



TERMS OF REFERENCE
SWAP AND REPLACEMENT OF CHILLER AND COOLING TOWER
AT ASEC HERITAGE BUILDING

I. BACKGROUND

The ASEAN Secretariat was established in February 1976 by the Foreign Ministers of ASEAN. It was first housed at the Department of Foreign Affairs of Indonesia in Jakarta and moved to the current location at 70A Jalan Sisingamangaraja, Jakarta since 1981. Currently, the ASEAN Secretariat (ASEC) is housed at two buildings:

- 1) The Heritage Building which established in 1981. The building has 9 stories with approximately 11,000 sqm in total areas.
- 2) The New Building which was established in 2019. The building consists of two towers, and each has 16 stories with approximately 44,000 Sqm in total area. It is located adjacent to the Heritage Building.

Since its establishment, the ASEAN Secretariat Heritage Building has served as a central hub for ASEAN's operations and initiatives. To support its role, the building has been equipped with various building systems, one of which is HVAC system (Heating Ventilation and Air Conditioning). In 2002, part of the HVAC system: the chillers and cooling towers in the ASEAN Secretariat Heritage Building was upgraded to meet the building's cooling demand and provide centralized cooling for the building's air conditioning system. However, after more than two decades of operation, the system already passed the optimum lifetime and experiencing broken parts, therefore requires modernization to improve energy efficiency, reliability, and sustainability performance.

The proposed upgrade involves swapping and replacing the existing system with new water-cooled magnetic chillers, chilled & condenser water pumps, and cooling towers to enhance energy efficiency, system reliability, and sustainability. This upgrade is necessary to ensure that the cooling system continues to support the building's operational

requirements including the current reduced load, and in accordance with current engineering standards and best practices.

The ASEAN Secretariat seeks professional vendors with technical expertise and proven experience to deliver this critical upgrade, ensuring the long-term reliability, operational resilience, and energy performance of the ASEAN Secretariat Heritage Building's cooling system.

II. OBJECTIVE

The objective of this work is to swap and replace the chiller and cooling tower system at the ASEAN Secretariat Heritage Building, upgrading the existing system with new water-cooled magnetic chillers, chilled & condenser water pumps, and cooling towers.

III. EXPECTED DELIVERABLES

1. Completed swap and replacement work of the existing chiller and cooling tower with new water-cooled magnetic chillers, chilled & condenser water pumps, cooling towers, and associated chilled water and condenser water riser piping, including all necessary connections, fittings, valves, supports, insulation, and related works.
2. Carry out thorough testing and commissioning of the complete system to ensure that all installed equipment operates properly and performs in accordance with the specified design and applicable engineering standards.
3. Manual books and instructions to repair or troubleshoot new chiller and cooling tower System.

IV. SCOPE OF WORKS

The scope of works for the Swap and Replacement of Chiller and Cooling Tower System at ASEC Heritage Building are as follows:

1. Preparation of works by providing manpower, tools, materials, safety equipment and necessary protection to prevent damage of other building items during the working process (safety barrier).

2. The contractor is responsible for carefully removing the existing chiller and cooling tower system components (e.g., electrical panels, pipes, pumps, and other accessories) that are in the way and transport the old equipment outside of ASEC. **Contractor to include the price of the old equipment as price deduction in the final offer.**
3. The contractor is responsible for arranging the chiller, CHWP, and CWP in an efficient and practical layout, ensuring adequate space for operation, maintenance, and access. The scope shall also include repainting the chiller room and rearranging the lighting fixtures as necessary to accommodate the revised equipment layout.
4. The Contractor shall be responsible for dismantling and reinstating all civil works affected by the project, including, but not limited to, the wall at the chiller room, as necessary to facilitate the removal of the existing chiller and the installation of the new chiller and associated accessories. The scope shall also include the provision and installation of a dedicated shaft for the riser piping, complete with eight (8) units of 60 × 80 cm steel access shaft doors, or an appropriate size subject to ASEC's approval, as well as the installation of GRC partitions extending from the Ground Floor (GF) to the rooftop.
5. The contractor shall install the new water-cooled magnetic chillers, chilled & condenser water pumps, and cooling towers system, including all electrical & control panels, pipes, sensors, and necessary accessories. The installation must consider the following:
 - a) The chillers, chilled & condenser water pumps, and cooling towers must be certified by Air-Conditioning, Heating, and Refrigeration Institute (AHRI) and/or other internationally recognized equivalent certification organizations.
 - b) The system must be connected seamlessly with the ASEC Heritage Building's Air Conditioner infrastructure (AHUs & FCUs) and comply with all applicable engineering codes, standards, and local authority requirements.
 - c) Each component shall be securely installed with proper foundations, anchorage, piping, and electrical connections in compliance with applicable SNI standards and relevant engineering codes and regulations.

- d) The contractor is responsible for ensuring that all components are installed with care to avoid damage during installation. Any damage caused during the installation process must be repaired or replaced by the contractor at no extra cost to ASEC.
- e) The transition between old system and new system must be carefully planned, scheduled, and approved by ASEC to minimize disruption to ASEC operation.
- f) The Contractor shall provide appropriate solutions and recommendations to minimize any disruption to ASEC operations. Such measures may include, but are not limited to, the provision of temporary chillers and other necessary technical arrangements, subject to ASEC's prior review and approval.

6. System Configuration, Calibration, and Testing:

- a) After installation, the contractor shall configure, calibrate, and commission the system to ensure proper operation and optimal performance, including balancing chilled water and condenser water flows, verifying control sequences and setting operational parameters.
- b) The contractor shall conduct comprehensive testing and commissioning to verify the full functionality and performance of the system, including the chillers, chilled water pumps, condenser water pumps, cooling towers, control panels, and associated control systems.

5. The contractor must conduct minimum 2 times training on the proper operation, maintenance, troubleshooting, and repair procedures for the new chiller plant system.

6. The contractor must include a **1-year free maintenance & warranty** period as part of the project. During this period, the contractor will provide regular checks, troubleshooting, and any necessary corrective maintenance for the new chiller plant system at no additional cost to ASEC. All the maintenance activities must be recorded in written detailed report and to be submitted maximum 7 working days after each maintenance work is completed.

V. TECHNICAL SPECIFICATIONS

The Technical Specifications for the Swap & Replacement of Chiller and Cooling Tower System at ASEC Heritage Building are as follows:

No.	Description	Quantity
1.	Water Cooled Magnetic Chiller 120 TR	2 unit
2.	Chilled Water Pump 11 kW & Accessories	2 unit
3.	Condenser Water Pump 7.5 kW & Accessories	2 unit
4.	Cooling Tower 175 HRT with 2 motors 5,5kW & Accessories	2 unit
5.	Piping Installations & Accessories	1 lot
6.	Electrical Panel Installations & Accessories	1 lot
7.	Civil Works for Chiller Rooms & Shaft Riser Pipe	1 lot

VI. GENERAL REQUIREMENTS

1. The contractor is highly recommended to attend the preliminary site visit to check existing conditions to ensure that the proposal submitted will cover all the possible condition including to be able to check the value of the existing equipment. ASEC will not be responsible for covering additional costs due to differing site conditions.
2. The contractor must ensure that the newly installed chiller and cooling tower system components (e.g., electrical panels, pipes, pumps, and other accessories) meets all required safety standards, local best practices (SNI), and AHRI regulations, with proper testing and calibration to prevent accidents, and safeguarding ASEC property from any potential damage during installation and testing.
3. The contractor shall maintain a high standard of cleanliness and tidiness in the work area during and after installation, ensuring that all equipment, tools, and waste materials are properly managed and disposed of.
4. The contractor must ensure all work is carried out with minimal disruption to ASEC's daily operations and ensure safety protocols are strictly followed during the installation process.
5. The contractor is responsible for ensuring that the ceiling and surrounding civil works remain in good condition during the installation process. If any part of the ceiling or civil structure is damaged during the installation, the contractor must

- rectify and restore it to its original condition at no additional cost. Any damage caused by the contractor must be repaired to ASEC's satisfaction.
6. The contractor must provide comprehensive documentation for ASEC's approval and training to ASEC personnel on the operation and maintenance of the new chiller plant system, ensuring that the building staff is fully equipped to manage and troubleshoot the system post-installation.

VII. CONTRACTOR QUALIFICATIONS

1. Have at least 5 years' experience in the installation, maintenance and upgrading of Chiller & HVAC systems, particularly in office building, commercial areas, or similar facilities. A list of relevant projects must be attached in the submitted document.
2. Have at least 3 successful similar projects, proven by minimum 3 reference letter. Reference letter must be attached in the submitted document.
3. Have a valid business license (SIUP/NIB) or an equivalent government document related to HVAC and/or electronics and electrical installations. Licenses must be attached in the submitted document. Submission of additional licenses related to this works will be considered as an added advantage.
4. Have an authorized certification or a similar letter from the principal manufacturer, confirming their authorization to install, maintain, and service the specified chiller and/or cooling tower system brand. Submission of additional certifications related to this works will be considered as an added advantage.
5. Have a good knowledge about the project, proven by submitting work method that complies with Engineering Standards and Safety Regulations.
6. Have sufficient manpower by submitting manpower information and organizational structure to complete the project & schedule of completion for the project, schedule must comply with work schedule in ASEC premises (refer to chapter IX).
7. Have a valid certification and submit at least 1 (one) personnel Health and Safety License (K3 Umum), Electrician Technician (Teknisi K3 Listrik) and HVAC Technician (Teknisi Teknik Pendingin Tata Udara – TPTU) or similar. Copy of valid license must be attached in the submitted document. Submission of additional valid certifications related to this works will be considered as an added advantage.

VIII. TERMS OF PAYMENT

The terms of payment for this project consist of:

1. First payment : 10% Down Payment (DP)
2. Second payment : 35% upon achieving 50% of the actual project progress
3. Third payment : 45% will be due upon completion of all project works
4. Fourth payment : 5% will be settled after the project finished, including the maintenance & warranty period (12 months).

IX. DURATION OF SERVICES AND WORK SCHEDULE

The selected vendor shall be committed to complete the work within 6 (Six) months and follows the working schedule in accordance with the ASEC procedures as follows:

1. Monday to Friday : 5.00 pm to 10.00 pm.
2. Saturday and Sunday : 07.30 am to 10.00 pm.

The works schedule may change as instructed by ASEC.