CHAPTER 1

INTRODUCTION

1.1 General

Even though Malaysia is just a small country but it has the 9th largest peatland in the world. Besides Sarawak, in Peninsular Malaysia there are also several other places with peat soil. One of it is Pekan districts located at Pahang Darul Makmur, the east coast of Malaysia.

Peat also can be defined as “generally unconsolidated organic material consisting largely of organic residues accumulated as a result of incomplete decomposition of dead plant constituents under conditions of excessive moisture” (Landva 2007). Peat soil contains highly organic content from plant materials. It has spongy consistency, brown to dark colour and organic odour. The presence of organic matter in peat leads to a high potential in agricultural industries.

Besides that, peat soil have different characteristics depends on the place where it is found. Moreover, among soil scientist and engineers, peat soil has no specific definition. Soil scientist defined peat soil as a soil with organic content greater than 35%, whereas geotechnical engineers defined peat soil with organic content greater than 20%.

Peaty soil is not suitable for any types of foundation because of high compressibility and known to be problematic for geotechnical purposes. Development of peat is important especially in Malaysia because peat has
become increasingly necessary for economic purposes because the increase in growth population as well. Moreover, constructions on peaty soil make it tough for the engineers to deal with. Before any construction take place, it is important to have a site investigation which involves soil investigation before doing any improvement of the soil.

Soil sampling procedure can be divided into two parts which is the allocation of the samples over the region under survey and the sampling technique. However in this study it was focused more on the sampling technique which involving two different types of sampler; modified sampler and conventional sampler. Types and design of peat soil sampler is important in order to obtain a high quality of soil sample with fewer disturbances.

Besides that, the design of soil sampler also can give effect on the soil disturbance. They are many types of sampler produced to cope with the problem in obtaining undisturbed soil sample. Each has been designed to meet particular requirements of soil type and working conditions.
1.2 Statement of Problem

Peat soil is known as one of the problematic soil where its behavior and characteristics such as high moisture content, high compressibility and void ratio shows the unsuitability of this soil for any type of construction. However, in order to deal with the current urban land scarcity for development, geotechnical engineers have been challenged to design foundations in marginalized soil including peat.

Even though there are many kind of method have been made to improvise the soil, engineers need to identify the behavior, characteristics and strength in details in order to know what should be done next. Design of the sampler was also one of the factor that affect the quality of the peat soil sample.

Hence, to solve the problem of obtaining undisturbed soil sample is important because if the degree of the disturbance is high, then engineers might underestimate or overestimates the strength of the peat soil.