

# Siemens

Location: **Beijing, China**



## Building characteristics

### Purpose:

The building of Siemens Beijing Headquarters is a high-grade office building in Beijing Wangjing area, gathering Siemens's power, lighting, automation, building technology, and many other high-tech research results.

There are multi-functional areas of offices, conferences, exhibitions, garage-regions etc., which bring together with all the Siemens companies and departments from the northern region. With the total building investment of more than 1 billion RMB, this building became the landmark in Beijing's Fourth Ring Northeast.

**Area:** 59 393 m<sup>2</sup>

**Cubic measure being handled by VTS units:**  
189 500 m<sup>3</sup>

## The conception of ventilation system

As for a high-rise building, the set up of air conditioning system is classified into high and low areas. The hot and chiller water of the low area is supplied directly from the chiller and boiler, while the hot and chiller water of the high area is supplied by the plate heat exchanger.

The first floor of the building is lobby and reporting hall, using the centre air conditioning system coming with fresh air; B1 and B2 property management rooms use fresh air unit together with fan coil; Separate make-up air system is installed in the office area, with make-up air unit room located on each floor, and ceiling inducer at the end point. Considering the elimination of the cooling and heating load of the construction, the landing fan coil is installed in the outside room.

The total rotary energy recovery unit is installed in the roof. The air is sent into mechanical room of each floor after cooling and dehumidification in the summer or heating and humidification in the winter, and then sent into the office area.

## Project AHUs functions



General characteristic of used devices			
Number of AHUs	37		
Configuration	Ventilation, Heater, Cooler, Filter, Rotary wheel and Fans		
Operational parameters			
	Energy recovery	No energy recovery	Economy [%]
Total AHUs heating capacity [kW]	2 368	4 002,6	41%
Total supply AHUs electric power consumption [kW]	186,543		
Total exhaust AHUs electric power consumption [kW]	65,022		
Total supply Air Flow Rate [m <sup>3</sup> /h]	365 600		
Total exhaust Air Flow Rate [m <sup>3</sup> /h]	144 000		
Average SFP [kW/m <sup>3</sup> /s]/[W/m <sup>3</sup> /h]	2,48	0,69	
Noise parameters for loudest units at 250Hz			
	Supply	Exhaust	
Inlet [dB]	88,9	89	
Outlet [dB]	87,9	85	
Environment [dB]	62,9	60	

## Solution provided by VTS

In this project, VTS has provided a total of 37 units, including 5 rotary energy recovery air handling units, 4 VS300, 1 VS230; and the rest 32 units are supply air handling units with cooler, whose models are ranged from VS21 to VS180.

The rotary wheel units are used for the heat recovery of the exhaust air and the pretreatment of the make-up air, which come with the heater and cooler coils for further cooling or heating of the make-up air. After that, the make-up air is sent into the technical room of each floor and into the office region from the make-up air unit.