

# **TENDER FORM FOR WiFi SERVICE**

(to be completed in duplicate)

Name: United Christian College

Address: 11 Tong Yam Street, Tai Hang Tung, Kowloon

School Ref. No.: T202102

Tender Closing Date and Time: 12:00 noon on May 31, 2021

## **PART I**

The undersigned hereby offers to undertake the service as described in the **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 **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; tenders shall REMAIN OPEN FOR 90 DAYS after the Closing Date; and the school is not bound to accept the lowest or any tender and reserves the right to accept all or any part of any tender within the period during which the 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**

1. It is an offence under the Prevention of Bribery Ordinance that, without lawful authority or reasonable excuse, school staff accept advantages from supplies and contractors or the suppliers and contractors offer advantages to school staff in connection with school procurement.
2. School employees or suppliers and contractors of any party or parties to commit such violations, if any, relating to tenders will not be considered; even been appointed, the contract will be signed be declared null and void.

PART III

RECONFIRMATION OF TENDER VALIDITY

With reference to Part I of this tender document, it is reconfirmed that the validity of tender offered by this company remains open for 90 days from May 31, 2021.

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

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

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

Signature : \_\_\_\_\_ in the capacity of \_\_\_\_\_ (state official position e.g. Director, Manager, Secretary)

Duly authorised to sign tenders for and on behalf of : -

\_\_\_\_\_

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

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

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

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

## PART IV: REQUIREMENTS SPECIFICATION

This section specifies the user requirements of the School of the WiFi network. The Contractor shall be capable of supporting the requirements set out below.

*Please indicate whether the requirements are complied or not. If not, please provide detail or remarks.*

Item	Descriptions [ WiFi 900 (4-year contract) ]	Comply key requirement (Y/N)	If not, please provide detail, or Remarks (If any)
1	<p><b>Wi-Fi services starts</b></p> <ul style="list-style-type: none"> <li>• September 1, 2021</li> </ul>		
2	<p><b>Wi-Fi subscription period</b></p> <ul style="list-style-type: none"> <li>• 48 months, starting from September 1, 2021</li> </ul>		
3	<p><b>Wi-Fi Standard and Coverage (1)</b></p> <ul style="list-style-type: none"> <li>• use IEEE 802.11 a/b/g/n/ac/ac2/ax network or above in the following rooms               <ul style="list-style-type: none"> <li>○ 26 Classroom C11, C12, C13, B23, B24, B25, C21, C22, C23, B31, B33, B34, B35, C31, C32, C33, C41, C42, C43, A51, A52, A53, A54, A55 C51, C54</li> <li>○ 14 special Rooms: I.S Lab.(A44), Chem. Lab.(A43), Phy. Lab(A33), Bio Lab.(A34), Art Room(A24), Music Rm(A13), I.T. Rm (B21), Computer Rm(A15), Studio(B32), Lab Preparation Rm(A32) Staff Rm1(B13), Teacher Lounge(B22), Server Rm (A12), Office(B12),</li> </ul> </li> </ul> <p><b>Wi-Fi Standard and Coverage (2)</b></p> <ul style="list-style-type: none"> <li>• use IEEE 802.11 a/b/g/n/ac/ac2/ax network or above in the following rooms/locations               <ul style="list-style-type: none"> <li>○ Geography Room(A14) (80)</li> <li>○ Library(B14) (80)</li> <li>○ Staff Room(A21) (80)</li> <li>○ Covered Playground (300)</li> <li>○ Chapel (300)</li> <li>○ Study Hall(160)</li> </ul> </li> </ul>		

Item	<p style="text-align: center;"><b>Descriptions</b>  <b>[ WiFi 900 (4-year contract) ]</b></p>	Comply key requirement (Y/N)	If not, please provide detail, or Remarks (If any)
5	<p><b>Number of Concurrent Connection per classroom</b></p> <ul style="list-style-type: none"> <li>● For those rooms under item 3 above [<b>Wi-Fi Standard and Coverage (1)</b>], commensurate with maximum 40 devices in a room with at least 3 Mbps upload / download bandwidth per connection. The contractor shall provide a PoC to prove that the required bandwidth can be supported for 40 devices at the same time before tender award</li> <li>● For those rooms/locations under item 3 above [<b>Wi-Fi Standard and Coverage (2)</b>], commensurate with maximum number of said device as specified in the bracket after the room number/name in that room with at least 3 Mbps upload / download bandwidth per connection. The contractor shall provide a PoC to prove that the required bandwidth can be supported for said number of devices at the same time before tender award</li> </ul>		
6	<p><b>Number of classrooms using Wi-Fi concurrently</b></p> <ul style="list-style-type: none"> <li>● 24 rooms</li> </ul>		
7	<p><b>SSID &amp; Authentication Method</b></p> <ul style="list-style-type: none"> <li>● Support Multiple SSID co-exist through an AP</li> <li>● Different SSID can have different authentication method</li> <li>● Authentication method : Support MAC address filter (School can have the ability to add / edit / remove MAC address permit / deny to Wi-Fi connection)</li> <li>● Authentication method : use 802.1x standard based authentication and Hong Kong Education City single sign-on services</li> </ul>		
8	<p><b>Session Control</b></p> <ul style="list-style-type: none"> <li>● <i>Hong Kong Education City authentication service can support one device or multiple devices to connect based on user group (student, teachers, guest)</i></li> </ul>		
9	<p><b>Internet Content Filtering Service</b></p> <ul style="list-style-type: none"> <li>● based on filtering profile commonly adopted by most schools and managed by vendors and the school.</li> </ul>		

Item	<p style="text-align: center;"><i>Descriptions</i> [ <i>WiFi 900 (4-year contract)</i> ]</p>	Comply key requirement (Y/N)	If not, please provide detail, or Remarks (If any)
10	<p><b><i>Relationship with Existing Network Infrastructure and Facilities</i></b></p> <ul style="list-style-type: none"> <li>● not rely on any existing ITED network facilities and ITED cabling of the School, nor interfere with the existing Wi-Fi network of the School. The Wi-Fi network shall be physically separated from the school network</li> <li>● if trunks / conduits for existing School WiFi900 do not have enough space, new trunks / conduits are required to install for the connection</li> <li>● if floor cabinets (racks) for existing School WiFi900 do not have enough space, new racks are required to install for the network connecting devices and related equipment</li> <li>● if cables for existing School WiFi900 are not enough, new cables are required to install</li> <li>● All new trunks, conduits, cabinets and cables are required to compromise with school before the actual installation / mounting</li> </ul>		
11	<p><b><i>Broadband Network</i></b></p> <ul style="list-style-type: none"> <li>● utilize the existing broadband for the WiFi service.</li> <li>● configure the firewall/router to allow both school network and WiFi network to access Internet.</li> <li>● configure the firewall/router for internet access to school internal resource.</li> </ul>		
12	<p><b><i>Managed Service</i></b></p> <ul style="list-style-type: none"> <li>● operate the Wi-Fi network and the dedicated broadband line, using managed service model, by a self-owned network operation centre with international quality management, IT service management and information security certification grant, provide end-to-end service with single point of contact including configuration, provisioning of service, proactive monitoring, maintenance and regular reporting</li> </ul>		
13	<p><b><i>Service Level Agreement</i></b></p> <ul style="list-style-type: none"> <li>● ensure at least 99.7% availability of the Wi-Fi services</li> <li>● support four-hour response time and four-hour service recovery with active monitoring, helpdesk support</li> <li>● support hours from Mon to Sat 7:00 am to 6:00 pm</li> <li>● provide monthly monitoring reports for the School</li> </ul>		

Item	<p style="text-align: center;"><b>Descriptions</b> [ WiFi 900 (4-year contract) ]</p>	<p style="text-align: center;"><b>Comply key requirement (Y/N)</b></p>	<p style="text-align: center;"><b>not, please provide detail, or Remarks (If any)</b></p>
14	<p><b><i>Redundancy</i></b></p> <ul style="list-style-type: none"> <li>● At least 1 spare AP should be stored in the School to increase the availability of the WiFi service.</li> <li>● In case of machine failures, a spare device must be provided to the School without any charge within 24 hours before the failed device can be fixed.</li> </ul>		
15	<p><b><i>Contract End Arrangement</i></b></p> <ul style="list-style-type: none"> <li>● All newly added / provided trunks, conduits, cables, LAN ports and power points, if has/have, shall be considered as fixture of the School and shall become the property of the School, the Contractor shall remove or keep those provisions according to the instruction of the School</li> <li>● Contractor can remove the network equipment such as switch, routers, and access points. If not, please state clearly.</li> </ul>		
16	<p><b><i>Delay of Schedule</i></b></p> <ul style="list-style-type: none"> <li>● If the Contractor fails to provide any part of the WiFi service which shall be ready for use in the School within 60 days after the target Ending then notwithstanding anything else contained in this Contract the School shall be entitled to terminate this Contract with forthwith by giving written notice to the Contractor and to recover from the Contractor the amount of all damages and loss suffered by the School resulting from such failure, including without limitation to any damages and loss resulting from the termination of related service orders.</li> <li>● Within one (1) week of the termination of this Contract, the Contractor shall collect its own Hardware and Software at his own cost after the contractor has removed the School Data in the Hardware.</li> <li>● The Contractor shall reinstate and make good the concerned area of the School to the satisfaction of the School after removal of the hardware.</li> </ul>		
17	<p><b><i>Technical Detail</i></b></p> <ul style="list-style-type: none"> <li>● Please refer to the information below.</li> </ul>		

## **Technical Detail of the required WiFi 900 Infrastructure (Equipment & detail of Services)**

### **1. Wi-Fi Network**

- 1.1. The Wireless LAN (WLAN) System of the Wi-Fi network shall support simultaneous dual-operation-mode that is FAT Access Point (AP) and Thin Access Point are both supported together with WLAN Controller. WLAN Controller shall be capable of fully centralized provisioning, configuration and monitoring all APs functionalities; a backup of the WLAN Controller shall be available.
- 1.2. Resilience service platform should be designed with redundant WLAN controller, servers, core switches, web gateways shall be provided for redundancy purpose and the failover from the primary platform equipment to secondary platform equipment can be achieved without any manual interruption.
- 1.3. The thin client WLAN Access Point (AP) shall be a high-performance wireless network access device, which shall be connected with the Power over Ethernet (PoE) Access Switches via Structured Cabling System. Appropriate type of connection cables between WLAN APs and the antenna shall be provided.
- 1.4. The WLAN APs shall be compatible with IEEE 802.11a/b/g/n/ac/ac2/ax standard or above (according to the rooms specified at item 3 and 4 in the specification table above), support dual band of 2x2:2 in 2.4GHz and 5GHz. For WiFi AX, support dual band of 2x2:2 in 2.4GHz and 4x4: 4 in 5GHz as well as OFDMA, MU-MIMO and Internal antennas.
- 1.5. The Contractor shall design the WLAN System to provide the coverage for the required wireless coverage place. The received signal strength measurement from the Wi-Fi Service at the Wi-Fi client device (such as tablet PC or notebook computer) is no worse than -68 dBm. The Contractor shall provide certificate or test report to illustrate that the Wi-Fi client device for testing satisfies the power emission requirement.
- 1.6. The WLAN AP shall support DHCP, PoE, VLANs, WPA2, IEEE 802.1x and certificate authentication.
- 1.7. The WLAN System shall support automatic channel selection, protocol filtering, multicast/broadcast storm filtering and load balancing.
- 1.8. The WLAN system shall allow single or multiple devices per user account to be authenticated using 802.1x and Hong Kong Education City single sign-on service.
- 1.9. Each WLAN AP shall be able to support at least concurrent 40, or otherwise specified amount of users connecting to the network simultaneously. In no circumstance shall the speed of data transmission symmetrically fall below the data rate requirement at any place or any corner or any highly congested area within the areas being covered. In case the transmission speed is below the said data rates, the Contractor shall be responsible for all remedial measures to rectify or configure fine-tuning of antenna or even increase the quantity of the WLAN AP at Contractor's own costs in order to meet the data rate requirement as mentioned in the Specification. A complete set of catalogues with brand and model shall be submitted and highlighted for reference. The catalogues shall show all the features and technical specifications of the products and systems.
- 1.10. The system shall provide bandwidth control per connection.
- 1.11. The WLAN shall allow different authentications by using Service Set Identifiers (SSIDs).
- 1.12. The SSIDs shall be able to be set hidden from searching by Wi-Fi devices. The devices have to manually set SSID to make connection.
- 1.13. Individual APs shall be allowed to be assigned by more than one SSIDs.
- 1.14. The SSIDs shall be isolated by VLANs, so different users under different SSIDs could be bind to corresponding firewall secure policy control and integration purpose.
- 1.15. Antennas of APs shall support 802.11ac Beamforming standard by capable of detecting user locations in real time for direction switching while devices in motion.
- 1.16. The DHCP server shall support at least 30 queries/sec.

- 1.17. The WLAN system shall suspend the session of the user once the session control is expired and the suspension time shall be configured by the school.
- 1.18. The Contractor shall in provision of the service comply with non-interference requirements of and shall not cause interference prohibited under the Telecommunication Ordinance (Cap 106) or any other laws or regulation of Hong Kong.
- 1.19. The WLAN System shall provide termination of idle sessions and control of the duration features.
- 1.20. The WLAN System shall support client roaming across Access Points.
- 1.21. The WLAN system shall cover all areas specified under this tender.
- 1.22. The quotation shall include the cost to provide sufficient quantity and its cabling work required, including but not limited to supply and install the Fibre optics, Cat 6 cable, Conduit, cable patch panel, cable faceplate, Cable patch cord.
- 1.23. The Contractor shall provide complete set of WLAN Systems which consist of Wireless Access Point, Connection Cable, Authentication System, Wireless LAN Controller, PoE Switch, horizontal UTP Cat 6 cable/OM3 Fiber, patch cable UTP Cat 6 / OM3 Fiber Optics, any required license and all associated accessories.
- 1.24. All access points (AP) shall be certified by OFCA and copy of certificates issued by OFCA shall be attached to the proposals.
- 1.25. The Contractor shall ensure that there is no interference between WLAN Access Points due to limited non-overlapping channels assignment when the WLAN AP is installed. The Contractor shall be responsible at his own costs for providing solution to eliminate the interferences including but not limited to reassignment of the non-overlapping channels, adding extra APs with lower transmission power and/or replacement of the WLAN AP.
- 1.26. The WLAN System shall support Web GUI management.
- 1.27. FTP service shall not be allowed in the Wi-Fi network (to avoid exchanging credential and files in plain text without any encryption).
- 1.28. The WLAN System shall support IPV6 addressing method.
- 1.29. The WLAN system deployed shall be non-Asian brand, but not limited to well-known brand in the market.
- 1.30. The contractor shall be authorized by the WLAN vendor to bid for this project to avoid any faked or low quality products are deployed. A vendor certificate shall be provided during the tender submission.
- 1.31. The contractor shall have at least 5 x certified engineers on the proposed WLAN brand for at least 6 months.
- 1.32. Those certified engineers shall be permanent staff of the contractors for at least 6 months in order to ensure the service quality on deployment and after-sales services can be maintained. The Contractor shall submit those supporting documents during tender submission.
- 1.33. The cabling deployed in the Wi-Fi network shall be non-Asian brand, but not limited to well-known brand (e.g. Systimax, AMP, Krone, Brandrex, 3M & etc...).
- 1.34. The contractor shall be authorized by the cabling vendor to bid for this project to avoid any faked or low quality products are deployed. A vendor certificate shall be provided during the tender submission.

## **2. Core Switch**

- 2.1. The Core Switch would be responsible for connecting all PoE access switches in typical floors for WLAN AP while the Core switch shall be a non PoE switch (i.e. The Access Point shall not connect to the core switch directly).
- 2.2. The Core Switch shall be capable of providing the required bandwidth, QoS, and policy-based routing to carry all sorts of information including video, voice, data, image, etc.
- 2.3. The Core switch shall not be the same equipment as the Broadband Router or Firewall. A separate core switch must be provided.
- 2.4. Each Core Switch shall provide a Gigabit Ethernet connection to each PoE Access Switch in typical floors.



- 2.5. The Core Switch shall support Layer 2 and Layer 3 switching and capable of providing the wired speed performance.
- 2.6. The Core Switch shall support basic IP unicast routing protocols, Static route, Routing Information Protocol (RIPv1, RIPv2), inter VLAN routing.
- 2.7. The Core Switch shall support Internet Group Management Protocol (IGMP) snooping and multicast and unicast storm control, Spanning-Tree Protocol.
- 2.8. The Core Switch shall support WebGUI Management, Access Control Lists (ACLs), DHCP Interface and SNMP.
- 2.9. The Core Switch shall support VLANs including support for IEEE 802.1Q and IEEE 802.1p.

### 3. **PoE Access Switch**

- 3.1. The Access Switches shall be deployed to provide high performance interconnectivity between the Core Switches and the WLAN APs on typical floor.
- 3.2. The Access Switch shall consist of 8/12/24/48 x 10/100/1000Base-T Ethernet ports, with minimum of 1 x 1000Base-T / 1000Base-SX SFP Gigabit Ethernet uplink ports connected with the Core Switch.
- 3.3. The Access Switch shall be used for connecting the WLAN APs. The Contractor shall determine the Maximum power loading of the devices to be connected with the PoE Access Switches. The Contractor shall provide additional PoE Access Switch(es) if the total power loading summed up from the PoE devices exceeds the maximum power loading capacity of the PoE Access Switch.
- 3.4. The Access Switches shall support VLAN configuration.
- 3.5. The Access Switches shall be at wired speed.
- 3.6. The Access Switches shall be provided sufficient port density to meet all the required links.
- 3.7. The Access Switches shall support PoE and shall conform to IEEE 802.af / IEEE 802.3af standard, which delivers power over single copper UTP cable for WLAN AP.
- 3.8. The Access Switches shall support Internet Group Management Protocol (IGMP) snooping and multicast and unicast storm control, IEEE 802.1D Spanning-Tree Protocol.
- 3.9. The Access Switches shall support Virtual local area network (VLANs) including support for IEEE 802.1Q and IEEE 802.1p.
- 3.10. The Access Switches shall support WebGUI Management, Access Control Lists (ACLs), DHCP Relay and SNMP.

### 4. **Firewall**

- 4.1. The performance of the Firewall shall not be degraded with 100% Internet bandwidth utilization.
- 4.2. Network Address Translation (NAT) is required.
- 4.3. Access Control Policy is required.
- 4.4. The configuration settings of the appliance shall be allowed to export to files for backup and restore for rapid recovery and shall control all incoming and outgoing Internet traffic, serving as the sole entry and exit point between the Internet and the WLANs in all locations.
- 4.5. The configuration settings of the appliance shall support blocking specific network ports, including ports of Transmission Control Protocol (TCP) and User Datagram Protocol (UDP). Blocking denial of service (DoS) attacks and malformed packet attacks shall also be configured.
- 4.6. The firewall policy should be applied to control network traffic such that public users should be prohibited to access the internal network segments of the School.
- 4.7. The router policy should be applied to shape the guest user VLAN traffic to designated bandwidth requested by School to preserve the e-learning in class which is the primary purpose of School Wi-Fi.
- 4.8. The firewall should support UTM features, dual WLAN with IPS Throughput 2.2 GB or above, load balance feature allow school has the administrative right to do bandwidth control and routing.

## 5. **Service Requirements**

- 5.1. The Contractor shall be responsible for the total project management and shall assign a person to act as the single contact point to the School regarding all related activities of the contract. This single contact point cannot be transferred to a sub-contractor unless explicitly agreed by the School. Contractor should formally inform the School in writing if there is a change of contact point.
- 5.2. The project manager of this project shall be the permanent staff of the contractor for at least 6 months. The contractor shall prove that the project manager is the permanent staff by providing supporting documents during tender submission.
- 5.3. The project manager shall attend the project meeting before completion of the project.
- 5.4. The Contractor shall provide rack/cabinet or use existing school rack if there is available rack space. All switches/firewall shall be properly installed into wall mounted cabinet or rack.
- 5.5. Cables shall be labeled with connected port and its device id.
- 5.6. All the equipment shall be labeled with an identifiable id.
- 5.7. The placement of cables, cabinets, racks and appliances shall be shown on the network diagram.
- 5.8. Switches and/or other appliances shall be properly installed into cabinet/rack with appropriate ventilation.
- 5.9. 13A power cord(s) shall be bundled with appliance(s).
- 5.10. Cable shall be properly set up onto appropriate cable management guide.
- 5.11. Contractor should make sure that the actual environment is suitable for the installation and operation of equipment with School agreement in advance, and make necessary suggestions, if any.

## 6. **Service Level Requirements**

- 6.1. The Contractor shall provide incident/problem report to the School within 5 working days after each incident and the resolution taken.
- 6.2. The Contractor shall derive mechanism, including forms and reference tables for measuring and recording the Service Level Measures, to ease the administration and monitoring by the School.
- 6.3. Advance notice by at least 2 weeks shall be given to the School prior to all scheduled maintenance. At most 4 scheduled maintenances per year are excluded from the calculation of Service Levels. No more than 1 hour service interruption or an agreed time slot is accepted for each scheduled maintenance.
- 6.4. Service Level, expressed in percentage, is the ratio of actual available time to the scheduled available time for the Wi-Fi network of the School and is calculated according to the following formula:
  - Service Availability Level = (Schedule Uptime within the month– Unscheduled Downtime within the month) / Scheduled Uptime within the month, where
    - Scheduled Uptime: The duration, in unit of minutes, for the Wi-Fi network of the School is scheduled to be available for the month. The duration will exclude the scheduled downtime, which is defined as duration agreed between the School and the Contractor during which the service may be deliberately made unavailable to users.
    - Unscheduled Downtime: The amount of time, in unit of minutes, that the service are unavailable due to equipment failure or other reasons under the responsibility of the Contractor.

## 7. **Service Level Rebates**

- 7.1. The Service Rebates to the School operate as liquidated damages for the performance fallen short of the target service levels over a period of one month. The service measures stipulated in Point 6 (Service Level Requirements) above will be used to determine the Service Rebates in Service Availability (S1) and Service Resumption Time (S2).
- 7.2. The application of the Service Level Rebates adjustment to the monthly charge will commence with effective from the acceptance of the reliability test.
- 7.3. For each month, the Service Rebates for different service measures (S1, S2) will be calculated as below if the Contractor cannot meet the target Service Levels for the Wi-Fi network of the School under the availability agreed:

$$\text{Failure Hour} \times [(\text{Yearly Subscription Fee}) / (365 \times 24)] \times 2$$

*where Failure Hour: The unscheduled downtime or the time to resume the network due to the failure of hardware or software which is provided by the Contractor. Failure Hour is calculated in the increment of 0.5 Hour.*

- 7.4. The Service Rebates of the Wi-Fi network of the School, if any, will be paid by crediting the invoice of the following month.

## 8. **Helpdesk Service**

- 8.1. The Helpdesk Service shall maintain dedicated hotline, including phone, email and fax, for enquiries and complaints.
- 8.2. The Helpdesk Service shall answer enquiries and complaints originated from the School concerning the Service.
- 8.3. The Helpdesk Service shall operate from Mon to Sat 07:00 am to 06:00 pm.
- 8.4. The Helpdesk Service shall maintain call logs on enquiries and complaints. The information shall be included but not be limited to date, time, description of issues, contact information, and follow-up actions. The Contractor shall observe and comply with Personal Data (Privacy) Ordinance in handling all information relating to these enquiries and complaints.
- 8.5. The Contractor shall provide the following information concerning the Helpdesk service related to the implementation of the Service:
  - Detailed information of the helpdesk office, such as address, phone number, fax number; and
  - Facilities, computer systems and equipment provided in the helpdesk office, such as private branch exchange (PBX), keyline telephone system (KTS), interactive voice response system (IVRS) and voice recording system.
- 8.6. The Contractor shall provide helpdesk staff with the necessary tools, including but not limited to hardware and software, related training for supporting the Service.
- 8.7. The Contractor shall not make use of the Helpdesk Service to transmit any message or conduct any activity to the School, which is not connected with the provision of the Service. The School shall have the full discretion to determine whether any such message or activity is in breach of this provision. The Contractor shall forthwith stop transmitting such message or conducting such activity and refrain from doing it further once the School has notified the Contractor in writing or verbally of its determination.

## 9. **User Acceptance Test**

- 9.1. The Contractor shall conduct tests with the School before the service is officially accepted and subscription started. Tests shall include User Acceptance Test for reliability and performance of the hardware and software, and also the monitoring, operation support and all other aspects related to the Service Level Agreement of the Service. At least 14 school working days of trial period is expected for service monitoring after testing.
- 9.2. The contractor will be required to perform test making reference to the User Acceptance Test and System Test documents at [www.edb.gov.hk/ited/Wi-Fi900](http://www.edb.gov.hk/ited/Wi-Fi900). They include the types of testing to be performed, the requirements to be tested, the testing environment, testing tools and pass/fail criteria as reference to the Contractor.

- 9.3. The Contractor shall upon request by the School arrange briefings to the School and/or Responsible Parties of the School, with briefing materials, prior to the User Acceptance Test when required.
- 9.4. The Contractor shall provide detailed acceptance test plan and a step by step testing procedure with expected results against the requirements set out in this specification.
- 9.5. The Contractor shall provide, configure and set up the proper software and hardware for the School to carry out the User Acceptance Test.
- 9.6. The Contractor shall be required to carry out tests to demonstrate that the equipment and system meet the specification and other contractual requirements. The Contractor shall also be responsible for the timely preparation and compilation of all test schedules, test procedures and test reports.
- 9.7. The Contractor shall follow the agreed standards as laid down in this specification for the testing methods and procedures.
- 9.8. The Contractor shall submit a schedule of site performance and commissioning tests at least 3 working days prior to the commencement of the scheduled commissioning date.
- 9.9. Special tools, test equipment, test objects and simulators required for the demonstration of either bench or commissioning tests shall be made available by the Contractor at no extra charge to the School.
- 9.10. All test equipment used by the Contractor shall be properly and periodically calibrated. Measuring standards used in calibration shall be traceable to international or national measurement standards, or to an industry recognized manufacturer's reference, subject to approval of the School.
- 9.11. Calibration procedures and results shall be documented and signed by certifying body where applicable. The Contractor may be requested to show evidence of calibration of test equipment by submission of copies of these calibration records prior to conduction of any tests.
- 9.12. The Contractor shall submit the User Acceptance Test report within 3 working days. The acceptance of the installation will only be granted after receiving a satisfactorily UAT report from the Contractor.
- 9.13. All equipment to be installed may be subject to inspection and bench testing. The Contractor shall meet the cost of deliveries for bench test. Notwithstanding, the Contractor shall have carried out the tests in accordance with the requirements and procedures stipulated in this specification and submitted the associated test reports for inspection.

## 10. Termination of Service

- 10.1. The School reserves the right to terminate all or part of the Service at any time with written notice of 10 working days in advance if:
  - The Contractor fails to meet the target service levels under Service Level Requirements for two consecutive months, or three months in total within the committed subscription period;
  - The School suspects that unauthorized activity has occurred or is occurring in relation to the Service;
  - The provision of the Service will cause the School to be in breach of any applicable law;
- 10.2. The Contractor shall provide to the School and implement the Exit Plan in accordance with:
  - The Contractor shall provide to the School an Exit Plan with feasible arrangements before the committed subscription contract date;
  - If the School considers the Exit Plan as not satisfactory, it will notify the Contractor with comments. The Contractor shall revise the Exit Plan by taking into consideration of the School's comments and provide to the School with five (5) working days after the date of receiving the School's comments. If the Exit Plan has been considered as not satisfactory for three or more times, the School shall have the right to terminate this Contract by giving 10 days' notice in writing;

- Detailed exit procedures, disengagement timetable and actions to be taken by both the Contractor and the School for smooth termination of all or any part of the Service;
- The Exit Plan shall aim at enabling the School or its authorized parties to perform in substitution for the Contractor and to eliminate or minimize any disruption or deterioration of the Service. The Exit Plan shall contain, but not limited to the following information:
  - ◊ Detailed exit procedures, disengagement timetable and actions to be taken by both the Contractor and the School for smooth termination of all or any part of the Service;
  - ◊ Any information that is necessary for the School or a new service provider to continue the provision of the Service;
  - ◊ Details of the Contractor's personnel and other resources that will assist the School or the School's authorized parties during the handover;
  - ◊ All provisions of facilities such as trunks, conduits, cables, LAN ports and power points, shall be considered as fixture of the School venues and shall become the property of the School. The Contractor shall remove or keep those provisions according to the instruction of the School. Contractor can remove the network equipment such as switch, routers, and access points.
- The Contractor shall be responsible for the implementation and execution of the Exit Plan and shall ensure that the exit plan is carried out in a timely and orderly manner.

## 11. **Wi-Fi Project Reference**

- 11.1. The Contractor shall list out 5 Wi-Fi 100/900 reference cases with compliment letters.
- 11.2. The compliment letters shall be provided during the tender submission
- 11.3. To prove that the Contractor has the capability on Wi-Fi system design and maintenance, The Contractor shall list out 20 reference cases in non-subscription model which uses the same wireless solution vendor as the proposed brand in last 3 years while the cases in a single year shall not be less than 5.
- 11.4. The project references shall be provided during tender submission.

## 12. **Sub-Contracts**

- 12.1. The Tenderer shall be the prime Contractor for all the services specified in Part X and Part Y of this contract. The Tenderer shall be the single point of contact for all contractual matters.
- 12.2. The Tenderer shall be liable for the performance or breach of any provisions of the contract by Sub-Contractors.
- 12.3. The Tenderer shall provide details of the sub-contract service for the Wi-Fi operation and maintenance of the Sub-Contractors in the format listed on Section 5 of Part Y. The hierarchy of the sub-contracting shall also be clearly stated below. If there are no Sub-Contractors, please enter nil.
- 12.4. No Sub-Contractor(s) specified in Section 5 of Part Y shall be replaced unless prior written consent has been given by the School.
- 12.5. The Tenderer shall ensure that the quality of the service rendered by the Tenderer shall not be affected due to any change of Sub-Contractors;
- 12.6. The Tenderer shall not be relieved from any of its obligations hereunder by entering into any sub-contract for the performance of any part of this contract. If request by the School, the Tenderer shall describe which part of the service shall be performed by the Sub-Contractor(s) in the sub-contract(s) between the tenderer and its Sub-Contractor(s).

### 13. Schedule of Work

The Contractor shall provide the service according to the following schedule.

Phase	Items	Starting Date	Subscription Period	Service fee
I	Build up of WiFi network (including UAT)	On or before 31 July 2021	31 July 2021	0
II	Trial Period of Service	1 August 2021	31 Aug 2021	0
III	Subscription of service	1 Sep 2021	31 Aug 2025	Quoted price

### 14. Deliverables

14.1. The Contractor is required to provide the following deliverables for the WiFi network design:

- Master Activity Plan
- Network Configuration Report and Network Diagram
- Network Test Plan and Network Test Result Report
- Operation Manual for End User
- User Acceptance Test Plan
- Exit Plan

14.2. The Contractor is required to provide the monthly monitoring report with the following items:

- Network Health Report
- Network Usage Report
- Reporting of security incidents
- Reporting on trend and statistics of incident and their analysis
- Reporting of the failure rate for all equipment with detailed fault analysis
- Problem log and incident log for critical failure of the network
- Statistical report on the type and no. of calls
- Summary of the outstanding enquiry for the month-to-date

### 15. Price Proposal and Tender submission

15.1 The Service Provider is required to provide a breakdown on the service charges for each of the service items as set out in the Price Proposal at **PART V - TENDER SCHEDULE**. Failure in complying with this requirement will render the quotation disqualified.

15.2 Please note that, the School has the absolute discretion to accept the whole of the Services or just part of the Services as listed out by items in the Price Proposal.

15.3 Set up cost will not be considered as a part of the cost in subscription mode

15.4 Please provide two sets of quotation documents for processing of the quotation.

15.5 The Service Provider is required to submit the following information and document.

- A Statement of Compliance to provide response that the quotation complies with all requirements stated in this Specification.
- Price Schedule
- No upfront cost or one off cost schools shall be paid throughout the entire subscription period.
- Proposed AP location mark on the Floor plan.

- Proposed Network infrastructure show on the Network Diagram.
- Implementation Plan.
- WiFi Access Point certificates issued by OFCA.
- Product information including technical and descriptive literature and catalogues. Information provided by the manufacturer shall be able to substantiate that the products offered meet the mandatory Technical Specification.

## **16. Selection criteria**

School is looking for a contractor based on the following criteria

- Proposed pricing fit with school budget
- Solution suitability to school
- Equipment and services level that can offer
- Case reference
- Other useful information

## **17. Terms of payment**

The subscription will be paid in arrears of each month during the subscription period.

## **18. Enquiry**

For enquiry, please contact Mr. Wong Lik Wai of the School at [wlw@ucc.edu.hk](mailto:wlw@ucc.edu.hk) or by phone at 2777 8344.

**PART V - TENDER SCHEDULE** (to be completed in duplicate)

**1. Price details for Standard Provision**

WiFi Service Subscription	4 years			School's choice on confirmation
	Monthly payment	Annual payment	Lump sum payment	
<p><i>(Requirement as stated in Part IV)</i>  <b>Wi-Fi Standard and Coverage (1)</b></p> <ul style="list-style-type: none"> <li>○ 26 Classrooms: C11, C12, C13, B23, B24, B25, C21, C22, C23, B31, B33, B34, B35, C31, C32, C33, C41, C42, C43, A51, A52, A53, A54, A55 C51, C54</li> <li>○ 14 special Rooms: I.S Lab.(A44), Chem. Lab.(A43), Phy. Lab(A33), Bio Lab.(A34), Art Room(A24), I.T. Rm (B21) Music Rm(A13), Computer R(A15), Office, Staff Rm1 Server Rm, Lab Preparation Rm 1, Teacher Lounge, Studio</li> </ul> <p><b>Wi-Fi Standard and Coverage (2)</b></p> <ul style="list-style-type: none"> <li>○ Library (80)</li> <li>○ Geography Room (80)</li> <li>○ Staff Room (80)</li> <li>○ Covered Playground (300)</li> <li>○ Chapel (300)</li> </ul>				
<b>Total in HK\$</b>				



**Deviation of your proposal from the school requirements specification as stated in PART IV.**

<b>Requirements specification</b> <i>(Refer to PART IV)</i>	<i>Please state clearly any deviations of your proposal from the school requirement specification.)</i>

**2. Details of equipment to be proposed in the Buildup of WiFi network in the School**

*(Please state whether the school own the equipment at the end of contract period. If so, please also state the annual cost of maintenance service for that equipment.)*

Items	Brand and Model	Quantity	Brand New (Y/N) ?	Ownership at the end of contract period
WiFi Controllers				
Access Points				
Router/Firewall	Firewall throughput = _____ IPS throughput = _____ Firewall maximum concurrent connection = _____			
Core Switch				

Access PoE Switches				
LAN Cables				
Others (please specify)				

**3. The Tenderer provide details of the sub-contract service involved in the proposal for the project implementation, service operation and maintenance in the format listed below**

Name of Sub-Contractor	Sub-contract service	Roles and responsibility

**4. The Tenderer to provide case reference of past deployment in WiFi100/WiFi900 with Sub-Contractors details in the format listed below**

Name of School	Name of Sub-Contractor	Sub-contract service	Roles and responsibility

**5. A floor plan (provided by the School) is attached.**

Annex I: Floor Plan of the School

**6. Existing WiFi Network Diagram (provided by the School) is attached.**

Annex II: Existing WiFi Network Diagram

**7. New WiFi Network Diagram (provided by the School) is attached.**

Annex III: New WiFi Network Diagram

**8. Document to be submitted**

*(Tick the box if it is submitted)*

- Tenderer background information together with a photocopy of Business Registration Document/Identity Card.
- A Statement of Compliance to provide response that the quotation complies with all requirements stated in this Specification.
- Tender Form Part III and Part V(Tender Schedule)
- Proposed AP location mark on the Floor plan.
- Proposed Network infrastructure show on the Network Diagram.
- Implementation Plan.
- WiFi Access Point certificates issued by OFCA.
- Product information including technical and descriptive literature and catalogues. Information provided by the manufacturer shall be able to substantiate that the products offered meet the mandatory Technical Specification.
- Reference cases from education sector on managed service model using the same wireless solution vendor as the proposed brand in last 2 years. The contact of the customer shall be provided for verification.

## 9. Authorization and Signature

We/I understand that if we/I fail to supply the 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 services are obtained from elsewhere.

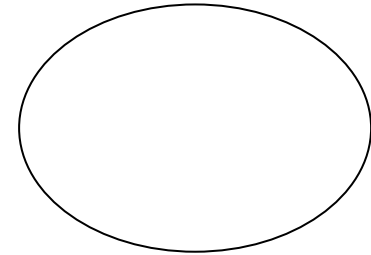
Name of Tenderer: \_\_\_\_\_

Name and Signature of Person authorized to sign Tender

Signature: \_\_\_\_\_

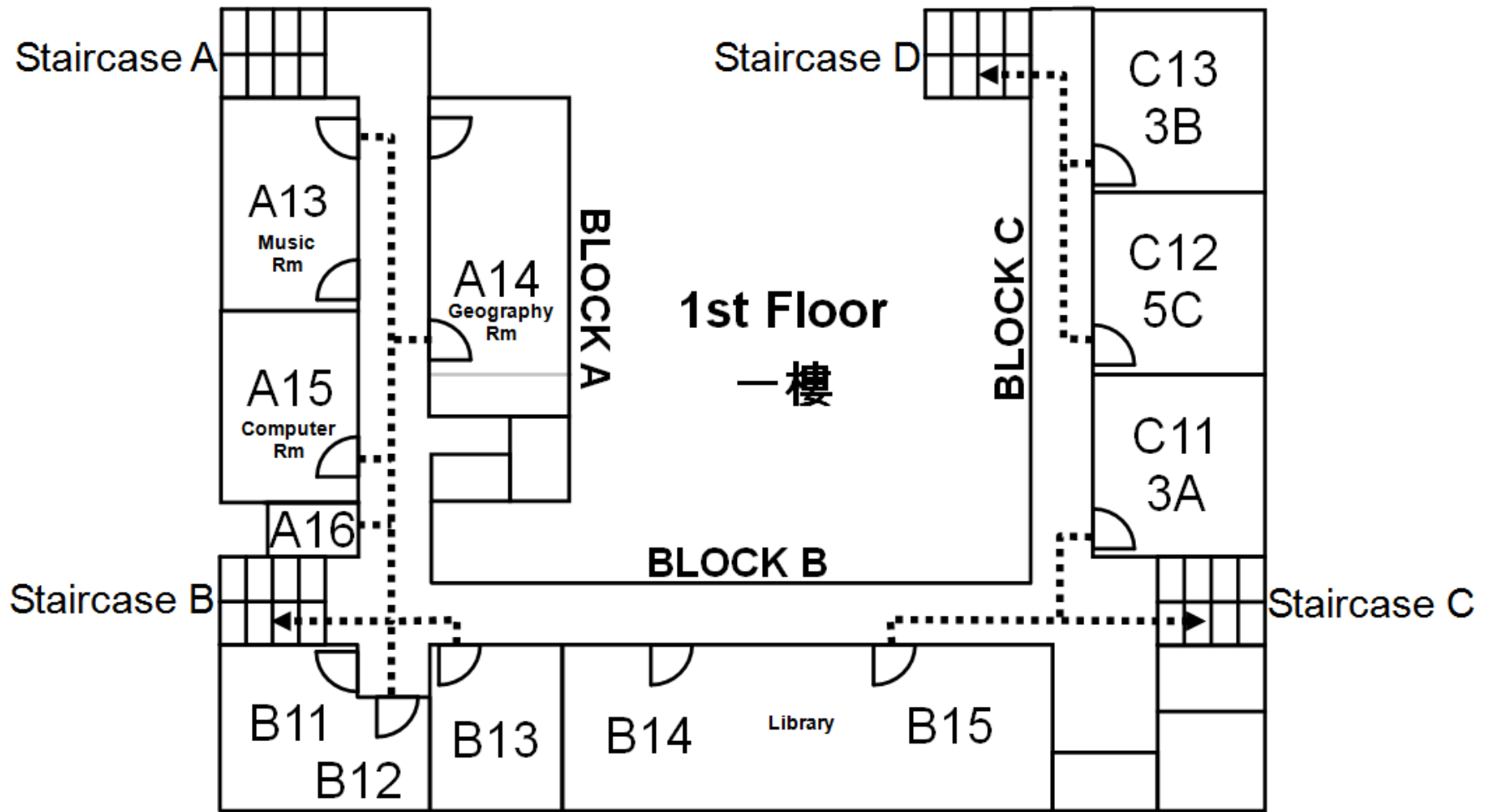
Name (in block letters): \_\_\_\_\_

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

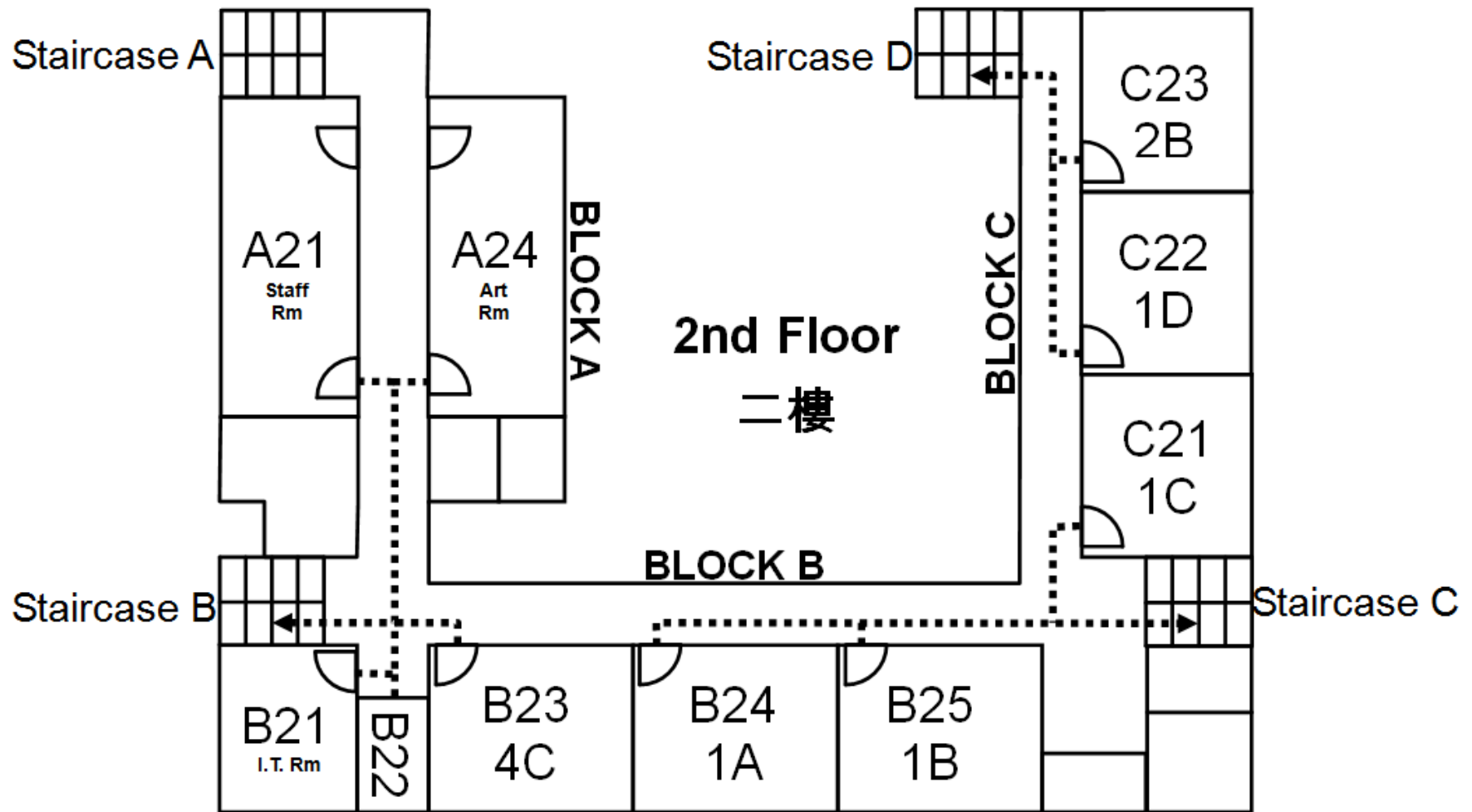


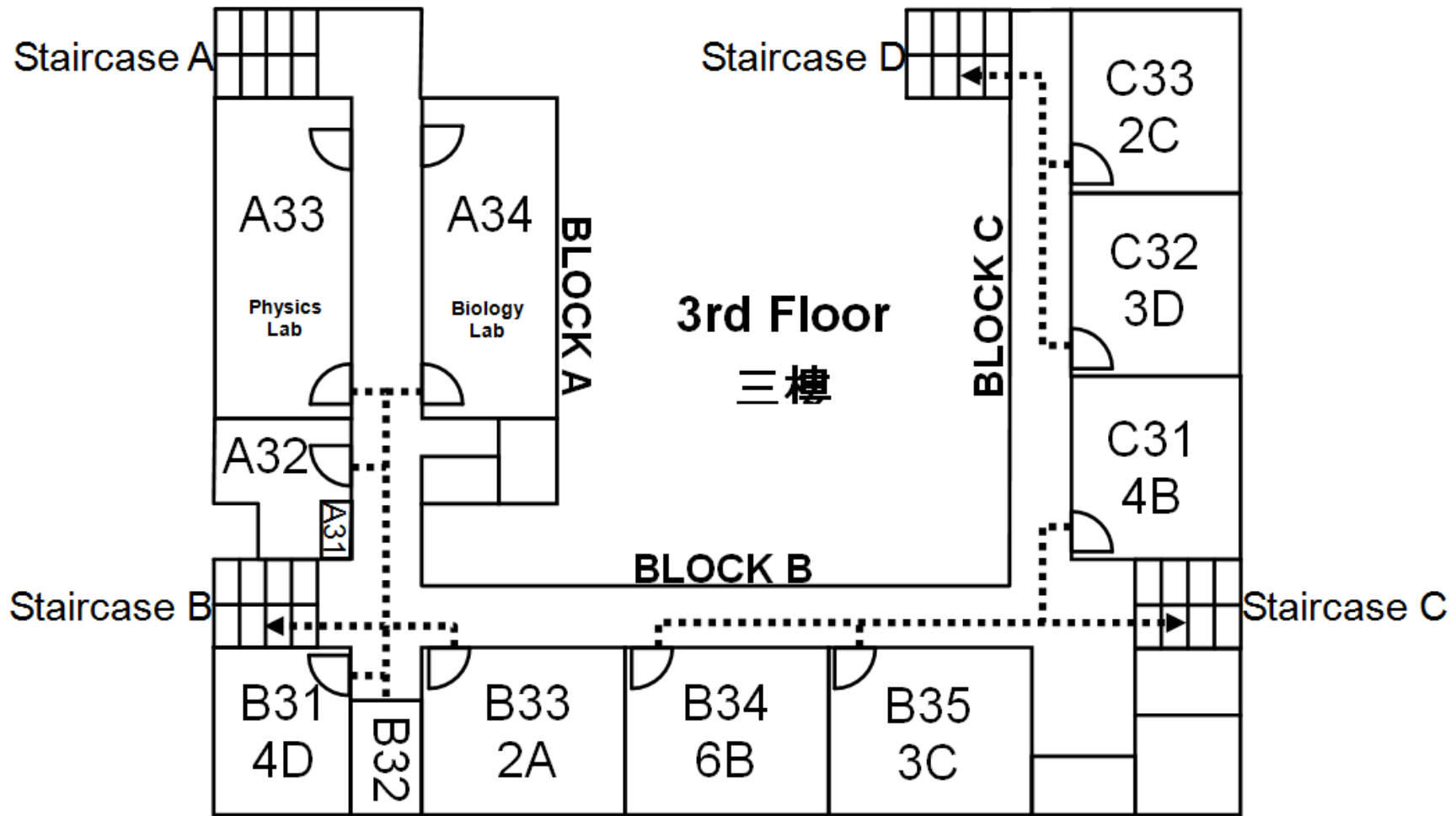
Company Chop

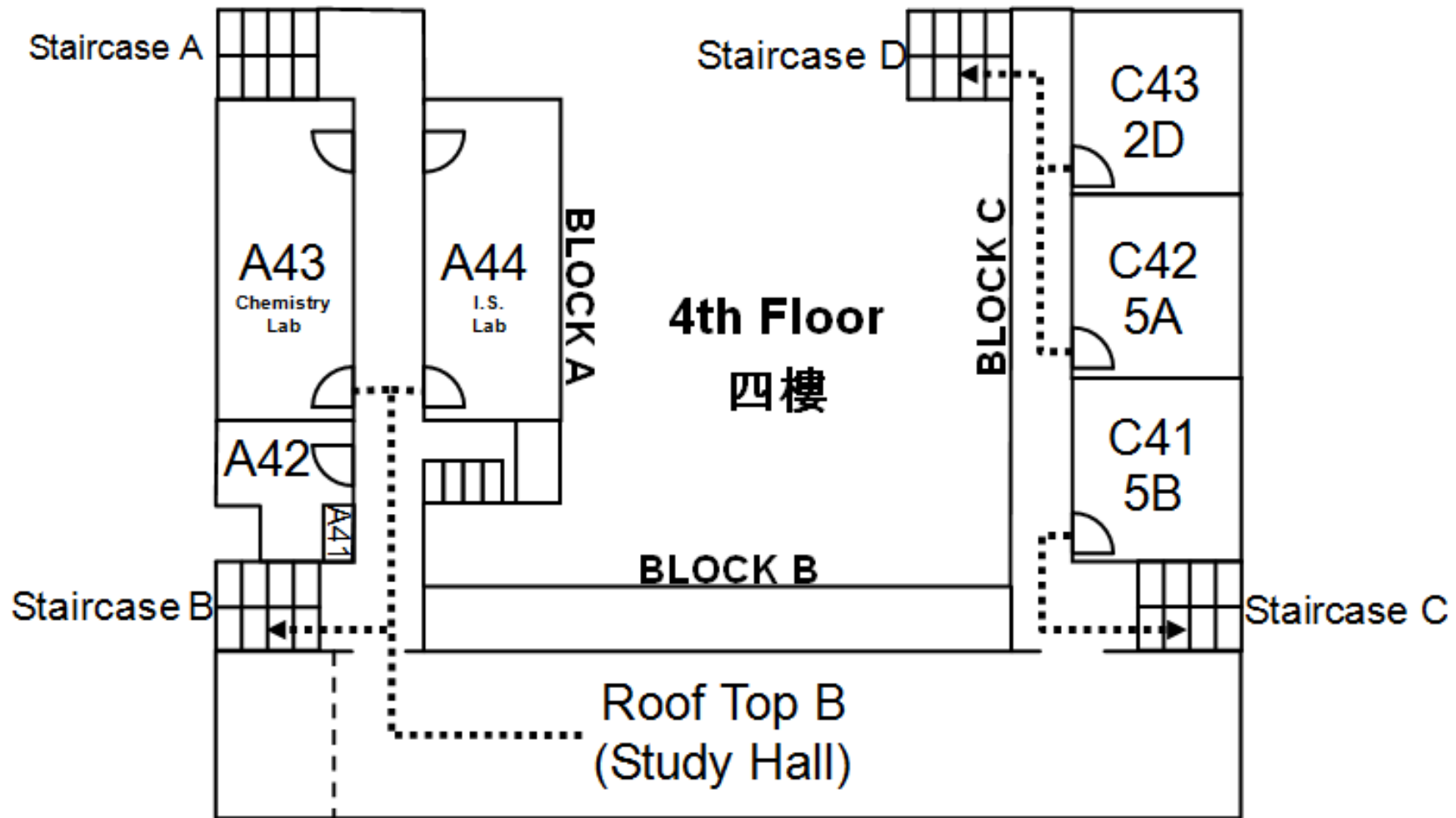
APPENX 1: FLOOR PLAN

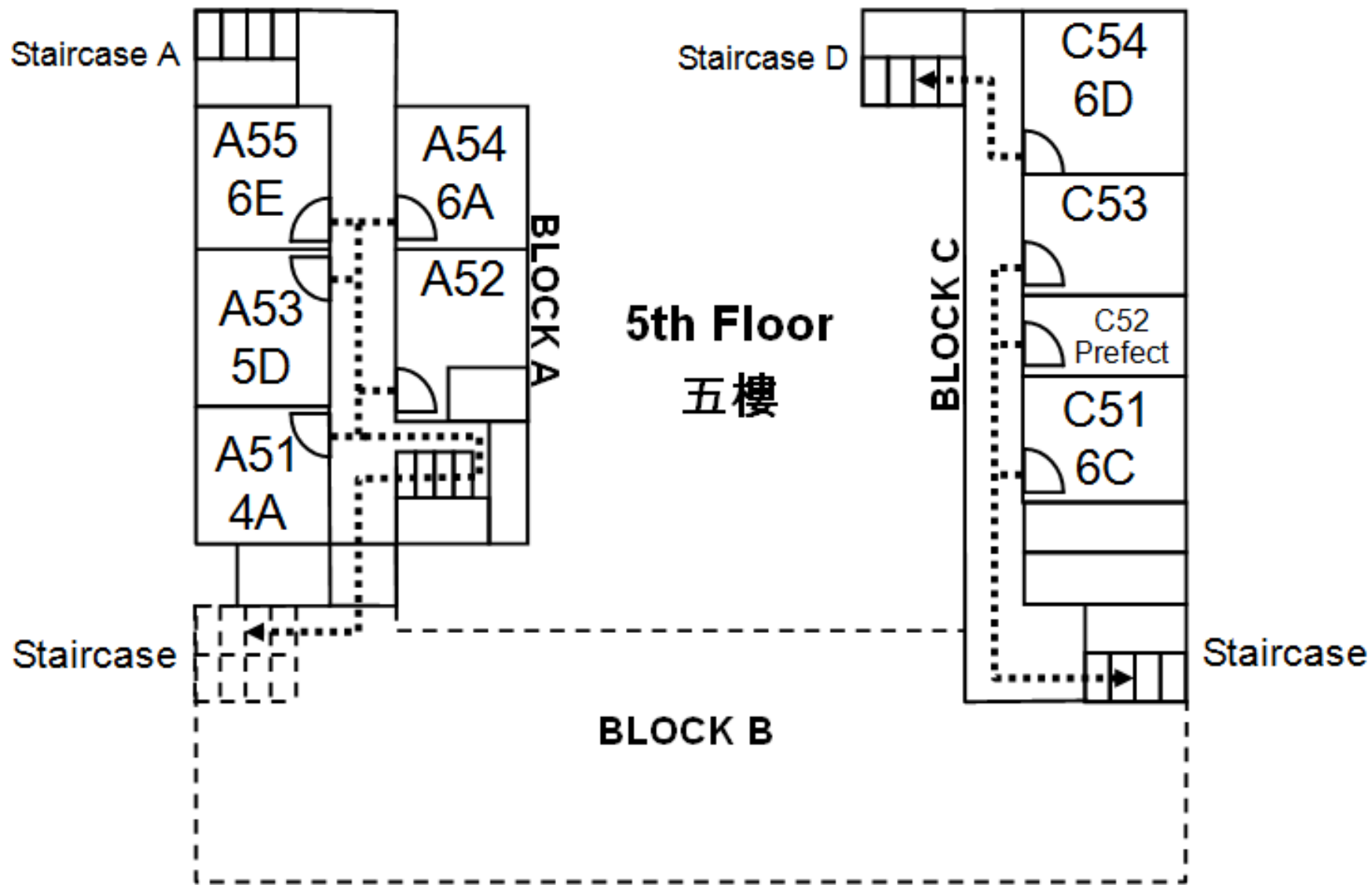




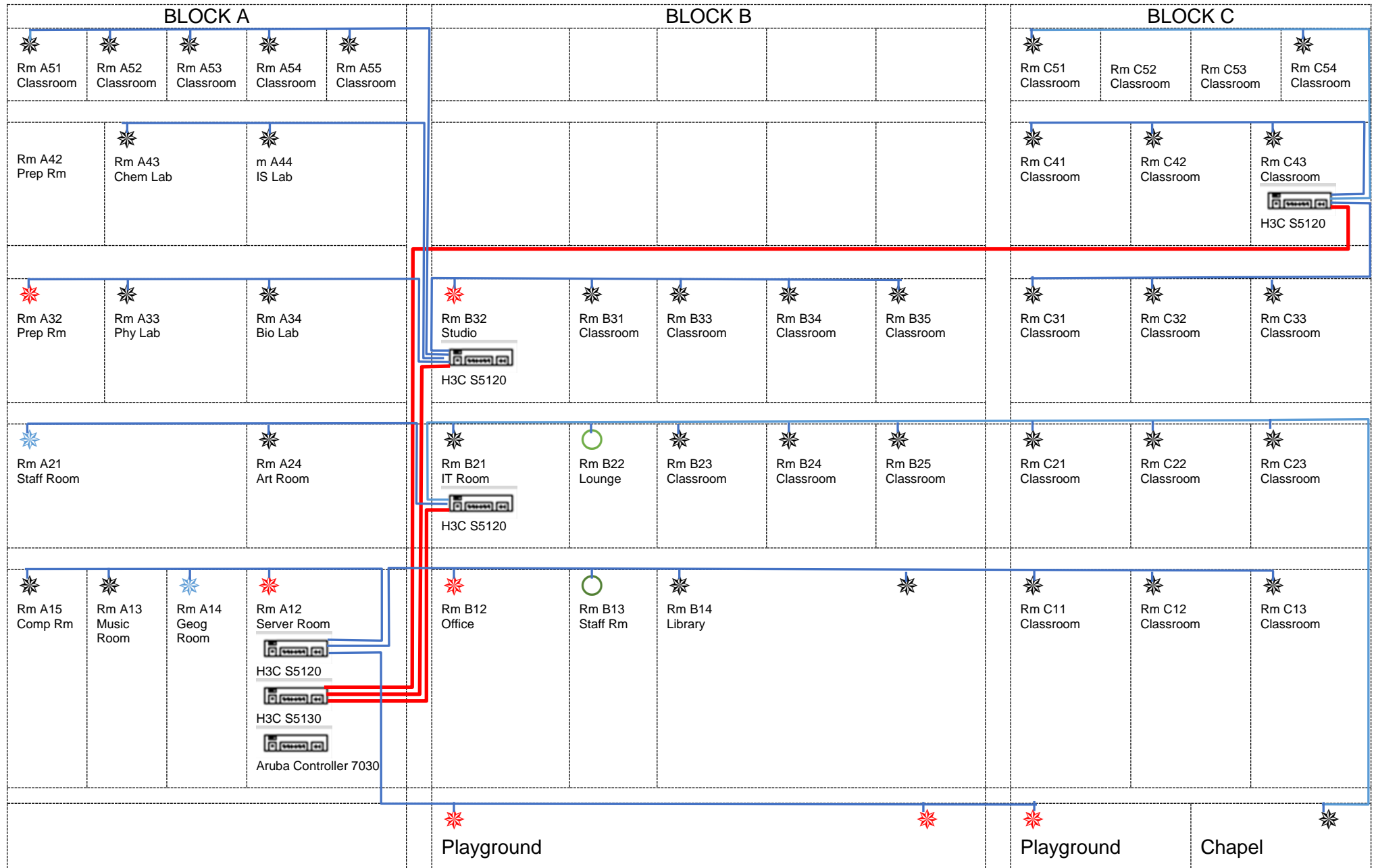






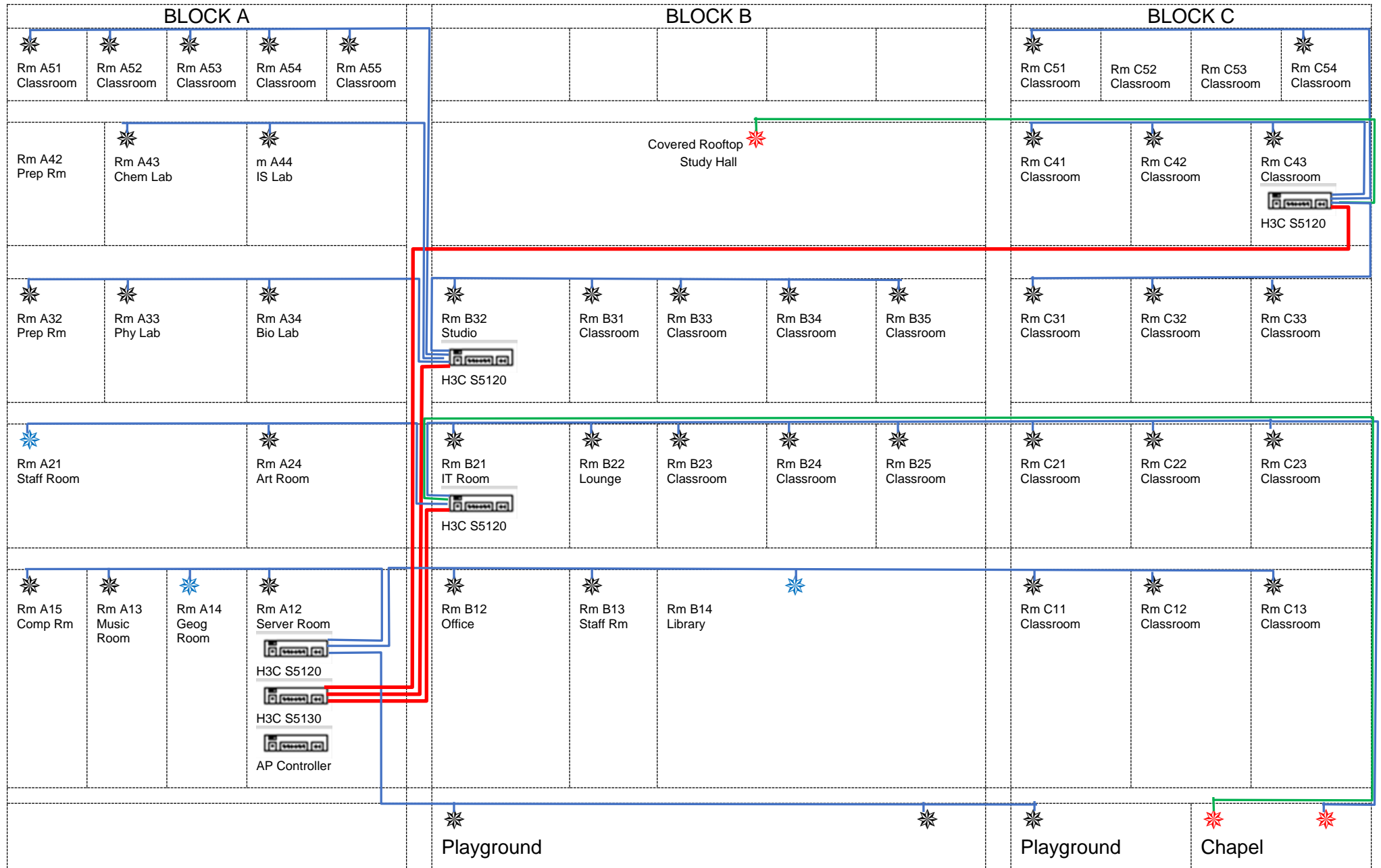


# Annex II: Existing WIFI Network Diagram



- \* 37 Aruba AP-205
- \* 7 Aruba AP-93/105
- \* 2 Aruba AP-215
- 2 WIFI node
- OM3 fribe
- Cat6 cable

# Annex III: New WIFI Network Diagram



\* 43 AP (40 concurrent connections)  
 \* 3 AP (80 concurrent connections)

— OM3 fiber  
 \* 3 AP (160 concurrent connections)

— Additional Cat6 cable  
 — Cat6 cable