



福建中學(小西灣)
FUKIEN SECONDARY SCHOOL
(SIU SAI WAN)

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招標書

學校檔號: T05/2023-2024

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承投學校無線網絡工程及維護

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「承投學校無線網絡工程及維護投標書」

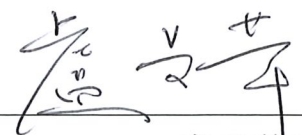
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供應商

福建中學(小西灣)校長


盧曼華啟

2023年12月15日

標書名稱:學校無線網絡工程及維護

標書編號:T05/2023-2024

招標日期:2023年12月15日

截標日期:2024年1月5日

開標時間:4:00 P.M.

承辦商 1 名稱: HGC Global Communications Limited

承辦商 1 地址行 1:17/F, Hutchison Telecom Tower,

承辦商 1 地址行 2:299 Cheung Fai Road,

承辦商 1 地址行 3:Tsing Yi, Hong Kong

承辦商 2 名稱: HKBN Enterprise Solutions Limited

承辦商 2 地址行 1:ROOM 825,8/F, KITEC,

承辦商 2 地址行 2:1 TRADEMART DRIVE, KOWLOON BAY KLN

承辦商 2 地址行 3:按一下或點選這裡以輸入文字。

承辦商 3 名稱: HKT Limited

承辦商 3 地址行 1:23/F, PCCW Tower,

承辦商 3 地址行 2:Taikoo Place, Quarry Bay

承辦商 4 名稱: HKC Network Limited

承辦商 4 地址行 1:Unit A2, 10/F, One Capital Place,

承辦商 4 地址行 2:18 Luard Road,

承辦商 4 地址行 3:Wan Chai, Hong Kong.

承辦商 5 名稱: SmarTone Mobile Communications Limited

承辦商 5 地址行 1:378 Kwun Tong Road 31/F

承辦商 5 地址行 2:Millennium City 2.

承辦商 5 地址行 3:Kwun Tong Kowloon. Hong Kong

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承投供應學校無線網絡工程及維護的投標表格

學校名稱及地址： 福建中學(小西灣) 香港小西灣富怡道二號
 學校檔號： T05/2023-2024
 截標的日期和時間： 2024年1月5日 4:00 P.M.

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日期： _____ 年 _____ 月 _____ 日

姓名(請以正楷填寫)： _____

簽署人： _____

職銜： _____ (請註明職位，例如董事、經理、秘書等)

上方簽署人已獲授權，代表：

_____ 公司簽署投標書，該公司在

香港註冊的辦事處地址為 _____

電話號碼： _____ 傳真號碼： _____

Wi-Fi REQUIREMENTS SPECIFICATION

1. Introduction

The Contractor is invited to

- Build up a Wi-Fi network in **Fukien Secondary School (Siu Sai Wan)** (The School); and
- Provide and maintain a Wi-Fi service through subscription mode.

2. Background

The School will **enhance / top up** the IT infrastructure so as to set up the necessary Wi-Fi environment in the school premises (full Wi-Fi coverage in ALL classrooms, special rooms, playgrounds and school hall) for supporting e-learning in class. Regarding the enhancement of Wi-Fi infrastructure, we would like to hire a contractor to design, build, operate and maintain the whole infrastructure; and to pay for the service by subscription thereafter, through a **subscription** model.

3. User Requirements

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

3.1 Standard Provision

- **Number of Concurrent Connection** – commensurate with the maximum number of students, say **<40 tablets/expected>**, in a class with at least **<2.5Mbps/expected>** upload / download bandwidth per connection
- **Number of classrooms using Wi-Fi concurrently.**
- **Authentication Method** – use 802.1x standard based authentication and Hong Kong Education City single sign-on services.
- **Session Control** –Hong Kong Education City authentication service can support one device or multiple devices to connect based on user group (student, teachers).
- **Internet Content Filtering Service** – Cloud based Internet Content filtering profile in Hong Kong commonly adopted by most schools

with ability to create black / white list filters and managed by vendors and school.

- **Existing Network Facilities** – not rely on any existing network facilities and 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
- **Broadband Network** – use separate broadband for the Wi-Fi service. State otherwise if the existing broadband can be utilized for the service.
- **Managed Service** – operate the Wi-Fi and its networking devices using managed service model, provide end-to-end service with single point of contact including configuration, provisioning of service, proactive remote monitoring, maintenance and regular reporting.
- **Service Level Agreement** – ensure at least 99.7% availability of the Wi-Fi service, support four-hour response time and four-hour service recovery with active monitoring, helpdesk support with support hours from Mon to Sat 8:00 am to 6:00 pm, and provide monthly monitoring reports for the School.
- **Contract End Arrangement** – All provisions of trunks, conduits, cables, LAN ports and power points 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. Contractor can remove the network equipment such as switch, routers, and access points.
- **Industrial standard** – The manufacturer of the access point should be positioned in the “2022 Gartner Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure”.

3.2 Add-on Service (to be aligned with Part Y)

- **Wi-Fi coverage** – to include special rooms and open areas
- **Broadband Service** – provide at least <1Gbps>Mbps Internet connection at school and **allowing further upgrade**
- **Authentication Method** – Authentication method shall includes WPA2 Enterprise, OAuth 2.0 and well as MAC address filtering and user account system being used by school, etc.
- **Session Control** – Guest Landing page shall support session control where access time can be changed by school
- **WLAN system access control** – specific request on MAC address

filtering.

- **MAC Address Monitoring** – The lists of filtering and filtered MAC addresses are to be monitored by **the Contractor or the School**.
- **Internet Content Filtering Service** – Cloud based Internet Content filtering profile in Hong Kong commonly adopted by most schools with ability to create black / white list filters and managed by vendors and school.
- **E-Mail Filtering Service** – can integrate with cloud base email filtering to protect client from email hazard.
- **Zoom Managed Service** – capable to manage the registered Zoom account traffic on the same support platform.
- **Integration of networks** – system integration with existing network with secure design.
- **Voice Traffic Management** – wireless infrastructure is capable to support the Wi-Fi phone solution within the same network
- **Internet addresses subscription & configuration** – for Internet access to school internal resources, via system integration
- **Monitoring of Wi-Fi network** – specific request on monitoring of Wi-Fi network by the Contractor and the School.
- **Redundancy** – increase the availability of the Wi-Fi service.
- **Support hours** – extended support hours and/or reduced time for recovery, the SLA must be 4 hours response and 4 hours onsite
- **Contract End Arrangement** – Other arrangements
- **Mobile Internet Backup Services** - capable to support automatic failover and fallback between fixed broadband circuit and mobile network to provide uninterrupted connectivity when the primary broadband connection is unavailable.

3.3. Deliverables

3.3.1 The Contractor is required to provide the following deliverables for the Wi-Fi 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

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

- Network Health Report
- **Network Usage Report (Based on per AP / per user)**
- 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

4. Technical Specification (Standard Provision)

4.1 Wi-Fi Network

4.1.1 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 Points are both supported together with Cloud-based WLAN Controller in Managed model. Thus local Controller in school is not acceptable. The Cloud-based WLAN Controller shall be located in Hong Kong and is capable of fully centralized provisioning, configuration and monitoring all APs functionalities; a backup of the Cloud-based WLAN Controller shall be available in Hong Kong.

4.1.2 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.

4.1.3 The WLAN APs shall be compatible on both Wi-Fi 5 & Wi-Fi 6 with IEEE 802.11a/b/g/n/ac wave2/ax standard or above, support dual band of minimum 2x2:2 in 2.4GHz and 2x2:2 in 5GHz as well as OFDMA, MU-MIMO and Internal antennas.

4.1.4 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.

4.1.5 The WLAN AP shall support PoE, WPA2, WPA3, IEEE 802.1x and certificate authentication.

4.1.6 The WLAN System shall support automatic channel selection, protocol filtering, multicast/broadcast storm filtering and load balancing.

4.1.7 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.

4.1.8 Each WLAN AP shall be able to support at least concurrent **<40/expected>** 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.

4.1.9 The WLAN shall allow different authentications by using Service Set Identifiers (SSIDs).

4.1.10 Individual APs shall be allowed to be assigned by more than one SSID and up-to eight SSIDs.

4.1.11 Antennas of APs shall be capable of detecting user locations in real time for direction switching while devices in motion, beam forming.

4.1.12 The DHCP server shall support at least 30 queries/sec.

4.1.13 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.

4.1.14 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.

4.1.15 The WLAN System shall provide termination of idle sessions and control of the duration features.

4.1.16 The WLAN System shall support client roaming across Access Points.

4.1.17 The WLAN system shall cover all areas specified under this tender.

4.1.18 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.

4.1.19 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/OS2 Fiber, patch cable UTP Cat 6 / OS2 Fiber Optics, any required license and all associated accessories.

4.1.20 All access points (AP) shall be certified by OFCA and copy of certificates issued by OFCA shall be attached to the proposals.

4.1.21 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.

4.1.22 The WLAN System shall support Web GUI management.

4.1.23 FTP service shall not be allowed in the Wi-Fi network (to avoid exchanging credential and files in plain text without any encryption).

4.1.24 The WLAN system deployed shall be **non-Asian** brand.

4.1.25 Mobile 5G Router for Mobile Internet Backup

- System Features:
 - Support fault alert
 - Support single view for the Wi-Fi and 5G status
 - Support auto failover between School Wi-Fi fixed broadband line and 5G network
- Mobile 5G Router:
 - Cellular: Standard compliant: 3GPP Release 15(both LTE and 5G)
 - LAN port: Support up to 2 x 1GE LAN Ports (RJ45)
- LED display:
 - Signal strength indicator
 - 5G network status
 - LAN Port status
- Peak data rate:
 - Sub-6 DL: 2.3Gbps
 - UL:1Gbps

4.2 Core Switch

4.2.1 The Core Switch would be responsible for connecting all PoE access switches in typical floors for WLAN AP.

4.2.2 The Core Switch shall be capable of providing DHCP Services for IP addresses distribution for mobile devices connecting to the network, and the required bandwidth, QoS, and policy-based routing to carry all sorts of information including video, voice, data, image, etc.

4.2.3 Each Core Switch shall provide a Gigabit Ethernet connection to each PoE Access Switch in typical floors.

4.2.4 The Core Switch shall support Layer 2 and Layer 3 switching and capable of providing the wired speed performance.

4.2.5 The Core Switch shall support basic IP unicast routing protocols, Static route, Routing Information Protocol (RIPv1, RIPv2), inter VLAN routing.

4.2.6 The Core Switch shall support Internet Group Management Protocol (IGMP) snooping and multicast and unicast storm control, Spanning-Tree Protocol.

4.2.7 The Core Switch shall support WebGUI Management for contractor's support, Access Control Lists (ACLs), DHCP Interface and SNMP.

4.2.8 The Core Switch shall support VLANs including support for IEEE 802.1Q and IEEE 802.1p.

4.3 PoE Access Switch

4.3.1 The Access Switches shall be deployed to provide high performance interconnectivity between the Core Switches and the WLAN APs on typical floor and support Cloud-based management

4.3.2 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.

4.3.3 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.

4.3.4 The Access Switches shall support VLAN configuration.

4.3.5 The Access Switches shall be at wired speed.

4.3.6 The Access Switches shall be provided sufficient port density to meet all the required links.

4.3.7 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.

4.3.8 The Access Switches shall support Internet Group Management Protocol (IGMP) snooping and multicast and unicast storm control, IEEE 802.1D Spanning-Tree Protocol.

4.3.9 The Access Switches shall support Virtual local area network (VLANs) including support for IEEE 802.1Q and IEEE 802.1p.

4.3.10 The Access Switches shall support WebGUI Management, Access Control Lists (ACLs), DHCP Relay and SNMP.

4.4 Firewall

4.4.1 The performance of the Firewall shall not be degraded with 100% Internet bandwidth utilization.

4.4.2 Network Address Translation (NAT) is required.

4.4.3 Access Control Policy, Content Filtering and Anti-Malware services are required.

4.5 Service Requirements

4.5.1 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.

4.5.2 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.

4.5.3 Cables shall be labelled with connected port and its device id.

4.5.4 All the equipment shall be labelled with an identifiable id.

4.5.5 The placement of cables, cabinets, racks and appliances shall be shown on the network diagram.

4.5.6 Switches and/or other appliances shall be properly installed into cabinet/rack with appropriate ventilation.

4.5.7 13A power cord(s) shall be bundled with appliance(s).

4.5.8 Cable shall be properly set up onto appropriate cable management guide.

4.5.9 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.

4.6 Service Level Requirements

4.6.1 The Contractor shall provide incident/problem report to the School within 5 working days after each incident and the resolution taken.

4.6.2 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.

4.6.3 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.

4.6.4 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 minute that the services are unavailable due to equipment failure or other reasons under the responsibility of the Contractor.

4.7 Service Level Rebates

4.7.1 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 4.6 will be used to determine the Service Rebates in Service Availability (S1) and Service Resumption Time (S2).

4.7.2 The application of the Service Level Rebates adjustment to the monthly charge will commence with effective from the acceptance of the reliability test.

4.7.3 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:

Failure Hour x [(Yearly Subscription Fees) / (365 x 24)] x 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.

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

4.8 Helpdesk Service

4.8.1 The Helpdesk Service shall maintain dedicated hotline, including phone, email and fax, for enquiries and complaints.

4.8.2 The Helpdesk Service shall answer enquiries and complaints originated from the School concerning the Service.

4.8.3 The Helpdesk Service shall operate from Mon to Sat 8:00 am to 6:00 pm.

4.8.4 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.

4.8.5 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.

4.8.6 The Contractor shall provide helpdesk staff with the necessary tools, including but not limited to hardware and software, related training for supporting the Service.

4.8.7 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.

4.9 User Acceptance Test

4.9.1 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.

4.9.3 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.

4.9.4 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.

4.9.5 The Contractor shall provide, configure and set up the proper software and hardware for the School to carry out the User Acceptance Test.

4.9.6 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.

4.9.7 The Contractor shall follow the agreed standards as laid down in this specification for the testing methods and procedures.

4.9.8 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.

4.9.9 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.

4.9.10 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.

4.9.11 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.

4.9.12 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.

4.9.13 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.

4.10 Termination of Service

4.10.1 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 **one** consecutive months, or **two** 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;

4.10.2 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.

4.11 Wi-Fi Project Reference

4.11.1 The Contractor shall list out at least 200 Wi-Fi 900 reference cases with compliment letters. The compliment letters shall be provided during the tender submission

4.11.2 The project references shall be provided during tender submission.

5. Technical Specification (Add-on Requirement)

級別 B: Wifi 6 with standard performance for use in classroom

	Items	Minimum Requirements
1.	Wifi standards	IEEE 802.11a/b/g/n/ac/ax
2.	Data Ports	Auto-sensing 10/100/1000 Mbps, POE Port (on one port)
3.	Mounting options	Wall Mount on existing AP location
4.	Concurrent Stations	Up to 512 clients per AP
5.	Support Data Rates	802.11ax: able to attain at least 1500 Mbps 802.11ac: able to attain at least 850Mbps
6.	Wireless security	WPA-PSK, WPA-TKIP, WPA2 AES, WPA3-Personal, WPA3-Enterprise, 802.11i, Dynamic PSK, OWE
7.	Peak PHY Rates	· for 2.4GHz: able to attain 550 Mbps · for 5GHz: able to attain 1200 Mbps

級別 C: Wifi 6 with superior performance for use in the School Hall

	Items	Minimum Requirements
1.	Wifi standards	IEEE 802/11a/b/g/n/ac/ax
2.	Data Ports	Auto-sensing 10/100/1000 Mbps, POE Port (on one port)
3.	Mounting options	Wall Mount on existing AP location
4.	Concurrent Stations	Up to 512 clients per AP
5.	Support Data Rates	802.11ax: : able to attain at least 2000 Mbps 802.11ac: : able to attain at least 1600 Mbps
6.	Wireless security	WPA-PSK, WPA-TKIP, WPA2 AES, WPA3, 802.11i, Dynamic PSK, OWE
7.	Peak PHY Rates	For 2.4GHz: able to attain 570 Mbps For 5GHz: able to attain 2400 Mbps

6. Sub-Contracts

6.1 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.

6.2 The Tenderer shall be liable for the performance or breach of any provisions of the contract by Sub-Contractors.

6.3 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.

6.4 No Sub-Contractor(s) specified in Section 5 of Part Y shall be replaced unless prior written consent has been given by the School.

6.5 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;

6.6 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).

7. Schedule of Work

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

Phase	Items	Starting Date	Ending Date	Service fee
I	Build up of Wi-Fi network	On or before JAN 2024	28 JAN 2024	0
II	Subscription of service	10FEB 2023	11 FEB 2026	Quoted price

8. Delay of Schedule

8.1 If the Contractor fails to provide any part of the Wi-Fi service which shall be ready for use in the School within 60 days after the target Ending Date specified in Section 8 of Schedule of Work 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.

8.2 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.

8.3 The Contractor shall reinstate and make good the concerned area of the School to the satisfaction of the School after removal of the hardware.

9. Terms of Payment

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

10.Price Proposal

10.1 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 Y - PRICE SCHEDULE**. Failure in complying with this requirement will render the quotation disqualified.

10.2 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.

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

11. Invitation for Quotations

11.1 Quotations are invited for the execution of the whole of the Services as described in this document. Quotations for part but not all of the Services will not be considered.

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

12. Tender Preparation and Submission

12.1 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.
- Wi-Fi 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.

13. Selection and Payment

School is looking for a contractor based on the following criteria

- Proposed pricing
- Proposed solution
- Equipment and services level
- Case reference
- Other useful information

14. Enquiry

For enquiry, please contact **TZE KEI YUEN FRANK** of the School at **FRANK.TZE@FSS.EDU.HK** or by phone at 2566-9223.

- PRICE SCHEDULE
(to be completed in duplicate)

1. Price details for Standard Provision

		1 year		2 years		3 years		School's choice on confirmation
		Monthly price	Annual price	Monthly price	Annual price	Monthly price	Annual price	
Standard Provision: WiFi 6 or above								
(1) 現有 AP 位置及數量:								
樓層	地點	AP 最低級別*	AP 數量					
G	有蓋操場(2), 黃光漢堂(1), EA(1), 英語角(1)	B	5					
1	禮堂	C	3					
	115, 116, 走廊(1)	B	3					
2	201, 202, 203, 204, 205, 206, 207, 212, 215	B	9					
3	301, Library(302), 303, 305, 310, 312	B	6					
4	401, 402, 403, 404, 405, 406, 407, 413, 415	B	9					
5	501, 502, 503, 504, 505, 506, 507, 512, 514	B	9					
6	601, 602, 603, 604, 605, 606, 607, 612, 614	B	9					
		數量	53					
(2) 另加 AP 位置及數量 (位置並未有喉管)								
樓層	地點	AP 最低級別*	AP 數量					
1	禮堂後台 (覆蓋門口更亭)	B	1					
		數量	1					
Wi-Fi Service Subscription (Requirement as stated in Part A)								
Total in HK\$								

2. Price details for Add-on Services (Offer will be considered on itemized basis)

Add-on Service	Description	1 year		2 years		3 years		School's choice on confirmation
		Additional monthly price	Additional annual price	Additional monthly price	Additional annual price	Additional monthly price	Additional annual price	
Wi-Fi coverage for other areas	As specified in Part 3 and Part 4							
Broadband service								
Authentication Method								
Session Control								
WLAN Access Control								
Internet Content Filtering Service								
Integration of networks								
Internet addresses subscription & configuration								
Monitoring of Wi-Fi network								
Redundancy								
Wi-Fi Service Recovery								
Support hours								
Reporting								
Contract End Arrangements								

3. The Tenderer to 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

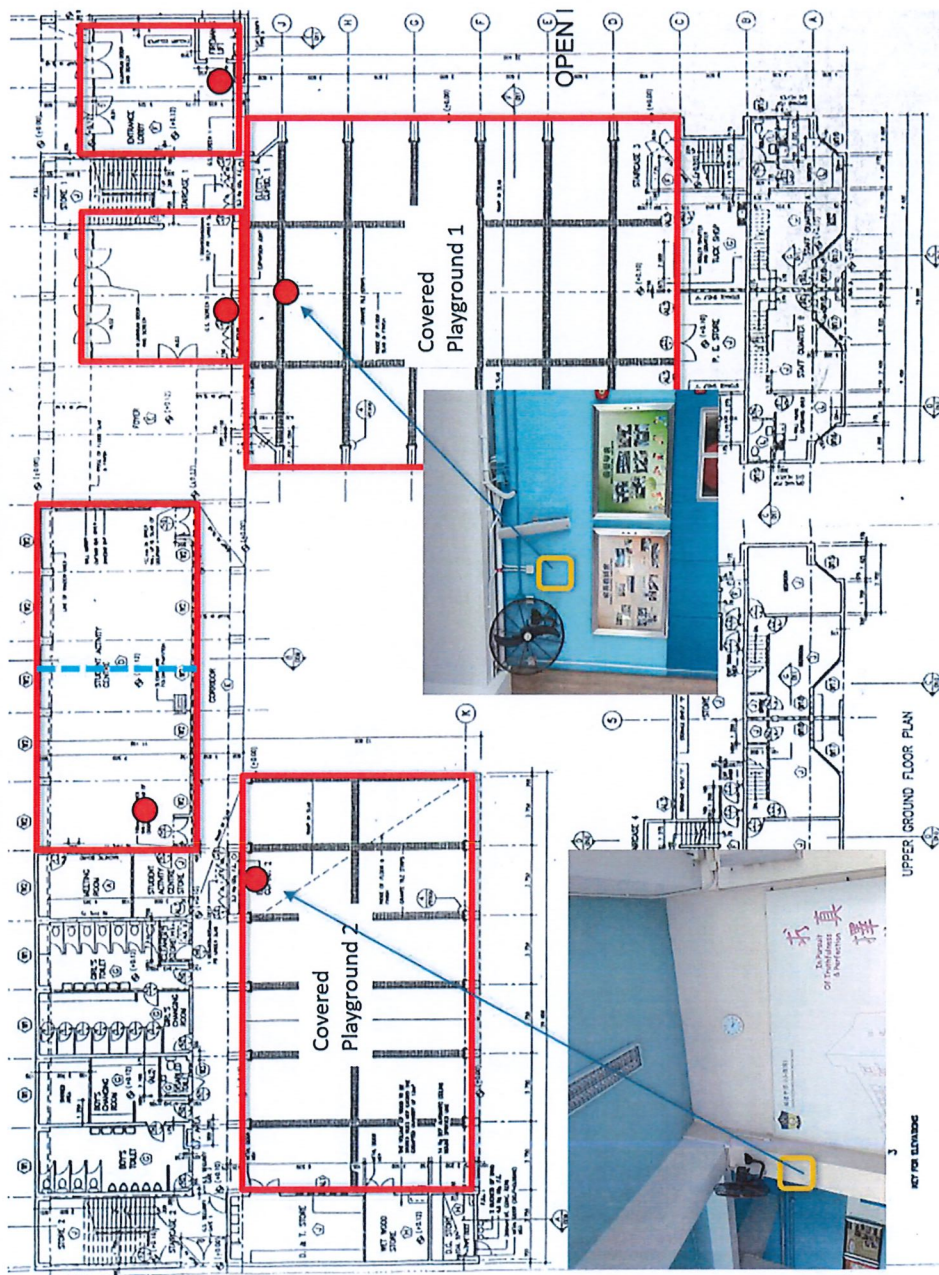
4. The Tenderer to provide case reference of past deployment in Wi-Fi100/Wi-Fi900 with Sub-Contractors details in the format listed below

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

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

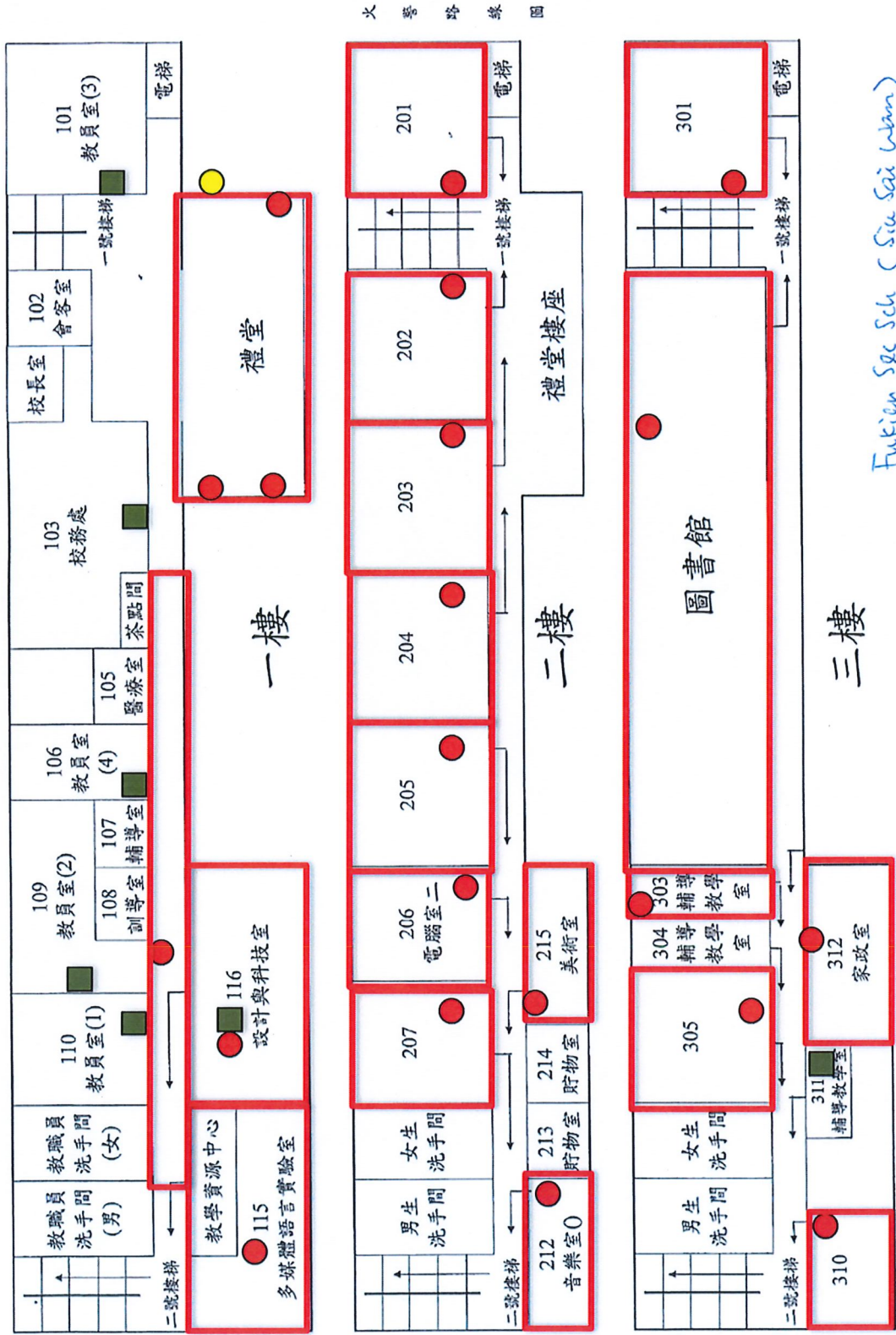
Proposed AP Location (G/F)

APPENDIX A



6.

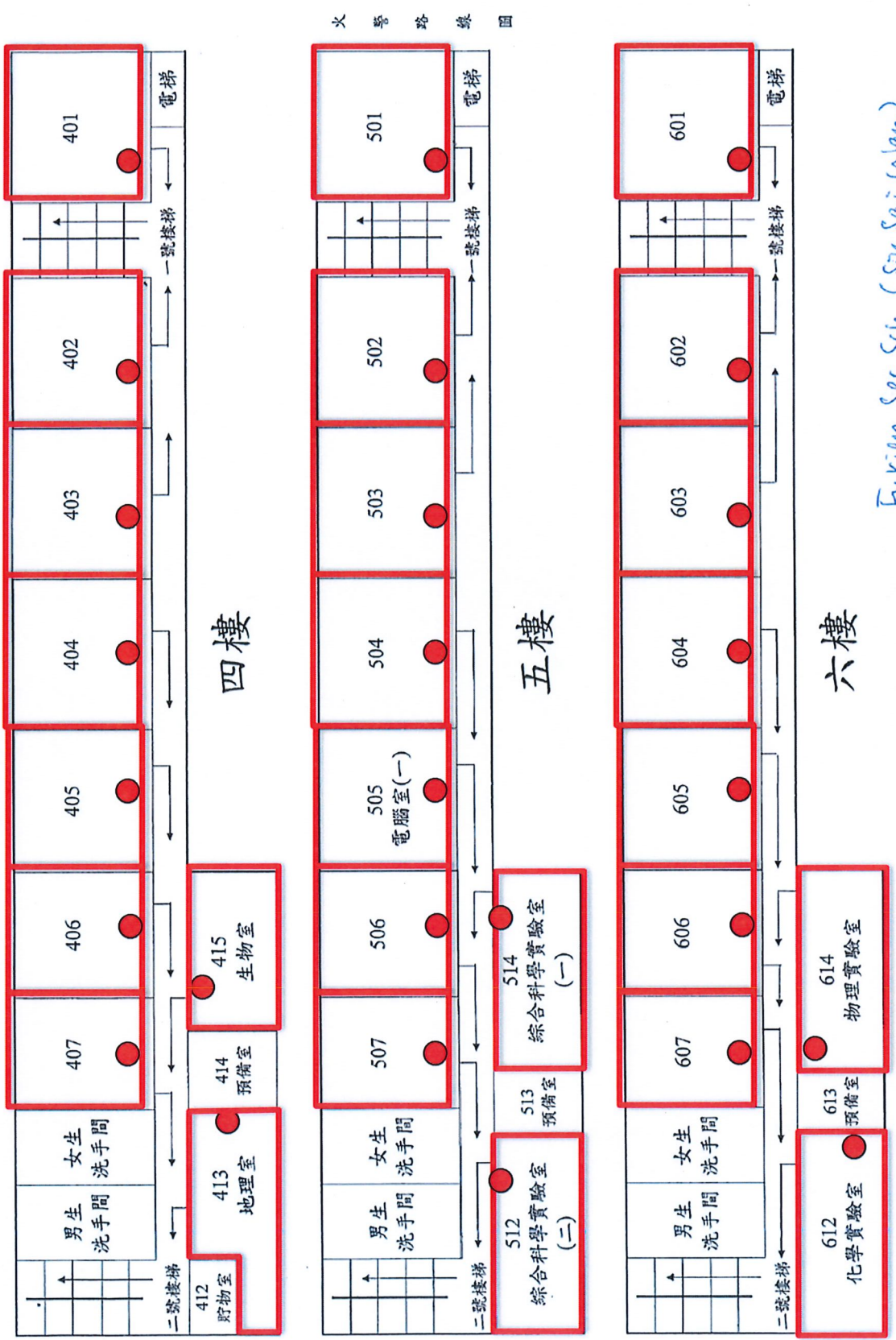
Proposed AP Location (1/F-3/F)



Fukien Sec Sch (Siu Sai Woon)

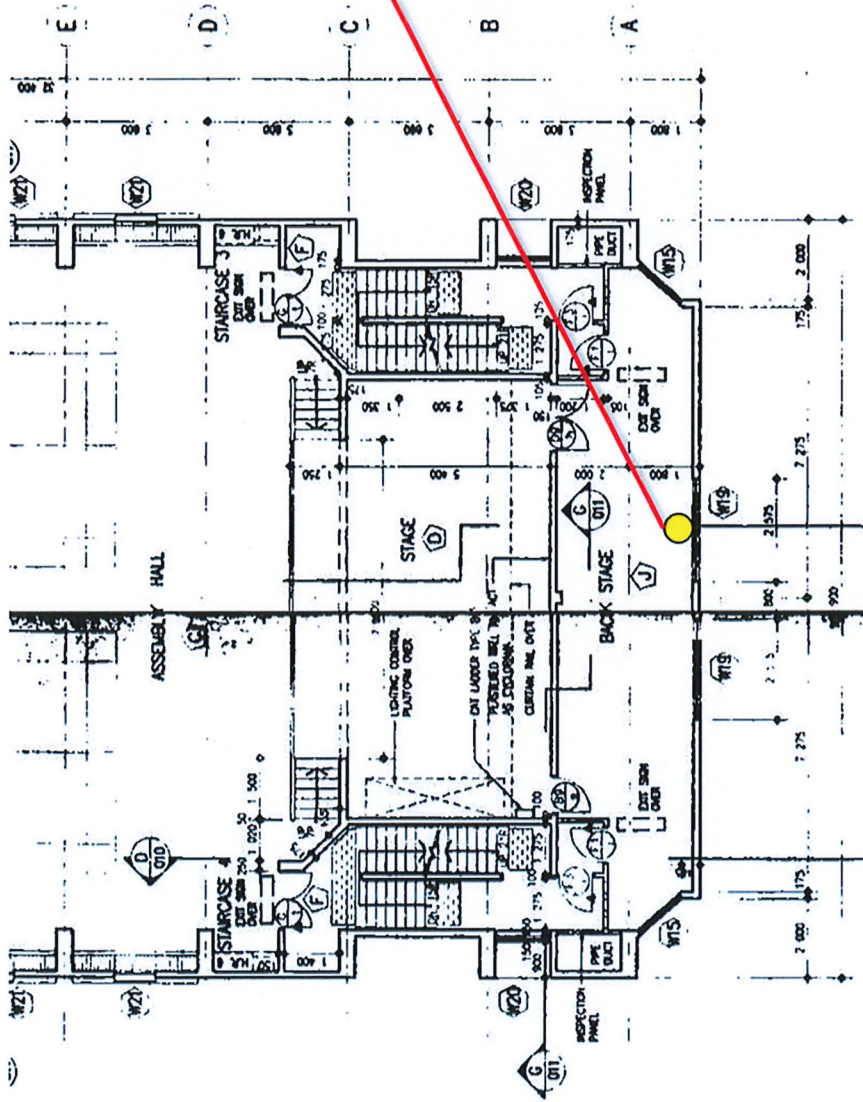
火警路線圖

Proposed AP Location (4/F-6/F)



Evian Sec Cria (Site Sca: r.l.n.a.u.)

New addon with no exiting Wifi Cable Node

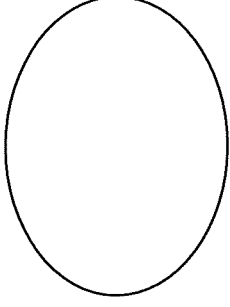


P.S. This node is to provide coverage to the area around main entrance

- Existing AP
- New addon
- Existing WiFi cable node



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.



Company Chop

Name of Supplier: _____
Name and Signature of Person Authorized to Sign Tender _____
Name (in block letters): _____
Date: _____

Signature: _____

Appendix I

Marking Scheme for Tender

The marking Scheme will involve two stages including:

Stage I

The tender is assessed according to all the requirements stated in the Appendix I in this stage. The tender will not be assessed further in the case that the tender does not meet all the requirements stated in the Appendix I.

Stage II

The tender must meet all the requirements stated in the Appendix I in this stage. The service, the quality, the price and the credibility stated in the Appendix I provided by the Company will be assessed further.

Credibility	10%
Service	60%
Quality	20%
Pricing	10%
Total Weight	100%

		Assessment Criteria	Weighting
Credibility (5%)	1.	Company background. IT project experiences. Contractor's Experience and Goodwill in building up WiFi network and infrastructure upgrade in schools over the past years	5%
Service (30%)	2.	System software and configuration (Technical architecture, security, resilience)	10%
	3.	Composition of On-Going Support/ Maintenance Services	10%
	4.	Ownership of all equipment/devices and fixture provided after contract	10%
Quality (15%)	5.	Proposed approach and methodology	7.5%
	6.	Manufacturer's brand name and goodwill, skill level, compatibility and stability	7.5%
Pricing (50%)	7.	Contractor's quoted price	50%
		Total Weight	100%

投標附表

申報利益表

1. 你在福建中學(小西灣)內有沒有人或業務利益關係(註譯1)? 有/沒有#
如有的話，請說明。

2. 你的家人或親屬(註譯2)有沒有擔任此學校的現任職位? 有/沒有#
如有的話，請提供姓名及關係。

註譯

(註譯1)個人利包括你參予經營 / 承包學校的各項服務等。

(註譯2)你的家人或你的親屬包括:

- (a) 你的配偶;
- (b) 你的父母;
- (c) 你的配偶父母;
- (d) 你的兄弟姊妹及其配偶; 以及
- (e) 你或你的配偶的子女及其配偶。

申報人簽署: _____ 申報人姓名: _____ 日期: _____

#請將不適用者刪去

回郵標籤

供應商必須使用以下格式的回郵標籤，同時不可在信封面上顯示任何能識別報價者身份的資料。

福建中學(小西灣)
小西灣富怡道二號
校長收啟

承投「學校無線網絡工程及維護」標書
標書編號：T05/2023-2024

限閱文件