Kajima Akasaka Annex of Kajima Corporation

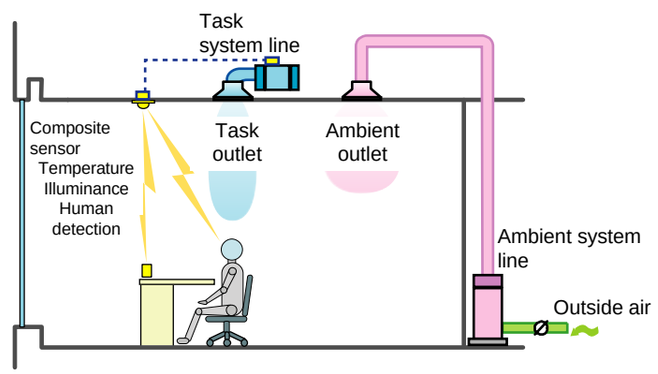
Building overview

Location:	Minato-ku, Tokyo
Start of constr.:	July 2005
Completion:	July 2007
Building type:	Office and rental apartments
structure	SRC construction
Total floor area:	33,517 m^2
Scale:	15-story structure

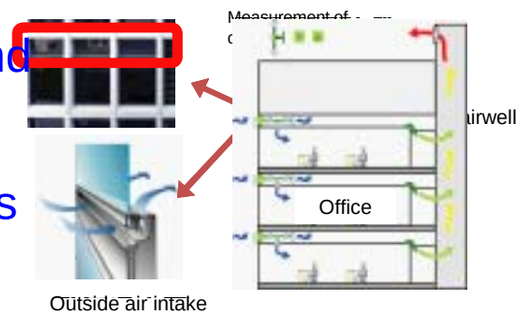
Concept and outline of environmentally sustainable design

1. Flexibility
   - ”Eco-module” to provide illumination and air conditioning where humans are present
   - Optimum coordination control among solar radiation control, climate control, and illumination
   - Task and ambient AC available for general-purposed application with multiple building air conditioners
   - Variable air-current outlet, ”Universal Comfort,” which provides soft personal air current
2. Sustainability
   - Building exterior design with high-performance glass and energy conservation
   - Hybrid AC coupled with natural ventilation in stairwells
   - ”B and OA Net System” integrating BA and OA networks

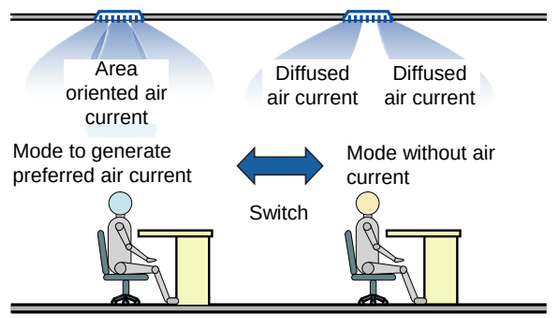
Wireless remote thermostat



Task and ambient air conditioning system

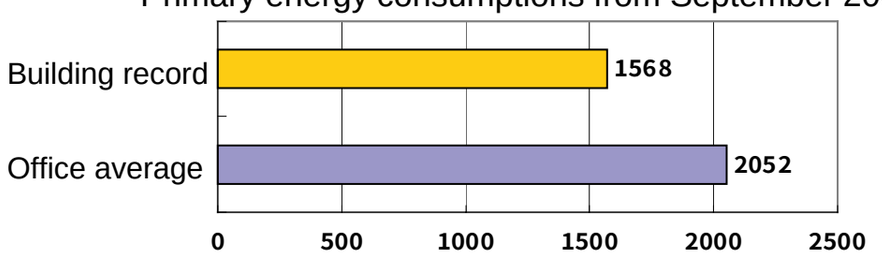


Natural ventilation system



“Universal Comfort” (task outlet)

Primary energy consumptions from September 2007 to August 2008



Average data by building use: from FY2007 Energy Consumptions of Buildings Survey Report by The Building-Energy Manager’s Association of Japan

CASBEE: Rank S; certified (BEE = 3.3)
(complex use: office 4.0, residential 2.2)

“Techno Station” of Technical Research Institute of Obayashi Corporation

Building overview

Location:	Kiyose City, Tokyo
Start of constr.:	November 2009
Completion:	September 2010
Building type:	Research institute (office)
Structure:	Steel construction
Total floor area:	5,535 m^2
Scale:	3FL

Concept and outline of environmentally sustainable design

Core base of intellectual creation which has attained both productivity increase and CO_2 reduction

1) Passive systems: reduction of loads

Eco-room system, “Peri-buffer” (perimeter zone) system, Natural ventilation system, natural water use system

2) Active systems: CO2 mitigation by applying new technologies

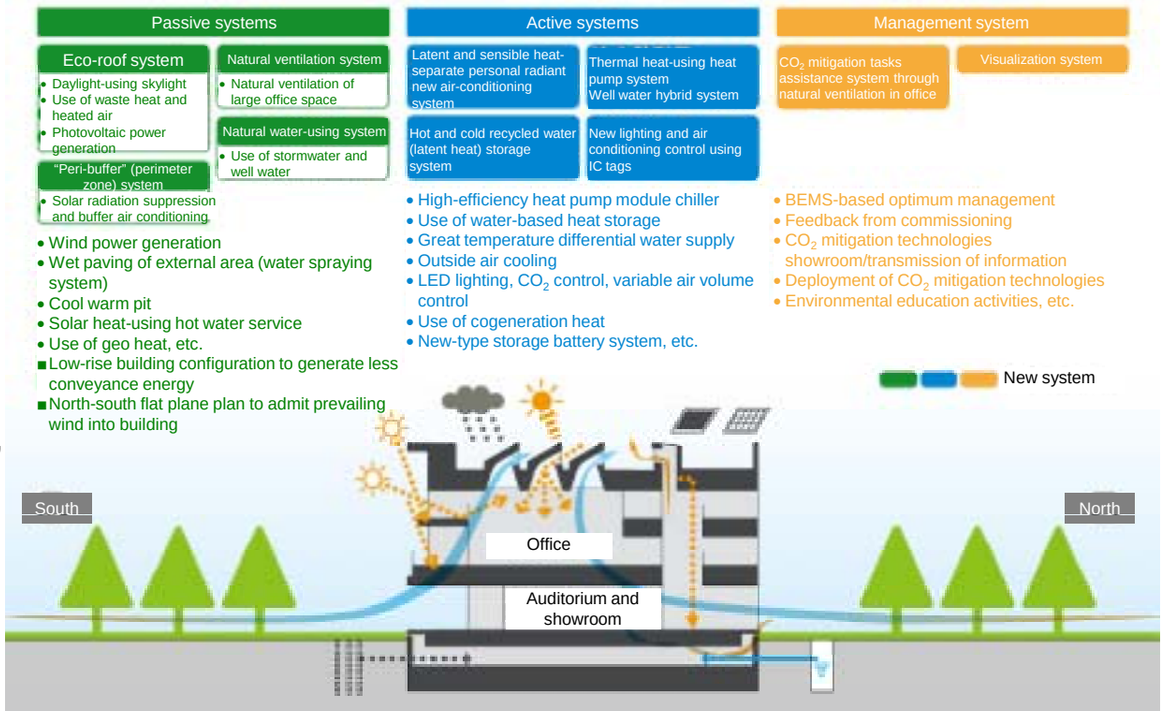
Latent and sensible heat-separate personal radiant new air-conditioning system, Thermal heat-using heat pump system, Well water hybrid system, hot and cold recycled water latent heat storage system, New lighting and air conditioning control using IC tags

3) Management system (operation): CO2 reduction through operation management

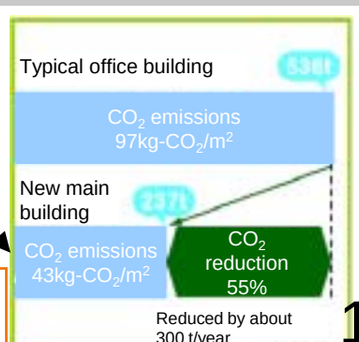
BEMS-based optimum management and feedback from commissioning

4) Management system (environmental tasks): CO2 mitigation through assistance for environmental tasks

CO_2 mitigation tasks assistance system through natural ventilation in office, Visualization system, information transmission and promotion



Carbon credit equivalent to carbon footprint was purchased to achieve carbon-neutral.



CASBEE: Rank S certified (BEE = 7.6), PAL: 35.9% reduction, ERR: 41.9% reduction

New Head Office of Shimizu Corporation (under construction)

Building overview

Location:	Chuo-ku, Tokyo
Start of construction:	April 2009
Completion:	January 2012
Building type:	Office
Structure:	RC (partially, S structure)
Total floor area:	Approximately 51,800 m^2
Scale:	22F, 3BF, 1PH

Concept and outline of environmentally sustainable design

New RC super-high office tower; column-less office

- Hybrid panels of structure, exterior and environmental system (solar power panels and sun shading device).

AC system for intellectual productivity enhancement

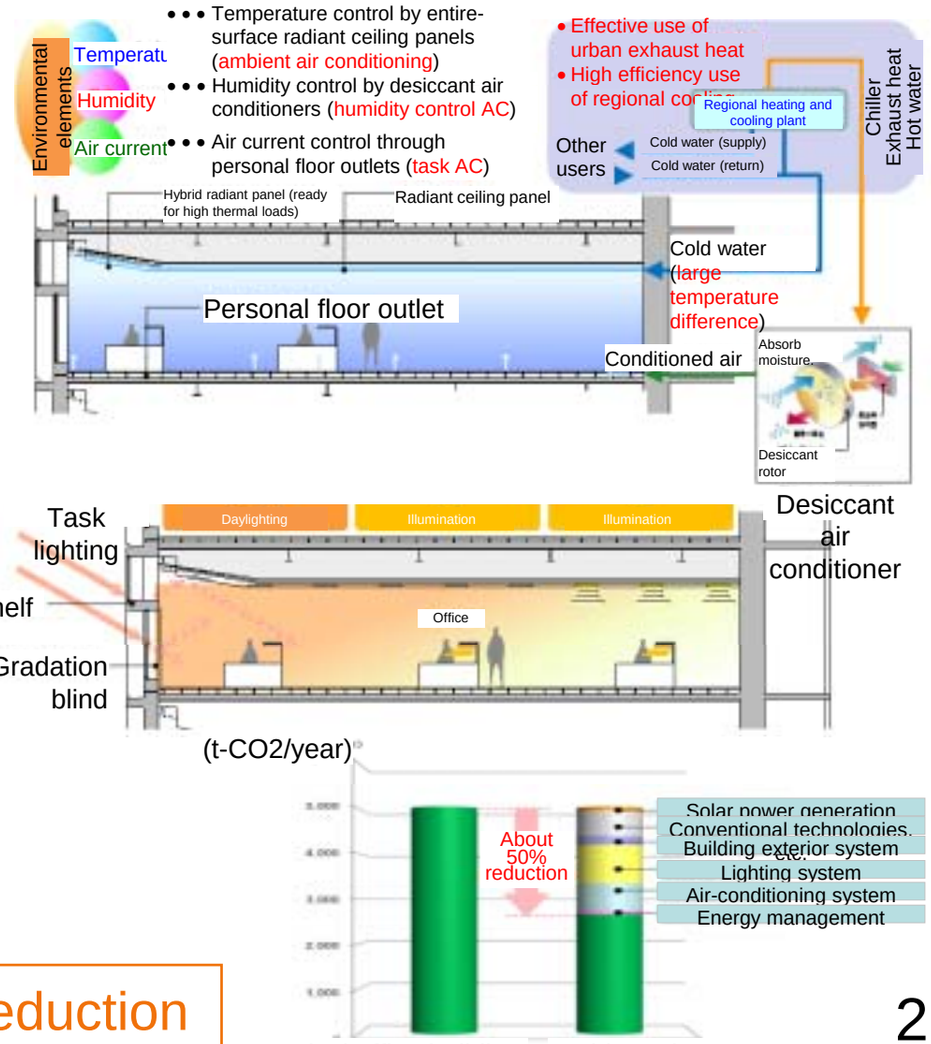
- Radiating base air conditioning and Personal air conditioning
- Earth- and human-friendly radiant AC system by new humidity control and perimeter control system

Lighting system making maximum use of PV power

- LED lighting in the whole building , Day-lighting system and personal lighting control
- PV panels about 2,000 m^2 on the perimeter generate lighting energy for the office space

Optimum operation control through central monitoring

- The building operation is optimized by BEMS, load prediction, and simulation technology.



CASBEE: Rank S (BEE = 4.4), CO_2 during operation: 50% reduction

Sapporo Building of Taisei Corporation

Building overview

Location:	Chuo-ku, Sapporo City, Hokkaido
Start of constr.:	July 2005
Completion:	June 2006
Building type:	Office, retail, and parking
Structure:	RC, S
Total floor area:	6,970 m^2
Scale:	8FL, 1BF



Concept and outline of environmentally sustainable design

1) Minimum thermal load environment

- External insulation and minimized window area

2) Northern area air conditioning

- Natural energy utilization of free cooling, outside air cooling, and natural ventilation
- Energy reduction and load leveling by structure thermal storage & radiant heating and cooling

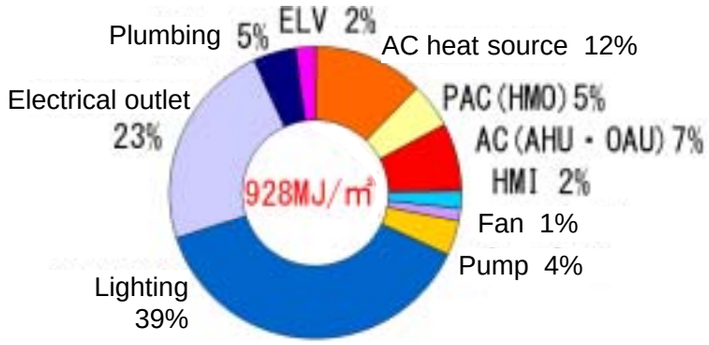
3) Day-lighting system T-Soleil

- Comfort eco-void by automatic sun-tracking mirror , diffusion and radiation prism mirrors

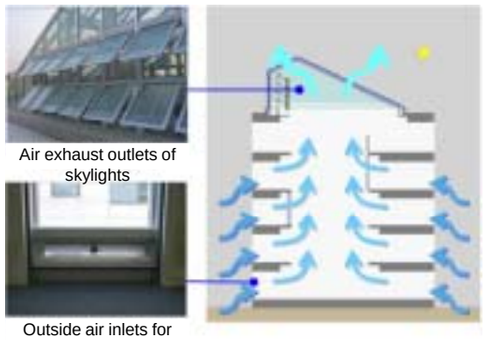
4) High-efficiency operation based on BEMS

- Energy-saving operation to ensure a steady increase in efficient energy performance

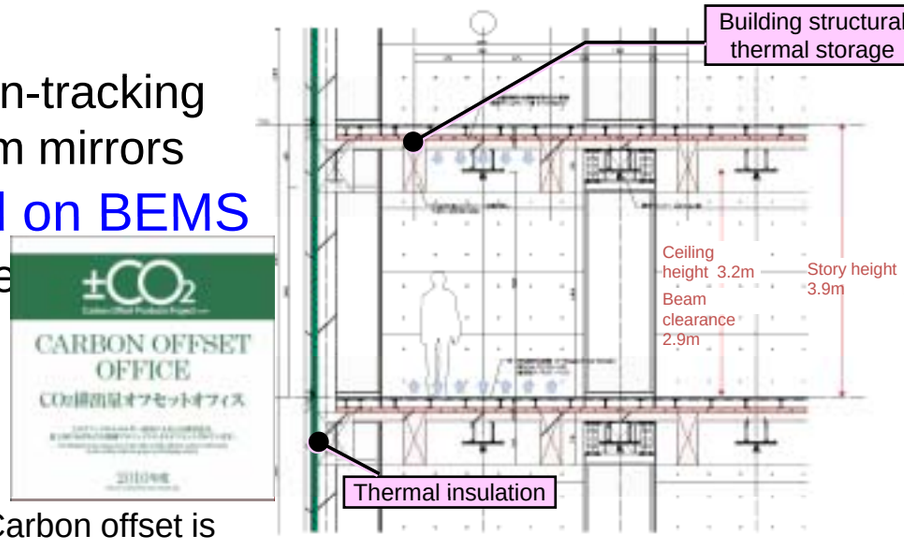
CASBEE: Rank S (BEE = 4.5 in 2006), ERR: 49% reduction (measurement in 2009)



Primary energy consumptions (figure in FY2009)

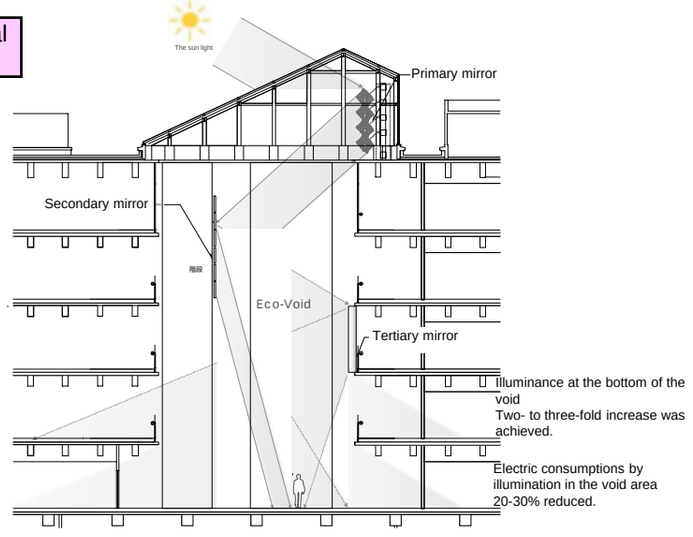


Natural draft



Building-structural thermal storage radiant heating and cooling system

Carbon offset is achieved through the use of carbon credit.



Conceptual diagram of solar power admission system T-Soleil

Global Headquarters of Nissan Motor Co., Ltd. designed by Takenaka Corporation

Building overview

Location:	Yokohama City
Start of constr.:	January 2007
Completion:	April 2009
Building type:	Office
Structure:	S, SRC
Total floor area:	92,100 m^2
Scale:	22FL, 2BF

Concept and outline of environmentally sustainable design

Creative office with “creation of intelligence” which delivers high environmental performance

1)Engineering of facade as an environmental device exterior louvers

- The effective layout of exterior louvers blocks direct sun rays, materializing an office area commanding a panoramic view of the landscape all the time.

2)Headquarters functions under the theme of “creation of intelligence” two-story atriums, light-well

- Development of the building plan where two-story atriums with a staircase are provided in the north and south sides of the building, inspiring agile actions and close communication among staff.

3)Energy conservation day-lighting, natural ventilation, task & ambient AC

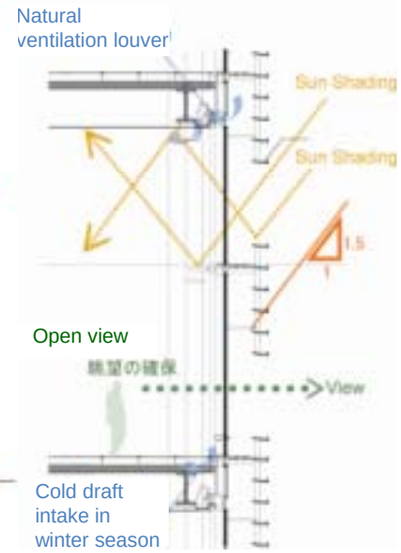
- Day-lighting: the light shelf function of exterior louvers and daylight sensors
- Natural ventilation: Intake of outside air from exterior sashes and evacuation from the light well
- Task and ambient air conditioning: Adoption of under-floor air conditioning

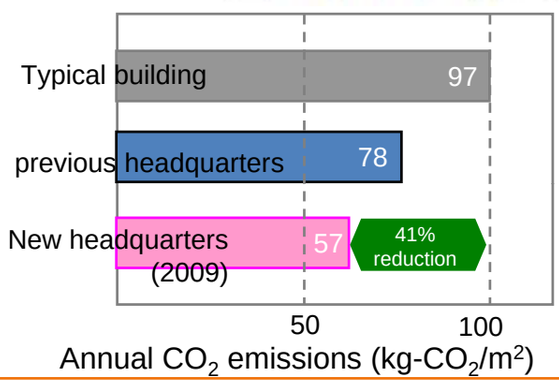
4)Green roof for lower stories

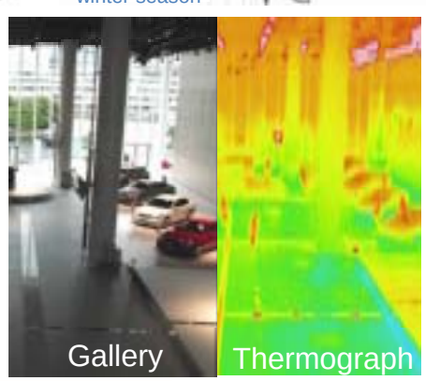
- With the rooftop treated as a facade in a broad sense, the rooftops of the low-rise portion are covered with greenery.
- The rooftop is actively utilized to provide refreshing space for employees

5)Large-space gallery radiant air-conditioning

- Enhancement in comfort through residential air conditioning largely using radiant systems, and energy conservation by abatement in room temperature setting







CASBEE: Rank S (BEE = 5.6), PAL: 26% reduction, CO_2 : 41% reduction (2009 measurement)