

DEVELOPMENT OF AN ELECTRIC ROLL UP DOOR IN THE  
DEPARTMENT OF INDUSTRIAL ENGINEERING  
AND TECHNOLOGY

Design Project

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**DEVELOPMENT OF AN ELECTRIC ROLL UP DOOR IN THE  
DEPARTMENT OF INDUSTRIAL ENGINEERING  
AND TECHNOLOGY**

**Undergraduate Design Project  
Submitted to the Faculty of the  
College of Engineering and Information Technology  
Cavite State University  
Indang, Cavite**

**In partial fulfilment  
of the requirements for the degree  
Bachelor of Industrial Technology  
Major in Electrical Technology**

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## **ABSTRACT**

**MANLOGON, MARK ALEXIS L. and MARASIGAN, MERVEN C. Development of an Electric Roll Up Door in the Department of Industrial Engineering and Technology.** Undergraduate Design Project. Bachelor of Industrial Technology Major in Electrical Technology, Cavite State University, Indang, Cavite May, 2017. Adviser: Prof. Danielito R. Escano.

The study entitled “ Development of an Electric Roll Up Door in the Department of Industrial Engineering and Technology” was conducted to develop an electric roll up door for the department from February 2016 up to March 2017. Specifically, it aimed to design an electric roll-up door that can easily move up and down and can be controlled automatically and manually; construct an electric roll-up door using a remote control and push button; test and evaluate the functionality of the electric roll-up door; and to conduct a cost analysis for an electric roll-up door.

The electric roll-up door with a dimension of 178 cm by 350 cm featured two functions; electrical driven and manually operated. Switch, remote control and chain block is used to control the operation to “up” and “down” the rolling door. In case of black out or change power of electricity supply, this design project can be operated manually using metal chain. The door had also a provision of manipulating the roll-up door with the use of remote control; the device was designed to operate within a range of 50 meters.

The researchers had evaluated the design project specifically with 30 participants including students and faculty members in the Department of Industrial Engineering and Technology with a result of an overall average mean of 4.86 (Outstanding). Based from the results of an evaluation the designed project was found beneficial to the participants

including the user, students and the instructors. The design project had a total cost of P34,645.00.

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# **DEVELOPMENT OF AN ELECTRIC ROLL UP DOOR IN THE DEPARTMENT OF INDUSTRIAL ENGINEERING AND TECHNOLOGY**

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An undergraduate design project submitted to the faculty of the Department of Industrial Engineering, and Technology, College of Engineering and Information Technology, Cavite State University, Indang, Cavite in partial fulfilment of the requirements for the degree of Bachelor in Industrial Technology Major in Electrical Technology with Contribution No. CEIT 2016-17-2-038. Prepared under the supervision of Mr. Danielito R. Escaño.

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## **INTRODUCTION**

Electric roll up door is a large door on a garage that opens either manually or by an electric motor. Garage door are frequently large enough to accommodate automobiles and other vehicles. Small garage doors may be made in a single panel that tilts up and back across the garage ceiling. Larger doors are usually made in several jointed panels that roll up on tracks across the garage ceiling, or into a roll above the doorway. The operating mechanism is spring-loaded or counter balanced to offset the weight of the door and reduce human or motor effort required to operate the door. Less commonly, some garage doors slide or swing horizontally. Doors are made of wood, metal, or fiberglass, and may be insulated to prevent heat loss. Warehouses, bus garages and locomotive sheds have larger versions.

Electric roll up door sectional overhead door is a type of window shutter consisting of many horizontal slats or sometimes bars or web systems hinged together.