Without an airtight, continuous air barrier, warm air seeps out during the winter and in during the summer, resulting in uncomfortable occupant spaces, issues with moisture and condensation, and unnecessarily high heating and cooling bills. Airtightness starts at the design phase for gut renovations and new construction projects alike. Building plans should incorporate air barrier materials at every point along the envelope assembly and specify how these materials will be joined up to create an unbroken, airtight layer. While this whole-building approach may not be possible for retrofits, sealing major points of air leakage—such as windows and doors, air conditioners, and vents—can provide substantial energy efficiency gains.

**Air Barrier**
A combination of materials that prevents the movement of air across a continuous, defined boundary. The air barrier typically includes windows, gaskets, sealants, membranes, and weather-stripping.

**Thermal Barrier**
A combination of materials, including insulation, that prevents heat loss and gain between conditioned and unconditioned spaces.

**Water Barrier**
Water-resistant materials that prevent water from moving across a defined boundary. Many air barriers also function as water barriers.

**Vapor Barrier**
Controls water vapor diffusion, defined as the movement of vapor through permeable materials.

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There was a block party last night? I had no idea—this building is so quiet that I slept right through it.