CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

Earthquake is highly unpredictable to happen and frequently happen all of a sudden. Until now, there is no accurate way to predict when an earthquake will happen. As result many people will be killed and injured due to collapse building not due to the earthquake itself. Other than that, other structure such as roads, bridges and dam also experience damage from the earthquake. Generally, a lot of destruction happens upon the occurrence of an earthquake.

Bridges is a sensitive and importance structures, thus the design of bridges in Malaysia must considering the earthquake effect. Bridge is a structure worked to traverse physical obstruction without shutting the path underneath, for example a waterway, valley or road for the purpose of giving way over the obstacle. There are various designs of bridges that provide specific use and will apply to different situation. Each design of the bridge vary according to the function itself, the location where the bridge will be construct, the material used and the cost to build the bridge. Several type of bridges use in Malaysia is steel arch road bridge, concrete bridge (precast concrete bridge), suspension bridges and cable stayed bridge.

Figure 1.1: Steel Arch Road Bridge ,Sultan Iskandar Bridge, Kuala Kangsar (1932)

Source: The Bridge Builder-Marvels of Engineering

Figure 1.2: Concrete Bridge, Sultan Abdullah Bridge, Jerantut Pahang

Source: The Bridge Builder-Marvels of Engineering

Figure 1.3: Sultan Ibrahim Suspension Bridge, Kuala Krai (1945)
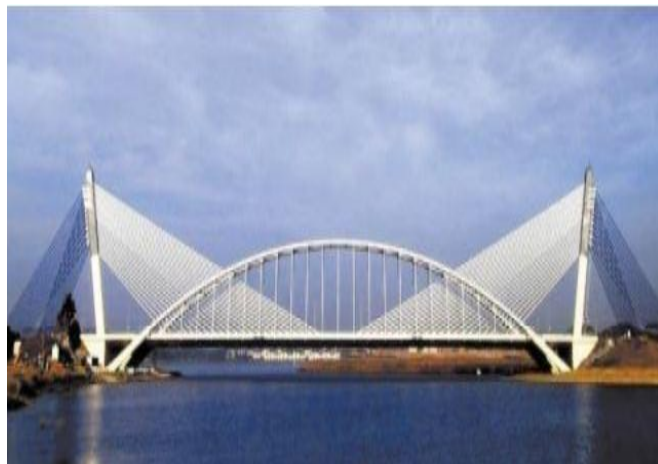
Source: The Bridge Builder-Marvels of Engineering

Figure 1.4: Cable Stayed Bridge, Sri Saujana Bridge, Putrajaya (2002)

Source: The Bridge Builder-Marvels of Engineering

1.2   PROBLEM STATEMENT

Malaysia is not free from earthquake. Peninsular Malaysia is located quite near to two active sources of earthquake which is 350km away from Sumatra fault and 500km from Sumatran Subduction Zone. Now Malaysia is not immune to earthquake