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CIRCULAR TO BUILDING OWNERS AND PROFESSIONAL INSTITUTES/ASSOCIATIONS

(1) PRESCRIBED GREEN MARK STANDARD FOR EXISTING BUILDINGS; AND (2) PERIODIC ENERGY AUDITS OF BUILDING COOLING SYSTEM

1. This circular serves to inform you that with effect **from 02 January 2014**, under Part IIIB of the Building Control Act (the “Act”) and the Building Control (Environmental Sustainability Measures for Existing Buildings) Regulations 2013 (the “Regulations”), you are required to comply with the minimum environmental sustainability standard (Green Mark Standard) for existing buildings when replacing/installing building cooling systems and submit periodic energy efficiency audits of building cooling systems.

PRESCRIBED GREEN MARK STANDARD FOR EXISTING BUILDINGS

2. Building owners are required to meet the minimum environmental sustainability standard when they install any water-cooled/air-cooled chiller or replace any water-cooled/air-cooled chiller with another water-cooled/air-cooled chiller or unitary system if the installation or replacement takes place on or after 02 January 2014.

3. The minimum environmental sustainability standard will be applicable to:

- (a) any single-use development comprising a hotel, retail building or office building with a gross floor area (GFA) of 15,000m² or more; and
- (b) any mixed-use development, as long as there is any hotel, retail building or office building therein and the GFA of a combination of these parts is 15,000m² or more¹.

¹ Any mixed-use development which includes any industrial building, industrial retail building, light industrial building, special industrial building, railway premises, port services and facilities or airport services and facilities shall not be required to comply with the minimum environmental sustainability standard.

4. The Regulations require building owners to score a minimum of 50 Green Mark points, calculated using the scoring methodology as specified in the Code on Environmental Sustainability Measures for Existing Buildings, and such other requirements as may be specified in the Code. Building owners are required to submit to BCA for approval:

- (a) a design Green Mark Score for the building including other specified documents **before** installing or replacing of chillers (major energy-use change) ; and
- (b) an as-built Green Mark Score for the building including other specified documents **after** completing the installation of chillers.

5. The building owners will have to engage a Professional Mechanical Engineer (PE(Mech)) to assess and ensure that the above mentioned requirements are met.

6. Please note that the chiller plant upgrading and other energy improvement works must be completed within three (3) years from the date BCA approves the design Green Mark Score.

7. In addition, a plan fee is required upon submission of the design Green Mark score. BCA will provide a subsidy to offset a portion of the fee for the first and second years of implementation:

- for the first year, a 25% subsidy will be provided; and
- for the second year a 15% subsidy will be provided.

PERIODIC ENERGY AUDIT OF BUILDING COOLING SYSTEM

8. The aim of a periodic energy audit is to ensure that the building cooling system installed continues to operate as efficiently as per its initial design throughout its life cycle and continues to meet the energy efficiency standard prescribed in the Regulations and Code on Periodic Energy Audit of Building Cooling System.

9. With effect from 02 January 2014, upon receipt of the Notice issued by the Commissioner of Building Control under the Act, building owners of the following two categories of buildings will need to engage a Professional Mechanical Engineer (PE(Mech)) or an Energy Auditor registered with BCA to carry out an energy audit on their chiller system in accordance with the Code and submit the necessary documents to BCA. The list of Energy Auditors registered with BCA is available on the BCA website in Para 11.

10. For new buildings whose application for planning permission is submitted on or after 1 December 2010, building owners may be issued a notice:

- (a) at any time after the temporary occupation permit (TOP) or certificate of statutory completion (CSC) is issued,; and
- (b) at intervals of not less than three years after the date of the last notice served.

11. For existing buildings which have undergone a major energy-use change on and after 02 January 2014 and are required to meet the prescribed Green Mark Standard for existing building, building owners may be issued a notice:

- (a) three years after the date of the approved as-built score; and
- (b) at intervals of not less than three years after the date of the last notice served.

CLARIFICATION

12. For more information on the legislative requirements, Codes, the submission process, application fees, and the BCA Energy Auditor Scheme, please refer to the following link on BCA's website:

http://www.bca.gov.sg/EnvSusLegislation/Existing_Building_Legislation.html.

13. If you require any clarification, please contact the following officers:

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14. For general enquiry, please e-mail: bca_enquiry@bca.gov.sg.



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Advertisement published on Straits Times and 联合早报 (in Mandarin) on 15 July 2013:



Building and Construction Authority
We shape a **safe, high quality, sustainable** and **friendly** built environment.



MANDATORY ENVIRONMENTAL SUSTAINABILITY STANDARD FOR EXISTING BUILDINGS & PERIODIC ENERGY AUDIT

under the Building Control Act (Chapter 29)

with effect from **2 Jan 2014**

Mandatory Environmental Standard for Existing Buildings	Periodic Energy Audit of Building Cooling Systems
<p>Who are affected? Owners or MCSTs:</p> <ul style="list-style-type: none"> of hotels, retail buildings, office buildings and mixed-use developments (a combination of hotel, retail and/or office) with gross floor area 15,000m² or more, and who plan to install or replace central water-cooled/ air-cooled chiller(s). <p>What are the requirements?</p> <ul style="list-style-type: none">  Appoint A Professional Engineer (Mechanical)  Ensure Retrofitted design will meet minimum environmental sustainability standard  Submit Plans for BCA's approval before and after retrofit 	<p>Who are affected? Owners or MCSTs of:</p> <ul style="list-style-type: none"> buildings (excluding industrial buildings) that have applied for planning permission from 1 Dec 2010 existing buildings that will undergo chiller retrofit from 2 Jan 2014 <p>Upon being notified by BCA:</p> <ul style="list-style-type: none">  Appoint A Professional Engineer (Mechanical) or Energy Auditor registered with BCA  Submit Energy audit report to BCA

More details on the legislation and Codes can be found at
www.bca.gov.sg/EnvSusLegislation/Existing_Building_Legislation.html
 or call **1800-3425222 (1800-DIAL BCA)**

Extract of Sections of the Building Control Act on the Prescribed Green Mark Standard for Existing Buildings

Submission of design score for building undergoing major energy-use change

22FB.—(1) No owner of any prescribed building shall carry out, or permit or authorise the carrying out of, any major energy-use change to that building, unless the owner has first —

- (a) appointed a mechanical engineer to assess the design score for the major energy-use change to the building;
- (b) submitted the design score assessed by the mechanical engineer appointed under paragraph (a) to the Commissioner of Building Control for approval, in the prescribed form and manner and accompanied by such documents and fee as may be prescribed; and
- (c) obtained the approval of the Commissioner of Building Control for the design score, which approval has not lapsed at the time of commencement of the major energy-use change.

(2) The Commissioner of Building Control shall not approve the design score in relation to a prescribed building unless the design score meets the prevailing minimum environmental sustainability standard for that building or a building of that class or type.

(3) Upon receiving the submission of a design score relating to a prescribed building for approval under subsection (1), the Commissioner of Building Control may direct the owner of the prescribed building in writing —

- (a) to comply with such requirements in relation to the major energy-use change as the Commissioner of Building Control may specify so that the design score meets the minimum environmental sustainability standard applicable to the building; and
- (b) to re-submit the design score for his approval within such period as may be specified in the direction.

(4) If the direction given by the Commissioner of Building Control under subsection (3) is not complied with within the period specified in that direction, or such further period as may be extended by the Commissioner of Building Control, the application for approval of the design score shall, at the end of that period, be deemed to be disapproved by the Commissioner of Building Control.

(5) The Commissioner of Building Control may, on the application of an owner of a prescribed building in any particular case, modify or waive any requirement in relation to the minimum environmental sustainability standard applicable to the building, subject to such conditions as the Commissioner of Building Control may impose.

(6) The Commissioner of Building Control may approve the design score on the basis of a declaration by the mechanical engineer who assessed the score certifying the correctness of the design score.

(7) A mechanical engineer appointed under subsection (1)(a) in relation to a prescribed building shall —

- (a) design the proposed major energy-use change to the building so that the design score meets the minimum environmental sustainability standard applicable to the building;
- (b) assess the design score for the major energy-use change to the building in the manner prescribed; and
- (c) provide to the owner of the prescribed building —
 - (i) the design score and the documents on which the design score was assessed;
 - (ii) a declaration as to whether the design score meets the minimum environmental sustainability standard applicable to the building; and
 - (iii) such other documents as may be required by the Commissioner of Building Control.

(8) Any owner of a prescribed building who, without reasonable excuse, contravenes subsection (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$100,000 and, in the case of a continuing offence, to a further fine not exceeding \$1,000 for every day or part thereof during which the offence continues after conviction.

(9) Any mechanical engineer who —

- (a) without reasonable excuse, contravenes subsection (7); or
- (b) furnishes any information or makes any statement in relation to the design score, or in any other document required under subsection (7)(c), which he knows or has reason to believe is false, shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$10,000.

Completion of major energy-use change and submission of as-built score

22FE.—(1) The owner of the prescribed building shall, not later than 3 years after the approval of the design score for a major energy-use change to that building by the Commissioner of Building Control —

- (a) complete the major energy-use change in accordance with the design score approved by the Commissioner of Building Control, subject to any departure or deviation which complies with section 22FC; and
- (b) submit to the Commissioner of Building Control in such form and manner and within such time as may be prescribed —
 - (i) the as-built score of the building assessed by the mechanical engineer appointed under section 22FB(1)(a) or subsection (5) for the approval of the Commissioner of Building Control;
 - (ii) a declaration by the mechanical engineer who assessed the as-built score certifying the correctness of the as-built score; and
 - (iii) such other documents as may be prescribed.

(2) The Commissioner of Building Control may approve the as-built score on the basis of a declaration by the mechanical engineer who assessed the score certifying the correctness of the as-built score.

(3) A mechanical engineer appointed to assess the as-built score in relation to a prescribed building shall, within 7 days after the completion of the major energy-use change —

- (a) assess the as-built score of the prescribed building in the manner prescribed; and
- (b) provide to the owner of the prescribed building —
 - (i) the as-built score and the documents on which the as-built score was assessed;
 - (ii) a declaration as to whether the as-built score meets the minimum environmental sustainability standard applicable to the building;
 - (iii) such document certifying the completion of the major energy-use change as the Commissioner of Building Control may specify; and
 - (iv) such other documents as may be required by the Commissioner of Building Control.

(4) If the owner of the prescribed building ceases to be the owner thereof before the submission of the as-built score under subsection (1)(b), he shall notify the Commissioner of the Building Control of that fact not later than 7 days after he ceases to be the owner thereof.

(5) If any mechanical engineer appointed under section 22FB(1)(a) vacates his appointment before the submission of the as-built score under subsection (1)(b), the owner of the building shall —

- (a) appoint another mechanical engineer to assess the asbuilt score; and
- (b) within 7 days thereafter, notify the Commissioner of 10 Building Control of that substitute appointment.

(6) Any owner of a prescribed building who, without reasonable excuse, contravenes subsection (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$100,000 and, in the case of a continuing offence, to a further fine not exceeding \$1,000 for every day or part thereof during which the offence continues after conviction.

(7) Any owner of a prescribed building who, without reasonable excuse, contravenes subsection (4) or (5) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$10,000.

(8) Any mechanical engineer who —

- (a) without reasonable excuse, contravenes subsection (3); or
- (b) furnishes any information or makes any statement in relation to the as-built score, or in any other document required under subsection (3)(b), which he knows or has reason to believe is false, shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$10,000.

Extract of Sections of the Building Control Act on the Periodic Energy Audit of Building Cooling System

Periodic audit of energy efficiency of building cooling system

22FF.—(1) Subject to subsection (2), the Commissioner of Building Control may, by notice served on the owner of any of the following buildings, require an audit to be carried out as to whether the cooling system of the building meets the prescribed energy efficiency standard applicable to such cooling system (referred to in this Part as an energy audit):

- (a) any building in respect of which an application for planning permission is submitted to the competent authority under the Planning Act (Cap.232) on or after 1st December 2010; or
- (b) any prescribed building which has undergone a major energy-use change under this Part.

(2) A notice under subsection (1) may be issued —

- (a) to the owner of any building in respect of which the application for planning permission is submitted to the competent authority under the Planning Act (Cap. 232) on or after 1st December 2010 —
 - (i) at any time after the temporary occupation permit or, if no temporary occupation permit is issued, the certificate of statutory completion is issued in respect of that building; and
 - (ii) thereafter at intervals of not less than 3 years after the date of the last notice under this section; and
- (b) to the owner of any prescribed building which has undergone a major energy-use change —
 - (i) at any time on or after the third anniversary of the date of the approval of the as-built score referred to in section 22FE(1)(b)(i); and
 - (ii) thereafter at intervals of not less than 3 years after the date of the last notice under this section.

(3) The owner of a building on whom a notice is served under subsection (1) shall within such period as may be specified in the notice under subsection (1) or such longer period as the Commissioner of Building Control may allow in any particular case —

- (a) appoint a person referred to in section 22FG to carry out the energy audit;
- (b) if the cooling system does not meet the applicable prescribed energy efficiency standard, carry out such maintenance work or take such other measures in relation to the cooling system to ensure that it meets the applicable prescribed energy efficiency standard; and
- (c) submit the report of the energy audit to the Commissioner of Building Control in such form and manner as the Commissioner may specify.

(4) Any owner of a building who, without reasonable excuse contravenes subsection (3) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$20,000, and, in the case of a continuing offence, to a further fine not exceeding \$500 for every day or part thereof during which the offence continues after conviction.

(5) The Commissioner of Building Control may, on the application of an owner of a building in any particular case, modify any requirement in relation to the prescribed energy efficiency standard for the cooling system of the building, subject to such conditions as the Commissioner of Building Control may impose.

Persons who may carry out energy audit

22FG.—(1) The following persons may be appointed to carry out an energy audit under section 22FF:

- (a) a mechanical engineer;
- (b) an energy auditor registered under this section;
- (c) such other class or classes of persons as may be prescribed.

(2) An application to be registered as an energy auditor shall be made to the Commissioner of Building Control in the prescribed manner and shall be accompanied by such other documents or information and such application fee as may be prescribed.

(3) An individual shall be eligible to be registered as an energy auditor if he has the prescribed qualifications or experience in relation to assessing the energy efficiency of cooling systems of buildings.

(4) The Commissioner of Building Control shall consider the application and may register the applicant if he is satisfied that the applicant has the requisite qualifications and is capable of carrying out the duties of an energy auditor under this Act and the building regulations.

(5) The registration of an energy auditor shall be valid for such period as may be prescribed, being at least one year.

(6) The Commissioner of Building Control may appoint a committee of persons to assist him in considering applications for registration, or renewal of registration, as an energy auditor.

(7) The Commissioner of Building Control shall keep a register of energy auditors in which shall be entered the names of all persons registered under this section as energy auditors.

Duties of person carrying out energy audit

22FH.—(1) Any person appointed to carry out an energy audit under section 22FF of a cooling system of a building —

- (a) shall carry out the energy audit in the prescribed manner;
- (b) may, if the cooling system of the building fails to attain the prescribed energy efficiency standard applicable to such a cooling system, recommend to the owner of the building such measures as may be necessary to attain the prescribed energy efficiency standard; and
- (c) shall, on completion of the energy audit of the cooling system (including of any maintenance work or other measures taken to meet the prescribed energy efficiency standard), prepare and sign a report of the result of the energy audit in such form as the Commissioner of Building Control may specify.

- (2) Any person appointed to carry out an energy audit who —
- (a) without reasonable excuse, contravenes subsection (1); or
 - (b) furnishes any information or makes any statement in relation to the energy audit report required under subsection (1)(c), which he knows or has reason to believe is false, shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$10,000.

DISTRIBUTION (via registered mail):

Building owners of regulated category of buildings listed in Para 3, 10 and 11 of Circular

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