

**EOI for Provision of Advanced Facility Management System with  
Integrated Building Information Modelling (BIM) Data for New Acute Hospital  
Kowloon Central Cluster, Hospital Authority  
Hospital Authority**

**Update on specification**

Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
2.1.14	IoT device/ integration: The Tenderer shall integrate the BIM-FM system and other IoT systems provided by the hospital.	(M)	✓	
2.4.10	BIM Model Audit: Audits of the BIM model before any data integration are crucial to maintain its accuracy and relevance. The Tenderer shall provide the process of BIM model audits. The audits should assess the model's accuracy, completeness, and compliance with the Asset Information Requirement (AIR) provided in Appendix 5 and latest building and system data. The Tenderer must provide audit reports outlining findings and any necessary corrective actions. These audits are critical for ensuring the long-term utility and integrity of the BIM model.	(M)	✓	
2.5.3	a) Other Requirements a. User Interface: The mobile application should have an intuitive and user-friendly interface, suitable for staff, FM team members, and technicians. b. Data Integration: The Tenderer shall develop the APP or middleware for data exchange and update between the deliverable of the BIM-FM system and the existing HA or Hospital systems/ applications via HA API gateway. Details of existing systems/ applications used in HA and Hospitals will be further provided and coordinated upon the project commencement. c. Security: The application must ensure data security and protect sensitive information in compliance with The Hospital's policy. d. Accessibility: The app should be accessible across various mobile devices and platforms, ensuring wide usability. e. Future Integration: The Tenderer shall develop an API for connection and data exchange with the app. The data to be exchanged shall be decided by the Hospital or the Hospital's representatives.	(M)	✓	
2.6.19	All building services works including power points, conduits, junction boxes, cables and pipe works, etc. shall be concealed and no surface mounting will be permitted unless otherwise so agreed. These works shall be deemed to have been included and allowed for by the tenderer in the returned tender sum.	(M)	✓	Seems irrelevant in this context

Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
2.7.2	<p><b><u>Asset Management</u></b></p> <p>The Asset Management module offers robust tracking and management of building asset data only. It integrates with BIM for spatial visualization and includes <b>real-time tracking of movable assets</b>, comprehensive lifecycle management, and detailed asset information management. This module streamlines maintenance processes and enhances overall asset utilization efficiency.</p>	(M)	✓	
2.7.3	<p>a) Asset Tracking and Management</p> <p>a. Integration Requirement</p> <p>I Connection with As-Built BIM: Mandatory for facilitating asset tracking and enhancing spatial awareness within the BIM-FM system. BIM data should be in <b>IFC format</b>, and the equipment and asset data should include make, model, serial number, warranty information, maintenance records.</p> <p>II Communication with legacy systems via CDE:</p> <ul style="list-style-type: none"> <li>- CCMS: System to retrieve specific equipment data, including location, status, alerts, and signals.</li> <li>- RTLS: Real-time tracking of movable assets, such as medical equipment, using QR codes or RFID tags.</li> </ul> <p>III IoT Integration</p> <ul style="list-style-type: none"> <li>- Device Types: Use of QR codes/tags for asset tracking, integrated with RTLS for location tracking and management.</li> <li>- Data Transmission: Real-time transmission of data via secured wireless networks to maintain current asset statuses.</li> </ul> <p>(*Please note that the IoT sensors and devices will be supplied by the separate contractor(s) engaged by the Hospital. The provision of IoT hardware from the Tenderer is not required. The Tenderer only requires conduct the system integration between the BIM-FM system and other IoT systems provided by the Hospital.)</p> <p>b. Asset Information Management</p> <p>This function enables real-time monitoring of asset data, management of specifications, records, and documents, and allows authorized users to modify asset details and generate reports. It also associates historical work orders with assets and creates unique QR codes for each major asset for easy onsite identification.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- User shall be able to check the following information on the system or scan the RFID code of an asset (The proposed RFID setup from the Main Contractor shall refer to EMSD</li> </ul>	(M)	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>BIM data in IFC from contractor</p>

Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
	<p>BIM-AM Standards and Guidelines Version 3.0):</p> <ul style="list-style-type: none"> <li>• Real-time data such as temperature, water air flow rate etc;</li> <li>• Specifications, manufacturer details, warranty information;</li> <li>• Maintenance record;</li> <li>• Attachments.</li> </ul> <p>- Authorized User shall be able to add / revise / delete asset by setting rules (which shall be configurable)</p> <ul style="list-style-type: none"> <li>• Asset shall be added by a form on the web portal, user will be able to input/select basic information of an asset, such as category, asset name, location, code ID, image, etc.;</li> <li>• Ability to import the technical specification, the information will be able to add or drop through editing function on the web portal or through excel form;</li> <li>• Enable to upload documents in .pdf / .doc / .docx / .xls / .xlsx / .jpg / .png format for as built 2D Layout Drawings, as-built 2D installation Drawings, Installation Tenderer Contact Information, Vendor Contact information, Product Catalogue / . Technical Specification, Final System Design Document, Configuration Manual, O&amp;M manual, T&amp;C Report, Other Certificates / Permits etc;</li> <li>• User shall be able to view, download, or update the attachments as necessary.</li> </ul> <p>- User shall be able to generate reports of existing list or based on asset information, such as a list of assets with upcoming warranty expirations or assets requiring maintenance.</p> <p>- Record the historical work orders that are generated in the Smart Work Order management functions and associated with the asset as the maintenance record of the asset.</p> <p>II Interface</p> <ul style="list-style-type: none"> <li>- The system displays a user-friendly interface with options to search and retrieve asset information. User shall be able to check the asset in the 3D model, or in a categorized list.</li> <li>- The system provides interactive dashboard, showing key asset metrics</li> </ul>			

✓

Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
	<p>like total assets, asset conditions, and upcoming maintenance schedules.</p> <ul style="list-style-type: none"> <li>- Provide graph to display the selected assets performance, maintenance costs, and lifecycle analysis etc. for flexible analysis</li> <li>- Provide Alerts or notification panel for critical issues like asset failures or warranty expirations.</li> </ul> <p>c. Alerts and Notifications This function enables send alerts for potential issues, enabling proactive maintenance.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Generate alerts and notifications upon detecting early signs of equipment failure (configurable), to minimize breakdowns and downtime. Sensors installed on machinery shall continuously monitor performance, sending alerts when they detect potential issues (Issue specific type of work order) such as overheating or unusual vibrations.</li> <li>• This feature shall integrate with sensor, capture the required asset information.</li> <li>- Generate alerts for deviations in critical environmental conditions when monitoring.</li> <li>- Generate alerts when inventory levels of key items are low(configurable).</li> <li>- Generate alerts on abnormal energy usage for early intervention.</li> </ul> <p>d. Automated Work Order Registration Automatically generate work orders, notifying FM team promptly.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Automate the scheduling of regular maintenance tasks and register maintenance-type work orders. E.g. The system automatically generates a monthly work order for HVAC system filters replacement in an office building.</li> <li>- Quickly address issues to minimize operational disruptions. E.g. An automated work order is generated immediately after a key piece of production machinery shows early signs of wear, ensuring rapid response and minimal production interruption.</li> <li>• Require transfer data to Smart Work Order Management Module, shall</li> </ul>		✓	
			✓	

Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
	include 1.1 Equipment Identity 1.2. Location 1.3. Condition status (temperature too high) 1.4. Alert type 1.5. Time stamp			
2.7.7	<p>b) Predictive Maintenance</p> <p>a. Data Analytics &amp; AI Prediction</p> <p>This function predicts potential asset failures using historical and real-time data. It is crucial for anticipating maintenance needs.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Utilize AI algorithms and data analytics to analyze historical and real-time data, predicting potential asset failures before they occur.</li> <li>- Generate alerts and recommendations for preemptive maintenance actions based on predictive analysis.</li> </ul> <p>II Interface</p> <ul style="list-style-type: none"> <li>- A sophisticated analytics dashboard that displays predictive insights, trends, and potential failure points derived from AI algorithms.</li> <li>- Customizable data visualization tools for easy interpretation of complex datasets.</li> <li>- Advanced reporting tools to generate detailed reports on predictive maintenance activities, asset health, and performance trends.</li> <li>- Export options for reports to facilitate sharing and analysis.</li> </ul> <p>b. Conditional Monitoring</p> <p>This feature employs IoT sensors and devices to continuously track the health and performance of essential equipment.</p> <p>(*Please note that the IoT sensors and devices will be supplied by the separate contractor(s) engaged by the Hospital. The provision of IoT hardware from the Tenderer is not required. The Tenderer only requires conduct the system integration between the BIM-FM system and other IoT systems provided by the Hospital.)</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Implement IoT sensors and devices to continuously monitor the condition of critical assets like HVAC systems, elevators, and electrical infrastructure.</li> <li>- Collect and analyze data on asset performance, wear and tear, and operational anomalies for early detection of issues.</li> </ul> <p>II Interface</p>	(M)	<p>✓</p> <p>✓</p> <p>✓</p>	

Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
	<ul style="list-style-type: none"> <li>- A dedicated section for monitoring the real-time status of critical assets through IoT sensor data.</li> <li>- Visual indicators for asset health, including temperature, vibration, and other key performance metrics.</li> </ul>		✓	
	<p>c. Customized Maintenance Schedules</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Create dynamic maintenance schedules that adapt to the actual condition and usage patterns of equipment, moving beyond fixed-interval maintenance.</li> </ul>		✓	
	<p>d. Alerts and Notifications</p> <p>This feature allows for sending alerts for potential issues, enabling proactive maintenance.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Automate the scheduling of predictive maintenance tasks and register maintenance-type work orders.</li> </ul>		✓	
	<p>e. Automated Work Order Registration</p> <p>This feature allows for automatically generating work orders, notifying FM team promptly.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Generating specific type of work orders for maintenance.</li> </ul>		✓	
	<p>c) Roster Management</p> <p>a. Automated Shift Scheduling</p> <p>This feature automates the creation of shift schedules, considering technician's availability, qualifications, and workload to ensure fair and efficient allocation of shifts.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Automatically generate shift schedules based on technicians' availability, qualifications, and workload balance to ensure continuous coverage and operational efficiency.</li> <li>- Integrates technicians' rosters with the maintenance task schedule, ensuring that maintenance activities are planned in accordance with technicians' availability.</li> </ul>		✓	
	<p>II Interface</p> <ul style="list-style-type: none"> <li>- A user-friendly interface for creating and viewing shift schedules, with drag-and-drop functionality and easy editing features.</li> </ul>		✓	
	<p>b. Employee Availability Tracking</p> <p>This feature maintains a live record of staff availability, tracking various time-off requests to facilitate precise scheduling.</p> <p>I Use Cases</p>			

Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
	<ul style="list-style-type: none"> <li>- Tracks and records technicians' availability, including leave days, sick leaves, and other time-off requests, ensuring accurate and up-to-date scheduling.</li> </ul>		✓	
	<p>II Interface</p> <ul style="list-style-type: none"> <li>- Comprehensive technician profiles showing qualifications, availability, and historical scheduling data for informed decision-making.</li> </ul>		✓	
	<p>c. Skill-Based Task Assignment</p> <p>This feature assigns tasks to technicians by matching job requirements with their verified skills and qualifications for efficient job allocation.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Aligns tasks with the appropriate technicians based on their specific skills, certifications, and experience, optimizing task execution and workforce utilization.</li> </ul>		✓	
	<p>d. Shift Swap and Adjustment</p> <p>This feature empowers technician to manage their shifts with a user-friendly system for requesting swaps or adjustments, subject to approval.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Allows technicians to request shift changes or swaps through the system, subject to managerial approval, enhancing flexibility and employee satisfaction.</li> </ul>		✓	
	<p>II Interface</p> <ul style="list-style-type: none"> <li>- Technician shall be able to select a on duty colleague with same required qualifications in a drop menu.</li> <li>- Technician shall be able to check colleague's current position.</li> </ul>		✓	
	<p>e. Overtime and Compliance Monitoring</p> <p>This feature ensures fair labor practices and policy compliance by overseeing work hours and managing overtime.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Monitors technician work hours to manage overtime, ensuring adherence to labor regulations and internal hospital policies.</li> </ul>		✓	
	<p>f. Reporting and Analytics</p> <p>This feature provides analytics and reporting tools for a data-driven approach to managing staff workload and operational efficiency.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Generates insightful reports on staffing patterns, workload distribution, and compliance, aiding</li> </ul>		✓	

Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
	<p>in strategic planning and operational improvements.</p> <p>II Interface</p> <ul style="list-style-type: none"> <li>- Some interactive chart or graph, shall be able to select user, time period etc.</li> </ul> <p>g. Reporting and Analytics</p> <p>This feature allows for sending alerts for potential issues.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- In the event of abnormal work hours, dispatch alerts to the FM team member.</li> <li>- Generates notifications if shift changes are required.</li> </ul> <p>II Interface</p> <ul style="list-style-type: none"> <li>- Some interactive chart or graph, shall be able to select user, time period etc.</li> </ul>		<p>✓</p> <p>✓</p> <p>✓</p>	
2.7.15	<p>Standalone CCTV for FM (Mainly use PoE)</p> <p>(Optional)The Tenderer shall provide installation of 30 sets Standalone Smart CCTV with AI video analytic built-in function at the plantrooms (The actual location of delivery and installation is subject to the final confirmation by the Hospital), including installation service. (incl. cable containment from the field devices to the nearest trunking).</p> <p>a. Integration Requirement</p> <p>I Connection with As-Built BIM: Shall integration with As-Built BIM to visualize camera's location.</p> <p>II Communication with BIM-FM systems via CDE: Communication with BIM-FM system through (CDE) for data consolidation.</p> <p>III API Integration for the security system</p> <ul style="list-style-type: none"> <li>- Device Types: CCTV cameras capable of wired/wireless connectivity, with Power over Ethernet (PoE) support.</li> <li>- Data Capture: Video footage and motion detection alerts.</li> <li>- Other features (optional): intercom, people counting</li> <li>- Data Transmission Method: Support for both wired and wireless (PoE) transmission to ensure flexible and reliable connectivity.</li> </ul> <p>b. Centralized Control</p> <p>This feature allows the FM Team to oversee and manage CCTV operations from a single, centralized location, enabling control over cameras installed in specific areas like pump rooms and switch rooms.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Manage and oversee standalone CCTV systems installed in critical areas such as pump rooms, switch rooms, and other sensitive locations.</li> </ul>	(M)		By ATAL



Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
	<p>II Interface</p> <ul style="list-style-type: none"> <li>- A user-friendly dashboard for overseeing all CCTV feeds, with easy navigation and control features.</li> <li>- Options to view multiple camera feeds simultaneously and select specific cameras for detailed monitoring.</li> </ul> <p>c. Real-Time Monitoring This feature enables monitoring of live video feeds from CCTV cameras for continuous surveillance, enhancing security and safety across critical areas.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Enable continuous surveillance through CCTV cameras to monitor the safety and security of the facility.</li> </ul> <p>II Interface</p> <ul style="list-style-type: none"> <li>- Features for zoom, tilt, and pan controls to examine specific areas closely.</li> </ul> <p>d. Incident Response This feature allows for quickly respond to safety or security incidents identified through CCTV footage, facilitating immediate action.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Rapid response capabilities in case of safety incidents detected by the CCTV system.</li> </ul> <p>II Interface</p> <ul style="list-style-type: none"> <li>- Interface for logging incidents detected by CCTV, with details like time, location, and nature of the incident.</li> </ul> <p>e. Alerts and Notifications This feature supports receiving automated alerts for unusual activities or potential maintenance issues detected by the CCTV system.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Send automated alerts to the FM team in case of unusual activities or potential issues detected by the CCTV cameras.</li> <li>- Customizable alert thresholds based on different criteria (e.g., motion detection in restricted areas).</li> </ul> <p>II Interface</p> <ul style="list-style-type: none"> <li>- Customizable settings for alerts based on different parameters like motion detection, unauthorized access, etc.</li> </ul> <p>f. Automated Work Order Registration This feature enables the generation of work orders automatically when maintenance needs are identified by the CCTV system.</p> <p>I Use Cases</p>			

Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
	<ul style="list-style-type: none"> <li>- Automatically generate work orders when the system detects maintenance needs.</li> </ul> <p>II Data Transfer</p> <ul style="list-style-type: none"> <li>- Transfer data to Smart Work Order Management Module, should include 1.1 Equipment Identity 1.2. Location 1.3. Condition status (temperature too high) 1.4. Alert type 1.5. Time stamp</li> </ul>			
2.7.20	<p>a) Energy Consumption Monitoring and Control</p> <p>a. Integration Requirement</p> <p>I Connection with existing legacy systems: Shall integration with BEMS, PQMS, EMDS, CCMS to track the energy usage through API.</p> <p>II Communication with BIM-FM systems via CDE: Communication with BIM-FM system through (CDE) for data consolidation.</p> <p>III IoT integration</p> <ul style="list-style-type: none"> <li>- Device Types: Sound pressure level meter, Vibration transducer, Differential pressure range, Lighting intensity (lux) meter, Flood/water detection sensor, IAQ sensor (Temperature, RH, pm2.5, CO2, VOC, etc.), Motion detection sensor, smoke detector.</li> <li>- Data Transmission: Real-time transmission of data via secured wireless networks to monitor current energy statuses.</li> </ul> <p>(*Please note that the IoT sensors and devices will be supplied by the separate contractor(s) engaged by the Hospital. The provision of IoT hardware from the Tenderer is not required. The Tenderer only requires conduct the system integration between the BIM-FM system and other IoT systems provided by the Hospital.)</p> <p>b. Real-Time Monitoring</p> <p>This feature enables FM team to continuously track energy usage, providing immediate visibility into current consumption levels.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Continuously tracks and collects data on energy usage.</li> </ul> <p>II Interface</p> <ul style="list-style-type: none"> <li>- A dynamic, user-friendly dashboard displaying real-time energy usage, historical data, and trends.</li> <li>- Customizable widgets and graphs for different energy parameters and hospital sections.</li> </ul>	(M)	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	

Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
	<p>c. Efficiency Analysis</p> <p>This feature supports utilizing artificial intelligence to evaluate energy consumption patterns, identifying inefficiencies and suggesting optimization strategies.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Leverage AI algorithms to analyze complex energy usage patterns, identifying inefficiencies and areas for improvement.</li> </ul> <p>II Interface</p> <ul style="list-style-type: none"> <li>- A section dedicated to AI-driven efficiency analysis, showcasing insights, suggestions, and energy-saving opportunities.</li> </ul> <p>d. Alerts and Notifications</p> <p>This feature supports receiving automated alerts for unusual activities or potential maintenance issues detected by the system, enabling proactive measures.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Send automated alerts to the FM team in case of unusual activities or potential issues detected.</li> <li>- Customizable alert thresholds based on different criteria.</li> </ul> <p>II Interface</p> <ul style="list-style-type: none"> <li>- Customizable settings for alerts based on different parameters.</li> </ul> <p>e. Automated Work Order Registration</p> <p>This feature allows for automatically generating work orders when the system identifies maintenance needs, notifying FM team promptly.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Automatically generate work orders when the system detects maintenance needs.</li> </ul>		<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	
2.7.24	<p>a) Space Allocation &amp; Occupancy Management</p> <p>a. Space Allocation &amp; Occupancy monitoring</p> <p>This feature enables FM team to manage and assign various areas, ensuring optimal use of spaces.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Visualize space occupancy condition with IoT integration such as motion detection sensor</li> </ul> <p>(*Please note that the IoT sensors and devices will be supplied by the separate contractor(s) engaged by the Hospital. The provision of IoT hardware from the Tenderer is not required. The Tenderer only requires conduct the system integration between the BIM-FM system and other IoT systems provided by the Hospital.)</p> <ul style="list-style-type: none"> <li>- Dynamically reassign and reconfigure spaces in response to changing</li> </ul>	(M)	✓	

Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
	<p>hospital needs, such as expanding departments or temporary closures.</p> <p>II Interface</p> <ul style="list-style-type: none"> <li>- An intuitive, graphical interface for allocating and space.</li> </ul>		✓	
2.7.27	<p>a) Data Collection and Analysis</p> <p>a. Integration Requirement</p> <p>I Get Data From</p> <ul style="list-style-type: none"> <li>- API: Integration with existing systems, including CCMS, CMMS, FMMS , and COPPE etc.</li> <li>- BIM and IoT Device Integration: collect and consolidate data from Building Information Modeling (BIM) systems and a variety of Internet of Things (IoT) devices.</li> </ul> <p>(*Please note that the IoT sensors and devices will be supplied by the separate contractor(s) engaged by the Hospital. The provision of IoT hardware from the Tenderer is not required. The Tenderer only requires conduct the system integration between the BIM-FM system and other IoT systems provided by the Hospital.)</p> <p>II Data Type: shall include but not limited to</p> <ul style="list-style-type: none"> <li>- Energy usage, budget control, maintenance schedules, and more.</li> <li>- Detailed data on environmental parameters such as temperature, humidity, and equipment status,</li> <li>- ...</li> </ul> <p>b. Real-Time Data Processing</p> <p>This feature is focused on analyzing data in real-time, identifying trends, anomalies, and potential issues. It is particularly crucial for monitoring and optimizing the performance of critical systems like HVAC and lighting within the hospital.</p> <p>I Use Cases</p> <ul style="list-style-type: none"> <li>- Process and analyze data in real-time to identify trends, detect anomalies, and pinpoint potential issues in critical hospital systems like HVAC and lighting.</li> <li>- Use analytics to optimize the performance and efficiency of these systems, contributing to cost savings.</li> </ul> <p>II Interface</p> <ul style="list-style-type: none"> <li>- A dashboard that provides real-time visualization of key data points like energy consumption, environmental conditions, and system performance.</li> <li>- Interactive tools for data analysis, such as graphs, heat maps, and trend lines.</li> </ul>	(M)	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	

Clause	Specification	M/D	Yes	No (provide details)
			(Please tick as appropriate)	
	- Custom report generation tools to aid in decision-making and strategy development.			
7.1	<p>Core Team Composition:</p> <p>a) One (1) Project Manager:</p> <p>a. Must have a minimum of 15 years of experience in managing system development and integration projects.</p> <p>b. Required to act as the main point of contact and communicate effectively at all levels in both English and Cantonese.</p> <p>c. The Project Manager is expected to be based in Hong Kong and will be responsible for total project management.</p> <p>b) One (1) System Architect:</p> <p>a. Should possess at least 10 years of IT experience with a proven record in designing and implementing complex IT systems.</p> <p>c) Senior Programmers (Minimum of 2):</p> <p>a. Each must have demonstrable experience in BIM and system integration, contributing to the technical execution of the project.</p> <p>d) One (1) BIM Team Leader:</p> <p>a. Minimum 5 years of experience in As-built BIM Project Management and BIM-AM system;</p> <p>b. Obtained CIC Certified BIM Manager (CCBM) professional qualification or equivalent.</p>	(M)	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	
7.2	One (1) Core team member with minimum of 10 years of experience in AEC industry, preferably with MEP engineering background in managing building operations/maintenance.	(D)		By ATAL
10.10.16	HA will not provide any hardware and software for integration development. The vendor has to provide their own and required hardware and software to fulfill the tender requirements. The development output package/file can send to HA/Hospital IT for integration test.	(M)	✓	
10.11.8	Coordinate with other IoT contractor(s) to configure IoT devices to drop new incoming communication attempts and require them to initiate all communications	(D)	✓	
10.11.9	Coordinate with other IoT contractor(s) to configure IoT devices, gateways, and applications to communicate with authorized service endpoints only	(D)	✓	

Stage	Deliverables	Tentative Completion Date
<b>I</b>	<b><u>Development of Site B</u></b>	<b>Q4 2025</b>
	<u>Phase 1 - User Requirements</u> <ul style="list-style-type: none"> <li>- User interviews and surveys documentation</li> <li>- Developed workflow based on user requirements</li> <li>- User needs and expectations report</li> </ul>	Q2 2025
	<u>Phase 2 - System Developments</u> <ul style="list-style-type: none"> <li>- Detailed system architecture and user interface design plan</li> <li>- Development of core system functionalities</li> <li>- Full-scale BIM-FM system development</li> <li>- Security and data protection protocols</li> <li>- Iterative review and feedback process</li> </ul>	Q4 2025
	<u>Phase 3 - UAT</u> <ul style="list-style-type: none"> <li>- UAT test cases and scenarios</li> <li>- UAT feedback and modification reports</li> <li>- System readiness confirmation</li> </ul>	Q4 2025
<b>II</b>	<b><u>Development of Site A</u></b>	<b>Q2 2027</b>
	<u>Phase 1 – Data Analysis &amp; User Requirements</u> <ul style="list-style-type: none"> <li>- Data Analysis Report</li> <li>- User requirements session summaries</li> <li>- Site A-specific needs and goals documentation</li> </ul>	Q2 2026
	<u>Phase 2 - System Developments</u> <ul style="list-style-type: none"> <li>- Customized system design for Site A</li> <li>- Integration report of data analysis findings</li> <li>- Interoperability and update reports</li> </ul>	Q1 2027
	<u>Phase 3 - UAT</u> <ul style="list-style-type: none"> <li>- UAT test cases and scenarios</li> <li>- Final system tweaks and feedback implementation</li> </ul>	Q2 2027
<b>III</b>	<b><u>Completion</u></b>	<b>Q2 2027</b>
	<ul style="list-style-type: none"> <li>- Comprehensive training manuals and related documentation</li> <li>- Final system checks and adjustments</li> <li>- Operational handover documentation</li> <li>- Completion report and sign-off</li> </ul>	Q2 2027
<b>IV</b>	<b><u>Maintenance (DLP)</u></b>	<b>Q2 2028</b>
	<ul style="list-style-type: none"> <li>- Establishment of maintenance schedule and documentation of maintenance protocols</li> <li>- Setting up support and service agreements</li> <li>- Regular system updates and optimization</li> <li>- Responsive technical support</li> <li>- Periodic system performance reviews</li> </ul>	Q2 2028

# Contents

<b>1</b>	<b>Purpose and scope of this plan .....</b>	<b>5</b>
1.1	Project description .....	6
1.2	Project objectives .....	6
1.3	Key reference documentation .....	7
<b>2</b>	<b>Asset Information Management Systems .....</b>	<b>8</b>
2.1	Existing AIM Systems .....	8
2.2	Existing FM Systems organisation .....	8
2.3	Functional Linkage .....	9
2.4	Functional Modules .....	10
<b>3</b>	<b>Information Requirements .....</b>	<b>11</b>
3.1	Delivery formats .....	11
3.2	Model breakdown structure for Asset Management .....	11
3.3	System breakdown information .....	12
3.4	Nomenclature .....	13
3.5	BIM Object .....	13
3.6	Schedule of Information Requirements .....	15
3.7	Accuracy of Information .....	16
3.8	Key Compliance Requirements .....	16
3.9	Data ownership .....	16
3.9.1	Asset hierarchy .....	17
3.9.2	Asset relationships .....	18
3.9.3	Maintenance .....	19
3.9.4	Sustainability .....	24
3.9.5	Asset Operation Efficiency .....	29
<b>4</b>	<b>Information Standards, Information Production Methods and Procedures .....</b>	<b>31</b>
4.1	Information Standards .....	31
4.1.1	Information Management Standards .....	32
4.1.2	Asset Identification .....	33
4.1.3	Asset Information Model (AIM) Deliverables .....	33
4.2	Information Production Methods and Procedures .....	34
4.2.1	Soft Landings .....	35
4.3	Quality Assurance Procedures .....	37
4.3.1	Quality Systems .....	37
4.3.2	Responsibility .....	37
4.3.3	Procedures .....	38

**Price Schedule**

Tenderers are required to quote price for the Provision of Advanced Facility Management System with Integrated Building Information Modelling (BIM) Data for New Acute Hospital, Kowloon Central Cluster, Hospital Authority in the table below.

Item No.	Description of Services	Qty	UOM	Total Amount (HK\$)
1	User Requirements (including but not limited to User interviews and surveys documentation, Developed workflow based on user requirements, User needs and expectations report)	1	Job	
2	<u>System Developments:</u> Digital Twin Platform - BIM-Asset Integration - Building Twin - Control Console	1	Job	
3	<u>System Developments:</u> As-built BIM Models Audit	1	Job	
4.1	<u>System Developments:</u> (Module) Asset Management			
4.1a	Asset Tracking and Management	1	Job	
4.1b	Smart Works Order Management	1	Job	
4.1c	Inventory Management	1	Job	
4.1d	Preventive Maintenance	1	Job	
4.1e	Predictive Maintenance	1	Job	
4.1f	Roster Management	1	Job	
4.1g	Compliance and Regulation Management	1	Job	
4.1h	Integration with location tracking system (RTLS)	1	Job	
4.2	<u>System Developments:</u> (Module) Project Management			
4.2a	Project Management	1	Job	
4.2b	Procurement Management	1	Job	
4.2c	Budget Control and Management	1	Job	
4.2d	Contract Management	1	Job	



4.3	<u>System Developments:</u> (Module) Surveillance & Monitor			
4.3a	Standalone CCTV for FM	30	Device	
4.3b	Installation of Standalone CCTV for FM (Including but not limited to AI Video analytic, necessary cabling works, API for security system)	1	Job	
4.3c	Integration with Construction Site Access Control System	1	Job	
4.3d	Technologies Adoption	1	Job	
4.3e	Environmental Monitoring	1	Job	
4.3f	IoT integration (Sensors and device management*, Sensor data collection, private cloud implementation)	1	Job	
4.4	<u>System Developments:</u> (Module) Energy & Sustainability			
4.4a	Energy Consumption Monitoring and Control	1	Job	
4.4b	Sustainability and Green Initiatives	1	Job	
4.4c	Waste Management	1	Job	
4.5	<u>System Developments:</u> (Module) Space Management			
4.5a	Tenant Management	1	Job	
4.5b	Space Allocation Management	1	Job	
4.5c	Integration with smart admin systems (e.g. smart toilet, meeting room booking, smart parking etc.)	1	Job	
4.6	<u>System Developments:</u> (Module) Data Analysis			
4.6a	Data Collection and Analysis	1	Job	
4.6b	Reporting and Dashboard Creation	1	Job	
5	Data Integration with existing system (Including but not limited to Onboarding data from existing system, API development, Private cloud data cross-synchronisation, Crossover system architecture design and consultancy)	10	System	

6	Smart FM System web portal and Mobile App deployment	1	Job	
7	Customized Training Plan and all relevant training manuals and documentation	1	Job	
8	Maintenance at DLP (Including but not limited to Establishment of maintenance schedule and documentation of maintenance protocols, Setting up support and service agreements, Regular System updates and optimization, Responsive technical support, Periodic system performance review report)	1	Job	
9	Maintenance Support after DLP per year (Including but not limited to Keep the system up to date, System maintenance, Local technical support, System bug fix, Hotline service)	1	Job	

Note:

\* IoT sensors and devices will be supplied by separate contractor(s), no IoT hardware requirement for this contract.

**Person Authorized to Sign Tender**

Name of Tenderer:	Name:	Authorized Signature:
_____	_____	_____
Company Chop:	Position Held:	Email Address:
_____	_____	_____
Date:	Tel. No.:	Fax No.:
_____	_____	_____