



Figure 4.71 Photograph of brick plaza.

recommended that a prepared base, such as shown in Fig. 4.73, be used to reduce the amount of pumping and movement in the mortarless brick systems. Rigid paving systems are preferred where steps or exposed edges will be used (Fig. 4.74). Wherever steps, ramps, or exposed edges are used, the brick should be supported by a concrete base (Fig. 4.75). The flexible mortarless systems require support or restraint at the loose edges.

The bed for bricks and pavers usually consists of a base layer and a setting layer. The setting bed acts as a leveling course between the base and the finished surface. The base provides the strength and resistance to the finished surface. The possibilities for setting-bed materials are usually limited to sand or mortar, although sometimes asphalt is also used. There is a very broad range of choices of sand depending on the region it comes from. However, for the most part a well-graded (consistent size), washed sand with a maximum particle size of  $\frac{3}{16}$  in is acceptable. Concrete sand that complies with *ASTM C 33 Specification for Concrete Aggregates* is acceptable. Sand that meets *ASTM C144 Specification for Aggregates for Masonry Mortar*, sometimes called *mortar sand*, is also acceptable. Sand-setting beds should be between  $\frac{1}{2}$  and 2 in.

Mortar-setting beds are always used in rigid, mortared surfaces. Mortar should be prepared in accordance with *ASTM C 270 Specification for Mortar for Unit Masonry*. Type M mortar is preferred in applications where freezing is not expected, and it consists of 1 part portland cement,  $\frac{1}{4}$  part hydrated