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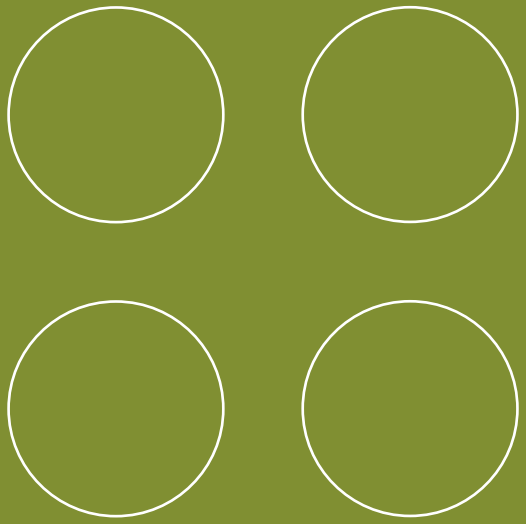

glossary

GREEN GLOSSARY
for high performance green buildings

The Green Glossary has been developed and produced in partnership by Antron® and the International Facility Managers Association. It is intended to serve as a reference guide for those involved in the design, construction and ownership/management of high performance green buildings. The information contained herein is based on accepted industry definitions and terminology from established industry sources. This information is not meant to endorse any particular product or practice, but rather to establish a "common language" for the industry. As such, it is endorsed by the following organizations:

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green glossary terms

A

Abridged Life Cycle Assessment (ALCA): A simplified methodology to evaluate the environmental effects of a product or activity holistically, by analyzing the most significant environmental impacts in the life cycle of a particular product, process, or activity. The abridged life cycle assessment consists of three complimentary components, restricted inventory analysis, abridged impact assessment, and improvement analysis, together with an integrative procedure known as "Scoping."

Absorption: Process by which a substance or particle is drawn into the structure of another.

ACH: See "Air Changes Per Hour."

Acid Deposition: The deposition of acid constituents to a surface. This occurs not only through precipitation, but also by the deposition of atmospheric particulate matter and the incorporation of soluble gases.

Acid Rain: The precipitation of dilute solutions of strong mineral acids, formed by the mixing in the atmosphere of various industrial pollutants (primarily sulfur dioxide and nitrogen oxides) with naturally occurring oxygen and water vapor.

Active Solar Techniques: Mechanisms, such as flat-plate collectors, which are designed to actively collect the energy of sunlight and use it; for example, to heat a building or to heat water.

Acute Exposure: A short-term exposure to a substance or material (typically less than one day).

Acute Toxicity: In toxicology, an effect that is manifested rapidly (i.e., minutes, hours, or even a few days) after the exposure to a hazard; either the exposure that generates the response, or the response itself, can be called acute (compare with "Chronic").

Adaptive Reuse: 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.

Adsorbent: Material that is capable of the binding and collection of substances or particles on its surface without chemically altering them.

Aeration: Exposing water to the air; often results in the release into the atmosphere of gaseous impurities found in polluted water.

Aerobic Treatment: Process by which microbes decompose complex organic compounds in the presence of oxygen and use the liberated energy for reproduction and growth.

Aerosol: Suspended droplets of liquid or liquid dispersions in air.

Agenda 21: A comprehensive blueprint for global action drafted by the 172 governments present at the 1992 Earth Summit organized by the United Nations in Rio de Janeiro, Brazil.

Air Changes Per Hour (ACH): Number of times per hour a volume of air, equivalent to the volume of space, enters that space.

Air Exchange Rate: The rate at which outside air replaces indoor air in a given space. Also see "Air Changes Per Hour."

Air Handling Unit: Equipment that includes a fan or blower, heating and/or cooling coils, regulator controls, condensate drain pans, and air filters.

Air Plenum: Any space used to convey air in a building, furnace or structure. The space above a suspended ceiling is often used as an air plenum.

Air Pollutant: Any substance in air that could, in high enough concentration, harm man, other animals, vegetation or material. Pollutants may include almost any natural or artificial composition of matter capable of being airborne. They may be in the form of solid particles, liquid droplets, gases or any combination thereof.

Air pollutants are often grouped in categories for ease in classification. Some of these categories are solids, sulfur compounds, volatile organic chemicals, particulate matter, nitrogen compounds, oxygen compounds, halogen compounds, radioactive compounds and odors.

Air Pollution: The presence of contaminants or pollutant substances in the air that interfere with human health or welfare, or produce other harmful environmental effects.

Air Toxics: Any air pollutant for which a National Ambient Air Quality Standard (NAAQS) does not exist that may reasonably be anticipated to cause serious or irreversible chronic or acute health effects in humans.

Airborne Particulates: Total suspended particulate matter found in the atmosphere as solid particles or liquid droplets. Chemical composition of particulates varies widely, depending on location and time of year. Sources of airborne particulates include dust, emissions from industrial processes, combustion products from the burning of wood and coal, combustion products associated with motor vehicle or non-road engine exhausts, and reactions to gases in the atmosphere.

Alternative Energy: Energy from a source other than the conventional fossil-fuel sources of oil, natural gas and coal (i.e. wind, running water, and the sun). Also referred to as "Alternative Fuel."

Alternative Energy Sources: Energy sources, which can be substituted for fossil fuels, nuclear power, and large-scale hydroelectric power; e.g., solar, wind, geothermal, biomass.

Ambient Air: The surrounding air.

Anthropogenic: Derived from human activities.

Antimicrobial: An agent that kills microbes.

Aquifer: Any underground water-bearing rock formation or group of formations, that supplies ground water, wells, or springs.

ASHRACE: American Society of Heating, Refrigeration and Air Conditioning Engineers.

B

BACT—Best Available Control Technology: An emission limitation based on the maximum degree of emission reduction (considering energy, environmental and economic impacts) achievable through application of production processes and available methods, systems and techniques. BACT does not permit emissions in excess of those allowed under any applicable Clean Air Act provisions. Use of the BACT concept is allowable on a case-by-case basis for major new or modified emissions sources in attainment areas and applies to each regulated pollutant.

Bake-out: Process by which a building is heated in an attempt to accelerate VOC emissions from furniture and materials.

BEES: See "Building for Environmental and Economic Sustainability."

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

Big Five Energy Sources: Coal, oil, natural gas, large-scale hydroelectric, and nuclear power.

Bioaccumulants: Substances that increase in concentration in living organisms as they take in contaminated air, water or food because the substances are very slowly metabolized or excreted.

Bioassay: Diverse sets of analytical methodologies, which utilize living organisms – applications range from assessment of water pollutants to screening pharmaceuticals.

Biocide: Product typically used to kill microorganisms.

Biodegradable: A material which can serve as a nutrient source for bacteria or fungi, and in the process is decomposed into basic molecular building blocks (e.g. carbon dioxide, water, and nitrogen oxides).

Biodegradable Product Claims: "Reliable scientific evidence that the entire product or package will completely break down" (by living organisms) "and return to nature, i.e., decompose into elements found in nature within a reasonably short period of time after customary disposal" (16 C.F.R. § 260.7 (b))."

Biodiversity: The totality of living animals, plants, fungi and microorganisms in a region. According to the World Conservation Union (IUCN), it is "the variety of life in all forms, levels and combinations. Includes ecosystem diversity, species diversity, and genetic diversity."

Bioengineering: Creation of new organisms with specific attributes through the insertion of the appropriate genetic material into the original organisms genome.

Biological Contamination: Contamination caused by bacteria, molds and their spores, pollen, viruses, and other biological debris. Indoor biological contamination can be the result of high levels of moisture intrusion (either through leaks, condensation on surfaces or poor relative humidity control). Poor cleaning practices and HVAC maintenance can also be a source of human exposure. People exposed to biologically contaminated environments may display allergic-type responses or physical symptoms such as coughing, muscle aches and respiratory congestion.

Biological Impoverishment: The loss of variety in the biosphere (even when species have not gone completely extinct).

Biological Oxygen Demand (BOD): A measure of the amount of oxygen consumed in the biological processes that break down organic matter in water. BOD is used as an indirect measure of the concentration of biologically degradable material present in organic wastes. It usually reflects the amount of oxygen consumed in five days by biological processes breaking down organic waste. BOD can also be used as an indicator of pollutant level, where the greater the BOD, the greater the degree of pollution. Also referred to as "biochemical oxygen demand."

Biological Productivity: Nature's capability to reproduce and regenerate, thereby accumulating biomass.

Biomagnification: The increasing concentration of a substance as it passes into higher trophic levels of a food web. Many bioaccumulants are also biomagnified.

Biomass: Plant matter such as trees, grasses, agricultural crops or other biological material. It can provide a renewable source of electrical power, fuel, or chemical feedstocks. All material of recent plant or animal origin.

Biome: A large-scale category that includes many communities of a similar nature.

Bioremediation: The use of bacteria and other small organisms (such as single-celled and multicellular microbes and fungi) to clean up or reduce unwanted concentrations of certain substances: also known as biotreatment.

Biosphere: (1) The part of the earth and its atmosphere in which living organisms exist or that is capable of supporting life. (2) The ecosystem composed of the earth and the living organisms inhabiting it.

Black Water: Wastewater from toilets and urinals, which contains pathogens that must be neutralized before the water can be safely reused. After neutralization, black water is typically used for non-potable purposes, such as flushing or irrigation.

Bottom-Up Approach: The development and encouragement of sustainable uses of biodiversity that provides incentives to save species while also respecting the right of all people to support their families and have a decent quality of life.

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

Building Envelope: The exterior surface of a building's construction—the walls, windows, roof and floor. Also referred to as "building shell."

Building for Environmental and Economic Sustainability (BEES): Software program developed by the NIST (National Institute of Standards and Technology). It is aimed at designers, builders, and product manufacturers. It provides a way to balance the environmental and economic performance of building products. BEES measures the environmental performance of building products by using an environmental life-cycle assessment approach specified in the latest versions of ISO 14000 draft standards. All stages in the life of a product line are analyzed: raw material acquisition, manufacture, transportation, installation, use, and recycling and waste management. Economic performance is measured using the ASTM standard life cycle cost method, which covers the costs of initial investment, replacement, operation, maintenance and repair, and disposal. Environmental and economic performance are combined into an overall performance measure using the ASTM standard for Multi-Attribute Decision Analysis. The BEES methodology is being refined and expanded under sponsorship of the EPA's Environmentally Preferable Purchasing Program. BEES currently addresses categories of product choices and is not specific to a type of product.

Building Life Cycle: The amortized annual cost of a building, including capital costs, installation costs, operating costs, maintenance costs and disposal costs discounted over the lifetime of the building.

Buildings Reborn: The adaptation of old buildings for uses different from their original purpose.

Building-related Illness: Diagnosable illness whose cause and symptoms can be directly attributed to a specific pollutant source within building (i.e. Legionnaire's disease, hypersensitivity, pneumonitis). Also see "Sick Building Syndrome."

By-product: Material, other than the principal product, generated as a consequence of an industrial process or as a breakdown product in a living system.

C

Carbon Dioxide: Odorless gas commonly sourced by respiration, and has been widely used as a measure of the ventilation adequacy of a space. A principle greenhouse gas. It is the result of the oxidation (including active combustion and respiration) of carbon based substances.

Carbon Monoxide: A colorless, odorless and highly toxic gas commonly created during combustion.

Carbon Tax: A charge on fossil fuels (coal, oil, natural gas) based on their carbon content. When burned, the carbon in these fuels becomes carbon dioxide in the atmosphere, the chief greenhouse gas.

Carcinogen: Any substance capable of causing or aggravating cancer.

Carrying Capacity: The maximum population size of a given species that an area can support without reducing its ability to support the same species in the future.

CFM: See "Cubic ft./min."

Chemical Oxygen Demand (COD): A measure of the oxygen required to oxidize all compounds, both organic and inorganic, in water.

Chlorofluorocarbons (CFCs): Chlorofluorocarbons, a very stable family of organic chemical compounds, are comprised of carbon, chlorine, and fluorine. Because of their stability, these compounds can migrate to the stratosphere, where they are broken down by more intense short wavelength UV light into fragments that destroy ozone. These compounds are also greenhouse gases.

Chronic: An exposure which spans long time periods – typically years. In toxicology, a chronic health effect is the result of a long term exposure; e.g., emphysema as a result of smoking.

CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora (U.S. Fish and Wildlife Service) provides lists of endangered species of timber and other natural products.

Clean Air Act: A federal statute enacted in 1963 that was the first of a series of acts and amendments that exerted increasing federal pressure on air polluters to clean up their emissions.

Clean Design: The systematic incorporation of life cycle environmental considerations into product design.

Clean Water Act: A federal statute enacted in 1972 that has been successful in improving the water quality of lakes and rivers.

Climate: The temperature, humidity, precipitation, winds, radiation, and other meteorological conditions characteristic of a locality or region over an extended period of time.

Climate Change: The term "climate change" is sometimes used to refer to all forms of climatic inconsistency, but because the earth's climate is never static, the term is more properly used to imply a significant change from one climactic condition to another. In some cases, "climate

change" has been used synonymously with the term "global warming"; scientists, however, tend to use the term in the wider sense to also include natural changes in climate. Also referred to as "global climate change." Also see "Global Warming."

Closed-loop Process: Part of an industrial production process; not part of a waste management process. Materials reclaimed and returned in a closed-loop process are neither classified as, defined as, nor operate as, a waste, i.e., any discarded material. Materials in a closed-loop process are treated as commodities in a manner designed to avoid loss or release to the environment (See Electronic Code of Federal Regulations (e-CFR), 40 C.F.R. § 261.4(a)(8)).

Closed-loop Recycling: A recycling system that uses a "closed-loop process." See "closed-loop process" Not to be confused with "horizontal recycling". See "horizontal recycling."

Cogeneration: The simultaneous production of electrical or mechanical energy (power) and useful thermal energy from the same fuel/energy source such as oil, coal, gas, biomass or solar.

Commissioning: Process by which the operating systems of a building are tested and adjusted prior to occupancy.

Comparative Risk Analysis: An environmental decision-making tool used to systematically measure, compare and rank environmental problems or issue areas. The process typically focuses on the risks a problem poses to human health, the natural environment and quality of life, and results in a list (or lists) of issue areas ranked in terms of relative risk.

Competitive Exclusion: A situation where niche overlap is very great and competition is so intense that one species eliminates another from a particular area.

Compost: Process whereby organic wastes, including food wastes, paper and yard wastes, decompose naturally, resulting in a product rich in minerals and ideal for gardening and farming as a soil conditioner, mulch, resurfacing material or landfill cover.

Compostable Product Claims: "Competent and reliable scientific evidence that all materials in the product or package will break down into, or otherwise become part of, usable compost (e.g., soil conditioning material, mulch) in a safe and timely manner in an appropriate composting program or facility, or in a home compost pile or device (16 C.F.R § 260.7 (c))."

Concentration: Amount of a material per unit volume (i.e. milligrams per liter).

Conservation: Preserving and renewing, when possible, human and natural resources. The use, protection and improvement of natural resources according to principles that will ensure their highest economic or social benefits.

Conservation Easements: A preservation tool that may be used by a land trust or conservation group to limit development.

Constructed Wetland: A human-made habitat for waterfowl and other life, often using greywater or rainwater catchment overflow.

Construction Administration (CA): The representation of the owner relative to the integrity of the design.

Construction and Demolition (C&D) Debris: Nonhazardous materials such as asphalt, concrete, brick, lumber, wallboard, roofing materials, ceramics, and plastics resulting from construction, deconstruction, remodeling, repair, cleanup, or demolition operations.

Consumption: The use of goods and services, materials and energy, by humans.

Contaminant: Any physical, chemical, biological or radiological substance or matter that has an adverse effect on air, water or soil.

Contamination: Introduction into water, air and soil of microorganisms, chemicals, toxic substances, wastes or wastewater in a concentration that makes the medium unfit for its next intended use. Also applies to surfaces of objects, buildings, and various household and agricultural use products.

Contingent Valuation Method (CVM): A method that attempts to "objectively" measure the dollar value of changes in environmental quality; often uses questionnaires and other surveys that ask people what they would pay for various environmental improvements.

Continuous Commissioning: An on-going program of structured commissioning throughout the lifetime of a building.

Conventional Power: Power produced from non-renewable fuels such as coal, oil, nuclear and gas, also known as traditional power.

Coproduct: A marketable by-product from a process. This includes materials that may be traditionally defined as wastes such as industrial scrap that is subsequently used as a raw material in a different manufacturing process.

Cradle-to-Cradle: Derived from the "Cradle-to-Grave" design methodology but ensures that end-of-life will result in materials that will become nutrients or feedstock for recycling into other valuable products.

Cradle-to-Grave: Design methodology that takes into account all stages of the life cycle (raw material extraction through end-of-life disposal) of a product, service, or building early in the design process.

Criteria Pollutants: A list of air pollutants identified in the 1970 Clean Air Act Amendments deemed to be critical in controlling air pollution and for which National Ambient Air Quality Standards (NAAQS) were established. Criteria pollutants include: sulfur dioxide (SO2), nitrogen dioxide (NO2), Volatile Organic Compounds (VOCs), particulate matter, carbon monoxide (CO), and lead (Pb).

Cubic ft./min. (CFM): Cubic feet per minute, a common measure of airflow.

D

Decay Rate: Math function that reflects the declining emissions of a product over time.

Deconstruction: A process to carefully dismantle or remove useable materials from structures, as an alternative to demolition. It maximizes the recovery of valuable building materials for reuse and recycling and minimizes the amount of waste land-filled. Deconstruction options may include: Reusing the entire building by remodeling, moving the structure to a new location or taking the building apart to reuse lumber, windows, doors, and other materials.

Deep-well Injection: Deposition of raw or treated, filtered hazardous waste by pumping it into deep wells, where it is contained in the pores of permeable subsurface rock.

Deforestation: The removal of forest cover from an area.

Delisted Species: Species that are removed from the endangered species list either because it is no longer endangered or threatened, or because it has gone extinct.

Demand-side Waste Management: Process whereby consumers use purchasing decisions to communicate to product manufacturers that they prefer environmentally sound products packaged with the least amount of waste, made from recycled or recyclable materials, and containing no hazardous substances.

Dematerialization: The reduction of the size of products, particularly as a way to conserve mineral resources.

Desertification: The spread of desert-like conditions due to human exploitation and misuse of the land.

Design for Environment: An engineering perspective in which the environmentally related characteristics of a product, process, or facility design are optimized.

Dioxin: Typically defined as a class of similar chorinated compounds that are persistent, bioaccumulative, and very toxic. Predominantly related to human activities – manufacturing and incineration.

Disposal: Final placement or destruction of toxic, radioactive or other wastes; surplus or banned pesticides or other chemicals; polluted soils; and drums containing hazardous materials from removal actions or accidental releases. Disposal may be accomplished through use of approved secure landfills, surface impoundments, land farming, deep-well injection, ocean dumping or incineration.

Dose-response: Relationship between exposure levels and biological effects – effects can be positive or negative.

Downcycling: A term coined to disparagingly describe creation of a product of lesser intrinsic value manufactured from a material at the end of its service life, which had higher initial end use value; it is important to note that as the term downcycle has historically been used, it does not provide insight into environmental benefit (e.g. there may actually be more environmental benefit from extending the life of a complex polymer prior to energy recovery or taking it apart into its respective building blocks).

Downstream Impacts: Environmental impacts caused by consumer use and product disposal.

Dynamic Environmental Chamber: Well-controlled system (including temperature, relative humidity (RH) and air quality/purity) that utilizes realistic air flows for the assessment of chemical emissions from products and materials.

E

Earth Summit: The United Nations Conference on Environment and Development (UNCED), held an international meeting in Rio de Janeiro in June 1992 to discuss environmental and development issues.

Ecodesign: A design process that considers the environmental impacts associated with a product throughout its entire life: from acquisition of raw materials through production/manufacturing and use to end of life. Ecodesign seeks to improve the aesthetic and functional aspects of the product with due consideration to social and ethical needs while simultaneously reducing environmental impacts.

Ecology: A branch of science concerned with the interrelationship of organisms and their environment.

Ecology, first law of: Garrett Hardin's concept that "we can never do merely one thing; sometimes referred to as the "Law of Unintended Consequences."

Ecosystem: An interconnected and symbiotic grouping of animals, plants, fungi and micro-organisms that sustains life through biological, geological and chemical activity.

Embodied Energy: Energy that is used during the entire life cycle of the commodity for manufacturing, transporting and disposing of the commodity as well as the inherent energy captured within the product itself. This term does not always correlate to life cycle environmental impact.

Emission Controls: Any measure that reduces emissions into air, water or soil. The most effective emission controls involve the redesign of the process so less waste is produced at the source. Common emission controls are wastewater treatment plants, stack scrubbers and in-plant, and solid waste reduction programs.

Emission Factor: Quantity of a substance or substances released from a given area or mass of a material at a set point in time (i.e. milligrams per square meter per hour).

Emissions: The release of gases, liquids and/or solids from any process or industry. Liquid emissions are commonly referred to as effluents.

Emissions Offsets: An approach to local emissions control by reduction of existing sources to allow for the addition of new sources.

Endangered Species Act of 1973: An act that directs the U.S. Fish and Wildlife Service to maintain a list of species that are endangered (in immediate danger of extinction) or threatened (likely to be endangered soon).

Energy Conservation: Decreasing the demand for use of energy.

Energy Efficiency: The ratio of energy output of a conversion process or a system to its energy input.

Energy Recovery: Obtaining usable energy by consuming waste through a variety of processes.

Environmental Footprint: Or ecological footprint, is the land (and water) area that would be required to support a defined human population and material standard indefinitely. For an industrial setting, this is a company's environmental impact determined by the amount of depletable raw materials and nonrenewable resources it consumes to make its products, and the quantity of wastes and emissions that are generated in the process. Traditionally, for a company to grow, the footprint had to get larger. Today, finding ways to reduce the environmental footprint is a priority for leading companies.

Environmental Impact: Any change to the environment, whether adverse or beneficial, wholly or partially resulting from human activity, industry or natural disasters.

Environmental Preference: To revise product specifications, policies, and/or purchasing contract terms to request or give preference to products or services that minimize impacts on the environment throughout the process of manufacture, distribution, use, reuse and recycling, and disposal.

Environmental Restoration: The act of repairing damage to a site caused by human activity, industry or natural disasters. The ideal environmental restoration, though rarely achieved, is to restore the site as closely as possible to its natural condition before it was disturbed.

Environmental Tobacco Smoke (ETS): Secondhand tobacco smoke exposure.

Environmental Wisdom: The ability to sort through facts and information about the environment and make correct decisions and plan long-term strategies.

Environmentally Preferable Products: Established by Executive Order 13101, Environmentally Preferable Products are products identified as having a lesser or reduced effect on health and the environment when compared with competing products that serve the same purpose.

Environmentally Preferable Purchasing: Environmentally Preferable Purchasing is a United States federal-wide program (Executive Order 13101) that encourages and assists Executive agencies in the purchasing of Environmentally Preferable Products and services.

EPP: See "Environmentally Preferable Products."

Erosion: The process of soil and nutrient loss, which leads to a decline in biological productivity of an area. Can also be used metaphorically to refer to depletion.

Estuary: A bay or inlet, often at the mouth of a river, in which large quantities of freshwater and seawater mix together. These unique habitats are necessary nursery grounds for many marine fish and shellfish.

Etiological: Relating to cause, such as disease or disorder.

ETS: See "Environmental Tobacco Smoke."

Executive Order 13101: An executive order signed in 1998, by then President Clinton, directing federal agencies to purchase Environmentally Preferable products and services.

Exotic Species: A nonnative species that is artificially introduced to an area.

Exposure: Quantity of a substance or material that a living organism could ingest, inhale, or absorb from a given environment.

Extinction: The complete loss of an entire species.

Extinction Vortex: Term describing the rapid decline and eventual extinction of a species.

F

Fertilizer: A substance, often an artificial chemical mixture, which is spread on or through the soil to make it more fertile.

Filtration: The percolation of water through sand and other settled sediment to remove suspended particles.

Five E's: The five potential values of environmental resources: esthetic (aesthetic), emotional, economic, environmental services, and ethical.

Fly Ash: The solid residue derived from incineration processes. Fly ash can be used as a substitute for portland cement in concrete.

Fossil Fuel: A fuel, such as coal, crude oil and natural gas, produced by the decomposition of ancient (fossilized) plants and animals; compare to "Alternative Energy."

Fossil Resources: Electric generation using natural gas, oil, coal, or petroleum coke or other petroleum-based fuels.

Fuel Cell: In this device, electrons are removed from hydrogen atoms to form an electric current; the hydrogen ions combine with oxygen to form water.

Fugitive Emissions: Emissions from valves or leaks in process equipment or material storage areas that are difficult to measure and do not flow through pollution-control devices.

Full-Cost Accounting: An accounting system in which environmental costs are built directly into the prices of products and services.

Fundamental Building Systems Commissioning: Verification by an outside source that the fundamental building elements and systems are designed, installed and calibrated to operate as intended.

Fungicide: Pesticides that are used to control, deter or destroy fungi.

Fungus (Fungi): Molds, mildews, yeasts, mushrooms and puffballs; a group of organisms that are lacking in chlorophyll and usually non-mobile, filamentous and multicellular. Some grow in soil; others attach themselves to decaying trees and other plants to obtain nutrients. Some are pathogens; others stabilize sewage and digest composted waste.

Future Costs: Environmental costs of a product which are not paid now, but rather are passed on to future generations.

G

Gas Chromatography: Analytical process by which chemical mixtures are separated into individual components for quantitative and perhaps qualitative analysis.

Geothermal: Energy (heat) originating from deep within the Earth.

Global Economy: The emerging international economy characterized by free trade in goods and services, unrestricted capital flows and weakened national powers to control domestic economies.

Global Warming: A process that raises the air temperature in the lower atmosphere due to heat trapped by greenhouse gases, such as carbon dioxide, methane, nitrous oxide, CFCs and ozone. It can occur as the result of natural influences, but the term is most often applied to the warming predicted to occur as a result of human activities (i.e. emissions of greenhouse gases).

Gray Water: Untreated or partially treated wastewater that is used for such purposes as watering lawns or flushing toilets (rather than using cleaner water of drinkable quality).

Green: A practice that works with nature instead of against it.

Green Accounting: An informal term referring to management accounting systems that specifically delineate the environmental costs of business activities rather than including those costs in overhead accounts.

Green Buildings: Buildings in which environmental considerations are given to design, construction and operation.

Green Design: A design, usually architectural, conforming to environmentally sound principles of building, material and energy use. A green building, for example, might make use of solar panels, skylights and recycled building materials.

Green Roof: A garden roof with lightweight medium to support low growing plants. It provides evaporative cooling, converts carbon dioxide to oxygen and reduces storm water runoff. Green roofs can also include reflective roofs (cool roofs).

Green Technologies: Environmentally friendly technologies including technologies that promote sustainability via efficiency improvements, reuse/recycling, and substitution.

Greenbelt Zones: Zones or areas in or around a city where the removal of native vegetation is prohibited and/or parks and other open, undeveloped, and vegetated space is protected.

Greenfield Site: Land on which no urban development has previously taken place; usually understood to be on the periphery of an existing built-up area.

Greenhouse Effect: (1) The warming of earth's surface and lower atmosphere as a result of carbon dioxide and water vapor in the atmosphere, which absorb and reradiate infrared radiation. (2) An intensification of this warming effect brought about by increased levels of carbon dioxide in the atmosphere, resulting from the burning of fossil fuels.

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.

Greenmail: When companies threaten to close or relocate (often to another country) if they are forced to comply with environmental laws.

Greenwash: Disinformation disseminated by an organization so as to present an environmentally responsible public image.

Grid: A term used to describe the network of wires and cables which transport electricity from a power plant.

Groundwater: A general term for the water beneath the Earth's surface.

H

Habitat: (1) The natural home of an animal or plant. (2) The sum of the environmental conditions that determine the existence of a community in a specific place.

Habitat Fragmentation: Habitat disruption where natural habitat is broken into small, relatively isolated sections.

Halons: Effective fire suppressants, which leave no residue and are of relatively low toxicity. Historically, they have been used in applications where conventional extinguishing agents (e.g., water) would be dangerous or result in significant peripheral damage – (e.g., electronics, electrical, and HVAC.) Note, Halons adversely affect stratospheric ozone and are being phased out.

Hazard: A material or condition that may cause damage, injury, or other harm, frequently established through standardized assays performed on biological systems or organisms. The confluence of hazard and exposure create a risk.

Hazardous Waste: Wastes that are particularly dangerous or destructive; specifically characterized by one or more of the following properties: ignitable, corrosive, reactive, or toxic.

Heat Recovery Ventilation: A system that reclaims the heat from warm exhaust air exiting a building and uses it to pre-heat entering fresh air.

Heavy Metals: Elements such as lead, mercury, zinc, copper, cadmium, and so forth, that may be required in trace amounts by organisms, but can cause damage when ingested in larger quantities.

Herbicide: A chemical substance used to kill plants.

High Performance Building: A green or sustainable building often with an emphasis on the use of advanced technology, or "smart infrastructure," and its impact on tenant ability to control key building comfort measures such as temperature and light levels to increase performance.

Historic Image Restoration: The renovation of a building or community that saves and restores the historic image of that place.

Holistic: A wide-reaching approach to a theory, a task, or a problem that encompasses all the elements of the system because of the interdependency of those elements.

Horizontal Recycling: A recycling system that turns a majority of the original product back into a similar product as the original.

Hot Spot: An area of exceptionally high species richness, especially concentrations of localized rare species that occur nowhere else.

Hydrocarbons (HC): Chemical compounds that consist entirely of carbon and hydrogen.

Hydroelectric Power: The use of artificial or natural waterfalls to generate electricity.

Hydrological Cycle: The natural cycle of water from evaporation, transportation in the atmosphere, condensation (rain), and the flow back to the ocean.

Hydronic Heating: A radiant heat system that distributes hot water through pipes, either to radiators or through a thermal mass floor. The floor absorbs heat and evenly radiates it to the living space.

Hydrophilic: Having a strong affinity for water; attracting, dissolving in or absorbing water.

Hydrophobic: Having a strong aversion to water; repelling water.

Hypersensitivity: Exaggerated immune system response to an allergen.

I

IAQ: See "Indoor Air Quality."

Impact Analysis: The second stage of life cycle assessment, in which the environmental impacts of a process, product, or facility are determined.

Improvement Analysis: The third stage of life cycle assessment, in which design for environment techniques are used in combination with the results of the first and second LCA stages to improve the environmental plan of a process, product, or facility.

Incineration: The burning of trash and garbage at high temperatures in a large furnace.

Indicator Species: A species in a community or ecosystem that is more susceptible to disturbances than most other species.

Indicators: (1) A measurement or reporting tool used to gauge how well a society is achieving its economic, environmental and societal goals. (2) A species of plant or animal, or a community, whose occurrence serves as evidence that certain environmental conditions exist.

Indoor Air Quality (IAQ): ASHRAE defines acceptable indoor air quality as air in which there are no known contaminants at harmful concentrations as determined by cognizant authorities and with which 80% or more people exposed do not express dissatisfaction.

Integrated Coastal Zone Management: A continuous and dynamic process by which decisions are made for the sustainable use, development and protection of coastal and marine areas and resources. ICM acknowledges the interrelationships that exist among coastal and ocean uses and the environments they potentially affect.

Integrated Waste Management: The complementary use of a variety of practices to handle solid waste safely and effectively. Techniques include source reduction, recycling, composting, combustion and landfilling.

Inventory Analysis: The first stage of life cycle assessment, in which the inputs and outputs of materials and energy are determined for a process, product, or facility.

Irreversible Disassembly: Disassembly in which brute force is used to recover the bulk of the principal materials from a product, and in which no refurbishment and reuse of components or modules is possible.

K

Keystone Species: A certain species that one or more other species are dependent upon for food, reproduction, or some other basic need.

Kyoto Protocol: From December 1 through 11, 1997, more than 160 nations met in Kyoto, Japan, to negotiate binding limitations on greenhouse gases for the developed nations, pursuant to the objectives of the Framework Convention on Climate Change of 1992. The outcome of the meeting was the Kyoto Protocol, in which the developed nations agreed to limit their greenhouse gas emissions, relative to the levels emitted in 1990. The United States' target is to reduce emissions from 1990 levels by 7% during the period 2008 to 2012.

L

Land Trust Alliance: An association of hundreds of local land trusts, dedicated to preserving open space and natural habitat, in the United States.

Landfill: In the simplest sense, an area where solid waste is deposited. In a sanitary facility, a hole in the ground is lined so that materials will not escape, and it is covered with layers of dirt as it is progressively filled. When completely filled, it

is capped and sealed with more dirt and topsoil.

Leachate: The solution that is produced by the action of percolating water through a permeable solid, as in a landfill.

LEED™ Rating System: LEED (Leadership in Energy and Environmental Design) is a self-assessing system designed for rating new and existing commercial, institutional, and high-rise residential buildings. It evaluates environmental performance from a "whole building" perspective over a building's life cycle, providing a definitive standard for what constitutes a green building.

Life Cycle of a Product: All phases associated with the life of a product (i.e. creation, distribution, sale, installation, end use, care and disposal/ reuse/recycle).

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. The life cycle assessment consists of three complimentary components – inventory analysis, impact analysis, and improvement analysis – together with an integrative procedure known as scooping.

Life Cycle Cost (LCC) Method: A technique of economic evaluation that sums over a given study period the costs of initial investment (less resale value), replacements, operations (including energy use), and maintenance and repair of an investment decision (expressed in present or annual value terms).

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

Life-Support Systems: According to the World Conservation Union (IUCN), the biophysical processes "that sustain the productivity, adaptability and capacity for renewal of lands, waters, and/or the biosphere as a whole."

Light Pollution: Excess "waste" light given off by outside sources (or sources visible from the outside) at night.

Limiting Nutrient: The nutrient in shortest supply in a particular ecosystem.

Lowest Observed Adverse Effect Level (LOAEL): The lowest level of a stressor (physical, chemical or biological) that can cause a statistically significant biological effect.

M

Mass Spectrum: Characteristic fingerprint of a substance, which makes its identification possible.

Materials Recovery Facility: Commonly called a MRF (pronounced "murf"). A processing facility that removes recyclables from the waste stream. A "dirty MRF" removes reusable materials from unseparated trash; a "clean MRF" separates commingled recyclables.

Megalopolis: A single vast urban area formed by the expansion and merging of adjacent cities and their suburbs.

Methane: A colorless, nonpoisonous, flammable gas created by anaerobic decomposition of organic compounds. A major component of natural gas used in the home.

Microbial Growth: The amplification or multiplication of microorganisms such as bacteria, algae, diatoms, plankton and fungi.

Microbiological Organism: Broad range of living organisms, which typically can be viewed only through a microscope.

Micron: A measure of length; one millionth of a meter.

Mold: Mold is a fungus that typically grows in a filamentous cobweb-like mass under damp conditions and is capable of producing staggering numbers of reproductive spores in as little as a few days. Molds are non-chlorophyll containing entities, which require organic matter, living or dead, for survival. Mold is a critical participant in the "recycling" of dead organic material on the planet. Molds are extraordinarily diverse in character and their relationship with humans span the positive (e.g., food, antibiotics) to the negative (e.g., pathogens, antigens, toxins).

Montreal Protocol: An agreement reached in 1987 at a meeting in Montreal, Canada, whereby a number of industrialized countries pledged to freeze CFC production at 1986 levels and then gradually decrease CFC production to 50% of 1986 levels by 1999.

Multiple-Use Development: The use of a piece of land for different purposes simultaneously, such as the use of riverside land for water filtration by plants, recreation, flood buffers, and wildlife habitat.

Mutagen: A substance that can cause inheritable changes in DNA.

N

National Ambient Air Quality Standards (NAAQS): Standards established by the EPA that apply to outdoor air throughout the country.

Natural siting criteria: An approach where the locations of roads, buildings, and other structures

are selected to be where the geological and biological factors are most favorable; essentially "working with nature" when selecting locations for human-made structures.

Net Present Value: Determination of current value of buildings and components in today's dollars that reflects a stream of current and future benefits and costs; projected future costs and benefits must be discounted to give a fair value in today's dollars.

Neurotoxin: A substance that can cause damage to nerve cells or the nervous system.

Niche: An organisms "occupation," or how it lives.

Nitric Oxide (NO): A gas formed by combustion under high temperature and high pressure in an internal combustion engine, and then converted by

sunlight and photochemical processes in ambient air to nitrogen oxide. Nitric oxide is a precursor of ground-level ozone pollution, or smog.

Nitrogen Oxide (NOx): The result of photochemical reactions of nitric oxide in ambient air. It is a major component of photochemical smog, a product of combustion from transportation and stationary sources, and a major contributor to the formation of ozone in the lower atmosphere and to acid deposition.

No Observable Adverse Effect Level (NOAEL): An upper limit exposure level determined experimentally at which there are no statistically significant biological effects observed in test subjects.

Nonhazardous Waste: Waste that is not classified as hazardous.

Non-Potable Water: Undrinkable water.

Nonrenewable Energy: Energy derived from depletable fuels (oil, gas, coal) created through lengthy geological processes and existing in limited quantities on the earth.

Nonrenewable Resource: A resource that cannot be replaced in the environment (i.e. fossil fuels) because it forms at a rate far slower than its consumption.

Nuclear Power: The use of nuclear fission reactions to generate electricity.

O

Ocean Energy: Waves, tides, differential heat layers, and other sources of energy directly related to the world's oceans.

Odor Threshold: The experimental determination of the concentration of a substance which can just be detected by smell. Also referred to as "Threshold Odor."

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

Open-loop Process: Any process that does not fit the definition of "closed-loop process."

Open-loop Recycling: Any recycling system that uses an open-loop process. See "open-loop process."

Organic Compound: Vast array of substances typically characterized as principally carbon and hydrogen, but that may also contain oxygen, nitrogen and a variety of other elements as structural building blocks.

Organic Farming: Avoiding the use of synthetic chemicals as fertilizers, pesticides, and herbicides, when farming.

OSHA: Occupational and Safety Hazards Association.

Overshoot: The growth beyond an area's carrying capacity, which leads to a "crash."

Ozone (O_3): A naturally occurring, highly reactive, irritating gas comprising triatomic oxygen formed by recombination of oxygen in the presence of ultraviolet radiation. It forms a protective layer that shields the earth and its inhabitants from excessive exposure to damaging ultraviolet radiation. Ozone can also form in the lower atmosphere in the reaction of certain hydrocarbons, nitrogen oxides, air and light (smog formation).

Ozone Depletion: Destruction of the earth's ozone layer, which can be caused by the photolytic breakdown of certain chlorine-and/or bromine-containing compounds (e.g. chlorofluorocarbons), which catalytically decompose ozone molecules.

Ozone Hole: A thinning break in the ozone layer. Designation of the amount of such depletion as an "ozone hole" is made when the detected amount of depletion exceeds 50 percent. Seasonal ozone holes have been observed over the antarctic and arctic regions, part of Canada, and the extreme northeastern United States.

Ozone Layer: The protective layer in the atmosphere, about 15 miles above the ground, that absorbs some of the sun's ultraviolet rays, thereby reducing the amount of potentially harmful radiation that reaches the earth's surface.

P

Particulate Pollution: Pollution made up of small liquid or solid particles suspended in the atmosphere or water supply.

Particulates: Small aggregates of matter, in either a solid or a liquid state, that are larger than individual molecules and are one of the categories of air pollution.

Passive Design: Design that reduces the energy consumption of a building by taking advantage of natural heating, cooling and lighting.

Passive Solar Design: A type of architecture that uses the inherent characteristics of a building to capture heat and light from the Sun.

Pathogens: Microorganisms (i.e. bacteria, viruses or parasites) that can cause disease in humans, animals and plants.

Permaculture Design: A system of assembling conceptual, material and strategic components in a pattern that functions to benefit life in all forms.

Pesticide: Any chemical used for killing insects, weeds, etc.

Petroleum: Crude oil or any fraction thereof that is liquid under normal conditions of temperature and pressure. The term includes petroleum-based substances comprising a complex blend of hydrocarbons derived from crude oil through the process of separation, conversion, upgrading and finishing, such as motor fuel, jet oil, lubricants, petroleum solvents and used oil.

pH Scale: A logarithmic scale that is used to measure acidity; 1 is very acidic, 7 is neutral, and 14 is very basic (alkaline).

Photochemical Oxidants: Air pollutants formed by the action of sunlight on oxides of nitrogen and hydrocarbons.

Photochemical Smog: Air pollution caused by chemical reactions of various pollutants emitted in the presence of sunlight.

Photosynthesis: The biological process in chlorophyll-containing cells that transforms sunlight, water, and carbon dioxide into plant matter (or biomass).

Photovoltaics: The use of semiconductor technology to generate electricity directly from sunlight.

Pollution: Generally, the presence of a substance in the environment that, because of its chemical composition or quantity, prevents the functioning of natural processes and produces undesirable environmental and health effects. Under the Clean Water Act, for example, the term has been defined as the man-made or man-induced alteration of the physical, biological, chemical and radiological integrity of water and other media.

Pollution Prevention: (1) Techniques that eliminate waste prior to treatment, such as changing ingredients in a chemical reaction. (2) Identifying areas, processes and activities that create excessive waste products or pollutants in order to reduce or prevent them through alteration or elimination of a process. (3) The EPA has initiated a number of voluntary programs in which industrial or commercial "partners" join with the EPA in promoting activities that conserve energy, conserve and protect the water supply, reduce emissions or find ways of utilizing them as energy resources, and reduce the waste stream.

Post-consumer Material: Any household or commercial product that has served its original, intended use.

Post-consumer Recycle Content: A product composition that contains some percentage of material that has been reclaimed from the same or another end use at the end of its former, useful life.

Post-industrial Material: Industrial manufacturing scrap or waste; also called pre-consumer material.

Post-industrial Recycle Content: A product composition that contains some percentage of manufacturing waste material that has been reclaimed from a process generating the same or a similar product. Also called pre-consumer recycle content.

Potable Water: Water that is safe to drink.

ppb: Parts per billion.

ppm: Parts per million.

Precautionary Principle: The principle that advises that, in the face of uncertainty, the best course of action is to assume that a potential problem is real and should be addressed ("better safe than sorry").

Pre-Consumer Waste: See "post-industrial material."

Pyrolysis: Decomposition of a chemical by extreme heat.

R

Rainwater Catchment: A method of collecting rain and snow melt in a cistern for reuse.

Recharge Area: An area where rainfall can infiltrate into an aquifer.

Reclamation: Restoration of materials found in the waste stream to a beneficial use that may be other than the original use.

Recommissioning: Also called Tuning, a re-calibration of a facility's operating systems.

Recyclable: Commonly referred to as the ability of a product or material to be recovered from, or otherwise diverted from, the solid waste stream for the purposes of recycling. FTC guidelines indicate that a product may not be advertised as "recyclable" unless a viable, active reclamation system exists, that is available to a majority of end users, and collects and processes the product for recycling.

Recycled Content: Materials that have been recovered or otherwise diverted from the solid waste stream, either during the manufacturing process (pre-consumer), or after consumer use (post-consumer). Pre-consumer material does not include materials normally reused by industry within the original manufacturing process.

Recycling: Process by which materials that would otherwise become solid waste are collected, separated or processed and returned to the economic mainstream to be reused in the form of raw materials or finished goods.

Relative Humidity (RH): Ratio of the amount of water vapor in air at a specific temperature to the maximum capacity of the air at that temperature.

Remediation: Efforts to counteract some or all of the effects of pollution after it has been released into an environment.

Renewable Energy: An energy source that, from an Earth perspective, is continually replenished.

Renewable Resources: A resource that can be replenished at a rate equal to or greater than its rate of depletion (i.e. solar, wind, geothermal and biomass resources).

Resource Conservation: Practices that protect, preserve or renew natural resources in a manner that will ensure their highest economic or social benefits.

Respirable: Particles or aerosols capable of being inhaled into the deep lung, <3 microns in diameter.

Retro-commissioning: Commissioning performed on a facility that has been in service but not previously commissioned.

Reuse: Using a product or component of municipal solid waste in its original form more than once.

Reused Components: Structural or finish materials removed from old buildings and reused in new or remodeled buildings.

Reversible Disassembly: Reverse manufacturing, in which the removal of screws, clips, and other fasteners permits refurbishment and reuse of some or all of the components and modules of a product.

RH: See "Relative Humidity."

Risk: A measure of the probability of an adverse effect on a population under a well-defined exposure scenario.

Risk Assessment: An evaluation of potential consequences to humans, wildlife, or the environment caused by a process, product, or activity, and including both the likelihood and the effects of an event.

Risk Factor: Characteristics (i.e. race, sex, age, and obesity) or variables (i.e. smoking and occupational exposure level) associated with increased probability of a toxic effect.

S

Sanitary Sewers: Underground pipes that carry off only domestic or industrial waste, but not storm water.

Sanitary Survey: An on-site review of the water sources, facilities, equipment, operation and maintenance of a public water system to evaluate the adequacy of those elements for producing and distributing safe drinking water.

Sanitary Water: Water discharged from sinks, showers, kitchens or other nonindustrial operations, but not from commodes.

SBS: See "Sick Building Syndrome."

Scientific Certification Systems (SCS): An independent testing and certification organization that evaluates a wide variety of food safety and environmental claims. The company's environmental division certifies a wide variety of claims related to environmental achievement in the product manufacturing and natural resource extraction sectors. Specific product attributes, such as recycled content and biodegradability, may be certified under the environmental claims certification program. SCS can also certify more holistic claims of environmental preferability considering the full product life-cycle.

Scoping: The involvement of local government agencies and the general public in the production of an Environmental Impact Statement for a proposed project.

Scrubbers: Devices that cleanse emissions, usually with water, before they are released into the air.

Selective Cutting: The harvesting of trees such that only certain trees are cut down and the land is not stripped bare.

Sick Building Syndrome (SBS): (1) A human health condition in which infections linger, caused by exposure to contaminants within a building as a result of poor ventilation. (2) 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. Complaints may be localized in a particular room or zone, or may spread throughout the building and may abate on leaving the building. Also see "Building-related Illness."

Sinks: Environmental reservoirs that receive the throughput of society.

Slash and Burn Agriculture: A form of agriculture where trees and other vegetation are cut down and burned in order to clear the land and release nutrients into the soil.

Smog: Traditionally, a mixture of smoke plus fog. Today, the term "smog" has the more general meaning of any anthropogenic haze. Photochemical smog involves the production, in stagnant, sunlit atmospheres, of oxidants such as O_3 by the photolysis of NO_2 and other substances, generally in combination with haze-causing particles.

Solar Energy: Energy derived from the Sun.

Source Reduction: As applied to solid waste, reducing the generation of waste in the first place (as opposed to later reusing or recycling waste).

Stack Effect: Flow of air resulting from warm air rising, creating a positive pressure area at the top of a building and negative pressure area at the bottom. This effect can overpower the mechanical system and disrupt building ventilation and air circulation.

Sterilizer: One of three groups of antimicrobials registered by the EPA for public health uses. The EPA considers an antimicrobial to be a sterilizer when it destroys or eliminates all forms of bacteria, viruses, and fungi and their spores. Because spores are considered the most difficult form of microorganism to destroy, the EPA considers the term "sporicide" to be synonymous with "sterilizer."

Stratosphere: The atmospheric shell lying just above the troposphere and characterized by a stable lapse rate. The temperature is approximately constant in the lower part of the stratosphere and increases from about 20 km to the top of the stratosphere at about 50 km.

Straw-Bale Construction: The use of annually renewable agricultural waste product, such as wheat, oats, barley, rye, and rice, to build thick, super-insulated, stucco covered walls. Straw bales are traditionally a waste product which farmers do not till under the soil, but do sell as animal bedding or landscape supply. 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. Bales can be taken directly from a baling machine or can be re-compressed for higher density. In contrast, hay bales are made from short species of livestock feed grass that is green/alive and is not suitable for this application.

Stressor: A set of conditions that may lead to an undesirable impact on the living systems which occupy an environment.

Strip Mining: A form of surface mining, especially for coal, that is very destructive to the landscape.

Suburban Sprawl: The spreading of a city's population out into the surrounding countryside, forming suburbs.

Sulfur Dioxide (SO_2): A heavy, smelly gas that can be condensed into a clear liquid; used to make sulfuric acid, bleaching agents, preservatives and refrigerants; a major source of air pollution in industrial areas.

Superfund: A commonly used name for the Federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) – related to the cost and cleanup of hazardous waste sites (EPA's National Priorities List).

Sustainable: Meeting the needs of the present without compromising the ability of future generations to meet their needs.

Sustainability: Practices that would ensure the continued viability of a product or practice well into the future.

Sustainability Gap: The difference between ecological production and current human over-consumption. Developing sustainability means reducing the sustainability gap.

Sustainable Development: An approach to progress that meets the needs of the present without compromising the ability of future generations to meet their needs.

T

Technosphere: The portion of the biosphere which has been altered or influenced by human activity.

Teratogen: A substance that can cause birth defects.

Thermal Pollution: The addition of heat to a body of water that may change the ecological balance.

Threshold Limit Value (TLV): The concentration of an airborne substance to which an average person can be repeatedly exposed without adverse effects. TLVs may be expressed in three ways: (1) TLV-TWA—Time-weighted average, based on an allowable exposure averaged over a normal 8-hour workday or 40-hour workweek. (2) TLV-STEL—Short-term exposure limit, or maximum concentration for a brief specified period of time, depending on a specific chemical (TWA must still be met). (3) TLV-C—Ceiling exposure limit, or maximum exposure concentration not to be exceeded under any circumstances (TWA must still be met).

Threshold Odor: See "Odor Threshold."

Throughput: The movement of materials and energy through society, or the materials and energy so moved.

Tipping Fee: Charge for the unloading or dumping of waste at a recycling facility, composting facility, landfill, transfer station or waste-to-energy facility.

TLV: See "Threshold Limit Value."

Total Environmental Impact (TEI): The total change on the environment, whether adverse or beneficial, wholly or partially resulting from human activity, industry or natural disasters.

Total Environmental Impact (TEI) Index: A tool developed and used by Antron. Much broader than the traditional industrial measures of raw material consumption and emissions, the Total Environmental Impact (TEI) Index includes value recovery of waste materials, and has a measure of societal impact: e.g., injuries and illnesses to employees and contractors; incidents like fires, explosions, accidental releases to the environment, and transportation incidents; global waste and emissions; and use of depletable raw materials and energy. The TEI Index was created using internal studies in North America rationalized with published studies done by Boustead in Brussels and Potting & Blok in the Netherlands.

Total Volatile Organic Compounds (TVOC): The total mass, typically in milligrams per cubic meters, of the organic compounds collected in air.

Toxic: Capable of having an adverse effect on an organism; poisonous; harmful or deadly.

Tree-Free Paper: Paper made with alternative resources such as kenaf and hemp, without using virgin tree pulp.

Triple Bottom Line Reporting: New form of corporate disclosure which integrates financial, environmental and social reporting.

Troposphere: The lowest layer of the atmosphere, ranging from the ground to the base of the stratosphere at 10–15 km altitude, depending on latitude and weather conditions. About 85% of the mass of the atmosphere is in the troposphere, where most weather features occur due to the dynamic interactions associated with temperature variations.

TVOC: See "Total Volatile Organic Compounds."

U

Upcycling: A subjective term used to describe the creation of a product with higher intrinsic value, manufactured from a material at the end of its service life, which had a lower initial end use value. It is important to note that the term does not provide insight into environmental benefit (e.g. there may be less environmental benefit to "upcycling" if the creation of the higher value product requires more energy than recycling into an alternate product.)

Upstream Impacts: Environmental impacts that are caused by the extraction of raw materials, transportation, and the manufacturing process.

Urban Ore: The concept that wastes of today, such as materials disposed of in landfills, may serve as sources of valuable raw materials, such as metals, in the future.

USGBC (U.S. Green Building Council): The United States foremost coalition of leaders from across the building industry working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work.

V

Value Recovery: Redirecting materials typically targeted for landfill or incineration into useful end use products; energy could be one of those products. See "Reclamation."

Ventilation: Process by which outside air is conveyed to an indoor space.

Volatile Organic Compound (VOC): Organic substances capable of entering the gas phase from either a liquid or solid form.

W

Waste to Energy: Burning of industrial waste to provide steam, heat or electricity. Sometimes referred to as waste-to-fuel process.

Wildscaping: Retention of native soil, vegetation, and other natural features when building on the land, rather than the removal of soil, vegetation and natural features followed by artificial landscaping once the building is completed.

Wind Farm: A vast trace of land covered with wind-powered turbines that are used to drive generators that produce electricity.

Wind Power: The harnessing of the wind's energy for human applications.

X

Xeriscaping: Landscaping designed to save water.

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