

# BUILDING A HEALTHY AND RESILIENT HOME

*glossary*

# Glossary

**5G Antenna** — A high-frequency transmitter used for next-generation mobile data. Installed densely and contributes to localized RF fields.

**ABS (Acrylonitrile Butadiene Styrene)** — A type of black plastic pipe used for drain, waste, and vent piping. Requires specific glue and is less flexible than PEX.

**ACH50** — Air Changes per Hour at 50 Pascals of Pressure. A measure of how many times the air inside a home is replaced in one hour when the house is depressurized to 50 Pascals during a blower door test. Lower numbers indicate tighter buildings.

**Admix** — Additive used in concrete or mortar to enhance properties like water resistance, workability, or curing time.

**Advanced framing** — A framing method that uses less lumber and increases energy efficiency by spacing studs 24 inches on center and minimizing unnecessary framing members to reduce thermal bridging.

**Advantech** — A brand of engineered subfloor panel made from wax-impregnated OSB with moisture resistance and stronger adhesives.

**Air Barrier** — A material or system that prevents unwanted airflow through the building envelope, helping to control moisture and temperature.

**Air Control Layer** — A building component that stops airflow through a building assembly, which also prevents moisture-laden air from entering and condensing inside walls.

**Air Infiltration** — The unintentional or accidental introduction of outside air into a building, typically through cracks, joints, or openings.

**Air Leakage** — The movement of air into or out of a building envelope through unsealed cracks and openings.

**Air Sealing** — The process of closing gaps and penetrations in the building envelope to reduce air leakage.

**Alternating Current (AC)** — A type of electrical current where the flow of electricity reverses direction periodically; standard in most homes.

**Anode Rod** — A sacrificial rod inside a water heater tank that corrodes over time to protect the tank from rust and extend its life.

**Anti-Cracking Membrane** — A layer installed under tile to prevent cracking due to slab movement; some are waterproof and some are not.

**Aquifer** — An underground layer of water-bearing rock or sediment from which groundwater can be extracted via a well.

**Asphalt** — A petroleum-based material commonly used for roofing shingles, driveways, and roads. It is considered toxic and may off-gas VOCs.

**Attic Hatch** — An access opening to a vented or conditioned attic. A common area for air leakage if not properly sealed.

**Awning Window** — A type of window hinged at the top that opens outward, providing ventilation while keeping out some rain.

**Back Dam** — A raised edge on the interior side of a window or door sill to prevent water from entering the interior.

**Backdrafting** — A dangerous condition where exhaust gases from combustion appliances like furnaces or water heaters are pulled into the home due to negative air pressure.

**Band Joist** — A horizontal framing member that caps the ends of floor joists and is often a source of air leaks if not properly sealed.

**Basement** — A below-grade portion of a home, typically with concrete walls and floor, used for storage or living space.

**Batt Insulation** — Pre-cut sections of insulation, typically fiberglass or mineral wool, installed between framing members.

**Bell End Connection** — A flared end on conduit that helps guide PEX pipe through more easily during installation in slab foundations.

**Blocking** — Short pieces of wood added between studs or joists to provide structural support for mounting objects like towel bars, TVs, or shelves.

**Blower Door Test** — A diagnostic test where a temporary fan is installed in a doorway to measure a home's airtightness and locate leaks in the building envelope.

**Blown-In Insulation** — Loose insulation material that is blown into place, often used in attics and wall cavities.

**Building Biologist** — A professional trained to measure and mitigate EMR, indoor air pollutants, and other environmental health hazards in homes.

**Building Code** — A set of rules and standards for construction, safety, health, and energy efficiency required by local jurisdictions. Building code is not always aligned with healthy building practices.

**Building Envelope** — The physical barrier between the conditioned interior of a building and the outdoor environment, consisting of the roof, walls, windows, doors, and foundation. The building envelope controls air, moisture, and thermal energy.

**Build Site** — The specific location on a piece of land where a home will be constructed, including its orientation and elevation.

**Bulk Water** — Water in its liquid form (e.g., rain, snow, or flooding) that must be kept out of the building envelope to prevent damage and mold growth.

**Capillary Break** — A layer or material (like crushed stone) that stops moisture from wicking into a structure by capillary action.

**Capillary Suction** — The movement of water through porous materials via tiny tubes, driven by adhesion and cohesion forces.

**Cap Flashing** — A metal flashing installed above other flashing or components (like a ledger board) to deflect water and protect materials underneath.

**Cap Screws** — Screws with a large washer-like head used to temporarily or permanently fasten insulation or other sheathing materials.

**Casement Window** — A window that is hinged on the side and opens outward like a door, providing good ventilation and air sealing.

**Cat6a Shielded Ethernet** — A type of Ethernet cable designed with shielding to block electric fields and reduce EMR exposure.

**Catch Basin** — A buried drainage box connected to underground pipes that collects water from downspouts and is part of a system to direct it away from a building.

**Catchment Tray** — A container placed under appliances or plumbing fixtures to catch leaks and redirect water away from vulnerable building materials.

**CCR Dimmer (Constant Current Reduction)** — A type of dimmer switch that operates with compatible LEDs to reduce flicker and Microsurge Electrical Pollution.

**Cellulose Insulation** — An insulation material made primarily from recycled paper, treated for fire resistance, and often dense-packed in wall cavities.

**Cementitious Grout** — Traditional sanded grout made from cement, often with fewer polymers, offering higher vapor permeability.

**Chimney Flashing** — A waterproofing detail at the intersection between a roof and a chimney, typically involving step flashing and counter flashing.

**Civil Engineer** — A licensed professional who designs and oversees construction of infrastructure such as grading, drainage, roads, and utility systems.

**Cladding** — The outermost layer of a building's wall that provides aesthetics and protection from sun and weather. Includes materials like wood, vinyl, metal, and brick.

**Clean Crushed Rock (3/4")** — Angular stone used as a base layer under foundations for drainage and to prevent capillary suction.

**Climate (Building)** — The long-term weather conditions (temperature, humidity, precipitation) that influence building design and materials.

**Commissioning** — The process of testing and verifying that an HVAC system is installed correctly and performing as designed, including airflow, drainage, electrical, and safety checks.

**Compacted Soil** — Soil that has been compressed to remove air and increase stability, often required under foundations or slabs.

**Composite Wood** — Engineered wood products made from wood fibers, chips, or veneers bonded together with adhesives. Includes OSB, MDF, and particleboard.

**Condensate Line** — A pipe that drains water collected by the HVAC system from dehumidification or cooling processes to the outside of the home.

**Condensation** — The process by which water vapor turns into liquid water when it encounters a cold surface.

**Conditioned Attic** — An attic space that is inside the thermal envelope and HVAC system, often insulated at the roofline and mechanically conditioned and ventilated.

**Construction Moisture** — Moisture retained in building materials during construction, such as wet lumber or freshly poured concrete.

**Continuous Insulation** — Insulation that runs across all structural members without thermal bridging, usually installed on the exterior of a building. Also called **Outsulation**.

**Contour** — A level line across a slope; used in swale and earthwork design to manage water flow.

**Control Layers** — The key components in a building assembly that manage the movement of heat, air, moisture, and vapor—the four main forces that affect building durability, energy efficiency, and indoor air quality.

**Counter Flashing** — A second layer of flashing that overlaps step flashing to ensure water doesn't seep behind it.

**CPVC (Chlorinated Polyvinyl Chloride)** — A rigid plastic pipe used in plumbing that is more prone to cracking than PEX or copper, and less durable over time.

**Cross Breeze** — Ventilation strategy where windows are placed on opposite sides of a space to allow air to flow through naturally.

**Crawl Space** — A shallow, unfinished space under a home, allowing access to utilities and sometimes used for ventilation or storage.

**Dampproofing** — A treatment applied to exterior foundation walls to resist soil moisture intrusion but not bulk water.

**Dew Point** — The temperature at which air can no longer hold water vapor, causing condensation.

**Dielectric Union** — A fitting used to join copper plumbing and prevent stray electrical current from entering a home's plumbing system.

**Dimple Board / Dimple Mat** — A plastic drainage layer with raised dimples used on foundation walls to channel water downward.

**Dowsing (for Water)** — A traditional, intuitive method used by experienced well diggers to locate underground water sources.

**Drywall** — Material commonly used to finish interior walls and ceilings. Must be kept dry to prevent mold. Also called **Gypsum Board** or **Sheetrock**.

**Double-Stud Wall** — A thicker wall assembly made by building two parallel stud walls for increased insulation or to accommodate interior plumbing while avoiding thermal bridges.

**Downspout** — A pipe that carries water from a gutter down to the ground or a drainage system.

**Downspout Extender** — A pipe or attachment added to a gutter downspout to carry water away from a foundation, preferably at least 10 feet.

**Drainage Plane** — A layer or space behind cladding that allows water to drain away from the wall assembly, preventing water intrusion and mold. Also called **Rainscreen**.

**Drain Mat** — A protective layer installed inside sink cabinets or beneath appliances to catch small leaks and contain water.

**Drain Tile** — A misnomer for perforated foundation drain pipe used to carry groundwater away from the home.

**Draining to Daylight** — A water management strategy in which water from a roof or yard flows by gravity to a visible outlet point, such as a slope or street gutter.

**Drip Irrigation** — A low-flow irrigation system that delivers water directly to the root zones of plants, minimizing water waste.

**Dry Well** — A subsurface pit filled with gravel or rock that collects and gradually disperses stormwater into the surrounding soil.

**Ducting** — The network of air channels that distribute heated, cooled, or ventilated air throughout a home.

**Duct Leakage Test** — A test to determine how much conditioned air is escaping from the HVAC ducts due to leaks.

**Ductless Mini Splits** — A type of HVAC system with indoor air-handling units and an outdoor compressor; requires no ductwork.

**Earthworks** — Landscaping strategies like berms, swales, or terraces that manage water movement and support vegetation.

**Eave** — The part of a roof that overhangs the exterior wall.

**Electric Fields** — Fields created by voltage, even if no current is flowing; commonly present around live wires.

**Electromagnetic Fields (EMFs)** — Invisible fields produced by electrical and electronic devices, including electric, magnetic, and radiofrequency fields.

**Electromagnetic Radiation (EMR)** — A form of energy emitted by electrical and wireless devices, often used interchangeably with EMF but emphasizing wave transmission. Low-EMR homes aim to reduce exposure to these fields.

**Encapsulant** — A coating that covers mold but does not stop its growth. It can hide toxins and is generally discouraged in healthy homebuilding.

**Engineered Hardwood** — A type of flooring made from a top layer of real hardwood veneer bonded to multiple layers of plywood or high-density fiberboard (HDF). Engineered hardwood is generally more dimensionally stable than solid hardwood, making it less prone to warping or cupping with moisture changes. However, depending on the construction, it may contain high-VOC glues and can usually only be refinished a limited number of times.

**Engineered I-Beams** — Structural framing members shaped like an “I,” made from OSB and LVL, used in floors and roofs.

**Engineered Lumber** — Structural wood products manufactured using layers of wood and adhesives, including LVLs, glulams, and I-joists.

**Engineered Septic System** — A wastewater treatment system designed for difficult sites, often using pumps or advanced filtration due to poor soils or lack of slope.

**Energy Heel / High Heel Trusses** — Roof trusses with added height at the roof edge to allow full-depth insulation at eaves and reduce thermal bridging.

**Energy Recovery Ventilator (ERV)** — A mechanical ventilation system that brings in fresh, filtered air and transfers humidity and heat between incoming and outgoing air streams. Also see **HRV**.

**Environmental Engineer** — A professional who addresses environmental issues such as water management, septic design, and soil stability.

**EPS (Expanded Polystyrene)** — A rigid foam insulation made of expanded polystyrene beads. Somewhat vapor permeable and cost-effective.

**Expansion Joints** — Gaps or flexible materials placed in concrete or other rigid assemblies to accommodate movement and allow it to crack in a controlled way as it cures and shrinks. Also called **control joints**.

**Exterior Grade Plywood** — Plywood made with water-resistant adhesives (typically phenol formaldehyde) for use in moist or outdoor environments.

**Exterior Insulation** — Insulation installed on the outside of the structural sheathing to reduce thermal bridging and maintain consistent wall temperatures. Also called **Outsulation**.

**Faced Insulation** — Insulation with an attached vapor barrier or kraft paper to reduce moisture transfer. Discouraged in healthy homes.

**Faraday Canopy** — A bed canopy made with shielding material to reduce EMR exposure while sleeping.

**Fiber Cement** — A composite siding material made from cement, sand, and cellulose fibers. Durable, fire-resistant, and low maintenance.

**Fiberglass Batts** — Pre-cut panels of fiberglass insulation commonly used in walls and ceilings. Must be installed without gaps.

**Fiberglass Rebar** — A non-metallic reinforcement bar for concrete, resistant to corrosion, thermal bridging, and EMR conduction.

**Finish Plumbing** — The final stage of plumbing installation, including fixtures like sinks, toilets, faucets, and water heaters.

**Fish Mouths** — Gaps or wrinkles in WRBs and tape that can collect water and compromise the water barrier.

**Flange** — The outer frame of a window used to mount it to a wall by screwing or nailing it in place.

**Flangeless Window** — A type of window without a perimeter flange; installed using clips for a cleaner look and less thermal bridging.

**Flashing** — Thin material (metal or membrane) installed to direct water away from openings and joints in a wall.

**Flashing Tape** — Adhesive-backed tape used to waterproof around windows, doors, and other openings.

**Flex Ducting** — Flexible, foil-covered ductwork common in residential construction. Easy to install but prone to kinks, sags, and air leakage, making it a mold risk. Flex ductwork cannot be mechanically cleaned without a risk for perforating it with the equipment.

**Flicker Free** — Lighting that doesn't produce rapid, invisible light fluctuations, which can cause headaches or eye strain.

**Float Switch** — A safety device in HVAC drain pans that shuts off the system or triggers an alarm if water backup is detected.

**Flood Test** — A test that checks for leaks in a waterproofed shower pan by filling it with water and verifying that the level doesn't drop over time.

**Flood Zone** — A geographic area defined by FEMA as having varying levels of flood risk.

**Floor Drain** — A plumbing fixture installed in floors, typically in utility rooms or bathrooms, to direct water into the drain system in case of leaks or spills.

**Floor Truss** — A structural framing component used to support floors. Types include open-web, engineered I-joists, solid wood, and steel.

**Flow-Through Assembly** — A roof or wall system designed to allow drying by vapor diffusion through vapor-permeable materials.

**Fluorescent / CFL** — Lighting that uses gas-discharge tubes; can contain mercury and flicker or emit EMR.

**Flanged / Flangeless** — Refers to window types; flanged windows have nailing fins for mounting, flangeless do not.

**Floor Underlayment** — A layer between subfloor and finished flooring that provides soundproofing, cushioning, or moisture resistance.

**Fluid-Applied Flashing** — A liquid sealant used to create a continuous waterproof and airtight layer around complex or irregular building penetrations.

**Formaldehyde (UF, PF)** —

- **UF (Urea Formaldehyde)** — A resin that emits high levels of VOCs. Found in many interior-grade products.
- **PF (Phenol Formaldehyde)** — A more stable and less toxic resin used in exterior-grade products.

**Form Boards** — Temporary wooden frames that shape concrete during pouring until it hardens.

**Foundation** — The structural base of a building, typically made of concrete, which supports the entire structure.

**Foundation Drain** — A system of perforated pipe around a foundation's perimeter that redirects water away to prevent water intrusion.

**Framing** — The construction of the building's skeleton using wood or metal studs. Framing defines the structure and layout of a home.

**French Drain** — A trench filled with gravel and a perforated pipe that redirects surface or groundwater away from a structure. Commonly installed in yards, hillsides, or behind retaining walls to prevent water from pooling or eroding soil.

**Full Spectrum** — Refers to lighting that closely mimics the spectral output of natural sunlight.

**Furring Strips** — Narrow wood, metal or plastic strips used to create space for ventilation or leveling behind wall surfaces like cladding or insulation. Also see **Rainscreen**.

**Gable Roof** — A pitched roof with two sloping sides that meet at a ridge, forming a triangular wall section. A gable roof minimizes water management risks. **Gasket** — A compressible material used to seal joints between building components and reduce air and moisture infiltration.

**Grade** — The slope of the ground around a home, shaped to direct water away from the structure.

**Grading** — Leveling and sloping land away from a building to direct water flow, ensure proper drainage, and prevent water intrusion.

**Grid-Tied Power** — A home that is connected to the municipal or regional electrical grid.

**Ground** — Electrical connection to the earth that safely dissipates stray current and stabilizes voltage levels.

**Ground Loop** — A wiring fault where improper grounding causes current to flow between two points that should have no voltage difference, generating magnetic fields.

**Groundwater** — Water present beneath the Earth's surface, which can seep into buildings if not properly managed.

**Groundwork Plumbing** — The first stage of plumbing installation where pipes are placed in or under the foundation before concrete is poured.

**Grout** — The material used between tiles. Grout can vary in permeability depending on its ingredients, especially polymers.

**Gutter** — A channel at the edge of a roof that collects and directs rainwater away from the house.

**Gypsum Board (Drywall)** — A panel made of gypsum plaster pressed between paper layers, used for interior wall finishes.

**Hardscape** — Non-living landscape elements such as pavers, walkways, patios, retaining walls, and driveways.

**HDPE (High-Density Polyethylene)** — The material used to manufacture PEX pipes; flexible and resistant to corrosion.

**Head Flashing** — Metal flashing installed above a window or door to redirect water away from the assembly.

**Heat Pump** — A highly efficient HVAC system that moves heat rather than generating it, providing both heating and cooling.

**Heat Recovery Ventilator (HRV)** — Similar to an ERV, but it transfers heat only (not moisture) between the air streams. Also see **ERV**.

**High-Performance Home** — A home built beyond minimum code requirements, focusing on energy efficiency, air quality, moisture management, durability, occupant health, and comfort.

**High Slope Roof** — A steeply pitched roof (e.g., 10:12 or 12:12) that sheds snow and water quickly but may be harder to access.

**High-Voltage Power Lines** — Large transmission lines that carry high voltage electricity and emit strong electric and magnetic fields.

**High Water Table** — A condition where groundwater is close to the surface, increasing the risk of water intrusion into basements or foundations.

**Hold-Downs** — Steel hardware used to anchor a building's frame to the foundation for structural integrity.

**Hot Mud** — A setting-type joint compound that hardens through chemical reaction, used with fiberglass tape and for fast drywall finishing.

**Hot Wire** — Carries current from the electrical panel to an appliance or outlet.

**Humidity** — The amount of water vapor present in the air.

**HVAC** — The system responsible for managing indoor temperature, air quality, and humidity.

**Hydrostatic Pressure** — The pressure exerted by a standing column of water due to gravity, which can drive water into building assemblies.

**Ice Dam** — A ridge of ice that forms at the edge of a roof, preventing melting snow from draining and potentially causing water to seep into the attic.

**Ice and Water Shield** — A self-adhering underlayment membrane that provides a watertight seal in high-risk roof areas (e.g., valleys, eaves).

**I-Joist (Engineered I-Beam)** — A floor framing member shaped like an "I", made with solid flanges and an OSB web, designed for strength and long spans.

**Impervious Surface** — A surface that water cannot penetrate, such as asphalt or concrete, which can alter natural drainage.

**Incandescent Lighting** — Traditional bulbs that produce light by heating a filament; emit full-spectrum light but are inefficient.

**Indoor Environmental Quality (IEQ)** — The condition inside a building based on the presence of pollutants, humidity, ventilation, and electromagnetic radiation.

**Infrastructure (Site)** — The systems and services (water, power, sewer, roads) needed to support a building on a piece of land.

**Insulation Bay** — The space between framing members (studs, joists, rafters) where insulation is installed.

**Insulation Supports** — Metal bars used to hold batt insulation snugly in place under subfloors.

**Interior Grade Plywood** — Plywood intended for indoor use, often made with urea formaldehyde adhesives.

**Interior Shear Wall** — A structural wall located inside the home that provides lateral support against wind and seismic forces.

**International Residential Code (IRC)** — A model building code used widely in the U.S. and abroad that sets minimum residential construction standards.

**Inverter** — A device that converts DC electricity (like from solar panels) into AC electricity for home use.

**Joint Compound** — Also known as drywall mud. Used to finish drywall joints and embed tape over seams.

**Joist Hanger** — A metal bracket used to anchor a joist to a ledger board or beam.

**Joist Tape** — A protective tape applied to the top of joists to prevent water damage.

**Kickout Flashing** — A specialized flashing that redirects water away from the junction between a roof and wall to prevent leaks.

**Kiln-Dried Lumber** — Lumber that has been dried in a kiln to a specific moisture content, reducing shrinkage and mold risk.

**Knee Wall** — A short, vertical wall—typically under 3 to 4 feet high—commonly found in attics or top-floor spaces where the roof slopes down to meet the floor. Knee walls are often located under the eaves and can impact insulation and air sealing strategies, so they require careful attention in energy-efficient and healthy home design.

**Laminated Veneer Lumber (LVL)** — An engineered wood product made of thin wood layers glued together, used for framing.

**Lap (Lapped Correctly)** — The proper overlapping of building materials so water flows outward, not inward, down the assembly.

**Leach Field** — A part of a septic system where treated wastewater is dispersed into the soil for natural filtration.

**Ledger Board** — A horizontal framing member that attaches a deck to the house, typically secured to the home's rim joist or foundation. It supports one end of the deck joists and must be properly flashed and fastened to prevent water intrusion and structural failure. Improper installation is a common source of moisture damage and deck collapse.

**Ledger Flashing** — Metal or membrane flashing applied above a deck ledger board to prevent water intrusion.

**Level 3 / 4 / 5 Finish** —

- **Level 3** — Light texture finish for surfaces to be covered with heavy texture.
- **Level 4** — Standard finish for matte and eggshell paints.
- **Level 5** — Skim coat finish for smooth surfaces or glossy paints.

**Light Frame Construction** — A standard construction method using dimensional lumber (2x4s, 2x6s) to frame walls. Also referred to as **Stick-Built Construction**.

**Low-E Glazing** — Glass coated with a thin layer that reflects infrared energy, helping retain heat in winter and block it in summer.

**Luxury Vinyl Plank (LVP)** — A synthetic flooring product that is durable and water-resistant but may off-gas VOCs and act as a vapor barrier.

**Luxury Vinyl Tile (LVT)** — Similar to LVP but shaped and styled to resemble ceramic or stone tile; shares the same concerns with VOCs and vapor impermeability.

**Magnetic Fields** — Electromagnetic radiation generated by moving electric current (e.g., in wiring or appliances); can penetrate walls. Magnetic fields are only present when current is flowing, but can be strong near appliances that are always running, such as refrigerators and HVAC equipment, as well as near electrical panels and high voltage power lines.

**Makeup Air** — Fresh air brought into a home to replace air that is exhausted by fans, necessary in tight buildings to maintain pressure balance.

**Manual D** — A calculation used to design and size the ducting system in a home.

**Manual J** — A calculation used to determine the correct heating and cooling loads of a home.

**Manual S** — A calculation used to select the properly sized HVAC equipment based on Manual J results.

**Mass Wall** — A building wall system made from dense materials like concrete, brick, or stone that regulate moisture and temperature by absorption and release.

**MC (Metal Clad) Cable** — Electrical wiring encased in flexible metal armor that helps contain electric fields and reduce EMR.

**Measure-Dry** — A term indicating that wood or concrete has reached equilibrium moisture content appropriate for indoor use and is safe to cover up.

**Mechanically Fastened WRB** — A WRB attached using cap nails or staples rather than adhesive. Must be carefully detailed to prevent leaks.

**MERV Rating** — A filter rating system (Minimum Efficiency Reporting Value). MERV 11 or higher filters are recommended for healthy indoor air quality.

**MgO Board** — Magnesium oxide board; a moisture-, mold-, and fire-resistant sheathing or wall panel alternative to gypsum. Must be specified carefully due to quality variations.

**Microsurge Electrical Pollution (MEP)** — Spikes and disturbances in electrical current on wiring caused by electronic devices and switching power supplies. Can interfere with health or devices. Sometimes called **Dirty Electricity**.

**Mineral Wool** — A non-combustible, mold-resistant, and vapor-open insulation material. Also known as **Rockwool** or **Slag Wool**.

**Mini-Split** — A ductless heat pump system that heats or cools individual rooms. Efficient and space-saving, but must be cleaned regularly.

**Moisture Content** — The percentage of water in wood or other materials. Wood above 20% moisture can grow mold.

**Mold** — A type of fungus that grows in damp conditions and feeds on organic materials; requires oxygen, spores, food, and water to grow.

**Monolithic Slab** — A foundation where the slab and footings are poured at the same time as one unit.

**Monopoly Framing** — A design approach in which a home is air-sealed and insulated as a compact box before adding overhangs, simplifying air and water sealing at complex junctions and reducing thermal bridging.

**Mulch** — Organic or inorganic material spread on soil to retain moisture, prevent erosion, and suppress weeds.

**Neutral-to-Ground Intertie** — A wiring error where neutral current flows into the ground, energizing it and creating magnetic fields.

**Neutral-to-Neutral Intertie** — A wiring error where two circuits share a neutral wire, creating unresolvable magnetic fields.

**Neutral Wire** — Returns current back to the electrical panel; typically white in residential wiring.

**One-Part Spray Foam** — A canned expanding foam product used to seal small gaps and penetrations in the building envelope.

**Open-Web Truss** — A truss made of solid wood members connected in triangular patterns, offering easy utility routing.

**OSB (Oriented Strand Board)** — A structural panel made from compressed wood strands and adhesive; used for sheathing and subflooring. Prone to moisture damage if untreated.

**Outsulation** — Insulation installed on the outside of the structural sheathing to reduce thermal bridging and maintain consistent wall temperatures. Also called **Exterior Insulation**.

**Overhang** — The part of the roof that extends beyond the exterior wall to protect the walls from rain and sun.

**Panelized Home** — A type of prefabricated house in which wall, roof, or floor sections are built offsite and assembled on the building site.

**Parallel Neutral Current** — Unintended current flow on plumbing or grounding paths due to improper neutral wiring.

**Particleboard** — A composite wood product made from small wood particles and adhesive, commonly used in cabinetry and furniture.

**Passive House** — A rigorous building certification focused on ultra-low energy use and superior indoor air quality. Requires extremely airtight construction and continuous ventilation.

**Passive Solar Orientation** — Designing a home by positioning windows and overhangs to optimize natural heating and cooling through seasonal sun angles.

**Penetration (Roof)** — Any element that protrudes through the roof (e.g., pipes, chimneys, skylights), which must be carefully waterproofed.

**Perfect Wall** — A building assembly concept developed by Joseph Lstiburek where all control layers (water, air, vapor, thermal) are installed in the right order, primarily on the exterior of the structure.

**Perforated Pipe** — A pipe with holes that allows water to enter and drain; used in foundation and radon mitigation systems. Also see **Drain Tile**.

**Permeable Paving** — Hard surfaces designed to allow water to pass through, reducing runoff and encouraging groundwater recharge.

**Perm Rating** — A measure of a material's ability to allow water vapor to pass through it; higher numbers indicate more vapor permeability.

**Permitting** — The process of obtaining legal approval from a local authority to begin construction or modification of a site.

**Pesticide** — Chemicals used to kill unwanted insects or organisms; harmful to humans, pollinators, and soil microbes.

**PEX (Cross-Linked Polyethylene)** — A flexible plastic pipe that is easy to install, corrosion-resistant, and suitable for most residential water supply systems.

**Planned Obsolescence** — The design of a product with an artificially limited useful life, so it becomes outdated or non-functional after a certain period.

**Planset** — A complete set of construction drawings that should include not just floor plans and elevations but also detailed sections showing how different parts of the house are constructed.

**Plenum Trusses** — Trusses designed with an open core to accommodate HVAC ducts within the conditioned envelope.

**Plinth Block** — A base block (typically aluminum or concrete) used to elevate and stabilize structural posts off the ground.

**Polyiso (Polyisocyanurate)** — A rigid foam insulation with high R-value per inch, often used in exterior applications.

**Polymer-Modified Grout** — Grout with added polymers to increase flexibility and water resistance, typically less vapor-permeable.

**Potable** — Safe for human consumption; typically refers to drinking water quality.

**Precipitation** — Any form of water, such as rain or snow, that falls from the atmosphere and may impact a building.

**Pressure-Treated Wood** — Wood chemically treated to resist moisture, insects, and decay, commonly used for sill plates.

**P-Trap** — A curved section of drainpipe that holds water to block sewer gases from entering the home.

**P-Trap Primer** — A device that periodically adds water to a P-trap to keep it from drying out and allowing sewer gases in.

**PVC (Polyvinyl Chloride)** — A white plastic pipe used for drains and venting. Requires specific glue different from glue used for ABS.

**Radiant Barrier OSB** — Roof sheathing with a reflective surface that reduces heat transfer into the attic.

**Radiant Heating / Cooling** — A heating and/or cooling system where wires or pipes under the floor condition the home by radiating heat or cold upward. Radiant cooling carries a risk of thermal bridging and condensation.

**Radiofrequency (RF) Fields** — High-frequency EMR used for wireless communications, such as WiFi, Bluetooth, and cell phones.

**Radon** — A naturally occurring radioactive gas that can enter homes through soil; prolonged exposure increases cancer risk.

**Radon Mitigation System** — A passive or active system installed under a foundation to vent radon and other soil gases out of the house.

**Rainscreen** — An air gap in an exterior wall that allows water drainage and air circulation to dry the wall system and prevent moisture buildup. Also called **Drainage Plane**.

**Rainwater Collection System** — A system designed to collect, filter, and store rainwater for later use.

**Rebar** — Short for "reinforcing bar"; steel or fiberglass rods placed in concrete to provide tensile strength.

**Reservoir Cladding** — Exterior materials (like brick or stucco) that absorb and retain water, requiring proper drainage planes.

**Retaining Wall** — A wall constructed to hold back soil and manage changes in elevation, sometimes used to redirect water flow.

**Reverse Osmosis (RO) System** — A water filtration system that uses pressure to force water through a semipermeable membrane, removing contaminants.

**Ridge Vent** — A ventilation feature installed along the peak of a roof to allow hot, moist air to escape from a vented attic.

**Rigid Ducting** — Hard, straight ductwork made of metal. Rigid ducting is preferable over flex ducting because it is more durable, easier to seal, and suitable for cleaning. It is also more expensive than flex ducting.

**Rigid Foam Insulation** — Insulation panels made from EPS, XPS, or polyiso. Used for exterior insulation or below grade.

**Rim Joist** — A horizontal framing member that caps the ends of the floor joists at the perimeter of a floor system. It provides lateral support for the joists, helps distribute loads, and offers a nailing surface for exterior sheathing or siding.

**Rockwool** — A brand of mineral wool insulation, known for fire resistance, soundproofing, and mold resistance.

**Romex** — Brand name commonly used to describe non-metallic sheathed electrical cable (NM cable) used in residential wiring. Radiates electric fields and Microsurge Electrical Pollution.

**Roof Slope** — The angle of a roof, usually expressed as rise over run (e.g., 4:12), determining how water and snow shed from the roof. The roof slope affects drainage and shingle performance.

**Roof Underlayment** — A waterproof or water-resistant layer installed under roofing material to protect the structure beneath.

**Roof-to-Wall Connection** — A joint where a sloped roof meets a vertical wall, prone to leakage if not flashed properly.

**Rough Opening** — The framed hole in a wall where a window or door will be installed.

**Rough Plumbing** — The second stage of plumbing installation, where supply pipes are routed through wall framing and shower drains are set.

**R-Value** — A measure of thermal resistance in insulation. Higher R-values indicate better insulating performance.

**Saturation** — The point at which a material can no longer absorb additional moisture.

**Schedule 40 Pipe** — A type of durable PVC pipe approved for potable water use.

**Sealer (Grout or Tile)** — A product applied to grout or tile surfaces to prevent staining and improve water resistance; varies in permeability.

**Septic System** — A private onsite system for wastewater treatment, consisting of a tank and leach field.

**Service Drop** — The overhead electrical line that connects a home to the utility grid.

**Service Ground / Ufer Ground** — A grounding system using concrete-encased rebar to dissipate electrical faults safely into the earth.

**Shearing Layers** — A concept describing how parts of a building (e.g., structure, services, finishes) change at different rates over time.

**Sheathing** — A panel (OSB, plywood, MgO) fastened to framing for structural stability and as a WRB substrate.

**Shed Roof** — A single-slope roof surface, often used for passive solar design and simplicity.

**Sheep's Wool Insulation** — Natural insulation made from wool fibers. Mold-resistant, non-toxic, and hygroscopic.

**Shiners** — Nails that miss studs or framing members during sheathing installation and offer no structural support. They should be removed or redone.

**Siding** — The outer surface layer of a wall that adds weather protection and aesthetic appeal.

**Sill Pan** — A waterproof pan installed under windows or doors to catch and drain water that may enter.

**Sill Plate** — The bottom horizontal board of a framed wall that sits directly on the foundation, typically pressure-treated.

**Sill Seal** — A compressible foam or plastic strip placed between concrete and the sill plate to block air and moisture infiltration.

**Siting** — The process of determining the exact placement and orientation of a home on its lot.

**Slab / Slab-on-Grade Foundation** — A concrete pad that serves as the foundation and first floor of the home; may be monolithic or with stem walls.

**Sleep Sanctuary** — A bedroom designed to minimize EMR exposure, promoting healing and restful sleep.

**Slider Window** — A window with sashes that slide horizontally to open. Sliders are not as efficient as Awnings or Casements.

**Smart Meters** — A utility meter that communicates wirelessly to monitor electricity, gas, or water usage. Emits RF radiation.

**Solar Heat Gain Coefficient (SHGC)** — Measures how much sunlight passes through the window and becomes heat inside your home.

**Solid Wood Flooring** — Flooring made from single planks of wood that can be refinished multiple times; generally low-VOC and durable.

**Soffit** — The underside of an eave or overhang, often vented in a vented attic.

**Solar Inverter** — Converts DC electricity from solar panels to AC for household use. Solar inverters generate varying levels of Microsurge Electrical Pollution depending on the design.

**Solid Core Door** — An interior door made with a solid material for better soundproofing and durability compared to hollow-core doors.

**Spray Foam Insulation** — A type of insulation that also acts as an air and vapor barrier; fast to install but contains VOCs and presents moisture risks. Not recommended for healthy homes due to chemical emissions and risk of concealing water damage.

**Stack Effect** — Warm air rises because it is less dense. In a heated building during winter, this means that warm indoor air tends to rise and escape out of leaks in the upper part of the building. This creates lower pressure at the bottom, which draws in cold outside air through cracks and gaps in the lower part of the building (basement, crawlspace).

**Staggered Double Stud Wall** — A wall design with two offset rows of studs to eliminate thermal bridging and improve insulation depth.

**Star Wiring** — A low-EMR electrical wiring strategy where all circuits return to a central point without daisy-chaining, minimizing interference and ground loops.

**Stego** — A brand of high-performance 10ml or 15 ml vapor barrier made from polyethylene, used under foundations.

**Stem-Wall Slab Foundation** — A foundation with vertical walls (stem walls) poured on footings, then a slab poured inside.

**Stick-Built Home** — A traditional building method where a wooden frame is constructed on site using dimensional lumber.

**Stickers** — Narrow boards placed under and between lumber layers to promote airflow and drying.

**STPE (Silyl-Terminated Polyether)** — A high-performance waterproofing material with strong adhesion and elasticity, used for foundation walls.

**Stucco** — A cement-based cladding system applied in layers over lath. Must be properly detailed to avoid trapping moisture.

**Subfloor** — The structural surface layer beneath the finish flooring, typically made of plywood or OSB.

**Sump Pump** — A pump installed in a pit (sump) to remove accumulated water from basements or crawl spaces.

**Swales** — Shallow, contoured, often vegetated ditches that capture and slow water, managing and directing surface water runoff and encouraging infiltration into the soil.

**Termination Bar** — A mechanical strip used to securely fasten the top edge of waterproofing membranes or dimple boards to foundation walls.

**Thermal Bridge** — A part of a building envelope where heat flows through more easily due to less insulation, increasing condensation risk.

**Thermal Camera** — A tool that detects temperature variations and is used to identify insulation gaps and moisture issues.

**Thermal Control Layer** — The insulation layer in a building that slows heat flow and prevents temperature-driven condensation.

**Thermal Envelope** — The insulated and air-sealed boundary of a building that controls heat flow between the interior and exterior.

**Tight Building** — A building that is well-sealed to minimize air leakage, improving energy efficiency and indoor air quality.

**Tile (Porcelain vs Ceramic)** — Porcelain tile is more dense and vapor-impermeable, while ceramic tile is more permeable but less common for floors.

**Tilt/Turn Window** — A high performance window that tilts inward for ventilation and swings open inward like a door.

**Topographical Map** — A detailed map showing land elevation and contours, used to assess site slope and water flow.

**Topographical Survey** — A detailed mapping of the elevation and contour of land, used to plan grading and drainage.

**Truss** — A structural framework of wood or metal used to support the roof.

**TVOCs (Total Volatile Organic Compounds)** — A group of airborne chemicals often emitted by gas appliances, associated with poor indoor air quality.

**Ufer Ground** — A grounding method using the rebar in a foundation slab; can cause magnetic fields if not managed properly.

**Underlayment (Flooring)** — A layer installed between the subfloor and finish floor to manage vapor, cushion flooring, or provide sound dampening.

**Underlayment (Roofing)** — A water-resistant or waterproof layer installed between the roof deck and shingles for additional protection.

**Unfaced Insulation** — Insulation without a vapor-retarder layer, allowing for greater drying potential in wall assemblies.

**U-Value** — A measure of how much heat a window or other building component allows to pass through. Lower U-values indicate better insulation and thermal performance, which is especially important for energy efficiency and comfort in both hot and cold climates.

**Valley** — A roof area where two sloping sections meet. A valley is a high-risk area for leaks.

**Variable Frequency Drive (VFD)** — A motor controller that adjusts frequency to regulate speed, common in modern HVAC and appliances; creates Microsurge Electrical Pollution.

**Vapor Barrier** — A material layer (like plastic sheeting) that blocks the movement of water vapor through walls, floors, or ceilings. Vapor barriers should not be used in walls; use **Vapor Retarders** instead.

**Vapor Permeable** — Describes materials that allow moisture vapor to pass through while blocking liquid water.

**Vapor Retarder** — A semi-permeable membrane that limits vapor flow while still allowing drying. Used instead of vapor barriers in walls.

**Variable Speed Motor** — A motor that adjusts its speed based on demand, improving HVAC system efficiency, comfort, and humidity control. Variable speed motors create Microsurge Electrical Pollution.

**Vapor-Variable Membrane** — A material whose vapor permeability changes based on humidity levels, allowing drying in some conditions while blocking moisture in others.

**Vented Attic** — An attic separated from the conditioned space, ventilated to the outside to control temperature and moisture.

**Ventilation** — The process of supplying fresh air to a space and exhausting stale air. Can be natural (windows) or mechanical (ERV/HRV).

**Vinyl Cladding** — Plastic-based siding material that is low-cost and low-maintenance but less durable and lower in breathability.

**Visible Transmittance (VT)** — The fraction of visible light (the portion of the solar spectrum visible to the human eye) that passes through a window, door, or skylight. Measured on a scale from 0 to 1, higher values indicate more natural daylight is transmitted indoors. VT is important for daylighting and visual comfort but must be balanced with solar heat gain and glare control.

**Volatile Organic Compounds (VOCs)** — Harmful gases emitted from products like paint, adhesives, and furnishings that can affect indoor air quality and occupant health.

**Vulcan Vent** — A brand of fire-rated vent designed to block embers from entering attics during wildfires.

**Water Control Layer** — A part of the building envelope that prevents liquid water (like rain and groundwater) from entering.

**Water-Resistive Barrier (WRB)** — A material that resists liquid water penetration but allows water vapor to pass through. Also called **Weather-Resistive Barrier**.

**Wireless Radiation** — A common term for RF EMR from devices like WiFi routers, smart meters, and Bluetooth-enabled devices.

**Virgin Soil** — Natural, undisturbed soil that has not been excavated or re-compacted, generally more stable for building.

**Wallboard** — Panels used for interior wall finishes, such as gypsum board, fiberglass-faced drywall, or MgO board.

**Warm Edge Spacer** — A material used to separate panes in a window that reduces heat transfer and condensation.

**Waterproofing** — A comprehensive system to prevent bulk water intrusion, including membranes, coatings, and drainage layers.

**Water Softener** — A system that removes calcium and magnesium from water to prevent scale buildup and improve soap effectiveness.

**Water Table** — The level below ground at which soil and rock are saturated with water; influences drainage and foundation design.

**Weed Burner** — A tool that uses flame to kill weeds; must be used with caution due to fire risk.

**Wet Building Materials** — Construction materials that contain moisture either from the manufacturing process or from weather exposure during construction.

**Wind-Driven Rain** — Rain propelled by wind, which can penetrate siding, windows, and other envelope weaknesses.

**Wind Washing** — Movement of unconditioned air through insulation cavities (often at attic eaves), reducing effectiveness.

**Window Header** — A horizontal framing member over a window that transfers loads around the opening. Often a thermal bridge unless insulated.

**Wood Fiberboard** — A vapor-open exterior insulation made from compressed wood fibers. Gutex is one brand that is often used.

**WRB (Weather- or Water-Resistive Barrier)** — A membrane or sheathing layer that prevents water from entering the wall assembly while allowing vapor to escape.

**Xeriscaping** — A landscaping approach using drought-tolerant, low-water plants, often native species, to reduce irrigation needs.

**Yard Settlement** — The process by which freshly placed soil compacts and settles over time, possibly reversing proper grading if not monitored.