

UNIVERSITI TEKNOLOGI MARA

**DESIGN OF MECHANICAL
FLOWER RACK**

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DIPLOMA

Feb 2024

ABSTRACT

The Design of Mechanical Flower Rack project is an innovative and sustainable solution for plant enthusiasts. This project main objective is to create a functional and visually appealing flower rack that incorporates mechanical elements and prioritizes the use of eco-friendly materials. Next, to minimize environmental impact while providing a practical solution for plant enthusiasts. The lack of sustainable and innovative flower racks available on the market is the main problem statement of this project. Most flower racks are made of non-eco-friendly materials and lack mechanical elements, making it challenging to hold a variety of plants and flowers. It is applicable to using various methodologies, including research, brainstorming, prototyping, and testing. Sustainable engineering and design principles will guide the team's decisions throughout the project's development. The functional, durable, and visually appealing flower rack that can hold a variety of plants and flowers, while also minimizing environmental impact. The project's significance lies in its contribution to sustainable engineering and design, providing a practical solution for plant enthusiasts, and inspiring future designs in the field. Finally, this project had been successfully produced and proven to be able to provide a positive impact to users for their necessary in daily use .

ACKNOWLEDGEMENT

Firstly, I wish to thank God for giving me the opportunity to embark on my diploma and for completing this long and challenging journey successfully. My gratitude and thanks go to my supervisor, Ts. Ainaa Maya Munira Binti Ismail.

Finally, this dissertation is dedicated to my father and mother for the vision and determination to educate me. This piece of victory is dedicated to both of you. Alhamdulillah.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

The Design of Mechanical Flower Rack is a final year project that aims to create an innovative and functional product that solves problems in a creative way. The project's main goal is to provide a flower rack that is both functional and aesthetically pleasing, inspired by nature, and made of durable materials. The project's success will be measured by the functionality, durability, and aesthetic appeal of the final product, showcasing how engineering and design can be used to create innovative solutions.

The Mechanical Flower Rack project is an excellent opportunity to showcase the intersection of engineering and design. The project's primary focus is to design a flower rack that combines both functionality and aesthetics. The flower rack will be designed to accommodate various types of flowers and plants, ensuring that they are well-arranged and well-displayed. Additionally, the design will be inspired by the natural world, creating a visually stunning look that will appeal to nature lovers.

The durability of the flower rack is another important factor that will be considered in the project. The design will be made of high-quality materials, ensuring that the flower rack can withstand harsh weather conditions and other environmental factors. The materials used will be carefully selected, ensuring that they are not only durable but also sustainable, as the project aims to promote eco-friendliness. The proposed mechanical model is based on the application of the Component Method (CM) and it allows for the flexural resistance of steel rack connections to be analytically assessed.