Annex I

Checklist for Vulnerability Surveys
(Wind)

The sketch reference numbers refer to the illustrations in Annex II.

ITEM	YES	NO	SKETCH REF#
Walls			
Precast concrete interconnected and fixed to floors and roofs			
Coral stone block masonry a 12 inches (or greater) in thickness and with a maximum height-to-thickness ratio of 12, or b 6 inches (or greater) in thickness and reinforced and fixed to floors and roofs			
Concrete block masonry reinforced and fixed to floors and roofs			
Timber construction complying with all of the following: a 3/4-inch marine plywood or 5/8-inch tongue-and-groove lumber b 2-inch by 4-inch vertical studs at (maximum) 2-foot spacing to which the plywood or lumber is nailed or screwed c two 2-inch by 4-inch horizontal base plates and two 2-inch by 4-inch horizontal eaves beams to which the studs are fastened with galvanised metal plates in accordance with manufacturers' specifications d all openings framed with 2-inch by 4-inch vertical and horizontal studs, cills and lintols all fastened with galvanised metal plates in accordance with manufacturers' specifications e the entire perimeter secured to reinforced concrete foundations with galvanised metal straps at (maximum) 4-foot spacing f minimum depth of foundation to be 3 feet below adjacent ground level unless some other means is used to achieve adequate anchorage			#W1 #W2 #W2
Roofs			
Concrete			
Light-weight coverings a 26-gauge steel sheeting with valley fasteners or with ridge fasteners supplemented by spacer blocks under the ridges. Fastener spacings must be not greater than 6 inches along the purlins and purlins must not be further apart than 4 feet for 15% of the roof dimension along eaves, gables and ridges.			#W3, #W4

ITEM	YES	NO	SKETCH REF#
b 22-gauge aluminium sheeting with valley fasteners or with ridge fasteners supplemented by spacer blocks under the ridges. Fastener spacings must be not greater than 6 inches along the purlins and purlins must not be further apart than 4 feet for 15% of the roof dimension along eaves, gables and ridges.			#W3, #W4
c Asphalt shingles fixed in accordance with manufacturer's recommendations for hurricane areas and laid on waterproofing felt on top of 3/4-inch (or greater) plywood sheets which in turn are fastened by screws or annular nails to supporting timber rafters			#W5
d shingles individually fixed to close boarding which in turn is fastened by screws or annular nails to supporting timber rafters			#W5
NB i In all cases the methods of fixing must, at least, comply with the manufacturers' recommendations for severe hurricane locations ii If battens are used, the fastening of the battens to the close boarding must be at least as strong as the fastening of the covering to the battens			
Other coverings			
a slates individually fixed to close boarding			#W5
b concrete or clay tiles individually fixed to close boarding			#W5
NB i In all cases the methods of fixing must, at least, comply with the manufacturers' recommendations for severe hurricane locations ii If battens are used, the fastening of the battens to the close boarding must be at least as strong as the fastening of the covering to the battens			

ITEM	YES	NO	SKETCH REF#
Frame supports for light-weight roof coverings a Steel rafters fixed to walls b Bolted steel trusses fixed to walls c Timber rafters fixed at the ridges and to the walls with bolts or proprietary fasteners d Bolted timber trusses fixed to the walls with bolts or proprietary fasteners d Timber trusses fabricated using proprietary fasteners and fixed to the walls with bolts or proprietary fasteners NB In all cases the methods of connecting and fixing must, at least, comply with the manufacturers' recommendations for severe hurricane locations			#W6 #W6 #W6, #W7
Windows			
Made of laminated glass fixed to frames with structural silicon and able to resist, without breaching, the impact of flying objects such a 2-inch by 4-inch piece of timber weighing 9 pounds moving at 35 miles per hour (similar to the requirements of Dade, Broward and Palm Beach Counties of Florida), or			
Protected by pre-installed or pre-fabricated shutters which are made of at least 3/4-inch timber or otherwise able to resist without breaching the impact of flying objects such as a 2-inch by 4-inch piece of timber weighing 9 pounds moving at 35 miles per hour.			#W8, #W9, #W10
Made of timber or aluminium louvres with provisions for excluding the rain during storm conditions			
The windows or shutters must be secured to the walls, slabs, beams or columns near all corners of each panel or in accordance with the manufacturers' recommendations for severe hurricane locations			
Doors			
Glass Sliding Doors a Made of laminated glass fixed to frames with structural silicon and able to resist without breaching the impact of flying objects such as an 8-foot long 2-inch by 4-inch piece of timber moving at 35 miles per hour, or			

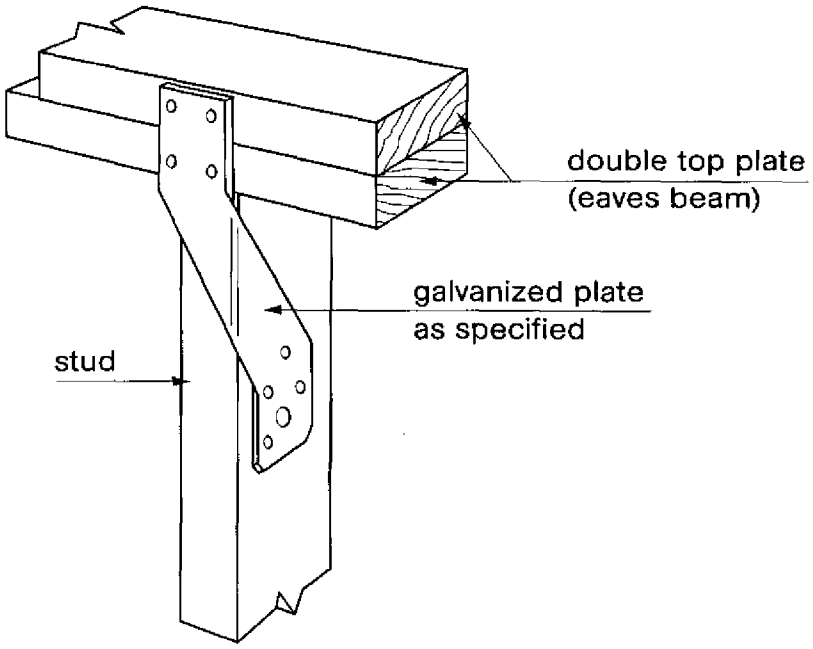
ITEM	YES	NO	SKETCH REF#
b Protected by pre-installed or pre-fabricated shutters which are made of at least 3/4-inch timber or otherwise able to resist without breaching the impact of flying objects such as an 8-foot long 2-inch by 4-inch piece of timber moving at 35 miles per hour. c The moving frames must have a certificate from the supplier indicating compliance with the requirements for Category 3 hurricanes, including both strength and deflexions. d The fixed perimeter frames must be secured to the walls, slabs, beams or columns by bolting or in accordance with the manufacturers' recommendations for severe hurricane locations. e The tracks of the top and bottom rails must be deep enough to prevent the moving doors from being dislodged in severe hurricanes. (The manufacturer's advice should be sought.)			
Roller Shutter (or Overhead) Doors a These must have certificates from the suppliers indicating compliance with the requirements for Category 3 hurricanes, including both strength and deflexions b The fixed perimeter frames must be secured to the walls, slabs, beams or columns by bolting or in accordance with the manufacturers' recommendations for severe hurricane locations c The side tracks must be deep enough to prevent the moving doors from being dislodged in severe hurricanes unless some other mechanism is employed to prevent such an occurrence (The manufacturer's advice should be sought.)			
Other Doors a Timber doors must be solid core or made up from solid timber members b Each door leaf must be fixed by hinges or bolts in at least four locations adjacent to all corners			
Other Apertures a Protection from wind and rain must be provided by pre-installed or pre-fabricated shutters which are made of at least 3/4-inch timber or otherwise able to resist without breaching the impact of flying objects such as an 8-foot long 2-inch by 4-inch piece of timber moving at 35 miles per hour.			#W8, #W9

ITEM	YES	NO	SKETCH REF#
b The shutters must be secured to the walls, slabs, beams or columns near all corners of each panel or in accordance with the manufacturers' recommendations for severe hurricane locations.			#W10
Solar Water Heaters and Air-conditioners			
These must have certificates from the suppliers indicating compliance with the requirements for Category 3 hurricanes for both manufacture and installation			
Roof Shapes			
a hip-roofs without parapets but with no overhangs and with minimum slope of 20°, or gable roofs without parapets but with no overhangs and with minimum slope of 25°			#W11
b hip-roofs with parapets and with minimum slope of 15°, or gable roofs with parapets and with minimum slope of 20°			#W12

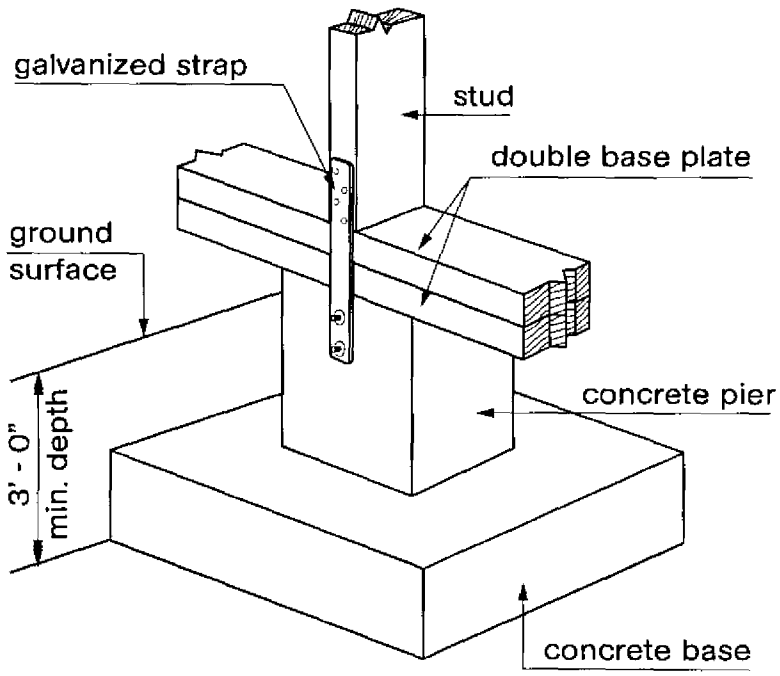
Annex II

Illustrations
(Wind)

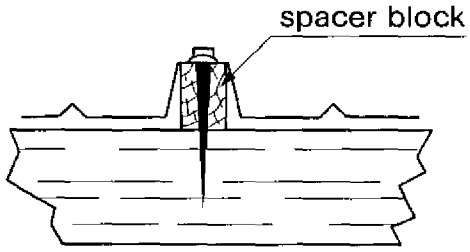
These illustrations were taken from
"Guide to Making Your Home Hurricane Resistant"
prepared by Tony Gibbs and Philip Jordan of Consulting Engineers Partnership Ltd
for United Insurance Company Ltd
1997



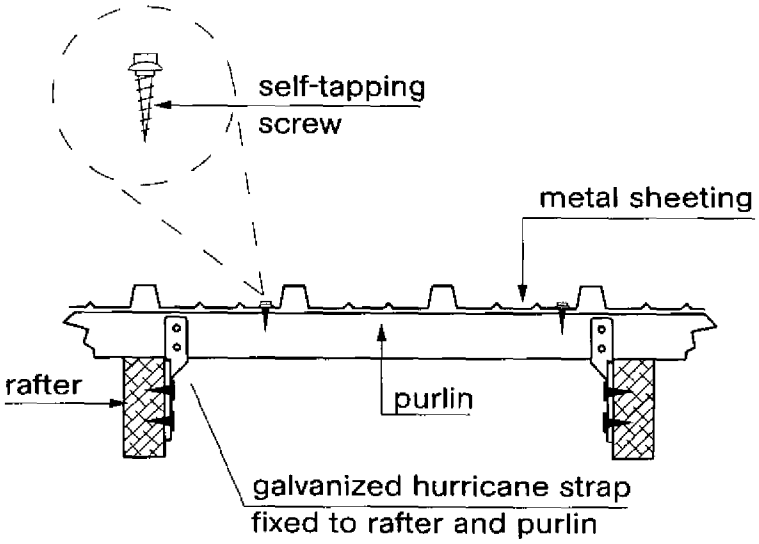
Stud & top plate connection



Stud to concrete connection
Foundation anchorage



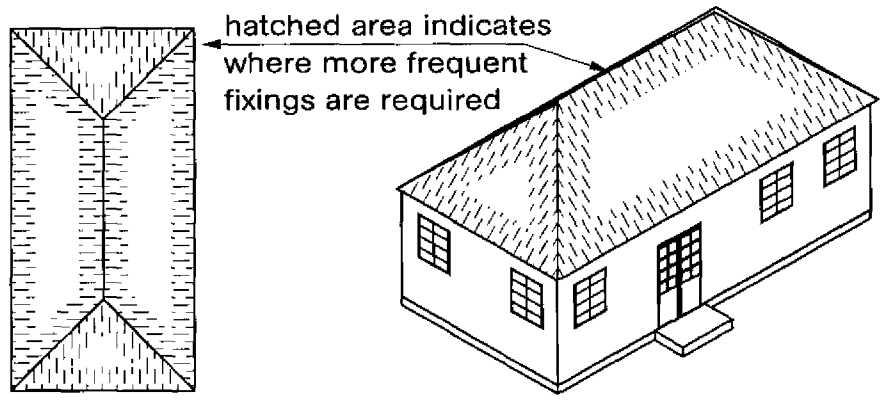
ridge connection



valley connection

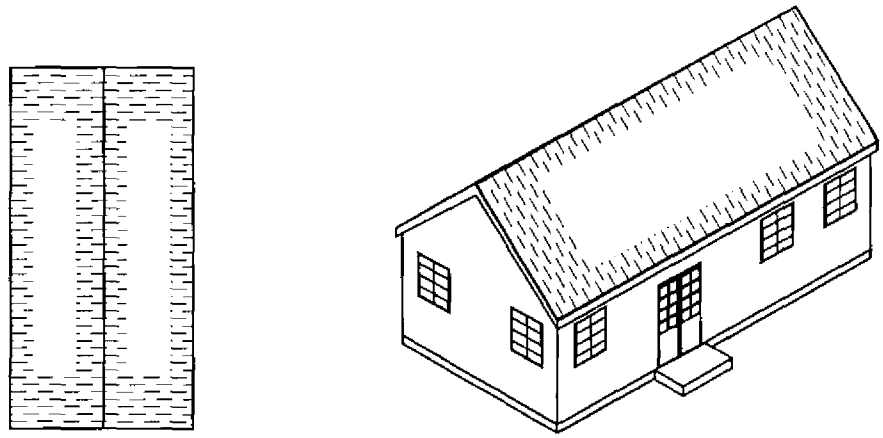
Metal sheet fixings and
purlin-to-rafter connection

W4



PLAN ISOMETRIC

hip-roof

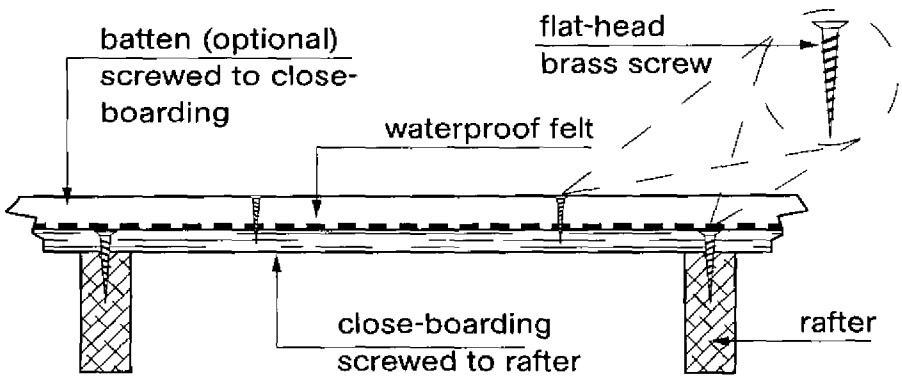


PLAN ISOMETRIC

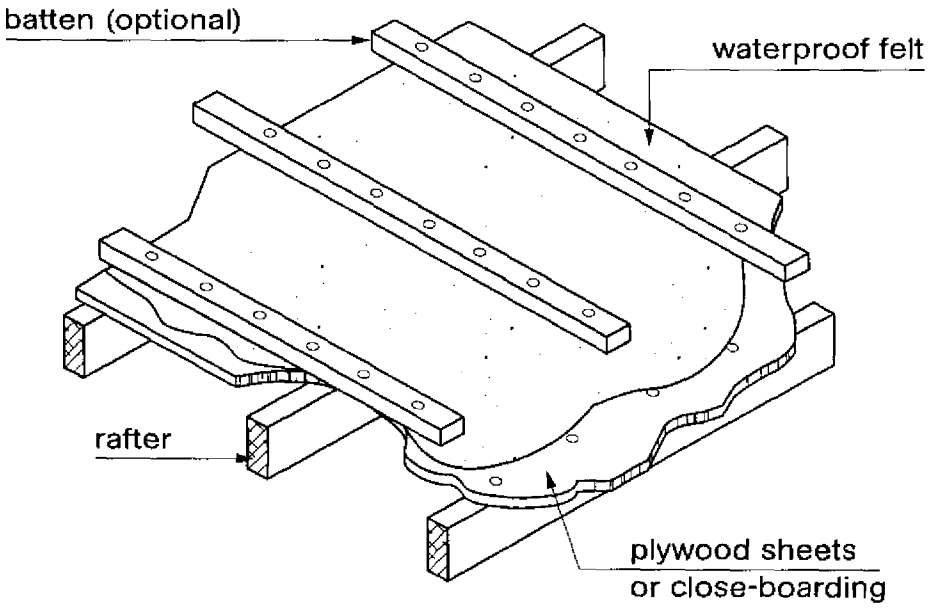
gable roof

The more vulnerable areas of roofs

W5



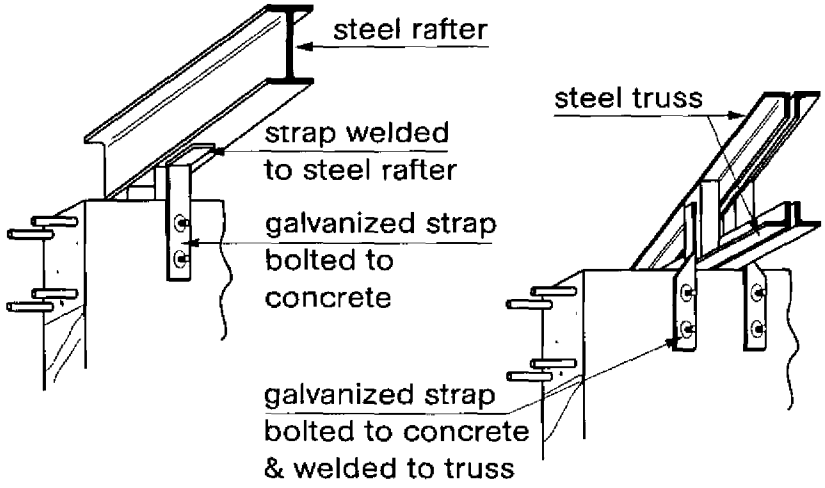
CROSS SECTION



ISOMETRIC

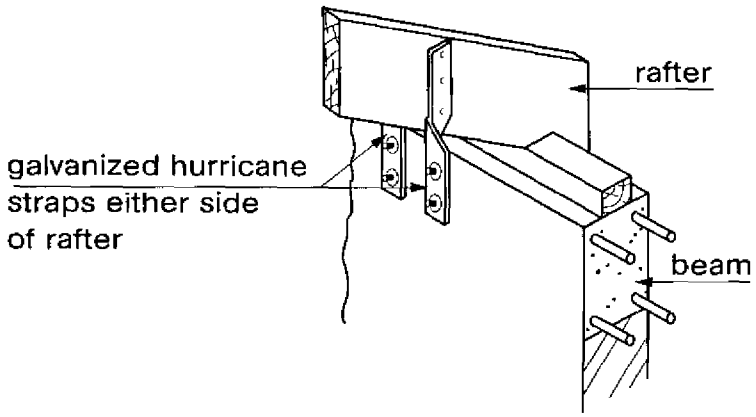
Fixing of close-boarding and battens for tile and shingle roofing

W6

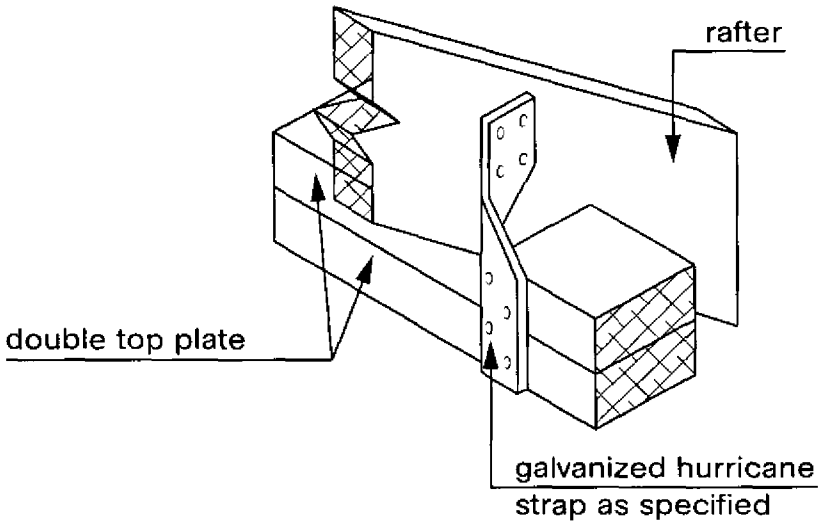


(after welding, apply rust-proofing coating)

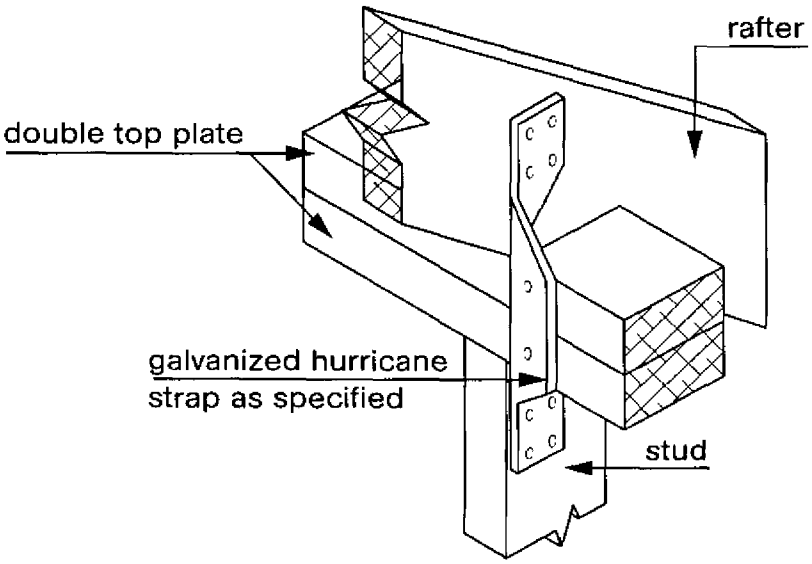
Steel truss and rafter connection to concrete



Timber rafter connection to concrete

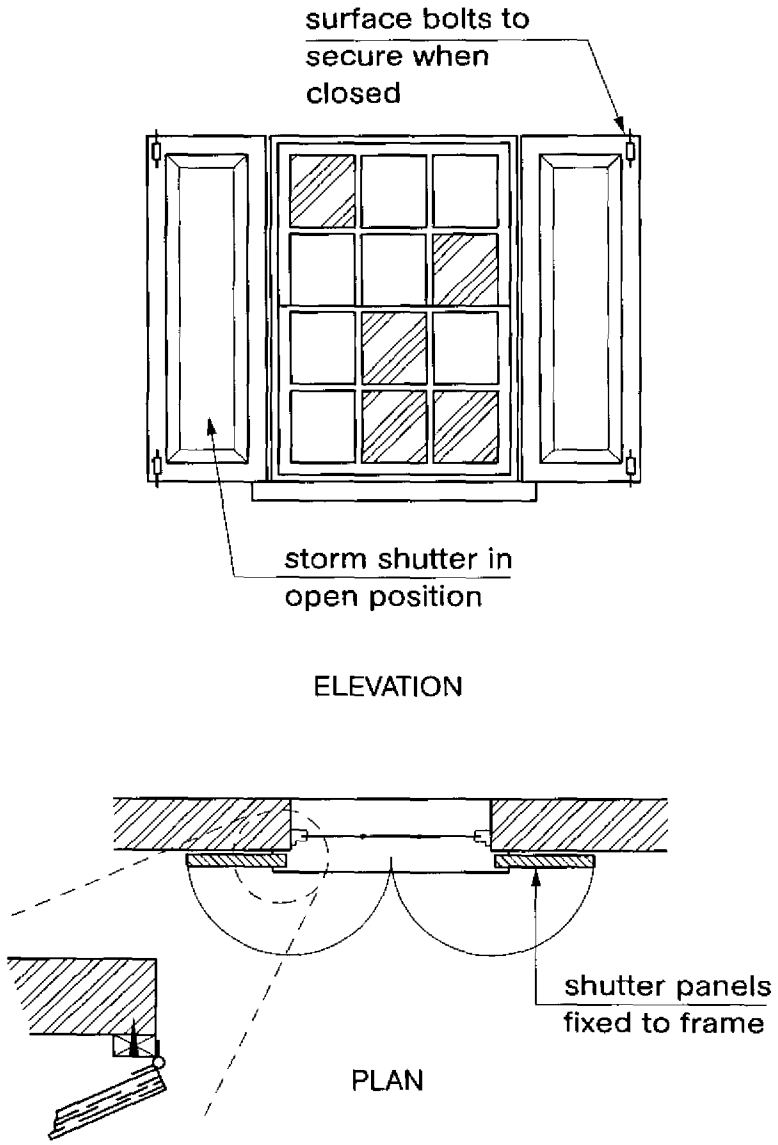


Rafter & top plate connection

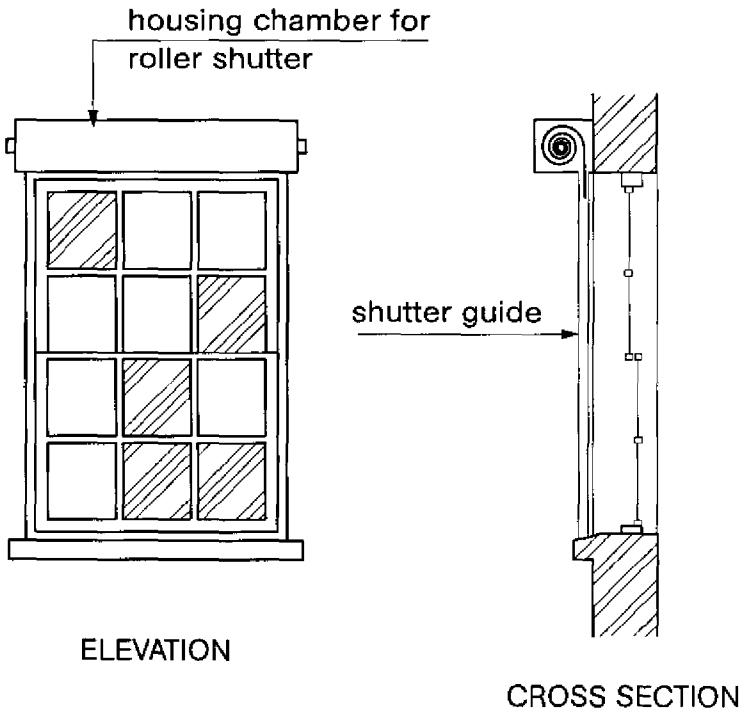


Stud, top plate & rafter connection

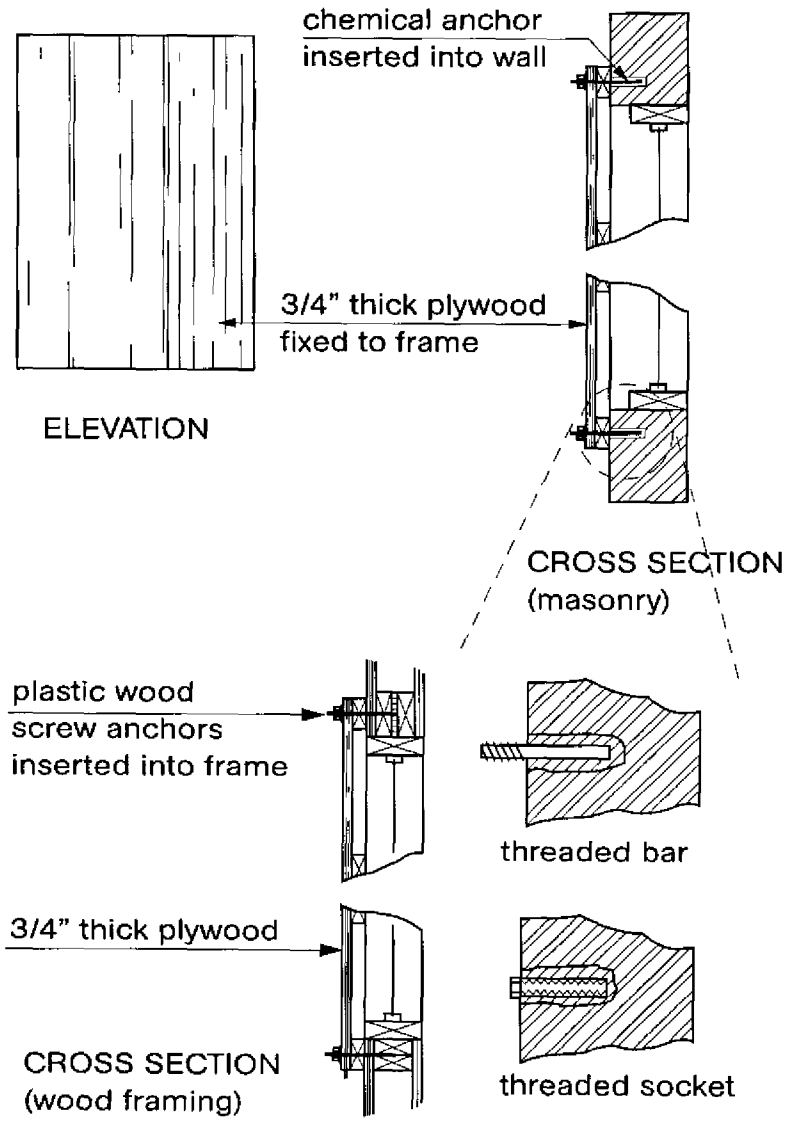
W8



Permanently installed shutters

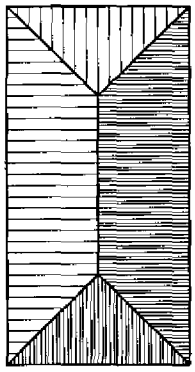


Roller shutter

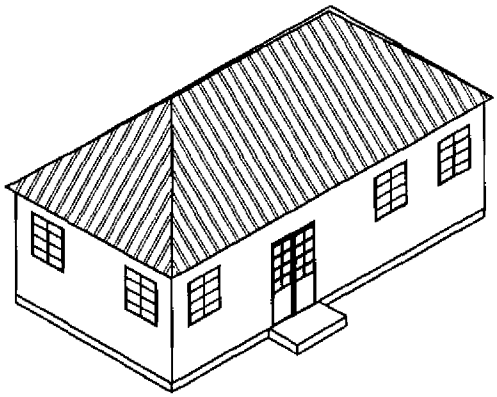


Pre-fabricated removable shutter

W11

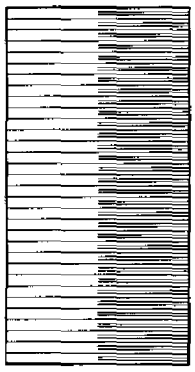


PLAN

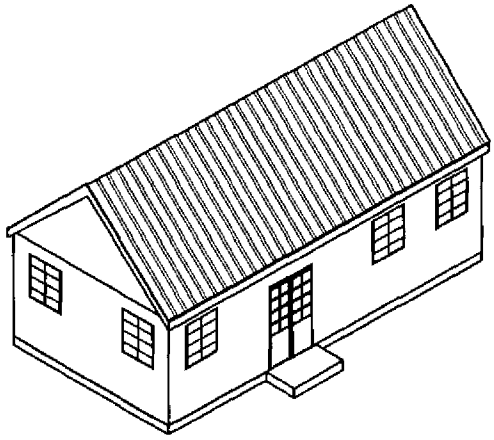


ISOMETRIC

hip: 20° or greater



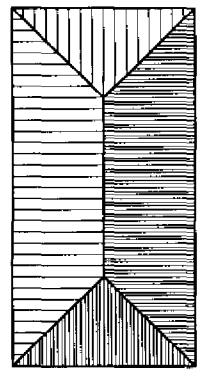
PLAN



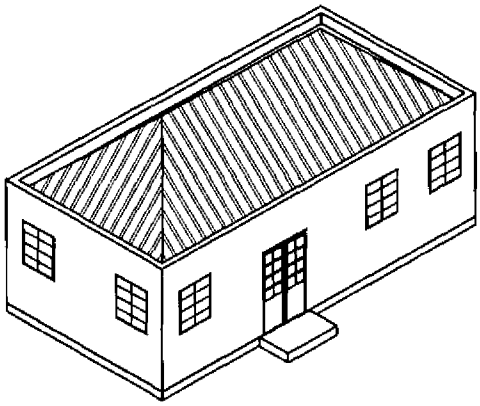
ISOMETRIC

high gable: 25° or greater

Favourable roof shapes

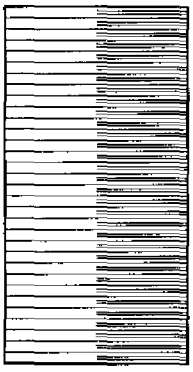


PLAN

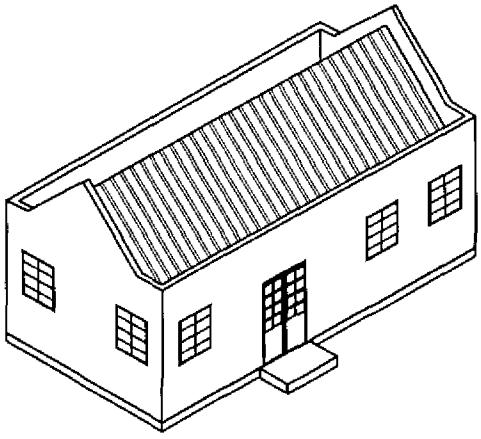


ISOMETRIC

hip with parapet: 15° or greater



PLAN



ISOMETRIC

high gable with parapet: 20° or greater

Favourable roof shapes

Annex III

Checklist for Vulnerability Surveys
(Earthquakes)

The sketch reference numbers refer to the illustrations in Annex IV.
Examples of structural and non-structural components are provided in illustration E1.

ITEM	YES	NO	SKETCH REF#
Electricity			
Generator a Is the emergency generator adequately secured?			
Batteries a Are the batteries securely attached to the battery rack? b Is the rack cross-braced in both directions? c Does the battery rack have bolts secured to a concrete pad?			
Diesel Fuel Tank a Is the tank securely attached to the supports? b Are the tank supports cross-braced in both directions? c Is the bracing attached with anchor bolts secured to a concrete pad?			#E2
Fuel Lines and Other Pipes a Are these lines and pipes attached with flexible connections? b Are they able to accommodate relative movement across joints?			#E2
Transformers, Controls, Switchgear a Are these items properly attached to the floor or wall?			
Bus Ducts and Cables a Are these able to distort at their connections to equipment without rupture? b Are they able to accommodate relative movement across joints? c Are they laterally braced?			
Fire Fighting			
Smoke Detectors and Alarms a Are they properly mounted? b Are the control system and fire doors securely anchored?			
Fire Extinguishers and Hose-reel Cabinets a Are the cabinets securely mounted? b Are the extinguishers secured with quick-release straps?			#E3

ITEM	YES	NO	SKETCH REF#
Emergency Water Tank a Is it securely anchored to its supports? b Are the supports braced in both directions? c Are the supports or braces anchored to a concrete foundation?			#E2
Propane Tanks			
The Tank a Is it securely anchored to its supports? b Are the supports braced in both directions? c Are the supports or braces anchored to a concrete foundation?			#E2
Shut-off Valve a Does the system have an automatic, earthquake-triggered shut-off valve? b If manual, is a wrench stored close by?			
Supply Pipes a Are they able to accommodate relative movement across joints and at the tank? c Are they laterally braced?			#E2
Plumbing			
Water Heaters and Boilers a Are they securely anchored to the floor or wall? b Does the gas line have a flexible connection to the heater or boiler to accommodate movement?			#E4
Pumps a Are they anchored or are they mounted on vibration isolation springs with seismic lateral restraints?			
Hot and Cold-water Pipes and Wastewater Pipes a Are the pipes laterally braced at reasonable intervals? b Do they have flexible connections to boilers and tanks? c Can they accommodate movement across joints? d Are "free" pipe penetrations through walls large enough to for seismic movement? e Are they free of asbestos insulation (which can be broken in an earthquake)?			
Solar Panels a Are they securely anchored to the roof?			

ITEM	YES	NO	SKETCH REF#
Elevators			
Cab a Is it properly attached to the guide rails?			
Cables, Counterweights, Rails a Are cables protected against misalignment during an earthquake? b Are counterweights properly attached to guide rails? c Are guide rails properly attached to the building structure?			
Motors and Control Cabinets a Are these anchored?			
Air Conditioning			
Chillers, Fans, Blowers, Filters, Air Compressors a Are they anchored or are they mounted on vibration isolation springs with seismic lateral restraints?			
Wall-mounted Units a Are they securely mounted?			
Ducts a Are they laterally braced? b Can they accommodate movement at locations where they cross separation joints?			
Diffusers a Are the grills anchored to the ducts or to the ceiling grid or to the wall? b Are hanging diffusers adequately supported?			
Non-structural Walls and Partitions			
Concrete Block, Brick, Clay Block a Are they reinforced vertically and/or horizontally? b Are they detailed to allow sliding at the top and movement at the sides? c Are they restrained at the top and the sides against falling?			#E6
Stud-wall and Other Lightweight a Are partial-height partitions braced at their top edges? b If they support shelving or cabinets, are they securely attached to the structure of the building?			#E5

ITEM	YES	NO	SKETCH REF#
Ceilings and Lights			
Ceilings a Do the suspended ceilings have diagonal bracing wires? b For plaster ceilings is the wire mesh or wood lath securely attached to the structure above?			#E7
Lighting a Do light fixtures (eg lay-in fluorescent fixtures) have supports independent of the ceiling grid? b Do pendant fixtures have safety restraints (eg cables) to limit sway? c Are emergency lights mounted to prevent them falling off shelf supports?			
Doors and Windows			
Doors a If exit doors are heavy metal fire doors that might jam in an earthquake, is there a crowbar or sledge hammer readily available to facilitate emergency opening? b Do automatic doors have manual overrides?			
Windows a Is it known whether the glazing has been designed to accommodate lateral movement? b Do large windows, door transoms and skylights have safety glass?			
Appendages and Sundries			
Parapets, Veneer and Decoration a Are parapets reinforced and braced? b Do veneers and decorative elements have positive anchorage to the building?			
Fences and Garden Walls a Is it known whether these were designed by the architect or engineer to resist lateral forces? b Are masonry walls reinforced vertically and rigidly fixed to their bases?			
Signs and Sculptures a Are signs adequately anchored? b Are heavy and/or tall sculptures anchored to prevent overturning? Clay and Concrete Roof Tiles			

ITEM	YES	NO	SKETCH REF#
a Are such tiles secured to the roof with individual fixings for each tile?			
Movable Equipment			
Communications a Is radio equipment restrained from sliding off shelves? b Are telephones placed away from edges of desks and counters? c Are elevated loud speakers and CCTV anchored to the structure?			
Computers a Is vital computer information backed up regularly and stored off site? b Is heavy computer equipment with a height-to-width ratio greater than 2 anchored or braced? c Are desktop items prevented from sliding off tables? d Are access floors braced diagonally or do they have seismically-certified pedestals?			 #E8 #E9
Storage of Records and Supplies a Are shelving units anchored to walls? b Are shelves fitted with edge restraints or cords to prevent items from falling? c Are heavier items located on the lower shelves? d Do filing cabinet drawers latch securely? e Are heavily-loaded racks braced in both directions? f Are fragile or valuable items restrained from tipping over? g Are chemical supplies secured or stored in "egg crate" containers?			 #E13 #E13 #E13 #E11 #E10 #E13 #E13
Hazardous Items a Are gas cylinders tightly secured with chains at top and bottom (or otherwise)? b Are the chains anchored to walls? c Are chemicals stored in accordance with manufacturers recommendations? d Are cabinets for hazardous materials given special attention with respect to anchoring?			 #E12 #E13

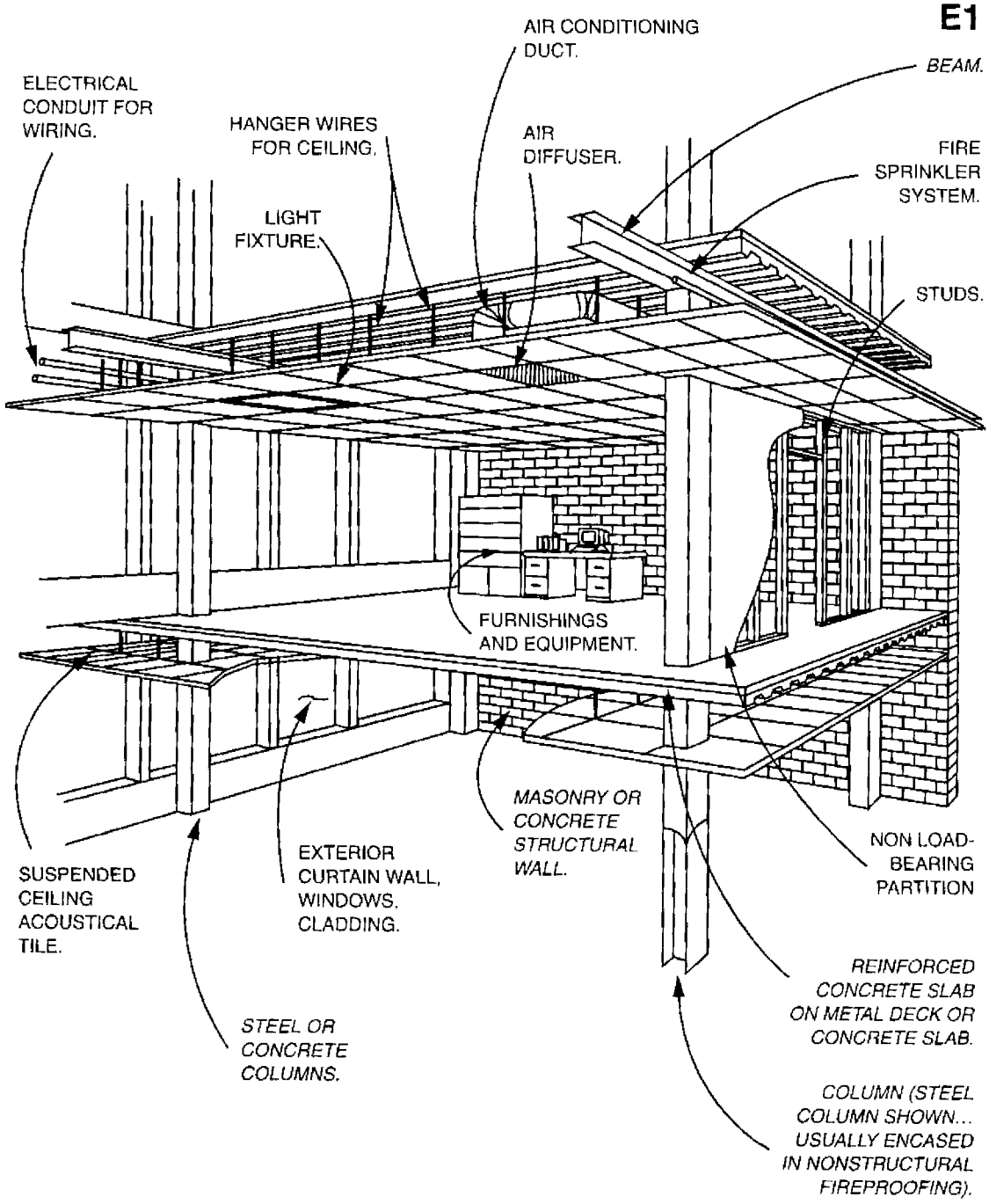
ITEM	YES	NO	SKETCH REF#
Furniture a Are heavy potted plants restrained from falling or located away from beds? b Are beds and tables and equipment with wheels provided with locks or other restraints to prevent them rolling unintentionally?			#E8

Annex IV

Illustrations
(Earthquakes)

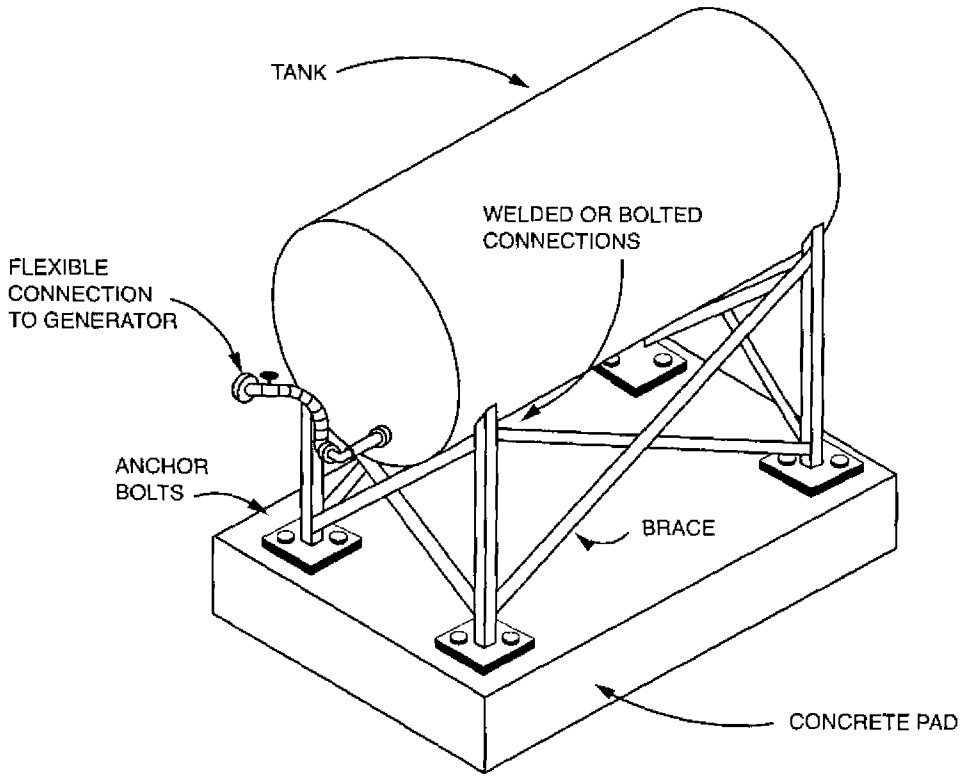
These illustrations are taken from
"Reducing the Risks of Nonstructural Earthquake Damage"
Issued by the Federal Emergency Management Agency (FEMA)
Third Edition FEMA 74/September 1994

E1

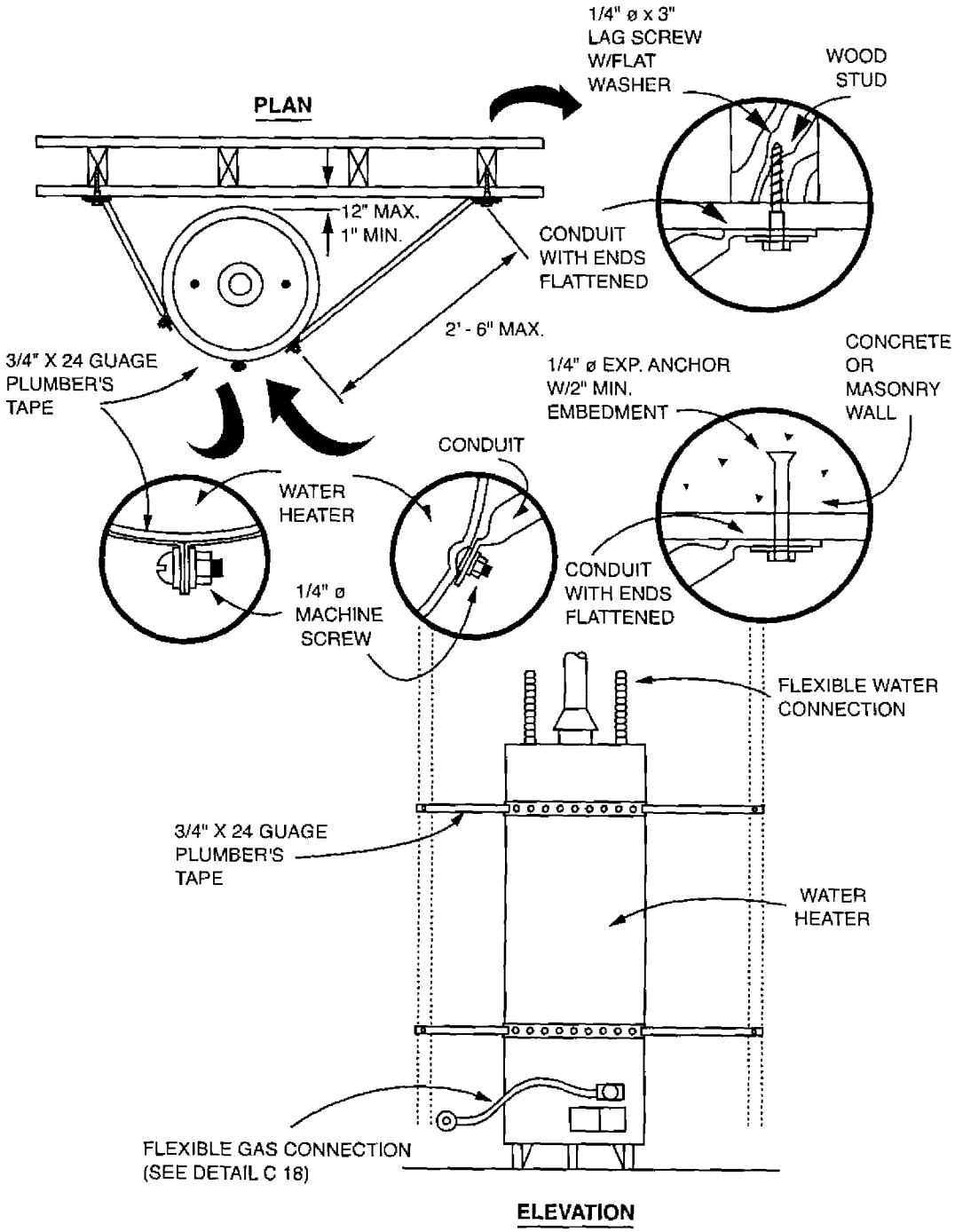


KEY
NONSTRUCTURAL ITEMS (STANDARD TEXT)
STRUCTURAL ITEMS (ITALICS)

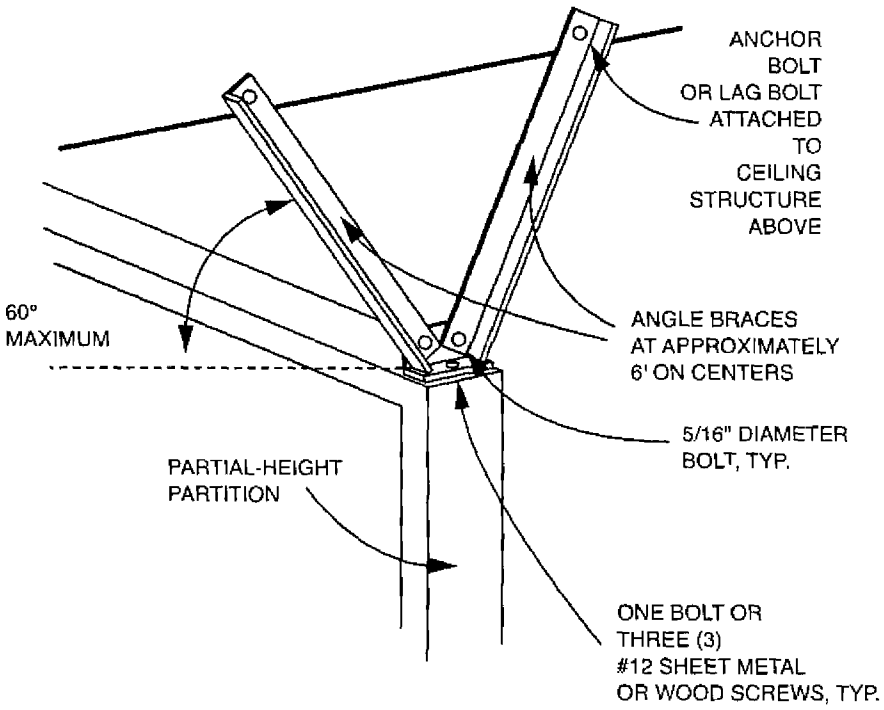
E2


TANK
WELDED OR BOLTED CONNECTIONS
FLEXIBLE CONNECTION TO GENERATOR
ANCHOR BOLTS
BRACE
CONCRETE PAD

E4

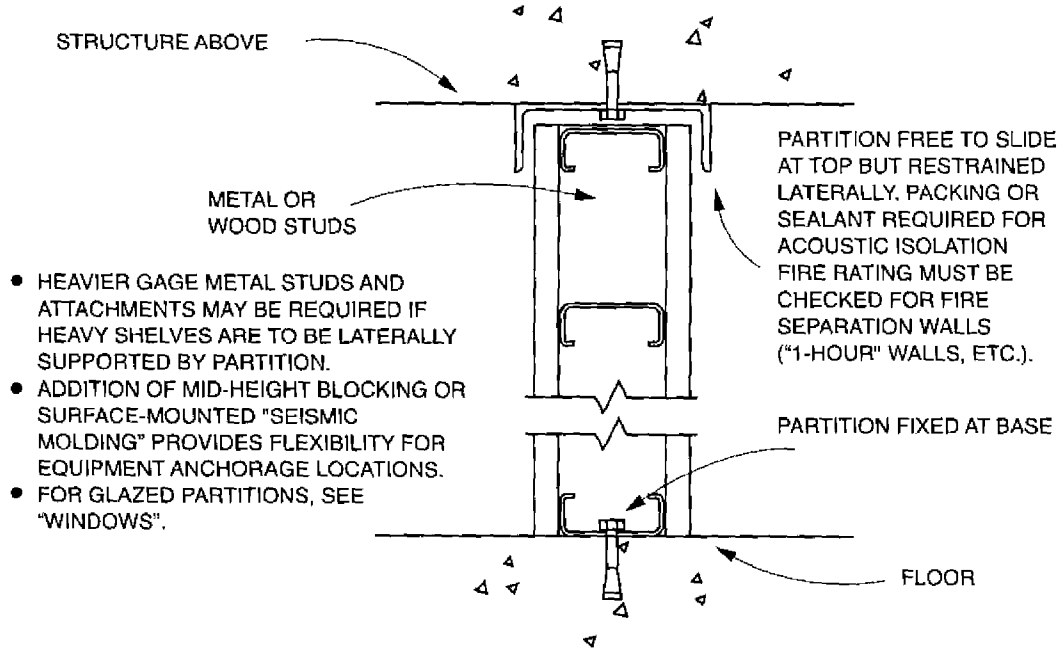

1/4" ø x 3"
LAG SCREW
W/FLAT
WASHER
WOOD
STUD
PLAN
12" MAX.
1" MIN.
CONDUIT
WITH ENDS
FLATTENED
2' - 6" MAX.
3/4" X 24 GUAGE
PLUMBER'S
TAPE
1/4" ø EXP. ANCHOR
W/2" MIN.
EMBEDMENT
CONCRETE
OR
MASONRY
WALL
CONDUIT
WATER
HEATER
1/4" ø
MACHINE
SCREW
CONDUIT
WITH ENDS
FLATTENED
FLEXIBLE WATER
CONNECTION
3/4" X 24 GUAGE
PLUMBER'S
TAPE
WATER
HEATER
FLEXIBLE GAS CONNECTION
(SEE DETAIL C 18)
ELEVATION

E5



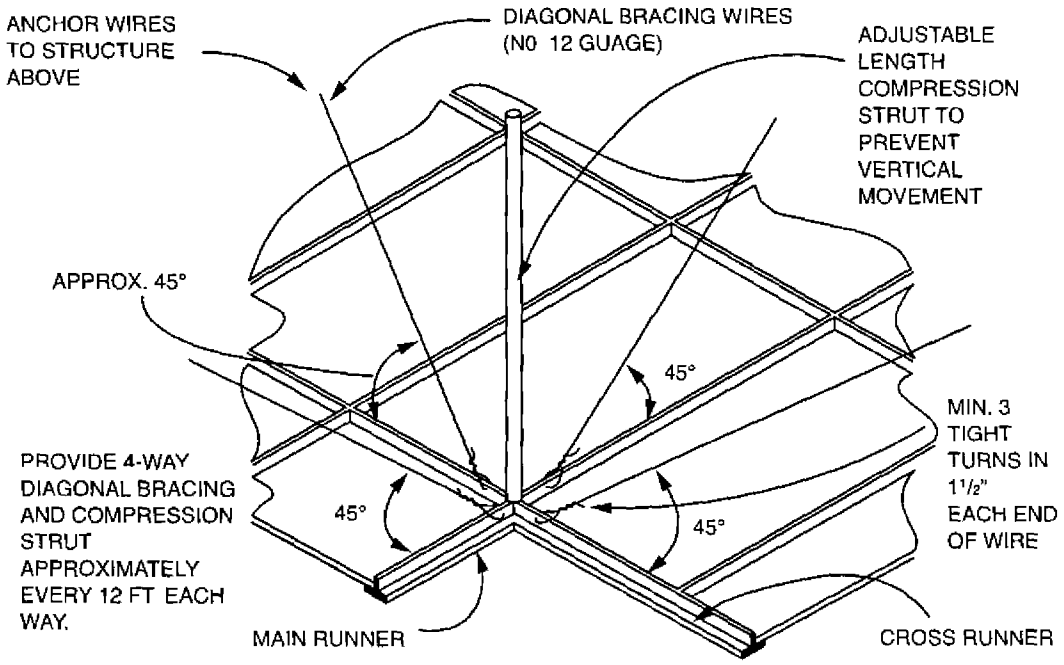
- HEAVIER BRACES OR CLOSER SPACING MAY BE REQUIRED IF PARTITION IS USED TO SUPPORT OR SEISMICALLY RESTRAIN HEAVY SHELVES OR OTHER NONSTRUCTURAL ITEMS.

E6

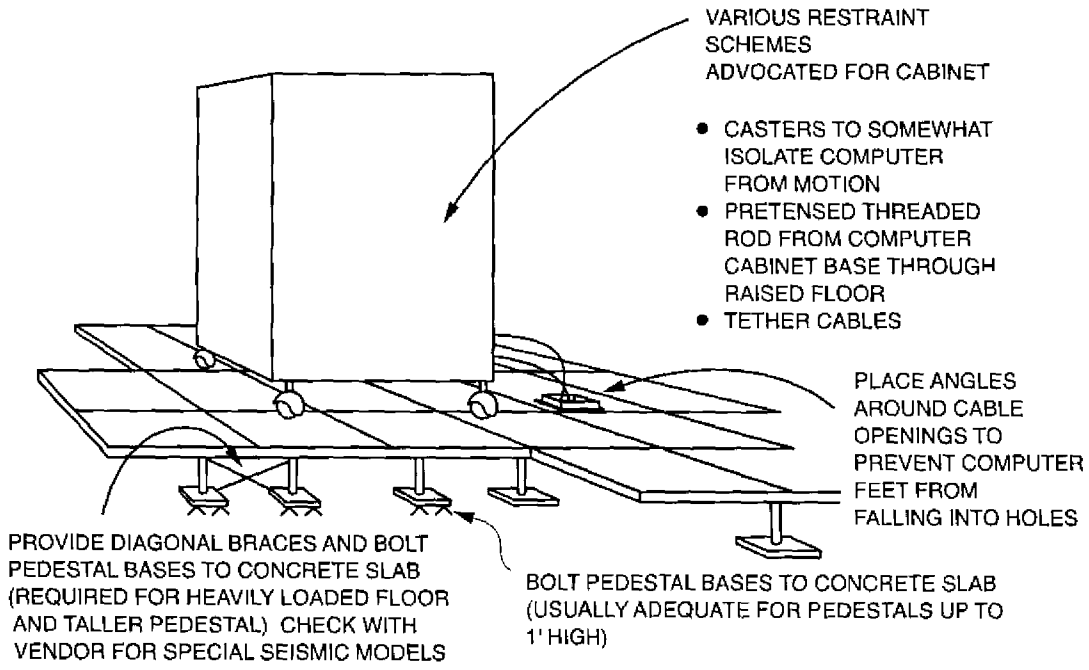


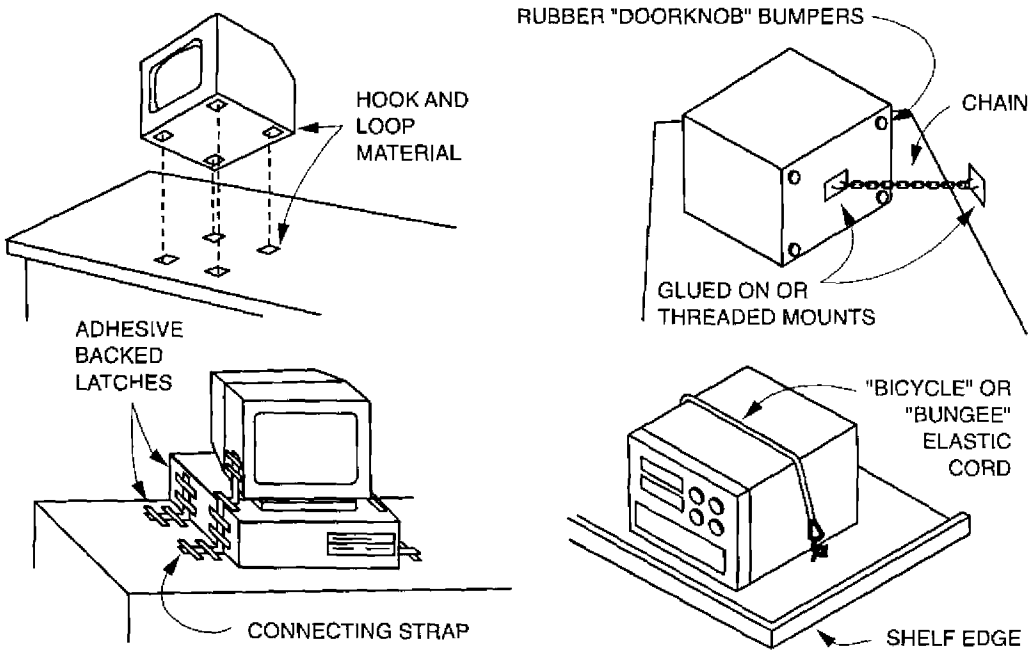
- HEAVIER GAGE METAL STUDS AND ATTACHMENTS MAY BE REQUIRED IF HEAVY SHELVES ARE TO BE LATERALLY SUPPORTED BY PARTITION.
- ADDITION OF MID-HEIGHT BLOCKING OR SURFACE-MOUNTED "SEISMIC MOLDING" PROVIDES FLEXIBILITY FOR EQUIPMENT ANCHORAGE LOCATIONS.
- FOR GLAZED PARTITIONS, SEE "WINDOWS".

E7

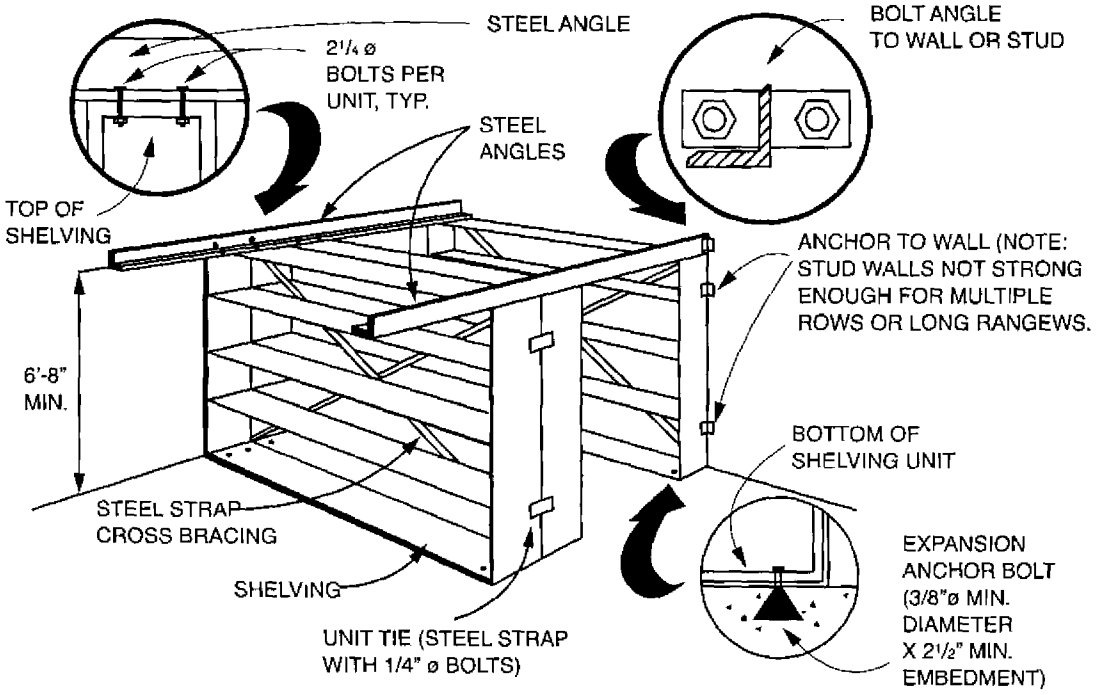

ANCHOR WIRES TO STRUCTURE ABOVE
DIAGONAL BRACING WIRES (N0 12 GUAGE)
ADJUSTABLE LENGTH COMPRESSION STRUT TO PREVENT VERTICAL MOVEMENT
APPROX. 45°
45°
MIN. 3 TIGHT TURNS IN 1½" EACH END OF WIRE
PROVIDE 4-WAY DIAGONAL BRACING AND COMPRESSION STRUT APPROXIMATELY EVERY 12 FT EACH WAY.
45°
45°
MAIN RUNNER
CROSS RUNNER

E8

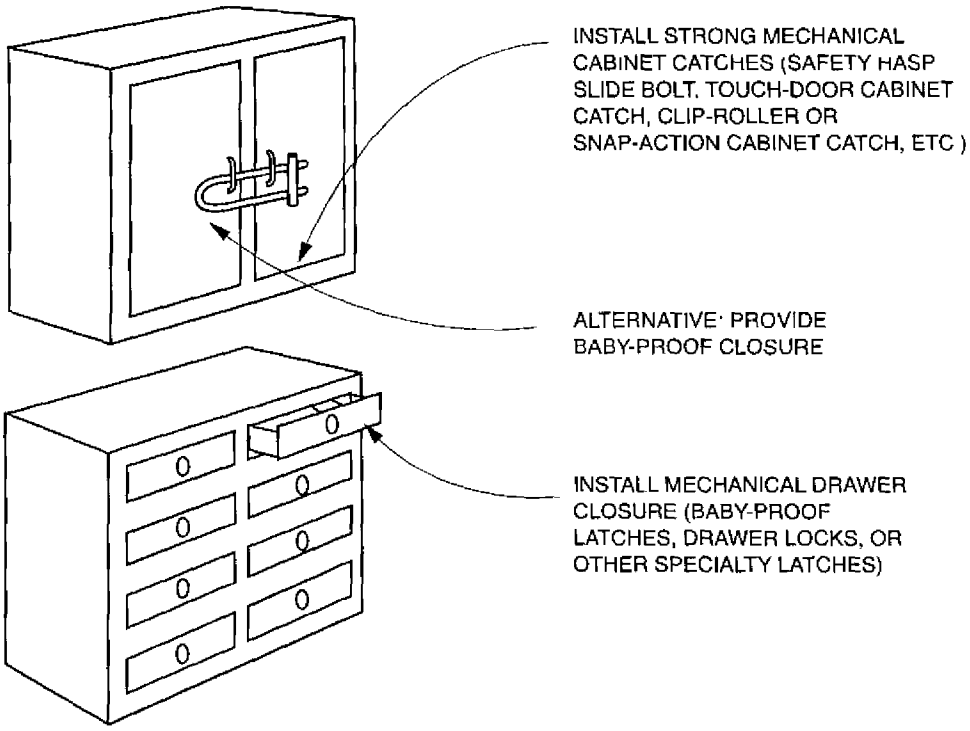

VARIOUS RESTRAINT SCHEMES ADVOCATED FOR CABINET
• CASTERS TO SOMEWHAT ISOLATE COMPUTER FROM MOTION
• PRETENSED THREADED ROD FROM COMPUTER CABINET BASE THROUGH RAISED FLOOR
• TETHER CABLES
PLACE ANGLES AROUND CABLE OPENINGS TO PREVENT COMPUTER FEET FROM FALLING INTO HOLES
PROVIDE DIAGONAL BRACES AND BOLT PEDESTAL BASES TO CONCRETE SLAB (REQUIRED FOR HEAVILY LOADED FLOOR AND TALLER PEDESTAL) CHECK WITH VENDOR FOR SPECIAL SEISMIC MODELS
BOLT PEDESTAL BASES TO CONCRETE SLAB (USUALLY ADEQUATE FOR PEDESTALS UP TO 1' HIGH)


HOOK AND
LOOP
MATERIAL
ADHESIVE
BACKED
LATCHES
CONNECTING STRAP
RUBBER "DOORKNOB" BUMPERS
CHAIN
GLUED ON OR
THREADED MOUNTS
"BICYCLE" OR
"BUNGEE"
ELASTIC
CORD
SHELF EDGE

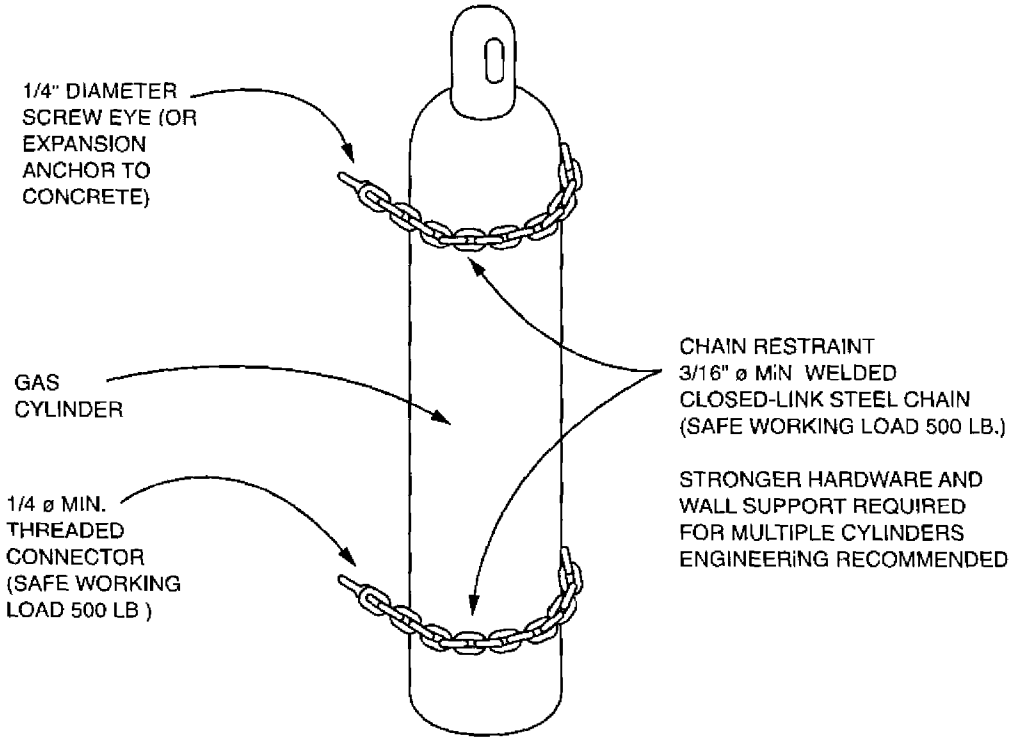
E10


STEEL ANGLE
2¼ ø
BOLTS PER
UNIT, TYP.
STEEL
ANGLES
BOLT ANGLE
TO WALL OR STUD
TOP OF
SHELVING
ANCHOR TO WALL (NOTE:
STUD WALLS NOT STRONG
ENOUGH FOR MULTIPLE
ROWS OR LONG RANGEWS.
6'-8"
MIN.
BOTTOM OF
SHELVING UNIT
STEEL STRAP
CROSS BRACING
SHELVING
UNIT TIE (STEEL STRAP
WITH 1/4" ø BOLTS)
EXPANSION
ANCHOR BOLT
(3/8"ø MIN.
DIAMETER
X 2½" MIN.
EMBEDMENT)

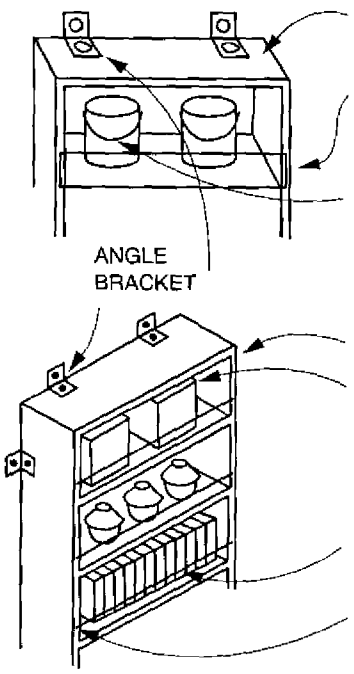
E11


INSTALL STRONG MECHANICAL CABINET CATCHES (SAFETY HASP SLIDE BOLT, TOUCH-DOOR CABINET CATCH, CLIP-ROLLER OR SNAP-ACTION CABINET CATCH, ETC)
ALTERNATIVE: PROVIDE BABY-PROOF CLOSURE
INSTALL MECHANICAL DRAWER CLOSURE (BABY-PROOF LATCHES, DRAWER LOCKS, OR OTHER SPECIALTY LATCHES)

E12


1/4" DIAMETER SCREW EYE (OR EXPANSION ANCHOR TO CONCRETE)
GAS CYLINDER
1/4 ø MIN. THREADED CONNECTOR (SAFE WORKING LOAD 500 LB)
CHAIN RESTRAINT 3/16" ø MIN WELDED CLOSED-LINK STEEL CHAIN (SAFE WORKING LOAD 500 LB.)
STRONGER HARDWARE AND WALL SUPPORT REQUIRED FOR MULTIPLE CYLINDERS ENGINEERING RECOMMENDED

E13



- ANCHOR STORAGE SHELVES
- PROVIDE SAFETY LIP OR SHELF EDGE
- PROVIDE MECHANICAL LATCHES FOR CABINETS AND DRAWERS
- STORE SMALL OR BREAKABLE ITEMS IN ORIGINAL PACKING OR EGGCRATE BOXES, NOT LOOSE ON SHELF OR IN DRAWER
- STORE INCOMPATIBLE MATERIALS AT A SAFE DISTANCE TO AVOID MIXING IF THE CONTAINERS FALL ORDER HAZARDOUS LAB CHEMICALS IN UNBREAKABLE PLASTIC BOTTLES OR IN GLASS BOTTLES WITH AN EXTERIOR PLASTIC SAFETY COATING

Annex V

Checklists for Maintenance Operations

Four tables are presented covering:

Building Interior

Building Exterior

Compound

Guidelines for Maintenance Checklists

The following abbreviations are used in the tables:

Frequency		*Operator*	
I	Immediately	C	General cleaners
D	Daily	MS	Maintenance staff
W	Weekly	HA	Hospital Administrator/Officer
Q	Quarterly		In Charge
A	Annually	G	Gardener

Notes: 1. For *Frequency* the maximum period is given.

2. For *Operator* the person named is usually responsible for seeing that the operation is carried out.

Building Interior

SPACES	FREQUENCY	OPERATOR
Washrooms and Toilet		
Inspect and report deficiencies	D	C/MS
Wash floors, toilet bowls, urinals, wash basins with disinfectant and deodorant	D	C
Order replacements	I	HA
Replace broken elements	Q	MS
Repair	I	MS
Paint	A	MS
Corridors and Classrooms		
Inspect and report deficiencies	D	C
Wash walls	W	C
Ceilings, Interior Roofs, Canopies		
Inspect and report deficiencies	A	MS
Repaint	every 4 years	MS
Laboratories and other Technical Areas		
Clean all counters, floors and walls	D	MS
Plumbing		
Inspect and report deficiencies	D	MS
Repair or replace defective pieces	I	MS
Internal Communication System		
Inspect all internal communications to ensure that the system is functioning properly and report defects.	Q	MS
Electricity		
Inspect electricity wiring on a room by room basis and report deficiencies.	Q	MS
Furniture		
Repair or replace broken elements	A	MS

Building Exterior

SPACES/MATERIAL	FREQUENCY	OPERATOR
Wood		
Inspect panels, louvres, railings and report deficiencies	A	MS
Replace all broken wood louvres	D	MS
Replace other damaged elements	Q	MS
Clean and paint marked surfaces	A	MS
Windows		
Inspect and report deficiencies	D	MS
Remove broken glass louvres or panes (see above also)	I	MS
Order replacements for broken glass and other elements	I	MS
Replace broken elements	Q	MS
Grease and oil louvre operators or handles	A	MS
Replace broken wire-mesh grills	Q	MS
Wash windows	Q	C/MS
Doors and Frames and Partitions		
Inspect and report deficiencies	Q	MS
Oil hinges etc.	A	MS
Replace defective and broken hardware	I	MS
Repair or replace defective doors and/or frames	I	MS
Stairs and Balconies		
Sweep stairs and balconies	D	C
Wash stairs, walls and rails	Q	C
Clean metal work of rust and coat with primer and paint	A	MS
Sand and paint wood railings or posts	every 2 years	MS
Roofs and Gutters		
Inspect and report deficiencies	A	MS
Repair and replace roof sheets and gutters as required	W	MS
Metal Panels		
Inspect	A	MS
Wash and remove graffiti	A	MS
Clean rust and repaint	every 2 years	MS

Compound

SPACES/MATERIALS	FREQUENCY	OPERATOR
Gardening		
Clean flower beds	W	G
Watering and fertilise plants	D	G
Remake plant beds	Q	G
Prune plants, trim hedges/trees	M	G
Grass playing fields	as required	G
Cut grass	W	G
Fence		
Inspect and report deficiencies	Q	MS
Repair	Q	MS
Paint	every 2 years	MS
Walkways and Courtyards		
Sweep	D	C
Clear litter and rubbish	D	C
Drainage Ditches		
Clean routinely	W	C
Clear blockages caused by excessive rain	I	MS
Repair damaged drains	A (in August)	MS
Water Mains		
Inspect and report deficiencies	Q	MS
Maintain earth cover	Q	MS
Repair breaches/leaks	I	SS
Septic Tank		
Inspect and report deficiencies	A (in August)	MS
Clean and flush out	every 4 years	MS
Repair	I	MS
Erosion near Structures		
Inspect and report deficiencies after heavy rainfall	Q and as required	MS
Return soil, grass area, re-direct water source	Q and as required	MS
Repair eroded area	I	MS
Rubbish bins		
Empty drums and burn (or carry away) rubbish	D	C
Inspect and replace bins if necessary	A	MS

Guidelines for Maintenance Checklists

In reporting deficiencies, the maintenance staff or handyman should be guided by the following notes. However, the guidelines which are given here are not intended to be exhaustive. They will, however, focus inspection on the critical areas.

SPACES/MATERIALS	GOOD	BAD
(a) Washrooms and Toilets		
Check to see if the walls are cracked	----------	----------
Where the walls are made of rubble stone see if the mortar is in good condition	----------	----------
Check to see if items such as soap holders and toilet paper holders are in place and are in working order	----------	----------
(b) Corridors and Classrooms		
Examine the floors to see if the concrete has been damaged in any way so that persons walking in the corridors or classrooms may trip	----------	----------
Check to see if the walls are damaged and need repairing	----------	----------
(c) Ceilings, Interior Roofs, and Canopies		
See if the ceilings and the undersides of the roofs and canopies have any watermarks which indicate leaks in the roof	----------	----------
See if any timber supports are rotten	----------	----------
Where the roof supports are of steel, check to see if there is any rust	----------	----------
See if any ceiling tiles need replacing	----------	----------
(d) Plumbing		
Check to see if there is any water on the floor	----------	----------
If there is, examine the wash basin to see if it is plugged	----------	----------
Examine the WC to see if the bowl is cracked	----------	----------
See if the flush tank is cracked	----------	----------
Check to see if the toilet seat cover is broken	----------	----------
See if the flush handle or pull chain is broken	----------	----------
See if the toilet bowl is fixed properly to the floor so that it does not rock when being used	----------	----------
See if the sewer pipe is properly fixed to the toilet and that there is no leaking at the joint	----------	----------
(e) Electricity		
See if all light bulbs are working and that all are in place	----------	----------
See if the wall plates are in good condition	----------	----------
See if the wall switches or pull switches are working	----------	----------
See if wall outlets are working	----------	----------

SPACES/MATERIALS	GOOD	BAD
(f) Windows		
See if the windows can close securely	----------	----------
See if the window operators are in good condition and are working	----------	----------
See if the bolts and locks are in working condition	----------	----------
See if the timber surrounding the windows is rotten and should be replaced	----------	----------
See if the windows leak even when closed	----------	----------
(g) Doors and Frames and Partitions		
See if the doors can close properly	----------	----------
See if the bolts and locks are in place and are working	----------	----------
See if the door frame is in good condition and that the timber is not rotten	----------	----------
Where the door is a wood door (brace and batten) see that the door has not warped	----------	----------
Check the partitions to see if the walls are in good condition	----------	----------
Report any loose mortar in a rubble wall	----------	----------
Report any cracked wall	----------	----------
(h) Roof and Gutters		
Check roofs for leaks	----------	----------
Check gutters for holes	----------	----------
Check gutter brackets to see if they are broken or rusted	----------	----------
(i) Fence		
With a chain link fence, check to see if the fence is broken	----------	----------
See if the fence posts are firmly in the ground	----------	----------
With a timber fence, check for rotten timber	----------	----------
(j) Water mains		
Check ground to see if there are any wet spots which would indicate a leaking water main	----------	----------
See if the water main is properly buried beneath the ground, or is well protected by concrete	----------	----------
(k) Septic tank		
Check to see if the tank has been cleaned in the last three years	----------	----------
See if the access covers fit properly, are in good condition and can be removed for cleaning	----------	----------
If the access covers can be opened too easily, children may remove the covers wilfully	----------	----------
See if the holders for the covers will cause people to trip The holder should be recessed with just enough room for a pickaxe blade to get under the holder.	----------	----------
See if the inlet pipe is firmly fixed to the tank and that there is no leak	----------	----------

SPACES/MATERIALS	GOOD	BAD
Where there is a soakaway check to see if the pipe to the soakaway is firmly bedded	.....	.....
See if there is any odour around the tank. If there is, the tank needs cleaning or another soakaway should be dug	.....	.....
Where there are tile fields, check to see if the pipes (tiles) are exposed. They should be well below ground level	.....	.....
See if the tiles are working and that there is no water on the ground around the pipes	.....	.....
(1) Erosion near Structures		
Examine the ground around the buildings to see if the rain water has removed any material - soil or stones	.....	.....
Check around the pipes to see if the pipes that were buried are still properly buried	.....	.....
Check around telephone or electricity poles on the property to see whether the rain water has removed soils around the bottom of the poles	.....	.....

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