

A Glossary of Sustainable Communities-Related Terminology

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Acceptable Indoor Air Quality: Air in an occupied space toward which a substantial majority of occupants express no dissatisfaction and in which there are not likely to be known contaminants at concentrations leading to exposure that post a significant health risk (ASHRAE 62-1989 revision)

Active Solar Heating: 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

Adaptive Buildings: Buildings that can be easily remarketed, retrofitted or reconfigured to better meet the changing needs of occupants, maintenance crews and the large community

Adaptive Reuse: The renovation of a building or site to include elements that allow a particular use or uses to occupy a space that originally was intended for a different use

Albedo: Synonymous with solar reflectance

ASHRAE: American Society of Heating, Refrigeration and Air Conditioning Engineers

Benefit/Cost Analysis: An economic method for assessing the benefits and costs of achieving alternative health-based standards at given levels of health protection

Blackwater: Water from toilets, kitchen sink, or other dirty sources (e.g., washing machines used for diapers), which may be contaminated with microorganisms or harmful bacteria

Biodiversity: The variety of life in all forms, levels and combinations including ecosystem diversity, species diversity and genetic diversity

Bioremediation: Involves the use of microorganisms and vegetation to remove contaminants from water and soil; can be a viable alternative to land filling or incineration

Brownfields: Abandoned, idled, or underused industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination

Building Density: The floor area of the building divided by the total area of the site (sq. ft. per acre)

Building Envelope: Exterior surface of a buildings construction-walls, windows, roof and floor. Also referred to as "building shell"

Built Environment: Refers to human-built structures such as single family homes

Carbon Footprint: A calculation of the amount of greenhouse gasses produced as a result of commercial, industrial, and individual activities.

Carbon Offset: a system intended to equalize carbon production around the globe by trading greenhouse gas emissions - typically produces through fossil fuels consumption-for environmentally friendly actions, such as planting trees and using clean energy sources.

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) commonly known as Superfund. Addresses abandoned or historical waste sites and contamination. It was enacted in 1980 to create a tax on the chemical and petroleum industries and provided federal authority to respond to releases of hazardous substances

Chlorofluorocarbons (CFCs): Hydrocarbons that deplete the stratospheric ozone layer

Climate Change: also called climate destabilization or greenhouse effect, this term represents the adverse effects of greenhouse gasses on weather patterns and ecosystems

CO²: Carbon dioxide; the most prevalent of the greenhouse gases emitted by burning fossil fuels. Naturally occurring from sources such as human and animal respiration, ocean-atmosphere exchange, and volcanic eruptions

Coheat Test: A test that measures the distribution of heating and cooling systems throughout a building. Measure the overall heat loss factor. The home is alternately heated with the furnace and an array of small heaters (coheaters) to calculate heat-delivery efficiency.

Community: An interacting population of individual living in a specific area

Compact Fluorescent Lamp (CFL): small fluorescent light bulbs that can be used in place of incandescent light bulbs. CFLs consume significantly less electricity and last 8-10 times longer than incandescent bulbs.

Conditional Space: The part of a building that is heated or cooled or both for the comfort of occupants (ASHRAE 62.1-2004)

Conservation Easement: Easement restricting a landowner to land uses that are compatible with long-term conservation and environmental values

Cradle to Grave: A term used in lifecycle analysis to describe the entire life of a material or product up to the point of disposal

Daylighting: The controlled admission of natural light into a space through glazing with the intent of reducing or eliminating electric lighting

Design Conditions: The exterior and interior environmental parameters specified for air conditioning (heating, cooling, and ventilation) and electrical design for a building

Development Footprint: The area on the project site that has been impacted by any development activity. Hardscape access roads, parking lots, non-building facilities and building structure are all included in the development footprint

Duct Blaster: A test that measures the air tightness of heating and cooling ducts

Emissions Trading: A system created by the Kyoto Protocol, which allows countries that are under-target on emissions to swap spare emissions with over-target countries with the goal of limiting carbon emissions worldwide

Emissivity: The ratio of the radiation emitted by a surface to the radiation emitted by a blackbody at the same temperature

Energy Assessment: A written report prepared by a qualified party evaluating energy usage, highlighting weak points in energy efficiency, and identifying a cost-savings measures. A less rigorous process than an energy audit

Energy Audit: a written report prepared by a qualified tester using methods and measurements that comply with industry standards

Energy Conservation Measures (ECMs): Installations of equipment or systems, or modifications of equipment or systems for the purpose of reducing energy use and/ or costs

Energy Efficient Mortgage (EEM): A mortgage that figures conserved energy into the loan in the form of credits as an energy efficiency incentive, mostly for new homes already certified as energy efficient

Energy Improvement Mortgage (EIM): A mortgage intended for existing homes for the purpose of installing energy efficiency improvements

Energy Modeling: Process to determine the energy use of a building based on software analysis; also called building energy simulation. Common simulation software include DOE-2 and Energy Plus

Energy Star: Program administered by the Environmental Protection Agency that evaluates products based on energy efficiency

ENERGY STAR Rating: The rating a building earns using the ENERGY STAR Portfolio Manager to compare building energy performance to similar buildings in similar climates. A score of 50 represents average building performance

Environmental Attributes of Green Power: Include emission reduction benefits that result from green power being used instead of conventional power sources

Ex-situ Remediation: Involves the removal of contaminated soil and groundwater

Fenestration: Design and construction of windows and doors

Fluorinated Gas: A greenhouse gas typically associated with refrigerants and aerosols

Fly Ash: The solid residue derived from incineration processes.

Forest Stewardship Council (FSC): A third-party certification organization that evaluates the sustainability of forest products. FSC-certified wood products have met specific criteria in areas such as forest management, labor conditions, and fair trade

Fuel Cell: A clean fuel source that converts chemical energy from hydrogen to electrical energy. Yields zero emissions

Global Warming: An increase in the near surface temperature of the Earth. Global warming has occurred in the distant past as the result of natural influences, but the term is most often used to refer to the warming predicted to occur as a result of increased emissions of greenhouse gases. Scientists generally agree that the Earth's surface has warmed by about 1 degree Fahrenheit in the past 140 years. The intergovernmental Panel on Climate Change recently concluded that increased concentrations of greenhouse gases are causing an increase in the Earth's surface temperature and that increased concentrations of sulfate aerosols have led to relative cooling in some regions, generally over and downwind of heavily industrialized areas.

Green Guides: Guidelines published by the Federal Trade Commission (FTC) providing standards for advertising claims that a product is green

Green Roof: Contained green space on, or integrated with, a building roof. Green roofs maintain living plants in a growing medium on top of a membrane and drainage system

Green Seal: A certification for construction products, such as windows, paints and adhesives attesting that the products were manufactured and can be used with minimal impact on the environment

Green Wash: To falsely claim a product is environmentally sound. Also known as faux green

Greenfields: Sites that have not been previously developed or graded and remain in a natural state

Greenhouse Effect: The warming of the Earth's atmosphere attributed to a buildup of carbon dioxide or other gases; some scientists think that this buildup allows the sun's rays to heat the earth while making the infrared radiation atmosphere opaque to infrared radiation, thereby preventing a counterbalancing loss of heat

Greenhouse Gases: Gases such as carbon dioxide, methane and CFCs that are relatively transparent to the higher-energy sunlight, but trap lower-energy infrared radiation

Heat Island Effect: Occurs when warmer temperatures are experienced in urban landscapes compared to adjacent rural areas as a result of solar energy retention on constructed surfaces; streets, sidewalks, parking lots and buildings. Strategic placement of trees can reduce this effect and reduce energy consumption for cooling by 15% to 30%

Heat Pump: an electric device with both heating and cooling capabilities. It extracts heat from one medium at a lower temperature (the heat source) and transfers it to another at a higher temperature (the heat sink), thereby cooling the first and warming the second

HERS, Home Energy Rating System: A home energy rating that supplies credible verification for a home's energy efficiency using the home's construction plans and the result of an onsite inspection

Horizontal View at 42 Inches: The approach used to confirm that the direct line of sight to perimeter vision glazing remains available from a seated position

Hubbert's Curve: A prediction, made by a geologist in the late 1950's, that classified fossil fuels as finite, and said that after a peak time access to these resources would rapidly decline, eventually diminishing entirely

Hybrid Vehicles: Vehicles that use a gasoline engine to drive an electric generator and use the electric generator and/or storage batteries to power electric motors that drive the vehicle's wheels

Hydrofluorcarbon: A greenhouse gas

Indoor Air Quality (IAQ): A measurement of the overall cleanliness of the air within a building or home

In-situ Remediation: Involves treatment of containments in place using technologies such as injection wells or reactive trenches

Integrated Design: A holistic process that considers the many disparate parts of a building project and examines the interaction between design, construction, and operations to optimize the energy and environmental performance of the project

Invasive plants: Both indigenous and non-indigenous species or strains that are characteristically adaptable, aggressive, have a high reproductive capacity and tend to overrun the ecosystem in which they inhabit. They are one of the great threats to biodiversity and ecosystem stability

Leadership in Energy and Environmental Design (LEED): A self-assessing green building rating system developed by the U.S. Green Building Council. LEED evaluates from a systems perspective. By achieving points in different areas of environmental performance, a building achieves a level of certification under the system

LEED, Leadership in Energy and Environmental Design: A certification granted by the United States Green Building Council. The detailed rating system involves full assessment of the construction, operation, and innovation of the (sustainable structure)

LEED-ND: LEED Certification for neighborhoods

Level Spreader: A mechanism that manages storm water runoff by containing, filtering, and slowly releasing it back into a stream or water source. Consists of a forebay, channel and buffer

Life Cycle Analysis (LCA): An evaluation of the environmental effects of a product or activity holistically, by analyzing the entire life cycle of a particular material, process, product, technology, service, or activity

Life Cycle Inventory (LCI): an accounting of the energy and waste associated with the creation of a new product through use and disposal

Light-Emitting Diode Lamp (LED): A technology that produces light by causing electrons to flow through the lamp and release energy in the form of light

Light Pollution: Waste light from building sites that produces glare, is directed upward to the sky or is directed off the site

Local/Regional Materials: Building products manufactured and/or extracted within a defined radius of the building site. For example, the U.S. Green Building Council defines local materials as those that are manufactured, processed, and/or extracted within a 500 mile radius of the site. Use of regional materials is considered a sustainable building strategy because these materials require less transport, reducing transportation-related environmental impacts. Additionally, regional materials support local economies, supporting the community goal of sustainable building

Low-emissivity (low-E) Windows: Window technology that lowers the amount of energy loss through windows by inhibiting the transmission of radiant heat while still allowing sufficient light to pass through

Methane (CH₄): A greenhouse gas. Livestock production is a major source of methane emissions

National Fenestration Rating Council (NFRC): National Organization that sets standards for windows and doors

Native (Indigenous) Plants: Plants that have adapted to a given area during a defined time period and are not invasive

Native Vegetation: A plant whose presence and survival in a specific region is not due to human intervention or cultivation

Natural Ventilation: Ventilation design that uses existing air currents on a site and natural convection to move and distribute air through a structure or space. Strategies include placement and operability of windows and doors, thermal chimneys, landscape berms to direct airflow on a site, and operable skylights

Naturescaping: A landscaping method that uses native plants to conserve and create natural habitats that provide nurturing environments for wildlife

Net Metering: A metering and billing arrangement that allows on-site generators to send excess electricity flows to the regional power grid

Nighttime Ventilation: Passive building strategy of flushing building structures with cool, nighttime air to minimize the next day's cooling load; it works best in conjunction with massive building envelopes

Nitrogen Runoff: The harmful release of nitrogen into waterways. It negatively impacts aquatic wildlife by decreasing oxygen-levels in the water. Livestock and fertilizers are main sources

Non-potable Water: Water that is not suitable for human consumption without treatment that meets or exceeds EPA drinking water standards

Nutrient Loading: See nitrogen runoff

Occupancy Sensor: A sensing device commonly connected to a room's lighting but also occasionally to heating or ventilation, which shuts down these services when the space is unoccupied

Off-gassing: The emission of volatile organic compounds from synthetic and natural products

On Demand Water Circulation Pump: A water-conservation device that rapidly moves water from a water heater to fixtures

On Demand Water Heater: A device that heats water rapidly as it is dispensed from the faucet. Eliminates the need for a conventional tank water heater

Orientation: The relation of a building and its associated fenestration and interior surface compass direction and, therefore, the location of the sun

Panelized Construction: Prefabricated building structures

Passive Building Design: Building configurations that take advantage of a natural, renewable resource (e.g., sunlight, cooling breezes, etc.) Passive design strategies typically do not involve any moving part or mechanical processes

Passive Cooling: Using passive building strategies to relieve the cooling load of a building by capitalizing on such things as predictable summer breezes or by shading windows from direct summer sunlight

Passive Design: In home construction, the building design and placement permits the use of natural processes such as radiation, convection, absorption, and conduction to support comfort levels

Passive Heating: The building's structure (or an 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. The home relies solely or primarily on non-mechanical means of heating

Passive Solar: Strategies for using the sun's energy to heat (or cool) a space, mass or liquid

Passive Solar Heating: Using the sun's energy (in the form of heat) to diminish a building's heating load, usually through the use of a large window area, which permit light penetration upon massive material to utilize the material's thermal storage capacity

Payback period: the time estimated for a capital investment to pay for itself, calculated by relating the cost of the investment to the profit it will earn or savings it will incur

Permeable Pavement: A paving material that allows the penetration of water, thus significantly reducing runoff from storm water

Pervious Paving: paving material that allows water to penetrate to the soil below; this reduces the amount of water that needs to be treated by the water system and increases the water aquifer

Perviousness: The percent of the surface area of a paving material that is open and allows moisture to pass through the material and soak into the earth below the paving system

Photovoltaic (PV) cell: An electronic device consisting of layers of semiconductor materials fabricated to form a junction (adjacent layers of materials with different electronic characteristics) and electrical contact, with the capability of converting incident light directly into electricity (direct current)

Post-consumer: Waste material generated by household or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose.

Potable Water: Water suitable for drinking and supplied from wells or municipal water systems.

Pressure Meter: A device for gauging the difference in air pressure between two spaces such as a garage and a crawl space

Previously Developed Sites: Sites that previously contained buildings, roadways parking lots, or were graded or altered by direct human activities

R-value: A unit of thermal resistance used for comparing insulating values of different materials; the higher the R-value of a material, the greater its insulating properties

Radon: A naturally occurring gas, colorless and odorless that has been shown to cause adverse health effects. Radon gas often enters a structure by seeping through cellar walls and floors

Rain Garden: An area, planted with deep-rooted plants, that collect storm water runoff and encourages absorption into the ground

Rain-water catchment/harvest: On-site rainwater harvest and storage systems used to offset potable water needs for a building and/or landscape. Systems can take a variety of forms, but usually consist of a surface for collecting precipitation (roof or other impervious surface) and a storage system. Depending on the end use, a variety of filtration and purification system also may be employed.

Rammed Earth Construction: A building technique involving dense compression of clay and dirt materials to create thick, flat surfaces, such as walls or floors

Rapidly Renewable Materials: Material considered to be an agricultural product both fiber and animal, that takes 10 years or less to grow or raise, and to harvest in an ongoing and sustainable fashion

Recycling: The collection, reprocessing, marketing and use of materials that were diverted or recovered from the solid waste stream

Refrigerants: The working fluids of refrigeration cycles. Refrigerants absorb heat from a reservoir at low temperatures and reject heat at higher temperatures

Regionally Manufactured Materials: For LEED for New Construction purposes, must be assembled as a finished product within a 500-mile radius of the project site

Regularly Occupied Spaces: Areas where workers are seated or standing as they work inside a building; in residential applications it refers to living and family rooms

Remediation: The process of cleaning up a contaminated site by physical, chemical or biological means. Remediation processes are typically applied to contaminated soil and groundwater

Renewable Energy Certificates (RECs): RECs are a representation of the environmental attributes of green power, and are sold separately from the electrons that make up the electricity

Salvaged Materials: Construction materials recovered from existing buildings or construction sites and reused in other buildings

Sequestration: The process by which carbon dioxide is removed from the atmosphere by plants

Shading Coefficient (SC): the ratio of solar heat gain through a given window glazing or screen material that through 1/8 inch clear, double strength glass. It is expressed as a number between 0 and 1. this term is being replaced by solar heat gain coefficient (SHGC), a more descriptive term. The lower a window's or screen's SC, the less solar heat it transmits and the greater its shading ability

Sick Building Syndrome (SBS): building whose occupants experience acute health and/or comfort effects that appear to be linked to time spent therein, but where no specific illness or cause can be identified. Symptoms include dizziness, headaches, irritated eyes, nausea, throat irritation, and coughing; these reactions typically cease when the person leaves the building. Complaints may be localized in a particular room or zone, or may spread throughout the building

Site Area: Synonymous with property area

Site Assessment: An evaluation of above-ground (including facilities) and subsurface characteristics, including the geology and hydrogeology of the site, to determine if a release has occurred, as well as the extent and concentration of the release

Smart House: consists of programmable electronic controls and sensors that can regulate heating, cooling, ventilation, lighting, appliance, and equipment operation in an energy conserving and climatically responsive manner

Solar Energy: Energy received from the sun in the form of electromagnetic radiation on the wavelength region from 0.3 to 2.7 microns. This includes all visible light as well as some ultraviolet and infrared radiation

Solar Reference (albedo): The ratio of the reflected solar energy to the incoming solar energy over wavelengths of approximately 0.3 to 2.5 micrometers

Solar Reflectance Index (SRI): A measure of a material's ability to reject solar heat, as shown by a small temperature rise

Sustainable Forestry: The practice of managing forest resources to meet the long-term forest product needs of humans while maintaining the biodiversity of forested landscapes. The primary goal is to restore, enhance and sustain a full range of forest values-economic, social and ecological

Sustainability: meeting the needs of the present without compromising the ability of future generations to meet their own needs (as defined by the Brundtland Commission 1987)

Tertiary Treatment: The highest form of wastewater treatment that includes the removal of nutrients, organic and solid material, along with biological or chemical polishing (generally to effluent limits of 10 mg/L BOD5 and 10 mg/L TSS)

Total Suspended Solids (TSS): Particles or flocs that are too small or light to be removed from storm water via gravity settling

Trombe Wall: An insulating wall that traps heat and releases it into the home for heating, or deflects heat

U-Value/U-factor: The measure of their rate of non-solar heat loss or gain through a material. It is the reciprocal of R-value. The lower the U-value, the greater the material's resistance to heat flow and the better its insulating value (the opposite of R-value)

Urban Growth: a boundary that identifies urban and urbanizable lands needed during a specified planning period to be planned an service to support urban development densities, and which separates these land form rural lands

Urban Infill: Redevelopment of sites, n the core of metropolitan areas for commercial and residential purposes

Ventilation: The process of supplying air to or removing air from a space for the purpose of controlling air contaminant levels, humidity, or temperature within the space. (ASHRAE62.1-2004)

VOCs (Volatile Organic Compounds): Carbon compounds that participate in atmospheric photochemical reactions (excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and carbonates, and ammonium carbonate.) The compounds vaporize (become a gas) at normal room temperatures

Water Footprint: An estimation of the amount of water used

Wetland Vegetation: Plants that require saturated soils to survive as well as certain tree and other plant species that can tolerate prolonged wet soil conditions

Whole-systems thinking: A process through which the interconnections of systems are actively considered, and solutions are sought that address multiple problems art the same time

Wind Power Systems: Convert the energy of the wind into electricity. Surplus electricity often is stored in a battery storage system for alter use, or the powe4 is passed back to the utility, essentially making the meter reverse

Xeriscape: Creative landscaping for water and energy efficiency and lower maintenance. The seven xeriscape principles are good planning and design, practical lawn areas, efficient irrigation, sols improvement, use of mulches, low water demand plants and good maintenance.

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