Offices

All Casio office sites are engaged in efforts to reduce CO_2 emissions and cut resource use by upgrading office equipment and improving work processes.

Reducing power consumption through server integration

Casio has vastly reduced its energy consumption by integrating the servers that had once been disparately located across the group.

Server integration results

815 servers had been integrated by March 2012.

Effects of reducing power consumption through server integration

This server integration effort is resulted in a total reduction in power consumption of 1,220,000 kWh, yielding a reduction in CO_2 emissions of 444 tons.

Contributing to Green IT Through Server Integration

	Through Mar. 2011	Apr. 2011 - Mar. 2012	Cumulative total
Number of servers integrated (machines)	681	134	815
Annual power consumption reduction (kWh)*1	1,021,500	201,000	1,222,500
Annual CO_2 reduction (tons-CO_2)*2	370.8	73.0	443.8
Number of Japanese cedars needed to absorb this amount (trees)*3	26,486	5,214	31,700

*1: Calculated based on a 1,500 kWh reduction per server per year.

*2: Calculated based on CO_2 emissions of 0.363 kg/kWh. From Japan's Ministry of Internal Affairs and Communications, "Report by the Study Group on ICT Policy for Addressing Global Warming," April 2008.

*3: Based on a document published by the Forest Agency of Japan's Ministry of the Environment, "Absorption Source Countermeasures for Greenery to Prevent Global Warming," indicating that a single Japanese cedar tree absorbs about 14 kg of CO_2 annually.

Casio Europe's energy-efficient building

Casio's office sites have shifted from focusing on reducing CO_2 per unit of production to cutting the total volume of CO_2 emitted across the entire Casio Group. In January 2009, Casio Europe integrated its offices, distribution center, and service center, which had previously been separately located around Germany, into a new energy-efficient building.

CASIO Europe

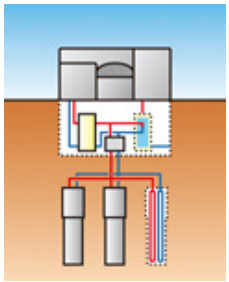
Diagram showing the use of geothermal heat

This building has an innovative air conditioning system that uses geothermal exchange equipment 130m below ground to pump water through pipes embedded in the concrete ceiling and floor of the building. The system pumps cool water in the summer and hot water in the winter to either cool or heat the building.
Energy consumption in the building is further reduced by controlling room temperatures using blinds that open and close automatically according to the weather as well as proper ventilation. In fiscal 2012, CO_2 emissions were reduced by about 45% compared to fiscal 2009 before relocation to the new building, based on a total floor space comparison.

Hachioji R&D Center takes on the challenge of climate change and environmental preservation

The Hachioji R&D Center was designed and constructed to reduce CO_2 emissions in order to contribute to the fight against climate change. The center continues to take on the challenge of environment protection. Some of its innovations are highlighted below.

Ongoing power-saving activities

Designed as an environmentally friendly building, the Hachioji R&D Center was completed in November 2003. The center is equipped with energy-saving features such as high-efficiency vertical thermal storage tanks, a natural ventilation system, automatic blinds, lighting control, and equipment control based on weather forecasting. With the participation of the construction and building management companies, the center holds ongoing meetings to consider power-saving measures. Thus, instead of just relying on its hardware, the center has been enthusiastically pursing other improvements such as finely tuned temperature control, and the revision of operation methods based on actual daily data.

As a result of these efforts, in fiscal 2010, five years after the base year of fiscal 2005, the center was able to reduce CO_2 emissions by 27.5%. In fiscal 2011, the organization and number of employees at the center were streamlined, but then in fiscal 2012, the number of employees increased. This brought about a corresponding significant decrease and then increase in CO_2 emissions. However, CO_2 emissions for both years were still about one third of that in the base year.

	Base year emissions (FY2005)	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012
Emissions (tons)	2,952	2,802	2,618	2,452	2,303	2,140	705	961
Reduction rate compared to the base year		5%	11%	17%	22%	28%	76%	67%

Figures reported up to fiscal 2010 differ due to a change in the CO_2 emissions calculation method

Click here to see CO2 emissions from office sites (environmental data)

The Hachioji R&D Center – environmentally friendly since the design stage

Thermal storage tanks
The water in the tanks is chilled using cheaper power at night, and the tanks are then used to cool the offices in the daytime. These distinctive thermal storage tanks are noticeable even from a distance, and have become an energy-saving symbol for the entire Hachioji R&D Center.

The air-conditioning system at the Hachioji R&D Center features large vertical thermal storage tanks that go up through the floors of the building. They contain water that is cooled during the night, and then used to enable indoor climate control during the day. Although the system can operate entirely on its own, it is actually run with human guidance, for “semi-automatic” operation. In other words, by having human technicians fine tune the system's automatic operation, greater savings in energy consumption and CO_2 emissions are being achieved. Technology plus human creativity combine to protect the environment.

Natural ventilation system maximizes use of outside weather conditions

No heating equipment is needed at the Hachioji R&D Center. This is because the building has comprehensive protection against cold weather, which prevents interior heat from escaping and improves thermal efficiency. Since room temperatures increase even in winter, due to body heat and heat from equipment such as computers, the interior is cooled by letting in the right amount of outside air, thereby maintaining optimal temperature control. Mechanical ventilation is employed to bring in outside air only when air circulation from natural ventilation becomes insufficient. This helps to minimize power costs.

Making the most of sunlight with automatic blinds

The opening and closing of the blinds is controlled automatically by calculating the position of the sun and using sensors to detect its intensity at the same time. Thanks to this technology, a comfortable interior environment is maintained. There are also sensors to detect room brightness and human movement for automatic control of interior lighting. This helps eliminate unnecessary electrical usage. Through these measures, the Hachioji R&D Center is contributing greatly to the reduction of CO_2 emissions, thereby helping in the fight against climate change and protecting the environment. While fully utilizing the environmentally friendly functions of this energy-saving building, the center is implementing cycles of improvement, operation, results, verification, and evaluation in order to achieve even more power savings in the future.

Automatic blinds

The automatic blinds help to maintain optimal interior temperatures and lighting through automatic control of natural light. They block the intense summer sun. In addition, employees came up with the idea of saving more electricity by opening the blinds at lunchtime to let light in and turning off the lights.