

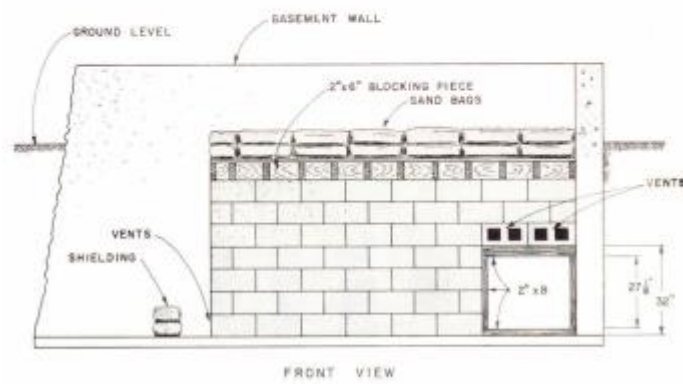
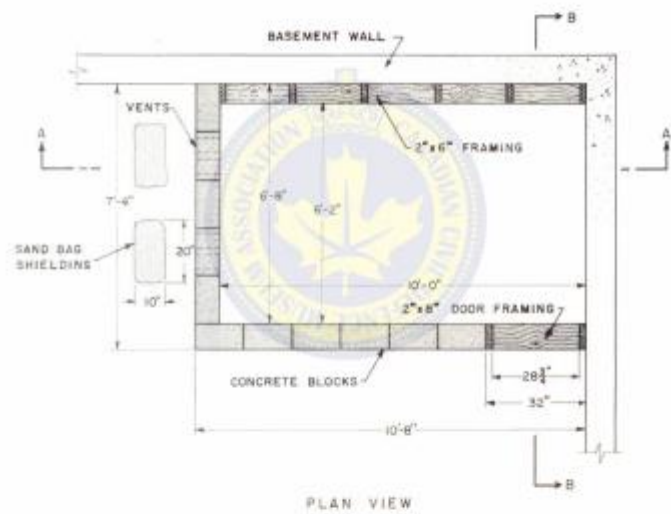


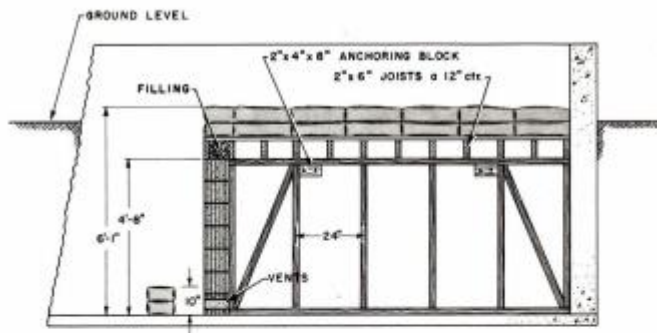
SIMPLER

SHELTERS

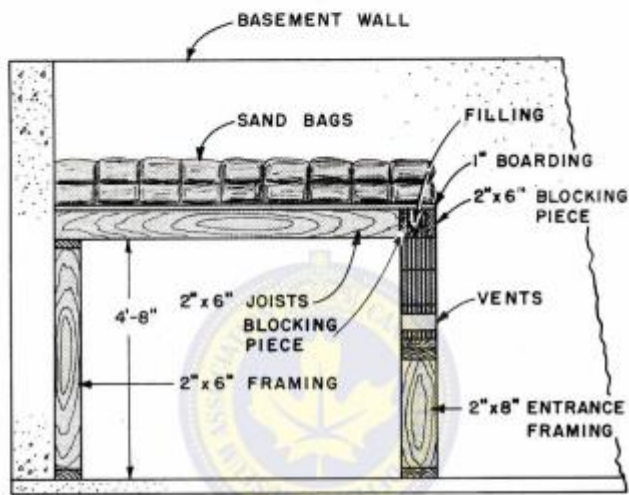
EMERGENCY MEASURES ORGANIZATION

CONCRETE BLOCK SIT-DOWN SHELTER

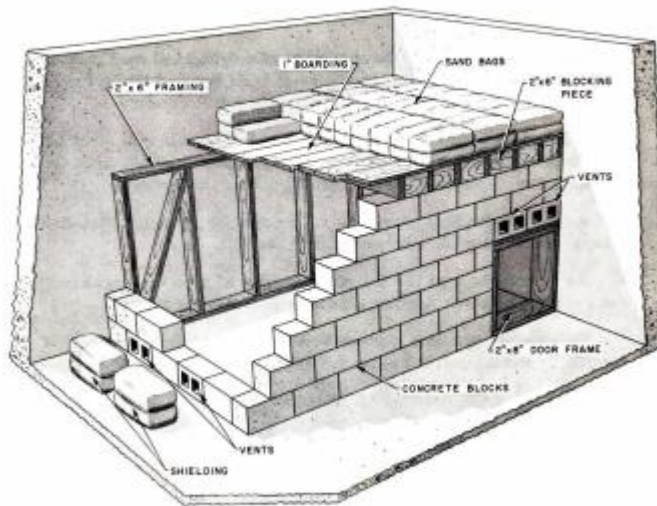


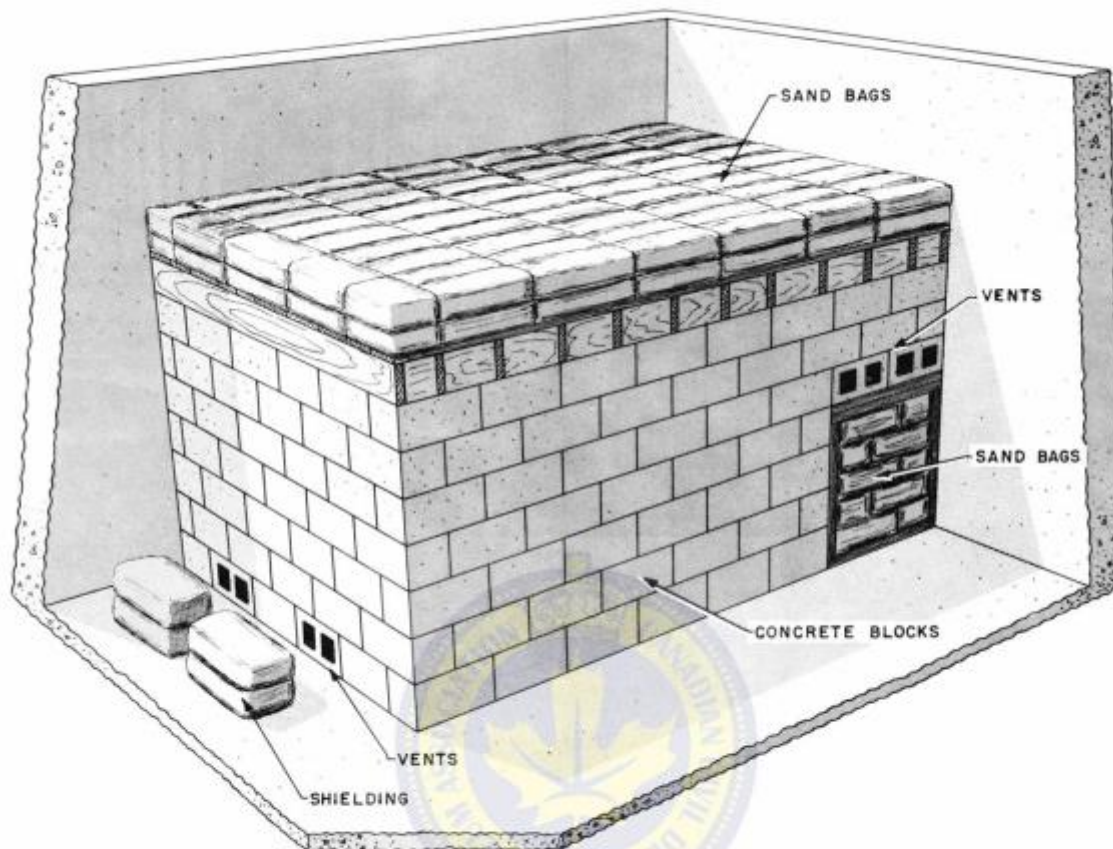


SECTION 'AA'



SECTION 'BB'





CONSTRUCTION TIPS:

The 2" x 6" wood stud wall must be securely fastened to the basement wall. The method is shown in "Blueprint for Survival No. 1."

The two concrete block walls must be started on a level base.

Hollow 8" concrete blocks may be used, but they must be filled with sand, carefully tamped after each course is installed.

Do not build the roof until the mortar in the block wall has dried for a period of two days.

Roof joist should be toe-nailed to the top plate of the stud wall.

The spaces between roof joists, directly above the concrete block walls, must be filled with concrete brick, block, or sand in small plastic bags.

The roof should be shielded with 10 to 12 inches of sand or earth, or any other material weighing about 100 lbs. per sq. ft. Shielding material may be contained in jute or polyethylene bags as shown, or

alternatively a sandbox arrangement may be constructed to retain it, without using bags.

The top of the roof joist should not be above outside grade level.

ADVANTAGES AND LIMITATIONS:

In the average basement, the protection factor would exceed 100.

Low headroom would restrict most activities.

After occupancy, the entrance must be blocked up with sandbags 10" thick.

Cooking facilities would be extremely limited.

Sanitary and other waste must be disposed of by placing it in receptacles located outside the shelter entrance. To accomplish this, the sandbags blocking the entrance are removed as required, and then replaced as quickly as possible.

The shelter as shown is suitable for 4 or 5 people. For larger families, the length (but not the width) may be increased.

Cost of materials should be less than \$100.00.

GENERAL INFORMATION ON FALLOUT SHELTERS

ALL shelters described in this leaflet are fallout shelters and have little or no resistance to blast.

Fallout consists of particles of dirt and dust which carry radioactive substances created by the explosion of a nuclear weapon. These particles will not enter a normal undamaged building, but they emit gamma rays which travel great distances and are capable of injuring people. The shielding material in shelters absorbs most of these highly penetrating radiations.

The protection factor of a shelter against fallout radiation is a measure of its ability to protect its occupants against gamma rays. Thus in a shelter having a protection factor of 100, people would receive only one percent of the amount of radiation that they would get outside in the same area.

Food and water in closed containers cannot be made radioactive by fallout. The air, itself, is not made radioactive by fallout.

Fallout shelters are primarily designed for people living in non-target areas. If you live in an area which may be attacked directly, you should give consideration to blast protection as well as fallout. The steel tank shelter is capable of being developed into a blast shelter at some additional cost. Plans for reinforced concrete blast shelters are also available, on request.

Due to wide variation in labour and material costs, it is not possible to accurately estimate the total cost of each shelter portrayed in this leaflet. Local suppliers and contractors should be consulted for cost information.

Shelters should be provided with sufficient water, food and supplies for a 14 day period. In most areas, people would be able to leave their shelters in less than 14 days, but it is not possible to predict in advance the areas in which this will be possible. Detailed lists of supplies and equipment recommended are contained in **EMO** publications, i.e. Blueprints for Survival Nos. 1 and 4.

Cooking and heating facilities in a shelter must be kept to an absolute minimum, due to the problems of ventilation in confined areas. Cooking equipment should only be required to heat water. Warm clothing, blankets, and sleeping bags should be used in preference to heating equipment, whenever possible.

Plans for a belowground concrete fallout shelter—similar to that on the cover of this leaflet—are available on request. Detailed information on blast shelters will be published shortly. Direct all your enquiries on matters of survival to your local civil defence or emergency measures office, or write:

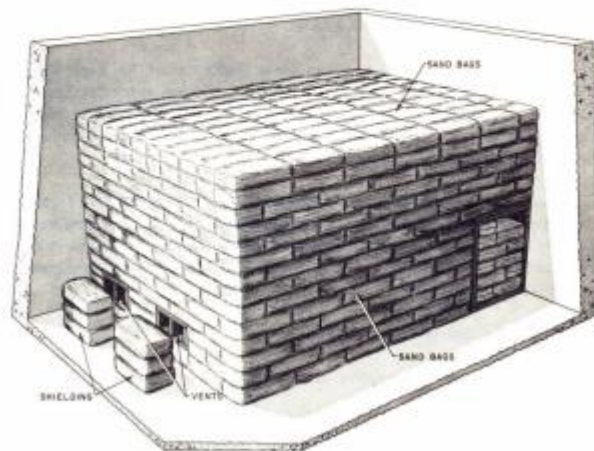
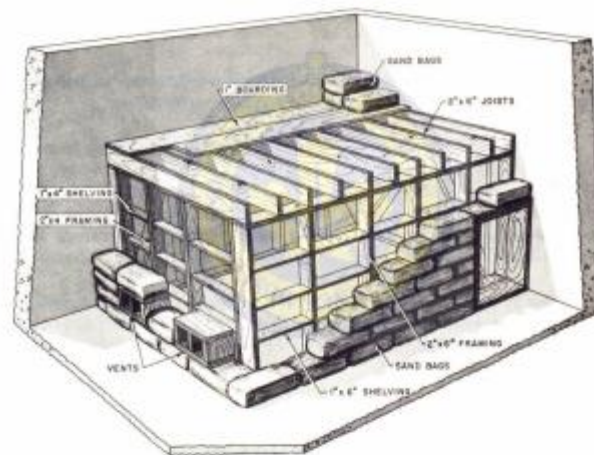
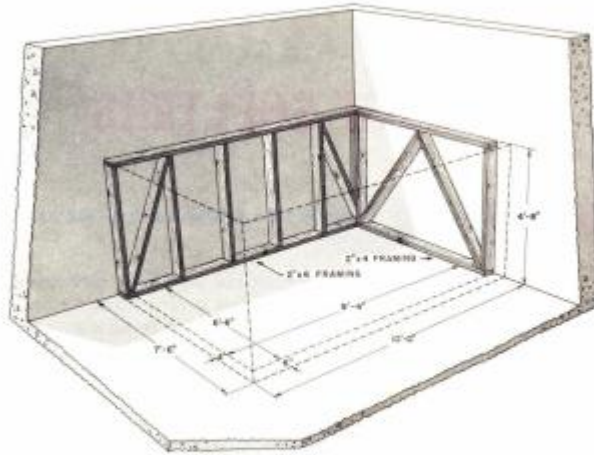
**Emergency Measures Organization,
Box 10,000,
Capital City of Your Province. (NOT Ottawa)**

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SANDBAG SIT-DOWN SHELTER



DESCRIPTION:

The wood frame walls shown in the top sketch must be secured to the concrete basement walls.

All bottom plates should be fastened to the floor with concrete nails.

Sandbags shown have filled size of 5' x 10' x 20" but any size may be used as long as minimum wall and roof covering is 10'.

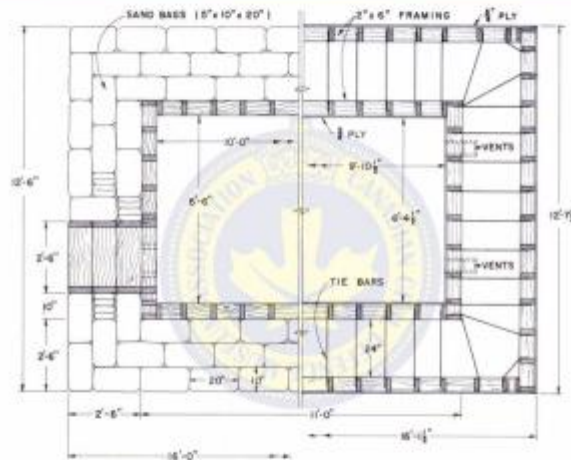
Jute or polyethylene bags may be used. For the size shown, 7 mil polyethylene is required for walls, 4 mil for roof.

Limitations similar to concrete block sit-down shelter.

Cost of materials should not exceed \$100.00.

Length can be varied as desired (but do not increase the width shown).

IMPROVISED ABOVEGROUND SHELTER



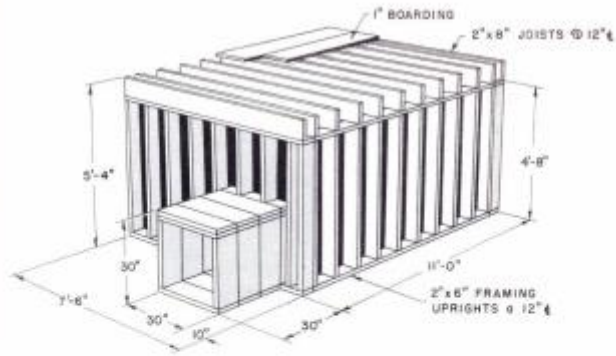
DESCRIPTION:

This shelter is designed for installation on a main floor, e.g. in a garage, barn, or any building having a slab-on-grade type floor.

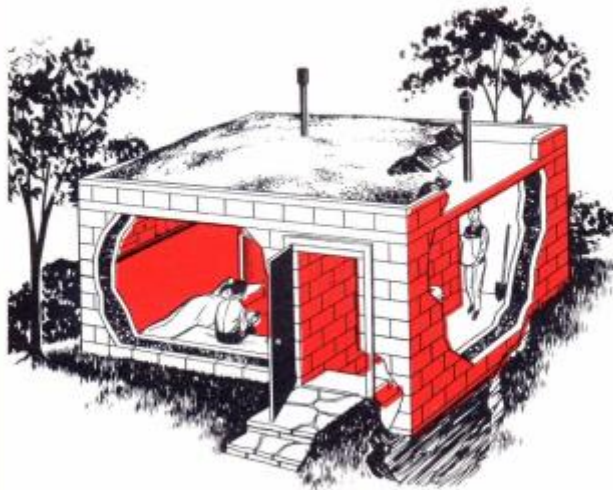
If suitably weatherproofed by covering with heavy polyethylene sheets or tarpaulins, it could be built in a backyard. For an outdoor installation, a foundation would be required for the wood frame walls, and the vents would have to be weatherproofed. If constructed outdoors, the durability of the shelter would be severely limited.

The sandbags shown have a filled volume of 5' x 10' x 20" and are made of 7 mil pigmented polyethylene, sealed by 2" plastic adhesive tape (or heat sealed). Any size bags may be used, but for outside construction, walls must be 30" thick and the roof 20" thick. The use of bags may be avoided by constructing double walls, lined with plywood, and filling the space with earth or sand. This method is illustrated in the above plan view.

If the improvised aboveground shelter is built inside another building which is of large size and heavy construction, the amount of shielding material required may be reduced. Each case must be calculated individually, and if in doubt, you should seek advice.



**CONCRETE BLOCK
ABOVEGROUND SHELTER**



DESCRIPTION:

This is a permanent-type concrete block structure, offering a protection factor of 100, and reasonably good living conditions.

Complete plans and specifications are available on request.

If hollow blocks are used, the voids must be filled with sand or concrete during construction. Tamping is important.

Metal wall ties are used to hold the double walls together.

Sand or pit run gravel may be used for roof shielding materials, and also to fill the hollow walls.

The overhead shielding material is supported by either a reinforced concrete slab, or wooden joist.

Ventilation is achieved by using a hand operated air blower. Air is brought in through a 3" pipe with a weatherproof intake. Another 3" pipe is used to expel stale air from the shelter.

STEEL TANK BELOWGROUND SHELTER



DESCRIPTION:

The shelter portrayed above consists of a cylindrical steel tank of 2500 or 3000 gallon capacity. Its diameter is six feet and the walls are of $\frac{3}{16}$ " steel plate. The top is covered with three feet of earth.

The shelter is entered by a circular manhole, to one side of which steel bars are welded to form a ladder. A baffle wall of sandbags separates the entranceway from the main part of the shelter.

A false wooden floor provides a flat area on the bottom of the tank. Storage space is available below the floor sections.

Air is brought into the shelter through a 3" pipe by means of a hand operated blower. Another pipe is used to exhaust stale air.

This shelter provides a protection factor of 1000 or more. It is completely waterproof. It has the following disadvantages:

- (a) In areas having high water tables, it may tend to float, and must be anchored down.
- (b) Condensation may be a problem.
- (c) Acoustics leave much to be desired.