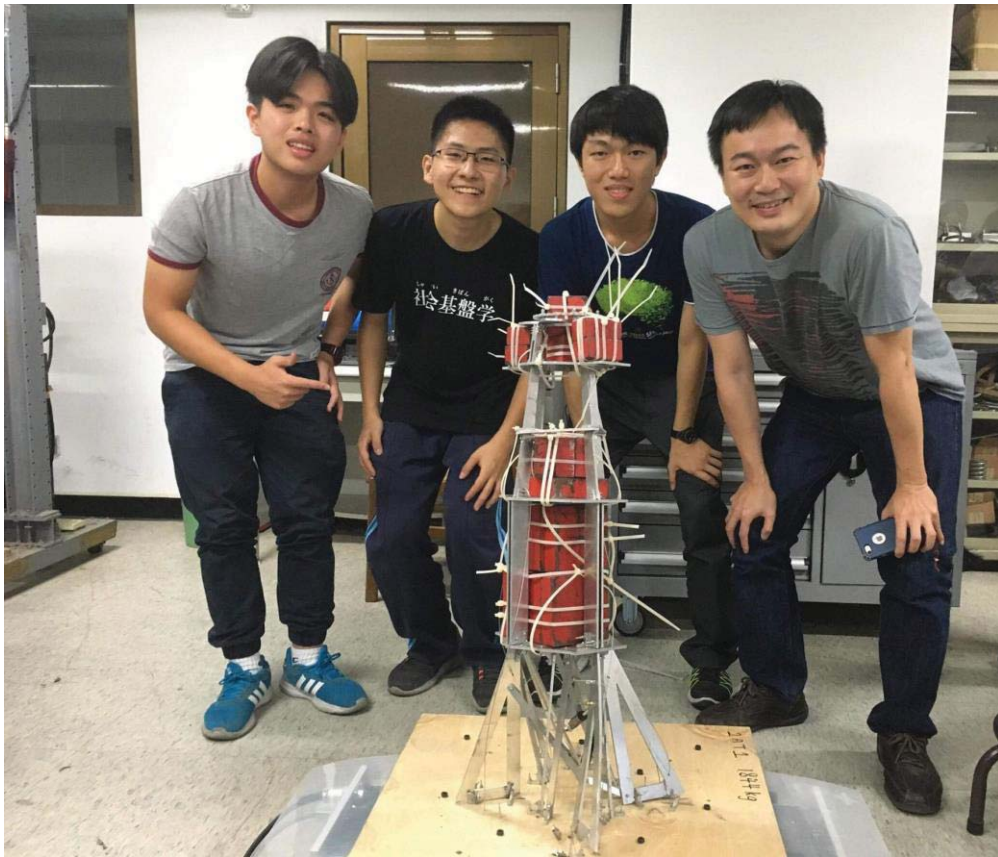


蓋亞守護者

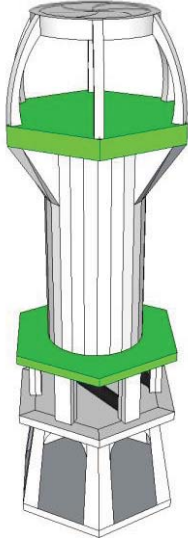


設計概念

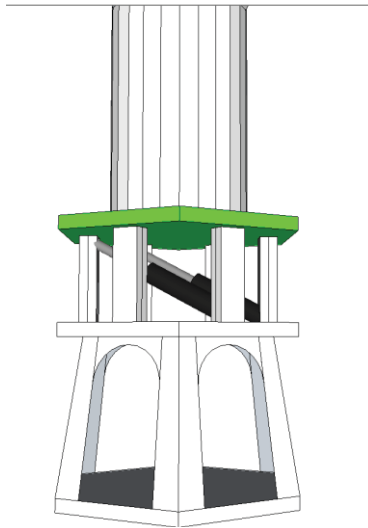
蓋亞，是希臘神話中的大地女神。蓋亞守護者的外型創作靈感是來自火箭，航向天際，守護大地。我們認為火箭下寬上窄美觀且耐震，為了增加舒適度，我們把阻尼器放在底層 x-y 方向，同時消底兩軸的能量，讓阻尼器發揮最大效益，第二及第三層則是以放置載重塊為目的，因此在初步設計時模擬了載重塊放入的情形。此外，蓋亞守護者的最大特色便是頂層的旋開式開關，利用齒輪去引導開關的開合，模擬科幻電影中的艙門。



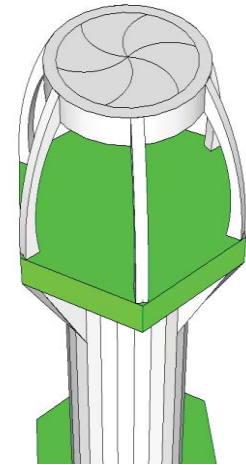
手繪設計草圖



初步的構思

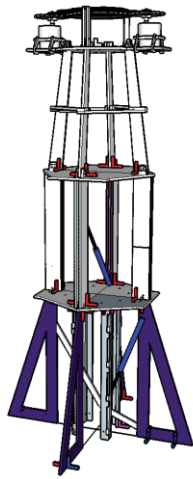


打算第二層加入阻尼器

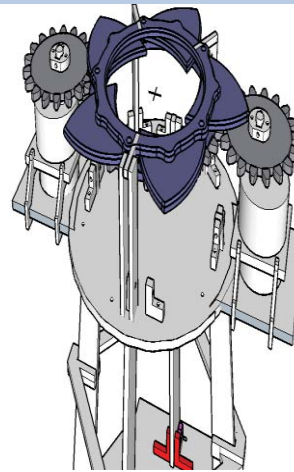


開關想用旋開的方式

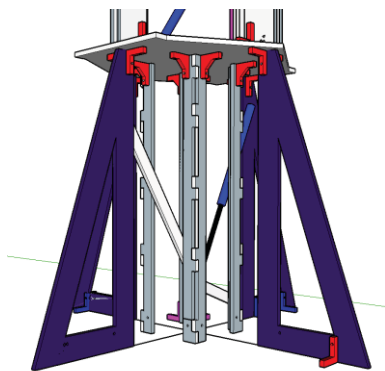
3D電腦設計圖



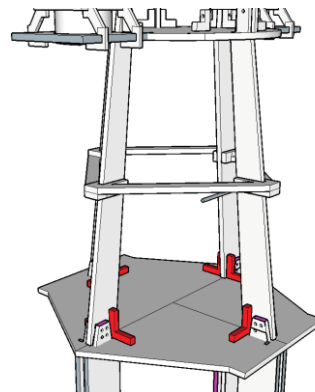
採用內縮的設計，增加塔的穩定度



頂層的開關仿效了光圈，選用旋開的方式

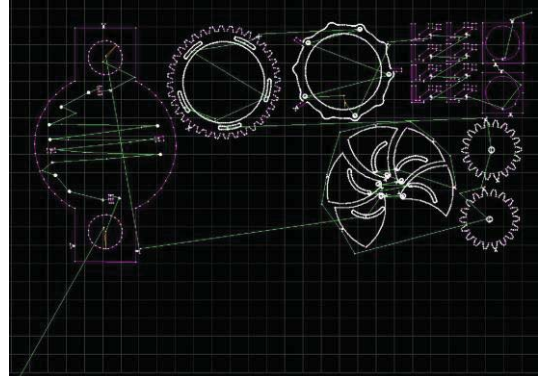
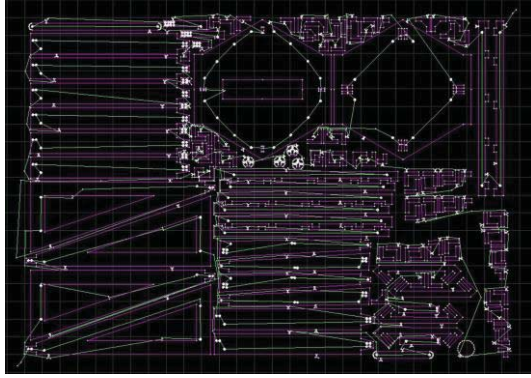


運用阻尼器，三角形支撐等提高抗震能力



第三層的结构則用了斜撐抵抗扭力

組裝平面圖

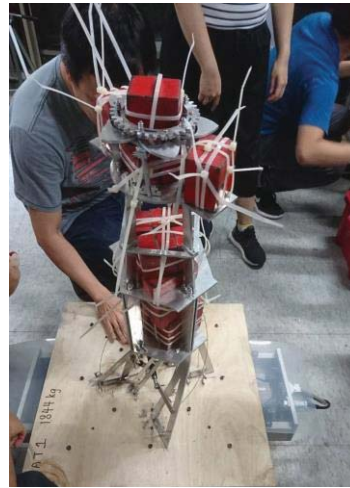


OMAX 水刀規劃路徑圖

振動台耐震測試

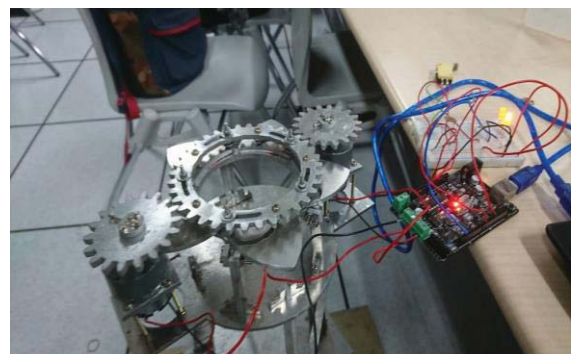
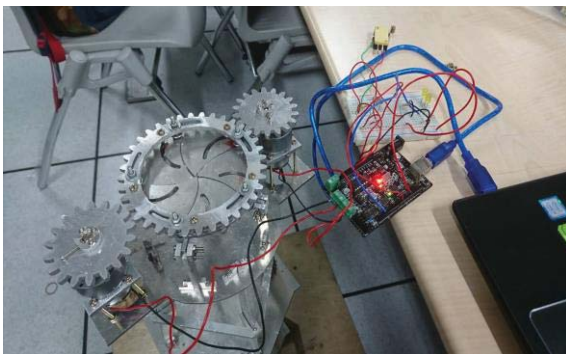


上震動台準備測試 800gal 的強度前



通過 800gal 後(塔有稍微傾倒)

自動控制測試



屋頂開闔程式碼

```

#define E1 5 // motor 1 speed
#define M1 10 // motor 1 direction
#define E2 6 // motor 2 speed
#define M2 11 // motor 2 direction
#define INPIN 13
#define INPIN1 9
#define LED 2

boolean check = false ;

void setup(){
  pinMode(M1, OUTPUT);
  pinMode(E1, OUTPUT);
  pinMode(M2, OUTPUT);
  pinMode(E2, OUTPUT);
  pinMode(LED, OUTPUT);
  pinMode(INPIN, INPUT);
  pinMode(INPIN1, INPUT);
  Serial.begin(9600);
  digitalWrite(M1, HIGH);
  digitalWrite(M2, HIGH);
}

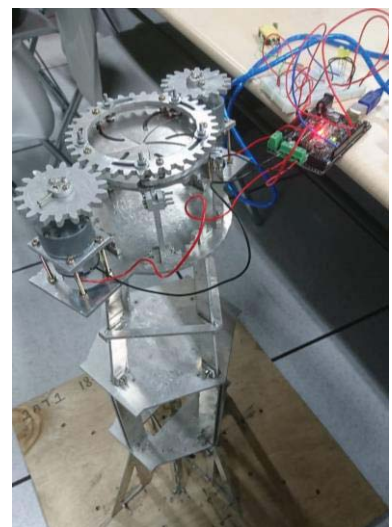
void loop(){
  int sensorValue = digitalRead(INPIN);

  if(sensorValue == LOW){
    if (check == false){
      analogWrite(E1, 255);
      analogWrite(E2, 255);

      digitalWrite( 2, HIGH );
      digitalWrite( M1, HIGH );
      digitalWrite( M2, HIGH );
      delay(2200);
      digitalWrite( 2, LOW );
      analogWrite(E1, 0);
      analogWrite(E2, 0);
      check = true ;
    }
    else if (sensorValue < 10 && check == true){
      analogWrite(E1, 255);
      analogWrite(E2, 255);
      digitalWrite( M1, LOW );
      digitalWrite( M2, LOW );
      delay(2200);
      analogWrite(E1, 0);
      analogWrite(E2, 0);
      check = false ;
    }
  }
  else{
    int sensorValue1 = analogRead(A0);
    Serial.println(sensorValue1);
    if (sensorValue1 > 100 && check == false){
      digitalWrite( 2, HIGH );
      analogWrite(E1, 255);
      analogWrite(E2, 255);
    }
  }
}

```

作品完成圖



成員名單

B06501068 林家豪 土木一
 B06501080 宋柏賢 土木一
 B06501092 王威發 土木一
 B06501002 林佑謙 土木一

