



Circular Letter No.: 2019.160

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EU 1 Energy Performance – Performance-Based Approach

1. The Circular Letter provide a further interpretation to the energy simulation requirement on heating, ventilation, air conditioning and refrigeration (HVAC&R) system for buildings served by central chiller plant.

Simulation Methodology

2. To better reflect on the energy consumption of the central chiller plant in the simulation model, it is essential for project proponent of a building interior project served by central chiller plant (*hereafter known as project proponent*) to include BOTH water-side system (e.g. chiller, chilled water pumps, condensing water pumps and cooling towers) and air-side system (e.g. distribution fans) in the energy simulation model and clearly present all relevant data^{1,2} input into the simulation model during the course of the assessment.
3. The Technical Review Committee understands the potential difficulties that the project proponent faces in obtaining HVAC&R data from their respective host building. To recognize this constraint, the Technical Review Committee shall take a flexible and pragmatic stance when assessing the input into the simulation.
4. **Appendix A** provides the simulation methodology under different scenario. It is crucial that the Applicant follows strictly to this methodology when preparing the input into the simulation.

Assessment of Result

5. Under normal circumstance, it is understood that project proponent is responsible only on the design, management and maintenance of air-side system, while the design, management and maintenance of the water-side system rests mainly on the landlord.
6. In recognizing that the project proponent has no direct control over majority of the design, management and maintenance of the water-side system, the Technical Review Committee is ready to accept **ONLY** the annual energy consumption reduction of air-side system as the result to assess the credits achieved under HVAC&R section of the credit. In other words, the project proponent shall present (a) the energy consumption of HVAC&R for the baseline case, (b) the energy consumption of HVAC&R for the design case and (c) the annual energy

¹ For water-side system, this refers to chiller COP, rated power of condensing water pumps and chilled water pumps, flow rate of condensing water pumps and chilled water pumps, specific fan power to the cooling tower, temperature setting to the water-side system.

² For air-side system, this refers to the fan power and flow rate of the fan system, the cooling capacity of the coil and the temperature setting of the occupied space.

consumption reduction of air-side system as evidences to justify for the number of credits achieved under HVAC&R section of the credit.



Mr KM So
Chairperson of Standards Sub-committee

Appendix A – Methodology in Preparing The Energy Simulation of HVAC&R System

Scenario	Project Space		Host Building	
	Baseline	Design	Baseline	Design ³
<ul style="list-style-type: none"> Host building obtained “consent to the commencement of building works” for superstructure construction after the <u>Buildings Energy Efficiency Ordinance (BEEO) comes into full operation</u> (i.e. after 21 Sept 2012) Landlord provided <u>full evidences</u> on the HVAC&R System 	Latest edition of BEC	As-fitted	The BEC edition as stipulated on Certificate of Compliance Registration (COCR) or Form of Compliance (FOC), <i>whichever comes later.</i>	As-fitted
<ul style="list-style-type: none"> Host building obtained “consent to the commencement of building works” for superstructure construction after the <u>BEEO comes into full operation</u> (i.e. after 21 Sept 2012) Landlord provided <u>NO evidence</u> on the HVAC&R System 	Latest edition of BEC	As-fitted	The BEC edition as stipulated on COCR or FOC, <i>whichever comes later.</i>	The BEC edition as stipulated on COCR or FOC <u>(Energy Neutral)</u>
<ul style="list-style-type: none"> Host building obtained “consent to the commencement of building works” for superstructure construction before the <u>BEEO comes into full operation</u> (i.e. after 21 Sept 2012) Landlord provided <u>full evidences</u> on the HVAC&R System 	Latest edition of BEC	As-fitted	BEC 2012	As-fitted
<ul style="list-style-type: none"> Host building obtained “consent to the commencement of building works” for superstructure construction before the <u>BEEO comes into full operation</u> (i.e. after 21 Sept 2012) Landlord provided <u>NO evidence</u> on the HVAC&R System 	Latest edition of BEC	As-fitted	BEC 2012	BEC 2012 <u>(Energy Neutral)</u>

³ The acceptable evidences to substantiate on the design criteria include (a) energy audit report conducted in accordance with the Energy Audit Code (EAC) by EMSD, (b) manufacturer’s data, (c) equipment schedule, (d) T&C records from retro-commissioning and (e) other evidences which the Applicant deem more update/appropriate for the simulation model.