



CASE STUDY

Office Building

Facility at a glance

Name

DaimlerChrysler World Headquarters

Location

Auburn Hills, MI USA

Facility size

4.4 million ft² on 504-acres

Issue

Provide critical cooling that keeps the buildings comfortable and protects sensitive equipment from overheating

Solution

14 Daikin 1100-ton centrifugal chillers

As the largest single structure building in North America, the DaimlerChrysler complex encompasses 4.4 million square feet and is located on a 504-acre site, about 30 miles north of Detroit.

DaimlerChrysler World Headquarters in Detroit Relies On Daikin Chillers

Reliability, energy efficiency and environmentally friendly refrigerant are what make Daikin chillers DaimlerChrysler's number one choice for their Auburn Hills, Michigan, facility.

As the largest single structure building in North America, the DaimlerChrysler complex encompasses 4.4 million square feet and is located on a 504-acre site, about 30 miles north of Detroit. The facility was built in accordance with DaimlerChrysler's "Platform Team Concept", a concept which directs that all disciplines essential to planning, developing and selling a new product should be completely integrated and found in one facility. More than 10,500 employees work at the facility.

The size and scope of the building allows DaimlerChrysler to design, test, build, evaluate and develop marketing plans for its vehicles in one 12-story space. According to DaimlerChrysler, working as a completely integrated and adjacent team in one complex is a capability unmatched by any other auto maker in the world.

The 1.1 billion-dollar complex is made up of DaimlerChrysler World Headquarters, DaimlerChrysler Technology Center and Scientific Laboratories. In addition, the complex includes a 70,000-squarefoot education center, a health activity center, four dining facilities, two sundry shops and two hair salons, an extensive skylight system which provides natural light, and outdoor walking trails.

To provide the critical cooling that keeps the buildings comfortable and protects sensitive equipment from overheating, DaimlerChrysler relies on 14 Daikin Model PEH126/WSC126 1100-ton centrifugal chillers that provide 15,400 tons of cooling. Many of the chillers, which were installed in 1986, originally used R-500 refrigerant. From 2001 to the present Daikin Service has utilized the Centrifugal Optimization Program (COP) to optimize and enhance the performance of these chillers—increasing the tonnage by 100 tons per chiller to meet DaimlerChrysler's growing needs.

Once HFC-134a became available, all the chillers were converted to this ozone friendly refrigerant and subsequent chillers that were installed used HFC-134a. Using only ozone-friendly HFC-134a refrigerant in their chillers helps DaimlerChrysler live up to their environmental commitment.

Energy efficiency and reliability are also important factors in DaimlerChrysler's choice of Daikin chillers. The chillers run at a constant speed with 12,000 tons of cooling at a time, 24 hours a day, 7 days a week. This controlled capacity has all chillers on one loop providing chilled water—and not just for comfort. A \$30 million aero/acoustical wind tunnel and other test areas use chilled water as well. During the night, the chillers create chilled water that is then stored in huge thermal storage tanks for later use. This thermal storage practice helps to use energy more efficiently.

With the sensitive equipment that the buildings house, the chillers are required to run year-round—even in the winter. That's why energy efficiency and chiller performance are especially critical. To keep chillers at peak, performance levels, DaimlerChrysler and Daikin Service maintain a strict maintenance schedule.

The Daikin chillers have proven their reliability over time. With more than 70 years of service between them, the chillers are still performing to their promised factory specifications. DaimlerChrysler appreciates the way Daikin chillers keep them cool and help them to protect the environment.