



Arena Da Baixada

Vertical | Stadium
Location | Curitiba, PR
Product | Multi V III



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Issue

To add climate control to the Clube Atlético Paranaense stadium, one of the 12 stadiums that will be hosting the international games in 2014, following a comprehensive remodel aimed at meeting global requirements to ensure energy efficiency for the development and thermal comfort in the administrative, internal and booth areas.

Solution

to use LG's VRF systems which can meet the thermal comfort needs of large crowds.

Developer

CAP S/A, a Specific Purpose Enterprise (SPE) established to manage the construction works.

Construction company

CAP S/A

Installer

GoodServ

Enterprise

Joaquim Américo Guimarães Stadium, Arena da Baixada

Background

As one of the 12 host cities of the international games in 2014, Curitiba, the capital of the state of Paraná, will be hosting four games at the Arena Stadium, which underwent a major remodel and has had its entire air-conditioning system built with LG's VRF equipment.

Opened in 1914, the Arena da Baixada stadium is owned by Clube Atlético Paranaense. A century after it was built, the stadium has undergone a comprehensive remodel to be able to host international games.

The event, one of the biggest sporting events in the world, is being hosted in Brazil for the second time. Brazil first hosted the tournament in 1950. More than a large scale development, the new Arena da Baixada, like all tournament stadiums serves an ambassadorial role for Brazil. The stadium, which can seat 41,456 spectators, represents Brazil's pledge to offer the most advanced engineering alongside the cutting-edge technology and sustainability solutions for the global visitors who will be watching the games.

Situated in the Água Verde district, in the greater downtown area of the region's capital city, the stadium

occupies a premium location. Arena da Baixada underwent remodeling for nearly two years, an operation that involved approximately 5,500 workers.

Challenge

The arena's VIP areas and 36 box seats are all air-conditioned areas In addition to being energy-efficient, LG's equipment allows temperature levels to be adjusted to each individual box seat's needs.

The Arena da Baixada stadium has a several unique architectural features, one of which is a semi-transparent façade which allows people on the outside to watch the games. Originally, only the VIP areas were closed off and air-conditioned. The stadium has 36 box seats that can each accommodate 12 to 24 people. The boxes are served by a catering service, have access to a private lounge and have their own private elevators. The company responsible for installing the equipment, Good Serv, chose LG's Multi V III system for the renovations to the stadium. The air-conditioning project was planned and designed from the start with LG's VRF system in mind. "You can imagine how complex this undertaking was. We had to make

sure the manufacturer we partnered with would be able to work meet strict deadlines, on a project that involved many different challenges," said Luiz Olmiro, owner of Good Serv. "LG had this ability and gave us the certainty that we would deliver a premium quality product. One that was capable of meeting the requirements for the LEED sustainable building certification, which is in place for all of the tournament's stadiums."

Solution

LG'S Multi V III system is a solution that best meets the premium quality and energy-efficiency standards that the major constructions for the biggest football event in the world require.

The selection process for the right air conditioning system considered a series of factors, mostly related to securing sustainability certification. With 13 years of experience, Good Serv began its first arena construction project looking to deliver an efficient and sustainable air conditioning system that didn't sacrifice quality to meet environmental standards. LG's VRF was chosen after a long search for the ideal operating system. Arena da Baixada is the first stadium in the world to be equipped

with LG's Multi V III. The system uses R-410A, an eco-friendly refrigerant which does not harm the ozone layer. The LEED certified Multi V III ensures a balanced room temperature, no matter what the situation.

A total of 70 outdoor units (ODU) with a capacity of 8HP to 20HP and 198 indoor units (IDU) – including cassette, ceiling and duct IDUs – were installed, along with 85 fans and exhausts. As a result, LG's VRF system allowed for the ideal combination of ODUs and IDUs, increasing the project's versatility and efficiently cooling the stadium.

Benefit

Sharing learning and meeting the sustainable construction requirements were key differentials

According to Luiz Olmiro, the partnership with LG represented an installing advantage, because this equipment requires much less gas than the other devices, because the machines come with refrigerant instead of nitrogen inside. "With LG's technology, we could install up to 80HP in a single system," he adds.

Energy efficiency was also a key factor in the choice. According to Olmiro, "With Multi V III, we could deliver a high-tech

system to our clients. This enabled us to reach the required energy efficiency levels compared to the baseline of ASHRAE 90.1."

Technical training and operating support provided by LG were crucial for this project's success. "We had a total of 60 people from Good Serv involved in this project. We negotiated for a year with the manufacturer and the operation itself took another year. I can say that it was a winning partnership because we were able to get the entire system up and running on schedule," points out Luiz Olmiro. He later added, "This new experience with LG's product enhanced our portfolio. We usually design malls, but those are not the same as arenas. Because of the international games, this is a unique installation, not just for Brazilians but for the world. It was our privilege to design the first stadium in the world with 100% LG solutions, and with a capacity of 886 HP"



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