

學校檔號：T07

更換全校無線網絡系統 投標書 邀請信

本校為一所津貼小學。按教育局 2023-2024 年度編制，全校共有三十班。現誠邀 貴機構提供「更換全校無線網絡系統」的投標。倘 貴機構不擬接納部份服務條件，煩請於投標附表上清楚註明。

若 貴公司參與投標，請務必交回：

1. 投標意向書一份 (附件一)
2. 更換全校無線網絡系統投標表格一式兩份 (附件二)
3. 利益申報表格一份 (附件三)
4. 維護國家安全須知表格一份 (附件四)
5. 有效之商業登記副本一份

注意事項：

- i. 投標書信封必須密封
- ii. 投標書信封不可顯示 貴機構的身份(信封面寫上「投標更換全校無線網絡系統」)
- iii. 投標者必須把服務及價格資料分別密封於兩個空白的信封，信封面清楚註明「服務資料」及「價格資料」字樣。兩個信封須再放進一個大信封內，一併遞交。投標者不可於服務資料中泄露價格，否則有關投標書將不會被考慮。

投標請於二零二四年四月十一日(星期四)中午十二時正，**親送/掛號郵遞**送交新界天水圍 102 區第四期第二校舍 中華基督教青年會小學一樓校務處。逾期投標概不處理。另 貴機構的投標由截止日期起計，有效期為一年，如在該九十天內未接獲通知，則是次投標會當作落選論。

倘若 貴機構不擬投標，煩請盡快把本信件、投標表格及填妥的投標意向書寄回/傳真本校，並列明不擬投標的原因。

此外，根據《防止賄賂條例》，所有供應商和承辦商，向學校員工提供任何與他們職責有關的利益均屬違法行為，學校不容許供應商和承辦商透過任何形式的利益（包括捐贈）影響學校的選擇。學校員工或供應商和承辦商任何一方或雙方如有干犯上述違法行為，有關投標將不獲考慮；即使已獲委聘，所簽訂的有關合約亦會被宣告無效，敬請留意。若 貴機構對是次投標內容有任何疑問，請致電 2445 0580 與何健邦老師聯絡。

中華基督教青年會小學

羅勁柱署任校長
2024 年 3 月 19 日

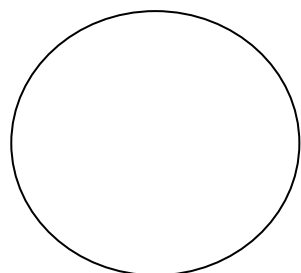
投標意向書

* 敝機構現樂意向中華基督教青年會小學呈交『更換全校無線網絡系統』的投標，並樂意遵從中華基督教青年會小學『更換全校無線網絡系統』投標表格內一切細則，並提供有關資料。

* 敝機構不擬向中華基督教青年會小學呈交『更換全校無線網絡系統』的投標，理由如下：

此覆

中華基督教青年會小學



公司印鑑

公司名稱: _____

負責人姓名: _____

負責人簽署: _____

公司電話: _____

日期: _____

1. 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 and its open areas) for supporting e-learning. 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 through a **purchase** model.

2. The Whole Design

The quoted price should include installation, setup, configuration and maintenance fee.

3. User Requirements

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

3.1. Standard Provision (to be amended according to the School's requirement)

- **WiFi Internet Connectivity** - using IEEE 802.11a/b/g/n/ac/ax network in standard classrooms. The minimum number of classrooms to be covered shall be at least equal to the number of approved standard classrooms for the 2024/27 school year.
- **Number of Concurrent Connection** - commensurate with the maximum number of students, say 40, in a class with at least 3 Mbps upload / download bandwidth per connection.
- **Authentication Method** - Use Hong Kong Education City accounts for authentication to save the effort for device registration.
- **Session Control** - allow multiple devices per user account to be authenticated using Hong Kong Education City.
- **Internet Content Filtering Service** - based on filtering profile commonly adopted by most schools and managed by vendors.
- **Existing Network Facilities** - **can rely on any existing network facilities and cabling of the School. Contractor should provide maintenance service within contract period in case existing cables, LAN ports are re-used.**
- **Hardware configuration** - School must have fully administrative right to configure Access Point controller and switch setting.

- **Managed Service** - operate the Wi-Fi network using managed service model, provide end-to-end service with single point of contact including configuration, provisioning of service, proactive monitoring, maintenance and regular reporting.
- **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.
- The Contractor shall reinstate and make good the concerned area of the School to the satisfaction of the school management after removal of the hardware.

3.2. Deliverables

3.2.1. 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

3.2.2. 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

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 AP are both supported together

with WLAN Controller. WLAN Controller shall be capable of fully centralized provisioning, configuration and monitoring all APs functionalities; **physical controller on premises is required.**

- 4.1.2. The thin client WLAN 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.
- 4.1.3. **The WLAN APs shall be WiFi 6 standard or above, support dual band of 2.4 GHz and 5 GHz with maximum rate 2.975Gbit/s or above.**
- 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 multiple devices per user account to be authenticated using Hong Kong Education City accounts.
- 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 user basis.

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.

4.2. 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 the required bandwidth, QoS, and policy-based routing to carry all sorts of information including video, voice, data, image, etc.

4.2.3. The Core switch shall not be the same equipment as the Broadband Router or Firewall. A separate core switch must be provided.

4.2.4. The Core Switch shall be a 24/48 x 10/100/ 1000Base-T Ethernet ports, 4 x 10 GE SFP+ with 10G connection to each PoE Access Switch on typical floors.

4.2.5. The Core Switch shall support Layer 2 and Layer 3 switching and capable of providing the packet forwarding rate of 96 Mpps and switching capacity 128/672 Gbit/s at least.

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

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

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

4.2.9. 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.
- 4.3.2. The Access Switch shall consist of 24/48 x 10/100/ 1000Base-T Ethernet ports, 4 x 10 GE SFP+ 2 stack ports with a 10G 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 of forwarding performance 132 Mbps and switching capacity 176Gbps/520Gbps at least.
- 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 (if any)

- 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 router policy should be applied to shape the guest user VLAN traffic to designated bandwidth requested by School to preserve the e-learning in class which is the primary purpose of School Wi-Fi.
- 4.4.8. The firewall should support dual WAN (1000 Mbps each) after enabling main policies.

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. Contractor should formally inform the School in writing if there is a change of contact point.
- 4.5.2. The project manager of this project shall be the staff of the contractor for at least 6 months. The contractor shall prove the employment of the project manager by providing supporting documents during tender submission.
- 4.5.3. The project manager shall attend the project meeting before completion of the project.
- 4.5.4. The Contractor shall provide rack/cabinet or use existing school rack if there is available rack space. All switches/firewall shall be properly installed into wall mounted cabinet or rack.
- 4.5.5. Cables shall be labelled with connected port and its device id.
- 4.5.6. All the equipment shall be labelled with an identifiable id.
- 4.5.7. The placement of cables, cabinets, racks and appliances shall be shown on the network diagram.
- 4.5.8. Switches and/or other appliances shall be properly installed into cabinet/rack with appropriate ventilation.

- 4.5.9. Cable length shall not be excessive nor too short in which preventing door opening or closing.
- 4.5.10. 13A power cord(s) shall be bundled with appliance(s).
- 4.5.11. Cable shall be properly set up onto appropriate cable management guide.
- 4.5.12. Contractor should make sure that the actual environment is suitable for the installation and operation of equipment with the School agreement in advance, and make necessary suggestions, if any.
- 4.5.13. Contractor should make sure all reused cables run in normal situation (i.e. 1Gbps). In case of any malfunction, contractor should repair them at their own cost.

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. Advanced 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.

4.7. Helpdesk Service

- 4.7.1. The Helpdesk Service shall maintain dedicated hotline, including phone, email, instant messaging and fax, for enquiries and complaints.
- 4.7.2. The Helpdesk Service shall answer enquiries and complaints originated from the School not only concerning the Service, as well as remote re-configuration of existing firewall, switches, virtual machines, active directory and PC/files management.
- 4.7.3. The Helpdesk Service shall operate 24hours from Mon to Sat, and 9am to 5pm with operators providing tier remote re-configuration services .

4.7.4. 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. User Acceptance Test

4.8.1. 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.

5. Schedule of Work

Phase	Items	Starting Date	Ending Date	Service fee
I	Build up of WiFi network	May 2024	15 July 2024	0
II	Subscription of service (Warranty)	Ending Date of Build up	3 years Warranty	Quoted price

6. Tender Preparation and Submission

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

- Price Schedule
- Proposed AP location mark on the Floor plan
- Proposed Network infrastructure show on the Network Diagram
- Implementation Plan
- WLAN system 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.

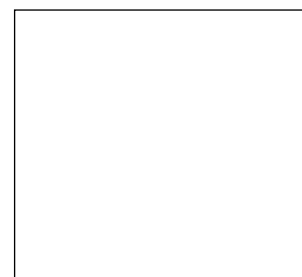
請填妥以下表格/另行附上投標資料

項目	合共費用(HKD)	備註
一次性付款		

選項(月租支付)

項目	每月費用(HKD)	合共費用(HKD)	備註
分期兩年計算			
分期三年計算			

以上是本公司提供之投標，現蓋印作實



公司印鑑

報價評審準則

本校向來重視服務機構的服務內容和質素，所以服務及價格評審各佔的比重如下：

價格評審比重 - 40% 服務評審比重 - 60%

請就以下項目，申述 貴機構提供的最佳服務，校方會按以下範疇作評審準則：

1.1 硬件品質和服務支援	<ul style="list-style-type: none">○ Core Switch 網絡核心交換器○ Access Point 無線存取點○ Controller 無線網絡控制器○ 客戶服務和技術支援○ 施工時間及能否迎合校方要求配合學校基建○ 其他額外服務和供應商在學界的信譽
1.2 價格	<ul style="list-style-type: none">○ 硬件整體價格○ 其他額外費用

利益申報表格

聲明：

1. 《防止賄賂條例》，在學校採購過程中，如學校員工接受供應商和承辦商提供之利益，或供應商和承辦商向學校員工提供利益，均屬違法。
2. 學校員工或供應商和承辦商任何一方或雙方如有干犯上述違法行為，有關投標將不獲考慮；即使已獲委聘，所簽訂之有關合約亦會被宣告無效。

中華基督教青年會小學
申報利益表現

1. 你與中華基督教青年會小學有沒有存在任何業務利益關係？(註釋1)
有/沒有 #
如有的話，請說明。
-
-

2. 你的家人或親屬(註釋 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。
-
-

註釋

(註釋 1) 個人利益包括你參與經營 / 承包學校的各項服務等。

(註釋 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

#請將不適用的刪去

維護國家安全須知表格
(適用於物料或服務報價／招標)

附件四

下方簽署人確認即使報價／招標文件中有任何相反的規定，學校保留以其公司曾經、正在或有理由相信其公司曾經或正在作出可能構成或導致發生危害國家安全罪行的行為或活動為由，取消其公司資格的權利，又或為維護國家安全，或為保障香港的公眾利益、公共道德、公共秩序或公共安全，而有必要剔除其公司。

下方簽署人確認若出現下列任何一種情況，學校可以立即終止合約：

- (i) 其公司曾經或正在作出可能構成或導致發生危害國家安全罪行或不利於國家安全的行為或活動；
- (ii) 繼續僱用其公司或繼續履行合約不利於國家安全；或
- (iii) 學校合理地認為 上述任何一種情況即將出現。

公司名稱：_____

香港註冊的辦事處地址：_____

簽署人姓名(正楷)：_____

簽署人職銜(請註明)：_____

簽署人簽署：_____

公司電話：_____

傳真號碼：_____

日期：_____

無線存取點(AP)位置

描述	房間編號
更換原有無線存取點(AP)	<ul style="list-style-type: none"> ● 101, 103(office/校長室位置轉移), 106A, ServerRoom, 107, 113, 114, 禮堂 x2 ● 201, 202, 203, 204, 205, 206, 213 STEM Room, 214 ArtRoom ● 302, 303, 306, 307, 308, 313, 314, 315 ● 402, 403, 404, 405, 406, 407, 408 ● 502, 503, 504, 507, 508, 509 ● 602, 603, 604, 605, 606, 607, 608 ● 籃球場(巴士旁), 籃球場(演講台), 飯堂, 園圃, GF 傳達處, GC 會議室, G02 生活動中心, 雨天操場
無線存取點(AP)新增點	<ul style="list-style-type: none"> ● 304, 305, 505, 506 ● GF 青庭 x2, 籃球場 x2 (加強信號), 106 電腦室, 禮堂 (加強信號)
*新增有線網絡位置(Node)	<ul style="list-style-type: none"> ● GF 青庭 x4
無線存取點(AP)總數	64
有線網絡位置(Node) 總數	4

無線存取點(AP)「同時使用者數量」:

一般課室(40)	特別室(40)	園舖/感恩巴士(40)
小班房(20)	General Office (20)	
禮堂(300)	教員室(80)	
籃球場 1(80)	飯堂(100)	
籃球場 2(80)	圖書館(40)	
雨天操場(80)	會議室(60)	