



ISIDORE NEWMAN SCHOOL, SCIENCE AND TECHNOLOGY CENTER

Project Program

The Rupa and Tarun Jolly Science and Technology Building is a three-story, 33,000 square foot building on the campus of Isidore Newman School. The new science building includes 3 specialty laboratories, 9 combination classroom-labs, a Makerspace and common green space. A stunning steel staircase, intended to be monolithic and sculptural in nature, anchors a three-story high atrium at the building's entrance.

The design goal of the new science building is to put education on display. Stormwater retention, solar panels, and a weather station are all integrated into the building's design, displayed on an "energy use dashboard" that allows students to see their real-time energy consumption. The classroom-labs themselves are outfitted with glass walls to allow students the opportunity to observe other classes, satiate their curiosity, and to spark interest and potential collaboration. The design team curated exposed pipes, beams, and MEP systems to present the building itself as an educational tool.

The thoughtful design of the Rupa and Tarun Jolly Science and Technology Building has resulted in an environment that is conducive to students' natural way of learning, with the goal to inspire a new generation of innovators.

The design-build process helped Newman achieve their key project needs with maximum time for decision making and approvals from their board, within their desired budget and, most importantly, delivered on time for the 2018 school year to start.

Location

New Orleans, Louisiana

Services Provided

Architectural Design, Structural Engineering,
Preconstruction Services,
Design-Build Delivery

Self-Performed Services

Architectural Millwork, Structural Steel

Project Size

33,200 sf

Project Completed

August 2022

Awards

2019, ABC Bayou Chapter,
Award of Excellence

2019

2019, ENR Texas and Louisiana, Award of
Merit

We consider this project a success for multiple reasons. The obvious reasons are our team's ability to meet the owner's budget and schedule constraints with grace. In addition to the owner's requested changes, a significant aspect that would have affected our schedule was Louisiana's unique amount of weather days in the year. Mostly, we consider this project a success because we achieved total owner satisfaction.

Innovative Programs for Quality Control

During each phase of design, Project Architect Blake Bergeron conducted multiple iterations of design review and markups and virtual design and construction exercises. Initially, participating in these design reviews were our subconsultant lab designer, MEP engineering consultant and our in-house engineering team. Eventually, our key MEP subcontractors were engaged to participate in these reviews, as well as our operations team.

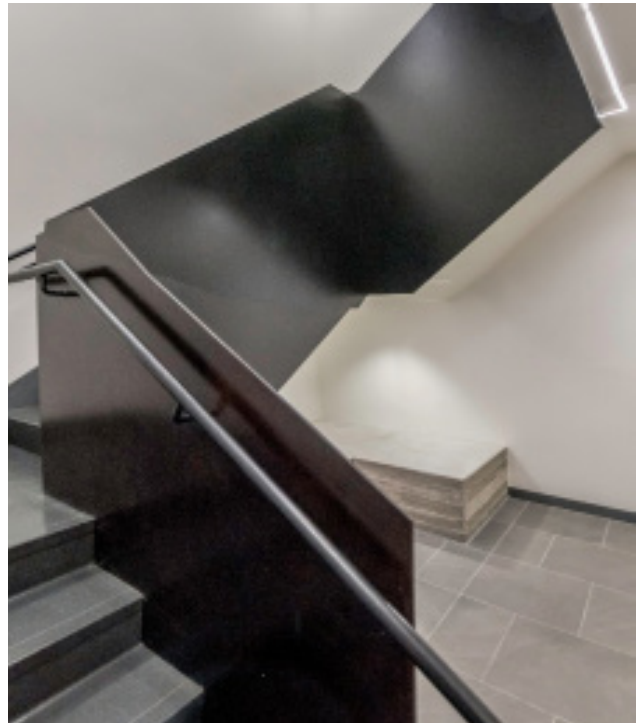
Blake was responsible for all the QA/QC reviews during the design phase. He was responsible for facilitating site visits, conducting submittal reviews, and performing the necessary VDC and clash detection sessions. Blake and key members of the design team stayed intimately involved in the project through construction, especially as owner scope continued to change.

As we entered construction, Blake continued to lead the QA/QC process with significant involvement from Jeff Cherry, Project Executive, Scott Rohr, Project Superintendent, and Stephen Scallan, Project Manager. The operations team was involved in several page-turn meetings for constructability reviews, which also included our key subcontractors.

A key need in effective Quality Control and Quality Assurance is responsiveness to solve problems between the field and the design team. As an integrated design-builder, our architects sit under the same roof as our builders and can get onsite to be with our field team members at a moment's notice. While schedule was a key project goal for the team, it certainly did not come with a sacrifice to quality. Every inch of this building was meticulously designed, evaluated, and installed to be a high performing, long lasting product of institutional success.



Steel and concrete staircase under construction



The completed staircase anchors the 3-story space



Custom made panels mimic molecular structure



Second floor interior during construction

Innovative Programs for Schedule

Our schedules are made using Microsoft Project software and/or Primavera P6. We produce detailed maps that identify the critical paths and make changes to them as progress dictates. We include the design, estimating and procurement activities, as well as construction activities in the scheduling process. When possible, we use BIM to visualize the project's progress and plan critical tasks. We also led the BIM coordination process by working in the model with the design team to resolve conflicts.

Value Analysis / Engineering

Woodward's integrated design-build approach allowed our team to provide real-time, accurate cost data on multiple design concepts to allow Newman to make their decisions based on what would give them the most value in their final product. This private, board-run, educational entity, as expected, had pressure from many stakeholders, decision-makers, donors, and alumni on what this building needed to achieve.

At the issuance of Construction Documents, the owner adjusted their vision for the original design. Our team was able to price multiple re-design options and ultimately give the owner the maximum amount of time to make their decisions to add the most value for their investment. Due to our team's ability to effectively manage change and collaborate with key consultants and subcontractors, all owner-requested changes were implemented with no impact to their budget or schedule.

There were many interior design features that the owner wanted, but the design-build team had to find creative price solutions to achieve. Examples of this were the Geode Display on the first floor and the unique hexagonal ceiling panels that lined the staircase.

The largest, most significant value-added component to this project was the opportunity for a new central plant. Our team identified early on that their existing chillers would need to be relocated for better access. After engaging our mechanical engineer and subcontractor, we/our team quickly identified that the chillers were nearing their end of useful life. Our team concluded that the existing central plant's location was no longer ideal for the campus and its master plan. We took time to propose a new location with new mechanical components to set the campus up for better efficiency for decades to come. The school was able to add this \$1,000,000 scope item because the need was discovered, explored, and incorporated into the design early enough to not impact their initial budget.

Special Obstacles

The greatest challenge we experienced on this project was the site constraints and resulting logistical challenges of working on an operating school campus in a residential neighborhood. There were many risks that could have resulted from this challenge, and our team worked early to identify and plan for them. Risks included schedule impacts, affecting the school's daily operation, as well as campus safety and neighborhood safety.

To solve the risks related to schedule and operational disruptions from these challenges, our team identified a nearby, vacant, rentable property to schedule material deliveries, store materials, and utilize for laydown of equipment. This allowed for control in materials and reduced the amount of noise and traffic to the campus. To solve risks related to campus and neighborhood safety, our job was securely fenced with ample signage, and specific safety protocols for working on a school campus were established and implemented across all subcontractors on site. The superintendent kept in close communication with campus security and the facility manager to ensure students, parents, faculty, and neighboring residents were alerted in advance to major construction activities.

Newman's campus is approximately 11 acres and houses an inventory of buildings and an athletic field in Uptown New Orleans. This elite school has a total enrollment of 1,055 students from Pre-K- 12th grade. The ability to work efficiently, safely, and respectfully while the school maintains full operation was of paramount concern to our team. Through careful planning, constant communication, and additional construction activities like constructing temporary hallways and creating alternative exits; our team was able to work efficiently without impacting this school's daily operations.



Classroom-lab with exposed mechanical system



View from third-story classroom

Innovative Programs or Methods for Productivity

An innovative program or method to increase/ensure productivity is the integrated design-build delivery method used on this project. Our design-build team set the tone for this philosophy as well as established an alignment of project goals at our very first design kick-off meeting. In attendance were Newman Ownership Representatives, Woodward's Design Team, Woodward's Preconstruction and Construction professionals assigned to the project. Also, in attendance at this meeting were our two key subconsultants. This early integration and establishment of key members gave the team a feeling of open, and honest collaboration.

Throughout the design, our key Construction team of Lead Estimator, Project Executive, Project Manager, and Superintendent were engaged for constructability reviews, scheduling adjustments, and real time cost reporting. They were working diligently to liaise and collaborate between the designers, subcontractors and owners to ensure that as changes developed there was effective change management protocol and path forward.

After Programming and Conceptual Design, as we entered Design Development; we then engaged our two major key subcontractors, Allstar Electrical and Bernhard MCC. These key subs were engaged at this time to collaborate with our MEP subconsultant, our architectural group, and our preconstruction/construction professionals. They provided technical expertise on systems, pricing and value analysis, and participated in constructability reviews. We credit Bernhard MCC specifically to



Makerspace

identifying, creating solutions, and providing swift, accurate pricing analysis on the unexpected scope of the need for a new central plant. The original scope was to relocate two chillers in the existing central plant, after discovering these components were nearing the end of their life, it was determined they needed to be replaced. While exploring this option, Bernhard also explored the potential opportunity to relocate the central plant for a more efficient design and location. Because of their early involvement, our design-team effectively identified an opportunity for better long-term performance and was able to make design changes, account for cost impacts and effectively rebuild their new central plant without affecting the project's budget or schedule.

Our design team stayed involved through construction, because design never really ended. After the issuance of Construction Documents, there were major scope concepts that the owner identified they wanted to change. Our Project Architect had to effectively make major design changes while the project was kicked off and continued to progress, or we would not have met the owner's deadline of a 2018 School Year open. Through intense coordination between the Project Architect, the Project Manager, and the Site Superintendent, and major subs and consultants, we were able to adjust to the changes, validate pricing, recalibrate the schedule and recover from the impacts without effecting the owner's budget or schedule.

Additionally, the unique advantage that Woodward can bring its design-build projects is that our team are all located under one roof. Our construction professionals are one floor away from our architects, who are down the hall from our estimators. Our office layout lends itself to open collaboration in a highly technical fashion. Our superintendents always have a place in the office to meet with the design team, and our architects always have access to the site to meet with the field staff. Collaboration is truly our culture, which is the philosophy behind this project.

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