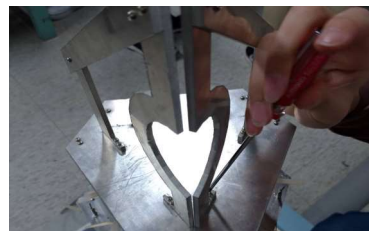
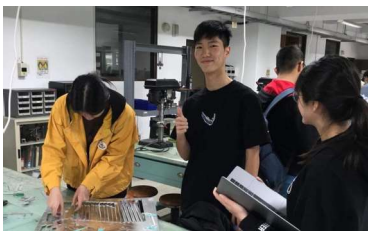


三角關係

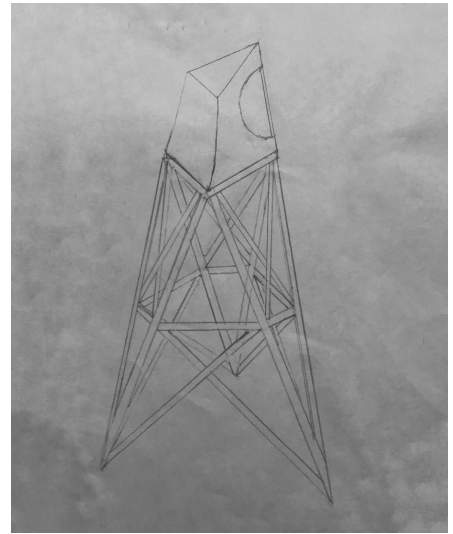
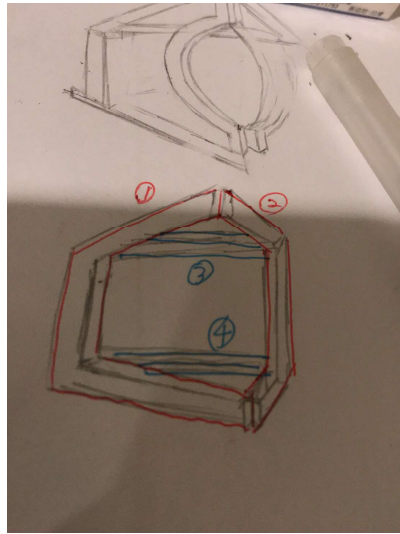
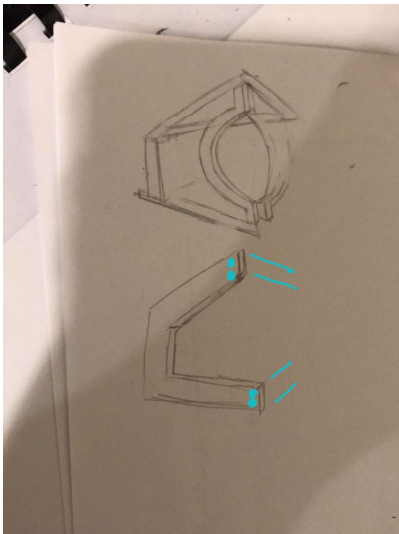


設計概念

主體結構採三角形的設計，打破圓形燈塔的傳統，不僅採用斜向且各角度的支柱，也加強底部的穩定度，達到堅固的建築結構。塔名「三角關係」代表著人、船與海密不可分得關係，指引著海上航行的船隻安全回到陸地。塔頂的外觀從正面角度觀看，可以看到一個愛心的形狀，與三角關係的名稱相呼應。

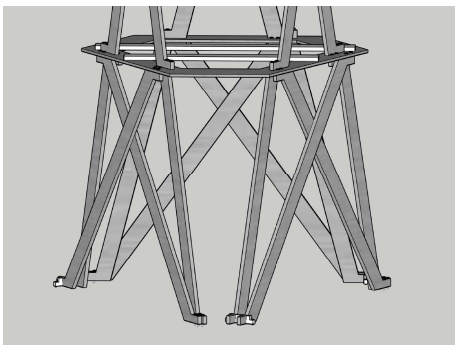


手繪設計草圖

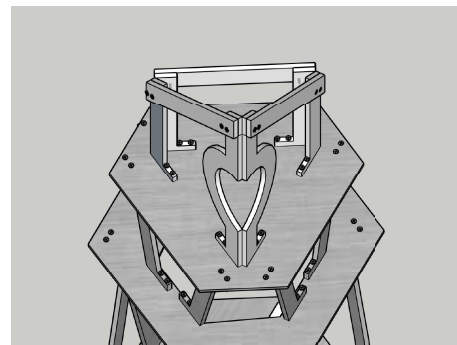


畫出建築的架構和接頭設計

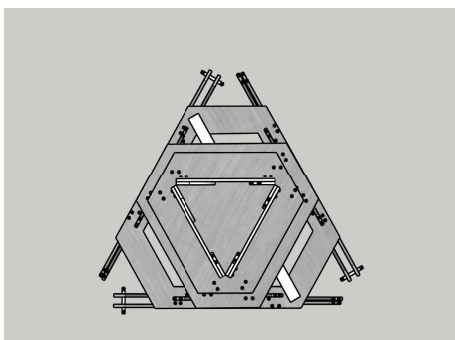
3D電腦設計圖



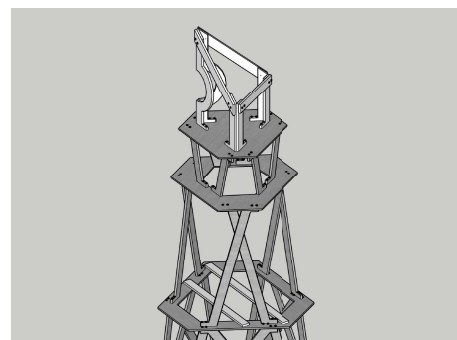
底部平面中間挖空部分作為最上層的底



從特定角度觀看到的愛心形狀

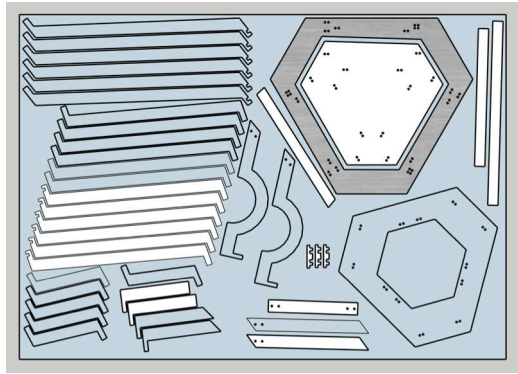


三角形為主的結構

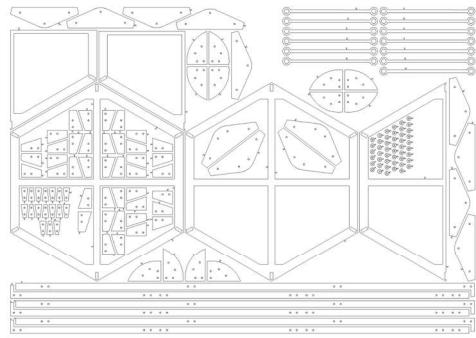


交錯的支柱對抗不同方向的力

組裝平面圖



模型零件擺放圖



水刀切割路線圖

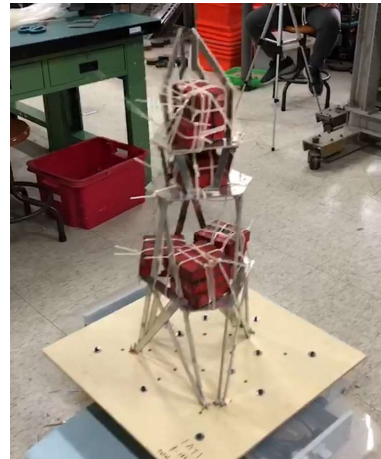
振動台耐震測試



重量 20kg 加速度 400m/s

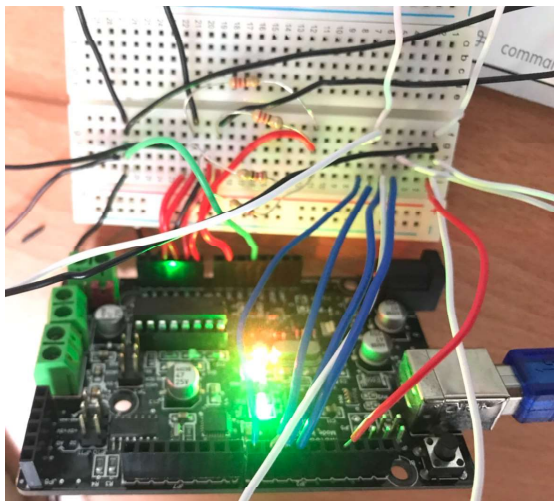


重量 29kg 加速度 600m/s



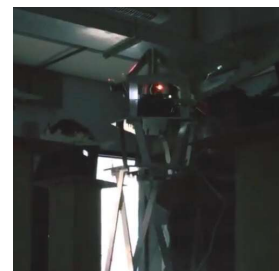
重量 29kg 加速度 800m/s

自動控制測試



電路裝置

藍線：連接光敏電阻和 arduino 板
 紅線：連接電阻和 arduino 板
 黑線：LED 燈
 白線：光敏電阻



測試情形

燈塔控制程式碼

```
void setup() {  
  Serial.begin(9600);  
  pinMode(11, OUTPUT);  
}  
  
void loop() {  
  digitalWrite(LED, LOW);  
  int val1 = analogRead(A0);  
  int val2 = analogRead(A1);  
  int val3 = analogRead(A2);  
  int val4 = analogRead(A3);  
  Serial.println(val1);  
  Serial.println(val2);  
  Serial.println(val3);  
  Serial.println(val4);  
  if(val1==100){  
    analogWrite(11, 255);  
    delay(500);  
    analogWrite(11, 0);  
    delay(500);  
  }  
  else if(val1>=10){  
    analogWrite(11, 255);  
    delay(100);  
    analogWrite(11, 0);  
    delay(100);  
  }  
  if (val2==100){  
    analogWrite(10, 255);  
    delay(500);  
    analogWrite(10, 0);  
    delay(500);  
  }  
  else if(val2>=10){
```

```
  }  
  else if(val2>=10){  
    analogWrite(10, 255);  
    delay(100);  
    analogWrite(10, 0);  
    delay(100);  
  }  
  if(val3==100){  
    digitalWrite(LED, LOW);  
    analogWrite(9, 255);  
    delay(500);  
    analogWrite(9, 0);  
    delay(500);  
  }  
  else if(val3>=10){  
    digitalWrite(LED, LOW);  
    analogWrite(9, 255);  
    delay(100);  
    analogWrite(9, 0);  
    delay(100);  
  }  
  if(val4==100){  
    analogWrite(8, 255);  
    delay(500);  
    analogWrite(8, 0);  
    delay(500);  
  }  
  else if(val4>=10){  
    analogWrite(8, 255);  
    delay(100);  
    analogWrite(8, 0);  
    delay(100);  
  }  
}
```

偵測到紅光時 LED 燈亮完會停頓 100 毫秒，偵測到白光時 LED 燈亮完會停頓 500 毫秒

作品完成圖



成員名單

- B07501013 詹捷 土木一
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- B07501113 林庭瑄 土木一

