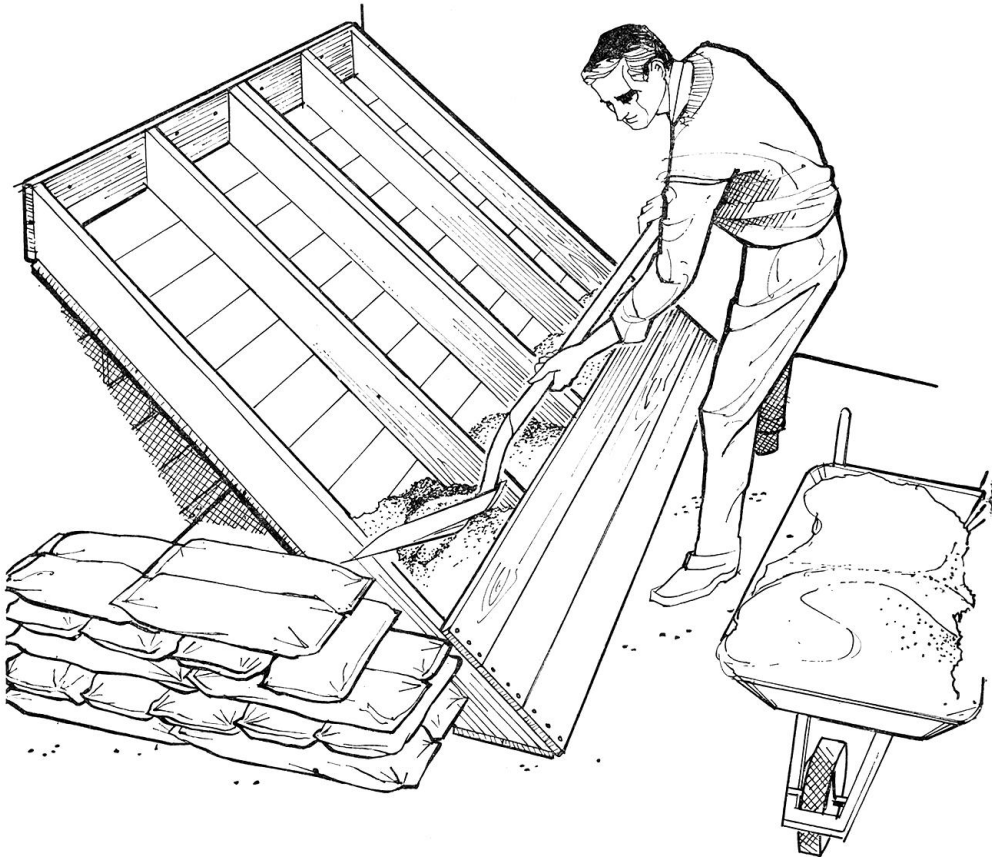




Basement Sand-Filled Lumber Lean-To Shelter

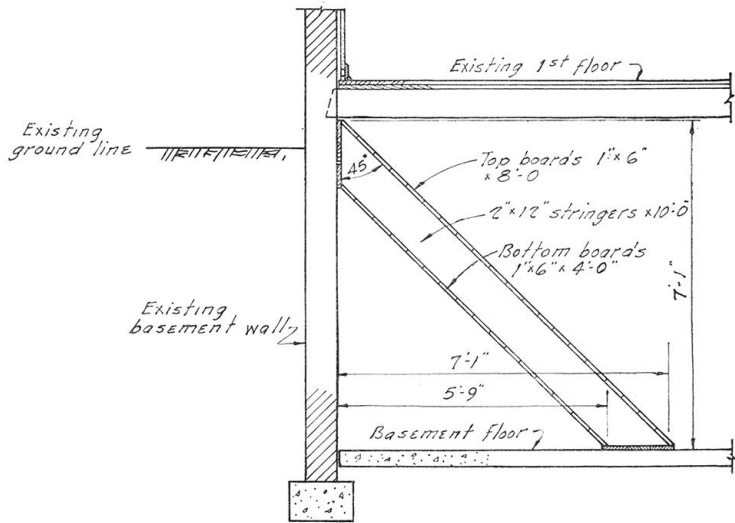


GENERAL INFORMATION

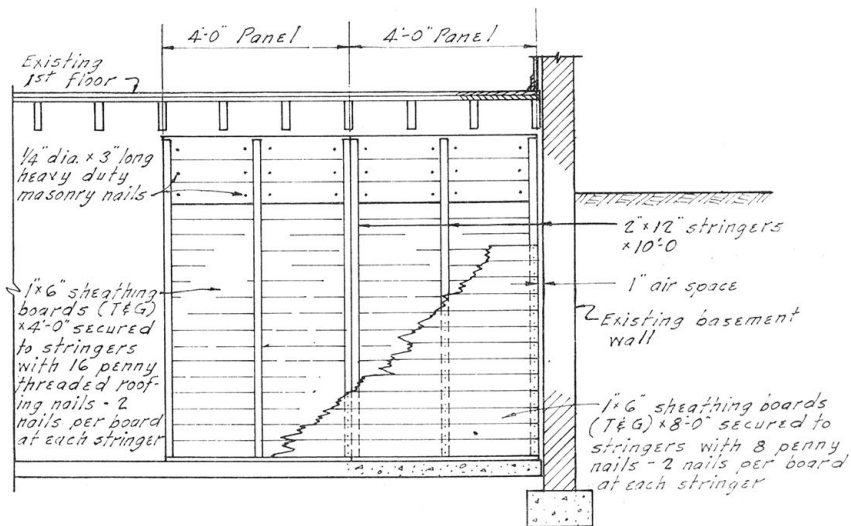
This shelter is designed to provide protection from the effects of radioactive fallout in the belowgrade basement of an existing structure. Its advantages are low cost, simplicity of construction, general availability of materials, and the fact that it may be easily disassembled.

TECHNICAL SUMMARY

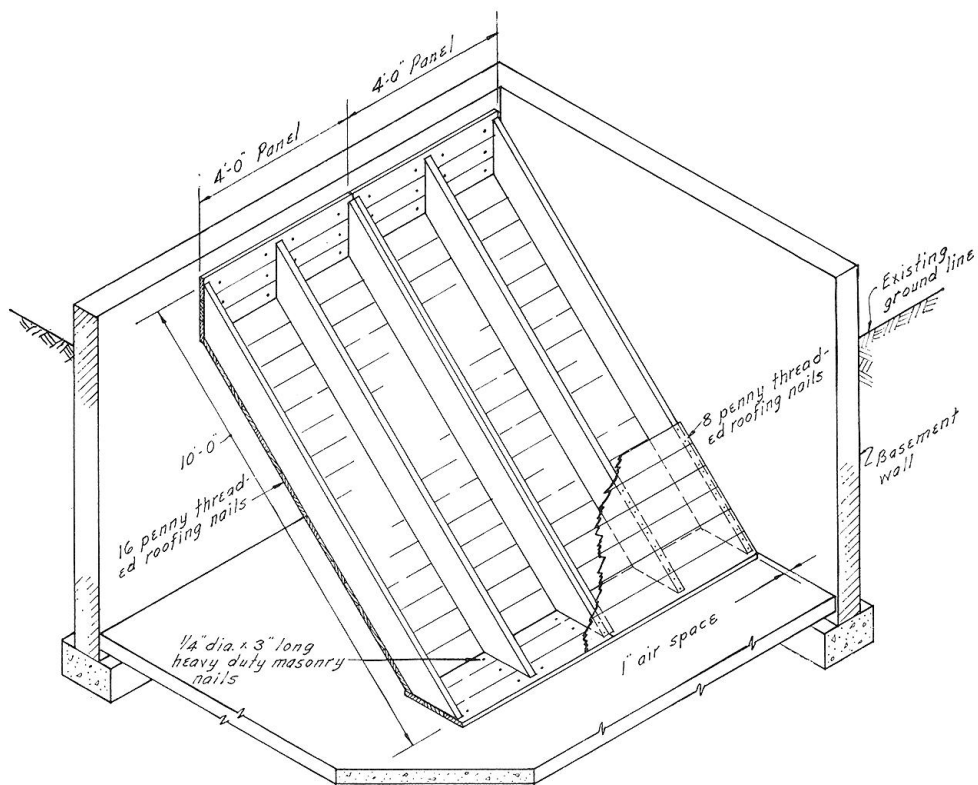
Space and Occupancy.—This shelter design will provide 45 square feet of area and approximately 128 cubic feet of space. It will house three persons. The shelter length can be increased by increments of 4-foot panels. The height may be increased by the use of more materials. This



SECTION



ELEVATION



ISOMETRIC VIEW

increase will be limited by basement height and handling of the panels.

Availability and Cost of Materials.—The materials necessary to construct this shelter should be available for a total cost of less than \$75 from retail lumberyards.

Fallout Protection Factor.—The shelter is designed to provide a protection factor of at least 100 in most residences.

Blast Protection.—Although this shelter was designed primarily to provide fallout protection, it would also provide some protection from flying debris associated with blast.

Ventilation.—Natural ventilation is obtained by omitting two sandbags from the top of the entranceway closure and by leaving a 1-inch gap between the end of the shelter and the basement wall.

Construction Time.—Construction time should not exceed 20 man-hours when all the materials are on hand at the shelter location. The use of precut panels would reduce the erection time.

Structural Life Expectancy.—When this shelter is erected in a dry basement which is kept free of vermin, its life expectancy range should be from 10 to 15 years.

CONSTRUCTION SEQUENCE

1. Brush-coat all surfaces of lumber with water repellent solution; double brush-coat all cut edges. (Optional.)
2. Cut 45° bevels on 2" x 12" stringers. Arrange in 4-foot panels. Using sixteenpenny threaded nails, attach bottom boards on the beveled ends first.
3. Fit in and nail remaining bottom boards.
4. Turn this panel rightside-up and place it in its permanent position. Fasten the panel to the wall and floor with heavy duty masonry nails, leaving a 1-inch gap between the end of the shelter and the basement wall.
5. Construct and fasten in sequence as many panels as are to be used.
6. Line the panels with building paper or polyethylene.
7. Using eightpenny nails, begin attaching top boards at the floor first. Keep the spaces thus formed filled with loose sand as the top-board application progresses. (Building paper or polyethylene sheet should also be applied between the sand and top boards.)
8. Thirty sandbags, each filled with 30 pounds of sand, should be placed in the shelter for emergency closure of entranceway.

BILL OF MATERIALS

(To shelter 3 persons)

<i>Item</i>	<i>Quantity</i>
2" x 12" x 10' rough or surfaced lumber.....	6 pieces.
1" x 6" x 4' rough or surfaced lumber.....	50 pieces.
1" x 6" x 8' rough or surfaced lumber (for top covering)---	20 pieces.
¼" diameter x 3" long heavy-duty masonry nails.....	2 pounds.
Sixteenpenny threaded roofing nails.....	6 pounds.
Eightpenny threaded roofing nails.....	3 pounds.
Dry sand.....	5½ tons.
Sandbags	30.
Building paper or polyethylene sheet.....	150 square feet.
Water repellent* (5 percent pentachlorophenol or equal)	1 quart.
toxic to wood-destroying fungi and insects.	

*Optional.