



PINE HALL BRICK

BUILD YOUR DREAMS.

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Sustainability: What is it?



According to *The Architects' Handbook of Professional Practice*, sustainability is the concept of meeting present needs without compromising the ability of future generations to meet their own needs. To us, it means providing a product that lasts a very long time while at the same time, minimizing the resources employed to produce it.

This principle guides us now and it has since 1922 through three generations of the Steele family. We are committed to long-term conservation of resources and embrace the concept of providing a foundation building block for generations to come just as brick makers have done for thousands of years.



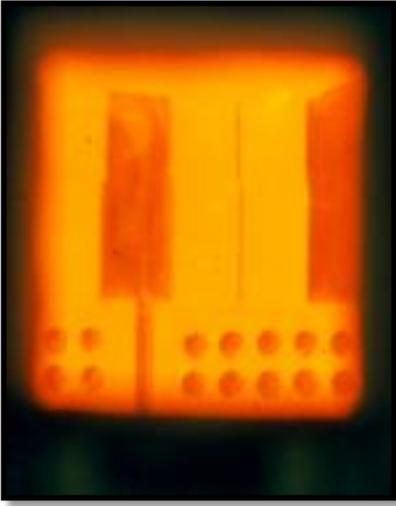
Brick is "green," in part, because it lasts a long time. Durability comes from the vitrification of clay particles into a dense mass. Simply, we mix clay shale with water to form a brick, dry it, and then, we fire it to around 2000 degrees.

The particles melt or fuse together to create a body structure that resists the ravages of time and weather. There are many old brick structures still standing around the world like the Great Wall of China, the Basilica of Constantine and the ancient structures of the Indus civilization that have stood for thousands of years.



Here, in our backyard of North Carolina, we have Pine Hall Brick homes that date back to 1923 (houses were built shortly after our founding in August of 1922) and they are still occupied, providing all the comforts of home.

Energy



A natural question: doesn't it take a lot of energy to make brick? The answer is yes but it takes energy to do a lot of things from running our cars to heating our homes to processing the food on our tables to enjoying leisure activities. We all make lifestyle choices that involve energy use every day. That's why choosing brick is a good one. Not only is brick a strong wall or paving material that is maintenance free with warm appeal, the energy used to produce brick compared to its life expectancy is lower than most building materials like concrete, glass, steel and aluminum (AIA Environmental Resource Guide-embodied energy). It is also lower in embodied energy than EIFS and fiber cement products according to a recent study by the National Brick Research Center.

Natural gas is the predominant fuel we use to fire our brick as it is the cleanest fuel to burn. We operate with gas on an "interruptible" basis meaning that in times of extreme demand, like very cold periods of the winter, we will shut off our gas usage in order that hospitals and consumers can still get gas.

One of our main corporate and environmental objectives is to continuously monitor and improve our fuel usage and efficiency. We invest every year in capital programs to lower our energy use per brick manufactured. Whether it's rebuilding kilns, slight alterations to our raw material mix or using alternative fuel sources, we lowered our energy use per brick manufactured over the last ten years by 19%.

Alternative fuels can be both cheaper to use and helpful for the environment. We will use alternative fuels when we can do so cleanly, safely, and within the guidelines of our environmental permits. Several of our kilns are fired on waste wood that otherwise would require disposal. Wood particulate comes from the flooring industry and may contain trace amounts of binder or finish material. The ability to burn them completely plays a helpful role in waste disposal.

Environment

Water

In order to make a brick, we mix clay shale (hardened clay) with water to form it into its rectangular shape. Our production water comes from on-site wells or nearby rivers and does not involve any treated water used for human consumption. Each plant site uses about 5000 gallons per day which represents only the amount of water that a farmer would use to irrigate a 75 acre farm one single time. In fact, the amount of our water usage is far less than the annual rainfall occurring on our property sites. Also, we are careful to make sure that process water used in other areas of the facility gets recycled back into our brickmaking so that no process water leaves the site.

Air

Our brickmaking production takes place in enclosed buildings where we have modern equipment in place to reduce the amounts of dust and to reduce the gases released into the air. We employ the use of modern

scrubbers that remove many potentially harmful gases. And, that equipment allows us to operate with far fewer emissions than the limits set by state air permits. In the plant environments that may have potential to create dust, we employ dust gathering bag filters to improve interior air quality. Outdoors, we regularly water unpaved surfaces to reduce dust creation during dryer periods.

Land

Clay shale is found in certain parts of the country (depending on geological makeup) and it is generally found in hilly areas, lying close to or just below the earth's surface. As a result, mining shale occurs mostly on the surface with a front-end loader and mines rarely get deeper than 25 feet. At no time do mines get deep enough to affect



or impact the area water table. All Pine Hall Brick mines are located within 10 miles of the facility they serve. We mine about five acres per year for each brick facility and when the surface shale is extracted, we regrade the area to control erosion and water runoff while planting new trees or grasses. Our preferred reclamation effort calls for planting seed bearing plants like milo, millet, lespedeza, and wheat to encourage the genesis of wildlife to the reclaimed area. These plants are effective in that they provide a food source for wildlife and their growth pattern allows for wildlife to roam among the plants to find seedlings along the ground. As the new ecosystem develops, trees begin to grow through natural fertilization.

Waste & Recycling

Our goal is to minimize waste through recycling. The following represents our major efforts in this area:

- Recycle process water for brick production
- Recycle all un-fired brick into new production
- Recycle kiln waste heat to dry brick
- Recycle harmless waste re-agents for farm use (donation)
- Use recycled waste wood for fuel (alternate use fuels)
- Recycle fired brick (not sold) into brick mulch for landscaping
- Recycle mine site overburden into land reclamation