

DEVELOPMENT OF MULTIPURPOSE TREE LAMP

MOHAMAD AZWAN BIN MOHD GHAZALI

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### SUPERVISOR'S DECLARATION

I hereby declare that I have checked this project and in my opinion this project is satisfactory in terms of scope and quality for the award of Diploma in Mechanical Engineering

Signature :  
Name of Supervisor : MOHD AZRUL HISHAM BIN HJ. MOHD ADIB  
Position: : TUTOR  
Date: : 24 NOVEMBER 2009

Signature :  
Name of Panel :  
Position :  
Date :

### STUDENT'S DECLARATION

I hereby declare that the work in this report is my own except for quotations and summaries which have been duly acknowledged. The report has not been accepted for any diploma and is not concurrently submitted for award of other diploma.

Signature :  
Name : MOHAMAD AZWAN BIN MOHD GHAZALI  
ID Number: : MB07062  
Date: : 24 NOVEMBER 2009

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## **ABSTRACT**

This report presents about multipurpose tree lamp that usually used for decorating especially at home. This is the device which important in order to provide light, and decoration in our home. Besides that, it also has other function like hook where it used to hold something small and lightweight. The idea of the fabricate for this lamp is based on student's creativity. The selection of suitable materials in the fabricating of this lamp is a loaded material which has ease to form, long life-span and can detain heavy load. Materials are used for the fabrication of the lamp is a round hollow steel.

## ABSTRAK

Laporan ini membentangkan tentang lampu pokok pelbagai guna yang selalunya digunakan untuk perhiasan terutamanya di dalam rumah. Lampu merupakan suatu perkakas yang penting untuk menyediakan pencahayaan, dan perhiasan di dalam rumah. Idea pembentukan lampu ini berdasarkan kreativiti pelajar sendiri. Pemilihan bahan yang sesuai untuk digunakan bagi pembentukkan lampu ini merupakan bahan yang mudah dibentuk, mempunyai jangka hayat yang tahan lama dan boleh menahan beban yang berat. Bahan yang dicadangkan untuk pembentukkan lampu ini merupakan material jenis "*round hollow steel*".

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**LIST OF SYMBOLS**

e	Strain	
$\sigma$	Stress	(N/m <sup>2</sup> )
E	Young's Modulus = $\sigma / e$	(N/m <sup>2</sup> )
y	Distance of surface from neutral surface	(m)
R	Radius of neutral axis	(m)
I	Moment of Inertia	(m <sup>4</sup> )
Z	Section modulus = $I/y_{\max}$	(m <sup>3</sup> )
M	Moment	(Nm)
W	Total load on beam	(N)
F	Concentrated force on beam	(N)
S	Shear Force on Section	(N)
L	Length of beam	(m)
x	Distance along beam	(m)

**LIST OF ABBREVIATIONS**

AL	Aluminium
AISI	The American Iron and Steel Institute
ASTM	American Society for Testing and Materials
CAD	Computer Aided Design
MIG	Metal Inert Gas Welding
PPE	Personal Protective Equipment
UHMWPE	Ultra high molecular weight polyethylene
SMAW	Shielded metal arc welding
UMP	Universiti Malaysia Pahang