Energy Efficiency of Buildings
Building (Energy Efficiency) Regulation

Introduction

The Building (Energy Efficiency) Regulation (B(EE)R) imposes energy efficiency requirements for buildings. It aims at reducing heat transfer through the building envelope thus saving the electricity consumption for air-conditioning by requiring the external walls and roofs of a commercial or hotel building to be designed and constructed to have a suitable Overall Thermal Transfer Value (OTTV). The suitable level of OTTV and the methodology of OTTV calculations are specified in the Code of Practice for Overall Thermal Transfer Value in Buildings 1995 (the OTTV Code) published by the Buildings Department (BD).

Review of OTTV Control

2. The OTTV control specified in the OTTV Code has been subject to periodic review with the following major revisions made to the OTTV Code:

(a) in the case of a building tower, the OTTV should not exceed 24 W/m^2;

(b) in the case of a podium, the OTTV should not exceed 56 W/m^2; and

(c) open-front shops or the like on G/F may be disregarded from the OTTV calculation, if the usable floor space of the shop is not more than $50m^2$ and any air-conditioning system to be installed for the shop should be separated from the air-conditioning system of the main building.

Procedure

3. It is possible that the design of the facade of a building may not have been finalised when building plans are first submitted. Accordingly, the Building Authority (BA) would accept that the first submission of building plans needs not be accompanied by the information and calculations as required by Regulation 5 of the B(EE)R. However, after the approval of building plans and prior to the application for consent to commence building works, submission of provisional OTTV Report is required under Regulation 10 of the Building (Administration) Regulations. The provisional OTTV Report should include detailed OTTV calculations and information on the standard forms (Form OTTV1 to OTTV4) set out in the schedule to the OTTV Code.

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4. Prior to the application for an occupation permit (OP), the finalised OTTVs of the external walls and roofs of the building and the shading coefficient of glass should be incorporated into the general building plans for record. Upon application for OP, the final OTTV Report containing the updated calculations, the record plans, test certificates or published specifications for the building materials used (such as glass used for fenestration and façade), and OTTV Summary Sheet in Appendix A should be submitted.

Acceptance of Building Materials

5. If building materials other than those listed in the OTTV Code are used, their OTTV related properties should be obtained from reliable sources. It would facilitate the processing of the consent or OP application if full background to the source of information and the suitability of the materials for use in local conditions are detailed in the submission.

Sunshading and Innovative Designs

6. Genuine sunshades used to assist in the reduction of the OTTV are not accountable for gross floor area and, by virtue of Regulation 6 of the B(EE)R, shall not be included in site coverage calculations, if they project 1.5m or less from the external walls. In determining whether the sunshades will assist in the reduction of the OTTV, quantitative assessment should be submitted to the BA for consideration, if the sunshades project over 750mm from the external walls. In addition, sunshades with a projection of not more than 750mm are regarded as not causing obstructions to prescribed windows. Sunshades will not be allowed to project over streets under section 31(1) of the Buildings Ordinance, but exemptions may be considered in individual cases if special circumstances so justify.

7. The BA may accept designs other than those stipulated in the OTTV Code provided that these designs are comparable or better in terms of energy efficiency. Innovative designs which aim at reducing OTTV would not be penalised in terms of plot ratio and site coverage if they could be demonstrated to be effective.

(HUI Siu-wai)
Building Authority

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Appendix A
(PNAP APP-67)

OTTV Summary Sheet

Address :				BD Ref. No.
Building Type		☐ 1. Hotel		
		☐ 2. Office (including industrial/office)		
		☐ 3. Shops		
		☐ 4. Others*, please specify :		
OTTV calculated by		☐ 1. Registered Professional Engineers (Building Services/Mechanical)		
		☐ 2. Architect		
		☐ 3. Others, please specify :		
Classification		Podium	Tower	
Designated Use		☐ 1. Shops ☐ 4. Cinema	☐ 1. Office	
		☐ 2. Offices ☐ 5. Plant Rooms	☐ 2. Hotel Rooms	
		☐ 3. Restaurants ☐ 6. Others	☐ 3. Others	
No. of Storeys (excluding ground floor)				
Gross Floor Area		m²	m²	
Usable Floor Area		m²	m²	
Total External Wall Area (including windows)		m² window to wall ratio	m² window to wall ratio	
Total Window Area		m² = :	m² = :	
Total Skylight Area		m²	m²	
*Weighted Average U-value (W/m² K)	Opaque Wall	W/m² K	W/m² K	
	Window	W/m² K	W/m² K	
	Opaque Roof	W/m² K	W/m² K	
	Skylight	W/m² K	W/m² K	
Window	Glass Type	☐Reflective, Area = m², SC = VLT =	☐Reflective, Area = m², SC = VLT =	
		☐Tinted, Area = m², SC= VLT =	☐Tinted Area = m², SC= VLT =	
		☐Clear, Area = m², SC= VLT =	☐Clear, Area = m², SC= VLT =	
	Double Glazing	☐ Yes ☐ No	☐ Yes ☐ No	
	External Shading	Overhang ☐ Yes ☐ No	Overhang ☐ Yes ☐ No	
		Sidefin ☐ Yes ☐ No	Sidefin ☐ Yes ☐ No	
Skylight	Glass Type	☐ Reflective, Area = m², SC = VLT =	☐Reflective, Area = m², SC = VLT =	
		☐ Tinted, Area = m², SC= VLT =	☐Tinted, Area = m², SC= VLT =	
		☐ Clear, Area = m², SC= VLT =	☐Clear, Area = m², SC= VLT =	
	Doubling Glazing	☐ Yes ☐ No	☐ Yes ☐ No	
	External Shading	☐ Yes ☐ No	☐ Yes ☐ No	
**Weighted Average Absorptivity	Wall			
	Roof			
**Weighted Average Density	Wall	kg/m²	kg/m²	
	Roof	kg/m²	kg/m²	
OTTV	Wall	W/m²	W/m²	
	Roof	W/m²	W/m²	
	Overall average	W/m²	W/m²	
Additional information/views on energy efficiency control :				

SC = Shading Coefficient VLT = Visible Light Transmittance

***Other commercial buildings may include : department stores, places of public entertainment, places of public assembly, restaurants etc.**

****Weighted by area**

Note :

1. Please tick in the box as appropriate
2. Window and skylight data should represent the major proportion of its use in the development.