

In Egypt, several significant challenges are being faced that hinder the enhancement and economic growth of the country. Among the 11 identified grand challenges, five are specifically addressed in our project (1– urban congestion and it is the most common problem) , (2– improving the use of arid areas) , (3– population growth and its consequences) , (4– recycling garbage and wastes for economic and environmental purposes) and (5– reducing the effect of climate change) With the aim of enhancing the urban and rural environment, countries tend to solve the problem of urban congestion in order to achieve economic development goals. This problem was manipulated in our project by linking rural and urban areas. After the problem of urban congestion was addressed, this problem to deal with something usually skillfully or efficiently, through using all materials used in waste, including motors and gears, to control the movement of the moving part of the bridge to allow the movement of ships underneath it. The goal of the project was to meet the design requirements, to allow the movement of the moving part of the bridge, as well as the ability of the moving part of the bridge to bear 5 kg, and the weight of the bridge should not exceed 20 kg. This was achieved by the motor pulling the moving part of the bridge to the fixed part. From the bridge, it is reversed through a gear mounted in a motor. In conclusion, the design requirements were met, as the moving part is able to bear what is required of it (5 kg) and its weight does not exceed 20 kg, and the mechanism of moving the moving part of the bridge is where a motor .and rope are used to enter and a motor and gear to exit, and thus the design idea was completed