

## 作品名稱 (太鼓達人)



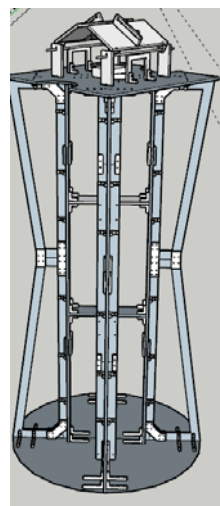
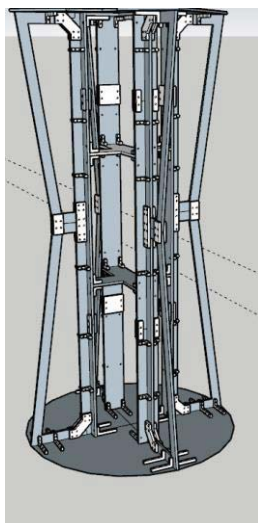
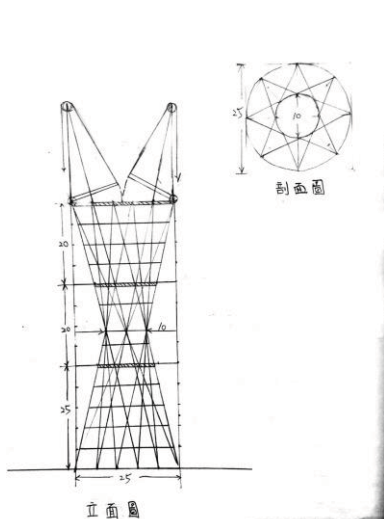
### 設計概念

太鼓達人

這座塔的設計理念就是由鼓來的，構造上處處對稱且十分穩固，外觀像是雙面鼓，由於長度規範無法一體成形，在柱子接合部分運用了許多螺絲和鋁板夾心固定、內外皆有接合使其完全不會有任何鬆動，屋頂開合則利用馬達捲線拉動的方式，簡單



# 手繪設計草圖

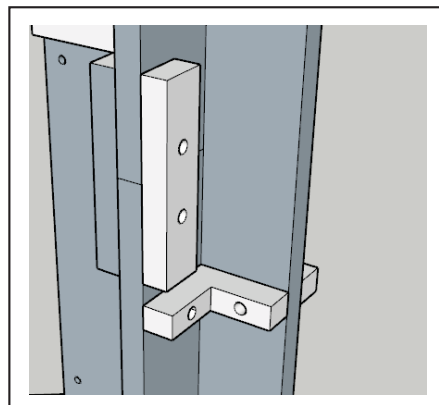
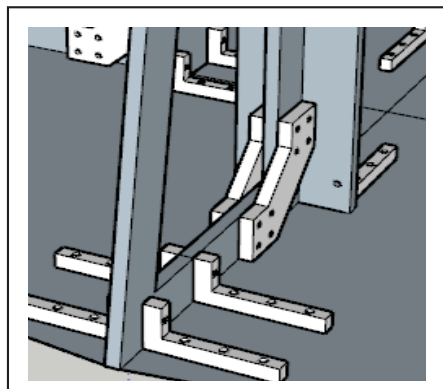
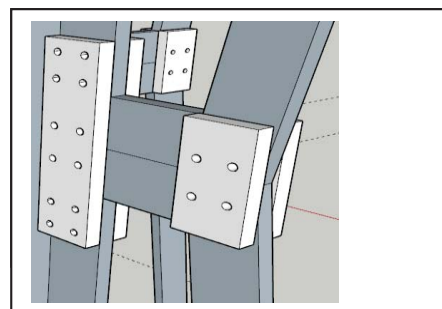
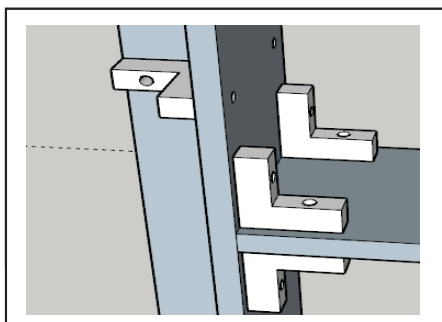


最初參考太鼓設計  
的手稿

屋頂以下的部分

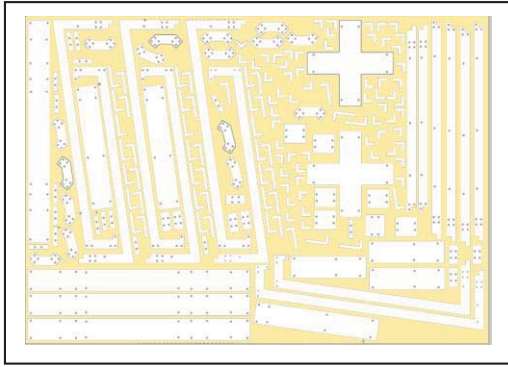
最後完成的設計

## 3D電腦設計圖

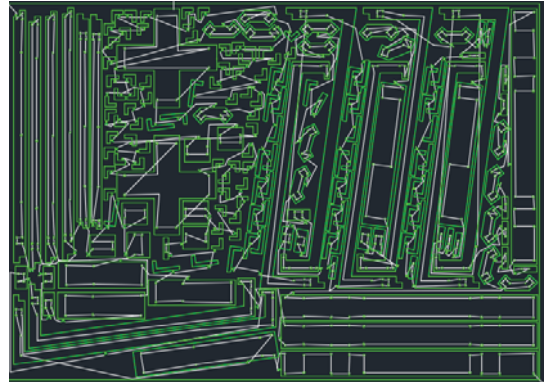


強調結構的設計

## 組裝平面圖

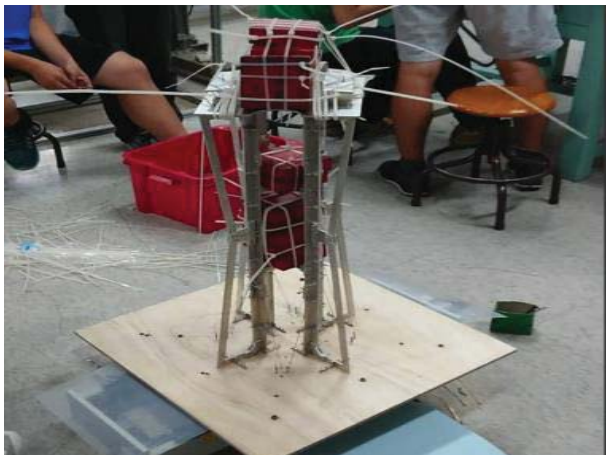


元件平放 Sketchup 圖

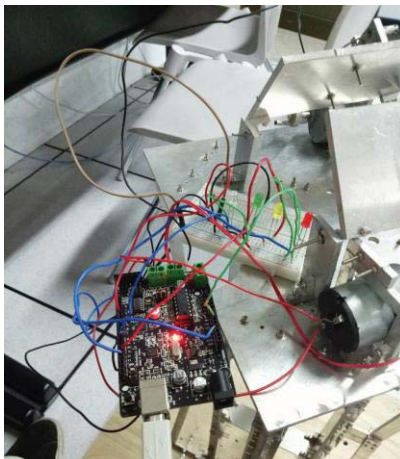


OMACX 路徑規劃圖

## 振動台耐震測試



## 自動控制測試



電路裝置



自動控制裝置

# 屋頂開闔程式碼

```

digitalWrite(LEDs, HIGH);
digitalWrite(LEDb, HIGH);
digitalWrite(LEDc, HIGH);
digitalWrite(LEDd, HIGH);
delay(1000);
digitalWrite(LEDa, LOW);
digitalWrite(LEDb, LOW);
digitalWrite(LEDc, LOW);
digitalWrite(LEDd, LOW);
delay(1000);
analogWrite(E1,200);
analogWrite(E2,200);
digitalWrite(LEDa, HIGH);
digitalWrite(LEDb, HIGH);
digitalWrite(LEDc, HIGH);
digitalWrite(LEDd, HIGH);
delay(1000);
digitalWrite(LEDa, LOW);
digitalWrite(LEDb, LOW);
digitalWrite(LEDc, LOW);
digitalWrite(LEDd, LOW);
delay(1000);
analogWrite(E1,0);
analogWrite(E2,0);
i = 1;
}
else if (state == HIGH && i==1) {
analogWrite(E1, 255);
analogWrite(E2, 255);
digitalWrite(LEDa, HIGH);
digitalWrite(M1, LOW);
digitalWrite(M2, LOW);

```

```

#define E1 6 // motor 1 speed
#define M1 11 // motor 1 direction
#define E2 5 // motor 2 speed
#define M2 10 // motor 2 direction
#define MICROSWITCH 3

#define LEDa 12
#define LEDb 13
#define LEDc 9
#define LEDd 8
void setup() {
pinMode(M1, OUTPUT);
pinMode(M1, OUTPUT);
pinMode(M2, OUTPUT);
pinMode(M2, OUTPUT);
pinMode(MICROSWITCH, INPUT);

pinMode(LEDa, OUTPUT);
pinMode(LEDb, OUTPUT);
pinMode(LEDc, OUTPUT);
pinMode(LEDd, OUTPUT);
Serial.begin(9600);
}
int i = 0;
void loop() {
int state = digitalRead(MICROSWITCH);
if(state == HIGH && i==0) {
Serial.println(state);
analogWrite(E1, 255);
analogWrite(E2, 255);
digitalWrite(M1, HIGH);

```

```

digitalWrite(LEDb, HIGH);
digitalWrite(LEDc, HIGH);
digitalWrite(LEDd, HIGH);
delay(1000);
digitalWrite(LEDa, LOW);
digitalWrite(LEDb, LOW);
digitalWrite(LEDc, LOW);
digitalWrite(LEDd, LOW);
delay(1000);
analogWrite(E1,200);
analogWrite(E2,200);
digitalWrite(LEDa, HIGH);
digitalWrite(LEDb, HIGH);
digitalWrite(LEDc, HIGH);
digitalWrite(LEDd, HIGH);
delay(1000);
digitalWrite(LEDa, LOW);
digitalWrite(LEDb, LOW);
digitalWrite(LEDc, LOW);
digitalWrite(LEDd, LOW);
delay(1000);
analogWrite(E1,0);
analogWrite(E2,0);
i = 0;
}
}

```

## 作品完成圖



## 成員名單

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