



**UNIVERSITI TEKNOLOGI MARA**

**THE CHALLENGES IN CHOOSING CEMENT  
BOARD IBS CONCEPT TO REDUCE THE COST  
OF A BUILDING COMPARE TO THE BRICK WALL**

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## ABSTRACT

The building industry keeps growing towards industrialization in construction by implementing Industrialized Building System (IBS) rather than using conventional cement wall structure. The components of IBS structure which are floors, walls, columns, beams and roof are assembled and erected on the site by properly joints to form the final units. This paper gives the results of a series challenges in comparison of conventional cement wall and IBS wall structure. A wall is a structural element that divides a space (room) into two areas (rooms) and provides both defense and protection. The walls are generally divided into two types: outer-walls and inner-walls. The outside walls offer a protective enclosure, while the interior walls assist split the enclosure into the required number of rooms. IBS structure wall is the new innovative technology which specialties economical, ease of installation, efficiency in time consuming and low maintenance. The surveys were divided in three different sections consists of section A, section B and section C that has been distributed among the professional and experience contractors and workers. In this context, the specific various questionnaires were setup which allow the respondents to evaluate and validate all the possibilities during installation and after installation between cement board and brick wall. During this survey was conducted, resulting the cement board wall has cheaper in price and easier for transportation. However, the cement board wall needed a longer time during the installation and required less worker to inaugurate while brick wall is vice versa. Besides that, overall contributor 's choice is cement board wall due to their low time consuming for the installation purposes.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 RESEARCH BACKGROUND

Wall is a structural feature that separates the space (room) into two spaces (rooms) and offers defense as well as protection. The walls are usually classified as outer-walls and inner-walls of two forms. Outer-walls provide the house with an enclosure for protection and inner-walls help to divide the enclosure into the number of rooms necessary. Often called inner walls as partition walls or interior walls, and sometimes called exterior walls as outside walls. Walls also divided into some types such as load bearing wall, non-load bearing wall, shear wall, retaining wall, brick masonry wall, core wall, precast wall, parapet wall, curtain wall, boundary wall or compound wall (Krishna, 2019).

Next, (Wallender, 2019) stated that cement board is an inexpensive, suitable building material that's make tiling, flooring and countertop project go quicker and faster and look finer in the end. Other than that, cement board has a long lasting, stronger and durable tile installation with no chance of rooting.

Other than that, a brick wall is a vertical element of construction that is made of bricks and mortar and is used to form the external walls of buildings, parapets, internal partitions, freestanding walls, retaining walls and so on. The first walls were made of mud bricks bound together by a slurry of thin clay, some of which proved to be remarkably durable. A contemporary brick wall usually consists of bricks constructed from clay, concrete or calcium-silicate. 215 mm (L) x 102.5 mm(W) x 65 mm (H) is the most typical brick scale. Bricks are connected together by a cemented or lime mortar, usually 10 mm thick for the horizontal (bedding) joints and 10 mm long for the vertical (perpend) joints. (Hill, 2002)