

SELECTION PROCEDURE

to find: "Best-Available Shelter Against High Winds"

This checklist procedure is designed to assist in a systematic review of a building to find the locations of the "Best-Available Shelter Space Against High Winds". It is not intended to infer that these spaces guarantee safety during a severe storm, but that they are the safest available in the building.

ADVANCE PREPARATION

Obtain the following equipment: compass, flashlight, tape measure and soft-tipped rod (pool cue)

Know tornado history for the geographic area (consult nearest National Weather Service Office)

Obtain plans of the building for each floor. Ideal plans are small, to scale with sufficient detail. If the drawings aren't available, have someone prepare a simple, yet accurate drawing of each floor. Check the drawings against the actual building. Do not assume accuracy!

EXTERIOR SURVEY

Establish "true" (magnetic) north. Use a compass or compare the building to an accurate map of the locality. Place a north arrow on the floor plans of the building. Do not confuse "true" north with "building north", a direction used by architects to simplify the drawings.

Observe completely around the building looking for and recording the location of:

1. potential missiles (site equipment, nearby buildings, automobiles, debris, etc.) especially on the south and west sides of the building.
2. ground embankment against the building.
3. mechanical equipment on roof.
4. electrical service entrance.
5. high building elements (chimneys, higher portions of the building).
6. changes in roof level.

Take a long look from the south and west noting building entrances and construction.

INTERIOR SURVEY (portions of the building to avoid)

Using the understanding of tornado behavior and its effects on buildings to predict what the tornado would do to a building. Carefully identify the following spaces as the most hazardous locations - spaces to avoid! Predict which portions of roofs are most likely to be removed:

1. windward sides (usually south and west)
2. long spans
3. non-framed construction (roofs on load bearing walls)
4. roof with overhangs

Avoid locations where roofs are likely to be removed. The roof may fall in on the occupants. Missiles also have direct access to interior spaces.

Avoid exterior walls that are most likely to be partially or completely destroyed. Examination of damaged buildings shows that any side of a building can be destroyed but that the most likely damage occurs in the following order:

1. south wall
2. west wall
3. east wall
4. north wall

Avoid those corridors (if any) that may become "wind tunnels". Examination of corridors after tornadoes revealed much debris and evidence of high speed. This evidence was found in corridors whose exterior doors exited directly (no turns) to the following directions (in order of severity):

1. to the south
2. to the west
3. to the east
4. to the north

Avoid those locations with GLASS facing the likely storm direction. Assume that the glass will blow IN on the south, west and occasionally on the east sides of the building.

Some buildings are built using various types of construction. Avoid (when possible) parts that contain load-bearing walls. If the wall collapse, the roof or floor above will fail.

INTERIOR SURVEY (portions of consider - but not necessarily)

Examination of building failure reveal a pattern of spaces at the storm. These are the spaces for occupancy.

Consider the LOWEST FLOOR. If a basement, or a partial basement the safest space in the structure.

Consider INTERIOR SPACES. They have no walls on the outside. NOT select interior spaces that

Consider spaces having SHORT cult to find one space that a degree of protection to all occupants (exception: basement). out a number of smaller spaces.

Consider portions of building tural frames (steel, concrete) than those portions that have walls.

The space per person depends on people and their degree of mobility. children require only 4 sq. ft/person is adequate for adult nursing home or hospital patients much more.

INTERIOR SURVEY (poor spots in generally good locations)

It is essential that the spaces selected be refined to the very best possible. Often poor (relatively hazardous) spaces exist within generally safe areas. These poor spaces must be avoided or occupied as a last resort.

Avoid spaces that are opposite doorways or openings into rooms that have south or west facing exterior walls. This is particularly critical if these exterior walls contain glass.

Avoid interior locations that contain glass. Examples are display cases, transom glass, door sidelights, etc.

Avoid interior locations under or near skylights or clearstories.

Avoid locations where interior doors swing. When the storm hits, the doors are likely to swing violently.

Avoid spaces within the "falling radius" of higher building elements (chimneys, walls enclosing higher roof areas). Assume that the falling radius is equal to the height of the high element above the roof.

QUESTIONS TO BE ANSWERED BEFORE FINAL SELECTION

Often the "Best-Available" spaces in the building can NOT be occupied during emergencies due to various legitimate reasons. These questions should help identify these potential conflicts before an emergency occurs.

What portion of the space is usable? Permanent equipment, furniture, etc. reduce the usable space.

Which good spaces are often inaccessible? Many excellent spaces are locked with few people having keys.

Which good spaces are unsuitable for occupancy due to operational reasons? Many security areas offer excellent protection but are operationally NOT GOOD due to need to retain security over records, equipment or money.

Where is the building First-aid kit or medical supplies? This equipment should be in one of the "Best-Available" spaces.

Would protection levels increase significantly (and time to shelter decrease significantly) if people were "jammed" in at lower square foot per person ratios? This is a valid alternative to lower quality protection with more adequate space per person.

A plan is almost worthless if it is not tested and understood by the people it is intended to protect. A good plan has the following features:

1. Recorded and published so that all know what to do.
2. Identifies one or more "Spotters" who are responsible for prompt, accurate visual identification of an approaching storm. (National Weather Service will provide training).
3. Prompt, clear warning alarm that is readily understood by all.