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CIRCULAR TO BUILDING OWNERS AND PROFESSIONAL INSTITUTES / ASSOCIATIONS

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

1. This is to inform the industry about the regulatory requirements and implementation timeline of the following:

- a) Prescribed Green Mark Standard for Existing Buildings; and
- b) Periodic Energy Audit of Building Cooling System

PRESCRIBED GREEN MARK STANDARD FOR EXISTING BUILDINGS

2. Under Part IIIB of the Building Control Act 2012 and Building Control (Environmental Sustainability Measures for Existing Buildings) Regulations 2013, building owners are required to meet the minimum environmental sustainability standard as and when they install or replace their water-cooled/ air-cooled chiller(s) to another water-cooled/ air-cooled chiller(s) or to unitary system(s). 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; and,
- b) an as-built Green Mark Score for the building, including other specified documents **after** completing the installation of chillers.

3. The building owners will have to engage a Mechanical Engineer (a Professional Engineer registered with the Professional Engineers Board in the branch of mechanical engineering, i.e. PE(Mech)) to ensure that the overall building design achieves the BCA Green Mark Standard for existing buildings at the Certified level, taking into account the chiller upgrade and other energy improvement works. The chiller upgrading and other energy improvement works must be completed within three years from the date BCA approved the designs of the retrofits.

4. The above requirements will be applicable to any hotel, retail building or office building with a gross floor area (GFA) of 15,000 square metres or more. In the case of any mixed-use development, the requirements will be applicable so far as there is a hotel, retail or office therein and the combination of these parts is 15,000 square metres or more.

5. An application fee is required upon submission of the design score. For the first and second year of implementation, BCA will provide a subsidy to offset part of the application fee. For the first year, a 25% subsidy will be provided and for the second year a 15% subsidy will be provided.

Implementation Timeline

6. This regulatory requirement was gazetted on 1st July 2013 and will take effect from 2nd January 2014. Building owners are reminded that they are not allowed to install or replace any of their chiller(s) without first obtaining the approval from BCA if their buildings fall within the category of buildings regulated under these Regulations as mentioned in paragraph 4 above.

PERIODIC ENERGY AUDIT OF BUILDING COOLING SYSTEM

7. The performance of any chiller system will deteriorate over time if not properly operated and maintained. The aim of the periodic energy audit is to ensure that the installed chiller system continue to operate as efficiently as per its initial design throughout its life cycle, and continue to comply with the minimum energy efficiency standard stipulated.

8. Further, with effect from 2nd January 2014 upon receipt of the Notice issued by the Commissioner of Building Control under Part IIIB of the Building Control Act, building owners of the following two categories of buildings will need to engage a 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 on Periodic Energy Audit of Building Cooling System and make the necessary documentary submission to BCA.

9. For new buildings whose application for planning permission is submitted on or after 1 December 2010, and are required to meet the Code for Environmental Sustainability of Buildings, building owners may be issued a Notice to carry out the energy audit:

- i. one year after temporary occupation permit (TOP) or certificate of statutory completion (SCS), whichever is earlier; and,
- ii. three years after the date of the last served notice thereafter.

10. For existing buildings which have had their chiller system changed on and after 2nd January 2014 and are required to meet the prescribed Green Mark standard for existing building, building owners may be issued a Notice to carry out the energy audit:

- a) three years after the date of the approved as-built score; and,
- b) three years after the date of the last served notice thereafter.

CLARIFICATION

11. An industry briefing will be conducted on the following dates. Interested parties please register with Rohana HARON at rohana_haron@bca.gov.sg or Eunice SIM at eunice_sim@bca.gov.sg:

- a) MND Auditorium, 12th August 2013, 2.00pm
- b) MND Auditorium, 13th August 2013, 9.00am
- c) MND Auditorium, 13th August 2013, 2.00pm

12. Details of the two regulatory measures are provided in Annex A and B attached. Information on the two regulatory measures, Codes and the BCA Energy Auditor Scheme are also available on the BCA website at http://www.bca.gov.sg/EnvSusLegislation/Existing_Building_Legislation.html. We would appreciate it if you could bring to the attention of your members the contents of this circular. If you require clarification or have any queries on the two legislative requirements, please contact the following officers:

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



TAN TIAN CHONG
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for COMMISSIONER OF BUILDING CONTROL

Annex A

Extract Sections of the 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 as-built score; and
- (b) within 7 days thereafter, notify the Commissioner of 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.

Annex B

Extract Sections of the 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.

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