air leaking into or out of a home through small cracks in doors frames, window frames, outlets, walls, floors, roof, and other construction. It is a primary component of heat loss and is measured in Air Changes per Hour (ACH).

**Argon Gas** - An improvement that can be made to the thermal performance of insulating glazing units is to reduce the conductance of the air space between the layers. Originally, the space was filled with air or flushed with dry nitrogen just prior to sealing. In a sealed glass insulating unit, air currents between the two panes of glazing carry heat to the top of the unit and settle into cold pools at the bottom. Filling the space with a less conductive, more viscous,

or slow-moving gas minimizes the convection currents within the space, conduction through the gas is reduced, and the overall transfer of heat between the inside and outside is reduced. Argon is inexpensive, nontoxic, nonreactive, clear, and odorless

**Asbestos** – A mineral fiber that has been commonly used in many building construction materials for insulation and as a fire-retardant. Invisible fibers of asbestos can be inhaled and have been connected to lung diseases and cancer.

**Bio-based Product** – Any product that is made of biological products, especially renewable products, with origins in agricultural and forestry.

**Bioswale** - Landscape elements designed to remove silt and pollution from surface runoff water. They consist of a swaled drainage course with gently sloped sides (less than six percent) and filled with vegetation, compost and/or riprap. The water's flow path, along with the wide and shallow ditch, is designed to maximize the time water spends in the swale, which aids the trapping of pollutants and silt

**Borate-treated wood** – Borate is a mineral product from borax. Treating wood with borates has been done in New Zealand and Australia for many years (for insect and moisture protection). Commercial applicability is being researched in the U.S. with a major effort geared toward preventing the borates from leaching out in the presence of moisture. Borates are commonly used to treat cellulose insulation.

**Building Envelope** – Elements of the building, including all external building materials, windows, and walls, that encloses the internal space.

**Built environment** – All human built structures

**Carbon Dioxide (CO<sub>2</sub>)** – A colorless, odorless incombustible gas that is considered to be a major contributor to global warming. It is a by-product of all combustion processes.

**Carbon Monoxide (CO)** – A colorless, odorless gas resulting from incomplete combustion. Gas stoves, fireplaces, kerosene appliances, tobacco smoke, and automobile exhaust are potential sources. Proper ventilation is important to prevent negative health effects such as fatigue, dizziness and nausea.

**Cellulose** – A fibrous part of plants used in making paper and textiles, which in turn may be made into building products.

**Cellulose Insulation with Borates** – Cellulose insulation made from recycled newspaper treated with borates to provide fire and vermin protection. Most cellulose insulation available now uses

chemical fire retardants as apposed to natural borates. The chemicals now used can cause allergic reactions.

**Cementitious Foam Insulation** – A magnesium oxide-based material blown with air to create an inert, effective insulation. It may be especially helpful for people with chemical sensitivities.

**Compost System** – A compost system converts organic waste (food, plant material) into a rich fertilizer. Several commercial models are available that prevent odors and thwart animals.

**Conditioned Air** – Air that has been heated, cooled, humidified, or dehumidified to maintain an interior space within the “comfort zone.” (sometimes referred to as “tempered” air)

**Day lighting Strategies** – These are methods that use natural light to full advantage to minimize the need for artificial lighting during the day. For example: a clerestory is a day lighting strategy that allows natural light into a building interior through a raised section of roof with vertical glass. Shading of the glass allows light in while minimizing heat gain. Louvers on the exterior or vertical glass on a house can affect natural light into the interior without the excessive heat gain associated with harsh, direct sunlight. Horizontal light shelves, located high on a wall with glass above (and possibly below) and projecting into the interior and typically the exterior as well, are excellent devices for bouncing daylight deep into a room.

**Drip Irrigation** – Above-ground, low pressure watering system with flexible tubing that releases small, steady amounts of water through emitters placed near individual plants.

**Dual Flush Toilets** - These toilets have two buttons for liquid and solid waste. This is a significant impact on water conservation, and can greatly reduce the amount of wear and tear on the plumbing stack. This increases the life cycle of the plumbing, and ultimately saves lots of water.

**Earth’s Thermal Energy** – A short distance below the surface, the Earth maintains a mostly constant temperature reasonably close to the human comfort range. This can be used advantageously by certain heating and cooling systems.

**Electrical Grid** - is a term used for an electricity network that may support all or some of the following three distinct operations: electricity generation, electric power transmission and/or electricity distribution.

**Energy Factor** - Energy Factor is an overall efficiency rating of the water heater. The higher the Energy Factor the more efficient the model. Water heaters with high Energy Factor ratings may cost more initially but save energy and money in the long run.

**Energy Recovery Ventilator (ERV)** – Draws stale air from the house and transfers the heat or coolness in that air to the fresh air being pulled into the house. This can help reduce energy costs while diluting indoor pollutants.

**Energy Use Meters** – A device that measures the amount of electrical energy supplied to or produced by a residence.

**Formaldehyde** – Formaldehyde is a colorless, pungent smelling material used as an adhering component of glues in many wood products. It can cause respiratory problems, cancer and chemical sensitivity.

**FSC Certified Wood** – Wood harvested from Forrest Stewardship Council certified forest. They developed a set of Principles and Criteria for forest management that is applicable to all FSC-certified forests

**Fungi** – Any of a group of parasitic lower plants that lack chlorophyll, including molds and mildews.

**Gray water** – Is defined as the wastewater produced from baths and showers, clothes washers and lavatories. Kitchen sink and toilet water is excluded. This water has excellent potential to be used as irrigation for landscaping.

**Ground Source Heat Pump** – A geothermal heating and cooling system that uses the moderating temperature of the earth to condition liquid that is contained in loops of metal or plastic that – through compression cycles – releases hot or cold air into a home through air handlers.

**Gypsum/Cellulose** – An interior wallboard product that uses cellulose from recycled newspapers with gypsum and perlite.

**Harvested Rainwater** – The rain that falls on a roof or yard and is channeled by gutters or channels to a storage tank. The first wash of water on a roof is usually discarded and the subsequent rainfall is captured for use if the system is being used for potable water. Good quality water is then available by this method.

**HEPA** – High-efficiency particle accumulator (filters).

**Hybrid Water Heater** - is a water heating system that integrates technology traits from both the Tank-type water heaters and the Tankless water heaters. The hybrid water heater maintains water pressure and consistent supply of hot water across multiple hot water applications, and

like its tankless cousins, the hybrid is efficient and can supply a continuous flow of hot water on demand.

**IAQ** – Indoor air quality.

**Insulated Masonry** – Reinforced (rebar and grout) cementitious blocks integrally insulated with Expanded Polystyrene (EPS), Polyurethane or other insulation material. Some systems utilize the thermal mass properties of the block as well.

**Lead** – A harmful environmental pollutant that is typical in older homes with lead-based paints and in the lead solder used in plumbing. Lead is toxic to many organs and can damage the brain, kidneys, and nervous system.

**LED Lighting/Solid-state lighting (SSL)** - A type of lighting that uses semiconductor light-emitting diodes and creates visible light with reduced heat generation or parasitic energy dissipation.

**Life Cycle Analysis** – A life cycle assessment (LCA) is an objective process to evaluate all the environmental burdens of a product or process through its entire existence. This encompasses extracting and processing raw materials, manufacturing, transportation, distribution, use and maintenance, recycling and final disposal.

**Low-Flow Valves and Aerators** - This can simply be called out to reduce the amount of water in the air water mix coming from a showerhead and faucet. This reduces the amount of water used, but doesn't take away from the experience or the effect of the water. No pressure is lost, and ultimately is not noticeable.

**Methane (CH<sub>4</sub>)** – An odorless, colorless, flammable gas that is a major constituent of natural gas. It is more powerful global warming agent than carbon dioxide.

**Natural Linoleum** – Cork is the primary material in natural linoleum. Cork is from the bark of the cork tree and is harvested without destroying the trees.

**Nitrogen Oxide (NO)** – A colorless, poisonous gas. It is a by-product of gas combustion.

**Organic waste** – Natural materials, such as food and yard waste, that decomposes naturally.

**Outgas / Offgas** – The emitting of fumes into the air.

**Passive Design** – Building design and placement that allows the use of natural processes such as radiation, convection, absorption, and conduction to minimize energy costs.

**Passive Cooling** – The buildings structure (or element of it) is designed to permit increased ventilation and retention of coolness within the building components. The intention is to minimize or eliminate the need for mechanical means of cooling.

**Passive Heating** – The buildings structure (or element of it) is designed to allow natural thermal energy flows such as radiation, conduction, and natural convection generated by the sun to provide heat.

**Perlite** – a natural volcanic glass that expands with heat and transforms into a fluffy form that can be used to for insulation purposes. Its drawback is that it will settle over time.

**Pervious/Permeable Paving** – Paving material that allows water to penetrate to the soil below.

**Photovoltaic** – The process of concerting sunlight directly into electricity. The electricity can be used immediately, stored in batteries or sold to a utility. Costs continue to drop and efficiency is improving for this technology.

**Post-Consumer Recycled Content** – Is material discarded after someone uses it. A waste type produced by the end consumer of a material stream; that is, where the waste-producing use did not involve the production of another product.

**Potable Water** – Drinkable water.

**Pre-Consumer Recycled Content** – A material that was discarded before it was ready for consumer use and processed into new products: preventing waste of potentially useful materials, reduction of the consumption of fresh raw materials, reduction of energy usage, reduction of air pollution (from incineration) and water pollution (from landfilling). It also reduces the need for "conventional" waste disposal, and lower greenhouse gas emissions as compared to virgin production.

**Pressure-Treated Wood** – Wood that is chemically preserved to prevent moisture decay. The process uses environmentally dangerous chemicals and there can be health hazards from working with, or coming into contact with the material. If pressure-treated wood is required for a residential application, ACQ preserved wood is the better choice at this time.

**R-Value** - R Value-"R" stands for resistance to winter heat loss and summer heat gain and is more accurate than inches in designating insulation performance. The higher the R-value, the better the insulation qualities. Even though one type or brand of insulation is thicker or thinner than another, it will provide identical resistance to heat loss if the R-value is the same. R-values can also be added. If you now have R-11 attic insulation and you want R-30, you can add an insulation material rated at R-19.

**Radiant Barrier** – A layer of metallic foil that reflects thermal radiation without transferring heat to other materials.

**Radiant Heat Transfer** – Radiant heat transfer occurs when there is a large difference between the temperatures of two surfaces that are exposed to each other but are not touching.

**Radon** – A radioactive, colorless, odorless gas that occurs naturally in the earth. When trapped in buildings, concentrations build up and it can cause health hazards such as lung cancer.

**Rammed Earth** – A building technique for exterior walls where earth is ‘rammed’ (or pressed down) between forms. Certain mixtures of moistened earth used in this technique harden under pressure and form a solid wall, which is then covered by a waterproofing coat.

**Rain Garden** - A planted depression that allows rainwater runoff from impervious urban areas like roofs, driveways, walkways, and compacted lawn areas the opportunity to be absorbed.

**Recycled Content** - The amount of material within a finished product that has been recycled. Either pre or post consumer.

**Run-off** – Water from rainfall or irrigation that is allowed to flow off the property. Run-off can be thought of as a lost resource and a contributor to non-point source pollution.

**SEER (Seasonal Energy Efficiency Ratio)** – The performance rating of unitary air-conditioning and air-source heat pump equipment. The higher the SEER rating of a unit, the more energy efficient it is. The SEER rating is the Btu of cooling output during a typical cooling-season divided by the total electric energy input in watt-hours during the same period.

**Soaker hose** – Low-flow watering device with small holes throughout the surface of the hose. Good for plan beds and gardens.

**Soil Moisture Sensor** – A device, which can be attached to any automatic irrigation system that monitors the water available to plants and allows irrigation only when the soil moisture level drops below the desired level.

**Solar/Sun Tube** - A tube or pipe for transport of light to another location, minimizing the loss of light or for distribution of light over its length, either for equidistribution along the entire length or for controlled light leakage.

**Sulphur Dioxide (SO<sub>2</sub>)** – A colorless, irritating gas that is a primary cause of acid rain. It is a by-product of coal combustion.

**Tankless/On Demand Water Heater** - A thermodynamic process using an energy source to heat water above its initial temperature. Typical domestic uses of hot water are for cooking, cleaning, bathing, and space heating.

**Thermal Chimney** – A section of a building where solar heat or thermal currents are controlled in a manner that stimulates an updraft and exhaust of heated air. This draws fresh air to occupied areas of the building through open windows or vents and is a passive cooling method.

**Thermal Efficiency** - Is defined as a dimensionless performance measure of a thermal device such as an internal combustion engine, a boiler, or a furnace. When expressed as a percentage, the thermal efficiency must be between 0% and 100%. Due to inefficiencies such as friction, heat loss, and other factors, thermal efficiencies are typically much less than 100%. For example, a typical gasoline automobile engine operates at around 25% thermal efficiency, and a large coal-fueled electrical generating plant peaks at about 46%. The largest diesel engine in the world peaks at 51.7%. In a combined cycle plant, thermal efficiencies are approaching 60%.

**Thermal Envelope** – The shell of a building that essentially creates a barrier from the elements. A highly insulated thermal envelope allows maximum control of interior temperatures with minimal outdoor influence.

**Thermal Mass** – Materials that absorb heat or coolness and store it for long periods of time. Water and masonry materials can provide thermal mass. Such materials react slowly to temperature variations and are important aspects of any passive heating or cooling system.

**U-Value** – The thermal transmittance of a composite system of materials. Generally, the reciprocal of the R-Value.

**Vapor Retarder** – A continuous plastic membrane which surrounds the entire thermal envelope of a house and prevents moisture penetration into the wall cavity.

**Volatile Organic Compounds (VOCs)** – A large family of chemicals including all organic compounds containing hydrogen and carbon that vaporizes at room temperature and pressure. They are found in many indoor sources, including many common household products and building materials. Finishes that contain VOCs can function as sealants, preventing outgassing of other toxic substances. There are commercial brands of finishes available that minimize the VOC content. Only these brands should be used and care must be taken in their application. Once thoroughly dried, they do not pose a health hazard.

**Wastewater Treatment** – Water that is discharged from homes and businesses from sinks, toilets, washers, showers, etc. It is treated through a series of separation and aeration processes.



**Water conserving Irrigation System** – Drip irrigation, soaker hoses, bubblers and low trajectory spay heads for water distribution, zoning irrigation for different water demand plan types, electronic timers with five day programming and rain override devices, irrigation schedules for early morning watering every five to seven days, and soil moisture sensors are the possible components for a water conserving irrigation system.

**Weatherization** - The practice of protecting a building and its interior from the elements, particularly from sunlight, precipitation, and wind, and of modifying a building to reduce energy consumption and optimize energy efficiency.

**Whole-House Fan** – A fan that is typically centrally located in the ceiling of the house. It pulls house air up into the attic area where it vents to the outdoors. The house air is replaced by outdoor air through open windows and screen doors when outside temperatures have cooled down in the evening.

## **Certification Programs:**

### **USGBC LEED Certification**

LEED is an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

Developed by the U.S. Green Building Council (USGBC), LEED provides building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

For more information go to: <http://www.usgbc.org>

### **NAHB Green**

Green Certification is based on the NAHB Model Green Home Building Guidelines and the ICC 700-2008 National Green Building Standard™. There are three green certification levels available in the Guidelines – Bronze, Silver, and Gold. The National Green Building Standard includes an additional level for residential buildings, Emerald. Land Developments can earn One, Two, Three, or Four Stars.

Residential buildings, remodeling projects, and developments can be Green Certified to the NAHB Model Green Home Building Guidelines or the National Green Building Standard.

There are three green certification levels available in the Guidelines – Bronze, Silver, and Gold. The Standard includes an additional level, Emerald. The green levels and certifications address key green construction areas including – Lot & Site Development, Resource Efficiency, Energy Efficiency, Water Efficiency, Indoor Environmental Quality, and Homeowner Education.

For more information go to: <http://www.nahbgreen.org>

### **Energy Star**

To earn the ENERGY STAR, a home must meet strict guidelines for energy efficiency set by the U.S. Environmental Protection Agency. These homes are at least 15% more energy efficient than homes built to the 2004 International Residential Code (IRC), and include additional energy-saving features that typically make them 20–30% more efficient than standard homes.

Any home three stories or less can earn the ENERGY STAR label if it has been verified to meet EPA's guidelines, including: single family, attached, and low-rise multi-family homes; manufactured homes; systems-built homes (e.g., SIP, ICF, or modular construction); log homes, concrete homes; and even existing retrofitted homes.

ENERGY STAR qualified homes can include a variety of 'tried-and-true' energy-efficient features that contribute to improved home quality and homeowner comfort, and to lower energy demand and reduced air pollution:

For more information go to: <http://www.energystar.gov>

### **Chicago Green Homes**

The purpose of the Chicago Green Homes Program is to encourage residential builders, developers and homeowners to use technologies, products and practices that will:

- Provide greater energy efficiency
- Provide healthier indoor air
- Reduce water usage
- Preserve natural resources
- Improve durability and reduce maintenance
- Reduce waste and pollution

For most projects, certification under the Chicago Green Homes Program is a multi-step process. Projects initially enroll in the program – typically during the design phase. As the project nears completion, the primary applicant should complete and submit the Application

for Certification and any final documentation. Once this is approved, the project will be certified by the City of Chicago as a Chicago Green Home. Projects are awarded one star, two stars, or three stars rating.

For more information go to: <http://egov.cityofchicago.org> and search for Chicago Green Homes OR email [chicagogreenhomes@cityofchicago.org](mailto:chicagogreenhomes@cityofchicago.org)