



**DEPARTMENT OF BUILDING SURVEYING
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**PRACTICE OF BUILDING INTEGRATED PHOTOVOLTAIC (BIPV)
IN DOMESTIC BUILDING**

**This academic project is submitted in partial fulfillment of the
requirement for the Bachelor Of Building Surveying (Hons.)**

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ABSTRACT

Solar photovoltaic is a clean form of renewable energy which the technology converts sunlight directly to electricity. The technology is widely adopted by countries such as Germany, Japan and the United States. For Japan, by the year 2005, 253,754 homes had PV system or photovoltaic installed through their capital subsidy programme. Germany boasted the world's highest PV installed capacity with 2,863 MW in 2006 with the growth largely due to the attractive feed-in tariff as a result of the passing of Renewable Energy Source Act. For Malaysia, the abundance and consistent sunlight makes this renewable energy technology most suitable for urban applications. Building Integrated Photovoltaic (BIPV) is which the building that has provided together with the solar system that is can generate the electricity through the solar panel. Photovoltaic system used the solar irradiance to electricity with solar panel. The electricity that generated depends on the efficiency of solar panels. In Malaysia, solar industry was introduced in early 1980's, primarily to provide basic electricity to remote areas. In July 1998, the solar system or photovoltaic has installed at the University Kebangsaan Malaysia for Malaysia's first practical experience of grid-connected PV on the initiative if the notional power utility.

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LIST OF ABBREVIATIONS

A	-	ampere
AC	-	alternating current
Ah	-	ampere hour
BiPV	-	building integrated photovoltaic
CdTe	-	Cadmium-Telluride
CuInSe₂	-	Copper-Indium-Diselenide
DC	-	Direct Current
GaAs	-	gallium arsenide
GEF	-	Global Environment Facility
GHGs	-	Greenhouse Gases
GKSB	-	Gading Kencana Sdn Bhd
GW/h	-	GigaWatt per hours
IEA	-	International Energy Agency
KKLB	-	Ministry of Rural and Regional Development
KTAK	-	Ministry of Energy, Water and Communication
kW	-	kilowatt
kWh	-	kilowatt hour
MIDA	-	Malaysian Industrial Development Authorities

CHAPTER 1

1.0 INTRODUCTION

Malaysia has quite a positive stance on issue of climate change. It was one of 150 countries to sign the United Nations Framework Convention on Climate Change in June 1992 at the Rio Earth Summit. The idea was to recognize climate change as “a common concern of humankind” and consequently forge a global strategy “to protect climate system for present and future generations”

Photovoltaic technology was first introduced into Malaysia in the early 1980s, primarily to provide basic electricity to remote areas. Subsequently, PV technology was used to generate electricity for offshore oil and gas platforms. In 1998, on the initiative of the national power utility, Tenaga Nasional Berhad (TNB), Malaysia started to experiment with grid-connected PV system. This was motivated by the success of the German Rooftop and Japanese Sunshine programmes. Between 1998 and 2002, six pilot grid-connected PV systems were installed with power capacity ranging from 2.8 kWp to 3.8 kWp. The first system was installed in July 1998 on the roof of a university and provided Malaysia’s first practical experience of grid-connected PV. This first system was rather simple and basic but also was very expensive.