

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

Super Green Office Building Project Technologies



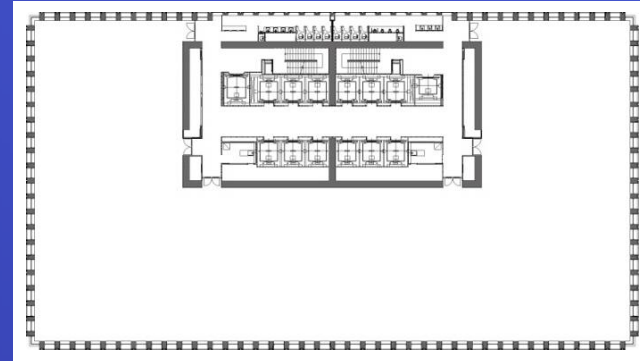
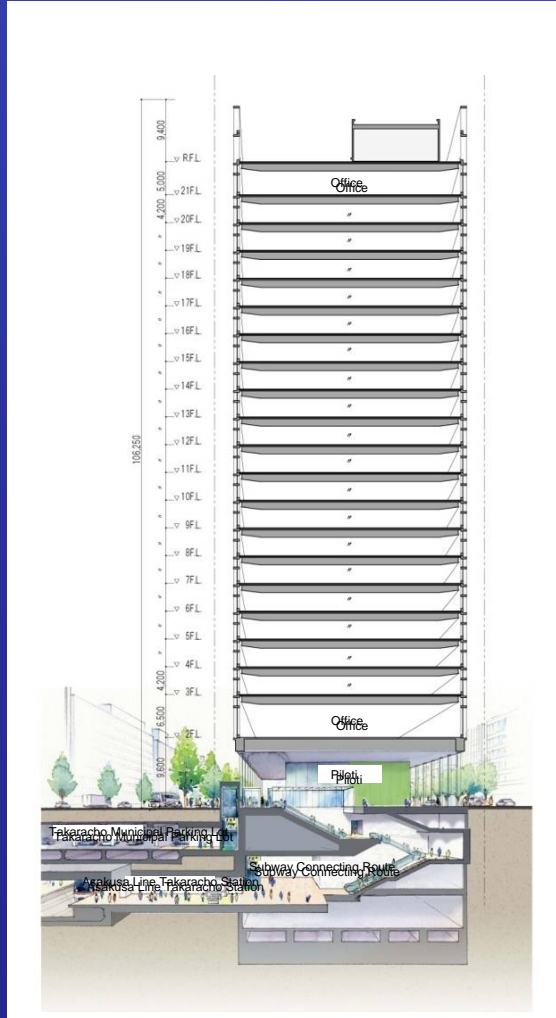
1 Project Overview “50% CO2 Emissions Reduction”
Super Green Office Building Overview

2 New RC Ultra High Rise Office Building
Hybrid Exterior System

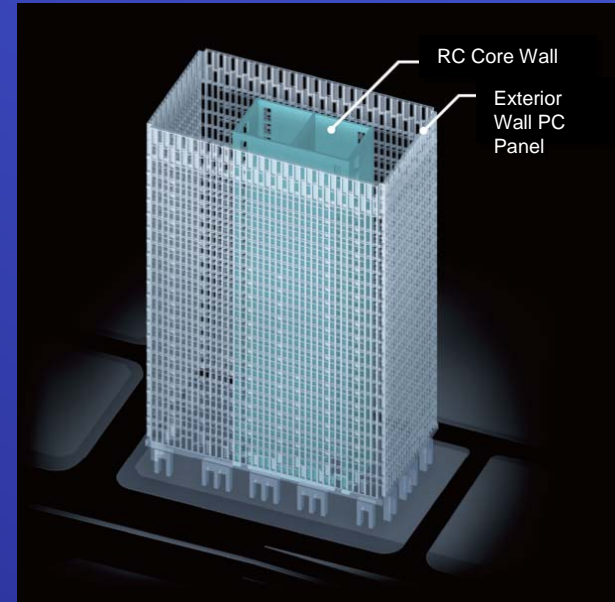
3 Air Conditioning System that Improves IP Productivity
3 Environmental Elements & Radiant Air Conditioning System

4 Lighting System Utilizing Solar Energy
Energy Offset Lighting System

Column-Free Office Building

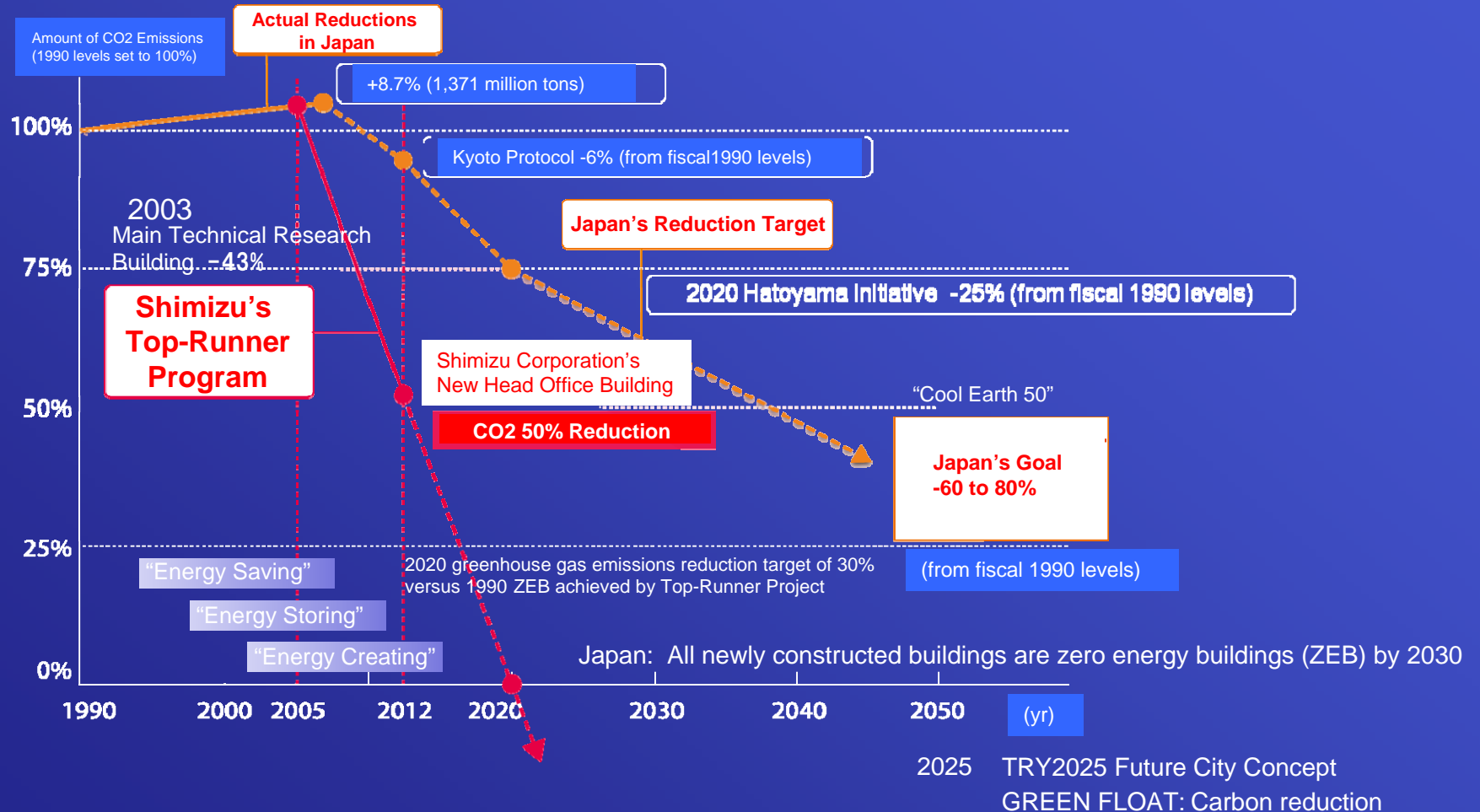


Typical Floor Plan



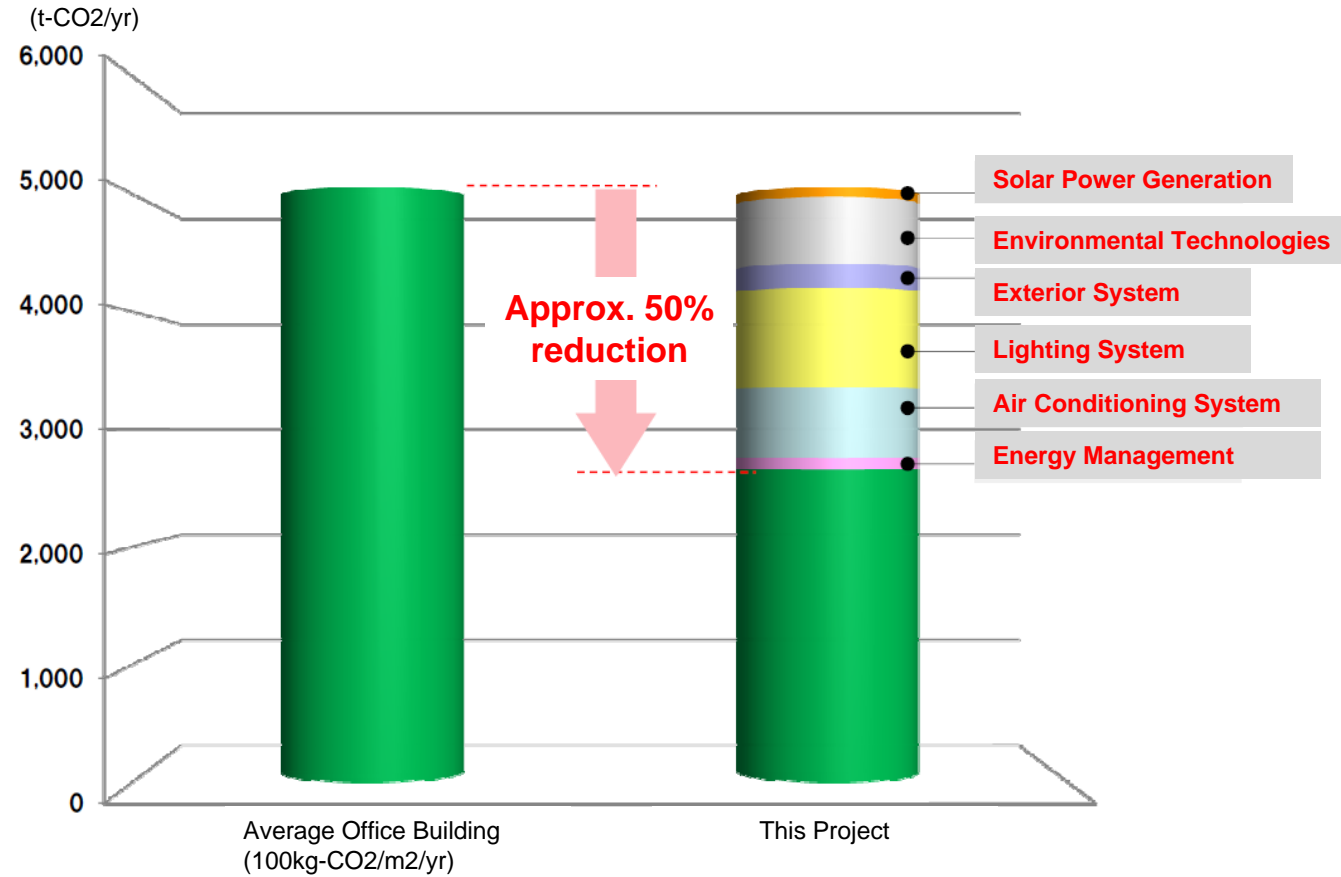
Basic Building Capabilities

- 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



Approx. 50% Reduction in CO2 Emissions

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

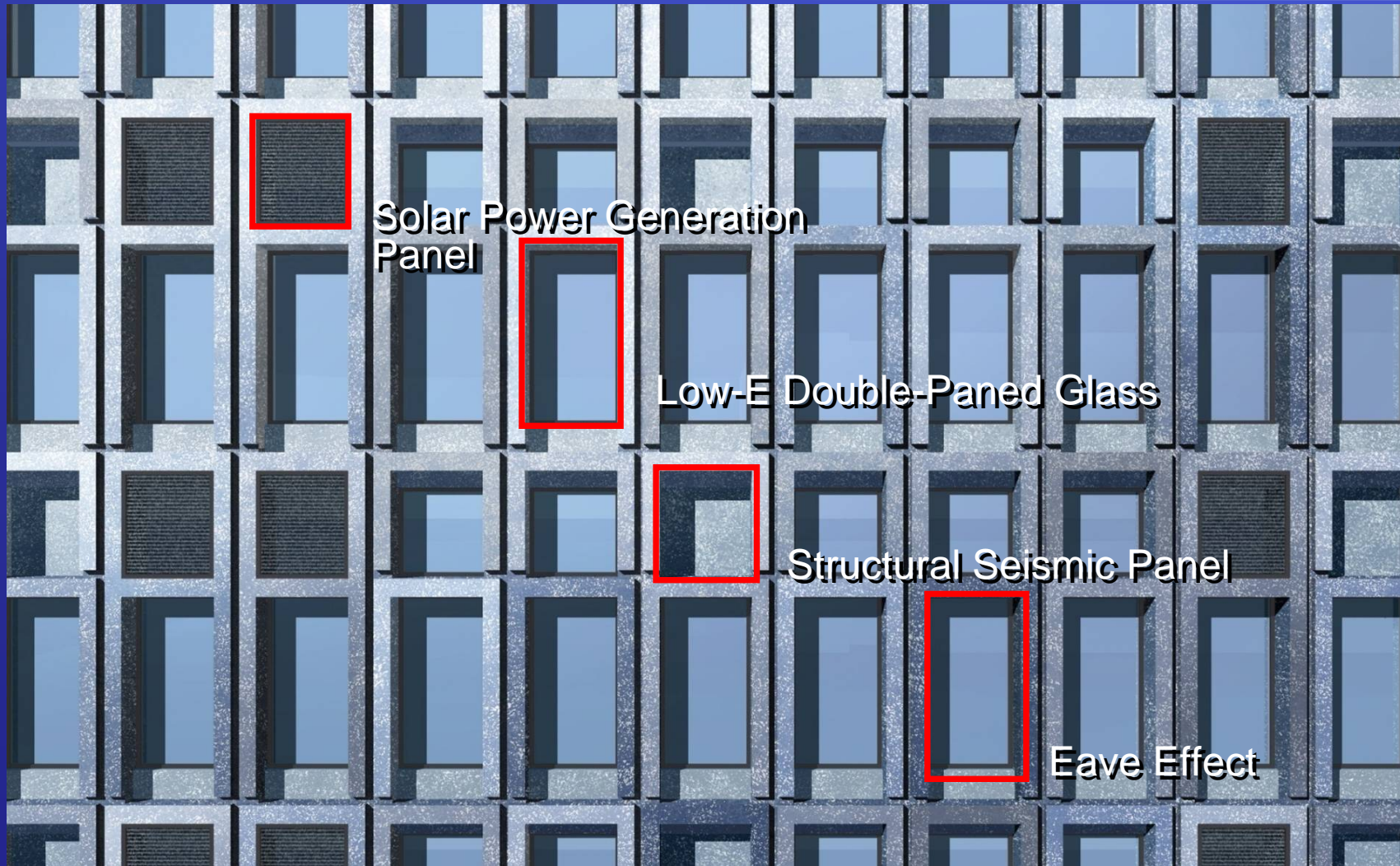


New RC Ultra High Rise Office Building

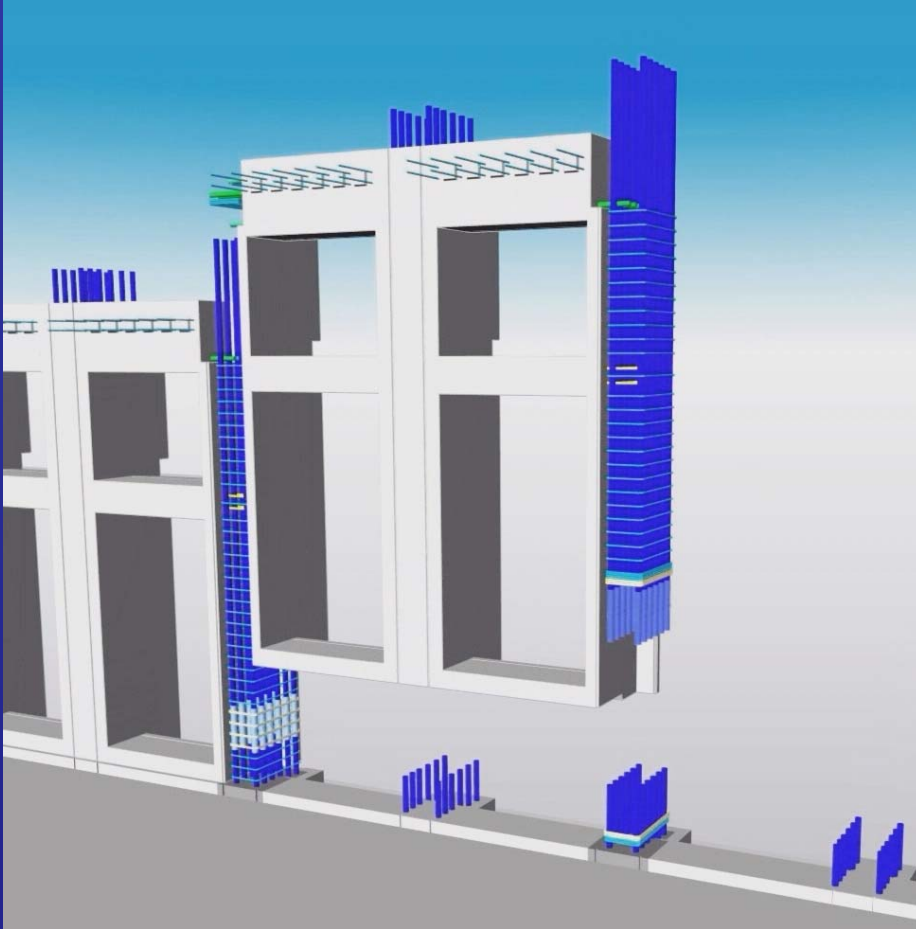
Hybrid Exterior System

Hybrid Exterior System

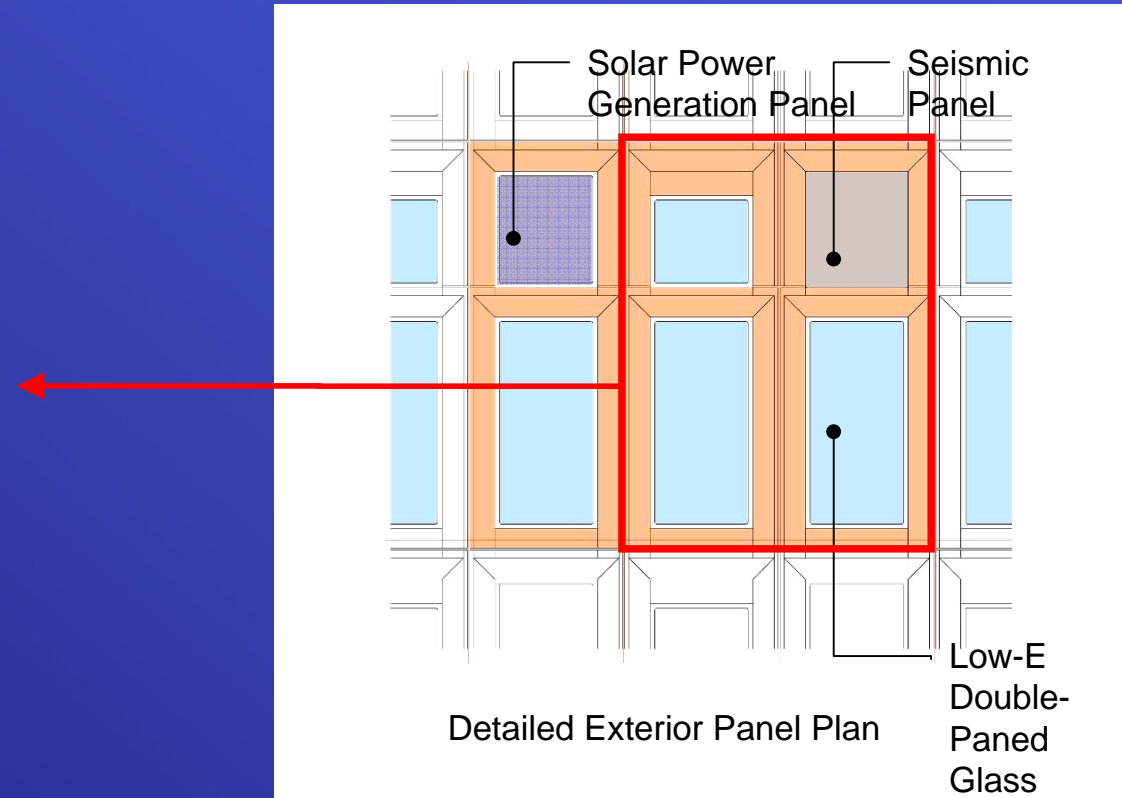
Construction x Environmental Devices x Exterior



Seismically Isolated RC Ultra High Rise, Supported by Core Walls and Exterior Frame



PC Paneling for Improved Construction Efficiency





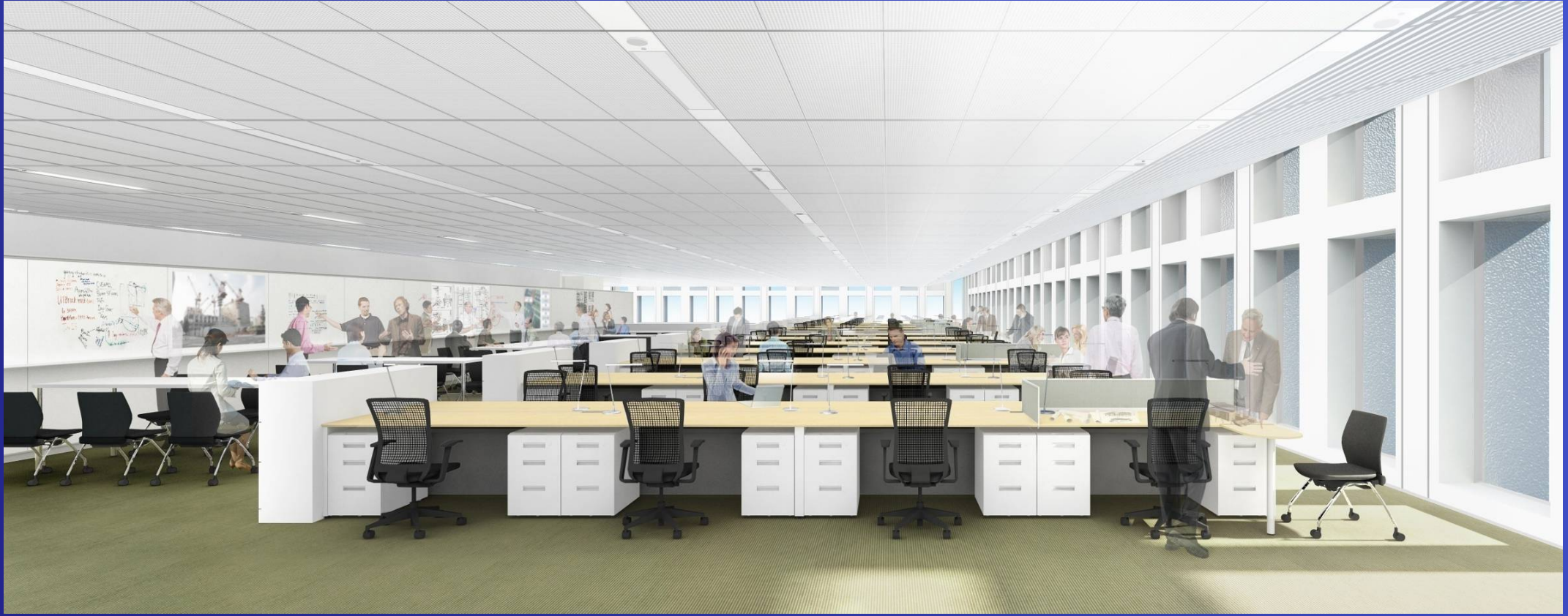
Air Conditioning System that Improves IP Productivity

Control of 3 Environmental
Elements

x

Radiative Air-conditioning

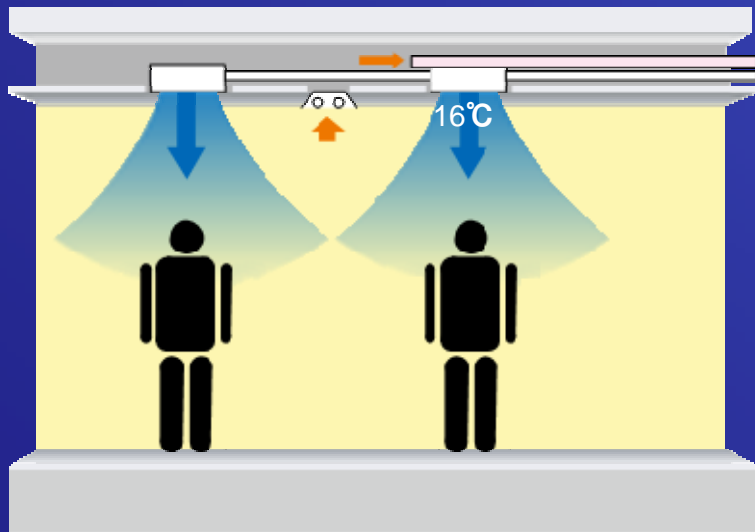
Creating a Comfortable Office Building that Improves IP Productivity



Features of Radiative Air-conditioning

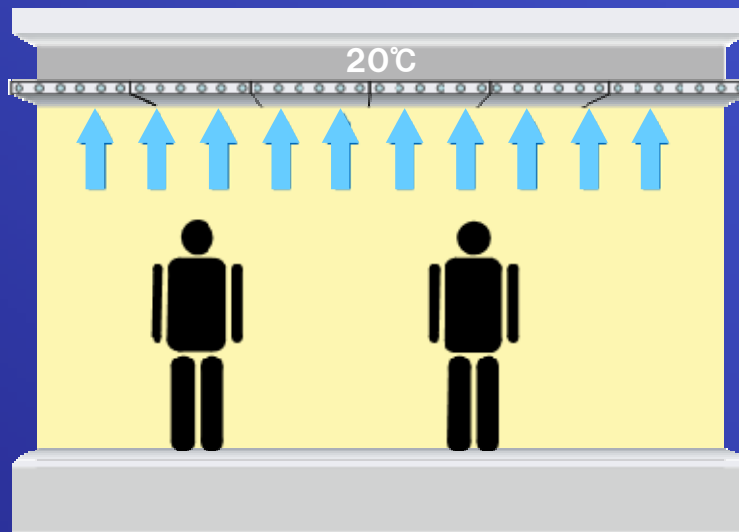
Conventional System

Control of temperature by mixing conditioned air and room air



Radiative Air-conditioning System

Direct control of perceived temperature through radiant heat

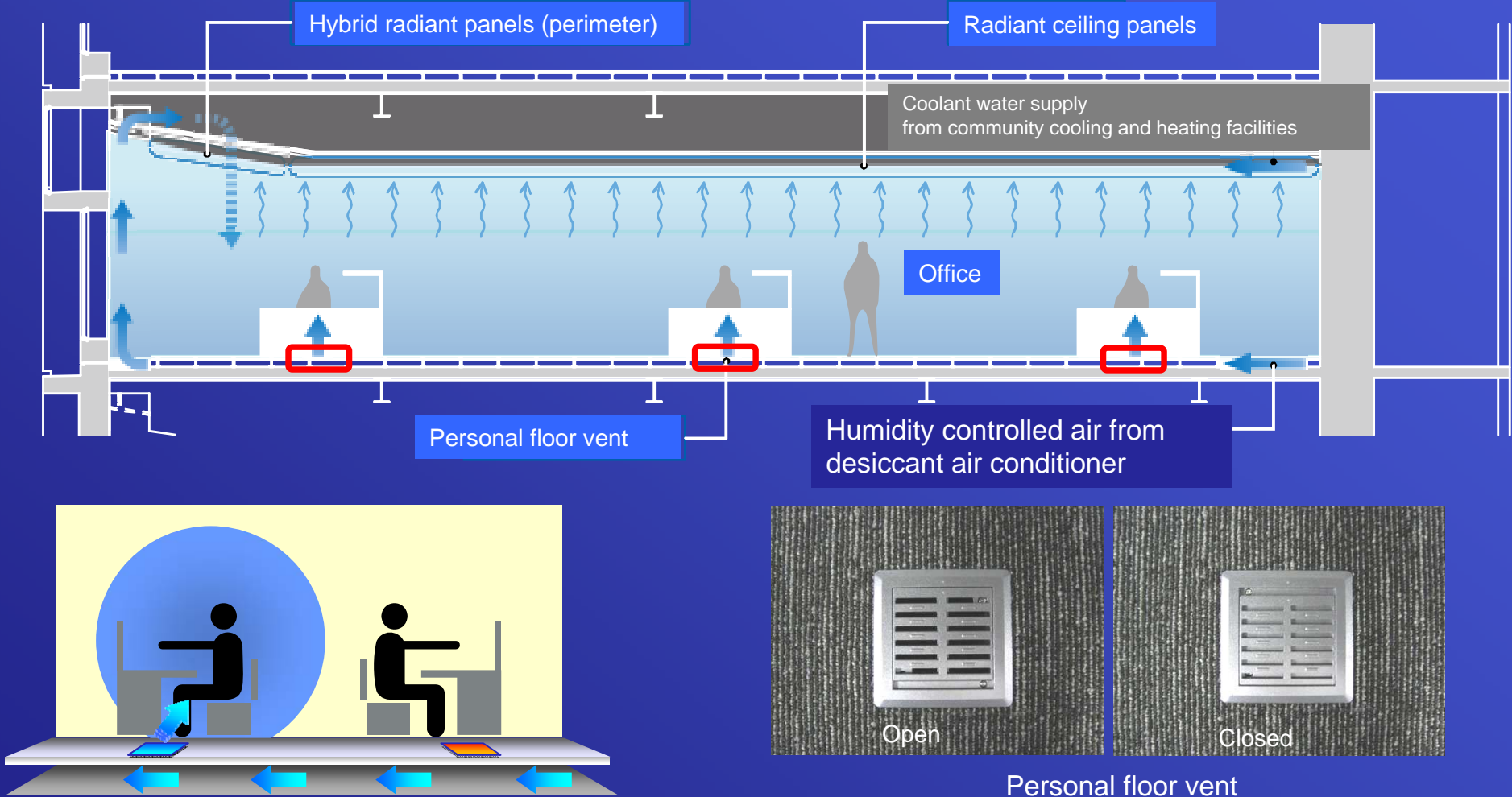


Radiative effect makes environment comfortable, even with “Cool Biz” settings

Environment free of unpleasant drafts

Air conditioning units are unnecessary, reducing energy consumption

Desiccant Air Conditioners and Personal Floor Vents





Lighting System
Utilizing Solar
Energy

Energy Offset Lighting
System

Solar Power Generation Panels

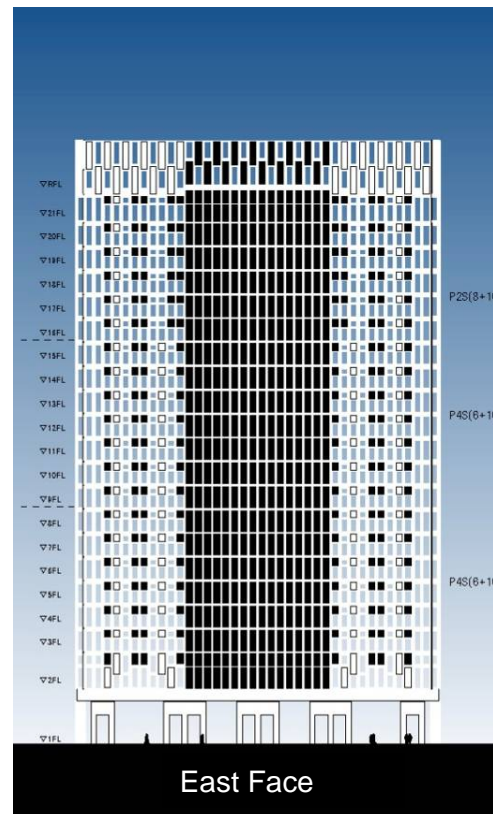
Installation of Approximately 2,000m² of Solar Power Generation Panels in External Windows



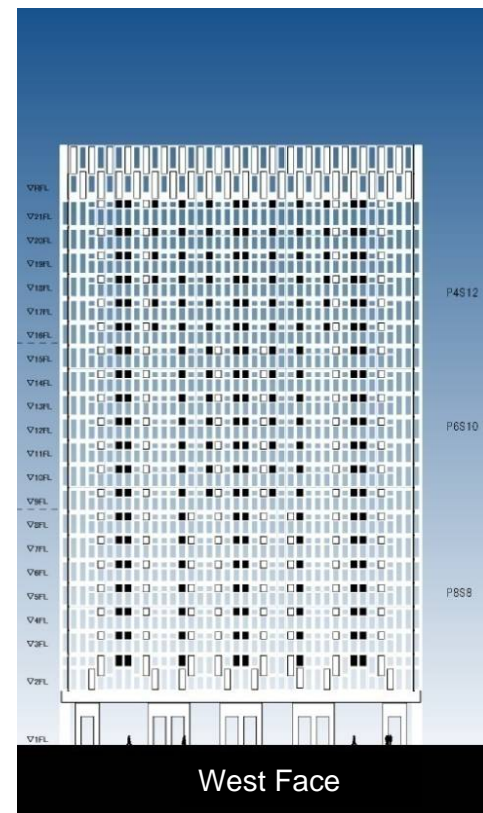
Poly-crystal panels
(Installed in windows
in common areas)



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



East Face



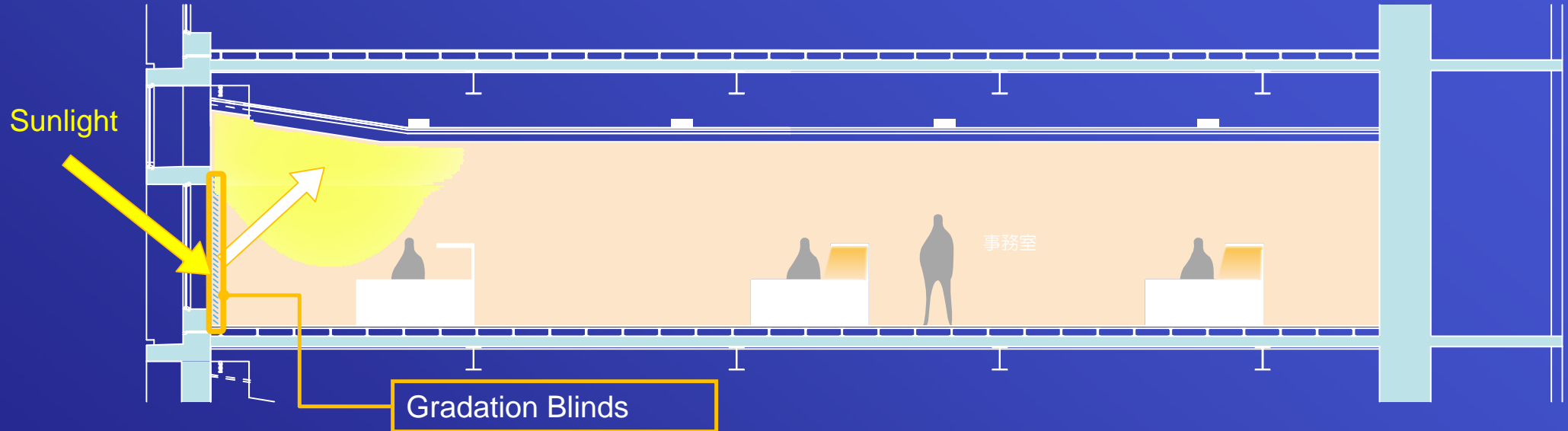
West Face

Office Building Lighting System Utilizing Solar Energy

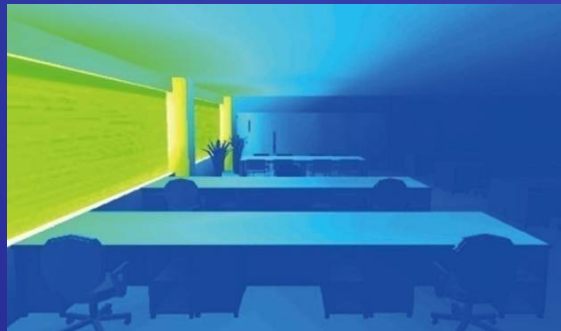
Ambient
Lighting

Task
Lighting

Gradation Blinds



Verification of effectiveness of
gradation blinds
(Light dispersion simulation)



Normal Blinds



Gradation Blinds

Smart Solution Lab (Within Technical Research Building)

