

## Audi Showroom

Ekaterinburg, Russia

### Building characteristics

**Purpose:** The car centre should meet all AUDI corporate standards regarding the design, functionality and other technical aspects. According to the corporate standards, the building consists of exhibition, sells and service zones.

**Area:** 1 660m<sup>2</sup>

**Cubic measure being handled by VTS units:** 11 000m<sup>3</sup>

### The conception of ventilation system

The building's character enforced high demands regarding comfort temperature and proper quantity of air exchanges in winter/summer time ( $t_{iN}=22/23^{\circ}\text{C}$ ), especially focused on avoiding any technical smell (fuel, oil, etc.) caused by demonstrated cars. The energy saving aspect was generally focused on electric energy consumed by fan sets – the cyclic operation of the system within the day in relation to the building's heat load (air volume adjustment) – and also heat energy consumption necessary for heating and cooling purposes. Air handling units present in the ventilation system's design were to guarantee reliable operation at 'extremely' low outdoor temperatures, typical for this climate zone (min outdoor temperature:  $-45^{\circ}\text{C}$ ). Because of no typical technical rooms, the installation of AHUs was arranged on a small space on the second floor of the facility. This solution was implemented due to the necessity of keeping the exhibition area as big as possible.

### Solution provided by VTS

In the ventilation system's design, five air handling units were suggested, to ensure the best possible system division into smaller sub-systems. The capacities of delivered units range from 3 000



(the office zone) to 10 000m<sup>3</sup>/h (the showroom and service zones). Because of weather conditions, high efficiency of energy savings became the most important parameter of the operation specification. The system is programmed to switch on into maximum possible recirculation at night and switch off during the day, reaching even 90%. This solution allowed for decreasing the heating power demand up to 33%, in relation to an identical unit not equipped with any energy recovery device. AHUs delivery in transport packaging and high quality of on-site assembling works provided by VTS service partner made logistics easier and cheaper for investors. Obtained additional energy savings resulted from a very good cooperation between the duct system's designer and a VTS engineer. The implementation of high efficiency PLUG fan sets with optimal air velocities inside ductwork and AHUs lead to an extremely low electrical energy consumption.



General characteristics of used devices			
Number of AHUs	5		
AHUs type	CV-A, CV-P		
Configuration	Mixing, Filter, Cooler, Heater, Fan		
Operational parameters			
	Energy recovery	No energy recovery	Economy [%]
Total AHUs heating capacity [kW]	450	671	33
Total AHUs cooling capacity [kW]	88		
Total supply AHUs electric power consumption [kW]	13		
Total supply Air Flow Rate [m <sup>3</sup> /h]	31 195		
Average SFP [kW/m <sup>3</sup> /s]/[W/m <sup>3</sup> /h]	1,49	0,41	
Noise parameters for loudest unit at 250 Hz			
	Supply		
Inlet [dB]	72		
Outlet [dB]	65		
Environment [dB]	54		

## Ауди Центр Екатеринбург



В 2003 году на AUDI Центр Екатеринбург было запроектировано и поставлено оборудование для вентиляции и центрального кондиционирования воздуха компании «VTS».

Проект выполняла организация, имеющая статус Авторизованного Сервиса VTS. Все требования по техническому заданию были учтены, а технические решения выполнены на стадии проектирования.

За это время VTS зарекомендовала себя, как производитель и поставщик современного, качественного и надёжного в эксплуатации оборудования, работающего в крайне неблагоприятных погодных условиях Среднего Урала (Свердловская область).

Все установки были изготовлены и поставлены в установленные договором сроки. Так же силами авторизованного сервиса VTS, на объекте была произведена сборка и наладка данного оборудования.

Ваш иск. №  
От (дата)  
Наш отдел  
Телефон  
Телефакс  
Дата

ООО «Концепт Кар»  
620034 г. Екатеринбург,  
ул. Бабкина 57  
тел./факс: (343) 214-80-80  
quattro@audi-ekaterinburg.ru  
www.audi-ekaterinburg.ru

Генеральный директор



С.В. Морковин