



## **Safe Rooms (Panic Rooms)**

A safe room also known as a strong room (or panic room) is a fortified room that is installed in a private residence or business to provide temporary refuge for the inhabitants in the event of a break in, home invasion, tornado, terror attack, or other threat. A safe room can also be required for high value equipment such as computer servers.

### **History of Safe Rooms**

Safe rooms can be traced back as far as the Middle Ages. Castles had a "castle keep," a room located in the deepest part of the castle, which was designed so the feudal lord could hide during a siege.

The features of the modern safe room are mostly derived from fallout shelters during the 1950s, which were created in response to the fear of nuclear attacks.

In South America where kidnappings are relatively common, some people use saferooms as an alternative to bodyguards.

In Israel, saferooms (known locally as a 'mamad') have been mandatory for every house built since 1992.

Panic rooms have become increasingly popular in new homes and are considered a necessity among certain sections of affluent society, who require higher security measures.

### **What should a Safe Room provide**

- Protection from perceived risk. The risk will typically range from a basic attack by burglars with hand tools to sustained attack by assailants armed with military weapons.
- Time. While safe rooms are designed to provide protection from attack, a highly motivated, well equipped adversary can defeat any safe room given enough time. In a rural environment, two hours resistance to attack should be sufficient to allow a response from police.
- Ease of access. Residents must be able to access the safe room unobserved and without crossing paths with the intruders.
- Communications. It is critical that the occupants of the safe room have a means to communicate with the police, both to notify them that an intrusion

has occurred, and to verify that it is safe to exit the room after the situation has been resolved

- **Visibility.** It is useful for the residents to be able to see how many attackers there are, how they are equipped and if possible, identify them. CCTV is the usual solution.

### **Location**

The most cost-effective solution is to take an ordinary room in the residence and equip it so that it can do double-duty as a safe room. Bedrooms and storage rooms are commonly used.

The safe room should be conveniently located in the home so occupants can quickly reach it in the event of an emergency. A central location near sleeping and living areas is usually a better choice than a more remote location such as a basement or attic. Ideally, the safe room would be located at the interior rather than the exterior of the home and have no accessible windows.

### **Design**

Safe room designs vary with budget and intended use. Even a closet can be converted into a rudimentary safe room, although it should have a solid-core door with a deadbolt lock. High-end custom models costing hundreds of thousands of dollars boast thick steel walls, video banks, computers, air-cleaning systems, bulletproof Kevlar®, and protection against bacterial and chemical infiltration. Recommendations for specific design elements are as follows:

- **Doors:** These are one of the most critical components of the safe room design. A bullet resistant door with internal steel framing can weigh in excess of 100 kilograms, yet it must operate smoothly and without fail in an emergency. The hardware must be selected to provide substantial, secure locking without compromising the smooth operation of the door itself. Most importantly, it must allow the door to be secured quickly, preferably from a single control point. The hardware should not be capable of being overridden or tampered with from the outside.
- **Floors:** Concrete is an adequate material for the floor. In other forms of floor construction, such as wood, it is important to provide supplementary protection suitable to the anticipated type of emergency. As safe room construction often uses heavy materials, it is important to ensure that the floor can support a large load.
- **Sound insulation:** The attackers may try to verbally coerce the occupants to leave the safe room. Effective sound insulation will limit the ability for such unwanted communication. Also, sound insulation will prevent the intruders from hearing phone conversations between the occupant and police.
- **Walls and ceilings:** Wall construction that spans from floor to ceiling is generally preferred because of the structural continuity of the framing. Bricks and blocks, while bullet-resistant, can become dislodged from

repeated sledgehammer battering. Steel stud walls, braced with additional reinforcing ties, can be faced with steel sheet or bullet-resistant materials, such as Kevlar®. These, in turn, may be covered with tile, sheetrock or other decorative finishes. Steel and Kevlar® panels are available in large sheet sizes. This helps minimize the number of joints that can be potential weak points of an assembly. It is important to not overlook penetrations that may be made for light fixtures, power points or plumbing pipes. Ductwork that passes through protected walls should also be carefully considered to ensure that the security is not breached, or they are not used to transfer poisonous gasses into the safe room.

- Cameras and monitors: Concealed cameras located outside the room enable its occupants to secretly monitor the movement and numbers of intruders.
- Generator: A self-contained power system is standard in higher-end safe rooms.
- Ventilation: For higher risk situations, special ventilation systems that filter the air coming into the room and provide positive air pressure within the room to keep irritants and other gases out should be installed. These systems can be complicated and need to be specifically engineered for the room which they are expected to provide ventilation for.

#### **Items to keep in a safe room:**

At a minimum, the safe room should be equipped with the following equipment and supplies:

- Flashlights and batteries
- Fire extinguisher
- First aid kit
- Any special medications needed by occupants (for example, insulin for a diabetic)
- Bottled water
- Dehydrated food
- Temporary toilet facilities
- Blankets

The quantity and type of supplies needed may vary depending on the number of occupants, location of safe room, and the total amount of time that it is expected that the room will be in use.

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