



**LOCK TAO SECONDARY SCHOOL**

**樂 道 中 學**

Mei Lam Estate, Shatin, N.T. 新界沙田美林邨

Tel 電話: 2602 1000

Fax 傳真: 2692 7712

Homepage 網址:

<http://www.locktao.edu.hk>

Email 電郵:

[school@locktao.edu.hk](mailto:school@locktao.edu.hk)

Tue, June 01, 2021

School Ref. No. : T2020008

Dear Sir / Madam

**INVITATION TO TENDER**

**TENDER FOR THE SUPPLY OF Design and Build for Innovation Technology Room, Food Technology Room and Electronic Technology Room**

You are invited to quote for the supply of the stores as specified in the enclosed tender schedule. If you are not prepared to accept a partial order, please state this clearly on the tender.

Your sealed tender, in duplicate, should be clearly marked on the envelope:

**TENDER FOR THE SUPPLY OF**

**Design and Build for Innovation Technology Room, Food Technology Room and Electronic Technology Room**

The envelope should be addressed to **Lock Tao Secondary School, Mei Lam Estate, Tai Wai** and arrive not later than **12:00 noon** on **Wednesday, June 23, 2021**. Late tenders will not be accepted. Your tender will remain open for 90 days from the "Closing Date", and you may consider your tender to be unsuccessful if no order is placed with you within these 90 days. You are requested to note that unless the tender form is completed, the tender will not be considered.

If you are unable or do not wish to quote, it would be appreciated if you return the tender form with reason to the above address at your earliest convenience.

Tenders will be accepted on a group basis.

Yours faithfully,

WONG Chi-wai  
Principal

## Tender Schedule

### Schedule and Penalty

- Date of Commencement: 2021-07-12 PM (by latest)
- Date of Completion for
  - ✧ **Electronic Technology Room (RM412):** Agreed date or 2021-08-31 if not stated
  - ✧ **Innovation Technology Room (RM007):** Agreed date or 2021-09-15 if not stated
  - ✧ **Food Technology Room (RM208):** Agreed date or 2021-10-15 if not stated
- Defects Liability Period: THREE (3) month
- Penalty for Delay: Rate of HKD1,000 per day per room (including Saturday, Sunday, School holidays and public holidays)

### Main Idea

- The Contractor shall provide full interior design and construction services to turn the
  - ✧ **Room007 into Innovation Technology Room** with the following purpose:
    - ✓ Design and technology classes
    - ✓ Maker classes
    - ✓ Robotic classes (robot with around 20 kg)
    - ✓ Textile classes
    - ✓ Design and fashion classes
    - ✓ Robotic and Elite Team Training area (competition field with 12 ft. x 12 ft.)
  - ✧ **Room208 into Food Technology Room** with the following purpose:
    - ✓ Home economics classes
    - ✓ Cooking classes
    - ✓ Food Science classes (e.g. Molecular gastronomy, nutrition, meal planning, ...)
    - ✓ Pâtisserie and Café Operations classes (APL course)
  - ✧ **Room412 into Electronic Technology Room** with the following purpose:
    - ✓ Electronic and micro-computer coding classes (e.g. raspberry pi / Arduino / microbit/...)
    - ✓ Computer programming classes
    - ✓ IoT classes
    - ✓ Artificial Intelligence (AI) classes
    - ✓ Mini-Robotic programming classes (e.g. EV3/Sphero/mbot/...)
- The services to be provided by the Contractor shall include but not limited to the following:
  - ✧ Interior design, floor plan and presentation.
  - ✧ Management of any sub-contracting specialist such as Mechanical & Electrical, Structural, Lighting, Audio Visual, Air-conditioning, Mechanical Ventilation, Fire Safety, Telecommunications, Computer Systems, etc.
  - ✧ Design and construction programmes.
  - ✧ Documentation for construction.
  - ✧ Construction and renovation.
  - ✧ Budgetary control.
  - ✧ Deconstruction management.
  - ✧ IT and Audio-Visual equipment selection and installation.

### For each Room

- Interior Design, Floor Plan and Consultation
  - ✧ Provide at least 2 (TWO) options of 3D interior design with design concept, material, color schemes.
  - ✧ Submit furniture layout, drawings and specification for the School to approve before commencement of works.
  - ✧ The Tenderer is required to provide a detailed design and working drawings in the tender schedule.
  - ✧ The design should be adaptable, flexible, mobile, integrated, organized and ergonomic.
- Fixture, furniture and Equipment
  - ✧ Furniture or IT equipment to be suggested by the Tenderer for the School's consideration.
  - ✧ Fixture and furniture should be included.

- **Storage**
  - ✧ Containers and storage options within the Lab for keeping students' on-going hands-on projects should be provided.
- **Construction and Renovation**
  - ✧ Build the Room(s) according to the design agreed by the School.
  - ✧ All design shall be approved by the School before commencement of works.
  - ✧ The successful Tenderer is required to make an onsite presentation detailing their design.
  - ✧ Repainting of the walls and replacing the suspended ceiling should correspond to the design (Colours should be shown on the proposed design sketch).
  - ✧ The construction and renovation work must fulfill the requirements of the Code of Practice for Fire Safety
  - ✧ Noise should be kept at the minimum level.
  - ✧ Dirt and polluted water should be cleared away every day.

### **Demolition Work of existing Room**

- Dismantle and cart away the existing fixture and loose furniture.
- Make good and touch up the affected area.
- Disposal of the garbage / destructed materials / equipment.
- Noise should be kept at the minimum level.
- Dirt and polluted water should be cleared away every day.

### **Construction Materials**

- **Basic Requirement**
  - ✧ Non-toxic materials.
  - ✧ Non-VOC and water base.
  - ✧ Environmental friendly materials are essential.
  - ✧ Tempered glass should be used.
  - ✧ Materials should not be flammable.
  - ✧ Fire-resistant

### **Site Works Requirement**

- **Site Supervision**
  - ✧ The Contractor shall provide a qualified site supervisor throughout the site work period. The site supervisor shall be responsible for co-ordination and supervision of site work, attend enquiries and complaints by the School. The Contractor shall submit the qualifications of site supervisor for approval. The School may request replacement of site supervisor should he found the site supervisor not suitable.
- **Site Safety**
  - ✧ The Contractor shall carry out all works and maintain site safety according to the Labour Department's requirements and the Contractor shall provide adequate safety devices to all workers or any third party entering the site.
- **Site Protection and Cleaning**
  - ✧ The contractor shall carry out temporary protection properly to lift car, passage, AV equipment, furniture & properties deemed necessary by the School
  - ✧ The contractor shall carry out temporary protection to contract works & properties deemed necessary by the School. The Contractor shall protect the access / glass / door / wall / tiles properly during the demolition and cart away works.
  - ✧ The Contractor shall bear all liability arising from losses and legal prosecutions. The Contractor shall from time to time cart away all rubbish promptly from site.
  - ✧ The contractor shall make good and touch up the affected areas on site.
- **Storage of Material**
  - ✧ Site storage and fabrication space is very restricted. The Contractor shall arrange for himself to have suitable off-site for fabrication and storage. The Contractor is NOT allowed to have materials stored inside the Site without the approval of the School that may be necessary in order to ensure continuity of material supplies to the Site.
- **Working Platform & Scaffolding**
  - ✧ The Contractor shall erect safety working platforms, including working at high level, double layer

scaffolding in accordance with relevant regulation for their execution of work.

- Schedule of Rates
  - ✧ The Contractor shall note that all dimension shall verify onsite and should not order materials or commence works solely based estimation. The School shall not be liable for any expense incurred by the Contractor in connection with incorrect ordering or abortive works.
- General Specification
  - ✧ The Contractor shall be deemed to have examined the following General Specifications applicable to this Contract:
    - ✓ General Specification for Building (GS) 2007 Edition issued by the Architectural Services Department, the Government of Hong Kong Special Administrative Region and all amendment thereto.
  - ✧ General Specification for Electrical Installation in Government Buildings of the Hong Kong Administrative Region issued by the Building Services Branch, Architectural Services Department - 2007 Edition and all subsequent amendments thereof.
- Contractor's Obligations
  - ✧ The Contractor's attention is drawn to his obligation but not limited to the following ordinance and regulations:
    - ✓ The Industrial Training Ordinance
    - ✓ Pneumoconiosis (Compensation) Ordinance
    - ✓ The Industrial Undertakings Regulations
    - ✓ The Construction Sites (Safety) Regulations
    - ✓ The Employee's Compensation Ordinance
    - ✓ The Noise Control Ordinance
    - ✓ The Air Pollution Control (Construction Dust) Ordinance
- Statutory Submission, Approval & Supervision
  - ✧ The contractor shall ensure all works are carried out in accordance with Minor Works Regulations. If required, the contractor shall appoint AP / RSE to prepare statutory submissions of Minor Works Control System and obtain relevant approval from Buildings Department (BD). Conduct supervision in accordance with code of practice, obtain all submission materials and report completion to BD.
- House Rules and Restrictions
  - ✧ The Contractor shall note that the following housekeeping rules within the School Campus and shall strictly be adhered to during the whole contract period:
    - ✓ No smoking within the School Campus is permitted at any time.
    - ✓ All workers on Site must not be naked to the waist and shall be properly dressed.
    - ✓ All areas of the School Campus shall be kept sanitary and clean.
    - ✓ All workers must not litter within the School Campus nor within the site.
    - ✓ All workers must not speak foul language within the School Campus.
    - ✓ No radio broadcasting within the School Campus is permitted at any time.
    - ✓ All workers and personnel of the Contractor and his sub-contractors on Site must wear working pass.
    - ✓ No gambling within the School Campus is permitted at any time.
    - ✓ The Contractor shall also conform to the regulations and restrictions imposed by the School. The Contractor shall allow in his tender any extra cost incurred in complying with such regulations and restrictions which may be imposed or altered from time to time.
    - ✓ The Contractor shall make every endeavor to cause the minimum nuisance, noise, dust or any other disturbance or inconvenience to the neighboring properties, students, pedestrians and traffic.
    - ✓ The Contractor shall closely liaise with the School at all times regarding restrictions on working date/time and the Contractor shall plan his works to suit the School's requirements and takes all necessary measures to minimize the disturbance to the operation of the School. The Contractor is responsible to seek the School prior approval for their work schedule.
    - ✓ The Contractor is required to carry out noisy works outside the School hours, Saturday and School holidays. Notwithstanding that, the Contractor may allow carrying out some noisy works during the School hours but shall be subject to the School's prior approval. The contractor

shall apply to the School at least 7 working days in advance and clearly state the details of noisy works for the School's consideration.

- ✓ In case the Contractor intends to carry out any non-noisy work in the School area during the School hours, he shall give at least 7 working days' notice to the School for approval. Notwithstanding such approval, the School reserves the right to stop any works if they consider it reasonably necessary in order that the School operation will not be affected. No claim whatsoever by the Contractor in this respect will be considered.
- ✓ The Contractor is deemed to have allowed in his tender for complying with all the above requirements, all other related requirements described in other parts of this Contract and all other reasonable constraints imposed by the School from time to time during Contract Period. No claim for extra payment or extension of contract period will be allowed. Furthermore, the Contractor shall be liable to and indemnify the School from any claim arising from his failure to comply with the above requirements.

### **Builder Works Requirement**

- Original statutory requirements on essential lighting shall be complied with [not necessarily add battery to essential lighting circuit]. Generally, battery lighting may be provided for corridors or the like that public may access and for rooms that do not have natural light with users not familiar with the use of the room (For example: Single/two-person office may not require battery lighting.). Please obtain FSD approval if in doubt.
- Socket outlets circuit shall be protected by individual RCDs.
- To avoid nuisance tripping of RCD, each circuit of socket is limited to serve 8 chargers maximum.
- Integrated RCD with MCB shall be used and shall be screw fixed type.
- Fused connection unit at ceiling shall be surface mounted to allow future flexible conduit connection.
- Phase identification shall be provided for all switches, socket outlets and fused connection units, etc
- Circuit number labels shall be provided on each of the socket outlets, isolators, etc.
- Low smoke halogen free copper cable shall be used for Electrical Services Installation.
- Contractor should be requested to provide drawings indicating BS installation inside non-removable false ceiling / bulkhead on access panel drawings during approval stage.
- LED display lamps should be adopted if colour temperature and colour rendering where applicable.
- White board lighting should be considered.
- Trunking shall not run inside fire rated ceiling void. If it cannot be avoided, adequate access panels must be provided and marked/identified on electrical design drawings.
- Make adequate space allowance in trunking system for future expansion.
- Socket outlets circuit shall be protected by individual RCDs.

### **Site Visit**

- Please contact Mr Chan Chun Tat by 6113-0294 for arrangement.

### **Selection criteria**

School is looking for a contractor based on the following criteria:

- Creative and Innovation Design which fit school plan and enable efficient L&T activities
- Proposed pricing fit with School budget
- Solution suitability to School
- Equipment and services level that can offer
- Agreed date of completion
- Case reference
- Other useful information

**Tender Schedule**  
**(to be completed in duplicate)**

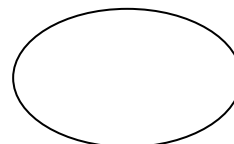
(Columns 4, 5 and 6 to be completed by Supplier)

(1) Item No.	(2) Description / Specification	(3) Quantity Required	(4) Unit Rate (HK\$)	(5) Total Amount (\$HK)	(6) Delivery Offered
A	<b>Design and Build for Innovation Technology Room</b> <b>(Rm007, G/F)</b> <i>Specification please refer to appendix A</i> <b>a) Price for design and build</b> <b>b) Price for furniture</b> <b>c) Price for AV equipment</b> <b>d) Price for network equipment</b> <b>e) Price for security equipment</b> <b>f) Price for equipment that are not listed above</b>  <b>g) Agreed date of completion: _____/_____/2021</b> <b>(2021-09-15 if leave blank)</b>				
B	<b>Design and Build for Food Technology Room</b> <b>(Rm208, 2/F)</b> <i>Specification please refer to appendix B</i> <b>a) Price for design and build</b> <b>b) Price for furniture</b> <b>c) Price for AV equipment</b> <b>d) Price for network equipment</b> <b>e) Price for security equipment</b> <b>f) Price for equipment that are not listed above</b>  <b>g) Agreed date of completion: _____/_____/2021</b> <b>(2021-10-15 if leave blank)</b>				
C	<b>Design and Build for Electronic Technology Room</b> <b>(Rm412, 4/F)</b> <i>Specification please refer to appendix C</i> <b>a) Price for design and build</b> <b>b) Price for furniture</b> <b>c) Price for AV equipment</b> <b>d) Price for network equipment</b> <b>e) Price for security equipment</b> <b>f) Price for equipment that are not listed above</b>  <b>g) Agreed date of completion: _____/_____/2021</b> <b>(2021-08-31 if leave blank)</b>				

\* Item A, B, and C can be considered separately.

Penalty for delay rate is HKD1,000 per day per room (including Saturday, Sunday, School holidays and public holidays)

We/I understand that if we/I fail to supply the stores or services as offered in our/my tender upon accepting school's order, we are/I am prepared to pay the price difference to the school if such stores or services are obtained from elsewhere.



Company Chop

Name of Supplier: \_\_\_\_\_

Name and Signature of Person authorized to sign Tender:

Name (in block letters): \_\_\_\_\_ Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**TENDER FORM FOR THE SUPPLY OF**  
**Design and Build for Innovation Technology Room, Food Technology Room and**  
**Electronic Technology Room**

Name and Address of School:	Lock Tao Secondary School Mei Lam Estate, Tai Wai, Shatin
School Ref. No. :	<b>T2020008</b>
Tender Closing Date and Time:	<b>12:00PM, Wed, June 23, 2021</b>

**PART I**

The undersigned hereby offers to undertake the service as described in the written quotation/tender schedule within the period of time as specified therein from the date of a firm order placed by the school at the price or prices quoted in the written quotation/tender schedule including labour, materials, all other charges and in accordance with the details provided by the school. In so doing, the undersigned acknowledges that all items not otherwise specified shall be provided in accordance with such details; written quotations/tenders shall REMAIN OPEN FOR 90 DAYS after the Closing Date; and the school is not bound to accept the lowest or any written quotation/tender and reserves the right to accept all or any part of any written quotation/tender within the period during which the written quotations/tenders remain open. The undersigned also warrants that his Company's Business Registration and Employees' Compensation Insurance Policy are currently in force and that the service which his Company offers to undertake will not cause any damage to the school's premises.

**PART II**

**PREVENTION OF BRIBERY ORDINANCE**

It is an offence under the Prevention of Bribery Ordinance that, without lawful authority or reasonable excuse, school staff accept advantages from suppliers and contractors or the suppliers and contractors offer advantages to school staff in connection with school procurement

### PART III

#### RECONFIRMATION OF WRITTEN QUOTATION/TENDER VALIDITY

With reference to Part I of this written quotation/tender document, it is reconfirmed that the validity of written quotation/tender offered by this company remains open for 90 days from **Wednesday, June 23, 2021**.

The undersigned also agrees to accept the fact that once the validity of written quotation/tender is reconfirmed, the pre-printed clause specified in the Company's written quotation/tender forms in regard to this nature shall NOT apply.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ of \_\_\_\_\_

Name (in block letters): \_\_\_\_\_

Signature \_\_\_\_\_ in the capacity of \_\_\_\_\_

with company chop (State official position, e.g. Director, Manager, Secretary, etc.)

Duly authorized to sign written quotations/tenders for and on behalf of :

\_\_\_\_\_  
whose registered office is situated at \_\_\_\_\_

\_\_\_\_\_ Hong Kong.

Telephone No. : \_\_\_\_\_

Fax No. : \_\_\_\_\_



## 工程與裝潢

### 清拆/移除

拆除木工室與康體設備間木牆。  
 拆除舊電話系統。  
 拆除部份課室設備。  
 拆除窗花。  
 拆除地磚。  
 拆除部份照明設備。  
 拆除部份不再使用之電力設備。  
 拆除儲物室現存木櫃/桌子。  
 拆除主空間和機械室之間間隔牆。

### 佈線(網絡線)

佈線(種類 1):

佈線(種類 1)	一般線絡線
傳輸規格	Cat.6A
銅線要求	AWG24

佈線(種類 2):

佈線(種類 2)	PoE 供電線
傳輸規格	Cat.6A & PoE++(802.3bt 標準)
銅線要求	AWG23

注意: 所有網絡線材(銅線)如果長度不足或者中間有斷芯，需要整條更換，不接受以接線豆或其他方法重新連接。

佈線(種類 3):

佈線(種類 3)	光纖
傳輸規格	OM3, LC to LC
線材制式	MM

### 佈線(電源)

佈線(單相電)與佈線(三相電): 13A/20A/32A 三種規格 數量、位置和種類請查看平面圖。
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### 照明設備

供電方式:	802.3af PoE+ Or AC
控制方式:	App/Web/燈制 (支援自定義控制)
訊號連接:	LAN /BT
安裝方式:	吊裝/天花
功率/亮度:	25W/2200lm 或更高
光線散射種類:	均光板
調光控制範圍:	10%-100%
CRI 值:	>80
色溫:	4000K
額定壽命:	50000 小時
其他:	遠端管理 統計報表 支援智語音助手 (Apple Google Amazon)

電器

## 冷氣:

型式:	掛牆/樓底懸吊型
匹數:	2
DC 變頻:	風機/壓縮機/室外機
制熱方式:	熱泵
冷媒使用:	R410A/R32
能源標籤:	1 級
外觀修改:	貼皮裝飾(與背景同色)
其他(選配):	支援智能語音助手 (Apple Google Amazon) 自行清潔功能(室內機)

壯滿

洗手盤:

材質:	不限
形狀:	方型圓角
水龍頭:	單一出水
其他:	與水機協同設計

水機:

濾水器:	NSF/ANSI 42 及 53 或 RO 逆滲透系統
形狀:	方型圓角
水溫:	冷/熱(可調溫度)
其他:	與洗手盤協同設計

註 1:濾水器部份可以為不同設備。

註 2:洗手盤與飲水機可以為整合式設計。

地板:

全房自流平水泥地。

與門口高低差需打磨處理。

請提供材料品牌和資料表(需包含材料性能表格)。

天花:

完成工程後以黑色油漆覆蓋。並覆蓋喉管線槽。

外露喉管線槽盡量以平行方式放置。

玻璃窗:

拼接數量上限:	3 片
玻璃種類:	膠合/雙層玻璃
收貨要求(玻璃):	無崩花，沒氣泡雜質， 密封膠沒欠缺

隔音:

位置:	近小禮堂
鋪設方式:	原有牆身上加工
顏色:	與牆身顏色配合

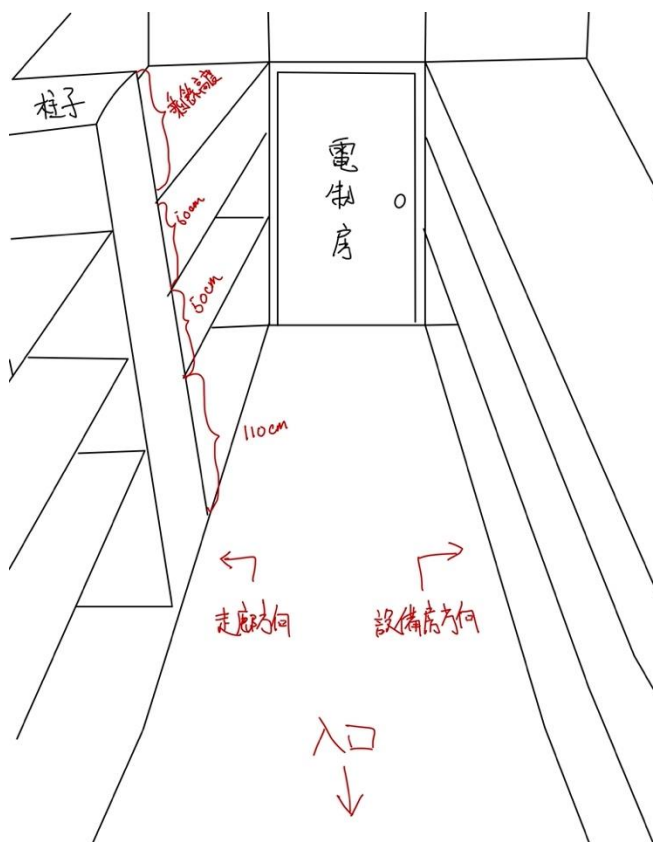
所有門需有隔音效果

位置:	DT 間隔牆
鋪設方式:	在間隔牆中鋪設
出入門:	增加隔音條

存物架(儲物室):

支架材質:	鋼/鐵
層板材質:	MDF
層板厚度:	2CM(MDF))
深度(左邊牆):	與柱子拉平
深度(右邊牆):	60CM
分層高度(低):	110CM
分層高度(中下):	50CM
分層高度(中上):	50CM
分層高度(高):	剩下高度

### 參考設計:



磚牆：

位置: 存物室與主空間和設備室交界

## 需先移除木框

填充磚頭後掃平上油

## 傢俱

### 電動升降工作桌:

大小(寬 x 深):	160x80CM+- 10CM
高度範圍:	65-125CM 或更多
負重:	70KG 或更多
升降模式:	電動
線材整合:	整線空間或掛架
保用年期:	3 年原廠維修保養或更多
其他(選配):	防夾手功能 過重自動斷電或警告

參考設計：IDÅSEN 升降式書檯

### 工作桌(機械室內):

支架材質:	鋼/鐵
支架顏色:	黑/灰
桌板材質:	耐磨/耐衝擊合成板
桌板顏色:	黑/灰/木色
桌板厚度:	3-5CM (視乎結構)
桌面整體負重:	1000KG
長寬高 (整體):	H80xW150xD75CM (+- 10CM)
其他:	可調整高度腳

參考設計：Tanko WBT-5203W

### 工作桌 (主空間):

支架材質:	鋼/鐵
支架顏色:	黑/灰
桌板材質:	木
桌板顏色:	木色
桌板厚度:	1.8-5CM (視乎結構)
桌面整體負重:	1000KG
長寬高 (整體):	H85xW150xD75CM (+- 10CM)
其他:	重型橡膠輪子 (帶鎖定)

參考設計：Tanko WA-57TGM

### 吧枱(A&B):

支架材質:	鋼/鐵
支架顏色:	黑色
桌板材質:	木板(原木>夾板>組合木)
桌板顏色:	亮面深色木漆
桌板厚度:	3CM 或更厚
長寬高 (A):	500Wx120Hx60D CM

長寬高 (B):	280Wx90H x70D CM
其他:	A&B 高度可以更改以配合其他設計。 位置與間距需和電源/網絡插座配合。

參考設計：設計參考/圖片 30-32

### 獎杯櫃(機械室前):

支架材質:	鋼/鐵
支架顏色:	黑/灰/墨綠
大小:	170Wx42Dx170H(可按實際調整)
層板材質:	玻璃
層板顏色:	透明
層板厚度:	0.5-1CM
其他:	金屬外框玻璃門 需固定在牆身 帶鎖 LED 照明 (白光) (IoT)

參考產品：IKEA MILSBO 玻璃門貯物櫃

RUDSTA 玻璃門貯物櫃

### 存物櫃(偏室):

主要材質:	鋼
顏色:	白色
大小:	180Wx190Hx47D CM (可以多個組合而成)
層板材質:	鋼
層板顏色:	白色
其他:	帶鎖耳

參考產品：IKEA HÄLLAN 貯物組合連門

### 零件櫃(偏室):

主要材質:	木/鋼
顏色:	白/米/黑色
大小:	200Wx180Hx50D CM (可以 2 個組合而成)
層板材質:	木/鋼
層板顏色:	白色
其他:	帶鎖/櫃門 內部空間能重組適應不同大小的抽屜

### 書櫃/展示架:

材質：	木材
主要顏色：	黑色
大小：	182Wx182Hx39D CM
層板材質：	木材
層板顏色：	黑色
其他：	LED 照明 (IoT)

參考設計：IKEA KALLAX 層架組合

### 地櫃(機械室門側):

主要材質：	原木/鋼
主要顏色：	深木色/黑色
大小：	100-110CM W 50-60CM H 30-40CM D
其他：	LED 照明 (IoT)

### 半腰式存物櫃(機械室內):

材質：	鋼/木材
主要顏色：	黑色/木色
大小：	5000Wx65Hx70D CM
層板材質：	木材
層板顏色：	木色
其他：	LED 照明 (IoT)

### 掛牆式工具架(機械室內)(洞洞板):

材質：	鋼
顏色：	黑/紅
大小：	大小不拘，需能組合至空間目標大小。 所需大小請參考平面圖上的標示。

配件：	各種掛勾/各種塑膠勾 各種圓勾/工具掛架 各種掛盒/或更多選擇
安裝方式：	掛牆安裝
其他：	

參考設計：Tanko KQ-306AR3



### 流動工具車：

主要材質：	鐵/鋼
顏色：	黑/紅
大小：	H1400-1500 CM W750-800 CM D500-550 CM
其他：	抽屜有安全鎖防掉出 抽屜具有間隔設計 輪子要具備鎖定功能 配備抽屜鎖定功能

參考設計：Tanko EGL-185MA

## 設備(請附上選用品牌型號)

### 影音設備

#### 影音設備(投影機)

面板解析度:	FHD 或 1080P 以上
亮度/流明度:	4000 或以上
投影技術:	LED/雷射光源
保用年期:	原廠 5 年或更多
其他:	HDBaseT 支援或伸延器/倒置安裝

#### 影音設備(投影幕)

大小:	110 吋
比例:	16:9/16:10
型式:	電動式
安裝:	牆身安裝
其他:	多幕同步升降

#### 影音設備(影像訊號處理器)

訊號輸入:	HDMI 2.0 x4 或更新
訊號輸出:	HDBaseT/ HDMI x4
影像規格(輸入):	4K @60hz
影像規格(輸出):	4K @60hz
保用年期:	原廠 3 年或更多
其他(必須):	影音分離(R/L/Ground)
其他(選配):	場景預設/快速切換 USB-C 輸入

#### 影音設備(影像訊號傳輸器)

訊號輸入:	HDMI x1 (如影像訊號處理器使用 HDBaseT 輸出可免此輸入端)
訊號輸出:	HDMI 2.0 x1 或更新規格
影像規格(輸入):	FHD@60hz - 4K @60hz
影像規格(輸出):	FHD@60hz - 4K @60hz
保用年期:	原廠 3 年或更多
其他:	4K @60hz(40M)/ FHD@60hz(70M)

#### 影音設備(擴音機)

輸入端子:	1/4 inch/3.5mm/RCA
輸出端子:	旋扭式(香蕉插)/RCA 或更多
支援喇叭數:	4 個或更多
功率:	60W

保用年期:	3 年原廠維修保養或更多
安裝型式:	機架式安裝/桌上式
其他(選配):	支援 AirPlay 2 協定

#### 影音設備(喇叭)

功率:	15W
型式:	天花倒置/牆身安裝
顏色:	白色

## 網絡設備

### 網絡設備(6U 網絡設備儲存櫃)

高度:	6U
深度:	20-24Inch
材質:	不鏽鋼或鐵
散熱:	最少一個 12CM 風扇散熱位置
其他:	左右側板能夠拆卸。 前置面板採用玻璃門。 前置/側板附帶的功能。

### 網絡設備(交換器-保安網絡)

接頭速度(用戶):	1Gbps RJ-45 PoE x 24 (最少 8 個支援 PoE++)
接頭速度(Uplink):	10Gbps SFP+ x2
保用年期:	3 年原廠維修保養或更多
安裝型式:	機架式安裝
PoE 支援:	802.3af/802.3.at/802.3bt
其他:	與現有系統相容

### 網絡設備(SFP 光纖模組-保安網絡)

接頭:	LC/LC
光段(收/發):	850nm/850nm
距離:	500M+
Mode:	MM
速度:	1Gbps
保用年期:	1 年原廠保養或更多
其他:	需要和現有保安網絡交換器相容

## 保安設備

### 保安設備(閉路電視)

解析度/幀數:	FHD@24
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鏡頭角度:	80° (H),46° (V),92° (D) or wider
電源供應:	PoE 802.3af/at
網絡介面:	10/100Mbps
其他:	相容現有系統

### 保安設備(網絡門禁(控制器))

接頭速度:	1Gbps x8 + 10Gbps x2
硬碟支援:	3.5 吋 SATA Drive
替代現有網絡控制器 門禁系統控制器 支援相關系統擴展控制 支援 UPS 後備電源 相容現有系統	

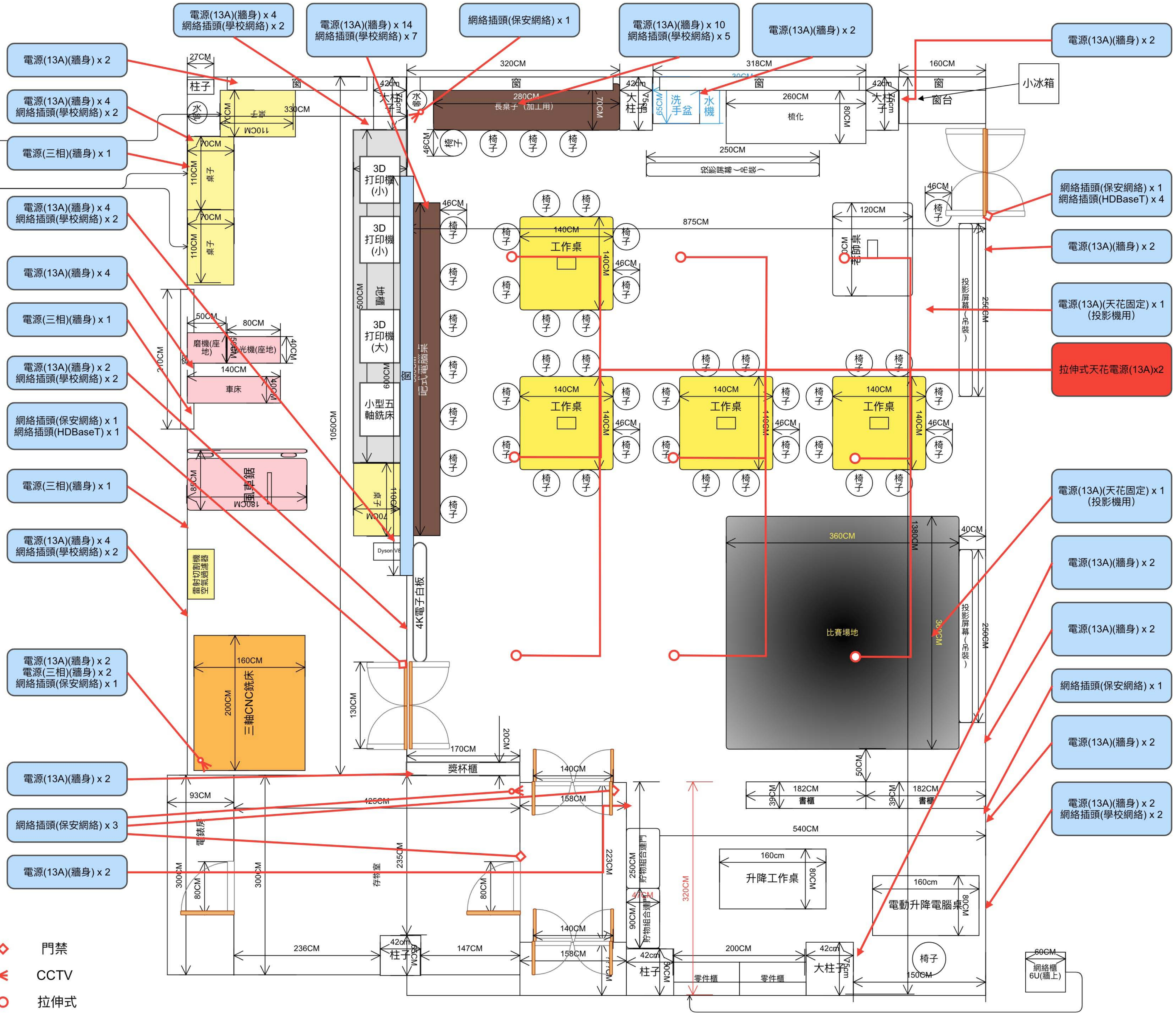
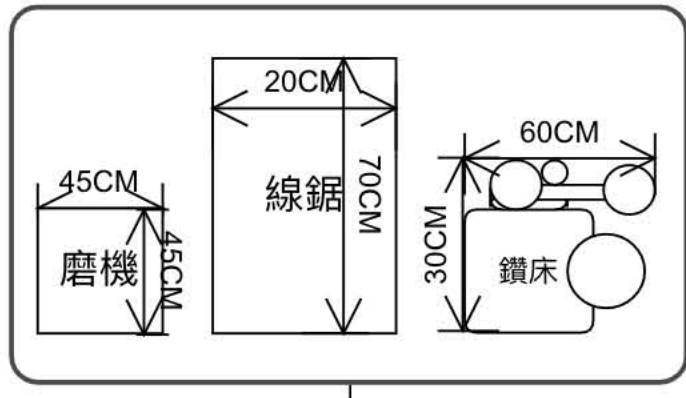
### 保安設備(網絡門禁(終端))

電源:	PoE++(802.3bt)
支援門鎖:	磁鎖, 電栓, 電鎖
支援開門方式:	NFC or 按鈕/手部搖晃 (Inside)
防水防塵:	IP54 或以上
工作溫度:	-10C 至 40C 或更寬
保用年期:	3 年原廠維修保養或更多
其他:	支援額外保安鏡頭 支援開鎖時短錄影 相容現有系統

### 保安設備(網絡門禁(門鎖))

電壓:	12V MAX
電流:	1A MAX
磅數:	400-600 磅
其他:	與網絡門禁(終端)相容



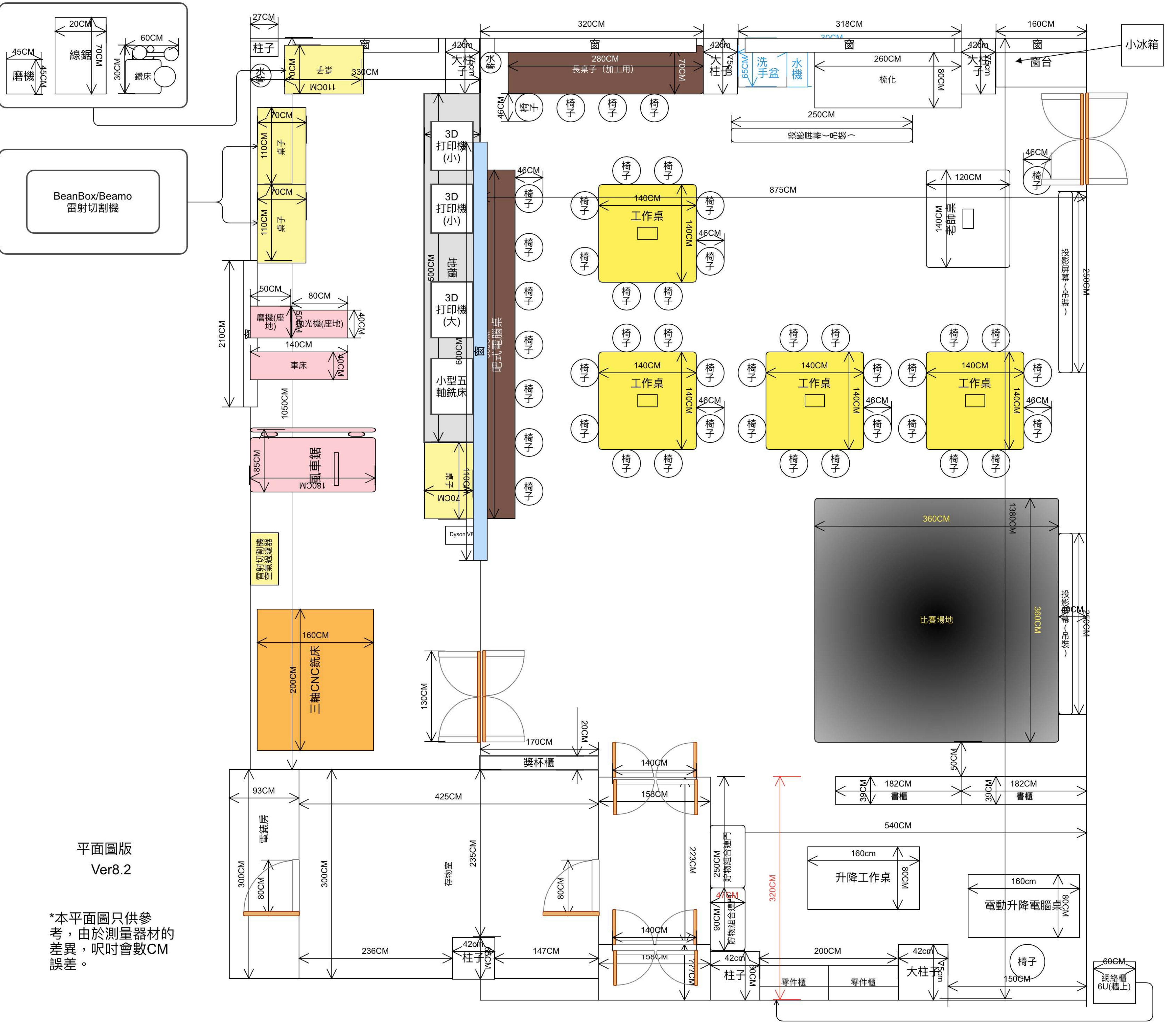


- 門禁
- CCTV
- 拉伸式

網電圖版  
Ver8.2

\*本平面圖只供參考，由於測量器材的差異，呢吋會數CM誤差。





平面圖版  
Ver8.2

\*本平面圖只供參考，由於測量器材的差異，呎吋會數CM誤差。



## 工程與裝潢

### 清拆/移除

清拆現有半身磁磚

清拆木地台

移除現有木櫃

移除原有鋅盤

### 水電設備

#### 電源插座(微波爐櫃)

數量：	8(4x2)/9(3x3)
獨立開關：	Yes
其他：	獨立保險絲

#### 電源插座(中島)

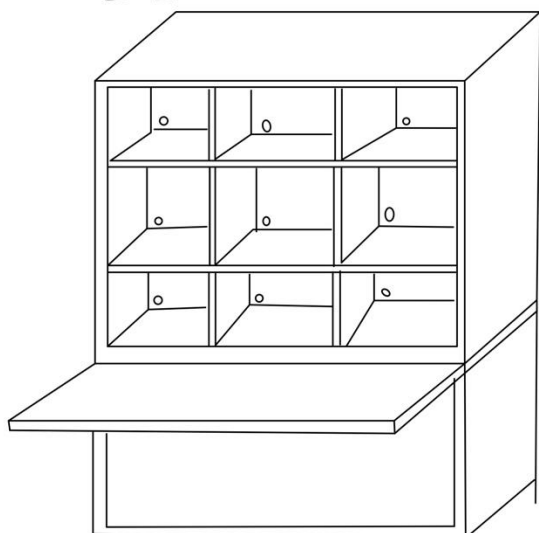
數量：	2
獨立開關：	Yes
其他：	獨立保險絲

#### 微波爐櫃(傢俱)

型式：	列陣式 3x3 或 4x2
材質：	木材
需要：	防潮/貼皮
其他：	電源開孔、線材管理

參考圖型：

微波爐櫃



### 中島(廚房系統)

大小(整套)：	250CM(W)x60CM(D)x95CM(H) (+/-10CM)
鋅盤：	
鋅盤大小(水槽)：	50Wx40Dx18H(長寬+/-10CM)
鋅盤材質：	不鏽鋼/石英石
水龍頭款式：	高身鵝頸型或類似
面板材質：	石材/不鏽鋼/木/竹
面板紋理：	石材/不鏽鋼/木/竹
儲物空間：	開放式/鋅盤下方設擋板
電源插座：	2 個 13A UK 插座
防火阻燃性能：	
保用：	5 年品質保
其他：	歡迎提供款式/設計參考

### 裝潢

#### 大桌子(傢俱)(拼組桌子)

大小(每張)(長寬高)：	200x80x80CM(高度+/-5CM)
材質：	MDF/實木
顏色/花紋：	淡色/原木
桌板厚度：	1 吋
其他：	桌子能互相鎖定

- 安裝 16 個來去水位
  - 12 個中島，1 台洗碗機，1 台洗衣機，2 台意式咖啡機(預留位置)
- 水處理系統
- 安裝 12 個煤氣位置
  - 位於每一個中島
- 安裝 12 個抽氣點/抽油煙機
  - 視符貴公司所選設備
- 修補木地台移除後的地面(如有需要)
  - 補磁磚
- 半身高磁磚
  - 歡迎提供款式
- 掃灰上油

## 設備(請附上選用品牌型號)

### 影音設備(擴音機)

輸入端子：	1/4 inch/3.5mm/RCA
輸出端子：	旋扭式(香蕉插)/RCA 或更多
支援喇叭數：	2~4 個
保用年期：	3 年原廠維修保養或更多
安裝型式：	機架式安裝/桌上式
其他(選配)：	支援 AirPlay 2 協定

### 影音設備(喇叭)

功率：	15W
型式：	天花倒置/牆身安裝
顏色：	白色

### 廚房設備(爐具)

爐頭數目：	4
烤/焗爐數目：	1
前置面板：	玻璃
能源使用：	煤氣
保用年期：	3 年上門包零件
爐具主要材質：	不鏽鋼
其他(爐頭)：	可拆式/密封式設計
其他(烤箱)：	對流風、箱內照明

### 廚房設備(空氣交換設備(抽油煙機))

型式：	獨立式/系統式
每分鐘房排風量(最高)：	14m <sup>3</sup> 或更高
抽風位置：	12
油煙過濾網材質(如有)：	金屬
噪音：	70db 或以下
開關：	延遲式
照明：	LED
保用年期：	3 年上門包零件
其他：	歡迎提供商用設計

### 廚房設備(冰箱-冷藏櫃)

容量：	180 公升或以上
機頭位置：	上置式>下置式
外殼材質：	不鏽鋼
櫃門型式：	玻璃門
型式：	立式
能源效率：	一級或同等
其他：	循環風扇/溫度調節

### 廚房設備(冰箱-雪藏櫃)

容量：	180 公升或以上
機頭位置：	上置式>下置式
外殼材質：	不鏽鋼
櫃門型式：	玻璃門
型式：	立式
能源效率：	一級或同等

### 清洗設備(洗衣乾衣機)

容量(洗衣)：	8KG
容量(乾衣)：	6KG 或更多
型式：	前置式滾桶
保用年期：	全機 2 年或以上
其他：	連安裝
其他(選配)：	IoT 相關功能支援 可以報多於一款機型

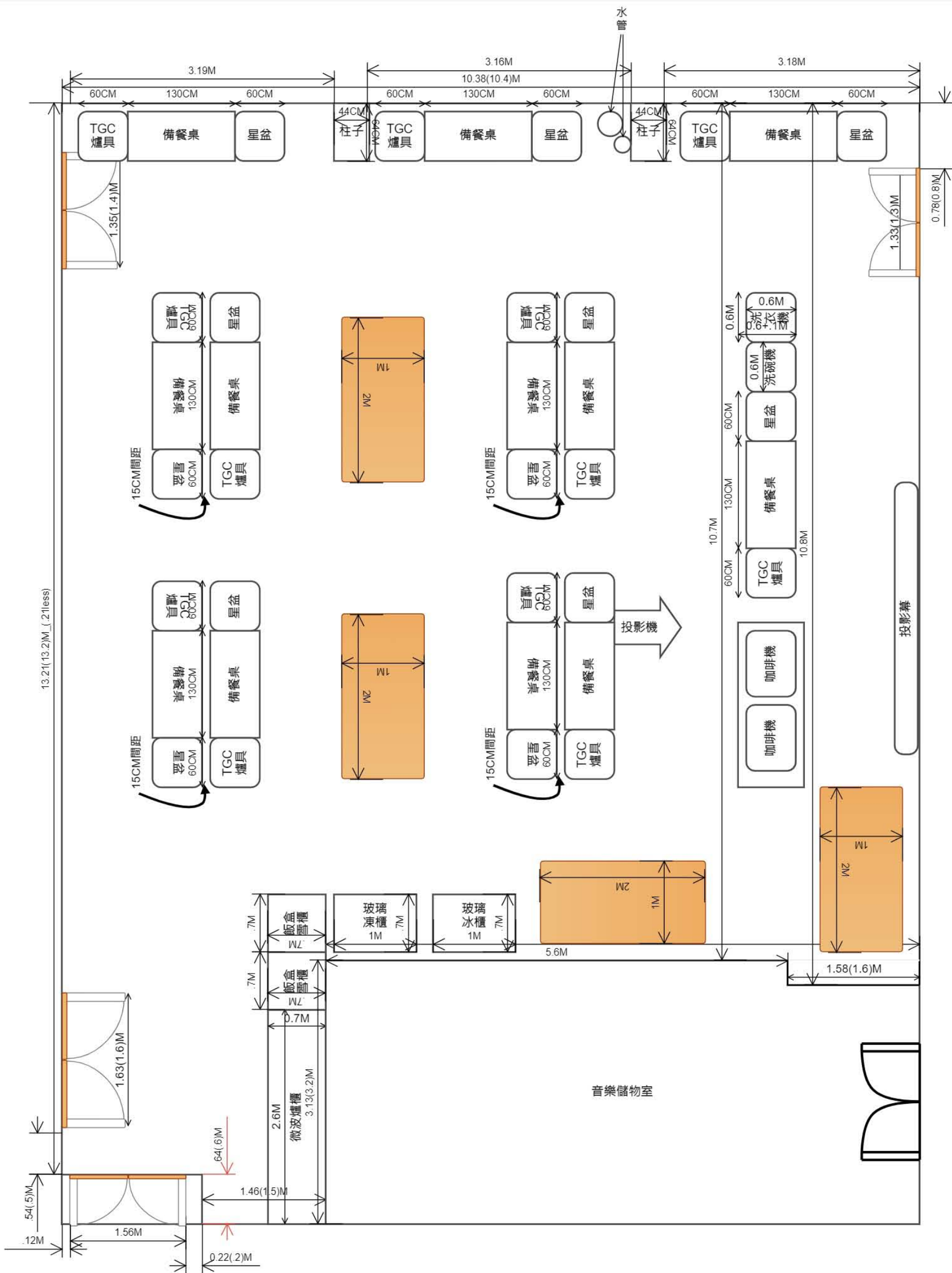
### 清洗設備(洗碗機)

容量：	13 套餐具或更多
外殼材質：	不鏽鋼
內殼材質：	不鏽鋼
開門方式：	前置式抽櫃/下拉式開門
風乾方式： (至少有其中三種)	風扇換氣/熱風風乾/熱 交換/自動開門/沸石烘 乾
最高水溫：	70C 或更高
支架層數：	3 層
支架功能：	可升降支架/可開合支架
噪音：	50db 或以下
保用年期：	3 年上門
其他(選配)：	中式碗籃/單獨烘乾功能 /單層清洗功能

### 空調設備(冷氣機)

型式：	分體式
匹數：	3
安裝：	208 黑板右方牆身
保用年期：	5 年
其他：	冷媒管長路程

### 冷熱水機



## 工程與裝潢

### 清拆

- 移除一台壞冷氣
  - 需要把木殼空洞補上
- 拆除向走廊方向之窗花
  - 需要以物料填充拆除後之空洞
- 移除原有無線咪系統
  - 需要以物料填充拆除後之空洞
- 移除原有語言學習系統和其線材
  - 移除後器材需集中放置以便報銷
- 移除原有投影機與投影幕
  - 移除後器材需集中放置以便報銷
- 移除科學預備室至 412 室原有之網絡線
  - AP PoE 網絡線需保留
- 移除現有膠地板
- 期間拆卸物和工程廢料需按程序棄置

### 電器

#### 空調設備（冷氣機）

型式：	分體式
匹數：	3
安裝：	代替一台損壞的冷氣
保用年期：	5 年
其他：	或需室外高空工程 室外機位於 6/F 天台

#### 分體式冷氣機（維修）

維修其中 2 台現有冷氣

由於多年未有使用，需作全面檢查

### 工程

#### 電源線安裝

數量：	每個座位四個或者每兩個座位八個。
插頭規格：	UK 13A 獨立電源開關
固定：	電源插板需要以螺絲或掛鉤固定在電腦桌背板上。
其他：	<ul style="list-style-type: none"> <li>• 牆身電源插蘇改為面板。</li> <li>• 牆身和電腦桌之間保留兩米電線的距離。</li> </ul>

#### 網絡線安裝(銅線網絡線)

線材規格：	Cat.6A
面板：	雙口
接頭標準：	568b
其他：	不接受以下情況 <ul style="list-style-type: none"> <li>• 線皮需在接頭按壓範圍(交換器端)</li> <li>• 網絡牆身底座良好固定。</li> <li>• 需要完整線材，中途不得接駁延長。</li> </ul>

#### 網絡線安裝(光纖網絡線)

線材規格：	OM3
線材接頭：	LC-LC
額外保留長度：	每邊 2 米
其他：	除了兩端的接頭，中間不得接駁延長。

#### 影音設備安裝

安裝項目：	投影機/投影幕/擴音機/喇叭/電視機/影像訊號處理
其他：	安裝所有【影音設備】項目並定位調教。

### 裝潢

#### 重鋪膠地板

重新鋪設三毫米厚膠地板(約 960ft)
請提供最少一個或多個款式的報價

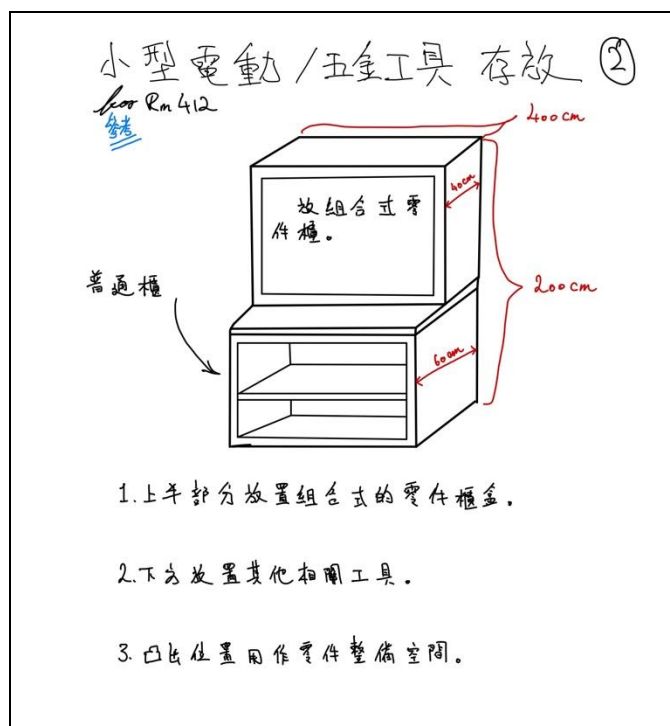
#### 牆身天花更新

修補(洞口)：	使用填充物料修補裝修工程期間所產生的洞口。
修補(批當剝落)：	把牆身批平，如有明顯的收水部份，請再次填補。
修補(設備拆除後之空洞)：	裁切合適大小板材並油上牆身顏色。
底油：	請提供顏色的色碼。
面油：	
大約面積：	1490ft

## 傢俱

### 電子零件櫃（訂造）

寬 x 深 x 高 (CM) :	400x40-60x200 (+-20CM)
主要材質 :	木材
其他 :	<ul style="list-style-type: none"> <li>上半部空間放置組裝式零件盒。</li> <li>下半部空間為一般工具的存物櫃。</li> </ul>
參考設計: 歡迎提供其他款式及設計	



## 設備(請附上選用品牌型號)

### 影音設備(投影機)

面板解析度：	FHD 或 1080P 以上
亮度/流明度：	4000 或以上
投影技術：	LED/雷射光源
保用年期：	原廠 5 年或更多
其他：	HDBaseT 支援或伸延器/倒置安裝

### 影音設備(投影幕)

大小：	110 吋
比例：	16 : 9/16 : 10
型式：	手拉式
安裝：	牆身安裝

### 影音設備(影像訊號處理器)

訊號輸入：	HDMI 2.0 x4 或更新 (選配: USB-C)
訊號輸出：	HDBaseT/ HDMI x4
影像規格(輸入)：	4K @60hz
影像規格(輸出)：	4K @60hz
保用年期：	原廠 3 年或更多
其他(必須)：	影音分離(R/L/Ground)
其他(選配)：	場景預設/快速切換

### 影音設備(影像訊號傳輸器)

訊號輸入：	HDMI x1 (如影像訊號處理器使用 HDBaseT 輸出可免此輸入端)
訊號輸出：	HDMI 2.0 x1 或更新規格
影像規格(輸入)：	FHD@60hz - 4K @60hz
影像規格(輸出)：	FHD@60hz - 4K @60hz

保用年期：	原廠 3 年或更多
其他：	4K @60hz(40M)/ FHD@60hz(70M)

### 影音設備(電視機)

電視大小：	約 65 吋
可視角：	170+(水平/垂直)
解析度：	FHD / UHD
保用年期：	5 年原廠維修保養或更多
安裝型式支援：	VESA 支援 / 天花支架安裝
訊號輸入：	支援 HDMIx2 或以上輸入(原生支援 HDBaseT 更佳)

### 影音設備(擴音機)

輸入端子：	1/4 inch/3.5mm/RCA
輸出端子：	旋扭式(香蕉插)/RCA 或更多
支援喇叭數：	2~4 個
保用年期：	3 年原廠維修保養或更多
安裝型式：	機架式安裝/桌上式
其他(選配)：	支援 AirPlay 2 協定

### 影音設備(喇叭)

安裝型式：	掛牆或倒置安裝
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### 網絡設備(8U 網絡設備儲存櫃)

高度：	8U
深度：	20-24Inch
材質：	不鏽鋼或鐵
散熱：	最少一個 12CM 風扇散熱位置。
其他：	左右側板能夠拆卸。 前置面板採用玻璃門。 前置/側板附帶鎖的功能。



