



Global Multi-Sports Events Choose Rain Bird Brazil



Site Report

OVERVIEW OF PROJECTS:

Barra Athletes' Housing Complex

31 high-rise buildings that will house over 15,000 athletes and staff during the games.

Barra Sports Park Complex

10-arena sports complex with large common area for athletes and attendees.

Cross-Country Course

Equestrian course with small lakes and stone hurdles, and 30 to 40 jumps over different obstacles.

Field Hockey Pitches

Practice and official artificial turf pitches at Ilha do Fundao and Deodoro Stadiums.

Rugby Pitches

Practice and official pitches at Ilha do Fundao, Deodoro, and Air Force Base Stadiums.

Madureira Park

Third largest green space and park in Rio de Janeiro, a model for sustainable community planning, energy use, and the Intelligent Use of Water™.



RAIN BIRD PRODUCTS USED:

- XFS Subsurface Dripline
- 1800® Series Spray Heads
- RD1800™ Series Spray Heads
- R-VAN Adjustable Rotary Nozzles
- HE-VAN High Efficiency Variable Arc Nozzles
- 5000 Series Rotors
- 5000 SAM PRS Series Rotors
- Falcon® 6504 Series Rotors
- 8005 Series Rotors
- EAGLE™ 900/950 Series
- ESP-LXME Series Controllers
- ESP-LXD Series Two-Wire Decoder Controllers
- WS-PRO LT Weather Station
- PGA Series Valves
- PESB Series Valves

DISTRIBUTORS & CONTRACTORS:

Irricom	Barra Athletes' Housing Complex
Greenleaf	Barra Athletes' Housing Complex Deodoro Stadium
Regatec	Barra Athletes' Housing Complex
HidroSystemas	Barra Sports Park Complex Ilha do Fundao Cross-Country Course
Campanelli	Ilha do Fundao Stadium
Chale do Agronomo	Air Force Base Stadium

NON-RAIN BIRD PRODUCTS USED:

- Otterbine Fountains
- Grundfos Pumps
- Underhill® Mirage™ Sprinklers

"At Madureira Park the irrigation design provided by Rain Bird Brazil was very well prepared and comprehensive. For a project this size and complexity we wanted to standardize the selection of high-efficiency adjustable nozzles, utilize flow management to schedule all watering when most of the public is not there to reduce vandalism, use a decoder control system to give us flexibility to easily add more valves, and automate the operation of the pump at variable flow rates so that it could provide water to both the irrigation system and to the rest rooms and other facilities."

Eduardo Schnable and Arnaldo Santos
Dimensional Engenharia, Madureira Park

FROM SUSTAINABLE LANDSCAPING FOR PUBLIC PARKS TO SPORTS TURF PITCHES, PRESTIGIOUS GLOBAL MULTI-SPORT EVENTS CHOOSE RAIN BIRD

A new housing complex, artificial and real turf pitches, a large urban park and green space, and equestrian cross-country course all rely on Rain Bird irrigation systems to meet unique requirements.

In Rio de Janeiro, Brazil, the city government created a public company, Rio Mais 2016, to oversee the entire development process in preparation for two multi-week global sporting events. Massive construction projects have been completed, including 31 high-rise apartment buildings to house athletes, the third largest urban park and green space in Rio, and dozens of competition-level and practice arenas.

Rain Bird was proud to have its irrigation products selected for these projects: Barra Athletes' Housing Complex, Barra Sports Park Complex, the equestrian cross-country course, the field hockey and rugby pitches, and Madureira Park. Each project had unique irrigation system requirements and challenges, and, given the large size of most of these projects, the design and installation processes were complex. Rain Bird's comprehensive line of commercial irrigation solutions addressed each of the project's challenges. Rain Bird Brazil's sales and technical team worked alongside a strong network of experienced distributors and contractors to ensure each project was completed to a high standard.

XFS SUBSURFACE DRIPLINE USED TO SAVE WATER AND REDUCE MAINTENANCE DUE TO VANDALISM

At Barra Athletes' Housing Complex and the Barra Sports Park Complex, where many of the competitions will be held, the priorities were deterring vandalism of the irrigation system and increasing water efficiency. Thousands of people will be visiting both of these venues and looking for any possible "souvenirs"

"The irrigation system at the Barra Athletes' Housing Complex uses reclaimed water and requires the minimum volume of water, meeting the regulatory standards for sustainable construction. It was a great pleasure to be involved in the project; the project has been held to the highest design and installation standards."

— Leandro da Silva Ribeiro
Managing Partner, Irricom



from the games—yes, this includes spray heads and nozzles! Dripline that can be installed below the surface was the perfect alternative to spray irrigation for the flower beds, shrubs, and turfgrass. HidroSystemas installed 25 miles (40 km) of XFS subsurface dripline at the sports complex. Because the XFS delivers water right to the root zone, water loss due to evaporation and wind drift was also minimized. At these two venues, XFS is estimated to reduce water consumption by at least 30 percent.

CONTROLLERS PROVIDE HIGH STATION COUNTS AND FLEXIBILITY NOW AND IN THE FUTURE

The ESP-LXME controller and the ESP-LXD two-wire decoder controllers were both installed at the Barra Athletes' Housing Complex, and the ESP-LXD was installed at all the other projects. These controllers were chosen for their high station count, advanced programming features, including flow management and the ability to upgrade these controllers to Rain Bird's IQ Remote Water Management.

At the housing complex, the ESP-LXD is used for the main landscape area, while the ESP-LXME is used in smaller areas. The 31 high-rise buildings that tower over the common areas have created several micro-climates and the landscaping either spends much of the day in the shade created by the building, is exposed to intense sunlight

and high temperatures if it is not shaded, or it faces a combination of both conditions throughout the day. The ESP-LXD's 200 stations allowed the team to design a system that has more zones to accommodate the various watering schedules. The controllers also optimize the schedules based on zone flow rate. Utilizing a flow sensor or Flow Smart Module, the controllers learn the flow rate of each zone and then optimize the sequence of irrigation schedules based on the total flow capacity of the system.



In the future, all of the ESP-LXME and ESP-LXD controllers can be upgraded to IQ by installing an NCC cartridge to allow for Ethernet, Wi-Fi or Cellular communication between the IQ central computer and the controllers. IQ can automate schedule changes based on weather and also help identify and isolate problems with irrigation system.

FROM SPORTS TURF TO HORSE TRACKS, RAIN BIRD ROTORS SOLVE MANY CHALLENGES

Rain Bird Brazil was also involved in the design and installation of the pitches at the official stadium and practice centers for field hockey and rugby. At the equestrian cross-country course, the team learned that even horses need an even riding surface to prevent injuries.

Wet, Artificial Turf Needed for Field Hockey Pitches

In the field hockey competition, the game is played on wet artificial turf. "Brazilians know how to design the best soccer pitches. The challenge for the field hockey pitches was to design an irrigation system that provided almost exactly the opposite criteria than soccer. The system needed to apply large amounts of water to quickly wet the field before the competition and during the intermissions," said Marcelo Zlochevsky, Rain Bird's national manager for landscaping

and agriculture. To accommodate this requirement, HidroSystemas and Greenleaf, the two pitch and irrigation contractors, used Underhill Mirage rain guns and Rain Bird EAGLE rotors installed very close to each other. The Mirage provided the long throw for the outlying field and applied the large amount of water needed in a short period of time and the EAGLE provided the close-in watering.



Team Back to Familiar Territory with Rugby Pitches

For the rugby pitches, the pitch requirements are similar to soccer. The pitch designers, contractors, and Rain Bird Brazil had worked together previously on 11 world-class soccer pitches in 2014. For this project, Rain Bird's 8005 rotors and 2" and 3" rain guns were chosen for their long throw radius. Depending on pressure, Rain Bird rain guns can provide well over a 100-foot throw radius, whereas 8005's radius can be adjusted from 39' to 81'. The 8005 also gives designers and grounds managers added flexibility because the arc can easily be adjusted using a flat-head screwdriver from 50° to 330° and used as a full-circle, 360° rotor. 8005 rotors use Rain Curtain™ nozzle technology for superior coverage and gentle close-in watering around the stem that ensures the sports turf is healthy and uniform everywhere.

Cross-Country Course at the National Equestrian Center

This course presented the design and installation team with some unique challenges. The length and dimensions of the course made it difficult to achieve the needed coverage and uniformity, and course changes during installation required the team to do some re-work, but in the end the project has been a great success. "The reliability of the pumping system and the irrigation control has been critical to the success at the cross-country course. The dimensions of the area and technical specifications of the track layout have been challenging in terms of uniformity but we were able



to overcome this challenge,” said Fernando Queiroz de Almeida, professor at the Veterinary Institute of the Federal Rural University of Rio de Janeiro. In particular, the turf on the course needed to be kept at a certain moisture level to avoid compaction of the soil. The Falcon® 6504 series rotors provided the needed coverage and uniformity on the course. The Falcon uses Rain Curtain™ nozzles, which have three ports for long-range, mid-range and close-in watering helping to create an even wetting pattern throughout the entire throw radius. Also, the Falcon’s arc adjusts from 40 to 360 degrees using a common screwdriver, allowing designers to meet changing course dimensions easily.

URBAN PARK SHOWCASES SUSTAINABLE DESIGN AND INTELLIGENT USE OF WATER

Rain Bird Brazil was the irrigation designer for Madureria Park and oversaw the installation of the irrigation system. This park was once a degraded and abandoned area, and is now transformed into the third largest urban green space in Rio. Madureria Park showcases sustainable design and low energy and water use, including using harvested rainwater for some of the irrigation water. To ensure quality system performance the team used filtration to remove debris from the harvested and well water. The team also chose the RD1800 spray head which is specially designed for lasting performance in dirty or gritty water. The high-efficiency R-VAN adjustable rotary nozzle is used with the RD1800 to provide even coverage at a low precipitation rate to reduce runoff. The 5004 rotor with SAM and PRS is used in the larger turf areas. The PRS helps regulate pressure to optimal pressure for better performance and water savings, and the SAM check valve prevents low head drainage keeping water in the lateral lines. In the future, the irrigation control

system will be upgraded to IQ and an onsite weather station will be used to manage the irrigation schedules using the latest weather conditions.

STRONG COMMERCIAL VALVES THAT CAN WITHSTAND HIGH PRESSURE

Reliable performance is a given requirement at all of these high-profile projects, and the team relied on the PGA and PESB series valves as the foundation for reliable system performance. Both of these valves can handle the high pressure needed for sports turf projects. “The PGA valve proved its value at previous soccer pitches—no problems, exceptional durability given high pressures, easy to operate, and almost no maintenance required—the PGA is the valve we used at all of the projects, except for Madureira Park. For that project because of the harvested rainwater, the PESB valve was the best choice,” said Marcello. The PESB uses an internal scrubber to clean the mesh filter, which helps prevent debris build-up and clogging.

FROM SPORTS FIELDS TO URBAN PARK, RAIN BIRD SOLUTIONS AND TEAM IN BRAZIL GET THE JOB DONE

Rain Bird Brazil’s extensive irrigation experience, breadth of services, and country-wide network of distributors put the team in a great position to be a part of many high-profile sports and infrastructure projects for these major international events. “Working on these projects was a big win for our team and customers. José Giacoia Neto, Rain Bird Brazil’s general manager and our service manager, Frederico Maia Haun, provided exceptional technical expertise to our customers. In Brazil, companies in the sports field industry have adopted Rain Bird as the technical reference,” said Marcelo. Each project provided an opportunity to showcase Rain Bird’s products and the exceptional performance of local sales and technical teams.



The Intelligent Use of Water™

At Rain Bird, we believe it is our responsibility to develop products and technologies that use water efficiently. Our commitment also extends to education, training and our communities.

The need to conserve water has never been greater. We want to do even more, and with your help, we can. Visit www.rainbird.com for more information about The Intelligent Use of Water.™



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