

2016 Exhibition of School Planning and Architecture

Mount Jordan Middle School

Canyons School District. Sandy, Utah

Category:
New Construction





MAIN EXTERIOR

A prominent red entry canopy made of single-skin metal panel makes a signature front entrance for STEAM-designed educational facility. The media center with floor-to-ceiling windows is located to the left, while administrative offices and the 600-seat auditorium are located to the right.

Site Plan



Site Development

The new Mount Jordan Middle School Replaced the 1950's era Middle School on the Same Site.

The site was thoughtfully developed to create outdoor learning opportunities. Exterior teaching and gathering spaces were provided in areas that normally would be dedicated to empty circulation routes. Between the grade level houses are informal learning areas with meandering benches and a mixture of hardscape and vegetation, and a formal learning area with a raised seating area large enough for a class to meet. The wetland area supports environmental awareness and science curriculum and outdoor basketball courts are used during lunch to give more time for their growing bodies to move and play. These simple gestures helped activate the exterior spaces and create a safer site environment.



Community Environment

COMMUNITY COUNCIL WORKSHOPS

Over many years, the existing Mount Jordan developed strong connections to the surrounding community. It was easily understood by the design team that it was critical to interact and collaborate with as many people as possible in the local community. This was done through community workshops that comprised of the Community Council, a formal group that has been part of Mount Jordan for many years. The Community Council consisted of elected parents, local leaders, the principal and a teacher representative. In addition, the workshops involved the school's PTSA president and school board members. The workshops were conducted after a design concept was developed and became a great tool to test initial design ideas. The workshop forum gave the Community Council the opportunity to understand fully the school district's vision, question decisions and offer suggestions and improvements. By refining the design based on the community's inputs, the public felt vested in the success of the project. This engagement added value to the project not only during design, but also when the doors opened on the first day.



“Walking the halls of the newly constructed Mount Jordan Middle School reveals a truly state of the art campus.”

MAYOR TOM DOLAN

Auditorium

Community Environment

SANDY CITY ARTS MEETINGS

In addition the formal workshops with the Community Council, a unique partnership between Sandy City's performing arts program and the district was developed to strengthen the arts program in the school. A financial contribution allowed for the development beyond a typical middle school auditorium into a full Broadway styled performing arts space for community and school use. The resulting 600-seat facility has a full fly loft, catwalks, enhanced sound and lighting systems, and full stage. This unique addition to the project emphasizes to students the importance of performing arts in the STEAM curriculum, and provides them with a state-of-the-art space to develop and learn. Shortly after the opening of The Theater at Mount Jordan, it hosted a successful run of a full production of Into the Woods by the Sandy Arts Guild and a season of The Nutcracker.

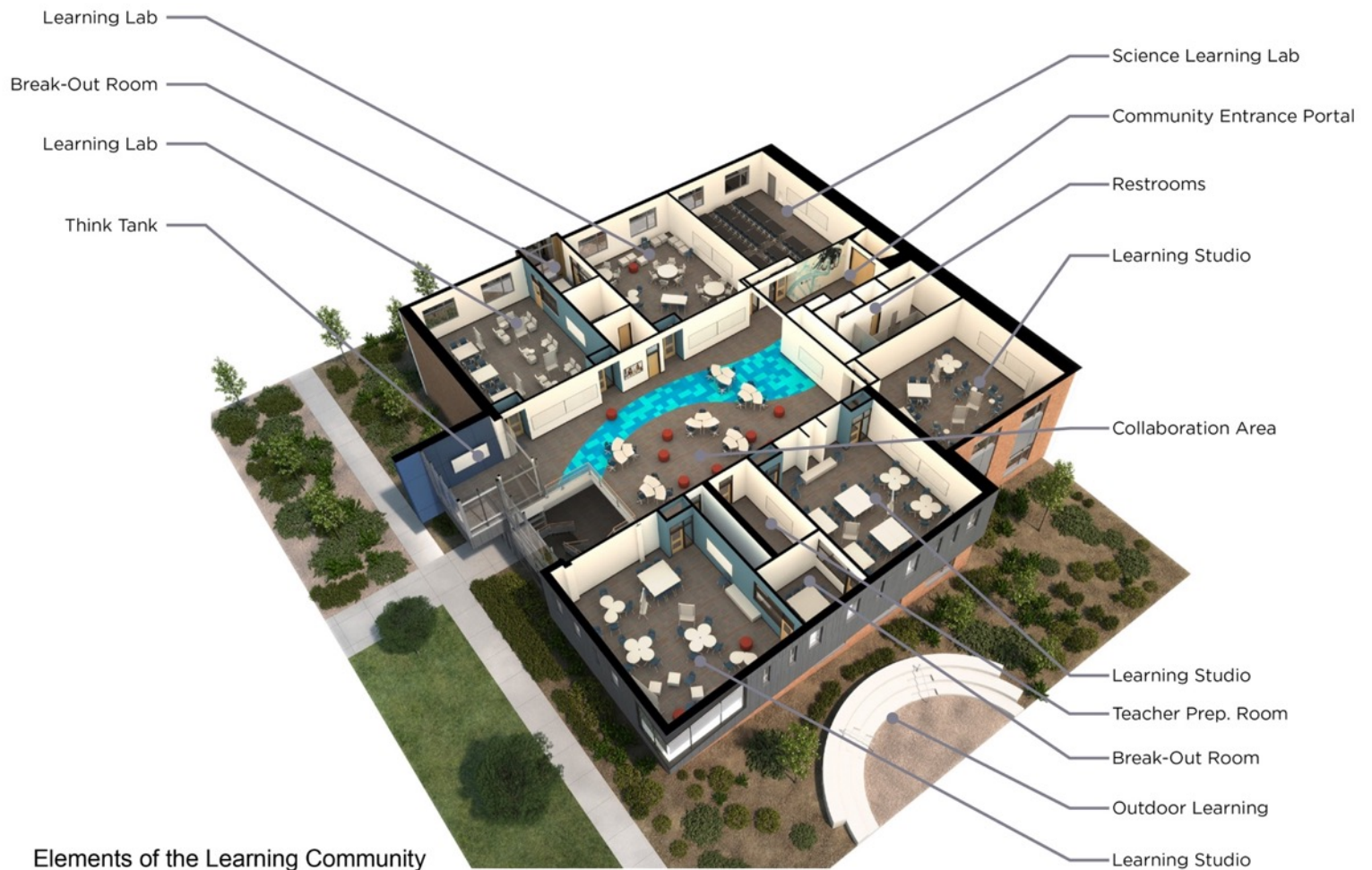
Educational Environment

BUILDING ORGANIZATION

The core building block for the educational environment is the Learning Community. Each learning community has two learning studios, two learning labs, a science-learning lab and either a special education or a Spanish immersion learning studio. Between each learning studio is a smaller break out space that provides a location for small-scale teaching and tutoring. The core learning community spaces are all organized around a shared collaboration area. This collaboration space is sized to handle multiple classes to gather at one time but is still intimate enough for smaller, breakout activities. From the central collaboration space students and teachers have access to a shared conference space (think tank), student restrooms, storage and a teacher preparation room. All of the core subjects are taught in the learning communities.

A grade level house is formed as one learning community is stacked on another. The school has three learning communities lined up on the east side of an open circulation spine. The entire elective and non-core classes, the information commons (media center suite) and the administration block are organized on the west side of the circulation spine. The building is bookended by the physical education area (gym, locker rooms, running track, fitness studio) and performing arts wing (band, choral, debate hall, auditorium). The simple organization and clear circulation contribute to a positive learning environment as students avoid the anxiety of feeling lost. The configuration along the main spine also allows natural light to be easily brought into all of the building.





Educational Environment (cont.)

Each of the learning studios are designed to support Middle School students engaged in STEAM learning activities. Every learning studio, learning lab and primary teaching space has windows for natural daylighting and views that help create an inviting, warm atmosphere. The spaces are large enough to support a variety of classroom configurations and learning activities. Each studio contains plenty of general storage in addition to a lockable storage cabinet to secure and charge the rooms 1-to-1 mobile tech cart.

Wall surfaces in the school are carefully designed to support the learning process. Labs and studios have smart board projection, white boards and a full tack wall for pin up space. Public areas have display monitors and whiteboards for small break out activities. Wall graphics and display cases throughout the building provide opportunities for students to learn about historic STEAM concepts and exhibit their own contributions.

Physical Environment

One of the unique things about Mount Jordan is its careful use of color. The new Mount Jordan looked for opportunities to use color to stimulate and reinforce building functions. Starting with the exterior, bright metal panel colors were selected to help create visual prominence and character for the school. Bright red was used to help users understand where main entry and circulation points were located. Internally, the design team looked at how color could be used at various levels and intensities to promote activities within the building. Like its active function, the main circulation spine is visually engaging and vibrant. Highly saturated colors/patterns are used and each of the three grade-level houses each have their own color portal that serves as wayfinding. Within the learning community the vibrant, the primary house color is toned down and softer patterns and neutral colors are introduced. Finally, within individual classrooms and break out spaces the colors take another step down in intensity to help reinforce the more intimate nature of active teaching. At each level of activity and space, color is carefully selected to help reinforce teaching activities and create a visually interesting environment.

The exterior brick masonry veneer is designed to be a simple backdrop against the vibrant, metal panel colors. The color of the brick masonry was deliberately selected to match the masonry of the original Mount Jordan. This ties the memory and history of the past with the present and future school. Engaging forms highlight each of the three learning communities. The strong primary color of the cantilevered entry helps announce where patrons enter the building. Durable concrete slats, a sustainable salvaged product, is used throughout as an accent material.



Physical Environment

BUILDING AS A LEARNING TOOL

The real success of Mount Jordan is the design team understanding that the building had the potential to become a teaching tool. The design team looked for opportunities to convey STEAM principals in patterns, materials, colors, and structures. For example, the VCT flooring pattern throughout the building represents various scientific diagrams like the solar system, Cartesian coordinate system, musical scale and molecular structures. The structure in the building, including a large 100' tube steel truss above the kitchen area, are left exposed and highlighted to emphasize the role of engineering in the building. Running down the length of the 600' main spine on both levels is a timeline wall graphic introducing students to the historical context of achievements in STEAM. Large, vibrant graphic panels greet students as they walk into each of the grade level houses and highlight key influential scientists and artists. The pattern in the exterior charcoal colored metal panel reflects the human genome pattern. Additionally, the team developed an on-site wetlands area that not only used for on-site storm water detention, but also becomes a teaching tool supporting the earth science program and a place for students to perform environmental experiments. With all these intentional design moves, the building is able to spark curiosity and wonder for students and staff and invites them to become a part of the learning process.



Floor Pattern



Supergraphic



Portal to Learning Community

Planning Process

In 2012, the School Board for the Canyons School District approved an innovative STEAM initiative for their middle school students. The new curriculum provides a creative project based learning approach to help students develop critical thinking skills in science, technology, engineering, arts, and math. Just as the STEAM curriculum was being defined and implemented, the design team concurrently began the planning process for the replacement of Mount Jordan Middle School. The challenge of designing a school that fully supported the STEAM curriculum that was still in development required an innovative programming process that has set the standard for future STEAM education in the district.

The unique planning process included many critical activities including:

Stakeholder Visioning Sessions
STEAM Curriculum Workshops
Teacher Focus Groups
Student Engagement Workshops
Concept and Design Charrettes
Community Council Workshops
City Arts Meetings

STAKEHOLDER VISIONING SESSIONS

A stakeholder group was established to provide high-level vision and direction for the new school and to reach consensus on the many facets of the design.

During the first meeting, the design team led the stakeholder group through a fun and collaborative project visioning process. With this, the group established the many characteristics of the design vision.

During the consensus process, the stakeholder committee established the following four vision, goals and objectives for the school:

Students

Focus should be on the students first. The school should provide an inviting, accessible and engaging learning environment that enhances a student's educational experience.

Community

The school should be a welcoming and strong educational center that builds on the rich, established academic tradition of the community. The building will serve to strengthen the relationship with the surrounding city and continues in its role as the heart of the community.

Curriculum

The school should fully supports districts innovative STEAM curriculum, 1 to 1 technology initiative, and foster principles of project based 21st century learning.

Social Responsibility

The building should be constructed on budget and be maintainable over its entire life. It should be highly sustainable and become a teaching tool to educate others on the role of sustainability.

STEAM CURRICULUM WORKSHOPS

The planning process for the Mount Jordan Middle School and the districts STEAM curriculum were developed simultaneously. Many STEAM curriculum workshops were conducted to help both the district and the design team understand the learning activities and methodologies that would be implemented with their new curriculum direction.

The outcome of the STEAM curriculum workshops were the following design criteria:

Support collaboration at every scale (student to student, students with teacher, teacher with teachers, teacher with administration)

Teaching spaces should be flexible and usable in a variety of ways with an ability to support adaptation for future programs and pedagogies

Spaces should be provided for large group discovery (more than one class together)

The building should account for space for kinesthetic activities and hands-on learning

Provide spaces for multiple uses, including creative, verbal, experimental and collaborative activities

Provide space for small group discussion, and individual tutoring

There should be places for quiet contemplation and individual study

All areas of the building should have convenient access to learning and presentation technology

Support creation and playback of student created media including podcasts, YouTube, Maximum use of natural light and ventilation is critical

Creative and stimulating colors, textures, and patterns should be used throughout the building to educate and enhance the learning environment

Acoustics and lighting must complement learning

Technologies should support seamless movement between learning spaces and teaching activities

Outdoor learning opportunities should be incorporated into the overall site design

The school should be comfortable, imaginative and fun.

Planning Process

(continued)

STUDENT ENGAGEMENT WORKSHOPS

The design team had the opportunity to meet with many students during the initial programming of the building. The student engagement sessions focused what students valued in the educational process and how best they learn. It was encouraging to see that the students quickly realized they all had different learning styles. The tone of the meetings and the project quickly shifted as the design team realized we needed to support universally all the students learning styles.

Many ideas that are implemented in the school originated from the student interactions including the creative use of color, downplaying the importance of lockers, and innovative educational technologies. One of the most meaningful interactions was when one of the students, Dominick, raised his hand and said that he learned best when it he was alone and not distracted by things around him. The conversation turned to how the design team could support the way Dominick learns best. Together the students came up with the idea to add smaller rooms next to the main classroom where a student could remove distractions. The students realized that the teacher would still need to see the student so they proposed adding windows into the space. The result of the student's idea was the addition of the breakout spaces shared between two of the learning studios.



TEACHER FOCUS GROUPS

A critical element in the planning for the new Mount Jordan Middle School was the Teacher Focus Groups. Teacher groups from all departments met with the design team, school principal and district facility director to investigate how the new design might support current and developing programs and pedagogies. The teachers offered insights into what they were doing and hoped to do in the new facility. The principal was a huge proponent of project based 21st Century learning methodologies and was a crucial part of the conversation. She was able to inspire the teachers to think beyond what they had always done, and imagine what might be possible with the new school.



Floor Plan Level One



Floor Plan Level Two

Exhibition of School Planning and Architecture

Project Data

Submitting Firm :	MHTN Architects
Project Role	Architects, Educational Planners
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Phone	801-647-0793

Joint Partner Firm:	N/A
Project Role	
Project Contact	
Title	
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City, State or Province, Country	
Phone	

Other Firm:	N/A
Project Role	
Project Contact	
Title	
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Phone	

Construction Firm:	Hogan & Associates Construction
Project Role	CM/CG
Project Contact	J.D. Forbush
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Phone	801-910-7027

Exhibition of School Planning and Architecture

Project Details

Project Name	Mount Jordan STEAM Middle School
City	Sandy
State	Utah
District Name	Canyons School District
Supt/President	Dr. James Briscoe
Occupancy Date	August 2015
Grades Housed	6-8
Capacity(Students)	1,200 Students
Site Size (acres)	20.2 Acres
Gross Area (sq. ft.)	206,670 Square Feet
Per Occupant(pupil)	172 Square Feet per Student
gross/net please indicate	.74
Design and Build?	No
If yes, Total Cost:	
Includes:	
If no,	CM/GC Delivery
Site Development:	\$5,283,699 (includes demolition of original school)
Building Construction:	\$32,523,452
Fixed Equipment:	\$750,000
Other:	
Total:	\$38,557,151



East (Front) Elevation



Main Entry and Media Center Exterior



Learning Community Collaboration Area



Learning Community Collaboration Area



EDUCATIONAL TECHNOLOGY

The use of technology was a key success at Mount Jordan and met the owner's requirement that the school be a 1-to-1 facility. This meant careful planning and design to make sure technology in the building was flexible, available at multiple scales/locations and facilitated the 21st century learning activities. The team worked with the district to develop built in charging stations for technology carts that could be secured in each classroom. This allowed each teacher the convenience of dictating when and how technology was used in the daily curriculum. Technology data hubs, projectors, AV and sound enhancement systems, collaboration and information monitors are present throughout the building as a resources, not a focus, to help facilitate learning at multiple scales and locations.

SUSTAINABILITY / EFFICIENCY

Although not specifically designed to meet LEED standards the design and owner team were very conscious of the need to provide an environmentally responsible building. The large amount of natural daylight throughout the building, particularly in the classrooms, means that learning activities can occur without the need for artificial light. The building is equipped throughout with addressable LED fixtures that will help with the overall energy performance of the building and allow for future reconfiguration if needed.

From a site perspective, the team developed an on-site wetlands area that not only is used for on-site storm water detention, but also becomes a teaching tool and place for students to perform environmental experiments. Where possible, materials were selected based on their regional availability, recycled content and life cycle maintainability. The design team was very conscious of the need to provide an environmentally responsible building that would reflect the STEAM character of the building's program. Sun studies were completed to ensure that the maximum amount of natural light could be brought into each teaching and collaboration space. It was determined that in addition to fixed sunshades on southern exposures, if the classroom wings were located on the east side of high clerestory spine the building could provide natural shade from the harsh western sunlight. The result is a building where teaching and learning can occur in inviting spaces that are naturally daylight.



Wetland (days after planting)



Main Street Corridor