

Ref. No.: PS84/TENDER/01/24

Date: 12/9/2024

By Registered Mail

The Manager

Dear Sirs,

INVITATION TO TENDER
TENDER FOR THE SUPPLY/SERVICE of
WIFI 900

1. You are invited to tender for the supply of the items as specified in the enclosed tender schedule. If you are not prepared to accept a partial order, please state this clearly on the tender schedule.
2. 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 Part II of the tender form is completed, the tender will not be considered.
3. If you are **unable or do not wish** to tender, **please sign and return P.5** of this letter to the school through mail or fax at your earliest convenience.
4. Tenders will be accepted on an *‘overall’/~~group~~’/~~itemized~~’ basis.
5. The school and its staff will not accept advantages in any way from suppliers and contractors.
6. Your sealed tender, **in duplicate**, should be clearly marked on the outside envelope:
Tender for the supply / service of **WIFI 900**.

The envelope should be addressed to Po Leung Kuk Ho Yuk Ching (1984) College, No.2, Chap Fuk Road, Tseung Kwan O, Kowloon and forwarded to arrive not later than Date: 3 / 10 / 2024
Time: 2:00 p.m. d / m / yyyy

7. Please be reminded not to identify your company on the envelope. Failure to comply might result in the tender being null and void. You are advised to use our schools’ return envelope to send in your tender.
8. Please be reminded that “The bidder, its employees and agents shall not offer any advantage (as defined in the Prevention of Bribery Ordinance, Cap. 201) to the school employees, SMC/IMC members, or any parent or student representative in a committee responsible for considering any matters in relation to this contract. Any such offer by the bidder or its employees or agent may constitute an offence under the Prevention of Bribery Ordinance and may render the contract null and void. The school may also cancel the contract awarded and hold the bidder liable for any loss or damage the school may sustain.”

Cont’ P.2...

...Cont'

Ref. No.: PS84/TENDER/01/24

9. The Contractor^(see Note) shall require the Contractor Employees to
- declare in the job application form and/or other related documents whether they have been convicted of any criminal offence in Hong Kong or elsewhere, and to provide the details; and
 - undergo the Sexual Conviction Record Check with the Hong Kong Police Force.
 - The Contractor shall seek the consent of the employees to pass the information regarding (a) and (b) to the School for its consideration of the suitability of the Contractor's prospective employees.

Note:

The Contractor shall inform the employees of the following:

- It is obligatory for the employees to provide the information required;
 - Refusing to disclose the required information or intentionally providing false information and/or withholding any material information may render them unsuitable for the post(s);
 - The information provided by the employees is used by the School for the consideration of their suitability for the post(s);
 - Any conviction of criminal offence(s) may not necessarily render them unsuitable for the post(s); and
 - The employees have the right to request for access and correction of the information provided by sending a written request to the Contractor.
10. This letter requires the Principal's signature with pen or ball pen. Principal's chop is invalid.

Yours sincerely,



Signature: _____

Lam Ming Yan
Principal

*Please delete as appropriate

For School use:

- This letter contains:
 - 10 points,
 - with a clause on anti-corruption (Clause 8) &
 - Reply to Tender Invitation & Tender Schedule.
- This letter is sent by Registered Mail.
- Teacher for this tender exercise

Name: Chung Ka Wa Lewis

Signature: _____

Name of clerk: Ng Ka Fung

Signature: _____

Ref. No.: PS84/TENDER/01/24

Reply to Tender Invitation

TENDER FORM FOR THE SUPPLY / SERVICE of WIFI 900

Name and Address of School Po Leung Kuk Ho Yuk Ching (1984) College, No.2, Chap Fuk Road, Tseung Kwan O, Kowloon.

School Ref. No.(to be entered by school) PS84/TENDER/01/24

Tender Closing Date and Time(to be entered by school) Date: 3 / 10 / 2024

d / m / yyyy

Time: 2:00 p.m.

PART I

The undersigned hereby offers to supply all or any part of the items described in the tender schedule attached with the delivery term quoted therein against the date of a firm order placed by the school at the price or the prices quoted in the tender schedule free of all other charges and in accordance with any drawings and/or specifications provided by the schools. In so doing, the undersigned acknowledges that all items not otherwise specified shall be in accordance with British Standard specifications where such exist; tender 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 tender remains open.

The undersigned also warrants that his Company's Business Registration and Employees' Compensation Insurance Policy are currently in force and that the items which his Company offers to supply do not to his knowledge infringe any patents.

The undersigned also declares during the 5-year period immediately preceding the tender closing date, it did NOT have the below-mentioned conviction OR three or more demerit points over a rolling period of three years:

- (i) any conviction of the following Ordinances—
 - (a) the Employment Ordinance (Cap.57) and the Employees' Compensation Ordinance (Cap. 282). [convictions in respect of these two Ordinances which individually carry maximum fines corresponding to Level 5 or higher within the meaning of Schedule 8 to the Criminal Procedure Ordinance (Cap. 221) will count];
 - (b) the Immigration Ordinance (Cap. 115). [convictions under Section 17I(1), Cap. 115 (offence to be employer of a person who is not lawfully employable) will count];
 - (c) Section 89, Cap. 221 and Section 41, Cap. 115 (aiding and abetting another person to breach his condition of stay);
 - (d) Section 38A(4), Cap. 115 (offence of the construction site controller if a person not lawfully employable takes employment on a construction site); or
 - (e) the Mandatory Provident Fund Schemes Ordinance (Cap. 485) [convictions under Section 7 (employer to arrange for employees to become Scheme members), Section 7A (employer and relevant employees required to contribute to registered scheme) and section 43E (making false or misleading statement), Cap. 485 will count]; or
- (ii) three or more demerit points under the demerit point system over a rolling period of three years for breaching contractual obligations in respect of wages, daily maximum working hours, signing of standard employment contracts with and wage payment by means of autopay to non-skilled workers employed for the carrying out of the contract with the Government.

The undersigned also hereby declares and undertakes that he shall ensure that his company has not submitted any tender in this purchase together with companies or persons associated with it. If his company has violated the said undertaking, the undersigned understands that all his or such tenders submitted by him shall be treated as void and at the same time the school may put his Company and all the associated companies or persons in the school's blacklist.

PART II
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 Date: 3 / 10 / 2024 Time: 2:00 p.m.
d / m / yyyy

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.

PART III
SAFEGUARDING NATIONAL SECURITY

The undersigned acknowledges that notwithstanding anything to the contrary in the tender documents, the school reserves the right to disqualify this company on the grounds that this company has engaged, is engaging, or is reasonably believed to have engaged or be engaging in acts or activities that are likely to cause or constitute the occurrence of offences endangering national security or otherwise the exclusion is necessary in the interest of national security, or is necessary to protect the public interest of Hong Kong, public morals, public order or public safety.

The undersigned also acknowledges that the school may immediately terminate the contract upon the occurrence of any of the following events:

- (a) this company has engaged or is engaging in acts or activities that are likely to cause or constitute the occurrence of offences endangering national security or which would otherwise be contrary to the interest of national security;
- (b) the continued engagement of this company or the continued performance of the contract is contrary to the interest of national security; or
- (c) the school reasonably believes that any of the events mentioned above is about to occur.

Dated this _____ day of _____ 20_____

Signature _____ in the capacity of _____
(State official position, e.g. Director, Manager, Secretary, etc.)

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

Whose registered office is situated at _____

_____ Hong Kong

Telephone No. _____ Fax No. _____

Reply Slip

(Email : info@plkhyc1984.edu.hk/ Fax No. 2704 9602)

Ref.: PS84/TENDER/01/24

Date: _____

The Principal

Po Leung Kuk Ho Yuk Ching (1984) College

2 Chap Fuk Road, Hang Hau,

Tseung Kwan O, Kln., Hong Kong

Dear Principal Lam,

Re: Tender for WIFI 900

We acknowledge receipt of your Invitation to Tender package.

We have received all of the documents listed in the Invitation to Tender without damage and in usable condition.

However, we are unable /do not wish to take part in this tendering exercise.

Yours faithfully,

Signature : _____

Authorized Signature & Company Chop

Name : _____

Title : _____

Name of Company : _____

PO LEUNG KUK HO YUK CHING (1984) COLLEGE
TENDER SCHEDULE (TO BE COMPLETED IN DUPLICATE)

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

(1) Item No.	(2) Description/Specification	(3) Quantity Required	(4) Unit Rate (HK\$)	(5) Total Amount (HK\$)	(6) Delivery Offered
1	Wi-Fi Service Subscription 3 Year and Broadband network service (Appendix A) Starting date : 2025-02-01 Expiration date : 2028-01-31 Onsite service	36 months			
2	Wi-Fi coverage for other areas (Appendix B) Bandwidth and protocol Authentication WLAN Access Control Content Filtering Service Integration of networks Monitoring of Wi-Fi network Availability of Wi-Fi service Recovery Helpdesk Support Reporting				
3	Wi-Fi Controllers <ul style="list-style-type: none"> ● At least 6 1000BASE-T ports ● At least 8Gbps 802.11 Performance ● Layer 2/Layer 3 network topology between an AP and AC ● Support 802.11, 802.11b, 802.11a, 802.11g, 802.11d, 802.11h, 802.11w, 802.11k, 802.11r, 802.11i, 802.11e, 802.11n, 802.11ac 802.11 LAN Protocols 	2			
4	Access Point A (Appendix B) At least: <ul style="list-style-type: none"> ● Indoor Wireless Access Point, Dual-radio, Dual-band, two spatial streams, theoretical maximum speed is 1167Mbps, supports 802.11a/b/g/n/ac connections, support 802.11ac WAVE2 and MU-MIMO, FAT/FIT modes, GE uplink copper port, supports PoE and local power supply, (PoE and local power adapters need to be purchased separately) 3 years onsite service 	37			

5	<p>Access Point B (Appendix B)</p> <p>At least:</p> <ul style="list-style-type: none"> Indoor 802.11ax WiFi6 Access Point, Dual-radio Dual-band (2.4G+ 5G or 5G + 5G); up to 1.775 Gbps in the 2.4 GHz + 5 GHz mode or 2.402 Gbps in the 5 GHz + 5 GHz mode ; (PoE and local power adapters sold separately) <p>3 years onsite service</p>	23			
6	<p>Access Point C (Appendix B)</p> <p>At least:</p> <ul style="list-style-type: none"> Indoor high-density 802.11ax wireless access point, dual-radio dual-band, up to 400Mbps for 2.4G (2*2 MIMO), up to 4.8Gbps for 5G (4*4 MIMO), up to 6 spatial streams, wireless access rate up to 5.2Gbps per AP. Supports concurrent 802.11a/b/g/n/ac and 802.11ax, FAT/FIT modes, PoE+ and local power supply (PoE+ and local power adapters are sold separately) <p>3 years onsite service</p>	2			
7	<p>Cabling A</p> <p>At least</p> <p>Installation of UTP Cable for Access Point -NEW</p> <p>Works including: -</p> <p>labour charge</p> <p>Wall Mount Installation of Access Point</p> <p>Cat. 6 UTP Cable</p> <p>Cat. 6 UTP Outlet</p> <p>UTP Jumper Cable (2m)</p> <p>20mm PVC Conduit</p>				
8	<p>Cabling B</p> <p>AP mounting Job is included</p> <p>Rely on existing WiFi Lan node</p>				
9	<p>Core Switch</p> <p>At least:</p> <p>24-Port L2+ Managed 10G Switch, 24 Gigabit RJ45 Ports, 4 *10G SFP+ Slots,19-inch Rack-mountable Steel Case, Static Routing</p> <p>3 years onsite service</p>	1			
10	<p>PoE Switch</p> <p>At least:</p> <p>24-Port Gigabit L2 Managed POE Switch, 24 Gigabit RJ45 POE/POE+ Ports, 4 SFP Slots, 370W PoE power budget, 19-inch Rack-mountable Stell Case</p> <p>3 years onsite service</p>	3			
11	<p>Physical Controller</p> <p>Controller with relevant license</p> <p>3 years onsite service</p>	2			

12	<p>Firewall (A)</p> <ol style="list-style-type: none"> 1. At least 12 x GE RJ45 Ports, 2 x GE RJ45 Management/DMZ Ports, 2 x GE RJ45 HA Ports, 4 x GE SFP Slots, 4 x GE RJ45/ SFP shared media Pairs, 2 x 10GE SFP+ FortiLink Slots 2. At least dual built-in AC Power Supplies 3. With dedicated ASIC that consolidates both network and content processing functions on a single chip, delivering fast application identification, steering, and overlay performance. 4. IPv4 firewall throughput of at least 20/18/10 Gbps with 1518/512/64 byte UDP packets 5. Firewall latency (64 byte, UDP) should not greater than 5 μs 6. IPS throughput of at least 2.6 Gbps 7. Threat Protection Throughput of at least 1 Gbps 8. Support concurrent session (TCP) of at least 1.5 million 9. At least support 56,000 new sessions per second (TCP) 10. At least support 10,000 firewall policies 11. Support at least 10 virtual firewalls 12. IPsec VPN Throughput (512 byte) of at least 11.5 Gbps 13. At least 2,500 Gateway-to-Gateway IPsec VPN Tunnels and 16,000 Client-to-Gateway IPsec VPN Tunnels 14. SSL-VPN throughput of at least 1 Gbps 15. Support at least 500 concurrent SSL-VPN users 16. SSL inspection throughput (IPS, avg. HTTPS) of at least 1 Gbps 17. Application control throughput (HTTP 64K) of at least 2.2 Gbps 18. Support High Availability configuration but not limited to Active / Active, Active / Passive, Clustering 19. Able to expand security via visibility and control with solution such as cloud, web application, email, sandboxing, DDoS, endpoint and wireless on the same brand-name solution 20. Security Appliance 21. 36 months protection bundle 22. 3 years onsite service 	1			
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13	<p>Firewall (B)</p> <ol style="list-style-type: none"> 1. At least 6 x GE RJ45 Ports, 2 x RJ45/SFP Shared Media Ports 2. With dedicated ASIC as security processing unit for IPv4, IPv6, IPsec encryption, and multicast traffic acceleration and another dedicated ASIC as security processing unit for IPS, crypto, and authentication engines acceleration 3. At least dual redundant DC Power Supplies 4. IPv4 firewall throughput of at least 10/10/7 Gbps with 1518/512/64 byte UDP packets 5. IPS throughput of at least 1.4 Gbps 6. Threat Protection Throughput of at least 900 Mbps 7. Support concurrent session (TCP) of at least 1.5 million 8. At least support 45,000 new sessions per second (TCP) 9. At least support 5,000 firewall policies 10. Support creation of at least 10 virtual firewalls 11. IPsec VPN Throughput (512 byte) of at least 6.5 Gbps 12. At least 2,00 Gateway-to-Gateway IPsec VPN Tunnels and 2,500 Client-to-Gateway IPsec VPN Tunnels 13. SSL-VPN throughput of at least 950 Mbps 14. Support at least 200 concurrent SSL-VPN users 15. SSL inspection throughput (IPS, HTTP) of at least 715 Mbps 16. Application control throughput (HTTP 64K) of at least 1.8 Gbps 17. High Availability cluster with a pair of firewalls (i.e. 2 nodes) of same model 18. Hardware failover in active/active, active/passive and clustering mode in function with outgoing and incoming load-balancing 19. Able to expand security via visibility and control with solution such as cloud, web application, email, sandboxing, DDoS, endpoint and wireless on the same brand-name solution 20. Security Appliance 21. 36 months protection bundle 22. 3 years onsite service 	1			
<p>Notes:</p> <ol style="list-style-type: none"> 1. All quoted prices should include installation fee, system integration fees and cabling work where necessary. 2. Include 3 Year maintenance fee. 3. Please indicate yearly maintenance fee after warranty period. 4. Ensure the completion of all the requirements of Appendix. 					

Any amendment made should bear a company chop and a signature from an authorized person. The use of correction pen or fluid would render the whole document invalid.

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

Name of Tenderer: _____

Signature of Person

Authorized to sign Tender: _____

Date: _____

d / m / yyyy



PART X – WiFi REQUIREMENTS SPECIFICATION

1. Introduction

The Contractor is invited to

- Build up a WiFi network in **PLK Ho Yuk Ching 1984 College** (The School); and
- Provide and maintain a WiFi service through subscription mode.

2. Background

The School will **enhance / top up** the IT infrastructure so as to set up the necessary WiFi environment in the school premises (full WiFi coverage in ALL classrooms) for supporting e-learning in class. Regarding the enhancement of WiFi 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 WiFi network. The Contractor shall be capable of supporting the requirements set out below.

3.1 Standard Provision

- **WiFi Internet Connectivity** – use IEEE 802.11 a/b/g/n/ac/wave 2/Ax network or above in a standard classroom. The minimum number of classrooms to be covered shall be at least equal to the number of approved classes for the 2021/22 school year, that is **24** classrooms.
- **Number of Concurrent Connection** – commensurate with the maximum number of students, say **40**, in a class with at least **2Mbps** upload / download bandwidth per connection
- **Number of classrooms using WiFi 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** – based on filtering profile commonly adopted by most schools and managed by vendors. Cloud based internet content filtering service is not acceptable.
- **Broadband Network** – provide 1G Broadband service with at least 16 fixed IP
- **Managed Service** – operate the WiFi network using managed service model, provide end-to-end service with single point of contact including configuration, provisioning of service, proactive monitoring, maintenance, Radio country code, channel and power setting, MAX clients number limitation for each radio, SSID and mapping VLAN management, built-in and external portal management, including social login, One-click, Voucher login methods, Portal page customization, language configuration, web and

telnet security configuration, AP load balancing and roaming setting, RRM auto RF planning, regular reporting, web interface and can be managed at the Cloud platform, provides easy device onboarding, configuration, monitoring, and troubleshooting.

- **Service Level Agreement** – ensure at least 99.7% availability of the WiFi 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.
- **Tenders will be disqualified and not be allowed to enter into the next stage if they fail to meet any of these mandatory requirements**

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

- **WiFi coverage** – to include special rooms and open areas
- **Authentication Method** – user account system being used by school, etc.
- **Session Control** – Other requirements
- **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 School
- **Internet Content Filtering Service** – School **MUST** have **FULLY** administrative right to manager internet content filtering service
- **Hardware configuration** – School **MUST** have the **FULLY** rights to configure Access Point controller and firewall setting
- **Integration of networks** – system integration with existing network with secure design.
- **Internet addresses subscription & configuration** – for Internet access to school internal resources.
- **Monitoring of WiFi network** – specific request on monitoring of WiFi network by School.
- **Support hours** – extended support hours and/or reduced time for recovery.
- **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.
- **Tenders will be disqualified and not be allowed to enter into the next stage if they fail to meet any of these mandatory requirements**

3.3. Deliverables

3.3.1 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

3.3.2 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

4. Technical Specification (Standard Provision)

4.1 WiFi Network

4.1.1 The Wireless LAN (WLAN) System of the WiFi 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.

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. Appropriate type of connection cables between WLAN APs and the antenna shall be provided. Support FAT/FIT/MACC modes switching. When operating in FIT mode, the AP can communicate with the AC via CAPWAP. The AP can be managed by on premise hardware controller (Dual physical Controller)

4.1.3 The WLAN APs shall be compatible with Wi-Fi 6 standard (Support 802.11ax) with Dual-radio dual-band design, Support Apple iBeacon, WeChat Shake features and other Bluetooth applications, can be used for Bluetooth location-based feature.

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 WiFi Service at the WiFi 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 WiFi client device for testing satisfies the power emission requirement.

4.1.5 The WLAN AP shall support DHCP, PoE, WPA2, 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 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 system shall provide bandwidth control per connection.

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

4.1.11 The SSIDs shall be able to be set hidden from searching by WiFi devices. The devices have to manually set SSID to make connection.

4.1.12 Individual APs shall be allowed to be assigned by more than one SSIDs.

4.1.13 Antennas of APs shall be capable of detecting user locations in real time for direction switching while devices in motion.

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

4.1.15 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.

4.1.16 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.

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

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

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

4.1.20 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. For the backbone, fibre optic is suggested.

4.1.21 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.

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

4.1.23 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.

4.1.24 The WLAN System shall support Web GUI management.

4.1.25 FTP service shall not be allowed in the WiFi network (to avoid exchanging credential and files in plain text without any encryption).

4.1.26 The WLAN System shall support IPV6 addressing method.

4.1.27 The WLAN System should support auto recognition of mainstream operating systems such as iOS, Android and Windows, etc. Support a self-adaptive authentication page that fits any screen size for easy access. Provide technology white paper as proof. Should be no additional license.

4.1.28 The WLAN System should support radio country code, channel and power setting.

4.1.29 The WLAN System should support MAX clients number limitation for each radio.

4.1.30 The WLAN System should support SSID and mapping VLAN management.

4.1.31 The WLAN System should support built-in and external portal management, including social login, One-click, Voucher, Account login methods, Portal page customization and language configuration.

- 4.1.32 The WLAN System should support WEB and telnet security configuration.
- 4.1.33 The WLAN System should support AP load balancing and roaming setting.
- 4.1.34 The WLAN System should support RRM auto RF planning.
- 4.1.35 The WLAN System should support auto-propose of device firmware version.
- 4.1.36 The AP can be managed by public cloud and mobile APP management without additional cost or licenses, features including but not limited to: QR-Code scan device provisioning, wireless SSID configuration and real topology; operating status monitoring and alert; 1-click radio RRM optimization, network healthiness diagnosis. (all related licenses should be included)
- 4.1.37 The WLAN System, Switch deployed shall be same brand to ensure the service quality on deployment and after-sales services can be maintained.
- 4.1.38 Wifi Access Point 802.11ax access point
- Support Wi-Fi 6 standard (IEEE 802.11ax), dual-radio dual-band, concurrent 802.11ax and 802.11a/b/g/n/ac
 - Support total 4 spatial streams, 2x2:2 in 2.4GHz , 2x2:2 in 5GHz
 - Support dual 5G radio mode operation for high-density environment
 - Maximum throughput (5G+5G mode) per AP at 2.4Gbps
 - Support PPSK or equivalent feature, WLAN Controller provide a one-time wireless password every user by batch, the device hardware MAC Address will be binded automatically, and the user cannot share their own password to other devices
 - Working with a wireless controller, support below related guest Wi-Fi access control feature without additional cost, including but not limited to guest captive portal, 1-click login with T&C acceptance, voucher (access code) with time and rate-limit control, Facebook and User Account authentication feature, etc. ; The provided guest portal should be self-adaptive that fits any mainstream mobile smart device screen size for easy access.
 - The AP can be managed by public cloud and mobile APP management without additional cost or licenses, features including but not limited to: QR-Code scan device provisioning, wireless SSID configuration and real topolog; operating status monitoring and alert; 1-click radio RRM optimization, network healthiness diagnosis. (all related licenses should be included)
 - The public cloud should support below remote device operation & maintenance (including access point, switches, gateway) features, including but not limited to: email alarm, dynamic Web Secure Tunnel to remote device, Web CLI (command-line), remote device reboot, schedule RRM planning and optimization, etc.
 - The AP should support WIDS (Wireless Intrusion Detection System) feature, including RF

interference tracking, rogue AP detection & containment, anti-ARP spoofing ,etc.

-The AP factory default firmware can be managed by public cloud licenses or on-premise hardware controller, without further manual firmware upgrade

-Provide Wi-Fi 6 Certification from Wi-Fi Alliance (WFA) of the AP. The product model should be consistent with that of the tender product.

-The AP should possess a test report issued by a international third-party authority for >950Mbps single-client 5GHz radio downstream throughput and with 1024 client connections.

4.1.39 Wifi Access Point 802.11ax access point (high density area)

-Support Wi-Fi 6 standard (IEEE 802.11ax) with **Four-radio dual-band design**

-Support 8 spatial streams

-Support 2.4GHz radio switching to 5GHz radio

-Support 1024QAM modulation and demodulation methods

-Support 5GHz: supports 2x2 MU-MIMO and a max access rate $\geq 1.2\text{Gbps}$; 2.4GHz: 2.4GHz: supports 2x2 MU-MIMO and a max access rate $\geq 400\text{Mbps}$, Max overall access rate $\geq 4.1\text{Gbps}$

-Support 160MHz bandwidth.Radio communications apparatus approval certificate is provided.

-At least 1 console port (for management), 1 SFP uplink port, 1 1G Base-T Ethernet uplink port, 1 2.5G Base-T Ethernet uplink port (PoE)

-Support Bluetooth5.0(built-in)

-Support a full-size USB jack

-Height is no more than 49mm and Support ceiling mount and wall mount preferable.

- Support AP virtualization. One single AP is virtualized as multiple APs and these virtualized APs, independent from one other, are managed by different ACs. Data isolation is applied among virtualized APs. Virtualized APs do not use AP licenses on ACs.

- Support Long GI configuration.

- Support rogue AP detection and countermeasure

- The AP MUST be support managed by public cloud & on premise hardware controller

4.2 Core Switch

4.2.1 Standalone Layer 3 Switch with at least 24 10/100/1000Base-T ports, 4 SFP+ 10GBase-X ports

- Switching capacity minimum 336Gbps, Packet forwarding rate minimum 108Mpps.

- Support at least 16 Layer 3 aggregation ports.

- Support static MAC address, MAC address filtering;

- Support STP, RSTP, LLDP; Support static routing;

- Support Many-to-one mirroring; Support IP standard ACL, MAC extended ACL, IP extended ACL, Port ACL for Layer 2 ports;

- Support Port-based speed limit (ingress/egress);

- Support Port protection, Hardware CPP; Support Web management;

- Support DHCP snooping;
- Support Self-organizing Network, Real Topology, Delivery Report; Support Mobile Provisioning, Mobile Monitoring & Alarm, Mobile maintenance Remotely

4.2.2 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.

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 basic IP unicast routing protocols, Static route, Routing Information Protocol (RIPv1, RIPv2), inter VLAN routing.

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

4.2.6 The Core Switch shall support WebGUI Management, Access Control Lists (ACLs), DHCP Interface and SNMP.

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

4.2.8 The network equipment deployed shall be same brand to ensure the service quality on deployment and after-sales services can be maintained.

4.3 PoE Access Switch

4.3.1 Standalone Layer 2 Switch with at least 24 10/100/1000 Base-T ports (PoE and PoE+) and 4SFP 1000Base-X ports

- Switching capacity minimum 336Gbps, Packet forwarding rate minimum 42Mpps.
- Support static MAC address, MAC address filtering; Support STP, RSTP;
- Support IP standard ACL, MAC extended ACL, IP extended ACL, Port ACL for Layer 2 ports;
- Support Port-based speed limit (ingress/egress); Support Port protection, Hardware CPP;
- Support Web management;
- Support DHCP snooping; Support Self-organizing Network, Real Topology, Delivery Report;
- Support Mobile Provisioning, Mobile Monitoring & Alarm, Mobile maintenance Remotely;
- Support IP30;
- Support Dynamic packet filter, state detection, attack defense, URL filtering, ARP and DOS attack protection, NAT, NAT, IPsec, GRE, AAA, SSH, Standard ACL, extended ACL, port security, MAC address restriction, MAC binding with IP and VLAN

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, spanning tree protocols of 802.1d, 802.1w, and 802.1s to ensure rapid convergence, improves fault tolerance capabilities, ensures stable running of networks and load balancing of links, and provides redundant links.

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

4.3.6 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.

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

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

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

4.3.10 The 24/48 ports PoE Access Switches supports IEEE 802.3af, IEEE 802.3at and IEEE 802.3bt and is also backward compatible with earlier standards, offering up to 90W output per port and 370W per device. The front 1-4 ports enable high power PoE application.

4.3.11 The network equipment deployed shall be same brand to ensure the service quality on deployment and after-sales services can be maintained.

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 is required.

4.4.4 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.

4.4.5 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.

4.4.6 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.

4.4.7 **The firewall (for ITED network) must provide the performance or better;**

- The Firewall throughput should support at least 30,000 Mbps
- The VPN throughput should support at least 3,000 Mbps
- The IPS throughput should support at least 5,800 Mbps
- Threat Protection throughput support at least 2,800 Mbps
- Concurrent connections should support at least 6,500,000
- Should provide Multi-function LCD display and navigation.
- Should support at least 120 GB SATA-III SSD
- Should provide Free Central Management

4.4.8 **The firewall (for ITED network) must support below software requirement**

Single box solution includes the following features on a single appliance:

- Application Control
- Malware Scanning
- Built-in free-of-cost reporting
- Web Application Firewall
- Full Email Protection with SPX encryption
- Integrated Wi-Fi controller with the 802.11ac wireless access points
- Bandwidth Management
- High Availability
- DLP

On-Box Detailed Reporting

- Included in every license
- Compatible and Extendable to configure multiple external Syslog servers
- Live Log Viewer
- Security Audit Reports (SAR)
- Synchronized Applications Report:

Cloud-based centralized reporting

- Comes with a set of pre-packed reports
- Offers tools to create custom reports

- Supports reporting schedules
- Allows uploading, filtering and searching of log files
- The free version comes with a week's worth of storage. Additional storage capacity licenses are available.

Web & Application Protection

- Comprehensive URL database
- Browsing Time quotas
- "Selective" HTTPS scanning
- Google App Control
- Creative Commons Enforcement
- External URL List
- Web Keyword Monitoring and Enforcement
- PUA Blocking

Comprehensive Email Protection

Firewall with all-in-one Email Encryption, DLP, Anti[1]spam, and malware protection solution

- MTA mode
- Anti-spam
- SPX Email Encryption
- DLP Engine
- Per-domain routing
- Smart Host Outbound Relay
- Greylisting
- Recipient Verification

4.4.9 Service provider should provide Dual firewall.

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 WiFi 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 WiFi 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.

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 WiFi 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.

4.7.4 The Service Rebates of the WiFi 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.

4.9.2 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/wifi900. 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.

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 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;

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.

5. Wi-Fi.HK (optional service)

5.1 The implementation of Wi-Fi.HK is advocated by the School, the decision of the implementation will not be served as a basis of discrimination for proposal evaluation.

5.2 To make it easier for the public and visitors to access free Wi-Fi services in Hong Kong, the Government is promoting the free Wi-Fi services offered by the public and private sectors in Hong Kong under a common Wi-Fi brand “Wi-Fi.HK”. It will help the public and visitors find and connect to the public Wi-Fi hotspots throughout Hong Kong. These free hotspots will be promoted under the Wi-Fi.HK brand through various means such as the Wi-Fi.HK thematic website and mobile app. With a common brand in place, it will create more business opportunities for the Wi-Fi.HK participating organisations to promote and deliver their products and services to their customers by leveraging on mobile technologies.

5.3 Contractor is invited to provide free Wi-Fi service riding on the same Wi-Fi network infrastructure using the Wi-Fi.HK SSID for school visitors such as parents to access the Internet in schools and such services shall incur no additional charge to the School.

5.4 The following are the requirements of the Wi-Fi.HK scheme:

- Aggregated total of at least 30 minutes free access time per day per device;
- Service available 24 hours x 7 days or as long as the venue is accessible to the user;
- All Access Points providing public Wi-Fi service be registered with OFCA;

- SSID of Access Points be presented in “Wi-Fi.HK via <designated name of service provider>” format;
- Landing page with Wi-Fi.HK logo, terms and conditions and disclaimers for user to accept for connection but no need for user to login using username or password;
- Hotline service, contact email or on-site support be provided for public enquiry and technical support; and
- Preferably with installation of digital server certificate issued by recognized certificate authority on the landing page so that users can easily discern the legitimacy of the Wi-Fi services.

5.5 The network for supporting Wi-Fi.HK shall not be allowed to have direct access to the School’s network. Connections via Wi-Fi.HK shall have access to the Internet only.

5.6 Content filtering is not a requirement for Wi-Fi.HK.

5.7 When the School terminates all or part of the Service, the Wi-Fi.HK service of the related area will be terminated together. The School also reserves the right to request the Contractor to terminate or suspend the Wi-Fi.HK service at any time.

5.8 More details of the scheme can be found at Wi-Fi.HK thematic website (<http://www.wi-fi.hk>).

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 Wifi 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 WiFi network	On or before 31 Nov 2021	31 Dec 2021	0
II	Subscription of service	01 Jan 2022	31 Dec 2024	Quoted price

8. Delay of Schedule

8.1 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 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.
- 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.
- Tenders will be disqualified and not be allowed to enter into the next stage if they fail to meet any of these mandatory requirements

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 **Ben** of the School at admin@intranet.plkhyc1984.edu.hk or by phone at **2703 7363**.

WiFi coverage areas

1. Class Room

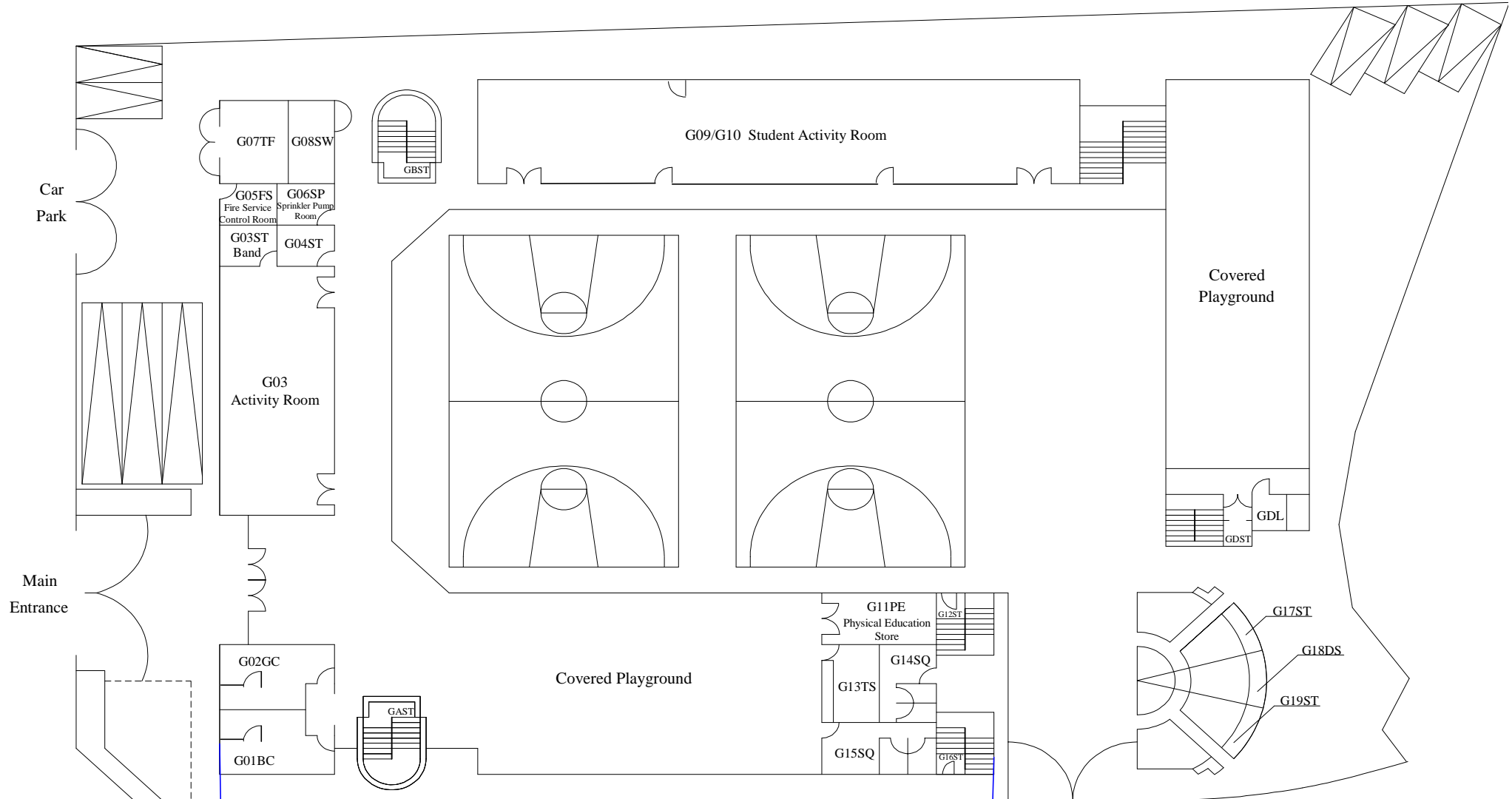
Class Room	model	Qty	To Closet
201	ACCESS POINT A	1	308
202	ACCESS POINT A	1	
203	ACCESS POINT A	1	
204	ACCESS POINT A	1	
206	ACCESS POINT B	1	
301	ACCESS POINT A	1	
302	ACCESS POINT A	1	
303	ACCESS POINT A	1	
304	ACCESS POINT A	1	
309	ACCESS POINT A	1	
312	ACCESS POINT A	1	
313	ACCESS POINT A	1	
401	ACCESS POINT A	1	
402	ACCESS POINT A	1	
403	ACCESS POINT A	1	
404	ACCESS POINT A	1	
406B	ACCESS POINT A	1	
407B	ACCESS POINT A	1	
411	ACCESS POINT A	1	
412	ACCESS POINT A	1	
413	ACCESS POINT A	1	
501	ACCESS POINT A	1	
502	ACCESS POINT A	1	
503	ACCESS POINT A	1	
504	ACCESS POINT A	1	
505	ACCESS POINT A	1	
506	ACCESS POINT A	1	
507	ACCESS POINT A	1	
508	ACCESS POINT A	1	

2. ITED (Wi-Fi Controllers)

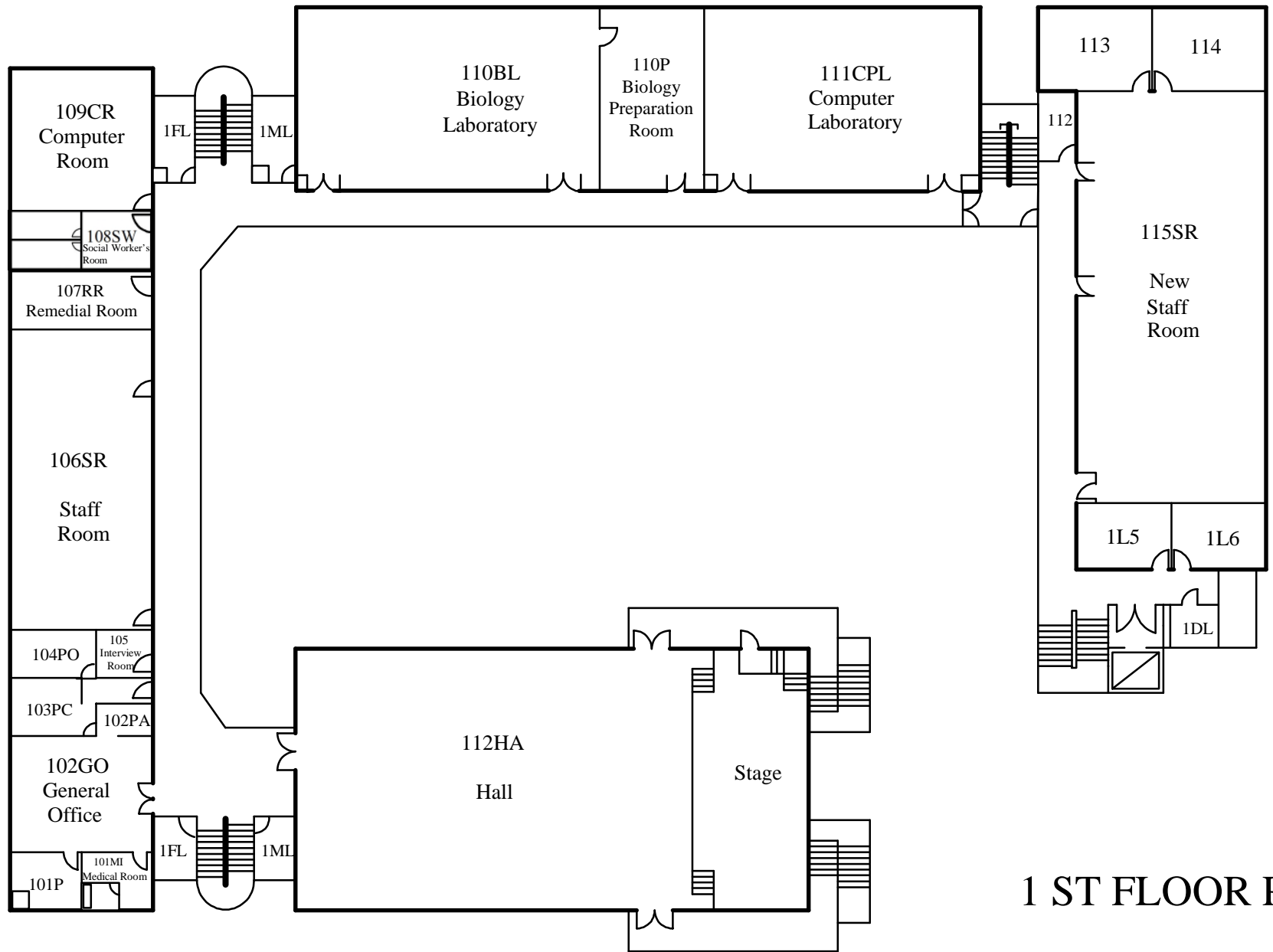
Class Room	model	Qty	To Closet
102	ACCESS POINT B	1	111
106A	ACCESS POINT B	1	
106B	ACCESS POINT B	1	
107(A)	ACCESS POINT B	1	
109	ACCESS POINT A	1	
110	ACCESS POINT B	1	
110P	ACCESS POINT B	1	
111	ACCESS POINT A	1	
115A	ACCESS POINT B	1	
115B	ACCESS POINT B	1	
207	ACCESS POINT B	1	
208	ACCESS POINT B	1	308
209	ACCESS POINT A	1	
211	ACCESS POINT A	1	
213	ACCESS POINT A	1	
214	ACCESS POINT B	1	
215/216	ACCESS POINT B	1	
306	ACCESS POINT A	1	
307	ACCESS POINT B	1	
310	ACCESS POINT A	1	
311	ACCESS POINT B	1	
408	ACCESS POINT B	1	
409	ACCESS POINT B	1	
410	ACCESS POINT B	1	
509	ACCESS POINT A	1	
510	ACCESS POINT B	1	
Covered Playground	ACCESS POINT B	1	111
G03	ACCESS POINT B	1	
G09	ACCESS POINT B	1	
G10	ACCESS POINT C	1	
Hall	ACCESS POINT C	1	
snack	ACCESS POINT A	1	

3. without Wi-Fi Controllers

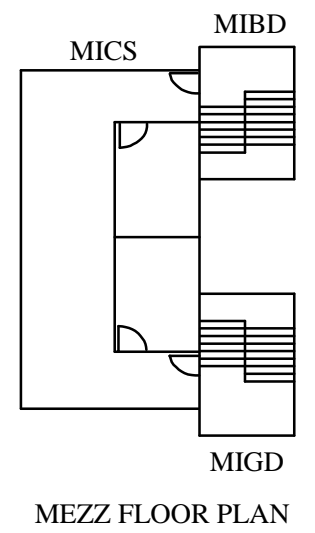
Class Room	model	Qty	To Closet
107(B)	ACCESS POINT B	1	107



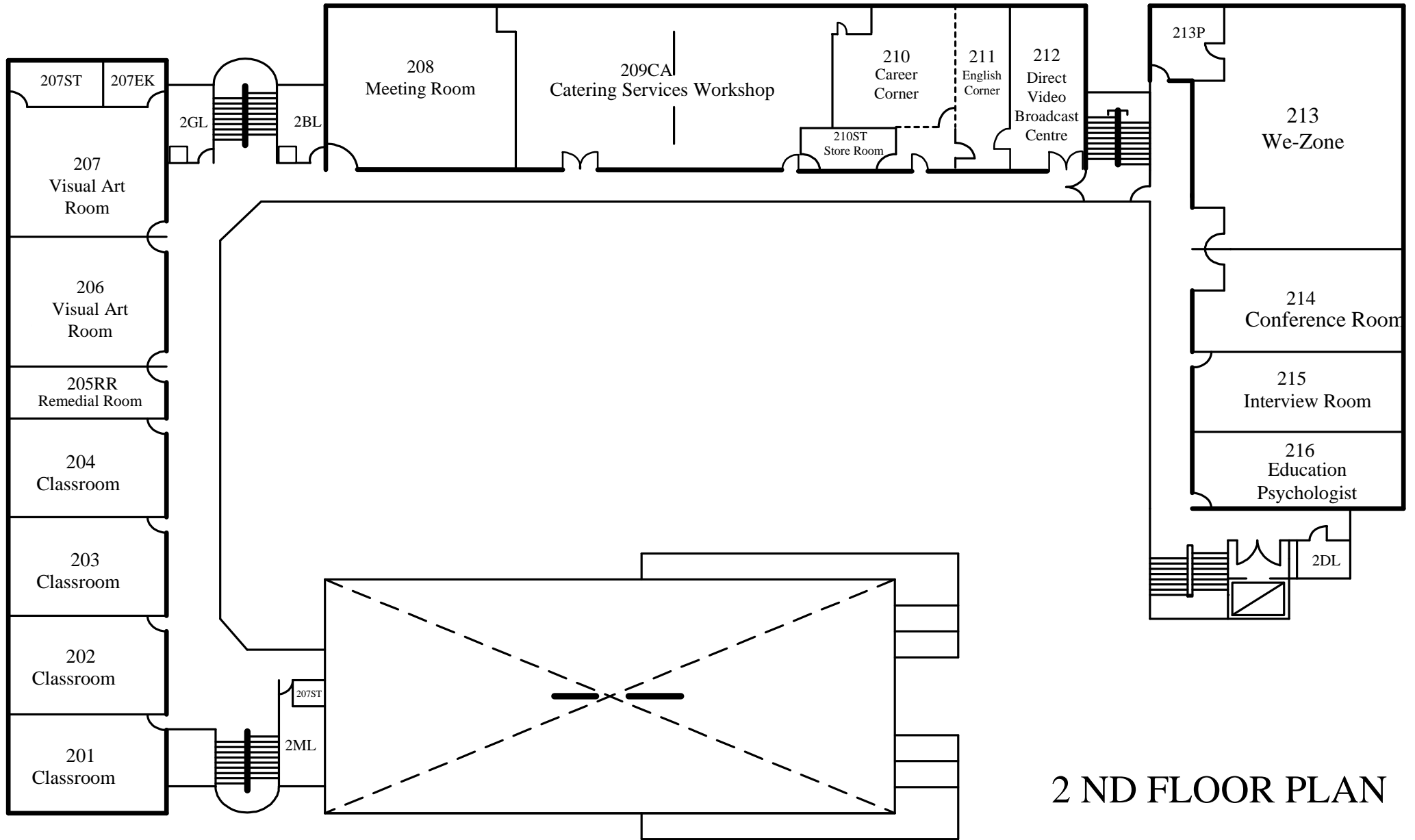
GROUND FLOOR PLAN



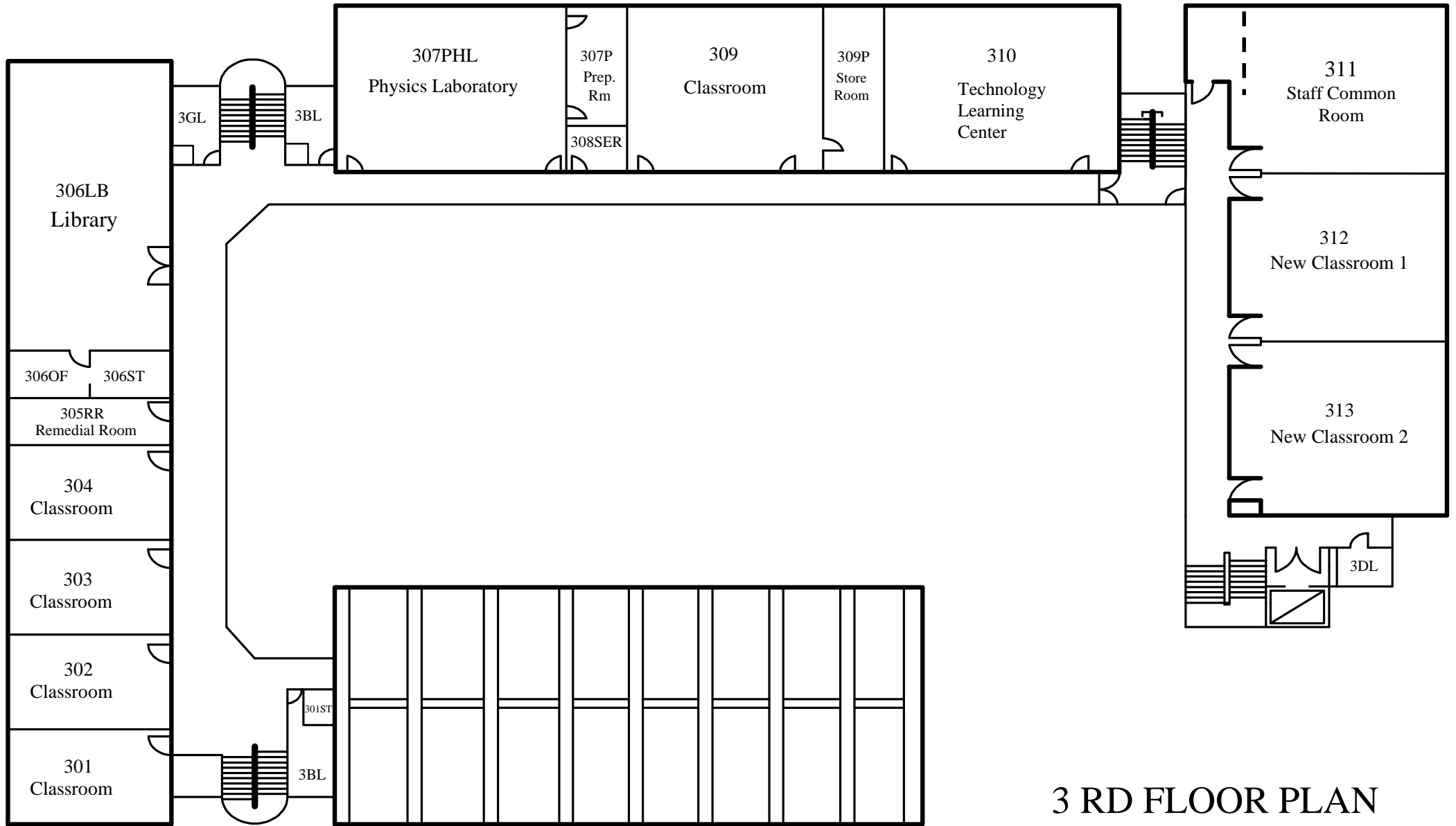
1 ST FLOOR PLAN



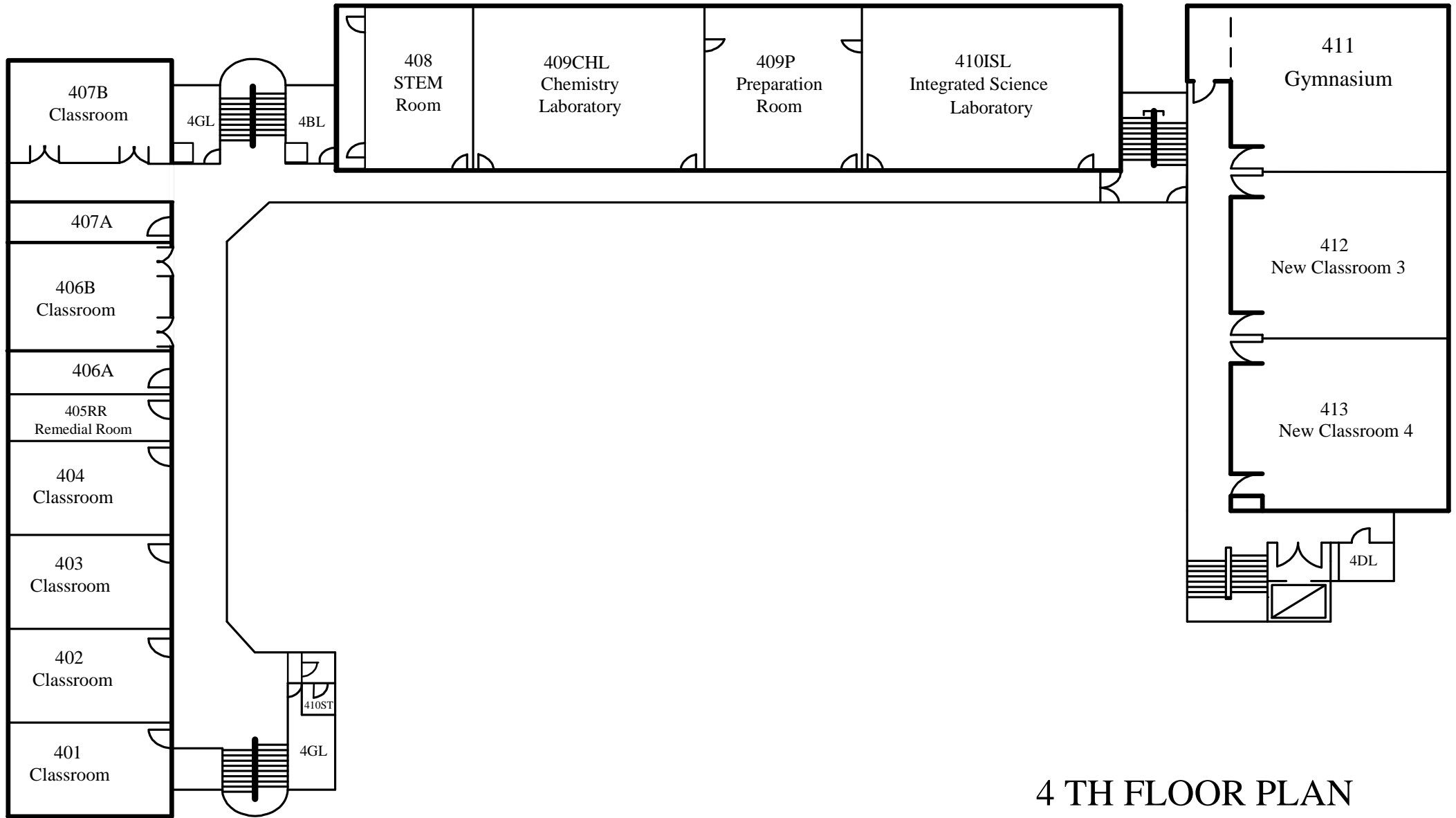
MEZZ FLOOR PLAN



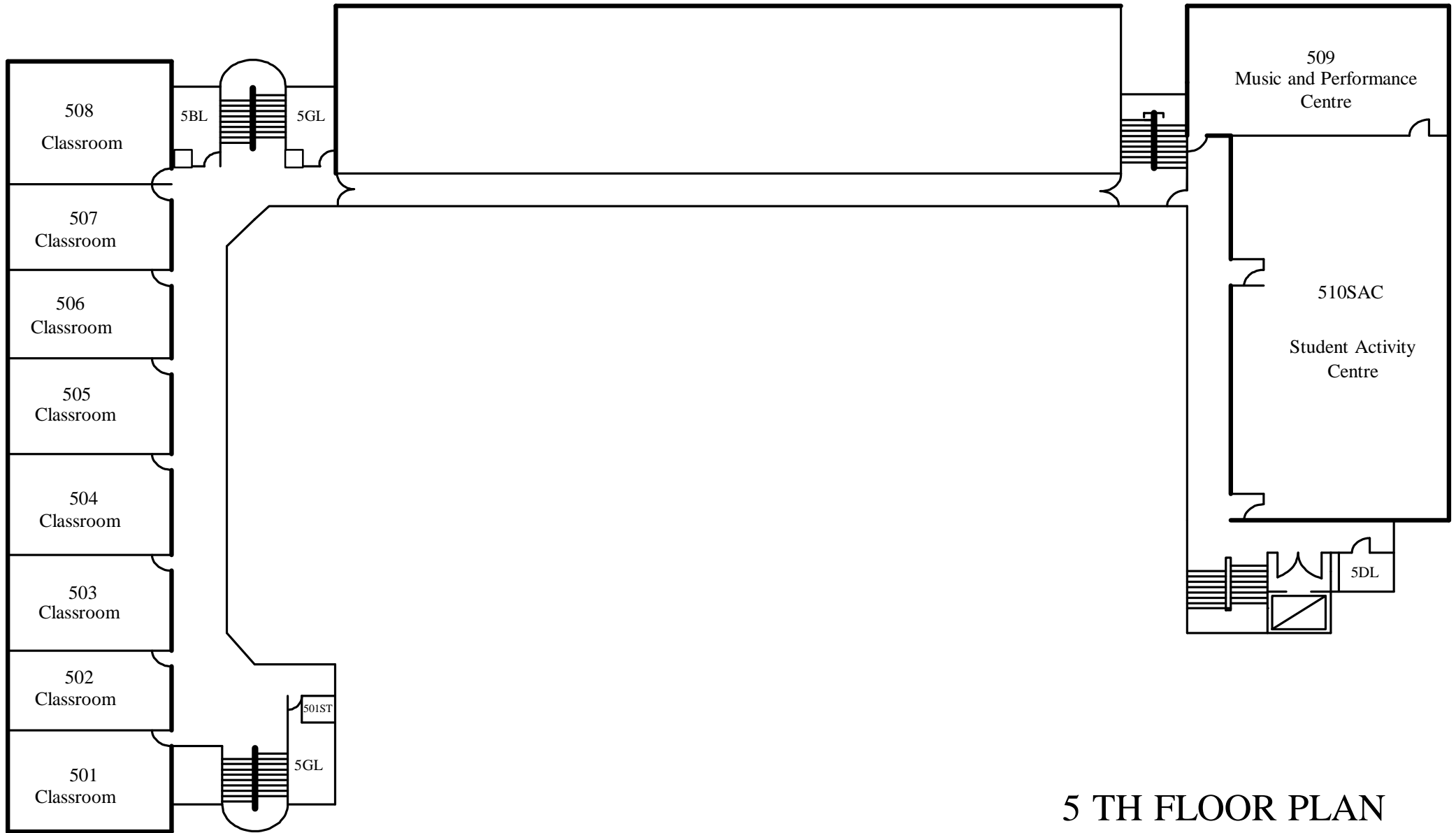
2 ND FLOOR PLAN



3 RD FLOOR PLAN



4 TH FLOOR PLAN



5 TH FLOOR PLAN