Building materials

Acero	Steel	
Arcilla	Clay	
Arena	Sand	
Asfalto	Asphalt	
Azulejo	Tile	
Cemento	Cement	
Escayola, yeso	Plaster	
Fibra de vidrio	Fibreglass	
Granito	Granite	
Hierro	Iron	
Hormigón	Concrete	
Hormigón armado	Reinforced concrete	
Hormigón pretensado	Pre-stressed concrete	
Ladrillo	Brick	
Baldosa	Floor tile	
Madera	Wood	
Mármol	Marble	
Piedra	Stone / rock	
Pizarra	Slate	
Roca caliza	Limestone	
Teja	Tile / Shingle	
Vidrio	Glass	

Definitions

Concrete: a mixture of cement, sand, small stones and water, used for foundations, pillars and other frame parts.

Reinforced concrete: is concrete with steel bars inside, to make it stronger.

Beam: is a long thick bar of wood, metal or concrete, especially one used to support the roof of a building.

Building Materials: Materials used for construction.

Ceiling: The overhead upper surface of a room

Hardness: Resistance to scratching or cutting

Properties	**Propiedades**	
Density	Densidad	
Compression	Compresión	
Traction	Tracción	
Hardness	Dureza	
Fragility	Fragilidad	
Bathroom fittings	Sanitarios	
A two-story house	una casa de dos plantas	
first floor (AmE), ground floor (BrE)	Planta baja	

Structures

Cimientos	Foundation	
Cubierta / Tejado	Roof	
Dintel	Lintel	
Habitación / Cuarto	Room	
Estructura	Frame	
Muro	Wall	
Pilar	Pillar / Column	
Planta Baja	Ground floor	
Puerta	Door	
Sótano	Basement	
Suelo / Piso (división de una casa)	Floor	
Tabique	Partition Wall	
Techo	Ceiling	
Ventana	Window	
Viga	Beam	
Vigueta	Small Beam	

ECOHOUSES

The most **energy-efficient houses** function like living things. They are designed to fit in the local environment and to respond to the climate. Australian architect Glenn Murcutt is known for designing earth-friendly homes that imitate nature. Even if you live far from Australia, you can apply Glenn Murcutt's ideas to your own building project.

1. Use Simple Materials: Forget the polished marble, imported tropical wood and expensive metals. A Glenn Murcutt home is simple, comfortable, and economical. He uses inexpensive materials that are available in his native Australian landscape. For example, in Murcutt's *Marie Short House* the roof is corrugated metal, the window frames are enameled steel, and the walls are timber from a nearby sawmill.

2. Touch the Earth Lightly: Glenn Murcutt loves quoting the Aboriginal proverb "touch the earth lightly because it expresses your concern for nature". Building in the Murcutt way means respecting the surrounding landscape. Murcutt's *Ball-Eastaway* house hovers above the earth on steel stilts. Because there is no deep excavation, the dry soil and surrounding trees of the surrounding arid forest are protected.

3. Follow the Sun: Glenn Murcutt's houses are based on natural light. Their shape is long and low, and they often feature verandas, skylights, adjustable window frames and movable screens. Frequently overlooking the ocean, his homes are designed to capture the sun.

4. Listen to the Wind: Even in the hot, tropical climate of Australia's Northern Territory, houses by Glenn Murcutt do not need air conditioning. Ingenious systems for ventilation assure that cooling breezes circulate through open rooms. At the same time, these houses are insulated from the heat and protected from strong winds.

Green building

A sustainable building, or green building is an outcome of a design philosophy which focuses on increasing the efficiency of resource use — energy, water, and materials — while reducing building impacts on human health and the environment during the building's lifecycle, through better siting, design, construction, operation, maintenance, and removal. Though green building is interpreted in many different ways, a common view is that they should be designed and operated to reduce the overall impact of the built environment on human health and the natural environment by:

- Efficiently using energy, water, and other resources
- Protecting occupant health and improving employee productivity
- Reducing waste, pollution and environmental degradation

A similar concept is natural building, which is usually on a smaller scale and tends to focus on the use of natural materials that are available locally. Other related topics include sustainable design, green architecture, and energy efficient buildings.

Reducing environmental impact

Green building practices aim to reduce the environmental impact of buildings. Buildings account for a large amount of land use, energy and water consumption, and air and atmosphere alteration. In the United States, more than 2,000,000 acres (8,100 km2) of open space, wildlife SUPS habitat, and wetlands are developed each year.

As of **2006**, buildings used 40 percent of the total energy consumed in both the US and European Union. In the US, 54 percent of that percentage was consumed by residential buildings and 46 percent by commercial buildings. In **2002**, buildings used approximately 68 percent of the total electricity consumed in the United States. 38 percent of the total amount of carbon dioxide in the United States can be attributed to buildings, 21 percent from homes and 17.5 percent from commercial uses. Buildings account for 12.2 percent of the total amount of water consumed per day in the United States.

Considering these statistics, reducing the amount of natural resources buildings consume and the amount of pollution given off is seen as crucial for future sustainability, according to EPA (Environmental Protection Agency).

The environmental impact of buildings is often underestimated, while the perceived costs of green buildings are overestimated. A recent survey by the World Business Council for Sustainable Development finds that green costs are overestimated by 300 percent, as key players in real estate and construction estimate the additional cost at 17 percent above conventional construction, more than triple the true average cost difference of about 5 percent.

Practices

Green building brings together a vast array of practices and techniques to reduce and ultimately eliminate the impacts of buildings on the environment and human health. It often emphasizes taking advantage of renewable resources, e.g., using sunlight through passive solar, active solar, and photovoltaic techniques and using plants and trees through green roofs, rain gardens, and for reduction of rainwater run-off. Many other techniques, such as using packed gravel or permeable concrete instead of conventional concrete or asphalt to enhance replenishment of ground water, are used as well. Effective green buildings are more than just a random collection of environmental friendly technologies, however.[9] They require careful, systemic attention to the full life cycle impacts of the resources embodied in the building and to the resource consumption and pollution emissions over the building's complete life cycle. Before focusing on materials and techniques, some believe that the first priority for green building is to reduce the building's demand on resources and energy, and recognize the direct relationship between a building's size and its demands.

On the aesthetic side of green architecture or sustainable design is the philosophy of designing a building that is in harmony with the natural features and resources surrounding the site. There are several key steps in designing sustainable buildings: specify 'green' building materials from local sources, reduce loads, optimize systems, and generate on-site renewable energy.

Materials

Building materials typically considered to be 'green' include rapidly renewable plant materials like bamboo (because bamboo grows quickly) and straw, lumber from forests certified to be sustainably managed, ecology blocks, dimension stone, recycled stone, recycled metal, and other products that are non-toxic, reusable, renewable, and/or recyclable (e.g. Trass, Linoleum, sheep wool, panels made from paper flakes, compressed earth block, adobe, baked earth, rammed earth, clay, vermiculite, flax linen, sisal, seagrass, cork, expanded clay grains, coconut, wood fibre plates, calcium sand stone, concrete (high and ultra high performance, roman self-healing concrete) , etc.) The EPA (Environmental Protection Agency) also suggests using recycled industrial goods, such as coal combustion products, foundry sand, and demolition debris in construction projects.

Reduced energy use

Green buildings often include measures to reduce energy use. To increase the efficiency of the building envelope, (the barrier between conditioned and unconditioned space), they may use high-efficiency windows and insulation in walls, ceilings, and floors. Another strategy, passive solar building design, is often implemented in low-energy homes. Designers orient windows and walls and place awnings, porches, and trees to shade windows and roofs during the summer while maximizing solar gain in the winter. In addition, effective window placement

(daylighting) can provide more natural light and lessen the need for electric lighting during the day. Solar water heating further reduces energy loads.

Onsite generation of renewable energy through solar power, wind power, hydro power, or biomass can significantly reduce the environmental impact of the building. Power generation is generally the most expensive feature to add to a building.

Reduced waste

Green architecture also seeks to reduce waste of energy, water and materials used during construction. For example, in California nearly 60% of the state's waste comes from commercial buildings. During the construction phase, one goal should be to reduce the amount of material going to landfills. Well-designed buildings also help reduce the amount of waste generated by the occupants as well, by providing on-site solutions such as compost bins to reduce matter going to landfills.

To reduce the impact on wells or water treatment plants, several options exist. "Greywater", wastewater from sources such as dishwashing or washing machines, can be used for subsurface irrigation, or if treated, for non-potable purposes, e.g., to flush toilets and wash cars. Rainwater collectors are used for similar purposes.

Centralized wastewater treatment systems can be costly and use a lot of energy. An alternative to this process is converting waste and wastewater into fertilizer, which avoids these costs and shows other benefits. By collecting human waste at the source and running it to a semi-centralized biogas plant with other biological waste, liquid fertilizer can be produced. This concept was demonstrated by a settlement in Lubeck Germany in the late 1990s. Practices like these provide soil with organic nutrients and create carbon sinks that remove carbon dioxide from the atmosphere, offsetting greenhouse gas emission. Producing artificial fertilizer is also more costly in energy than this process.