

TAISEI Zero Energy Building ZEB

SE 4 ALL Global Energy Efficiency Forum on Cities
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TAISEI CORPORATION

For a Lively World

What's ZEB ?

net Zero Energy Building

ZEB is the building with
ZERO energy annual consumption

Policy target of Japan

Targeting to realize **ZEB**,

By 2020; New public buildings

By 2030; Average of new buildings

Targets of US, EU, UK and France

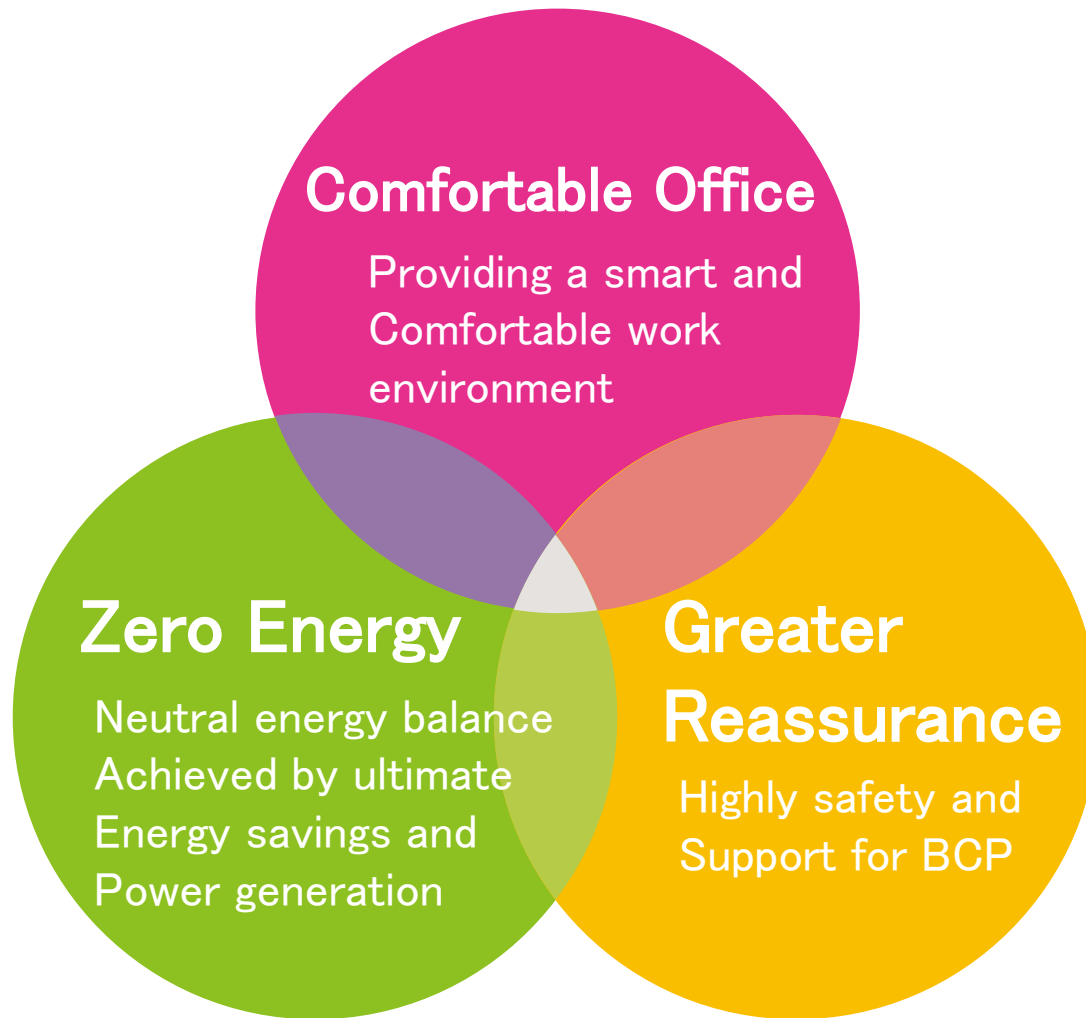
By 2020~2030

General Description of Our ZEB

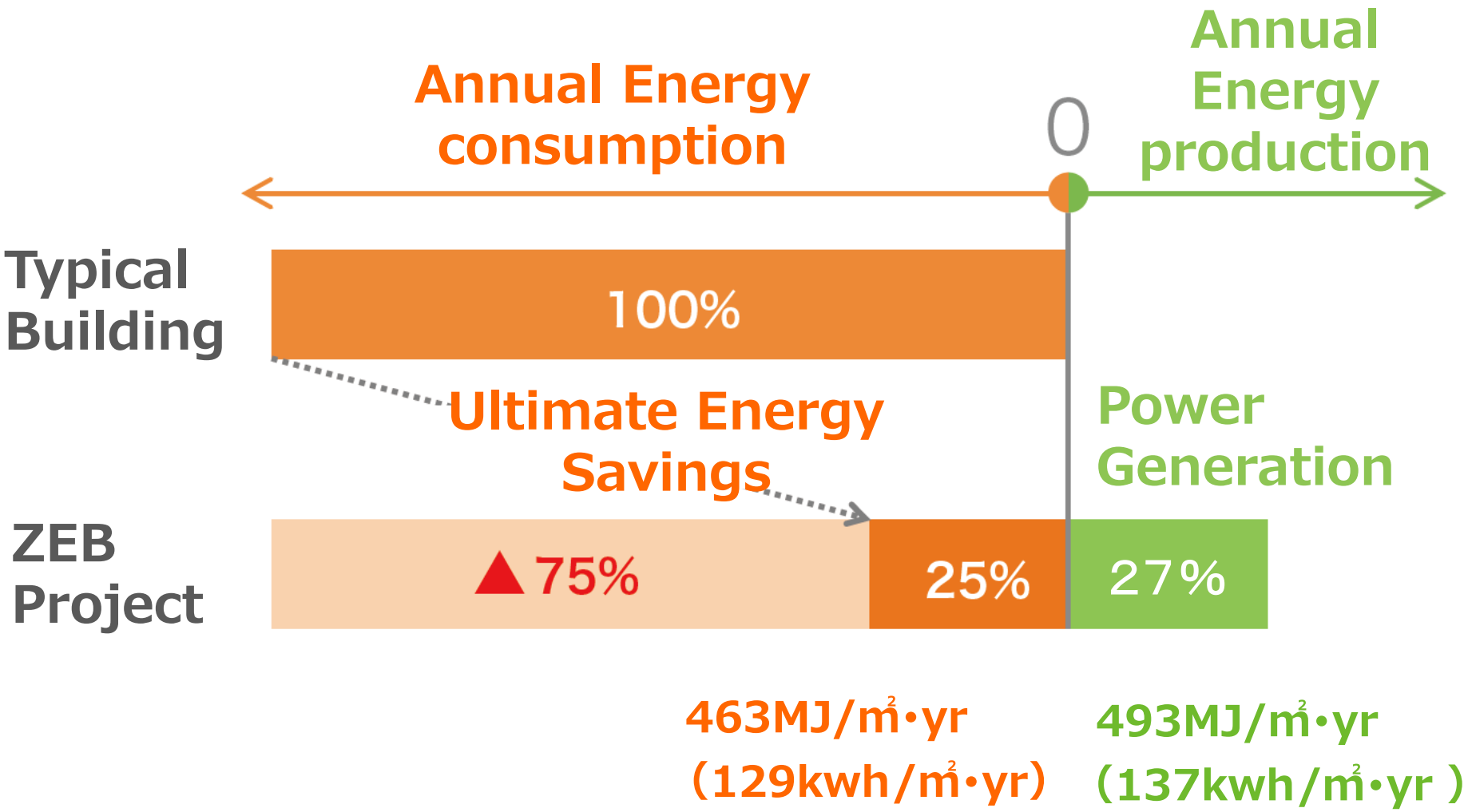
Floor number : 3 stories

Total floor area : 1,300 m²





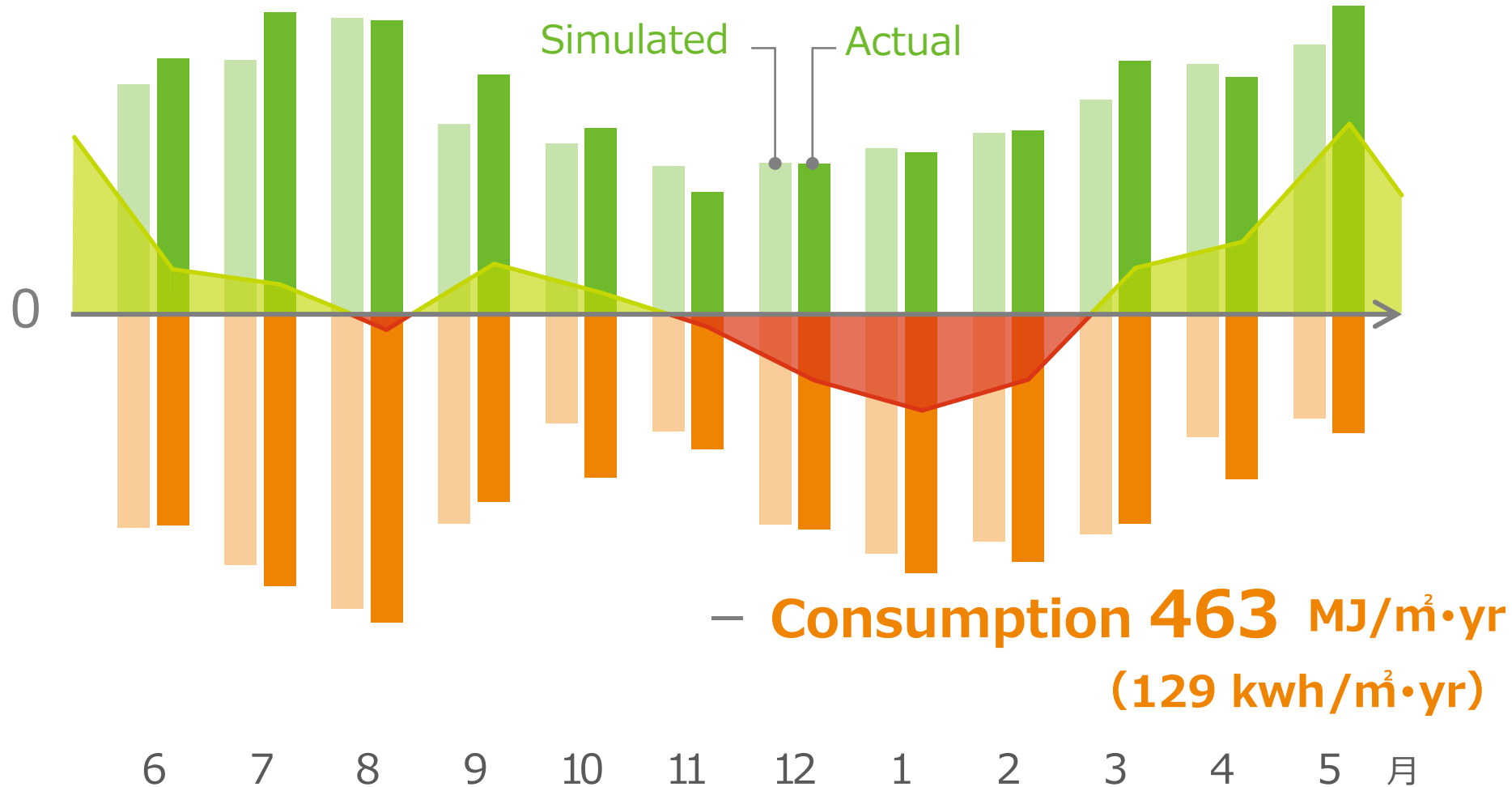
Results of Annual energy balance



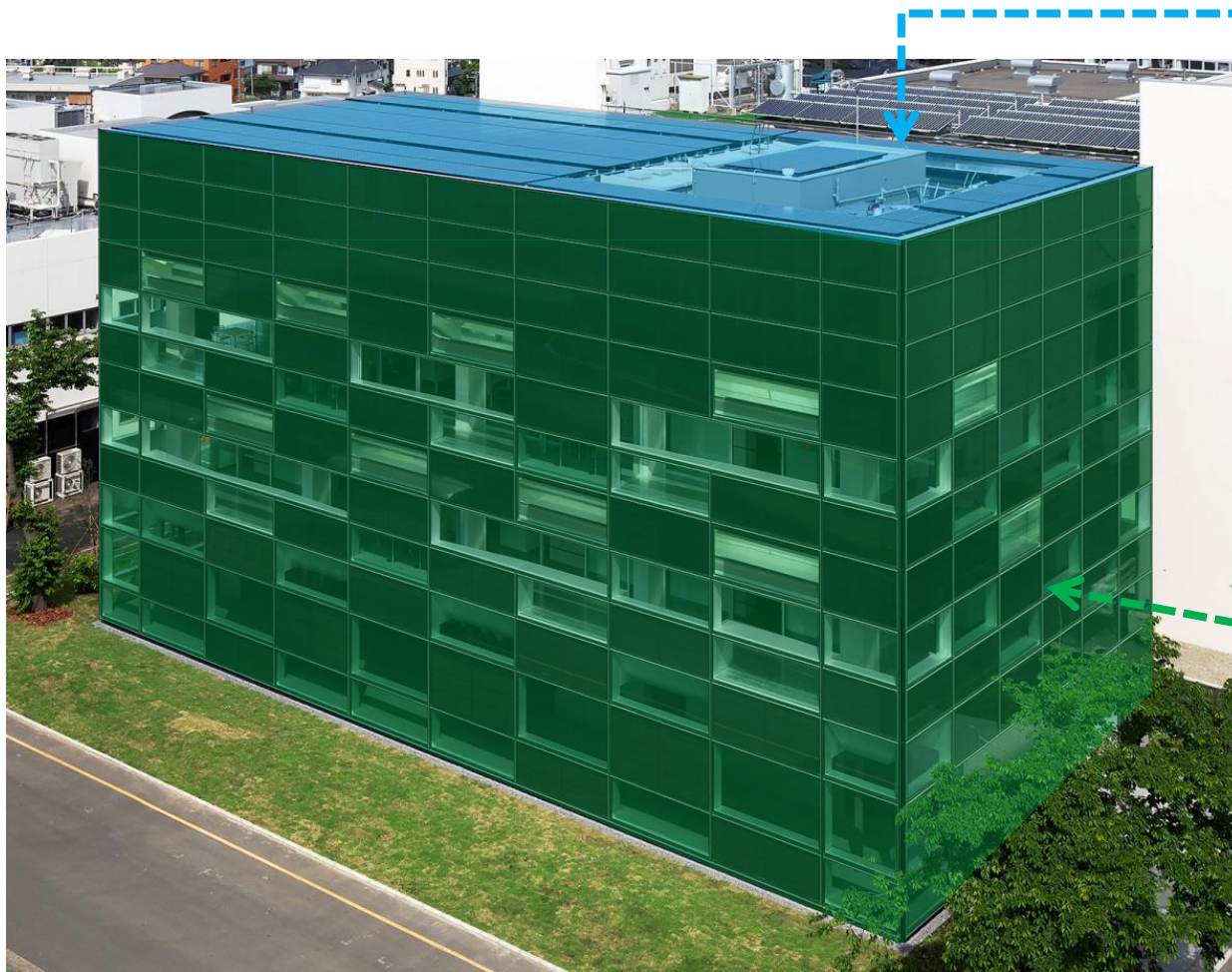
Results of Monthly Energy Production and consumption

2014.6.1– 2015.5.31

+ **Production 493 MJ/m²·yr**
(137 kwh/m²·yr)



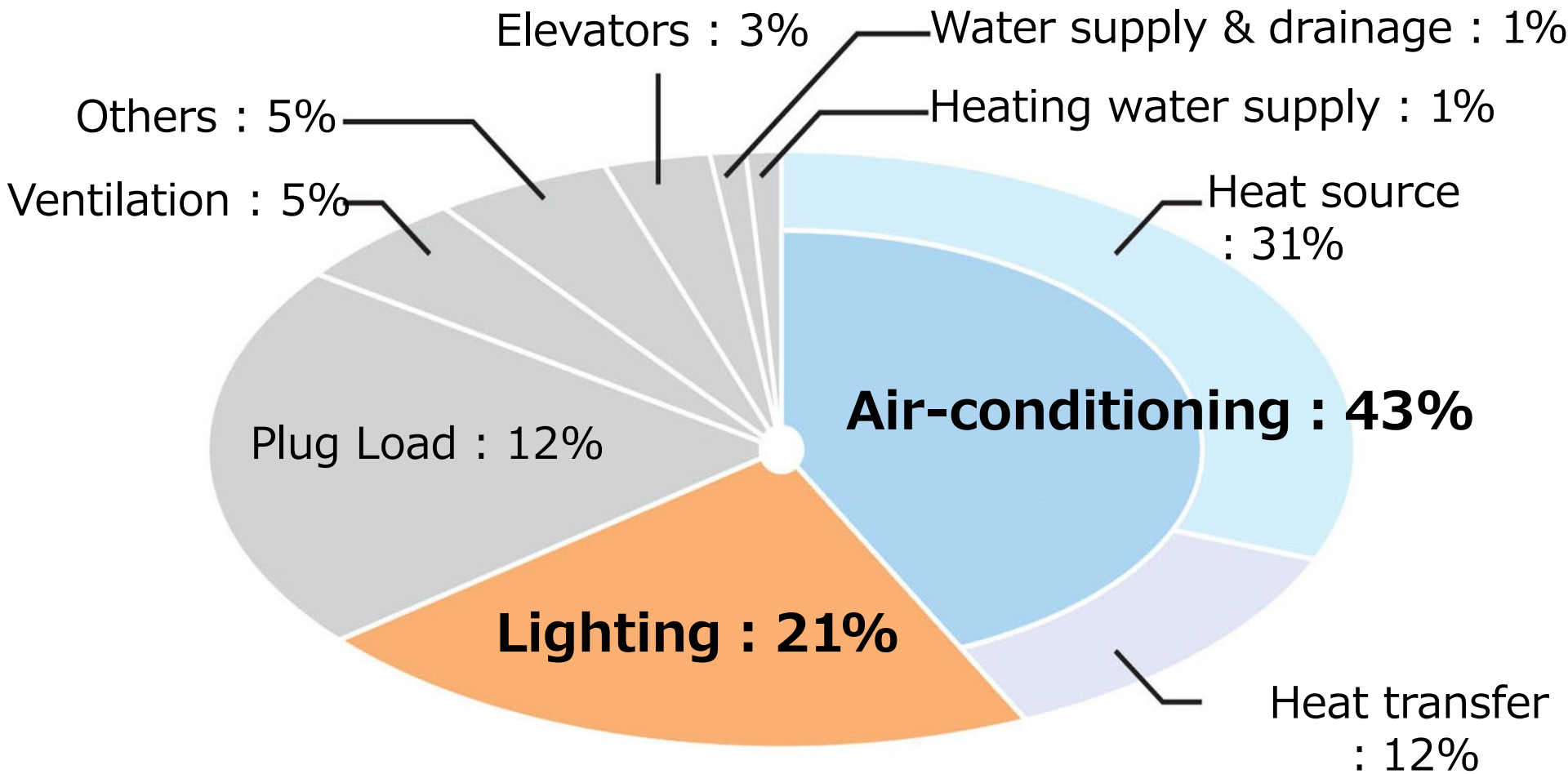
Photovoltaic (PV) Installation



Roof Top
Monocrystal PV

External Wall
Organic
Thin Film PV

Energy Consumption of Building Operation (typical office)



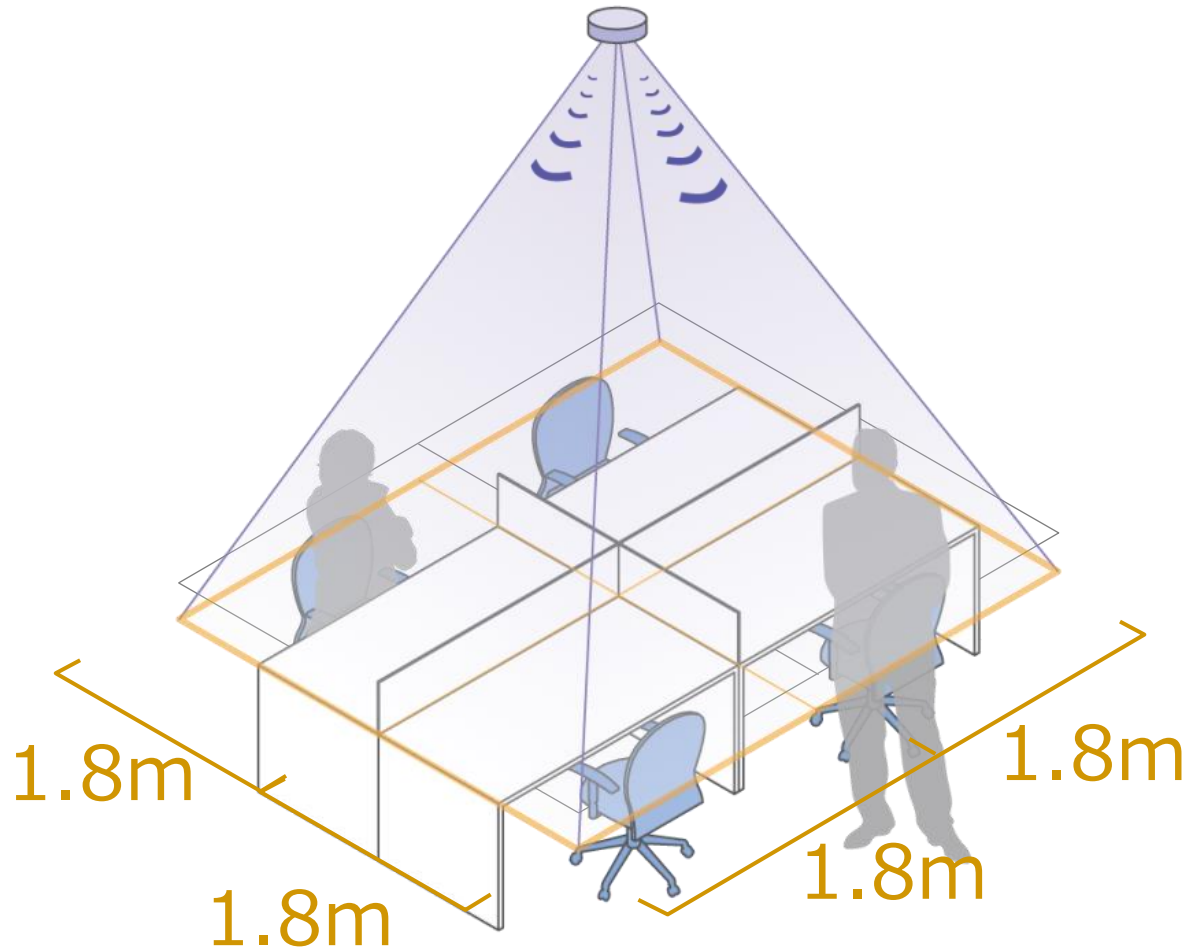
Smart sensor (T-smart Focus)

Precisely detect real time
human occupation

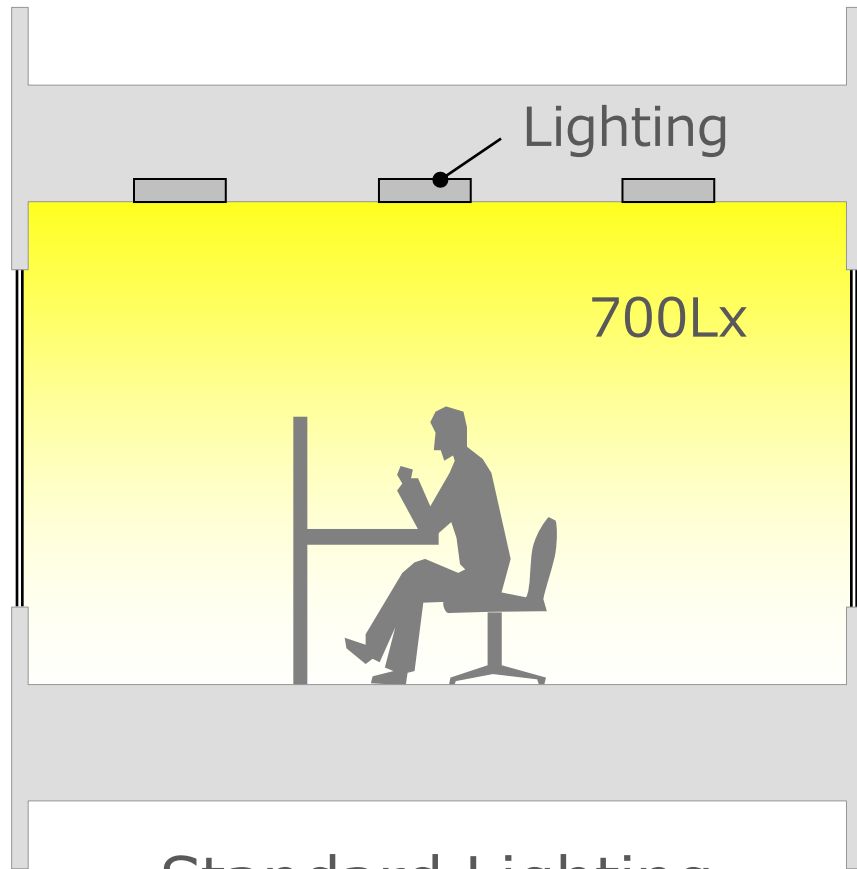
sensor



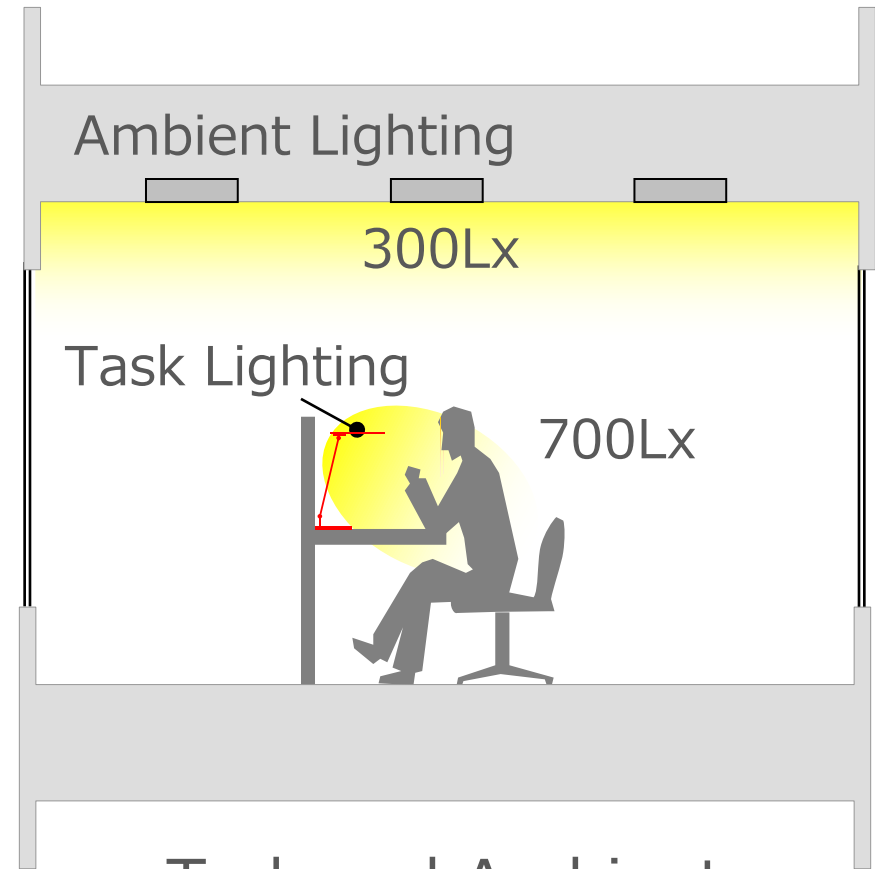
Smart sensor



Task and Ambient Lighting System

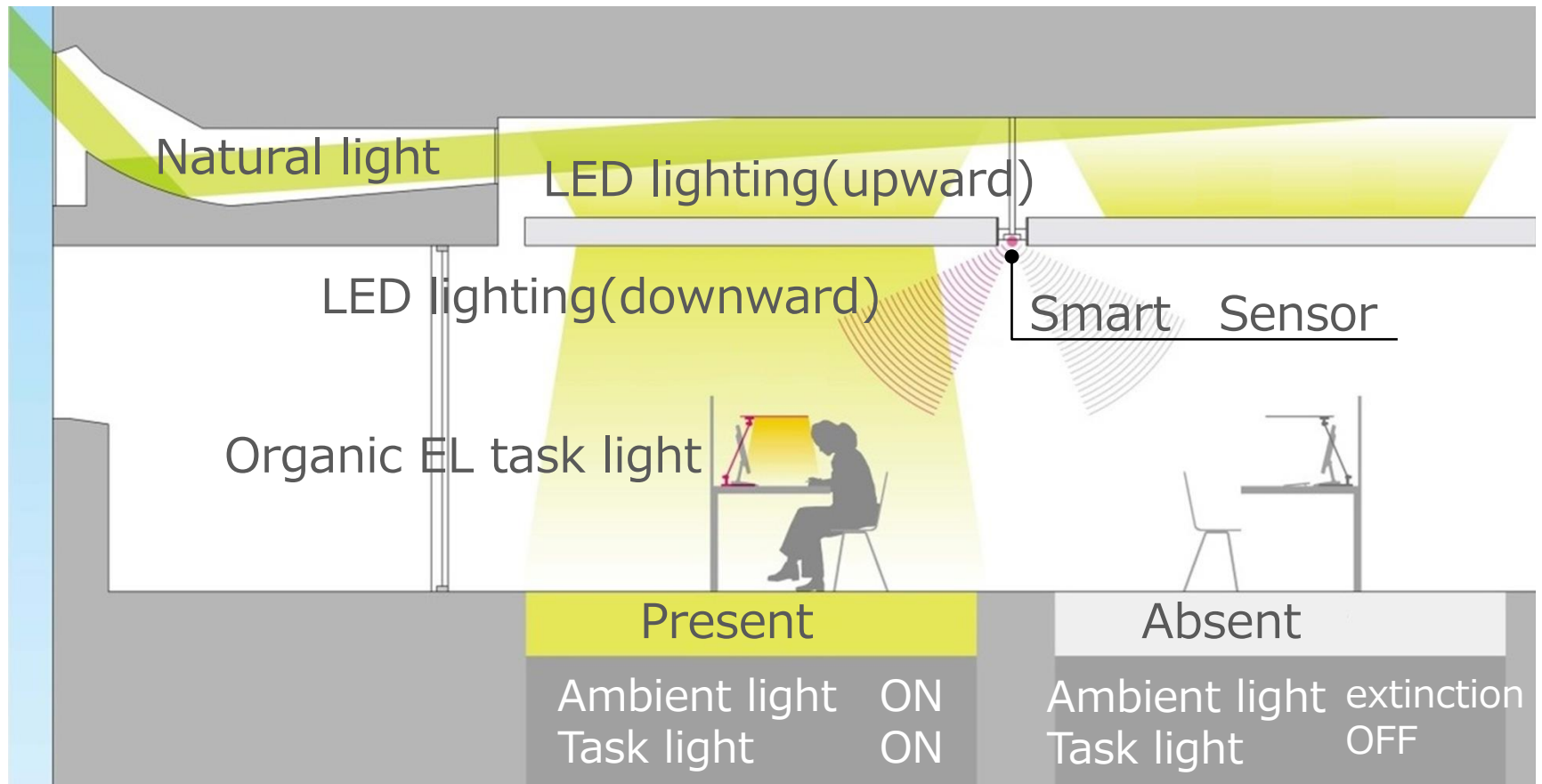


Standard Lighting System



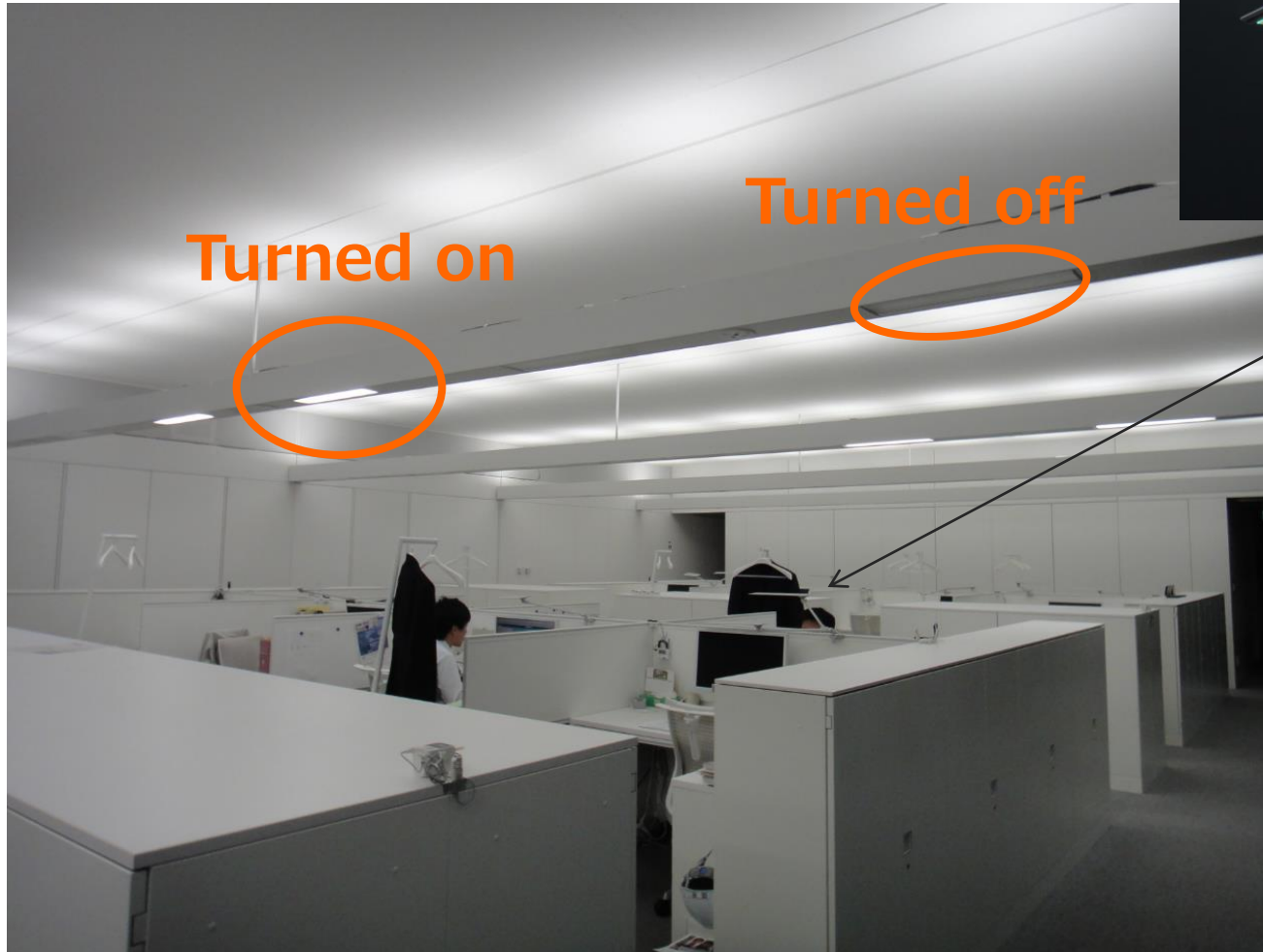
Task and Ambient Lighting System

Advanced Task and Ambient lighting system



Advanced Lighting control system

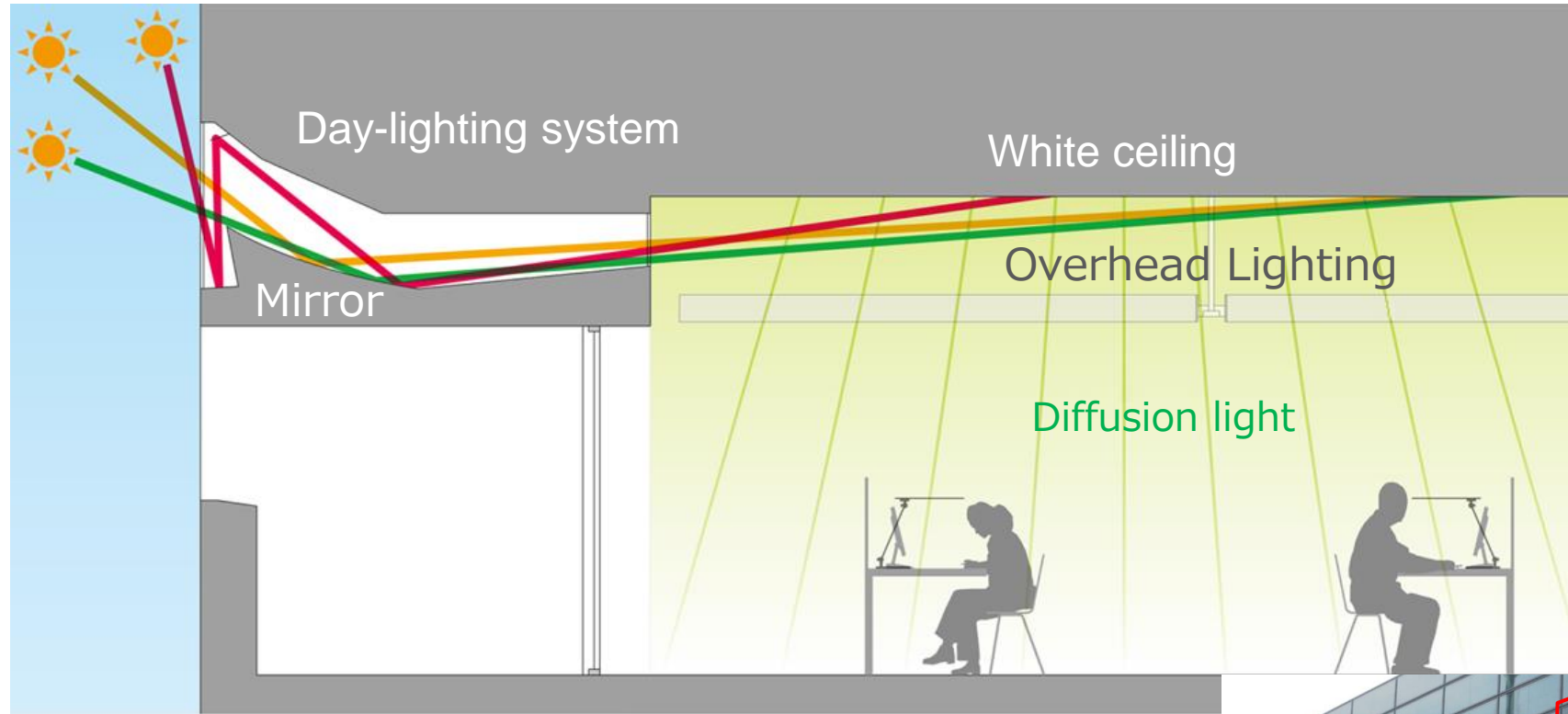
Automatic Ambient Lighting controlled by Smart Sensor



Organic EL
Task Light

Day-lighting System (T-Light Cube)

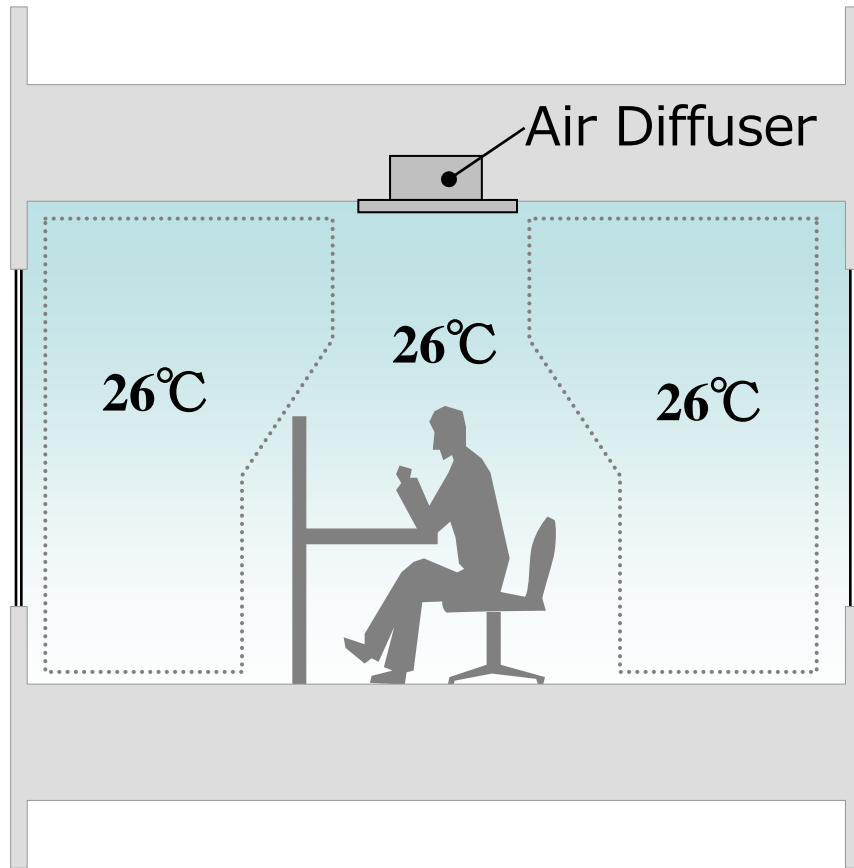
Constant Reflection of Sunlight at any position



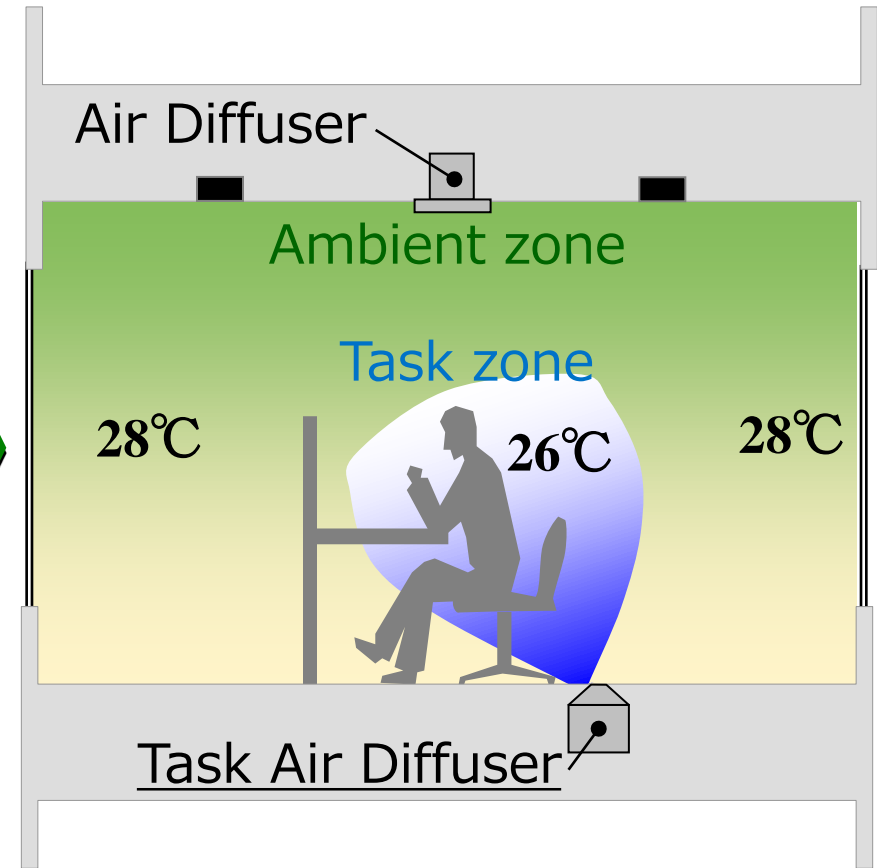
Day-lighting System (T-Light Cube)



Task and Ambient Air conditioning System

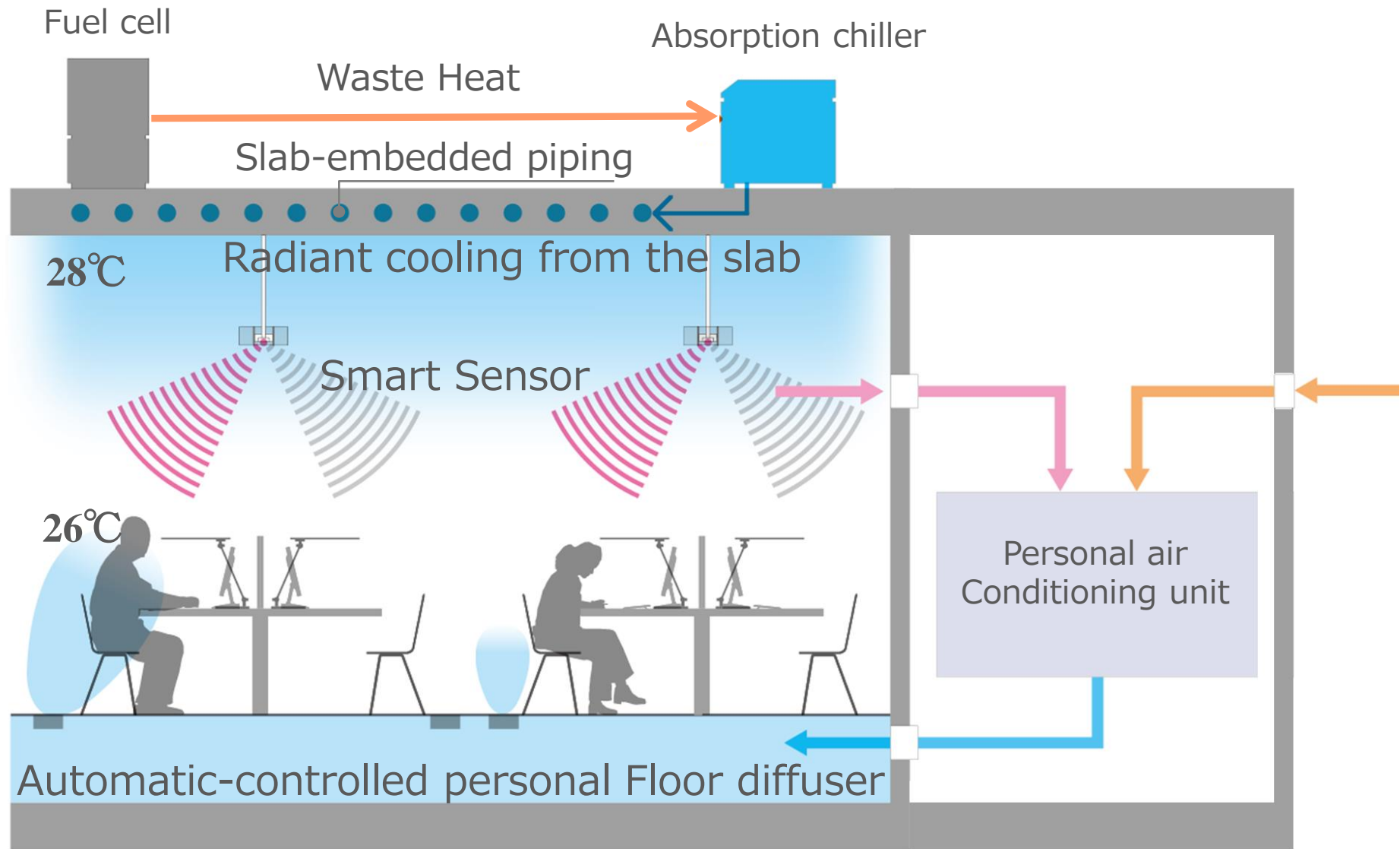


Conventional system



Task & Ambient system

Advanced Task and Ambient Air conditioning System



Ambient Cooling and Heating by Radiant System



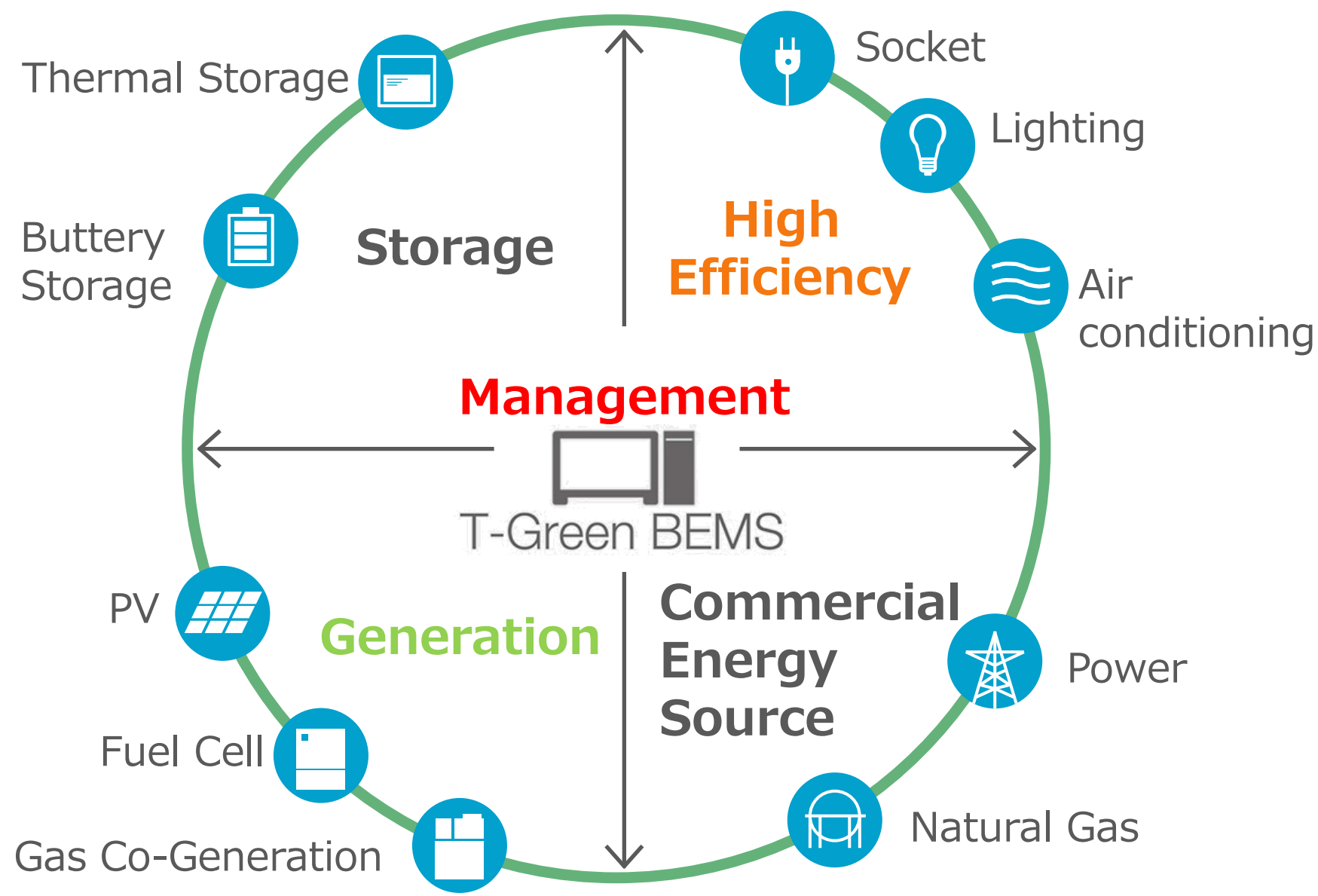
Task Air conditioning system by Floor Diffuser

Air from Floor Diffuser is controlled by Smart Sensor

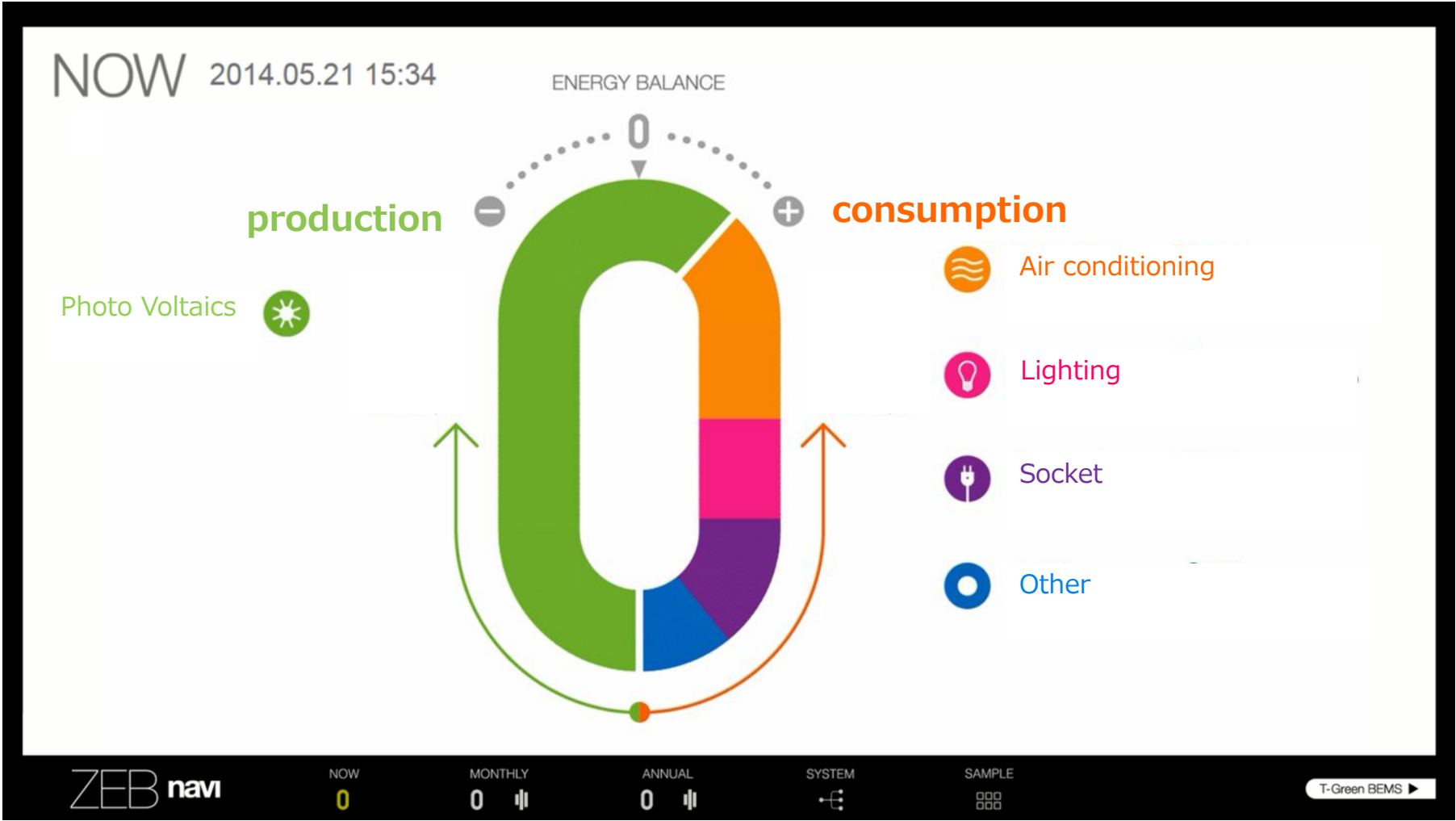


**Automatic control personal
Floor diffuser**

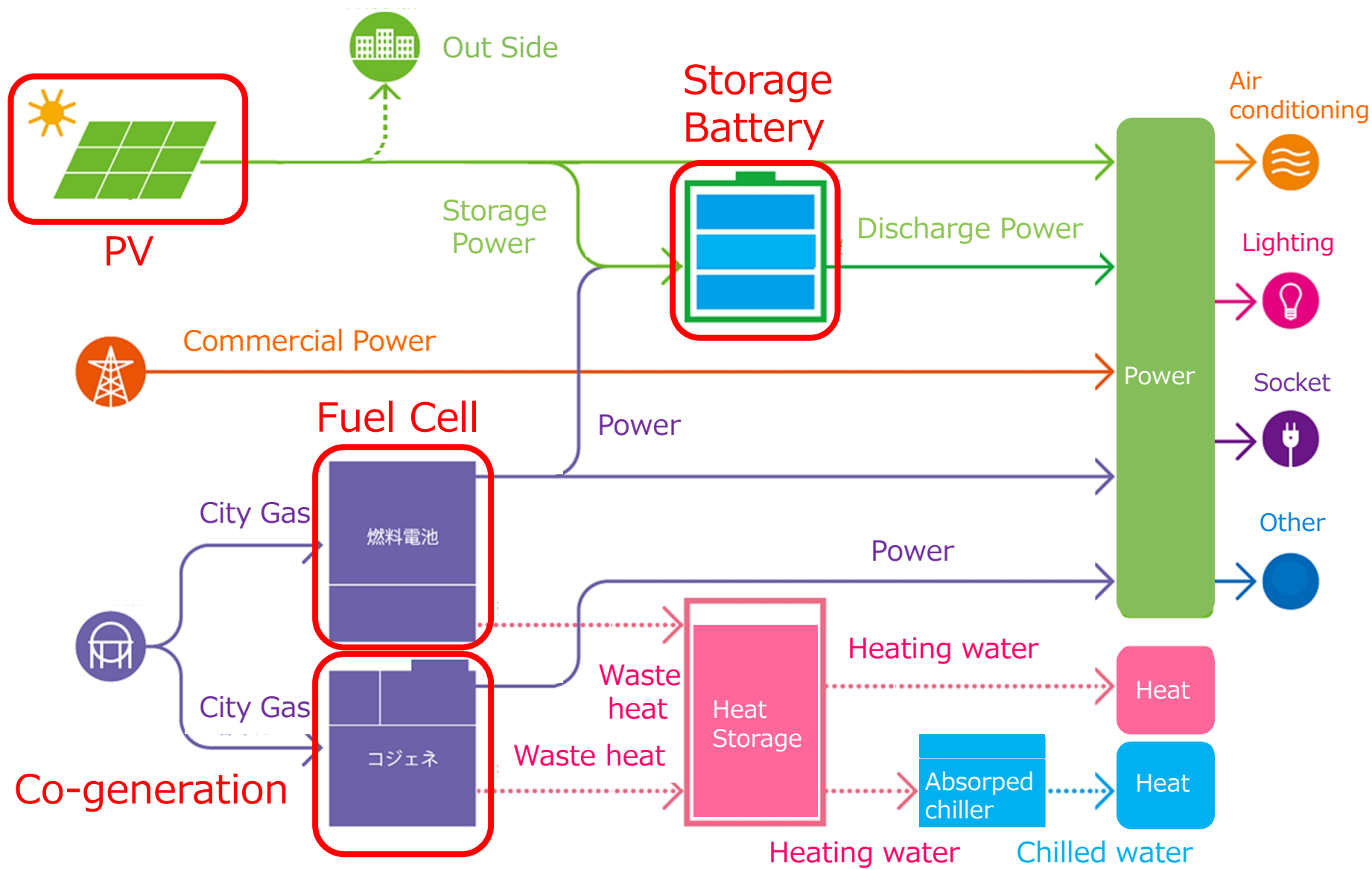
Building Energy Management System (T-Green BEMS)



Building Energy Management System (T-Green BEMS)

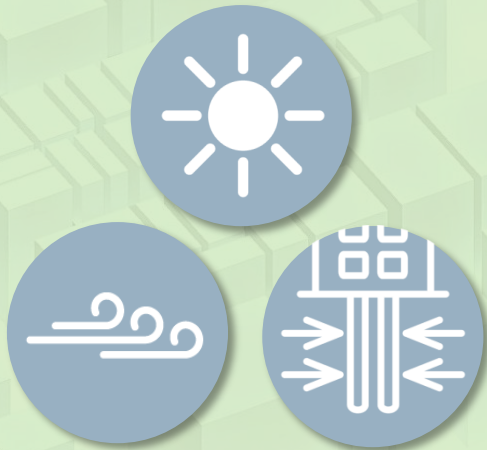


Reliable and High Efficient Energy System

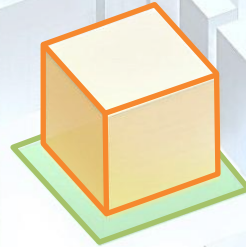


T-ZEB simulator

Site conditions



Evaluation of energy
Generation potential



Building



Evaluation of energy
Efficiency in building design



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