

## Wall Climbing Robot for Glass Cleaning

High-rise glass buildings won't look so good if they weren't cleaned from outside from time to time. Cleaning glass of such high rise buildings is very tricky and dangerous job. This involves workers hanging on to the outer side of the building using ropes and harnesses while cleaning the glass. There a wide number of deaths due to falling during glass cleaning activities.

Well here we propose a smart lass cleaner robot that can climb glass from outside using vacuum creation to climb and clean glass from outside. This Window & Glass Cleaning Robot also helps one reach & clean every corner of your glass or window where it is difficult for a human hand to reach.

The Glass cleaner robot provides following advantages including:

- Vacuum Suction Based Glass Climbing
- Same Vacuum Suction used to clean dust and water
- External power Supply for Unlimited cleaning time
- Easy to use compact and portable robot

The glass cleaner makes use of a 2 in 1 mechanism that helps it climb glass as well as such out dust as well as water on the outer surface of the glass. The robot is operated by a 4 wheel drive design with high grip wheels to help it move over the glass with ease.

The robot uses a high torque drone motor with propeller to produce the suction needed to cling on to the wall. The 4 motors of the robotic system are controlled by a controller circuitry. The controller makes use of a Bluetooth module to receive movement commands rom the user.

The user uses an android app to connect to the robotic system using Bluetooth. Once connection is successful the user may press buttons on the app to start the suction as well as control movement of the robot on wall.

### Components:

- **Components :A2212/6T 2200KV Brushless DC Motor**
- **3-Blade Propeller**
- **Electronic Speed Controller (ESC)**
- **NodeMCU (ESP8266)**
- **L298N Motor Driver**
- **DC Geared Motors**

- **Wheels**
- **Power Supply Module (SMPS)**
- **SG90 Servo Motor**
- **Buck Converter (Voltage Regulator)**
- **PCB/Development Board**
- **Connecting Wires**
- **Wooden Chassis**
- Mounts and Joints
- Supporting Frame
- Screws and Fittings

### **Applications:**

- Building Glass Cleaning
- Home & Factory Glass Cleaning

### **Advantages:**

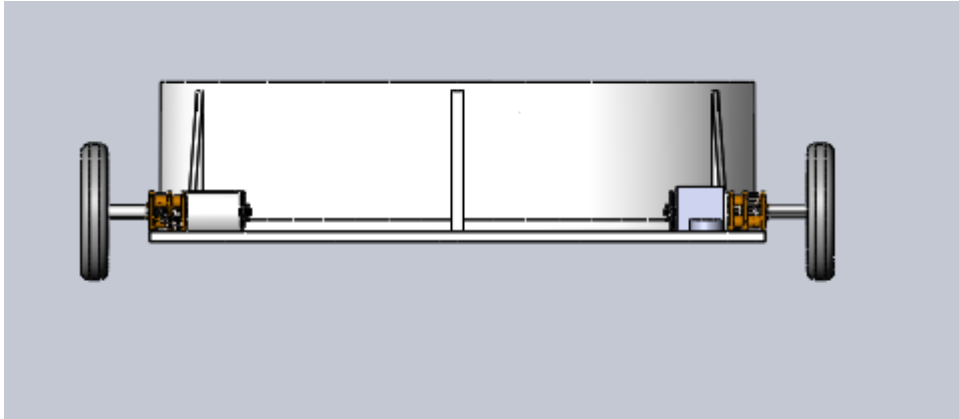
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### **Disadvantages:**

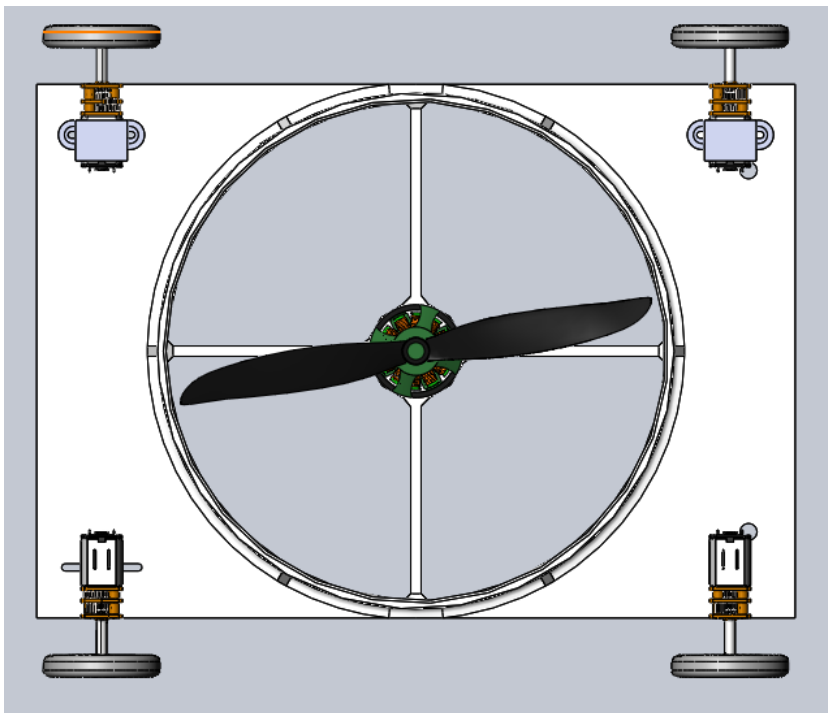
- Needs Power supply does not run on battery
- Cannot Wipe Glass Stains

**Block Diagram:**

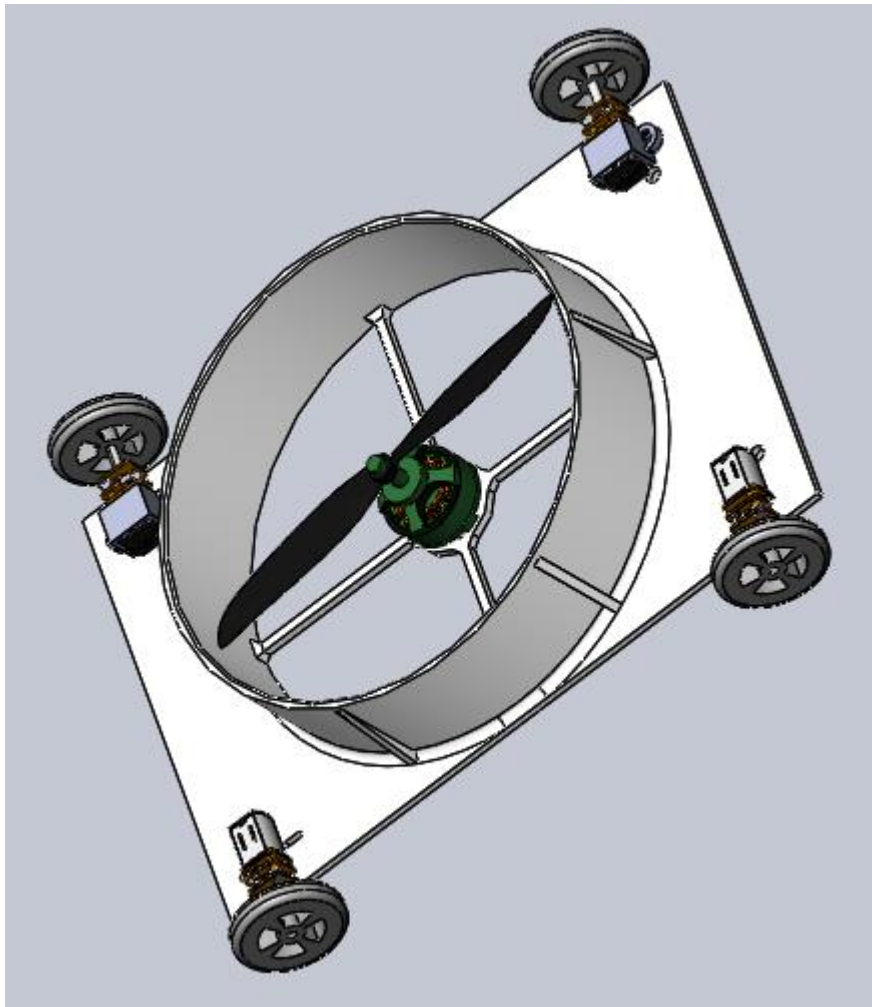
**Front View**

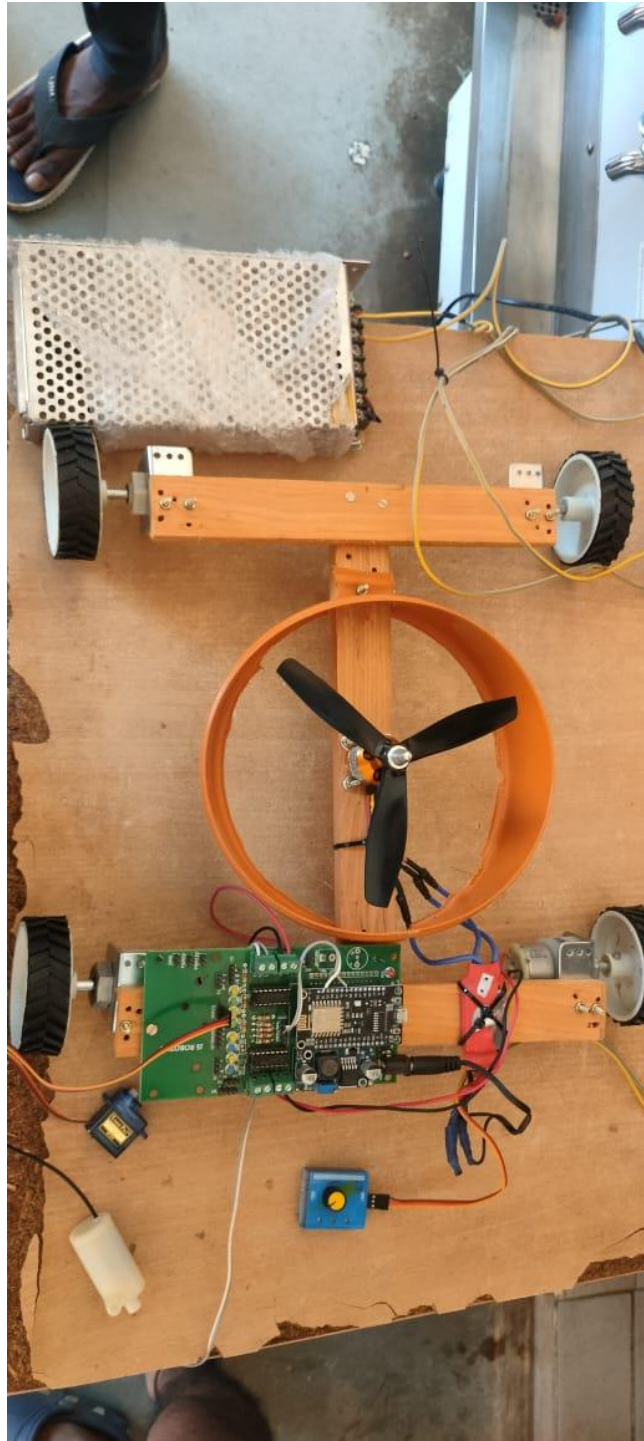


**Side View**



**3D View**





**Final prototype**

