



# HOW TO CONDUCT AN EARTHQUAKE DRILL IN SCHOOL

DEPARTMENT OF SCIENCE AND TECHNOLOGY  
PHILIPPINE INSTITUTE OF VOLCANOLOGY AND SEISMOLOGY

## Introduction

It is important to orient people on earthquake preparedness in order to be informed of what to do before, during and after an earthquake. During an earthquake, school children are one of the most vulnerable. As such, it is important for school administrators and teachers to be informed on how to properly conduct an earthquake drill. Teachers are the ones who will guide the students. They are the ones who will teach students how to protect themselves. The conduct of an earthquake drill requires planning and designing of evacuation procedure, as well as orienting teachers and ultimately students on how to do the earthquake drill. Earthquake drills are simple and easy to do. It only requires planning ahead and constant practice!

The conduct of an earthquake drill is different from that of a fire drill. In a fire drill, the sound of a siren/bell means that a fire is ongoing and all occupants of the building are to immediately evacuate to ensure their safety. In an earthquake drill, the sound of a siren/bell indicates that a strong shaking is ongoing and the level of ground shaking prevents people to stand and move around. To do so can cause more injury to the person as debris can fall and hurt him. One is not supposed to get out of the building while the shaking is ongoing.

## Objectives:

1. To ensure the safety of parents, students, teachers and staff during and after a damaging earthquake;
2. To help school administrators and their disaster action groups to design a specific response plan of the school for earthquakes;
3. To train teachers, school staff and students on how to practice proper action and response during earthquakes; and
4. To test various elements of the response plan designed by the School Disaster Management Committee (SDMC)

## STAGE 1

### Planning /Organizing the Earthquake Drill

- A. Form a School Disaster Management Committee (SDMC)** composed of several teams with specific tasks (*e.g. First Aid Team, Site Security Team, Fire-Safety Team, Evacuation Team, Communications Team*) and designate an over-all coordinator.

#### Members of the SDMC should evaluate the school.

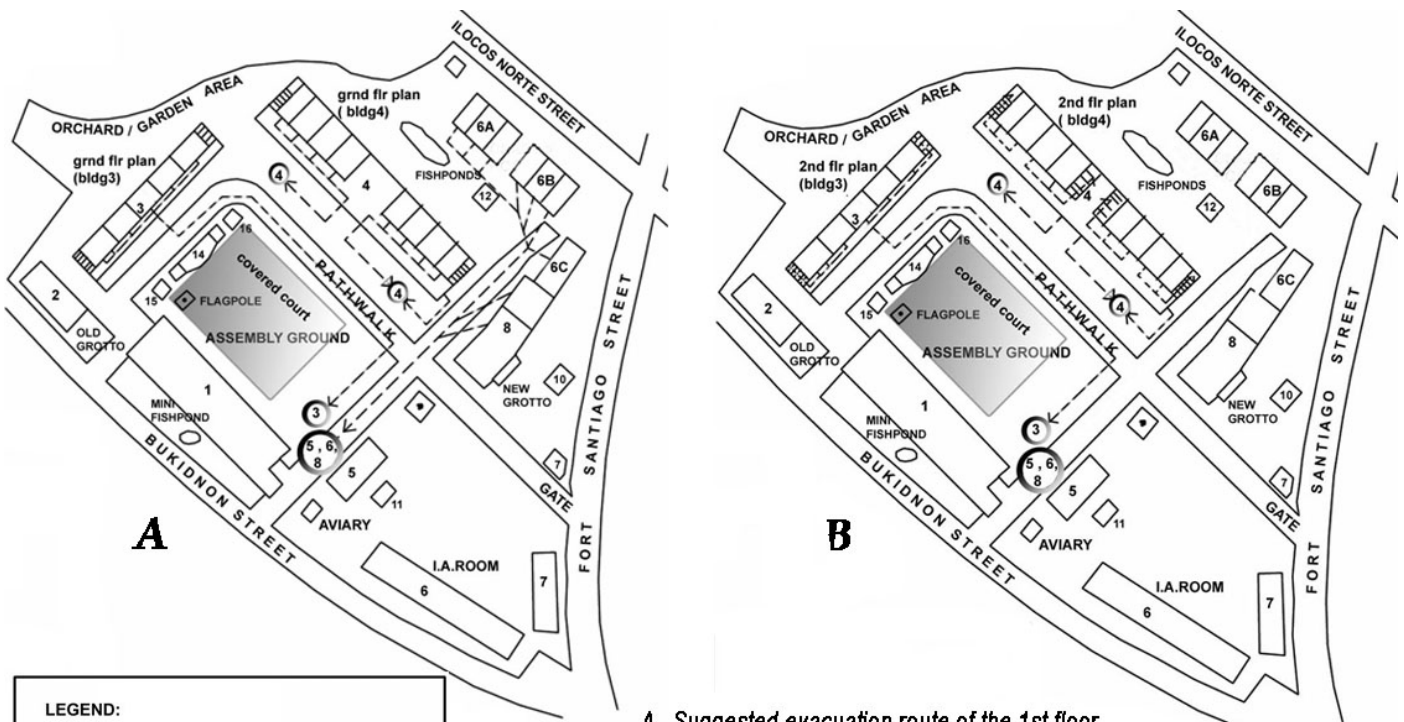
1. Have the following information available yearly: total number of students, teachers and staff; total number of students occupying each room, total number of students occupying each floor, total number of students occupying each building; and identify students or teachers with special needs (sick, old, disabled) and their location.
  2. Acquire the most recent school grounds layout or plan/map. Use this to identify open spaces and determine the total area of available space that can be utilized as “area of temporary refuge” that will be designated for the occupants of each building. Determine how many persons can occupy this open space. (*Is the space enough for the total number of students and teachers?*)
  3. Obtain a building lay out/ floor plan for each building that shows the rooms, corridors, staircases and exit points. (*Is the width of the corridor wide enough to accommodate the flow of traffic during an emergency?*)
- B. Members of the SDMC should conduct **building watching exercise**** and identify safe and unsafe spots inside the school grounds. This is necessary for stressing the do’s and don’ts.
1. Observe hazardous areas/practices within the school premises and dangerous conditions that may exist which people have not noticed before This should be plotted on the layout. (*e.g. Any hanging, unstable objects or structure; condition of power lines and utility poles; narrow alleys between buildings; elevators; corridors are too narrow; are there blockages along the corridors and exit points; do exit point remain open during school hours; doors of classroom that swing in instead of swing out*).

**STAGE 2**  
**Developing the School**  
**Earthquake Evacuation Plan**

After identifying the safe and unsafe spots, the next step is to develop the School Earthquake Evacuation Plan.

1. The School Earthquake Evacuation Plan should have provision to utilize all available open spaces nearest the building that are evaluated as safe from falling debris and other materials that may cause injuries to student.
2. Determine if there is sufficient open space for all. Areas to be occupied should be computed assuming 4 to 5 students would occupy a 1 sq m area.
3. Consider the number of students in each building (morning and afternoon session). Designate a specific open area for each class as their area of temporary refuge.

6. Once each class has been assigned a specific evacuation site, come up with evacuation procedure using the available map. Initially, all exit points nearest the room of occupants should be suggested as their exit routes; assuming that these are passable after the earthquake.
7. Determine the flow of traffic from each room along the corridors using the information on actual number of occupants per room and their designated evacuation area.
8. Indicate by arrows, the flow of student evacuation coming out of each room up to their designated evacuation site. This will be the suggested earthquake evacuation route for the students.
9. Prepare the final evacuation route and orient all the teachers and school staff about this. (Figure 1)
10. Prepare Earthquake Survival Kits (flashlight, battery operated radio, water, rope, blanket, candle, matches, tissue papers, tools like wrench, pliers, hammer, etc)
11. Prepare First-Aid Kits.



**A. Suggested evacuation route of the 1st floor of buildings 3, 4 and 6 (A, B & C) as well as buildings 5 & 8**

**B. Suggested evacuation route for the 2nd floor occupants of buildings 3 & 4**

LEGEND:	
1.	ADMINISTRATION BLDG
2.	BAGONG LIPUNAN BLDG (3 CLASSROOMS)
3.	PIMENTEL BLDG.(2 STOREY)
4.	IMELDA BLDG. (2 STOREY, 18 RMS)
5.	HOME ECONOMICS BLDG
6.	PREFAB BLDG (I.A.ROOM)
7.	KINDER LAND BLDG
8.	CANTEEN
9.	GUARDHOUSE
10.	BOYSCOUT CORNER
11.	GIRLSCOUT CORNER
12.	REST HOUSE (TEACHERS HANGOUT)
13.	INCENERATOR
14.	STAGE
15.	GSP INSIGNIA
16.	BSP INSIGNIA

## STAGE 3

### Orientation prior to the conduct of Earthquake Drill

**A.** Prepare the students a week before the scheduled earthquake drill. For each class, instruct the homeroom adviser to do the following:

1. Allot a specific time for lecture on earthquakes- what it is, how and why they occur, what to do before during and after an earthquake.
2. Conduct a **classroom observation activity**:
  - Draw floor plan of classroom (desks, teachers table, cabinets, etc)
  - Identify the safe spots in the classroom (tables, desks, doors, etc.)
  - Identify danger zones (*e.g. windows and glass, book shelves, machinery, cabinets and furniture that may topple or slide inside the classroom as well as all hanging and heavy objects*)
  - When dangerous areas within the classroom have been identified, ask the students what can be done to correct these and encourage them to take actions toward correcting this
3. Introduce to the students the suggested evacuation route prepared by SDMC.
4. Introduce to the students the assigned open area where they will evacuate after an earthquake
5. Assign somebody who will be in charge of making sure the door is open during the shaking

**B.** The main concern during an ongoing shaking is how to protect oneself.

**1.** Give specific instructions on **what to do during an earthquake**.

- Introduce **duck, cover and hold**
  - Take cover under a sturdy table or strongly supported doorway.
  - Watch out for falling objects.
  - Keep calm and don't panic.

**2.** Give specific instructions about **what to do as soon as the shaking stops**:

- Be alert.
- Listen to teacher's instructions.
- Walk out of the classroom in an orderly manner.
- While walking along the corridors to the nearest exit of the building, be alert and look out for falling debris.
- DON'T...Run, DON'T Push, DON'T Talk, DON'T Return, DON'T bring your things
- Quietly but quickly proceed to the designated evacuation area for the class and wait for further instructions from the teacher.
- NEVER go back to the building once you are outside. Buildings should be inspected by engineers for possible damage after an earthquake. Students should stay in the open area and wait for their parents/guardians to pick them up.

**3.** For the teacher, make sure all students are accounted for once in the designated evacuation area.



*PHIVOLCS seismologist Mr. Ishmael Narag demonstrates to students the "duck, cover and hold".*



*Students perform the "duck, cover and hold".*



*Teachers make a headcount of students at the designated evacuation area.*

## PHASES OF AN EARTHQUAKE DRILL

### Phase 1. Alarm

A pre-arranged signal such as siren/bell should be known to all. During the drill, the siren/bell indicates earthquake/shaking. Students and teachers will be alerted by this signal.

### Phase 2. Response

While the siren/bell is ongoing, everyone should move away from windows, glass or light fixtures. In this phase, everyone should perform “duck, cover and hold” under desks, tables or chairs. Remain in this position until the “shaking” stops.

### Phase 3. Evacuation

Once the “shaking” stops, teachers and students should evacuate the school building and proceed using pre-determined routes to go to identified evacuation areas.

### Phase 4. Assembly

At the designated evacuation area, students must be grouped together according to the class where they belong.

### Phase 5. Head count

Teachers should check and make sure all students are accounted for.

### Phase 6. Evaluation

An evaluation of the drill must be conducted to identify problems encountered during the drill and how this can be corrected in future earthquake drills.

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## STAGE 4

### Actual Conduct of Earthquake Drill

1. Prior to the scheduled drill, inform the neighborhood regarding the conduct of the drill.
2. Identify and assign observers for each exit points of the building and evacuation areas. They will give their comments and observations during the evaluation of the drill.
3. For the Actual Drill:
  - Assumptions:
    - 1-minute strong shaking signified by 1 minute siren/bell
    - Person can not stand
    - Buildings may have been damaged but no collapse
    - Possible falling objects including glass windows
    - No immediate assistance will be available for at least several hours. Self help and sustenance are required.
    - Possible injuries, fear, panic among students and teachers
  - Give instructions/reiterate the what to do's:
  - Once the siren is heard, do the proper and expected actions.
  - Participants during this 1-minute siren should perform the **duck, cover and hold**
  - After the 1-minute siren, students quietly go out of room and proceed to previously designated open space
  - Teacher should make head count while in the ground



Students perform the duck, cover and hold during the actual drill.