

Brick or Concrete?

by Gary Kleier

CHTKY.org

Brick or Concrete?

When someone says the word "SIDEWALK", what image comes to your mind? Is it a ribbon of gray-white concrete about four feet wide with scoring about every 4 feet along the way? For many people, that is their first and only image. However, for many of us who live in historic areas, the image is not concrete, but brick.

Until the late 1800s, concrete was unavailable. It was not until 1891, in Bellefontaine, Ohio, that the first concrete street in the United States was paved. Until that time, brick was a major paving material in many cities. As concrete became more available and the techniques for mixing and placing were refined, it became a very desirable material for paving purposes. In truth, concrete roadways have a lot of advantages over brick. They are much smoother and they are far less labor intensive to place. With the exception of longevity, it would be the rare occasion when a brick roadway had an advantage over concrete.

Unfortunately, without thinking about the consequences, many U.S. city officials accepted concrete as a superior product for all circumstances. For almost a hundred years cities have been ripping out perfectly good brick sidewalks and replacing them with concrete. In some cities, if you wanted to place a brick sidewalk, you first had to pour a concrete sidewalk and then place the brick over it. It wasn't until the last few decades of the 20th century that some cities began to stop this practice in historic areas. But as of this writing, I am unfamiliar with any city that installs brick sidewalks, over a bed of sand or gravel, anywhere but in the historic districts. If anyone does know of such a city, please let me know.

Before you write me off as a brick salesman, lets set the record straight. As an architect, I am frequently called upon to perform value engineering. That is, what is the best product for the job based upon the cost over the life of the product, not just the first cost. And therein is my argument. Based upon first cost, concrete sidewalks will usually be about 1/3 the cost of brick. However, based upon the life of the product, and the circumstances under which it is used, brick will frequently be the winner and by a large margin. Why? Life expectancy and maintenance.



Figure 1

Figure one shows one of the entrances to Central Park in Louisville, Kentucky. This historic park was completed in 1904. While the brick sidewalks work just as well today as they did 100 years ago, look at the handicapped curb ramp that was installed about 30 years ago. The severe cracking is not a recent occurrence. It has looked that way since I moved into the neighborhood in 1978. Had this ramp been installed in brick, the same brick that was removed from the sidewalk and discarded, we would not have been looking at this ugly mess for 30 years.



Figure 2

The sidewalk shown in Figure 2 was replaced about three years ago. The tree roots had cracked and displaced the sidewalk, causing a woman to trip and seriously injure herself. How long before that occurs again? The original "repair" took several days and probably cost over \$1000. How soon will it need "repairing" again and at what cost? If this sidewalk were brick, the initial repair would have taken only a couple of hours at a cost of less than \$100 and could be repaired again today for less than half of that.



Figure 3

Figure three shows a section of sidewalk along Oak Street in Louisville, Kentucky. Each section of concrete in this figure is approximately 4 feet square. To repair the damaged and displaced concrete surrounding the tree on the right side of this figure will require the removal of at least 7 of the concrete squares. The cost: about 20 to 30 times the cost of repairing a brick sidewalk and probably two to three days of time. That means this entire sidewalk will be closed to pedestrians for two to three days, a driving lane of the street will be blocked while the work takes place and the restaurant adjacent to the site will endure the sound of jackhammers for hours. If this were a brick sidewalk, the entire repair would require only a few hours, would not block the street, and it would make virtually no noise.



Figure 4

Figure 4 again shows a section of sidewalk along Oak Street. Notice how much area is available for rainwater to enter the ground. It is fortunate that the water table in this area of Louisville is relatively high and the sandy soil makes it easy for the tree roots to penetrate. But what about street trees that are not so fortunate? A brick sidewalk, laid over sand or gravel, allows a significant amount of rainwater to enter the ground. As an additional benefit, puddles tend to disappear in minutes rather than the hours or days they last on a concrete sidewalk.

After all of this, you probably think I believe brick to be a better sidewalk pavement than concrete. No, I don't. What I do believe is that the unthinking assumption that concrete is a superior product in all situations is wrong.

Here are the major points to consider:

- In terms of durability, brick has a slight advantage over concrete because it can accommodate small amounts of movement without cracking.
- The cost to install a brick sidewalk over a bed of gravel and sand is about 3 times the cost of concrete.
- The cost to repair a concrete sidewalk can be from ten to thirty times the cost of repairing a brick sidewalk
- The time required to repair a brick sidewalk is very little compared to concrete, it requires no heavy equipment and is relatively quiet.
- Brick is more environmentally friendly than concrete because it allows some amount of rainwater to enter the ground where concrete will not.
- Brick can be recycled where concrete cannot.

- Where esthetics are a concern, brick is probably more desirable than concrete.

For the home owner there can be additional advantages:

- Brick paving is an easy do-it-yourself project.
- Compared to concrete, mistakes in brick are easy to correct.
- Bricks don't harden on you while you are eating lunch, and a sudden rain storm does no damage.
- Laying brick in sand or gravel is something anyone can do if they will take a few minutes to read the simple instructions you will find on this web site. www.oldlouisville.com

You might also want to check the article on repairing brick sidewalks also on this web site.

For those of you who desire more information, I suggest you visit the web site of the Brick Institute of America (BIA). They can be found at:

www.BIA.org Check technical publications 14 and 14A.

©2000-2002 Gary Kleier, OldLouisville.com

Webmaster's note:

Gary Kleier is our resident Old Louisville Architectural Conservator. He lives on Floral Terrace and is one of those folks who was instrumental in the landscaping and beautification of that little jewel of a walking court between Sixth and Seventh Streets. Gary specializes in restoration architecture and architectural forensic services and has a wide range of talents which are described on his own web site at www.KleierAssociates.com. You can reach Gary by email at gjkleier@netscape.net

Other articles in this series:

[Brick Structures - Oh What Damage We Do Inflict](#) "The most deadly enemy is man and what he does in the name of maintenance and rehabilitation."

[The Vinyl Lie](#) "Every day unsuspecting owners of historic homes, believing they are actually making an investment in their home, succumb to the vicious lies of an unscrupulous industry....."

[A True Story](#) "The next time you are thinking about doing something to your "old" house, think about this true story."

[Brick Sidewalk Repair](#) A quick primer on repairing your brick walkways.

[Brick or Concrete?](#) An illustrated discussion on the advantages of both brick and concrete sidewalks. You decide.

[Old Louisville Guide Home Page](#)

Old Louisville National Historic District

[Home](#), [Newsletter](#), [News/Press Releases](#), [Old Louisville Business Directory](#), [History](#), [Historic Pictures](#), [Vintage Post Card Views](#), [Spring](#), [Autumn](#), [TerraServer Images](#), [Maps](#), [Calendar of Events](#), [Walking Tours](#), [Architectural Styles](#), [Architect's Corner](#), [St James Court](#), [Belgravia Court](#), [St. James Art Show](#), [Museums](#), [Libraries](#), [Literature](#), [Churches](#), [Bed and Breakfast Inns](#), [Restaurants-Taverns](#), [Recipes](#), [Visitors' Page](#), [Resources](#), [Old Louisville Places](#), [Our Lost Landmarks](#), [Old Louisville, the Way it Was](#), [Louisville Links](#), [Feedback](#)

information@oldlouisville.com