# 魏三角

## 設計概念

設計我們就以三角型為主力，因三角形是相當可靠的一種形狀，例如三角椅易站穩，且杜拜塔也以三角形為底。又因規定底面積，而三角形能將重心在比例上更靠近地面，可以有最佳的穩定度。

在設計時更是加強了原有的長處，以多片鋁板組成柱，構成了堅不可摧的核心。並用巧妙的鑲嵌梁、柱頂延伸、柱柱鑲嵌組成了高度穩固的梁柱接點。並又用極少材料補足剩餘之不足，如旋轉。

自動控制部分除了頂層的旋葉式開闔外，在第二層也加裝了三顆 LED 燈，除了美觀的作用之外，也會根據馬達的轉動閃爍不同的燈光，模擬真實的警示燈。

## 屋頂開闔程式碼

```
#define E1 5 // motor 1 speed
#define M1 10 // motor 1 direction
#define E2 6
#define M2 11
#define r 3
#define g 7
#define b 12
unsigned long time;
int val=0;

void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
  pinMode(M1, OUTPUT);
  pinMode(E1, OUTPUT);
  pinMode(r, OUTPUT);
  pinMode(g, OUTPUT);
  pinMode(b, OUTPUT);
  val=analogRead(A0);
}

void loop() {
  // put your main code here, to run repeatedly:
  if (millis()/1000-time>=5){
    val = analogRead(A0);
    time=millis()/1000;
  }
  if((analogRead(A0)*10/val)<=5){
    Serial.println((analogRead(A0)*10/val));
    for(int i=2 ; i >= 0; i--) {
       digitalWrite(M1, LOW);
       analogWrite(E1, 255);
       analogWrite(r, 0);
       analogWrite(g, 255-99);
       analogWrite(b, 255-71);
       delay(500);
       analogWrite(r, 255);
       analogWrite(g, 255);
       analogWrite(b, 255);
       delay(500);
    }
    analogWrite(E1, 0);
    analogWrite(E2, 0);
    delay(2000);
    digitalWrite(M2, LOW);
    analogWrite(E2, 255);
    delay(1500);
    analogWrite(E2, 0);
    time=millis();
  }
  else{
    Serial.println((analogRead(A0)*10/val));
    //analogWrite(E1, 0);
    //analogWrite(E2, 0);
    //analogWrite(r, random(0, 255));
    //analogWrite(g, random(0, 255));
    //analogWrite(b, random(0, 255));
    //delay(300);
    normal();
    time=millis();
  }
}

void normal(){

  for(int fadeValue = 255 ; fadeValue >= 0; fadeValue -=20) {
    analogWrite(g, fadeValue);
    delay(15);
  }
  for(int fadeValue = 0 ; fadeValue <= 255; fadeValue +=20) {
    analogWrite(r, fadeValue);
    delay(15);
  }
  for(int fadeValue = 255 ; fadeValue >= 0; fadeValue -=20) {
    analogWrite(b, fadeValue);
    delay(15);
  }
  for(int fadeValue = 0 ; fadeValue <= 255; fadeValue +=20) {
    analogWrite(g, fadeValue);
    delay(15);
  }
  for(int fadeValue = 255 ; fadeValue >= 0; fadeValue -=20) {
    analogWrite(r, fadeValue);
    delay(10);
  }
  for(int fadeValue = 0 ; fadeValue <= 255; fadeValue +=20) {
    analogWrite(b, fadeValue);
    delay(15);
  }

}
```

## 作品完成圖

## 成員名單

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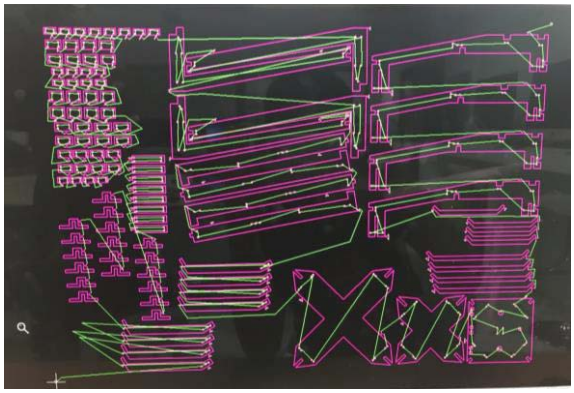
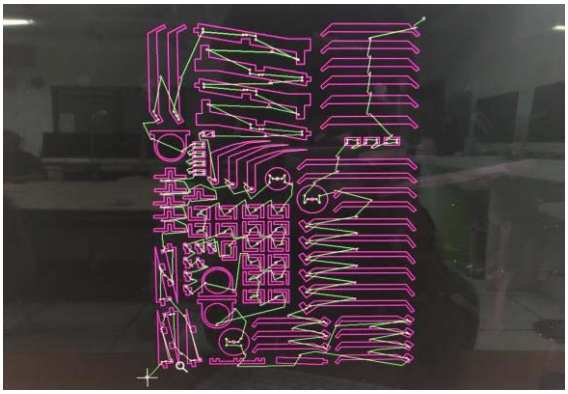
## 組裝平面圖





## 振動台耐震測試

## 自動控制測試