

太極樓

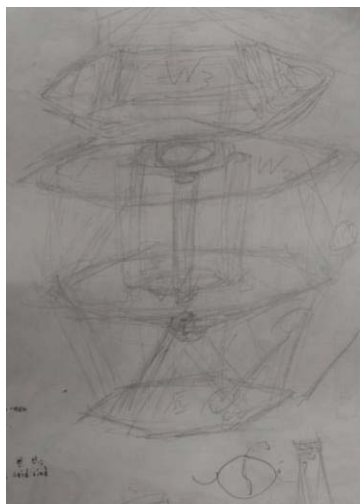


設計概念

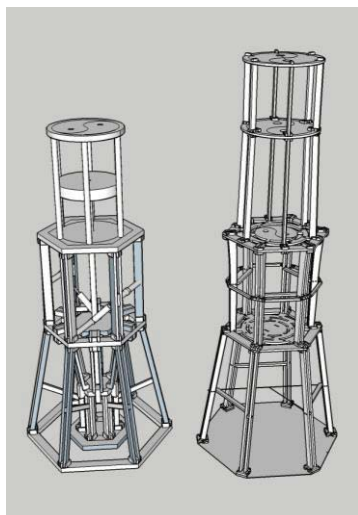
在設計初步時期，我們希望設計一個與眾不同的塔，既穩固又美觀，突發奇想，不如建一個太極風格的高塔吧！後來，塔的外觀便決定以太極作為主題，結構以蜂巢六角形為主，每一樓層都以精細的元件建構而成，緊密連繫，並呈現八卦以及五行「金、木、水、火、土」圖形，而太極樓頂部的開合機關則以太極陰陽為理，打開屋頂時，便是兩儀分明的一刻，打開的一側是虛，收合一側為實。



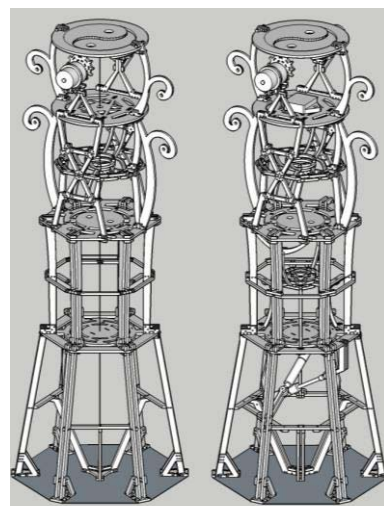
手繪設計草圖



草圖

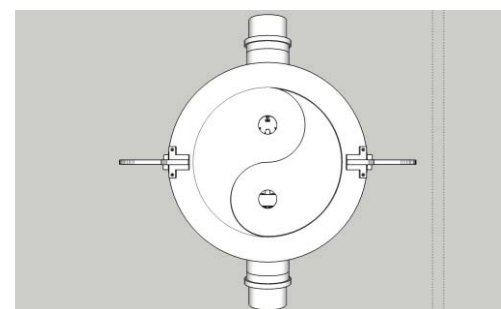
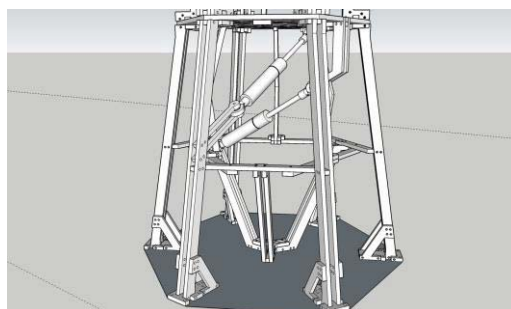
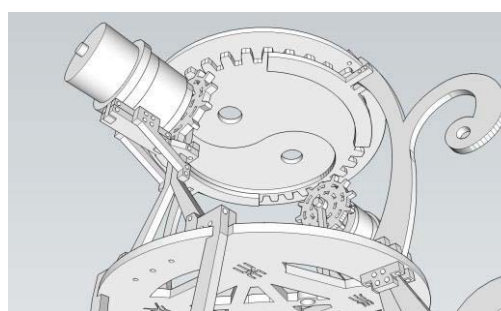
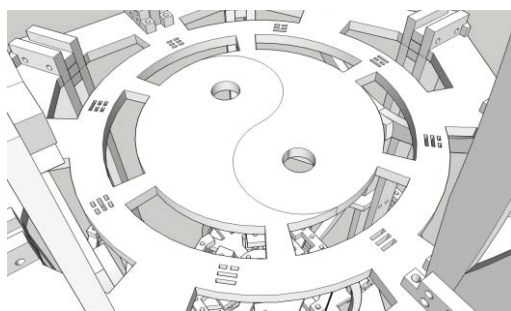
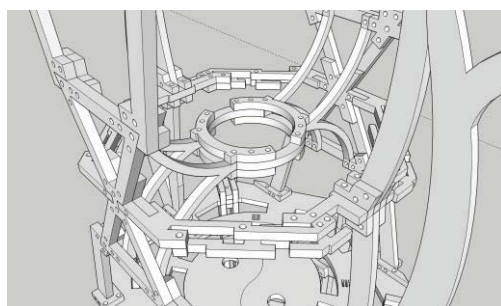
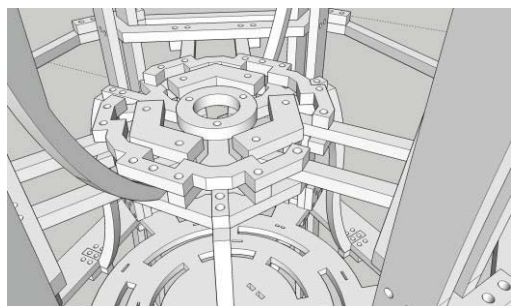


第一版及第二版



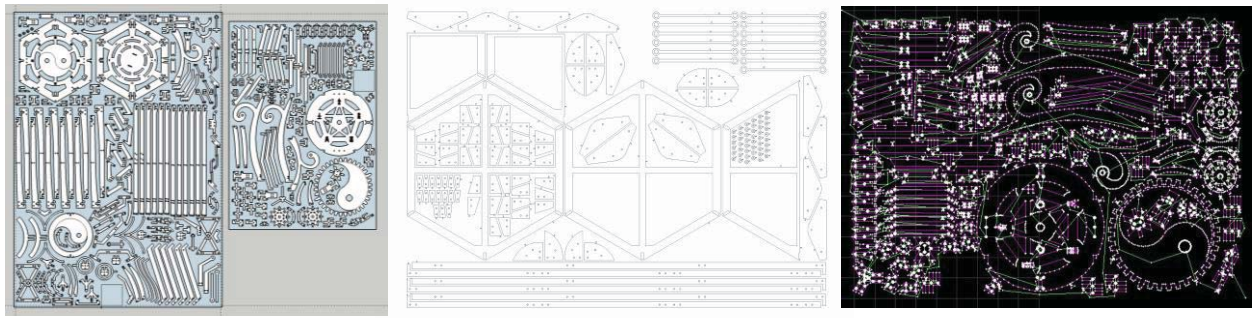
第三版及最終版

3D電腦設計圖



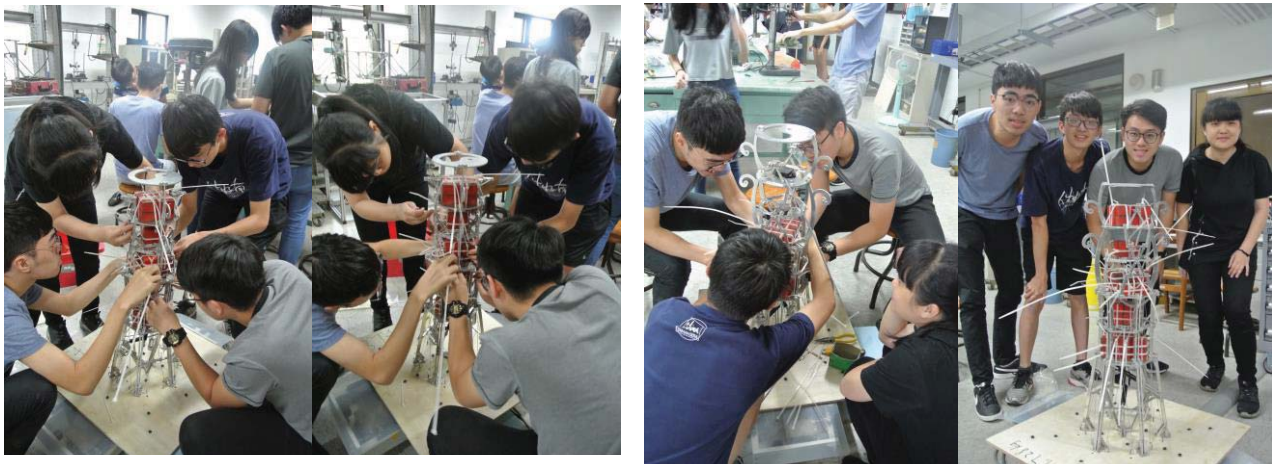
左上-1.2層間 右上-2.3層間 中左-2層樓版 中右-屋頂下方 左下-底層 右下-屋頂俯視

組裝平面圖



元件的平面圖及水刀切割路線圖

振動台耐震測試



自動控制測試



屋頂開闔程式碼

```

#define X A1
#define Y A0
int x = 0;
int y = 0;

#define LED3
#define LED2 4
#define LED3 2
#define LED4 7
#define LED5 8
#define LED6 12
//我要6顆LED啦(五行+白)

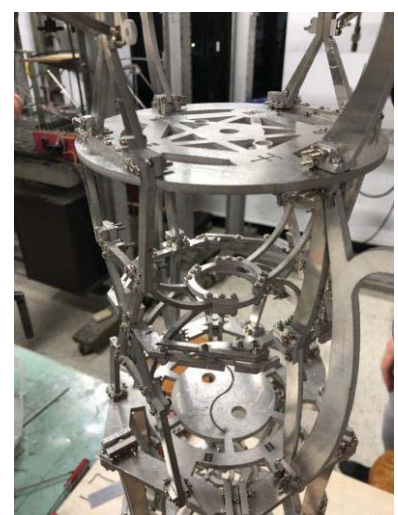
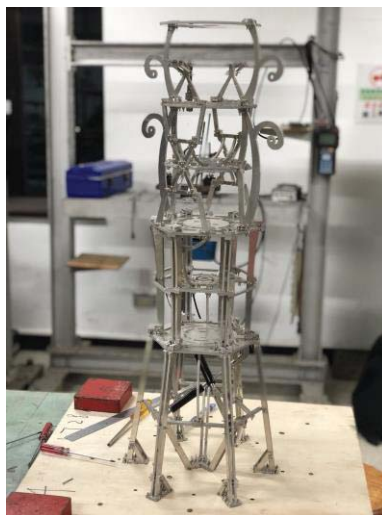
#define E1 5
#define E2 6
#define M1 10
#define M2 11
void setup() {
  Serial.begin(9600);
  pinMode(E1 , OUTPUT);
  pinMode(E2 , OUTPUT);
  pinMode(M1 , OUTPUT);
  pinMode(M2 , OUTPUT);
  pinMode(LED , OUTPUT);
  pinMode(LED2 , OUTPUT);
  pinMode(LED3 , OUTPUT);
  pinMode(LED4 , OUTPUT);
  pinMode(LED5 , OUTPUT);
  pinMode(LED6 , OUTPUT);
}

pinMode(LED5 , OUTPUT);
pinMode(LED6 , OUTPUT);
digitalWrite(LED2 , HIGH);
analogWrite(LED , 0);
analogWrite(E1 , 0);
analogWrite(E2 , 0);
}

void loop() {
  x = analogRead(X);
  y = analogRead(Y);
  Serial.println(x);
  Serial.println(y);
  if(x < 700 && y < 700){
    digitalWrite(LED2 , LOW);
    analogWrite(E1 , 0);
    analogWrite(E2 , 0);
    analogWrite(LED , (x + y)/8);
    delay(100);
  }else if(x > y){
    analogWrite(LED , x/4);
    digitalWrite(M1 , HIGH);
    digitalWrite(M2 , HIGH);
    analogWrite(E1 , x/4);
    analogWrite(E2 , x/4);
    digitalWrite(LED2 , HIGH);
    delay(50);
  }else{
    digitalWrite(LED3 , HIGH);
    delay(50);
    digitalWrite(LED5 , LOW);
    delay(50);
    digitalWrite(LED2 , HIGH);
    delay(50);
    digitalWrite(LED4 , LOW);
    delay(50);
    digitalWrite(LED3 , LOW);
    delay(50);
    digitalWrite(LED2 , LOW);
    delay(50);
    delay(100);
  }
  analogWrite(LED , y/4);
  digitalWrite(M1 , LOW);
  digitalWrite(M2 , LOW);
  analogWrite(E1 , y/4);
  analogWrite(E2 , y/4);
  digitalWrite(LED6 , HIGH);
  delay(50);
  digitalWrite(LED5 , HIGH);
  delay(50);
  digitalWrite(LED4 , HIGH);
  digitalWrite(LED6 , LOW);
}

```

作品完成圖



成員名單

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