

## Development Technologies

Hybrid exterior system

Energy offset lighting system

Task-specific and ambient radiative air-conditioning system

Shimizu Microgrid System

## Environmental Technologies

Vegetation roof / wall

Variable air flow control

Fresh air cooling control

Temperature differential water supply

Variable flow control

LED lighting

Waste / grey water recycling

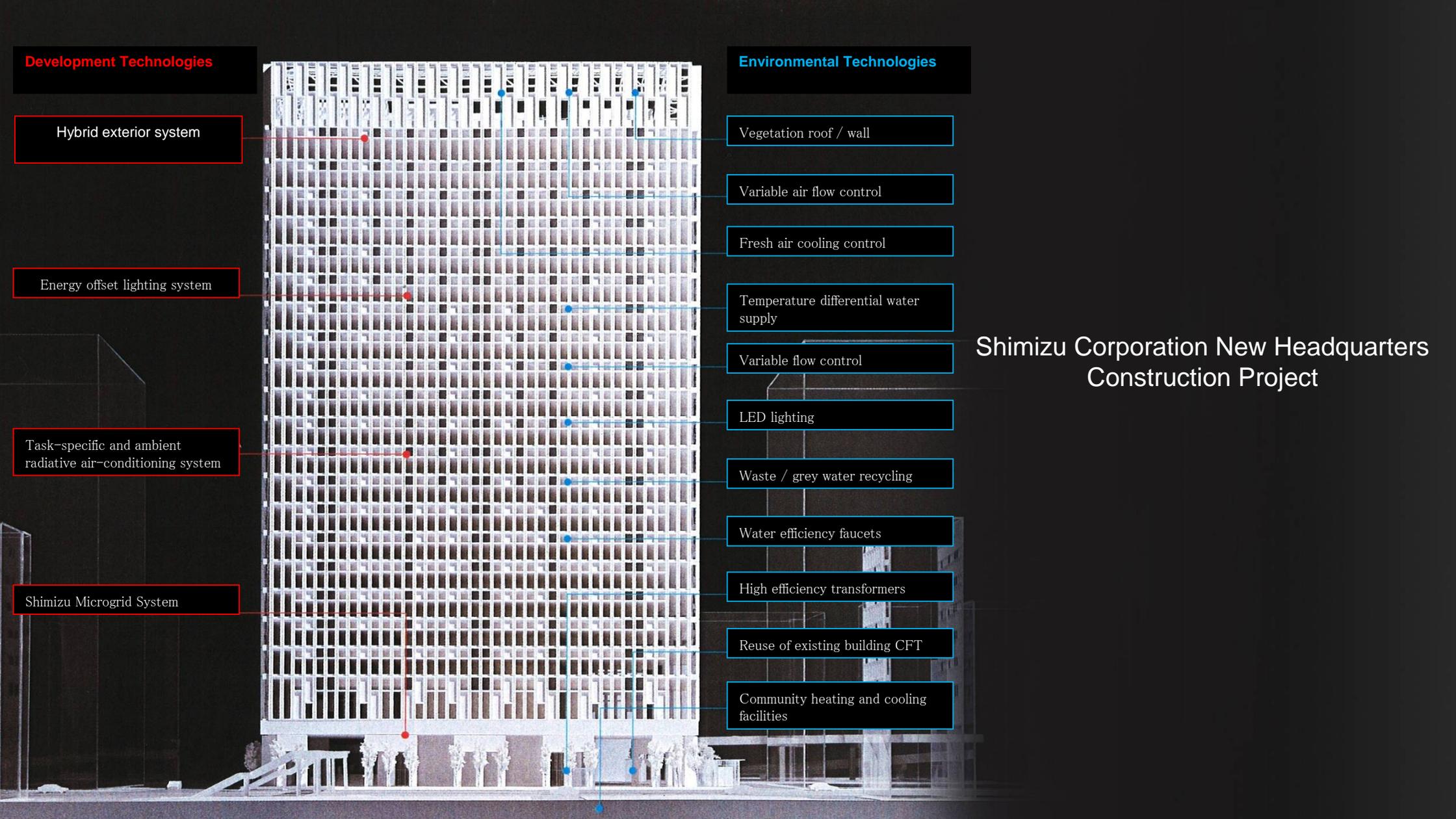
Water efficiency faucets

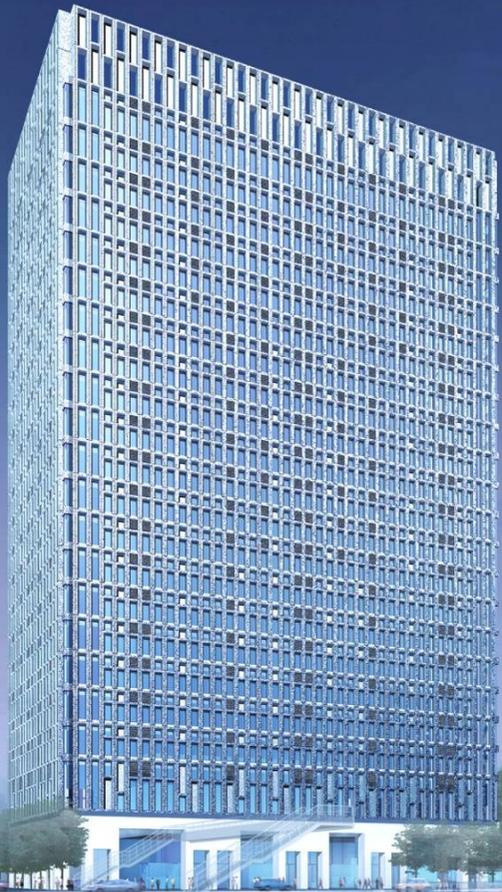
High efficiency transformers

Reuse of existing building CFT

Community heating and cooling facilities

# Shimizu Corporation New Headquarters Construction Project





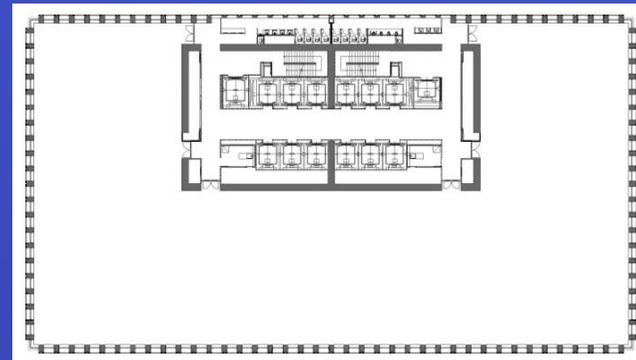
**1** Project Overview “50% CO2 Emissions Reduction”  
Super Green Office Building Overview

**2** New RC Ultra High Rise Office Building  
Hybrid Exterior System

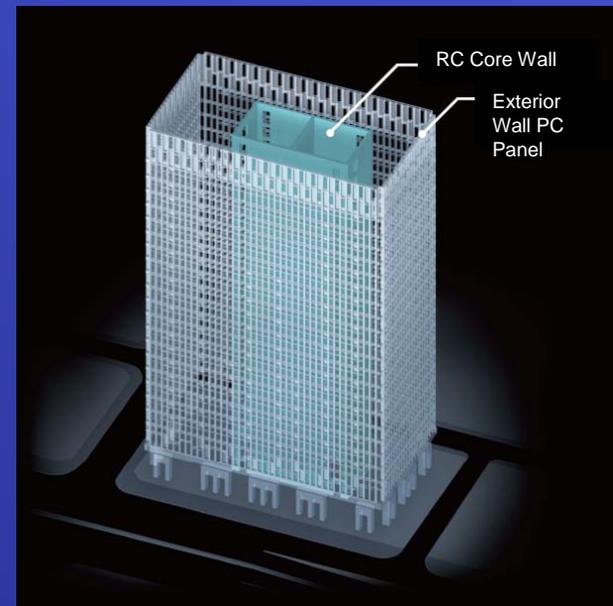
**3** Air Conditioning System that Improves IP Productivity  
3 Environmental Elements & Radiant Air Conditioning System

**4** Lighting System Utilizing Solar Energy  
Energy Offset Lighting System

# Column-Free Office Building

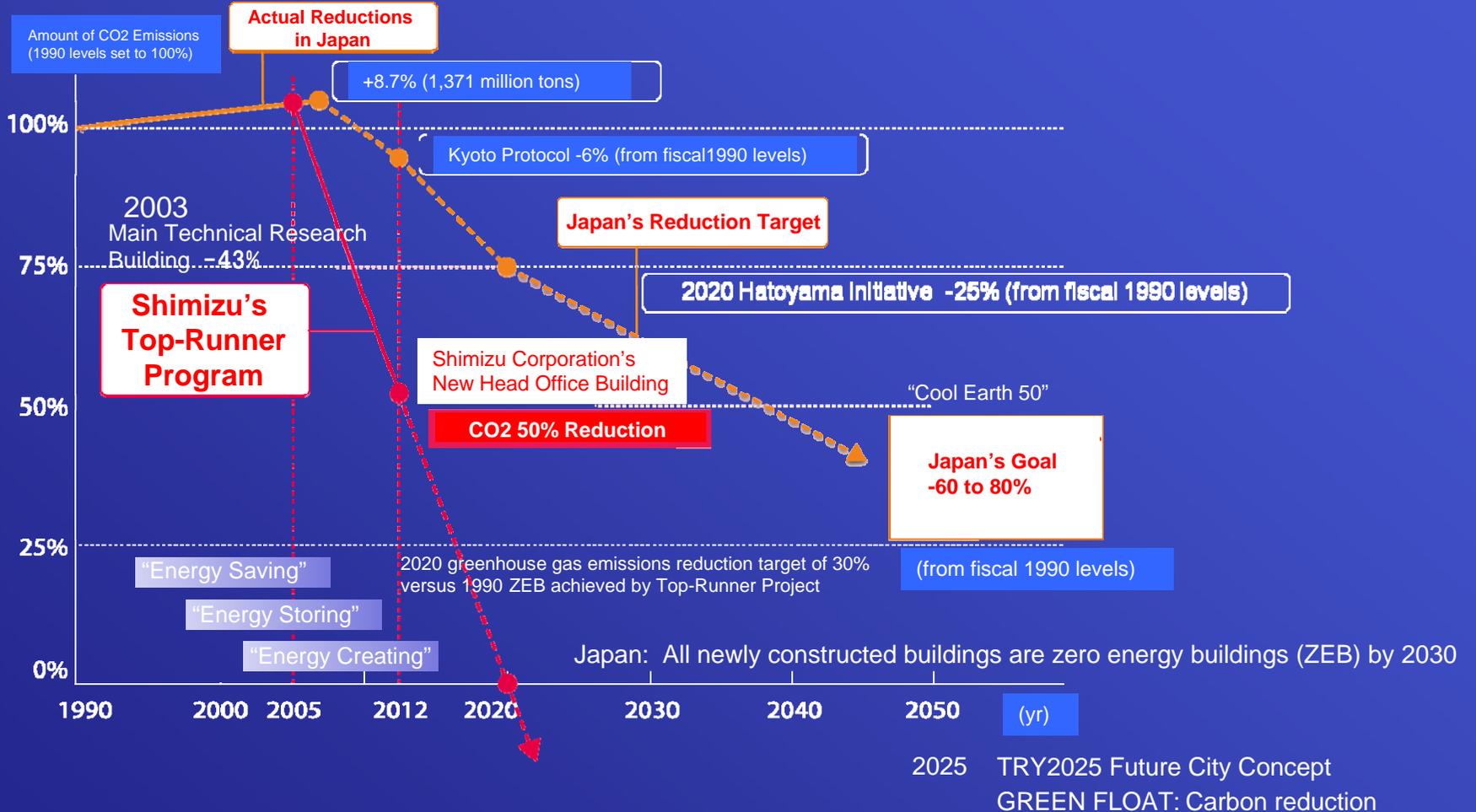


Typical Floor Plan



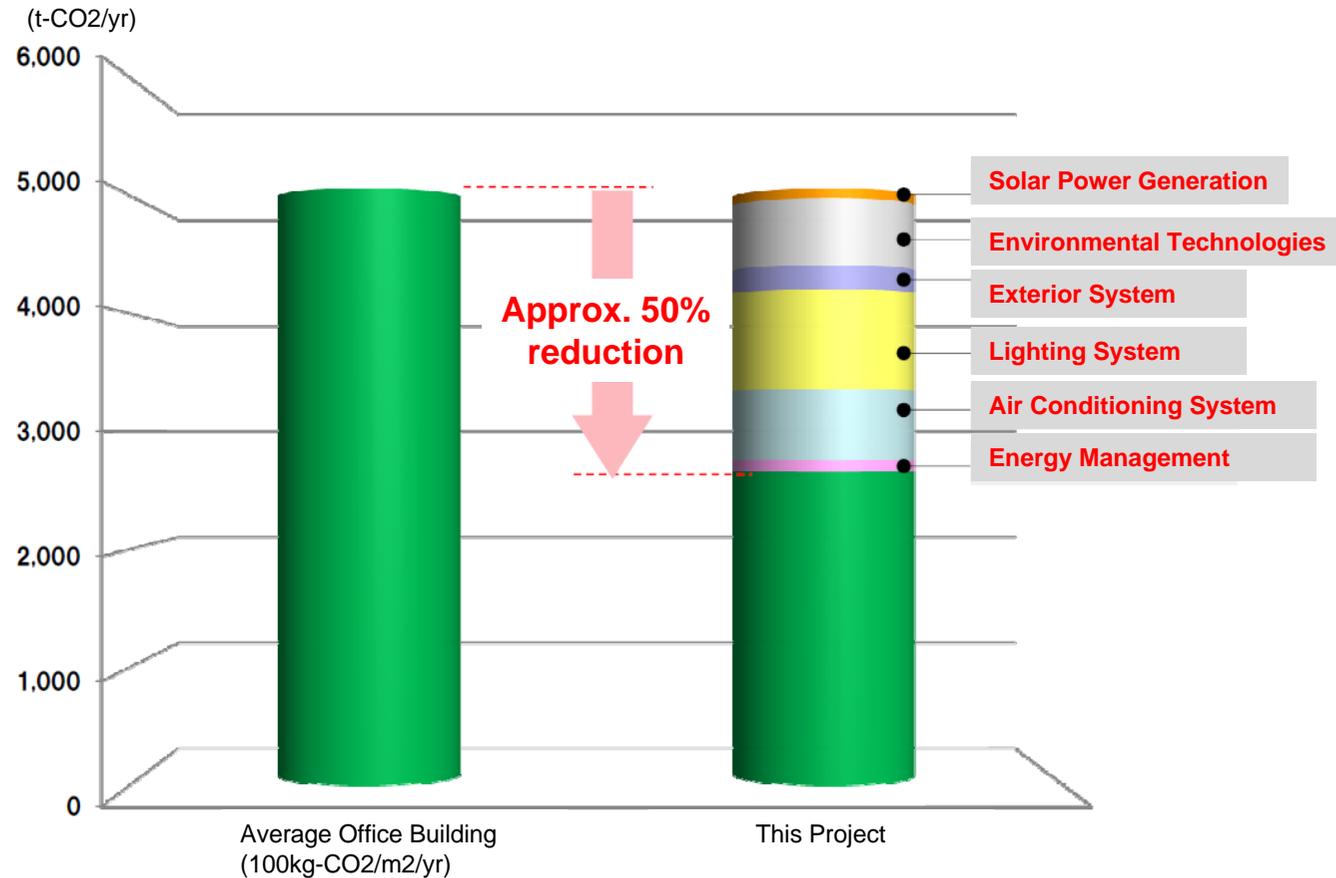
# Basic Building Capabilities

- New Headquarters Project: 50% CO2 emissions reduction versus average level of CO2 emissions by Tokyo office buildings in 2005



# 50% CO2 Emissions Reduction

Realizing highest class energy conscious office building by State-of-the-art technology development



# 50% CO2 Emissions Reduction

Newly developed cutting edge energy saving technologies

Hybrid Exterior System

Radiative Air-conditioning System

Energy Offset Lighting System



Conventional energy saving technologies

Air conditioning variable air flow control,  
Fresh air cooling control

Vegetation roof/ wall

LED lighting for common areas

Waste / grey water recycling,  
Water efficiency faucets

Ventilation variable air flow control

High efficiency transformer

Pump variable flow control,  
Temperature differential water supply

CFT reuse

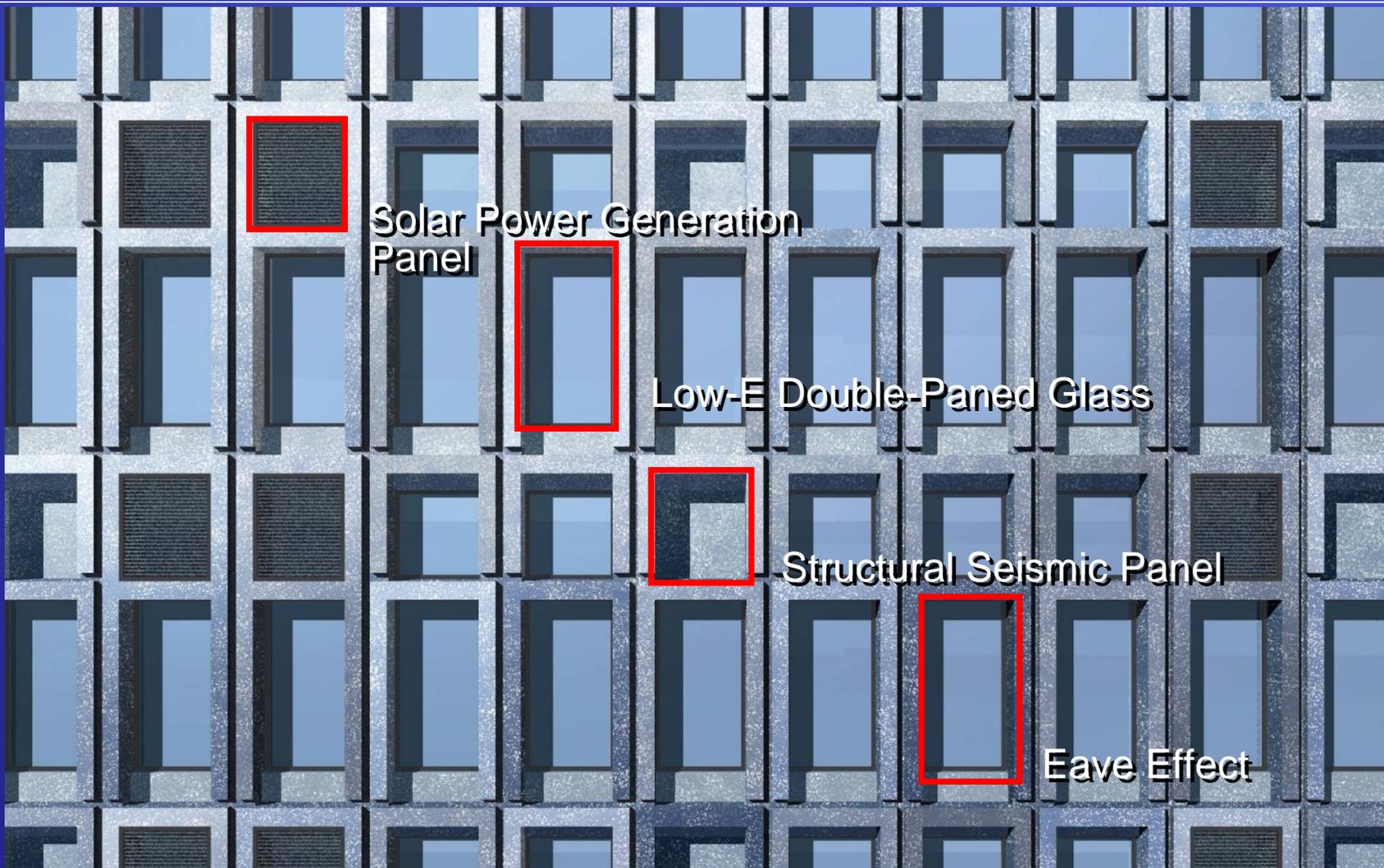


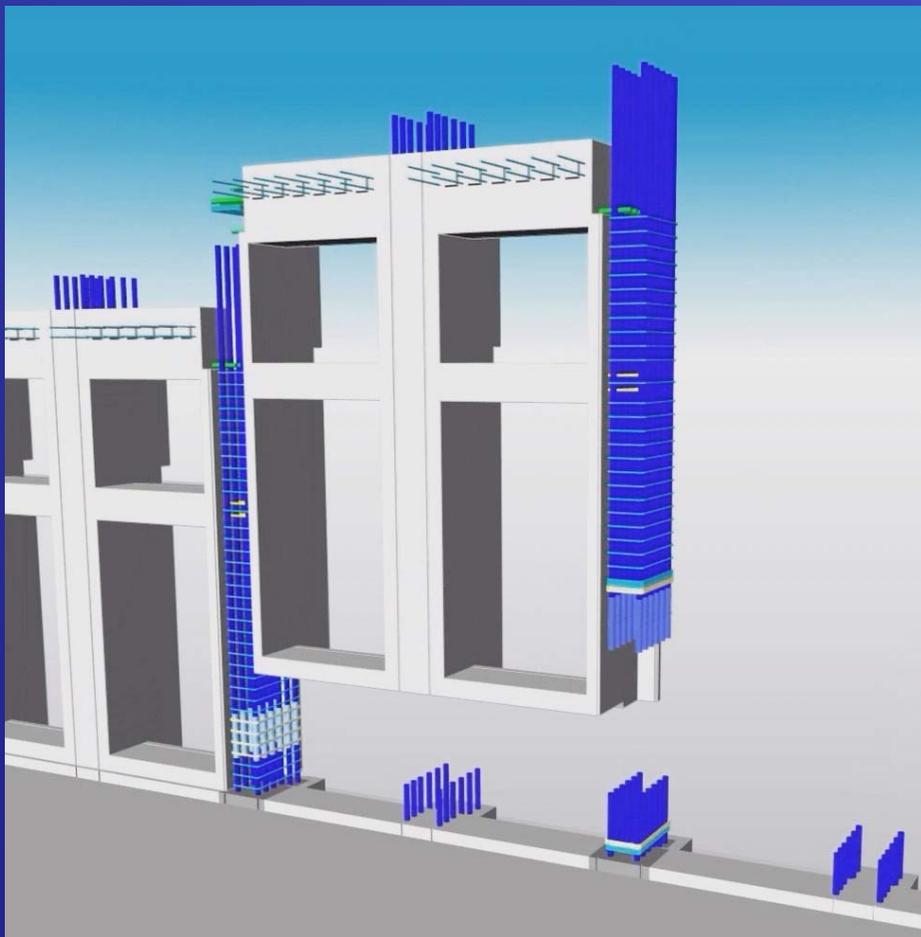
# New RC Ultra High Rise Office Building

Hybrid Exterior System

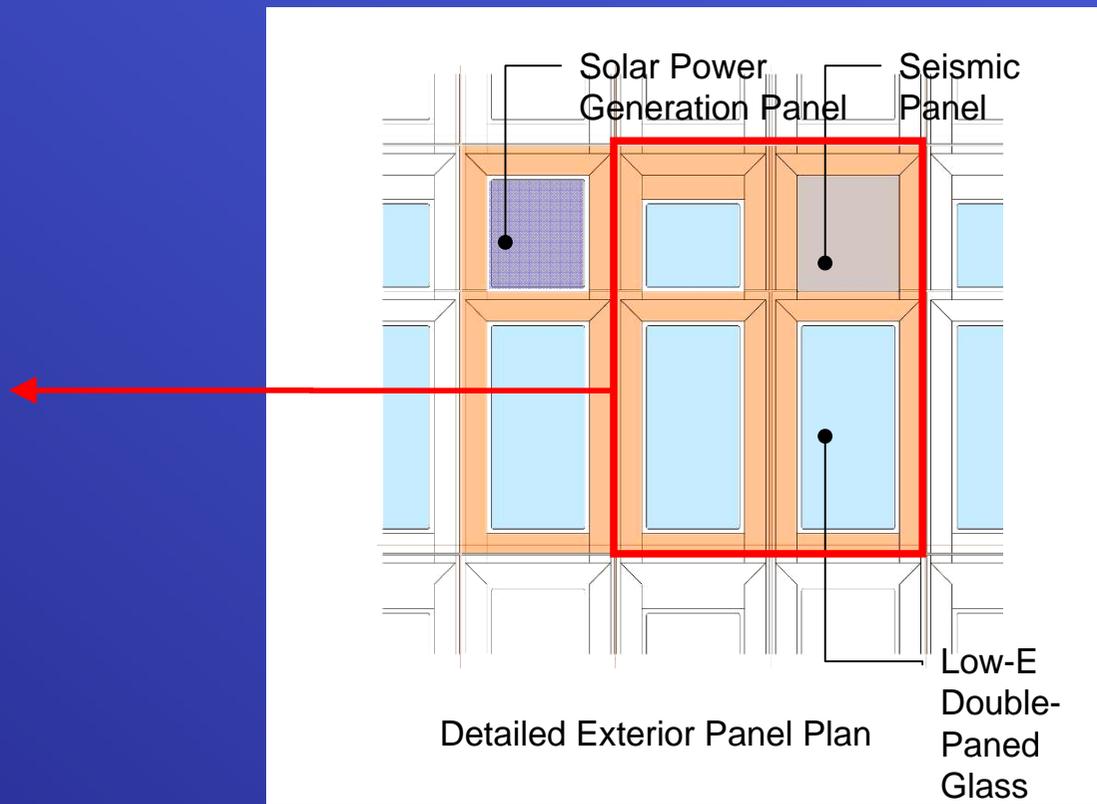
# Hybrid Exterior System

Construction x Environmental Devices x Exterior





## PC Paneling for Improved Construction Efficiency





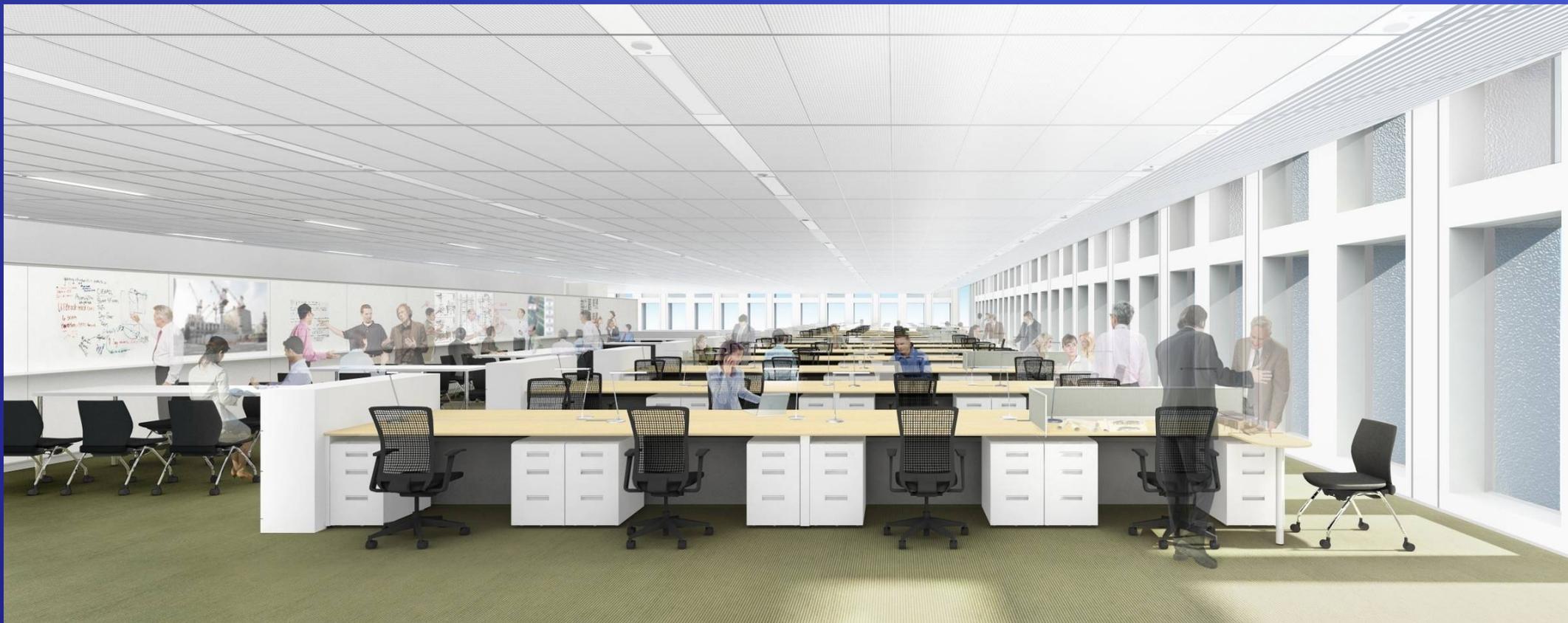
# Air Conditioning System that Improves IP Productivity

Control of 3 Environmental  
Elements

x

Radiative Air-conditioning

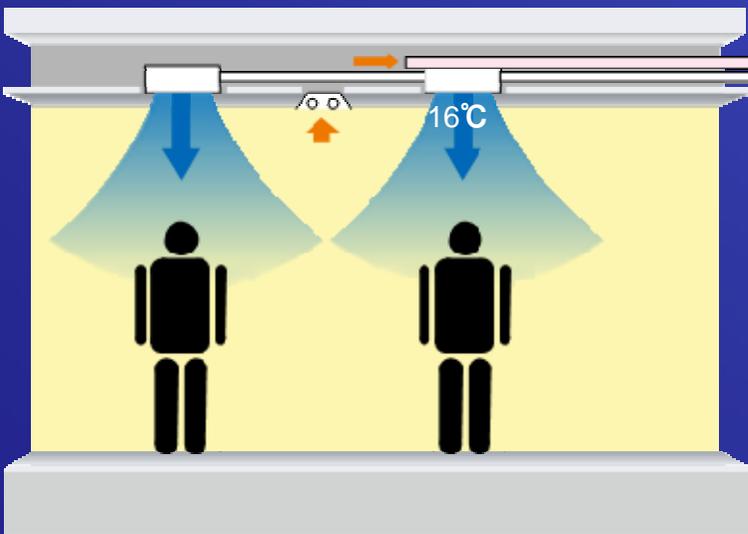
## Creating a Comfortable Office Building that Improves IP Productivity



## Features of Radiative Air-conditioning

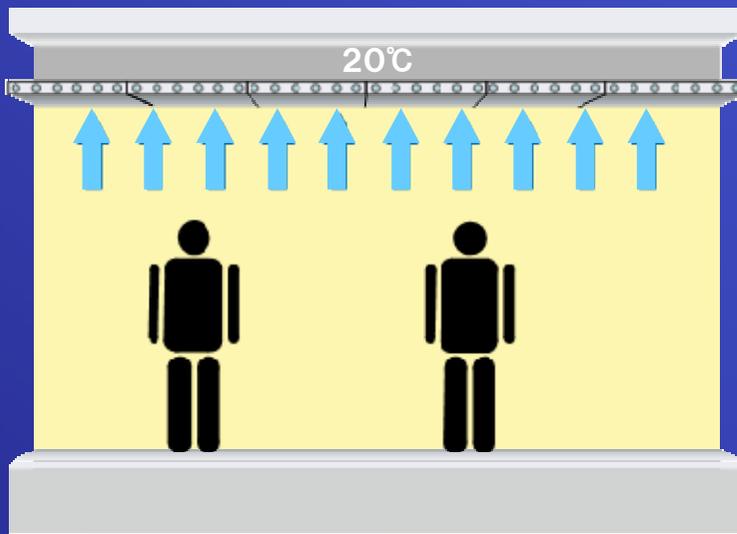
### Conventional System

Control of temperature by mixing conditioned air and room air



### Radiative Air-conditioning System

Direct control of perceived temperature through radiant heat

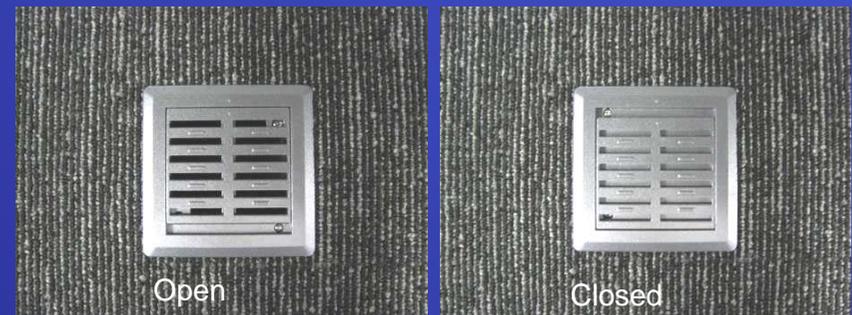
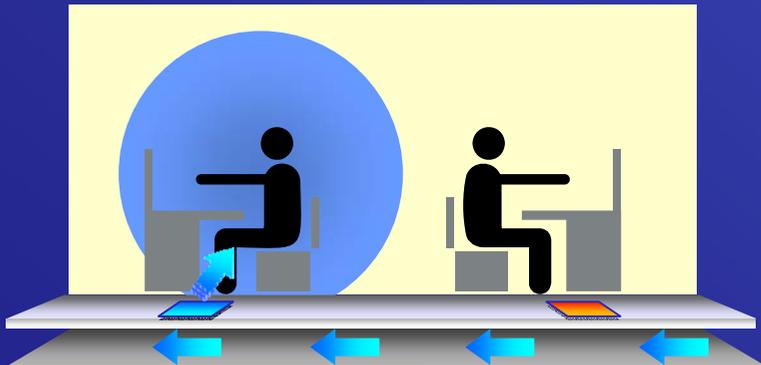
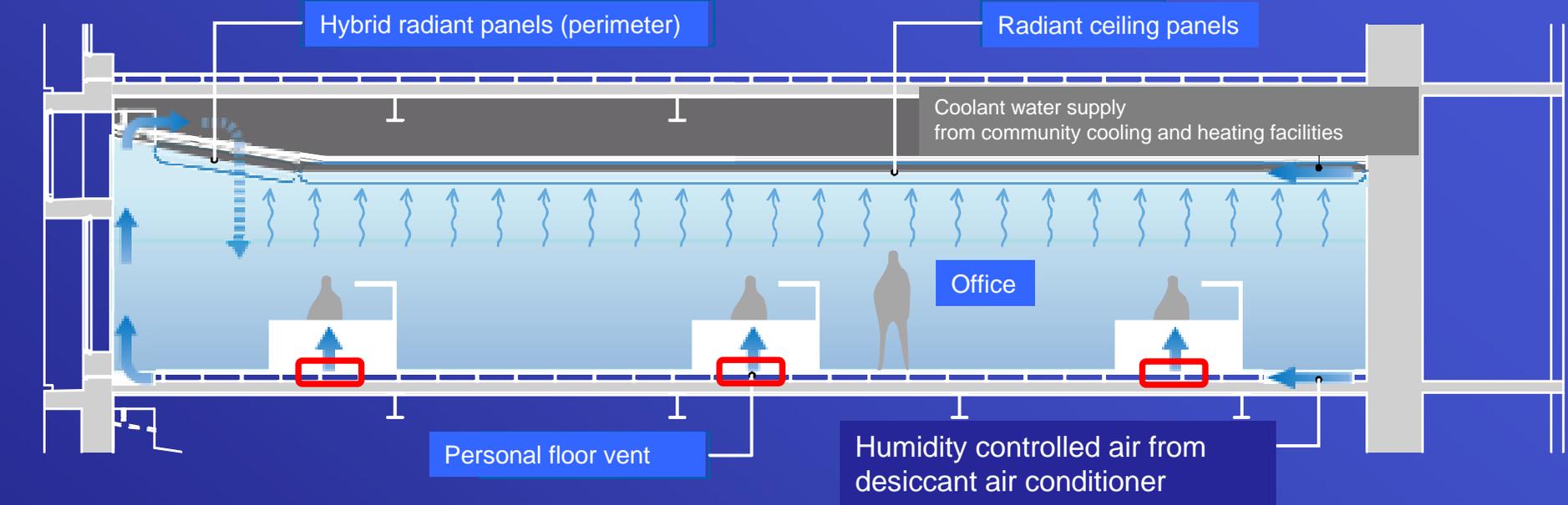


Radiative effect makes environment comfortable, even with “Cool Biz” settings

Environment free of unpleasant drafts

Air conditioning units are unnecessary, reducing energy consumption

# Desiccant Air Conditioners and Personal Floor Vents



Personal floor vent



Lighting System  
Utilizing Solar  
Energy

Energy Offset Lighting  
System

# Solar Power Generation Panels

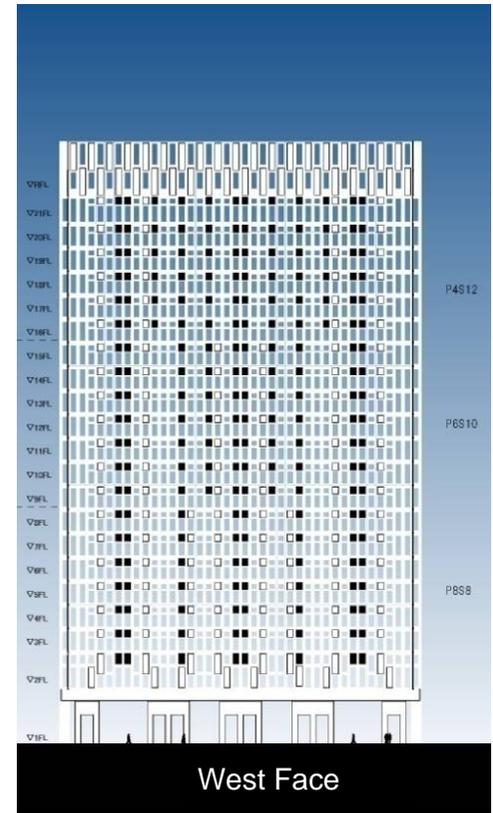
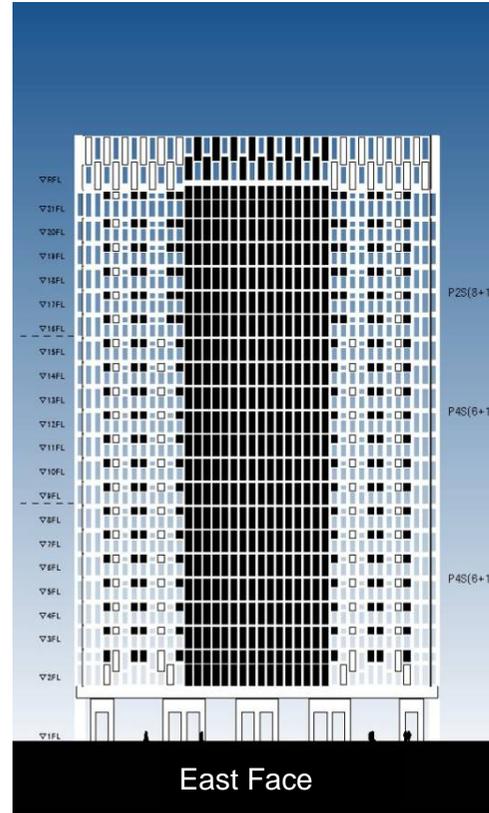
## Installation of Approximately 2,000m<sup>2</sup> of Solar Power Generation Panels in External Windows



Poly-crystal panels  
(Installed in windows  
in common areas)



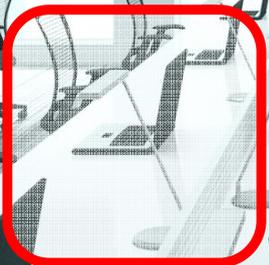
Thin film panels  
(Installed in office  
windows, etc.)



# Office Building Lighting System Utilizing Solar Energy

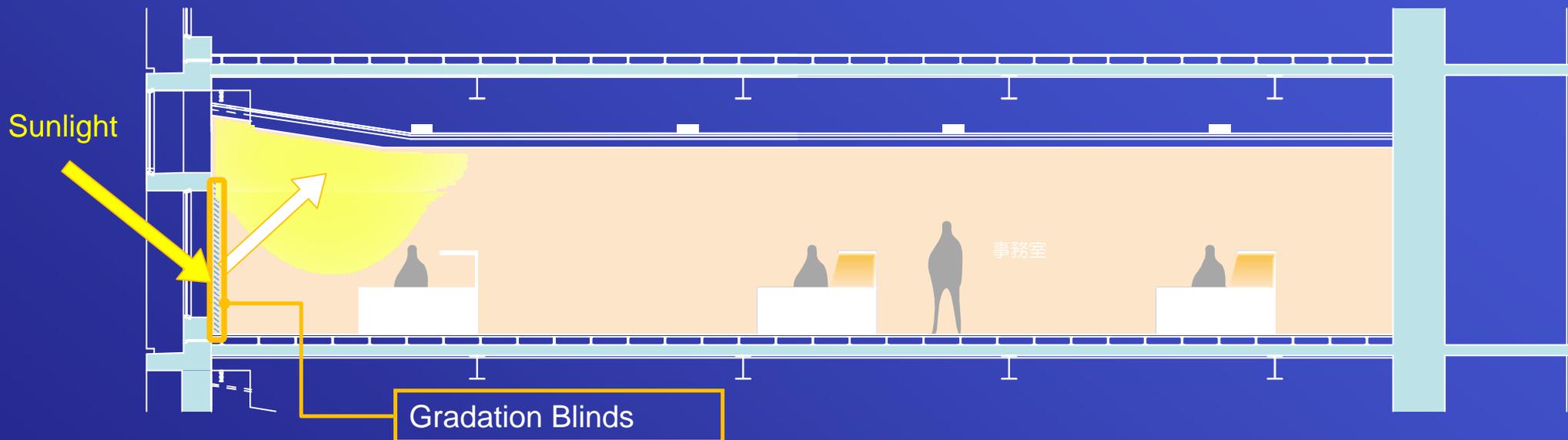


Ambient  
Lighting

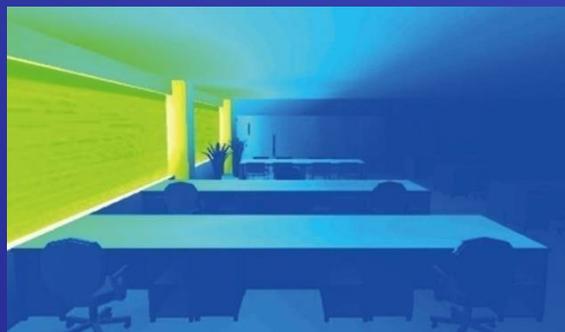


Task  
Lighting

# Gradation Blinds



Verification of effectiveness of gradation blinds (Light dispersion simulation)



Normal Blinds



Gradation Blinds

# Smart Solution Lab (Within Technical Research Building)

