Stepping Up!®

A GUIDE TO GREEN FEATURES: DEFINITIONS AND LINKS IN THE TUCSON MLS

USEFUL WEBSITES

www.nahb.org

http://leed.usgbc.org

http://www.harvestingrainwater.com

https://www.energystar.gov

https://www.facebook.com/AgentsGoneGreen

https://www.tep.com/efficiency/home/smart/

https://www.tucsonaz.gov/water/conservation

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- **NAHB: www.nahb.org**

National Association of Home Builders - NAHB is a trade association that helps promote the policies that make housing a national priority. Since 1942, NAHB has been serving its members, the housing industry, and the public at large.

The National Green Building Standard is one of the rating systems to which a project can be certified. The Standard provides a menu of green building practices for builders, remodelers and land developers to plan their green projects. The Standard offers four levels of green certification for residential buildings: Bronze, Silver, Gold, and Emerald; and four levels for residential developments: One-Star through FourStar. With each successive level, the project has to employ a greater number of green practices in six categories: Lot Design, Preparation, and Development; Resource Efficiency; Energy Efficiency; Water Efficiency; Indoor Environmental Quality; and Operation, Maintenance, and Building Owner Education. These building practices, when employed in construction and development, will reduce the potential environmental impacts of a residential project.

http://www.homeinnovation.com/ngbsbronzecookbook

- **USGBC- LEED Cert**

US Green Building Council - Leadership in Energy & Environmental Design
is a green building certification program that recognizes best-in-class building strategies and practices. To receive LEED certification, building projects satisfy prerequisites and earn points to achieve different levels of certification. Prerequisites and credits differ for each rating system, and teams choose the best fit for their project. CERTIFIED, SILVER, GOLD, PLATINUM

http://www.usgbc.org/leed

http://leed.usgbc.org

- **ENERGY STAR –** http//www.energystar.gov

ENERGY STAR: since 1992 Energy Star has been a U.S. Environmental Protection Agency (EPA) voluntary program that helps businesses and individuals save money and protect our climate through superior energy efficiency. Now in its 23rd year, the ENERGY STAR program has boosted the adoption of energy efficient products, practices, and services through valuable partnerships, objective measurement tools, and consumer education. For products, new homes, commercial buildings, industrial plants. In order to earn the label, ENERGY STAR products must be third-party certified based on testing in EPA-recognized laboratories.

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- **ENERGY STAR ADVANCED LIGHTING PACKAGE**:
  Designation identifies homes equipped with a comprehensive set of ENERGY STAR qualified light fixtures.

https://www.energystar.gov/index.cfm?c=fixtures.alp_consumers

- **ENERGY STAR APPLIANCE:**

Every appliance comes with two price tags: what it costs to take it home and what it costs to operate and maintain it each month. ENERGY STAR qualified appliances incorporate advanced technologies and use 10 to 50 percent less energy than standard appliances. From refrigerators to clothes washers, ENERGY STAR qualified appliances save energy, save money, and help reduce emissions of greenhouse gases and air pollutants at the source
https://www.energystar.gov/ia/new_homes/features/Appliances_062906.pdf

- **ENERGY STAR WINDOWS:**

  Every ENERGY STAR window, door and skylight is independently certified to perform at levels that meet or exceed energy efficiency guidelines set by the U.S. Department of Energy. But how do you know which windows work in your climate or how to install them to maximize your energy savings? The following tips will help you buy with confidence and install for efficiency.

https://www.energystar.gov/products/certified-products/detail/residential-windows-doors-and-skylights

- **ENERGY STAR AIR PACKAGE:**

PEOPLE are increasingly concerned about mold, radon, carbon monoxide, and toxic chemicals commonly found in homes. In fact, U.S. Environmental Protection Agency (EPA) studies show that levels of air pollution inside the home are often two to five times higher than outdoor levels. And poor indoor air quality is associated with a host of health problems, including eye irritation, allergies, headaches, and respiratory problems such as asthma. In addition, indoor air quality is having a sizable financial impact on the home building industry. Litigation associated with mold and other indoor air quality related concerns and the rising cost of liability coverage have cost builders across the country billions of dollars.

https://www.energystar.gov/iAIRPACKAGE

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- **GREEN LABEL CARPET:**

In 1992, CRI (Carpet and Rug Institute) launched its Green Label program to test carpet, cushions and adhesives to help specifiers identify products with very low emissions of Volatile Organic Compounds (VOCs). The test methodology was developed in cooperation with the U.S. EPA

http://www.carpet-rug.org/CRI-Testing-Programs/Green-Label-Plus.aspx

- **GREEN SEAL PAINTS:**

Green Seal is an independent non-profit organization dedicated to safeguarding the environment and transforming the marketplace by promoting the manufacture, purchase and use of environmentally responsible products and services.

Paints and coatings are significant contributors to indoor air pollution and ozone. Many of these products contain volatile organic compounds (VOCs), chemicals that can have short and long-term health effects and contribute to ground level ozone pollution. The EPA reports that concentrations of many VOCs can be up to ten times higher indoors than outdoors, while the California Air Resources Board has established limits on the VOC contents of paints. Many chemicals found in paints may be toxic, and users risk exposure to harmful chemicals through inhalation and dermal exposure.

http://www.greenseal.org

- **NON FORMALDEHYDE CABINETS:**

Cabinets are often made from pressed wood products, such as particleboard, hardwood plywood paneling, and medium-density fiberboard. The problem is that these materials typically contain formaldehyde, one of the volatile organic compounds, or VOCs, that are emitted as gases from certain solids and liquids, including various paints, lacquers, and binders.With homes increasingly air tight, the release of VOCs into the air can present significant health risks, from asthma to cancer. The federal Occupational Safety and Health Administration (OSHA) does regulate formaldehyde as a carcinogen.

- **INFILL SITE:**

In the urban planning and development industries, **infill** has been defined as the use of land within a built-up area for further construction, especially as part of a community redevelopment or growth management program or as part of smart growth.

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- **PREVIOUSLY DEVELOPED LAND:**

LAND which is or was occupied by a permanent structure, including the curtilage of the **developed land** and any associated fixed surface infrastructure.'
The **definition** includes defence buildings, but excludes: - **Land** that is or has been occupied by agricultural or forestry buildings.

- **INSULATED CONCRETE FORMS**:

(ICF) is a system of formwork for reinforced concrete usually made with a rigid thermal insulation that stays in place as a permanent interior and exterior substrate for walls, floors, and roofs. The forms are interlocking modular units that are dry-stacked (without mortar) and filled with concrete. The units lock together somewhat likeLego bricks and create a form for the structural walls or floors of a building. ICF construction has become commonplace for both low rise commercial and high performance residential construction as more stringent energy efficiency and natural disaster resistant building codes are adopted. ICFs may be used with frost protected shallow foundations (FPSF).

- **RAMMED EARTH:**

is a technique for buildingwalls, foundations, and floors using natural raw materials such as earth, chalk, lime or gravel.[2] It is an ancient building method that has seen a revival in recent years as people seek more sustainable building materials and natural building methods.

Rammed-earth can be simple to construct, noncombustible, thermally massive, strong, and durable. Structures such as walls can be labour-intensive to construct without machinery (powered tampers), however, and they are susceptible to water damage if inadequately protected or maintained.

Rammed-earth buildings are found on every continent except Antarctica, in a range of environments that include temperate and wet regions,[3] semiarid deserts, mountain areas and the tropics. The availability of useful soil and a building design appropriate for local climatic conditions are the factors that favour its use.

- **SIPS – STRUCTURAL INTEGRATED PANELS:**

Structural insulated panels (SIPs) are a high performance building system for residential and light commercial construction. The panels consist of an insulating foam core sandwiched between two structural facings, typically oriented strand board (OSB). SIPs are manufactured under factory controlled conditions and can be fabricated to fit nearly any building design. The result is a building system that is extremely strong, energy efficient and cost effective. Building with SIPs will save you time, money and labor.

http://www.sips.org

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- **DUAL FLUSH TOIETS:**

Dual flush toilets handle solid and liquid waste differently from standard American style toilets, giving the user a choice of flushes. It's an interactive toilet design that helps conserve water that has caught on quickly in countries where water is in short supply, like Australia, and in areas where water supply and treatment facilities are older or overtaxed. The Environmental Protection Agency (EPA) reports that by the year 2013, an estimated 36 states will experience water shortages as a result of increased water usage and inefficient water management from aging regional infrastructures. Using less water to flush liquid waste makes sense, but in the United States there may be cultural biases that make accepting a more hands-on approach to personal waste harder to accept.

http://home.howstuffworks.com/dual-flush-toilet.htm

- **LOW FLOW FAUCET:**

Bathroom and kitchen sink faucets account for 16% of the water used in an average home. Federal Plumbing Standards now specify that kitchen faucets use no more than 2.5 gpm and bathroom faucets use no more than 2.2 gpm, though several use less quite effectively. You can save up to 40% of the water used by sink faucets replacing your older faucet aerators with new water efficient ones**.**
Installing an aerator - the screw-on tip of the sink faucet - can be one of the most cost-effective water conservation measures your household can do because they control the flow of water through your faucet.
This is especially true if your sink faucets are older and don't have aerators, since some older models can use 5 or more gallons per minute (gpm).

http://www.conserveh2o.org/faucet-water-use

- **TANKLESS WATER HEATER:**

also called *instantaneous*, *continuous flow*, *inline*, *flash*, *on-demand*, or *instant-on* water heaters—are gaining in popularity.[*citation needed*] These high-power water heaters use high powered burners to instantly heat water as it flows through the device, and do not retain any water internally except for what is in the heat exchanger coil. Copper heat exchangers are preferred in these units because of their high thermal conductivity and ease of fabrication. Tankless heaters may be installed throughout a household at more than one point-of-use (POU), far from a central water heater, or larger centralized models may still be used to provide all the hot water requirements for an entire house. The main advantages of tankless water heaters are a plentiful continuous flow of hot water (as compared to a limited flow of continuously heated hot water from conventional tank water heaters), and potential energy savings under some conditions. The main disadvantage of these systems are their high initial costs (equipment and installation).
http://www.energystar.gov/products

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- **ENERGY SMART HOME RATING:**

RESNET(Residential Energy Services Network) - Energy Smart Builders are committed to increasing the energy performance of the homes they build. These energy efficient homes are more affordable to maintain, more comfortable and have a higher value compared to regular homes. The efforts of these leading builders benefit consumers, the environment, the local economy and our national security.
http://www.resnet.us/professional

- **RAINWATER HARVESTING:**

is the practice of capturing, infiltrating or utilizing rainfall from roofs, constructed catchment surfaces, and driveways, sidewalks, parking lots and streets.

HISTORY IN TUCSON – GREAT ARTICLE
https://www.hcn.org/issues/47.7/tucsons-rain-catching-revolution
REBATE PROGRAM:
https://www.tucsonaz.gov/water/rwh-rebate
BRAD LANCASTER
http://www.harvestingrainwater.com/

- **SOLAR HOT WATER SYSTEM:**

Solar water heating systems include storage tanks and solar collectors. There are two types of solar water heating systems: active, which have circulating pumps and controls, and passive, which don't.
http://energy.gov/energysaver/articles/solar-water-heaters

- **SOLAR POOL HEATER:**

Pool heating is a very good solar application. The systems are simple and relatively inexpensive. Pool systems usually use simple, low cost, unglazed plastic collectors. The pool itself is the thermal storage for the system, and the pump you already use for filtering pool water will also circulate water through the solar collectors.

http://www.builditsolar.com/Projects/PoolHeating/pool_heating.htm

- **ENERGY STAR SKYLIGHTS:**

Certified windows, doors, and skylights can reduce your energy bills by an average of 12% nationwide, while helping protect the environment. Energy Star products are independently certified to save energy without sacrificing features or functionality. Saving energy helps prevent climate change. Look for the Energy Star label to save money on your energy bills and help protect our environment.

http://www.energystar.gov/products

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- **TEP GUARANTEE:**

In the market for a newly constructed home? Look for a TEP Energy Smart Home or ENERGY STAR-qualified neighborhood with high-performance homes that save you money and energy. TEP Energy Smart Homes are designed and built to conserve energy and save you money. In cooperation with TEP, a number of Arizona builders are incorporating energy-saving features and building techniques in their new homes.

https://www.tep.com/efficiency/home/smart/
https://www.tep.com/news/newsroom/release/index.php?idRec=186

- **HERS RATING:**

The Home Energy Rating System (HERS) Index is the industry standard by which a home's energy efficiency is measured. It's also the nationally recognized system for inspecting and calculating a home's energy performance. A certified Home Energy Rater assesses the energy efficiency of a home, assigning it a relative performance score. The lower the number, the more energy efficient the home. The U.S. Department of Energy has determined that a typical resale home scores 130 on the HERS Index while a standard new home is awarded a rating of 100. This can effect the costs of maintaining the home.

http://www.resnet.us/hers-index?

- **BATHROOM EXHAUST OUT:**

Excess moisture has tremendous potential for damaging bathrooms. During a bath or shower, humidity levels rise significantly creating the perfect breeding ground for mold, mildew and microorganisms that can negatively impact health. In addition, long-term exposure to excess moisture and humidity can crack and peel paint and wallpaper, ruin wallboard, warp doors and rust cabinets and fixtures. Without control, it can even cause deterioration of joists and framing above the bathroom. Most of today's new homes are highly insulated and practically air tight, saving energy but making proper mechanical ventilation essential to maintaining good indoor air quality. Good ventilation protects both your health and your home and is especially important in bathrooms which experience high levels of moisture and humidity. A bathroom exhaust fan is a mechanical ventilation device which, when ducted to the exterior of the house, draws out stale, impure and very humid air thereby improving the quality of indoor air.

http://www.hvi.org/publications/bathroom_exhaust_fans.cfm

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GREEN LABEL BACKINGS:
As the industry resource for answers to carpet cushion-related questions, the Carpet Cushion Council educates carpet retailers, manufacturers, distributors, and cushion manufacturers about the benefits of carpet cushion. Ultimately, the carpet Cushion Council's objective is to provide carpet retailers with tools necessary to improve communication with customers and increase overall sales.

http://www.carpetcushion.org/
http://www.carpetcushion.org/

- **Kitchen Exhaust Out:**

Building codes require a kitchen-range hood for dispersing moisture, odors, fumes and heat from the immediate area during cooking. Kitchen exhaust fans that don't vent outside simply recirculate the polluted air around the kitchen. They're also noisy, which can deter homeowners from using them.

http://www.hgtv.com/remodel/kitchen-remodel/in-line-kitchen-exhaust-fans

- **WHOLE HOUSE AIR FILTRATION SYSTEM:**

Indoor air pollution is among the top five environmental health risks. Usually the best way to address this risk is to control or eliminate the sources of pollutants, and to ventilate a home with clean outdoor air. The ventilation method may, however, be limited by weather conditions or undesirable levels of contaminants contained in outdoor air. If these measures are insufficient, an air cleaning device may be useful. Air cleaning devices are intended to remove pollutants from indoor air. Some air cleaning devices are designed to be installed in the ductwork of a home's central heating, ventilating, and air-conditioning (HVAC) system to clean the air in the whole house

http://www.environmentalhealthproject.org/wp-content/uploads/2012/07/EPA-Guide-to-Air-Cleaners.pdf

- **FSC CERTIFIED WOOD:**

The Forest Stewardship Council (**FSC**) is an international not for-profit, multi-stakeholder organization established in 1993 to promote responsible management of the world's forests. Its main tools for achieving this are standard setting,**certification** and labeling of forest products.

https://us.fsc.org/

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- **RENEWABLE FLOORING:**

Sustainable flooring is produced from sustainable materials (and by a sustainable process) that reduces demands on ecosystems during its life-cycle. This includes harvest, production, use and disposal.

http://greenhomeguide.com/know-how/article/buyers-guide-to-green-floor-materials

http://woodflooring.sustainablesources.com/

- **NATURAL MATERIAL:**

Any product or physical matter that comes from plants, animals, or the ground. Minerals and the metals that can be extracted from them (without further modification) are also considered to belong into this category. Natural materials are also often used in textiles. Types include:

- Biotic materials
  - Wood (rattan, bamboo, bark etc.)
  - Natural fiber (silk),(wool, cotton, flax, hemp, jute, kapok, kenaf, moss, etc.)
- Inorganic material
  - Stone (flint, granite, obsidian, sandstone, sand, gems, glass, etc.)
  - Native metal (copper, bronze, iron, gold, silver, etc.)
  - Composites (clay, porcelain, plasticine, etc.)
- Other natural materials.
  - Soil

- **STRAWBALE:**

Straw bale construction uses baled straw from wheat, oats, barley, rye, rice and others in walls covered by earthen or lime stucco. Straw bales are traditionally a waste product which farmers do not till under the soil, but do sell as animal bedding or landscape supply due to their durable nature. In many areas of the country, it is also burned, causing severe air quality problems. It is important to recognize that straw is the dry plant material or stalk left in the field after a plant has matured, been harvested for seed, and is no longer alive. Hay bales are made from short species of livestock feed grass that is green/alive and are not suitable for this application. Hay is also typically twice the price of straw.

http://strawbale.sustainablesources.com/

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- **ONLY NATIVE PLANTS:**

  An ecosystem consists of interactions of plants, animals, and microorganisms with their physical (e.g., soil conditions and processes) and climatic conditions. Native plants form a part of a cooperative environment, or plant community, where several species or environments have developed to support them. This could be a case where a plant exists because a certain animal pollinates the plant and that animal exists because it relies on the pollen as a source of food. Some native plants rely on natural conditions, such as occasional wildfires, to release their seeds or to provide a fertile environment where their seedlings can become established.

https://en.wikipedia.org/wiki/Native_plant

Brad Lancaster's site

http://www.harvestingrainwater.com/tucson-az-plant-lists/southern-arizona-native-plant-list-for-rain-gardens/

- **GREYWATER LINES:**

Greywater is gently used water from your bathroom sinks, showers, tubs, and washing machines. It is not water that has come into contact with feces, either from the toilet or from washing diapers. **Greywater** may contain traces of dirt, food, grease, hair, and certain household cleaning products.

Harvesting greywater is a great way to utilize an on-site non-potable source of supplemental irrigation water, which, along with rainwater, can greatly reduce or eliminate our "need" to irrigate our landscapes with costly potable drinking water, which is the kind of water coming out of most outdoor faucets in the United States. However some of the ingredients, such as salts, that are found in various soaps and detergents can be detrimental to your soils and plants, especially in areas with alkaline soils. Therefore it's important to select detergents and other cleaning products that have fewer to no ingredients harmful to plants, and to select appropriate vegetation for the areas of your landscape harvesting greywater.

http://www.harvestingrainwater.com/greywater-harvesting/

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- **LOW FLOW SHOWERHEADS**:

Showering is one of the leading ways we use water in the home, accounting for nearly 17 percent of residential indoor water use—for the average family, that adds up to nearly 40 gallons per day. Did you know that standard showerheads use 2.5 gallons of water per minute (gpm)? Water–saving showerheads that earn the WaterSense label must demonstrate that they use no more than 2.0 gpm.

http://www.epa.gov/watersense/products/showerheads.html

- **WATER SENSE SHOWERHEADS and FAUCETS:**

Water–saving showerheads that earn the WaterSense labelmust demonstrate that they use no more than 2.0 gpm. The WaterSense label also ensures that these products provide a satisfactory shower that is equal to or better than conventional showerheads on the market. EPA worked with a variety of stakeholders—including consumers who tested various showerheads—to develop criteria for water coverage and spray intensity. All products bearing the WaterSense label—including water–efficient showerheads—must be independently certified to ensure they meet EPA water efficiency and performance criteria.