

# A SUSTAINABLE VISION

THE FUTURE OF  
AQUATIC-CENTER  
DESIGN

BY JODY SERGI



## **W**HILE SWIM MEET AND WATER POLO ATHLETES FOCUS ON AGILITY, SPEED, AND PERFORMANCE, THEY RARELY PAY ATTENTION TO THE POOL IN WHICH THEY COMPETE.

After all, they know it will always be heated to a consistent 81 degrees, fully cleaned, and tested, allowing swimmers to race at their highest level.

But for Texas-based Kirksey Architecture, the overall look and feel of the new Round Rock ISD Aquatic Center in Texas was essential. The 53-year-old firm has an enduring ethos to bring sustainable components to all its projects, from offices to K-12 campuses. And when the school district asked the firm to design a highly sustainable, competitive aquatic center, the design team jumped at the opportunity to create another passively ventilated facility.

Located in a northern suburb of Austin, the Round Rock Independent School District is one of the state's fastest-growing districts, serving over 48,000 students. For years, watersport athletes did not have a centralized facility within the district.

In 2018, RRISD passed a bond proposal that included funding for a competitive training facility. The site for the indoor pool was on an existing campus, which the team chose for its airflow based on results from several wind-velocity studies.

“Our first approach is always a sustainable one,” says Michael La Nasa, Kirksey’s Associate Partner & Director of PK-12 Projects. “After our initial meeting with Round Rock ISD, it became clear that their vision and goal to implement innovative, sustainable solutions at every touchpoint aligned with ours. This project is a testament to those core values that resonate so deeply with us both.”

The stakes were high—if the project was a success, it could become a new example for aquatic centers across the country.





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## MAJOR SUSTAINABLE COMPONENTS

During the design phase, the Kirksey team embarked on an innovative journey, focusing on three key areas for sustainability: passive ventilation, solar power, and Combined Heat Power (CHP) systems.

The new facility has large overhead doors on either side, which orient towards the prevailing southeast breeze. When open directly across from each other, the doors allow for passive ventilation. In addition, mechanical exhaust vents, in combination with a series of louvers, help move the air up and out when the doors are closed.

In terms of power, the district's initial budget did not allow for the installation of solar voltaic panels. However, Kirksey's forward-thinking design ensures the facility is ready to seamlessly integrate the panels when the funds become available.

The third major sustainable component of the design was the CHP system. These systems provide electric power, heating, and cooling from the same fuel source. CHP works well for this project because it uses a natural gas-fed generator, which is a clean way to run a generator and power the facility. The generator also produces tremendous amounts of heat and steam, which are then converted to a free, water-heat source to warm the pool.

Competitive pools require a temperature from 78 to 82 degrees to optimize athletic performance. Though the swimmers are comfortable, a passive ventilation strategy alleviates the hot and humid conditions for spectators during warmer months.

## PROJECT INFORMATION:

- **LOCATION:** ROUND ROCK, TEXAS
- **TRAIL LOCATION:** 2801 GATTIS SCHOOL RD, ROUND ROCK, TEXAS 78664
- **CONSTRUCTION COST:** \$17.1 MILLION
- **SIZE:** 48,500 SQUARE FEET
- **DESIGN START:** 2018
- **COMPLETION DATE:** JUNE 2022



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## HIGH-PERFORMING AQUATIC FACILITY

During design and construction, the project presented a few challenges.

Competitive pools typically cycle through thousands of gallons of water, require constant filtration, and demand the addition of numerous chemicals. In some cases, pools can be as costly

to run as entire campuses. The design and build team took these factors into account.

“Historically, pools are one of the costliest and [most] energy-intensive facilities to build and maintain,” says La Nasa.

The district suggested a long list of features to incorporate into the pool’s design. To meet those requirements while achieving a highly sustainable and energy-efficient pool, the design team explored each element to determine its viability.

Darren Bevard, Principal at Counsilman-Hunsaker, worked alongside the team as the aquatic-design specialty consultant and was responsible for program confirmation and design of the swimming pool and its equipment.

“There were several notable innovative aspects of this project design, including the ability to promote natural air movement through the natatorium space for energy efficiency and reduced operational cost impact,” Bevard says.



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“The use of regenerative media filtration systems to provide exceptional filtration performance for the pool water also reduced wastewater production. I’m proud of the overall design initiative for this building, which provided a highly functional and efficient facility to serve the district’s constituents and community.”

## BEAUTY AND FORM

The district’s primary initiative was to create a facility with the efficiency and flexibility to support training for three high school swim teams simultaneously (approximately 21 swim lanes) and the ability to host UIL-sanctioned high school meets. Additionally, the water needed to meet the needs for diving, water polo, lifeguard certification/training, youth learn-to-swim/water safety, fitness, wellness, and recreational aquatic activities.

Kirksey designed the facility with two distinct bodies of water and the necessary support facilities and amenities to meet those needs. The primary body of water includes a 50-meter competition pool that provides enough space for three teams to practice crossways at the same time. It also includes two bulkheads and provides one meter of springboard diving. The second body of water is a 25-yard, warm-water pool that accommodates warm-up, learn-to-swim, and other community activities and programs.

In addition to its functionality, the pool is stunning and serene, connecting to the outdoors with its full-vision sectional doors. This feature is so effective that the facility recently won an AIA Austin 2024 Design Award for the successful incorporation of the outdoors into an indoor pool.



## COURT OF PUBLIC OPINION

The public nature of the project also provided opportunities for community engagement.

The design team listened to the community’s initial concerns about equity and ensuring enough space for all students. There was a concerted effort to ensure every stakeholder’s fears and concerns were addressed during the project’s development.

However, as La Nasa highlighted, Round Rock ISD’s vision is not just to be sustainable, but to lead by example and be the most energy-efficient school district in Central Texas.

Questions also arose about where the facility would be built, how accessible it would be, and whether the structure's airflow would work. Kirksey participated in public hearings and meetings where community members voiced their concerns.

"We said 'tell us everything you're thinking,' and they did. They shared volumes of valuable information with us," La Nasa says.

Eventually, there was agreement on location and accessibility, and the 5A school district showed the community how much its swimming, diving, and water polo teams needed the facility.

## DIVING IN

The project was completed in June 2022, and because of its many sustainable strategies, it achieved the district's goal of being cost-effective, putting Round Rock on the map as innovative, forward-thinking, and environmentally responsible.

"The aquatics facility is such a flagship facility for our district, and it's so exciting to see students from all over Round Rock ISD and all over the state come out and use it," says Amber Feller, President of Round Rock ISD Board of Trustees, who provided remarks at the center's ribbon cutting in 2022.

Since the project's delivery, La Nasa has seen significant interest from districts, hotels, and commercial developments nationwide looking to build highly sustainable pool facilities. **PRB+**

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