

September-October 2024

DESIGN COST DATA

digital edition

Focus: Renovation/ Adaptive Reuse/ Tenant Build Out

Four Inspiring Adaptive
Reuse Projects

Six Common Allowances for
Tenant Improvements

Intern Preconstruction
Estimating Training Program

Legacy Magnet Academy
Tustin, California
Architect: PJHM

Legacy Magnet Academy

Tustin, California

Architect

PJHM Architects



Dramatic arches frame the entry to the amphitheater.

Architects often draw on a variety of different inspirations when creating a new design. The process can be both creative and incredibly technical as they take into consideration the resources of an existing site and mix in the complexities of a new build. This is the exciting challenge that PJHM Architects faced when the company was approached to design the new Legacy Magnet Academy campus in Tustin, California.

Established in 1963, PJHM Architects has evolved to become one of the dominate influences of educational design in California. This rich history of specialization enables them to understand the unique needs of schools and the communities they serve.

This approach was critical to the design of Tustin Unified School District's Legacy Magnet Academy. The first step was to form a comprehensive committee of representatives from school administrators, staff, and teachers to provide input on project requirements. A construction management firm worked in parallel with the design team through collaborative preconstruction processes, extracting analytical data from the



Interior common area.

Photo Courtesy: RMA Architectural Photography

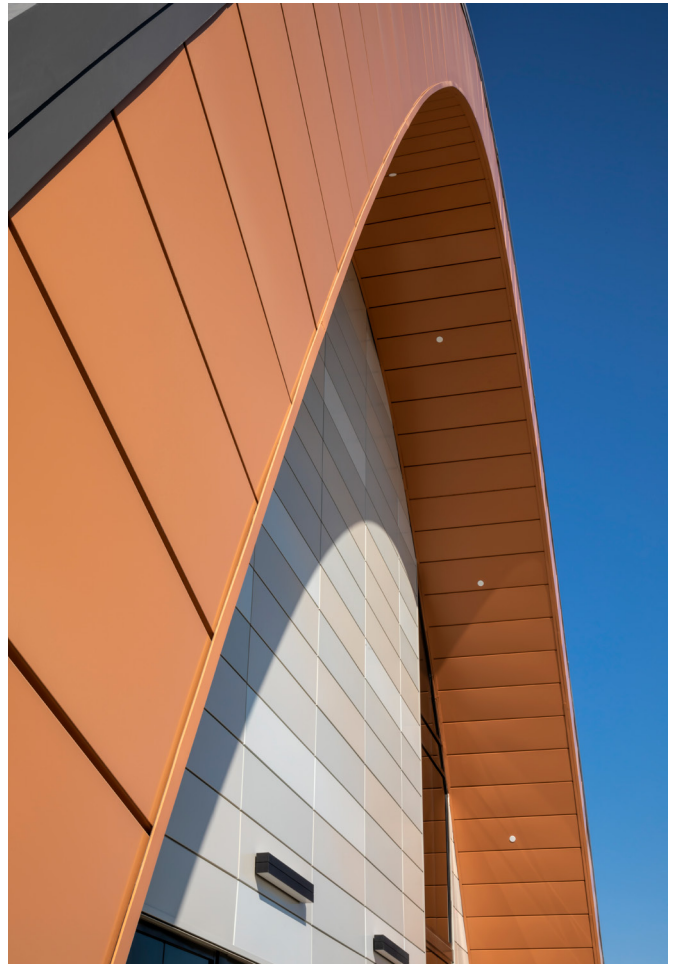
project's BIM software. This provided instantaneous feedback to the design team on cost, material quantities, scheduling and overall design audits.

One of the primary inspirations for the design was the history of the surrounding area. The project site was flanked by two iconic structures, the U.S. Navy and Marine Corps Air Station (M.C.A.S.) North and South blimp hangars. Constructed shortly after the attack on Pearl Harbor, the hangars, reaching 17 stories high, had the honor of being the largest wood framed structures ever built. Today, only one remains due to a fire that destroyed its partner in 2023.

The Legacy Magnet Academy campus acknowledges and celebrates this local military heritage with distinctive features, including an all wood-framed construction entirely clad with aircraft aluminum paneling. After a careful product search, PJHM Architects selected Dri-Design Painted Aluminum Panels for the building cladding to mimic the landmarks and provide a sustainable water management system for the design. Thomas Kruse, principal with PJHM Architects, says, "After we decided an open-joint rainscreen product would not work, we chose Dri-Design based on previous experience, quality of product detailing and weather protection."

From there, Best Contracting Services installed 49,000 square feet of paneling in a tapestry of elegant colors, including Agate Gray, Gray Cashmere, Semolina, and Silk Gray. Dri-Design materials were also used for the grand entrance of the school, which serves as the focal point of the design. The parabolic roof assembly includes 30-inch deep, three-point hinged, glued-laminated timber arches. Open air trellis assemblies highlight parabolically curved and interlaced hollow structural steel with circular cross sections, and longitudinal insulated transparent skylight systems pay added tribute to the historic hangars.

Specializing in educational architecture that expands learning, PJHM also factored in the future of the Legacy Magnet Academy and the school district's vision for its students and staff. The new 36-acre campus opened its doors in 2020 and now serves approximately 900–1,000 students in grades six through twelve. School leaders wanted to ensure the site



The M.C.A.S. blimp hangars were one of the primary inspirations for the design.



Legacy is a picturesque campus that establishes interactive spaces for learning.

was designed in a way that promoted its academic pillars of Technology, Innovation, Design and Entrepreneurship (TIDE). PJHM Architects took this mission to heart in its design.

The result is a picturesque campus that establishes interactive and collaborative spaces for learning. Education experiences are no longer confined to the classroom walls. Students now have access to a flexible environment that accommodates individual, small, and large group instruction.

The academic buildings feature a six-classroom and commons module that houses courses in science, math, language arts and electives. The TIDE classroom and student amphitheater also provide capacity for Career and Technical Education (C.T.E.) training, academic competitions and student rallies that promote community engagement.

Legacy Magnet Academy was also designed for high performance and sustainability, with energy and water management for the campus at the forefront of design. The all wood-framed wall and roof construction easily exceeds Title 24 building envelope requirements. The window walls, tubular and panelized insulated transparent skylight systems, constitute an abundance of naturally illuminated spaces, reducing the demand for artificial light. In addition, the school's landscaping utilizes a highly efficient, drought tolerant plant palette that integrates intelligent irrigation controllers and modern installation

techniques. This forward-thinking design anticipates a savings of over 1.3 million gallons of water every year when compared to other campuses within the district.

PJHM Architects is proud to include Tustin Unified School District's Legacy Magnet Academy to its expanding portfolio of K-12 design projects. Its celebration of history, culture, and learning made this campus an exciting project that helps pave the way for education in Southern California.



The 36-acre campus opened its doors in 2020 and now serves approximately 900-1,000 students and staff.

ADMINISTRATION & CLASSROOM BUILDING

Architect

PJHM Architects
24461 Ridge Route Drive, #100, Laguna Hills, CA 92653
www.pjhm.com

Project Team

Phase One

General Contractor

Balfour Beatty
1501 Quail Street, #130, Newport Beach, CA 92660

Phase Two

General Contractor

R. C. Construction Services, Inc.
2223 N. Locust Avenue, Rialto, CA 92377

Project General Description

Location: Tustin, California

Date Bid: Sep 2018

Construction Period: Phase one – Jan 2019 to Mar 2020; Phase two – Nov 2021 to Jan 2024

Site: 39 acres.

Total Square Feet: 118,085.

Building Square Feet: 118,085 square feet.

Building Height: 40 feet.

Number of Buildings: One/Administration and Classroom Building.

Basic Construction Type: New/Wood frame.

Foundation: Slab on grade.

Exterior Walls: Metal panel.

Roof: Metal.

Floors: Concrete.

Interior Walls: Metal stud drywall.

DIVISION	COST	% OF COST	SQ.FT. COST	SPECIFICATIONS
CONCRETE	4,766,000	11.67	52.93	Slab-on-grade, formwork.
MASONRY	152,660	0.37	1.70	Unit.
METALS	3,161,200	7.74	35.11	Structural steel, sheet metal, fabrication.
WOOD, PLASTICS & COMPOSITES	4,342,851	10.63	48.23	Rough carpentry, finish carpentry.
THERMAL & MOISTURE PROTECTION	8,498,229	20.80	94.38	Membrane roofing, metal roofing, siding & panels.
OPENINGS	2,738,250	6.70	30.41	Doors & frames, entrances, storefronts & curtain walls, hardware.
FINISHES	4,140,489	10.14	45.98	Gypsum board, ceilings, flooring, acoustic treatment, painting & coating.
SPECIALTIES	1,007,400	2.47	11.19	Interior, fire extinguishers.
FURNISHINGS	719,060	1.76	7.99	Window treatments, cabinets.
FIRE SUPPRESSION	449,000	1.10	4.99	Sprinklers.
PLUMBING	1,299,000	3.18	14.43	Piping & pumps, equipment, fixtures.
HVAC	2,977,000	7.29	33.06	Piping & pumps, air distribution.
ELECTRICAL	6,600,000	16.16	73.30	Low voltage, switchgear, lighting.
TOTAL BUILDING COSTS	40,851,139	100%	\$453.67	
EARTHWORK	1,659,000			
EXTERIOR IMPROVEMENTS	2,552,000			
TOTAL PROJECT COST	45,062,139			

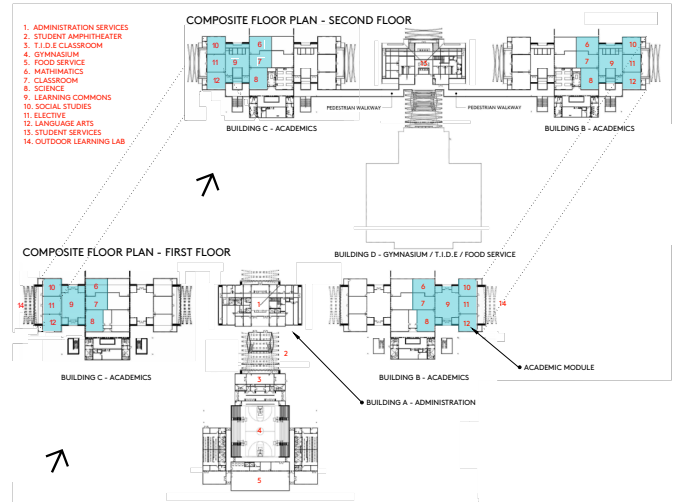
UPDATED ESTIMATE TO OCTOBER 2024: \$719.84 PER SQUARE FOOT

Regional Cost Trends

This project, updated to October 2024 in the selected cities of the United States.

EASTERN U.S.	Sq.Ft. Cost	Total Cost	CENTRAL U.S.	Sq.Ft. Cost	Total Cost	WESTERN U.S.	Sq.Ft. Cost	Total Cost
Atlanta, GA	\$503.89	\$45,372,666	Dallas, TX	\$503.89	\$45,372,666	Los Angeles, CA	\$719.84	\$64,818,094
Pittsburgh, PA	\$611.86	\$55,095,380	Kansas City, KS	\$623.86	\$56,175,682	Las Vegas, NV	\$689.85	\$62,117,341
New York, NY	\$827.82	\$74,540,809	Chicago, IL	\$713.84	\$64,277,944	Seattle, WA	\$689.85	\$62,117,341

For more information on this project and similar projects visit www.dcd.com



GYMNASIUM

Architect

PJHM Architects
 24461 Ridge Route Drive, #100, Laguna Hills, CA 92653
www.pjhm.com

Project Team

Phase One

General Contractor

Balfour Beatty
 1501 Quail Street, #130, Newport Beach, CA 92660

Phase Two

General Contractor

R. C. Construction Services, Inc.
 2223 N. Locust Avenue, Rialto, CA 92377

Project General Description

Location: Tustin, California
Date Bid: Jan 2021
Construction Period: Nov 2021 to Jan 2024
Site: 39 acres.
Total Square Feet: 28,040.
Building Square Feet: 28,040 square feet.
Building Height: 40 feet.
Number of Buildings: One/Gymnasium.
Basic Construction Type: New/Wood Frame.
Foundation: Slab on grade.
Exterior Walls: Metal panel.
Roof: Metal
Floors: Concrete.
Interior Walls: Metal stud drywall.

DIVISION	COST	% OF COST	SQ.FT. COST	SPECIFICATIONS
PROCUREMENT & CONTRACTING REQUIREMENTS	245,299	0.43	2.08	—
GENERAL REQUIREMENTS	1,794,532	3.13	15.20	—
CONCRETE	1,224,765	10.45	50.73	Slab-on-grade, formwork.
MASONRY	49,000	0.35	1.71	Unit.
METALS	3,665,500	11.91	57.81	Structural steel, sheet metal, fabrication.
WOOD, PLASTICS & COMPOSITES	1,859,402	10.82	52.52	Rough carpentry, finish carpentry.
THERMAL & MOISTURE PROTECTION	1,072,390	16.69	81.05	Membrane roofing, metal roofing, siding & panels.
OPENINGS	832,800	6.23	30.24	Doors & frames, entrances, storefronts & curtain walls, hardware.
FINISHES	1,433,946	11.48	55.74	Gypsum board, ceilings, flooring, acoustic treatment, painting & coating.
SPECIALTIES	80,708	0.14	0.68	Interior, fire extinguishers.
EQUIPMENT	75,000	0.13	0.64	Studio rig tension grid.
FURNISHINGS	494,712	2.12	10.28	Window treatments, cabinets, projection screens, lockers & benches, telescoping bleachers.
FIRE SUPPRESSION	191,650	2.60	12.62	Sprinklers.
PLUMBING	532,750	2.83	13.75	Piping & pumps, equipment, fixtures.
HVAC	997,000	5.03	24.41	Piping & pumps, air distribution.
ELECTRICAL	2,381,400	15.67	76.06	Low voltage, switchgear, lighting.
TOTAL BUILDING COSTS	16,930,854	100%	\$603.81	
EXISTING CONDITIONS	67,110			Demolition.
EARTHWORK	154,851			—
EXTERIOR IMPROVEMENTS	823,935			—
UTILITIES	261,250			—
TOTAL PROJECT COST	18,238,000			

UPDATED ESTIMATE TO OCTOBER 2024: \$804.49 PER SQUARE FOOT

Regional Cost Trends

This project, updated to October 2024 in the selected cities of the United States.

EASTERN U.S.	Sq.Ft. Cost	Total Cost	CENTRAL U.S.	Sq.Ft. Cost	Total Cost	WESTERN U.S.	Sq.Ft. Cost	Total Cost
Atlanta, GA	\$563.14	\$15,790,511	Dallas, TX	\$563.14	\$15,790,511	Los Angeles, CA	\$804.49	\$22,557,873
Pittsburgh, PA	\$683.82	\$19,174,192	Kansas City, KS	\$697.22	\$19,550,157	Las Vegas, NV	\$770.97	\$21,617,962
New York, NY	\$925.16	\$25,941,554	Chicago, IL	\$797.78	\$22,369,891	Seattle, WA	\$770.97	\$21,617,962

For more information on this project and similar projects visit www.dcd.com