



**Wallace Elementary School &
Johnston Early Learning Academy**
Johnston Community School District
Johnston, Iowa

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Executive Summary

As part of a larger district-wide facility plan, the existing Johnston Middle School was set for redevelopment. Originally built in 1984, the school had expanded and been renovated over the years to accommodate the needs of the growing district. This time around however, it was no longer needed as a middle school. The building was well built and maintained and the space was needed in the District, so it was a good target for a new use.

The District engaged the Design Team to co-create a vision for a new elementary center and early childhood academy that would support a more engaged and collaborative approach to delivering curriculum. Through the interactive, hands-on process, the goals were formed for the project and implementation began.

The project moved the existing Wallace Elementary that was in a building that was too small and couldn't easily grow. Additionally, it integrated the Early Childhood Education program that serves 450 children. The Johnston Early Learning Academy (JELA) met two important goals: 1) bringing all the district early childhood programming into one centralized location and 2) making good use of a wing of the existing middle school that was not needed for the elementary school program in the building.

The existing academic wings of the building were completely gutted and transformed to create a unique and dynamic learning environments.

Each wing included ten learning spaces that surround a centralized collaboration space bathed in natural light. Interactive windows that children can climb up into penetrate the exterior walls of each learning space and provide a strong indoor/outdoor connection. Bold use of shape and color define the spaces and engage the children in active learning and provides easy wayfinding through the larger building.

The JELA program is positioned at one end of the elementary school so that is able to have its own public entry, access to a self-contained outdoor learning center, and controlled integration with the grade school students in the building. While designed as a fully contained and independent center, because it is part of the elementary school the early childhood center is able to make use of the art, music, PE, food service, and special education programming in the elementary school portions of the building.

Sustainability in the design was considered from the onset. By keeping the building and as much of the existing space intact as possible, the project avoided waste and saved money through reuse. When modifications were made, energy savings were achieved through the introduction of natural lighting into the spaces, low-energy LED lighting, and new mechanical systems with outside air and CO₂ level controls, creating improved user comfort.

Project Data:

Project Name:	Wallace Elementary / Johnston Early Learning Academy
Owner:	Johnston Community School District
Project Location :	Johnston, Iowa
Project Type:	Renovation
Completion:	August 2018
Grade levels:	PK - 5
Student Capacity:	630 K-5, 210 P-K
Size:	165,000 sf (Total Building) 93,000 sf (Renovation)
Construction Cost:	\$14,250,000
Cost /sf	\$153



The Johnston Community & Schools

Johnston, Iowa is suburban community of around 24,000 people that is located on the north edge of the Des Moines metro area. In the last twenty years the city has experienced 178% growth in population, but continues to rank nationally and locally as one of the best suburbs to live, partly for its award-winning schools and quality of life.

Johnston's history was partially formed when Henry Wallace conducted experiments with hybridizing corn in and around Johnston. This led to the beginning of the Pioneer Hi-Bred, which eventually became the largest seed corn producer in the world. Still one of the largest operations in the city, the Wallace name would come to rest on the school that now sits down the street from Pioneer's headquarters.

Johnston Community School District has approximately 7,400 students from preschool through 12th grade. From what started as a one building district in 1914, it is now comprised of five elementary schools, two middle schools, a high school, an administrative resource center, a community education center, and a transportation and building and grounds facility.

The Project's Inception

The Johnston Community School District had added buildings and additions to address their growth over the years, but in 2010 they stepped back and developed a more comprehensive facility plan to address how they wanted to advance educational delivery. That plan directed the development and construction of a new high school that would provide the kind of spaces that would fundamentally alter the District's approach and provide students with new opportunities.

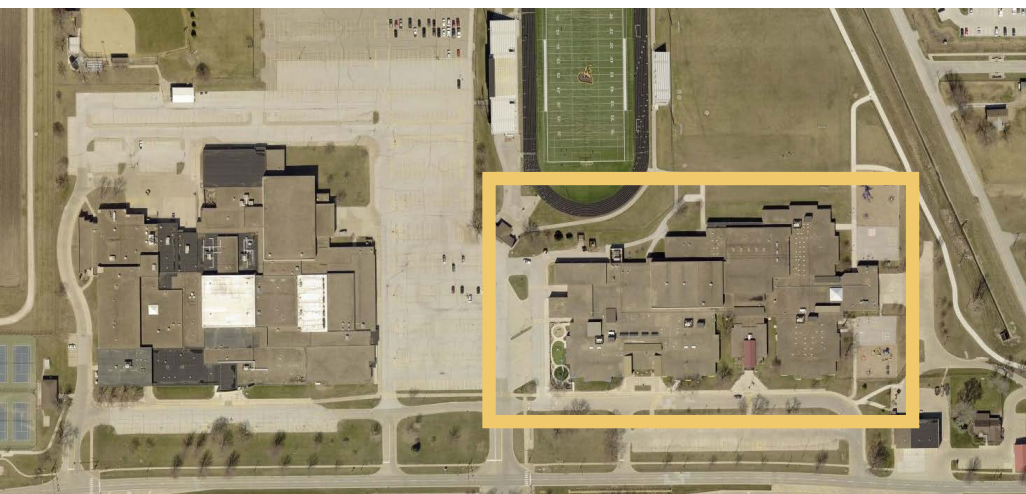


Within the framework of this new plan, the middle school students would shift into a modified version of the old high school, which then left the existing middle school ready for redevelopment. The original Wallace Elementary that had become too small to service the current needs and was planned to be redeveloped into the new district office, abandoning the existing office building that was one of Pioneer's original company buildings.

When the new High School was nearing completion, the Design Team and the District rolled up their sleeves and started to create a new vision for the future for the existing middle school building.

Though the District was no novice when it came to building new schools, they recognized that creating a new vision for the reuse of this building into an early learning center would require thinking about things a little differently. To best achieve this end, they formed an internal committee of teaching professionals, administrators, and District leaders to co-create a solution with the Design Team that would set the vision for the renovation, deliver new precedent for maximizing early learning curriculum, and create excitement around a project that wasn't going to be in a new building.

Redeveloping the former Middle School building into an early learning center and elementary offered unique opportunities. Previously serving a middle school curriculum for a larger student population, creating an environment within the existing structure that would engage earlier learners and not overwhelm them was job one. The building had abundant space and was very well maintained and kept over the years. The interventions to the existing building needed to be well thought out to make meaningful improvements where needed, but keep in place those newer components and systems in respect of previous District expenditures.



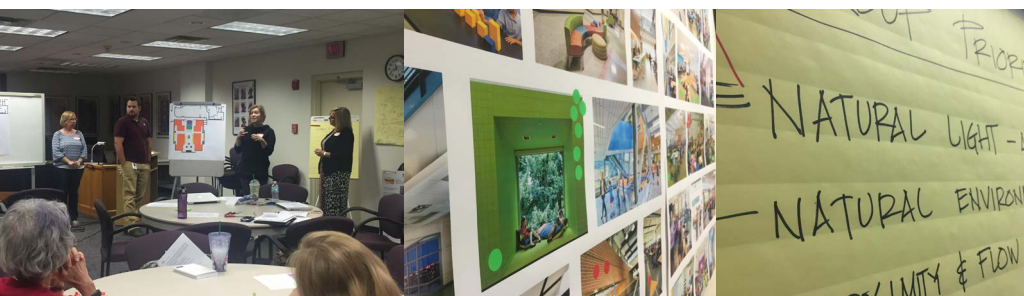
Forming the Vision

The vision for this facility was formed out of two day-long charrettes that included the District Vision Committee and members of the Design Team. These sessions were informational and interactive and were designed allow a free flow of ideas while ultimately creating strong goals and priorities to guide the development of the project moving forward.

- The planning group looked closely at how to differentiate learning opportunities through interactive feedback activities. Creating environments that provided opportunities for students to be more involved in seeking out settings where they felt most comfortable learning.
- Through virtual tours of recent projects and using feedback boards of architectural spaces, the committee narrowed in on aesthetic improvements and spatial relationships they thought most important when making modifications to the building.
- With an interactive charrette using the confines of the existing building exterior, the committee was split into smaller groups and given free rein to develop their ideal space layouts formed from their interactions.



- Through group share out, discussions, and goal setting exercises consensus was reached for the layouts of the learning communities and goals were set for the project.



- With another interactive feedback activity, the Design Team guided the committee through arranging the learning environments within the broader facility layout. The session helped the grouping of grade levels into specified learning communities to best serve the needs of the curriculum delivery. Additionally, this activity helped identify the strategic site interventions to best create play areas, assist in wayfinding, and create safe traffic flow around the facility.
- Lastly, the group developed a list of shared priorities for the project and ranked them to help guide the Team in the implementation of the project.



Program and Design Refinement

After the initial vision was set and the goals were in place, the District Committee members were adjusted to bring in additional expertise. The Design Team continued to work with the committee to refine the project and establish budgets and schedules.

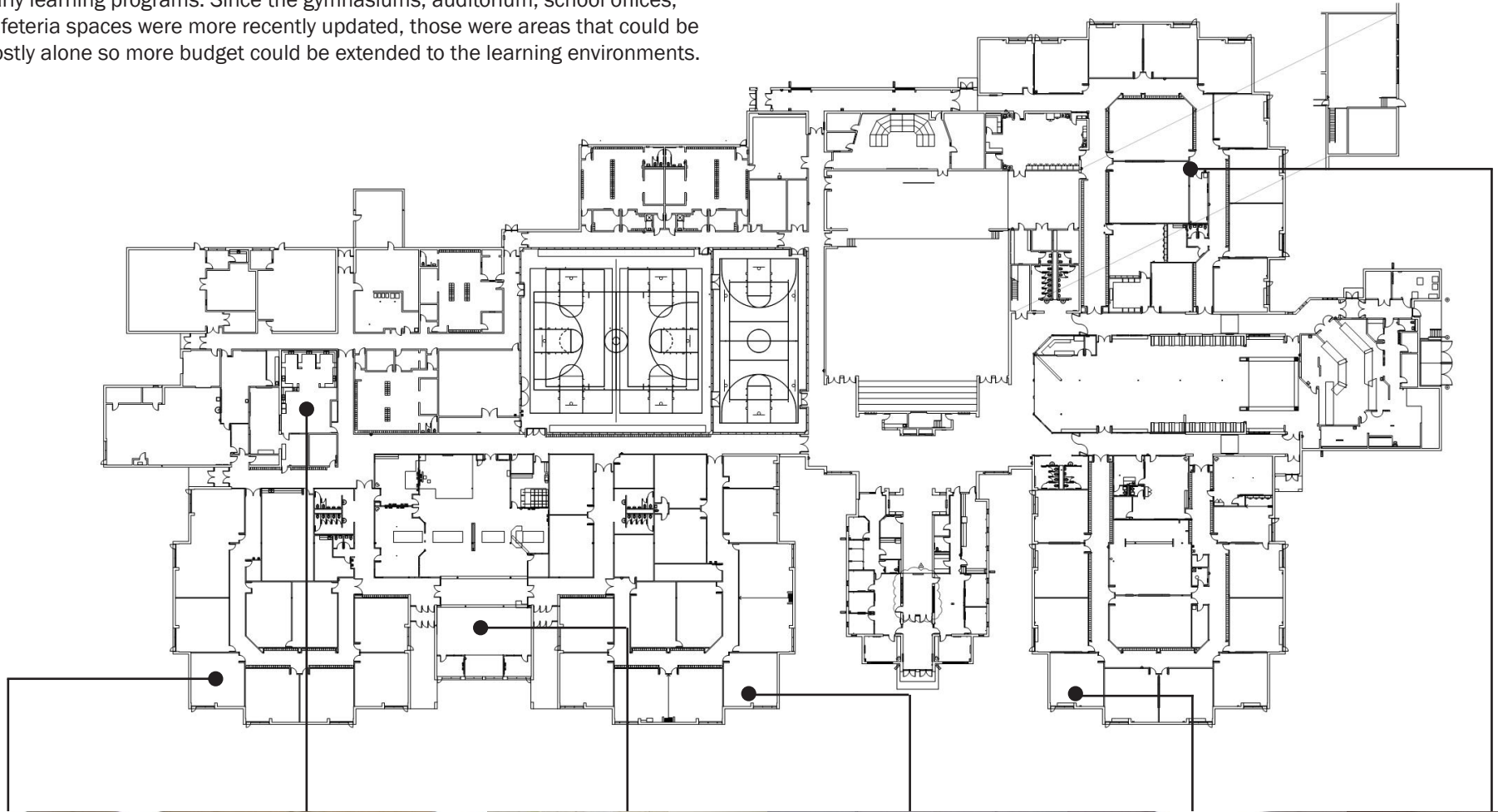
- Space programs were developed and refined to ensure all curriculum areas were accounted for and appropriately accommodated.
- Learning Community layouts were adjusted to the programmed needs and multiple layout scenarios were evaluated and narrowed to meet the project goals.
- Additional areas of the existing building were evaluated against program needs and spaces were assigned and considered for additional upgrade and renovation as needed.
- Renovation scopes, budgets and development schedules were refined to meet desired goals and fit with District priorities.

Vision Committee Priorities:

- 1. Maximize natural light in the learning areas**
- 2. Create student-centered spaces that allow choice**
- 3. Collaborative spaces that are flexible**
- 4. Create inviting and engaging spaces**
- 5. Spend money on educational spaces/furnishings**

Original Johnston Middle School Prior To Renovation

The existing Johnston Middle School building was originally constructed in the early 1980's with additions for more classrooms, an auditorium, a cafeteria, and an entry / office complex being added over the subsequent years as the needs arose. Though the original building lacked some excitement, it was still structurally sound and well maintained and was a good base for which to start a renovation. Built for a middle school program, the building offered ample space for the new elementary and early learning programs. Since the gymnasiums, auditorium, school offices, and cafeteria spaces were more recently updated, those were areas that could be left mostly alone so more budget could be extended to the learning environments.



Wallace Elementary / Johnston Early Learning Academy Renovation Plan



P-K Outdoor Play Area



Indoor Gross Motor Area



Early Childhood Community

The Johnston Early Learning Academy (JELA) functions mostly as a stand-alone center that serves the District's P-K programs. The JELA has its own outdoor play area and indoor gross-motor play areas, and the layout is uniquely arranged for their program needs.

K-ONE Community

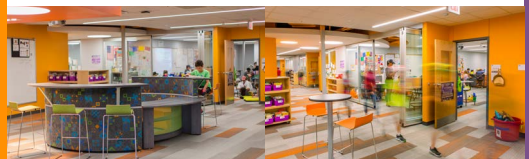
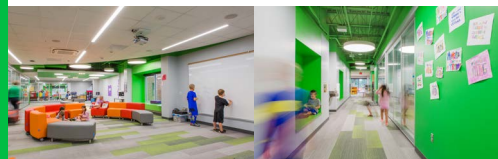
Starting the K-5 Wallace Elementary School, the K-One space design maximizes the collaboration space in the center and allows all studios to open onto the space through glass walls for maximum flexibility and visibility.

2-THREE Community

The 2-Three area creates common areas that were chosen to be more level specific. These areas maximize the natural light in those spaces and the studios open to them with glass walls. This collaboration starts to arrange for more small group work.

4-FIVE Community

The 4-Five Community design creates more areas for small to medium group work that happens more autonomously. The collaboration areas take advantage of natural light by pushing them to the outside corners, but still maintains visual connections to the studios.





Goal: Maximize natural light in the learning environments

As this project was mostly meant to be an interior renovation project, the Team used creativity and a surgical approach to introduce light into learning areas and make the best use of it to engage students. Old window configurations were opened up below the structural lintel and expanded glass seating areas were created to maximize both area and enjoyment. Additional openings were added at strategic locations within the spaces to get the most bang for the buck while minimizing exterior work.





Goal: Create student-centered learning spaces that allow choice

One of the main focuses of the planning committee was that the project could provide not only traditional instructional areas, but also create places and settings for students to find areas most suitable for them to feel comfortable and secure when learning. Both in the architecture and the furniture, the Design Team seized opportunities to create places for large groups, small groups, and intimate places to get away from the group with their own thoughts.





Goal: Create spaces for collaborative learning and keep them flexible

The building's original architecture naturally lent itself to the easy creation of learning communities. Through the charrette process, these communities were broken up to grade-level spaces with an Early Childhood Community, a K-1, a 2nd-3rd, and 4th-5th. Each of these were designed around their individual needs and the collaborative spaces inside each are tailored to fit the levels both in arrangement and furnishings. All use of acoustical glass walls to separate off individual learning studios when needed for curriculum activities.





Goal: Make the spaces inviting and engaging for young learners

The use of bold colors was introduced to enliven a very monotonous earth tone building and create a more casual and fun atmosphere. The colors and use of bold graphics serve as building wayfinding by differentiating the learning communities and major spaces and help young learners make sense of such a large and complex building.





In order to maximize the impact of the new learning environments, the parts of the existing building that had been recently updated or did not need to change to serve their function, were left alone or with minimal upgrades. This allowed the District to focus most of the budget on spaces that directly impacted and improved student engagement.



Sustainability

What's more sustainable than keeping and reusing an existing building. Safeguarding previous District expenditures, the project made an effort to keep the most recent work in place where possible, and where it wasn't a detriment to the project intent. All total, about 1/3 of the building's spaces were able to be kept intact with minimal upgrade. For the overall project, the Design Team conducted a thorough energy modeling process with an outside consultant to implement the most effective strategies on improvements that would maximize their value.

Energy saving strategies implemented on the project include:

- Low-E glass and energy efficient windows for new glazing.
- Additional windows to add daylighting in learning areas.
- New areas with LED lighting that included dimming strategies for daylighting.
- Upgraded mechanical in the learning areas that included an energy efficient VRF mechanical system with energy-recovery ventilation and Co2 monitoring to increase user comfort and lower demand when needed.