

STEM Sims™

Building Security



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Do you need an idea for a scientific study?
Try out one of our ideas or make one of your own.

Start right now learning about the basics of how building designers and safety experts protect these structures from a variety of threats. Take the following brief quiz to see how much you already know about securing a building. See the bottom of page 4 to check your answers.

1. Most building security experts suggest hiding security cameras from people's view so that the people don't know they are being watched and recorded.
 - a. true
 - b. false
2. If a personal identification badge system is used to help secure a building, who should *not* be required to wear an ID badge inside the building?
 - a. building visitors
 - b. upper management
 - c. contracted help, such as cleaning staff
 - d. no one
3. From a building security perspective, which of the following is recommended for locations close to a building's exterior walls?
 - a. mailboxes
 - b. trash cans
 - c. suggestion boxes
 - d. trees planted in the ground
4. A majority of building security experts suggest that fewer entrances and exits help make a building more secure.
 - a. true
 - b. false
5. Although all areas of a building should be secure, which area is the *least* sensitive in terms of providing controlled access?
 - a. computer server room
 - b. mail room
 - c. reception area
 - d. file storage area



Double Secret Security

Some building security systems have a feature that requires a user to enter both a numeric and verbal code before the system allows access to the building. The verbal code is derived from the numeric code using the number and letter combinations found on a typical keypad (Figure1). The numeric code appears below. Can you determine the verbal code that must be spoken into the system to gain entrance to the building? Remember that each number on the keypad can stand for three or four letters. For instance, the number “2” can represent the letters A, B, or C. See the bottom of page 4 to check your answer. Hint: The verbal code is something that people should consult when completing a multi-step task.

Numeric Code

2 4 3 2 5 5 4 7 8

Verbal Code

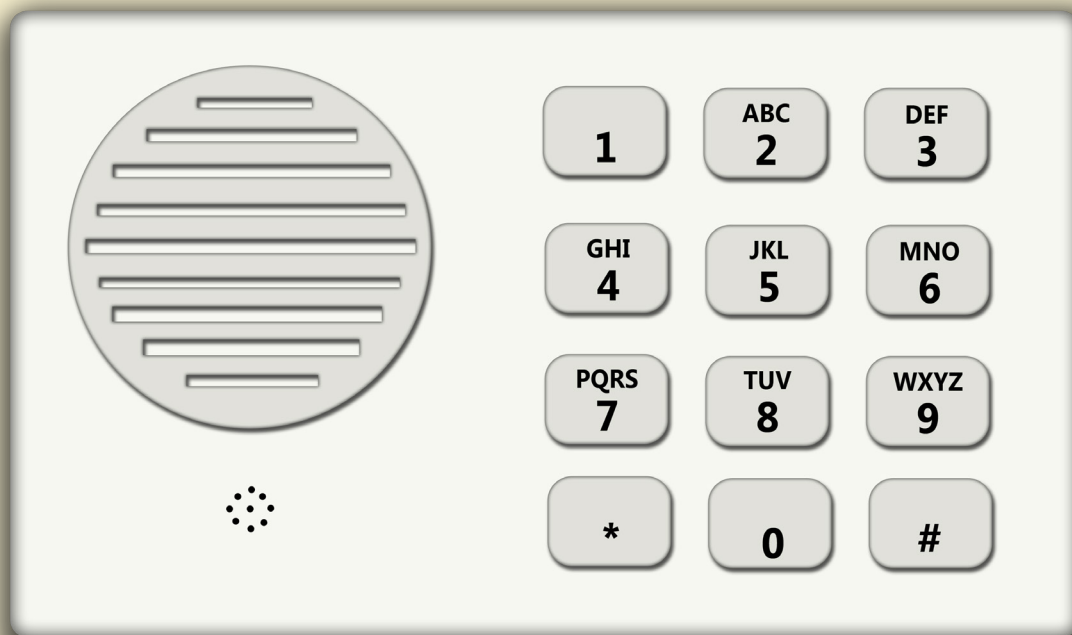


Figure 1

Building Security

Trying to Please Everyone

Architects are faced with a difficult task when designing today's building. They must balance the need for the safety of the people using and working in the building with making the structure accessible in the least restrictive manner. At the same time, architects want to create a building that is beautiful and shows their creativity. This notion is illustrated in a couple of interesting designs seen in the federal courthouse building shown in Figure 2. First, notice how the face of the building is curved and not flat. This feature reduces the blast impact of a bomb if it was exploded next the exterior front walls of the building. At the same time, the curved face looks very appealing to most people. Another safety measure is the landscaping berms built along the building's front walkway. These mounds protect the building from a person trying to drive a bomb-laden vehicle into the front doors of the building. People walking and driving by the front of the building only see a beautifully landscaped building front and not the extra security provided by the barriers.

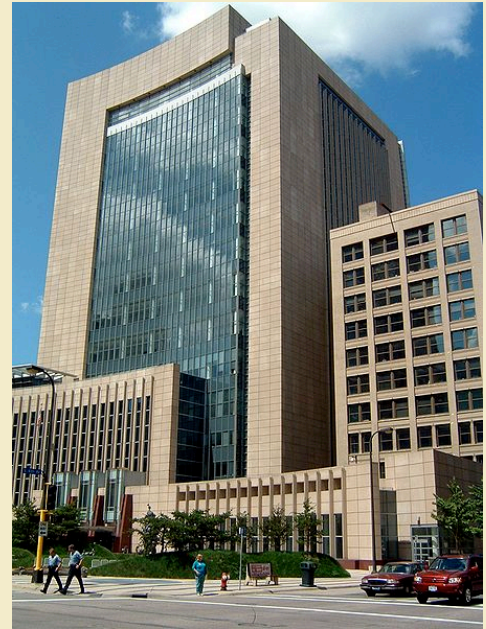


Figure 2



Figure 3 shows another courthouse, however, this building designer used concrete barriers in front of the entrance to protect the building instead of berms. Note how this building is not nearly as architecturally pleasing as the building in Figure 2. Also notice the closeness of the building to the roadway in figure 3. A vehicle containing a bomb could pull right up to the building, detonate the bomb, and cause serious injuries to many people inside the building.

Figure 3

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Answers: Page 2 Answers: 1) b, People are about 50% less likely to commit a crime when they know they are being watched. 2) d, 3) d, 4) a, 5) c. Page 3 Double Secret Security Answer: checklist

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