CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

In this modern world, the construction industry in Malaysia is growing hastily along with the increasing number of populations in this worldwide. In fact, according to Roskovic et al. (2005) and Shafish et al. (2014), the world’s population has been expected to surge from the present, six to nine billion by the year 2050 and by the end of century, the human’s population will reach 11 billion. This will result in a significant increase in the demand for food, water, river sources, energy, common goods and services.

Figure 1.1: Chart of annual population growth rate in Malaysia year 2010 – 2040

Source: Department of Statistics, Malaysia
The government around the globe, especially in most developing countries such as Malaysia has been facing a crucial problem of housing demand which has increasing day by day. Hence, the growth of the industry of construction is also increasing, since the people want to fulfil their needs of living. In order to fulfil the demand of housing, the demand of materials of construction such as bricks by the constructors especially the contractors has also inflating.

Brick is one of the oldest material which is found has been used by human beings in the construction industry. In 14,000 B.C and earlier, bricks were found in the Egypt in the form of hand-moulded and sun-dried. The types of bricks are continuing to be varied in most countries and they are being used through ages because of their greater physical and engineering properties. In addition, bricks can be classified into various types and uses such as building brick or common brick, floor brick, paving brick and facing brick.

Brick is a construction material which can be categorized in term of ‘masonry’. Generally, masonry is a combination of stone and brick units with mortar as their binding material. Masonry is primarily used in vertical structural elements such as building walls. High in proportion along with their height and length, let them acting to enclose or divide the area and supporting the loads from other elements.

Examples of masonry used in historical landmarks all around the world are including the Great Wall in China, the ruins of Greek and Roman, the pyramids in Egypt, the great cathedrals in Europe, the Taj Mahal in India, and many more. Hence, when shortage supplies of building materials, especially bricks happen, the construction industry will be in trouble. This is because masonry unit such as bricks still in popular use nowadays.
In the time being, the wastes produced by the Malaysian people day by day has overloaded and there are no enough areas or spaces available to dump all of these wastes. The wastes can either came from industrial or agricultural sectors. By finding out sustainable and affordable alternative, the overburdened wastes out there can be slowly eliminated. The people also has realized and becoming more concern about the issues