Most brick kilns now use natural gas instead of coal. This has reduced sulfur dioxide emissions and also allows more precise control of fuel consumption. Waste heat from the firing kilns is also ducted and reused to dry unfired units. When the costs of transporting brick to job sites is factored in, the embodied energy is estimated at approximately 4000 Btu per pound of brick.

The primary ingredients in concrete masonry units are the sand and aggregates, which account for as much as 90% of a unit's composition. These materials are abundant, easily extracted, and widely distributed geographically. Recycled materials such as crushed concrete or block and by-products such as blast furnace slag, cinders, and mill scale can be used for some of the aggregate. The portland cement used as the binder in concrete masonry is energy intensive in its production, but it accounts for only about 9 to 13% of the unit. Energy consumption for cement production has decreased 25% during the last 20 years, mostly as a result of more efficient equipment and production methods. The proportion of portland cement in concrete masonry units can be reduced by substituting fly ash, which is a by-product of coal-fired power plants.

Natural stone uses less energy in its production and fabrication than other masonry materials, but its transportation costs can be significantly higher. It is not unusual for a stone to be quarried on one continent, shipped to another for fabrication, and to yet another for installation. The use of local or regional building stones greatly reduces transportation and embodied energy costs.

2.4.2 Construction Site Operations

Masonry construction is generally less hazardous to the environment than some other building systems because most of the materials used are chemically inert. Mortar-mixing and stone-cutting operations can generate airborne particulate wastes such as silica dust. Keeping aggregate piles covered and using water-cooled saws can reduce this hazard. Modular dimensioning of masonry can reduce job-site waste by limiting construction to the use of only whole and half-size units.

Cleaning compounds, mortar admixtures, coatings, and the chemicals used to clean and maintain equipment may include potentially hazardous materials. Precautions should be taken in the disposal of such products, and runoff should be controlled to prevent the migration of chemicals into natural waterways and municipal storm sewer systems. On small cleaning projects, this may be a simple matter of temporary flashings and catch basins, but on large projects this may become a complex task. The rinse material should be tested after cleaning a sample wall area to make sure it is safe to dispose of in the public storm sewer system.

2.4.3 Indoor Air Quality/Building Ecology

When the cost of energy went up dramatically in the 1970s, building standards began to change. Construction was tightened up to reduce or eliminate air leakage and the heat loss or heat gain associated with it. Ventilation standards also changed, reducing the number of air changes per hour that the mechanical systems delivered to increase the efficiency of heating and cooling systems. Unfortunately, these changes also led to increased concentrations of chemical air pollutants in buildings. Many building products contain substances that are known to pose health risks through continued exposure. Substances used in the manufacture of plywood, insulation, sealants, adhesives, paints, pigments, and solvents include formaldehyde and benzenes (both of which are carcinogens), as well as trichloroethylene.

Synthetic carpet can emit formaldehyde, toluene, and xylene as well as methyl methacrylate, ethylbenzene, and a host of other chemicals. Even softwood framing lumber contains terpenes that continually offgas and are of concern for sensitive individuals. Masonry products are generally inert and do not contribute to indoor air quality problems. They contain no toxins or volatile organic compounds (VOCs), do not emit any chemical pollutants as they age, and will not support mold growth, and none of the natural stone that is typically used in building is known to emit radon.