

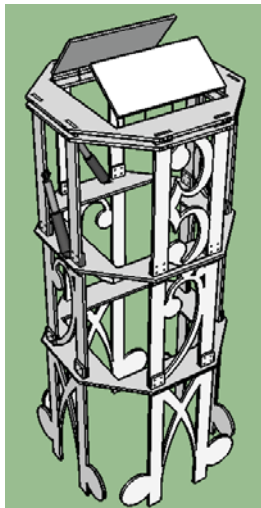
音樂闔



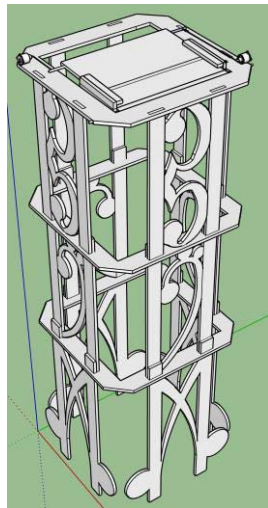
設計概念

音樂闔的靈感是來自我們組員對音樂的熱愛，不管是中提琴、長號，還是鋼琴，都是我們涉略的領域。於是我們在高塔各層的柱上，都設計了音樂相關符號，從低到高分別是八分音符、低音譜記號及中音譜記號，不只能支撐結構體，也兼具視覺美感。在屋頂開闔部分，則是參考在亞特蘭大的奔馳體育館，其屋頂的設計理念——相機光圈，而設計了六片葉片沿著各軌道同步移動，作為屋頂的開闔。

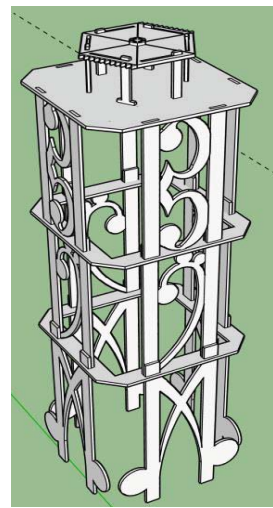




sketchup 草稿 1

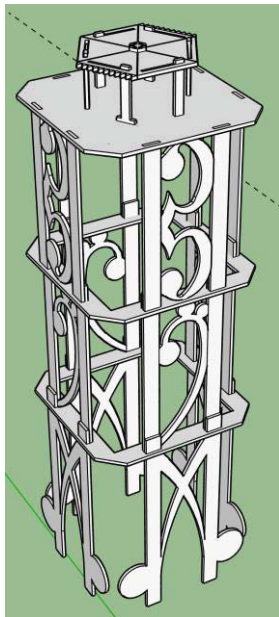


sketchup 草稿 2

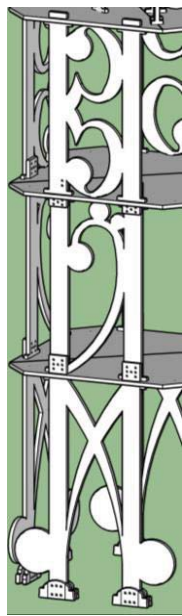


sketchup 草稿 3

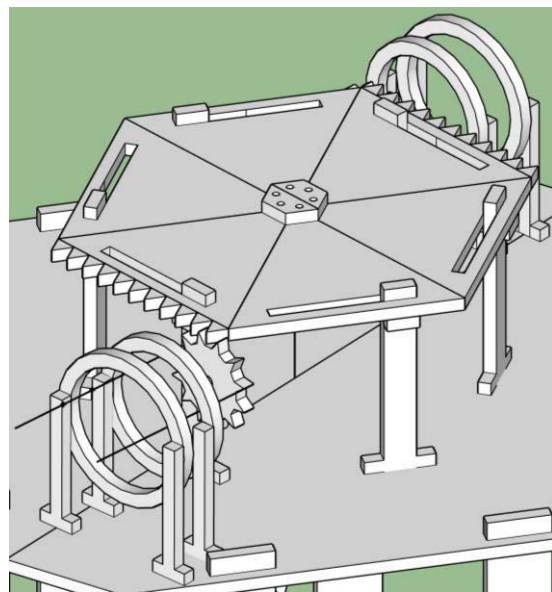
3D電腦設計圖



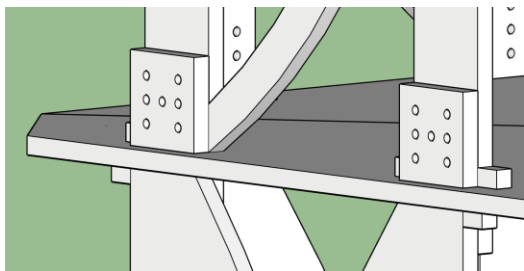
整體模型



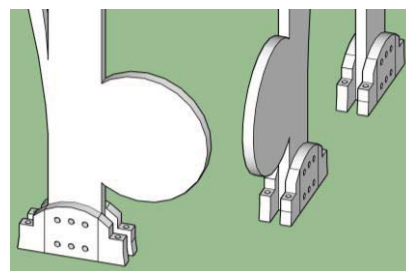
柱子上的音樂符號



光圈式屋頂

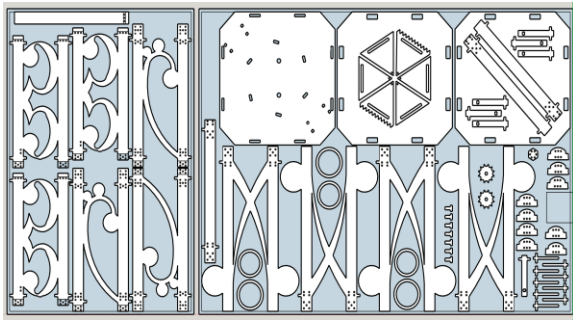


層板間柱的连接

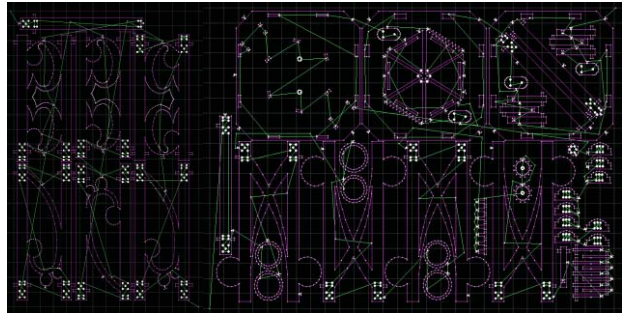


與底層木板的连接

組裝平面圖

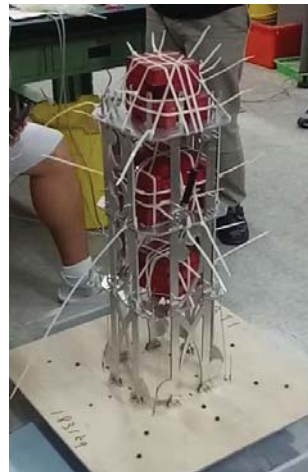


元件平放 sketchup 圖



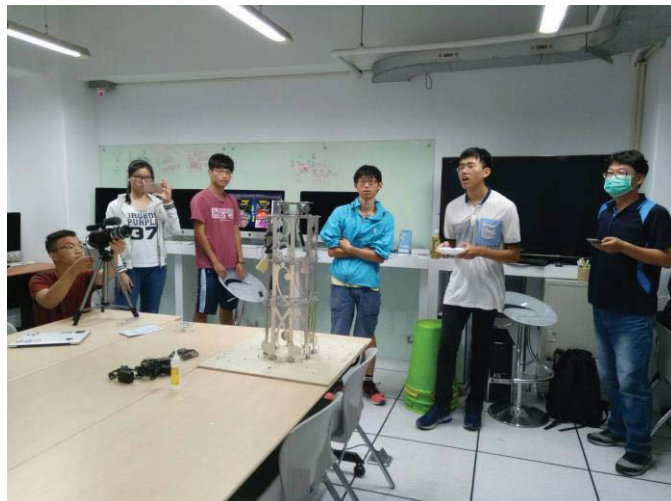
OMAX 路徑規劃圖

振動台耐震測試



頂層 65cm 載重 8.4 kg，45 cm 載重 14.4kg，25 cm 載重 7.2kg，震動強度 800gal

自動控制測試



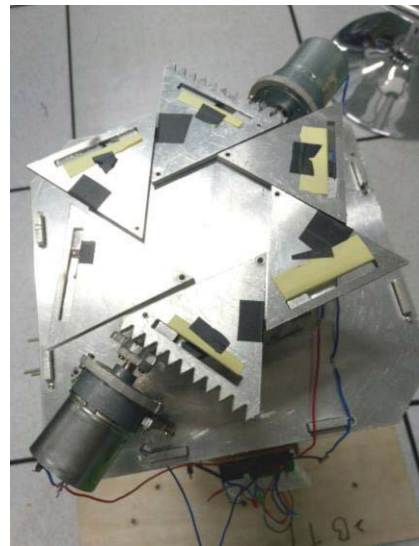
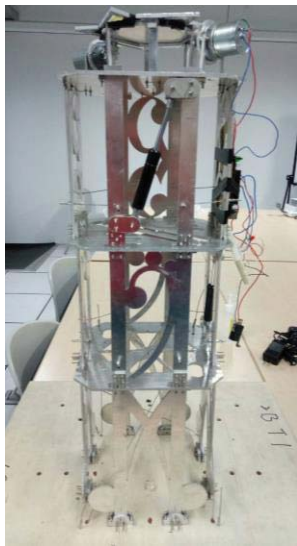
屋頂開闢程式碼

```
#define E1 6 // motor 1 speed
#define M1 11 // motor 1 direction
#define E2 5 // motor 1 speed
#define M2 10 // motor 1 direction
#define MICROSWITCH 4
int state = 0;
int i=1;
void setup(){
  pinMode(M1, OUTPUT);
  pinMode(E1, OUTPUT);
  pinMode(M2, OUTPUT);
  pinMode(E2, OUTPUT);
  pinMode(MICROSWITCH, INPUT);
  Serial.begin(9600);
}
void loop(){
  state = digitalRead(MICROSWITCH);
  Serial.println(state);
  if(state == HIGH && i%2==1) {
    while(state){
      state = digitalRead(MICROSWITCH);
      //Serial.println(state);
      analogWrite(E1, 255);

```

```
digitalWrite(M1, HIGH);
analogWrite(E2, 255);
digitalWrite(M2, HIGH);
    }
    i++;
  }
  else if(state == HIGH && i%2==0) {
    while(state){
      state = digitalRead(MICROSWITCH);
      //Serial.println(state);
      analogWrite(E1, 255);
      digitalWrite(M1, LOW);
      analogWrite(E2, 255);
      digitalWrite(M2, LOW);
    }
    i++;
  }
  else {
    analogWrite(E1, 0);
    analogWrite(E2, 0);
  }
}
```

作品完成圖



成員名單

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