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MEC332 MECHANICAL ENGINEERING DESIGN

PROJECT:

MULTIPURPOSE PORTABLE RAMP

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1.0 INTRODUCTION

1.1 OVERVIEW OF THE PROJECT

In the year of 2020, our group has been given an assignment for subject Mechanical Engineering Design that is named as Final Year Project (FYP). This assignment has been accomplished by 5 of our members with an assist from our subject lecturer Sir Mohd Halmy Bin Ab Latif and our supervisor Madam Norjasween Bt Ab Malek.

The topic that we chose for our project is 'Multipurpose Ramp'. We chose this topic because as we know that the world is populated by 7.6 billion number of humans in every variety of age either a new born human or elderly person. Every place in this world is modernize with building in the main city where most of the people living there. The construction is happening everywhere where a high building is the main choices nowadays due the overpopulated places such as Kuala Lumpur. High building can populate more people and save some more spaces. Some buildings provide ramps for universal use as for example wheelchair users, elderly or strollers for baby. Some building might ignore the fact that ramp is an important thing for these people.

Some people might be having the difficulties in walking up and down through stairs which mention specifically for the elders or someone who is injured. Other than that, workers could also face a problem when transferring large object while using stairs as an elevation. It will give a less mobility to the workers and directly give a risk while doing their job. In this case, we have provided a good solution for people who is facing such difficulties.

However, our concept for this Final Year Project (FYP) on 'Multipurpose Ramp' is not only focusing on one aim to resolve, but various problems for us to clear up making it easier for people to continue their daily life. Therefore, it is crucial to use ramp nowadays that allow many users such as wheelchair or stroller users and may more to use it. We do think this project of innovation could give more advantages rather than the downside that may cause a lot more complexity while they are using this product

1.2 DESIGN OBJECTIVE

From the problem statement above, the multipurpose ramp helps to ensure that the various users around us could perform their daily activities smoothly without facing any problem to move from different level of heights. The ramp mechanism is designed to make sure it is easy to bring at anytime and anywhere which it can be folded in order to save space and it is also lighter than any current ramps in the market.

Besides, this multipurpose ramp helps to improve our user's safety. This is where users do not have to lift up heavy things with their hands just like how they usually do while taking up the stairs which they could fall and injured themselves. Now, they can simply push the loads in an easier way all the way through the ramp. Since it is made from aluminium, users do not have to be worried about the weight limitations of this ramp because it is completely hard with strong bond particles. It will also not bend at all unless it has been used in a wrong method.

Other than that, it could also help lessen the usage of human energy. The manual way needs the person to push and lift it by themselves. However, there will be no more because now they could just deploy the ramp without any helps from others.