

**CENTRE OF STUDIES FOR BUILDING SURVEYING  
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING  
UNIVERSITI TEKNOLOGI MARA**

**MAINTENANCE MANAGEMENT OF GBI RATED RESIDENTIAL  
BUILDINGS**

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for the degree of  
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**“I hereby declare that this academic project is the result of my own research  
except for the quotation and summary which have been acknowledged”**

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## **ABSTRACT**

The purpose of this research is to study and improve the maintenance management of GBI rated residential buildings. This study highlights the existing maintenance management systems existed in the residential buildings. The definition and issues of management, green building index, regulations and guidelines are emphasizing in chapter 2. Plus, there are three types of research methods used are indicated in chapter 3. Moreover, three case studies of maintenance management of green building index in residential buildings are executed to observe whether the user are satisfied with the maintenance management and whether it is complied with building regulations and requirements by using questionnaire. Besides, questionnaires are deliberated and executes in order to find out the problems exist on managing the residential buildings and to discover the dissatisfaction of the user. It can be concluded that the users of Ken Bangsar are more satisfied with the maintenance management. The least satisfied users are from Saville Serviced Apartment. Although most of the residents do not have the knowledge of Green Building Index and its requirements, but some of them, the highest rate is from Ken Bangsar, acknowledge the meaning and requirements of Green Building Index. Some recommendation collected through studies to improve the maintenance management is for the user to gain knowledge on green building index. Residential buildings that have the title of GBI should also be complied with the standard of green building. Finally, the conclusion and recommendations will be done based on the analysis for the case studies, checklist and questionnaire.

## CHAPTER I

### 1.0 INTRODUCTION

This study concerns about the maintenance management of Green Building Index in residential houses. The issues to be highlighted are the lack of awareness regarding the management of the maintenance and the satisfaction level of occupancy.

According to (Tan, 2007) Greenhouse gasses and ozone depletion became household words perhaps following the Earth Summit in Rio, 1992. Rio was to be the environmental summit to end all summits. It was brought to attention that something had to be done, failing which the world would end up devouring and destroying itself. It was a call to action not a proposal for options. Many initiatives came out from the summit and the myriad of other NGO-led meetings and gatherings that year including Local Agenda 21, the role of community and self-help. Green building ratings began to be developed in the 1990s with BREEAM (UK, 1990) and later LEED (USA) being the better known ones. This was the result of the realization that buildings and the built environment contributed significantly to greenhouse gas emissions and thus they needed to be re-designed to reduce its negative impact to the environment.

The notion of buildings being 'machines for living' is proven true as buildings do last a long time and over that lifetime they do play a part in adding to the destruction of the environment. Green-rating tools were conceived to be able to assist architects, designers, builders, Government bodies, building owners, developers and end users to understand the impact of each design choice and solution. By so doing, the final built product would perform better in its location whilst also reducing its harmful impact on the surroundings.

## 1.1 DEFINITION AND AIM OF GBI

Green Building Index (GBI) is developed by Pertubuhan Arkitek Malaysia (PAM) and the Association of Consulting Engineers Malaysia (ACEM). It is a profession driven initiative to lead the property towards becoming more environment-friendly. The rating system gives opportunity for developers and building owners to design and construct green buildings that can provide energy and water savings, a healthier indoor environment, better connectivity to public transport and the adoption of recycling and greenery for their projects.

A green building focuses on increasing the efficiency of resource use – energy, water, and materials – while reducing building impact on human health and the environment during the building's life cycle, through better siting, design, construction, operation, maintenance, and removal. Green Buildings should be designed and operated to reduce the overall impact of the built environment on its surroundings ([www.greenbuildingindex.org](http://www.greenbuildingindex.org)).

This GBI initiative aims to assist the building industry in its march towards sustainable development. The GBI environmental rating system is created to:

- Define green building by establishing a common language and standard of measurement;
- Promote integrated, whole-building design;
- Recognise and reward environmental leadership;
- Transform the built environment to reduce the environmental impact of development; and
- Ensure new buildings remain relevant in the future and existing buildings are refurbished and thereafter sustained properly to remain relevant.