

JAKARTA GREEN BUILDING USER GUIDE

# JAKARTA USER GUIDE INTRODUCTION

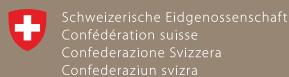


The Government of the Province of  
Jakarta Capital Special Territory

In cooperation with:



IFC in partnership with:



Swiss Confederation

Federal Department of Economic Affairs,  
Education and Research EAER  
State Secretariat for Economic Affairs SECO





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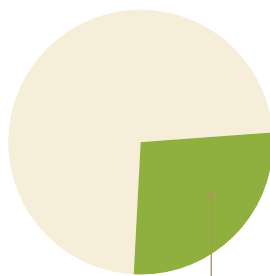
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# 01

## context

**Indonesia is the world's 4th most populous country, one of the world's largest Green House Gases (GHG) emitters and one of the countries most susceptible to climate change.**



Energy  
consumption in  
Indonesia

**27%**  
energy consumed  
in building

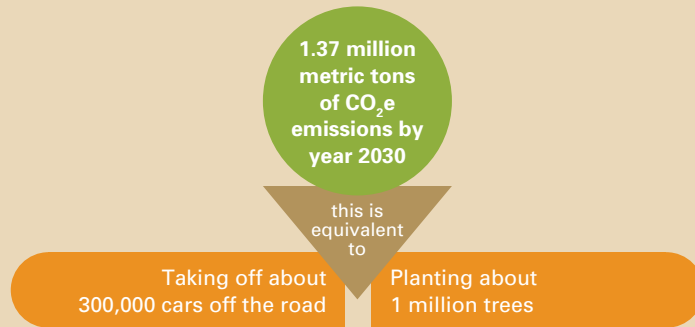
The national government set a 26% reduction below the business-as-usual (BAU) level by 2020 based on unilateral actions, and a further reduction of up to 41% if adequate international support is provided. A significant part of target is aimed to be achieved through higher energy efficiency in buildings. **The building sector in Indonesia is the 3rd largest final energy consumer after the industrial and transportation sectors, accounting for 27% of total final energy consumption in 2004.** This is expected to rise to 39% by 2030. Significant efforts are being carried out to cut down Indonesia's GHG emissions to meet its target.

Jakarta contributes about 20% of the country's GDP<sup>1</sup> and is therefore a logical place to start implementation of GHG reduction policies. Jakarta Province Government has set a more rigorous target of 30% city wide GHG emissions reduction by 2020. One of the most effective ways to improve urban energy, water and material efficiency is through a mandatory Green Building Code. With application of green buildings measures, at relatively low or even negative cost, buildings offer us the largest global opportunity to make deep carbon emission cuts (up to 35%), savings in energy use (30-50%), water use (up to 40%) and solid waste (up to 70%).

Developed through a rigorous process of market research, energy modeling, sensitivity analysis, cost-benefit analysis and stakeholder discussion, the Jakarta Green Building Code promulgated through Jakarta Province Governor's Regulation number 38/2012, became mandatory in April 2013 for all new and existing buildings of certain types and sizes. Compliance to the Code is now integrated into the Building Permit application process.

<sup>1</sup> The Archipelago Economy: Unleashing Indonesia's Potential, McKinsey Global Institute, September 2012.

### Implementation of Jakarta Green Building Code can reduce

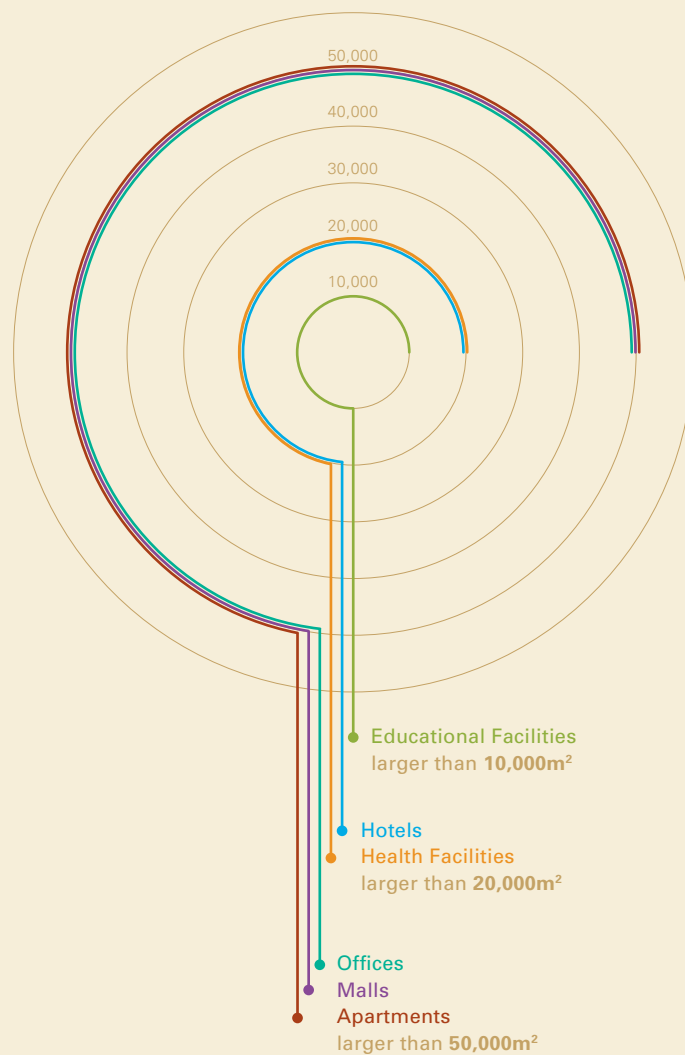


# 02 *scope*

The code is mandatory for following building types and sizes.

FIGURE 02

Building Types and  
Sizes that Have to  
Follow the Code



*The code applies to both new buildings and existing buildings.*

For new buildings, the code stipulates the following requirements:

TABLE . 01

**Code for New Buildings**

CATEGORY	REQUIREMENTS				
	1	2	3	4	5
<b>Building Envelope (BE)</b>	Maximum Overall Thermal Transfer Value (OTTV)				
<b>Air Conditioning System (AC)</b>	Temperature Setpoint	Minimum Cooling system efficiency	VAV for central cooling system	VSD for pumps & fans motor	Minimum chilled water pipe insulation
<b>Ventilation System (VS)</b>	Minimum ventilation rate				
<b>Air Quality in Spaces (AQ)</b>	CO <sub>2</sub> sensor control	CO control in enclosed parking	CFC-free refrigerants		
<b>Lighting System (LT)</b>	Photo sensor control of lights	Maximum lighting power			
<b>Transportation System (VT)</b>	VVVF motors for elevators	Automatic control for escalators			
<b>Electricity System (EL)</b>	Building management system for centrally cooled buildings	Energy sub metering			
<b>Water Efficiency (WE)</b>	Minimum water fixture efficiency	Sub-metering of water supply	Greywater Recycling		
<b>Land &amp; Waste Management (LW)</b>	Minimum green open area	Permeable materials for walkways	Rainwater collection system		
<b>Supporting Facilities (SF)</b>	Bicycle parking and shower				
<b>Solid &amp; Liquid Waste (SL)</b>	Solid/ liquid waste management system				
<b>Implementation of Construction Activities (CA)</b>	Washing bay for construction vehicles	Noise restrictions	Bath/ toilets for workers	Safety net around building	
<b>Conservation of Water During Construction (CW)</b>	Temporary absorption wells	Water reservoir	Dewatering plan		
<b>Management of Hazardous Waste from Construction (HW)</b>	Hazardous waste management				

For existing buildings, the code stipulates the following requirements.

T A B L E . 0 2

**Code for Existing Buildings**

C A T E G O R Y	R E Q U I R E M E N T S				
	1	2	3	4	5
<b>Energy Conservation and Efficiency (XE)</b>	Energy consumption reporting				
<b>Water Conservation and Efficiency (XW)</b>	Water meter	Water consumption reporting	Water quality testing		
<b>Air Quality and Thermal Comfort (XA)</b>	CO <sub>2</sub> sensor control	CO control in enclosed parking	Air quality testing	Temperature set point	
<b>Operation Management and Maintenance (XO)</b>	Conservation program				



# 03 *future development of the code*

**With a fairly high area threshold, only a handful of buildings will be required to comply with the code.**

This has been done intentionally to allow the government officials and the private sector players to build their competencies in enforcing and complying with the code. Over time, the knowledge and awareness of green buildings is expected to percolate to the entire market, especially due to the demonstrative effect of the large buildings that will follow the new code. The code is also expected to have an effect on the high efficiency building materials by increasing their demand.

**Government of Jakarta plans to periodically review the code to gradually increase its scope and impact.** This revision will be based on the experience of enforcement and compliance since the code became mandatory. It would also involve feedback from the market, new market trends and government policy directions. It is envisaged that the first review will be done in 2014.

# 04 *purpose and organization of the user guide*

In order to explain the requirements of the Jakarta Green Building Code and promote green building growth beyond its requirements, several user guides have been developed.

Typically each guide is organized as follows:

1. Need for these requirements
2. Code requirements
3. Potential benefits of compliance
4. Design principles and case studies

**These guides should not be used as a substitute for detailed design analysis.**

The user guides have been designed as a simple elaboration of the code requirements, and does not describe the design practices or technologies in extensive detail.

The guides are intended for use by architects, engineers, developers, building managers as well as government officials responsible for design evaluation. It could also be used for spreading awareness of green building practices among professional associations, academic and developmental organizations.

**Architects, engineers, property owners, developers, managers, and suppliers of building services/materials can use the guides to enhance their understanding of the Code and enhance their building designs, operations and product offering.**

**For policy makers and government officials, the user guides can inform policy formulation as well as provide a working reference for the technical officials in implementing the code.**

The following user guides are being prepared:

1. Building Envelope
2. Air Conditioning & Ventilation System
3. Lighting System
4. Electricity & Transportation within the Building
5. Water Efficiency
6. Landscape Management (in development)
7. Existing Buildings (in development)

*The user guides 1 through 6 are focused on the code requirements for new buildings.*

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## *resources and tools*

In addition to the user guides, the government of Jakarta province, with support from IFC and DANIDA-EINCOPS, has developed resources and tools for implementation of the code.

All these resources along with all user guides can be downloaded for free at <http://greenbuilding.web.id> and <http://dp2b.co>.

These websites will also provide the portal for using the checklists and uploading information for code compliance, including water and electricity consumption data that is required by the building code for existing buildings.

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## *acknowledgements*

The Jakarta Province Green Building Code user guides have been developed by the government of Jakarta province with support from International Finance Corporation (IFC) and the Danish International Development Aid (DANIDA) program EINCOPS and many supporters from the Indonesian building sector.

The primary user guide authors and contributors were:

- Dinas P2B Provinsi DKI Jakarta
- Autif Sayyed, IFC/World Bank Group
- Dr. Jatmika Adi Suryabrata, UGM Yogyakarta
- Agus Hariyadi, S.T, M.Sc., UGM Yogyakarta
- Atika Nur Fitriana, ST., UGM Yogyakarta
- Farida Lasida Adji, IFC/World Bank Group
- Sandra Pranoto, IFC/World Bank Group
- Annie Amalia Loppies, IFC/World Bank Group
- Theopilla Shinta, IFC/World Bank Group
- Triyono Adiputra, DANIDA-EINCOPS
- Vasudevan Kadalayil, IFC Consultant
- Mahesh Basavana, IFC Consultant
- Dr. Ir. Firdaus Ali, Indonesia Water Institute
- Ir. Anggia Murni. IALI.GP, Landscape Professional
- Billy Gunawan, IFC Consultant



**DINAS PENGAWASAN  
DAN PENERTIBAN BANGUNAN  
PEMERINTAH PROVINSI DKI JAKARTA**

Jalan Taman Jati Baru No. 1  
Jakarta Barat  
t. (62-21) 856 342  
f. (62-21) 856 732

[www.dppb.jakarta.go.id](http://www.dppb.jakarta.go.id)