



2022 A4LE John Shaw Award

LEAD INNOVATION STUDIO

hollis  **millers**
architects


LEAD INNOVATION STUDIO

The Park Hill School District's LEAD Innovation Studio is anything but a traditional high school, pushing the boundaries of teaching and learning and building collaborative learning communities. Born out of a master plan identifying the need for additional high school space, without the cost and footprint of an entire high school, the brand-new program immerses students in a self-driven, project-based learning program with the support of mentors in a flexible, professional environment. Arriving at the building through the hillside of trees, the immediate perception is not one of a school, but rather a professional building meant to focus on autonomy and give students a hold of their own learning experience (a main district goal) while preparing them to positively impact an ever-evolving world.

Inside, the building redefines the standards of traditional learning, as it does not function like a traditional high school – no art room, media center, teacher-owned classrooms, etc. Rather, the building boasts flexible labs and learning spaces, open corridors for display, breakout spaces, multi-purpose commons, outdoor study areas, presentation spaces and more. The integration of digital, analog and flexible spaces at various sizes enables students to design their learning experience within the parameters of mentorship and provides resources for every student. Operable walls, flexible furniture and more allow students a sense of choice in learning.

The hyper-efficient building, slated for LEED certification, sits on a tight footprint (75% less than a typical high school) to minimize site disturbance and maximize the connection to nature. Every square foot of the building is a learning space and through purposeful design, each space offers views to the outdoors integrating interior and exterior spaces and providing daylighting. Patios and balconies also serve as outdoor classrooms and study spaces. Learning is on display throughout the building and the materials used were chosen for multi-purpose capabilities.

LEAD served as a “testing ground” for learning in the rest of the district. Following the success of the intentional flexibility and collaboration spaces, the district is now repurposing commons and media centers in its other buildings to follow suit. The mastery-based learning approach has impacted the overarching instructional vision of the district, and the emphasis on learning communities has impacted students. Students choose to attend LEAD and have noticed a lack of cliques and social hierarchy.



“What is most exciting about the space is how everywhere you go in the building, you see learning on display – whether that is the end product of student work in display cases, or the interaction amongst students as they work collaboratively to solve problems.”

Dr. Ryan Stanley
Principal, LEAD Innovation Studio



Front Entryway

EDUCATIONAL VISION

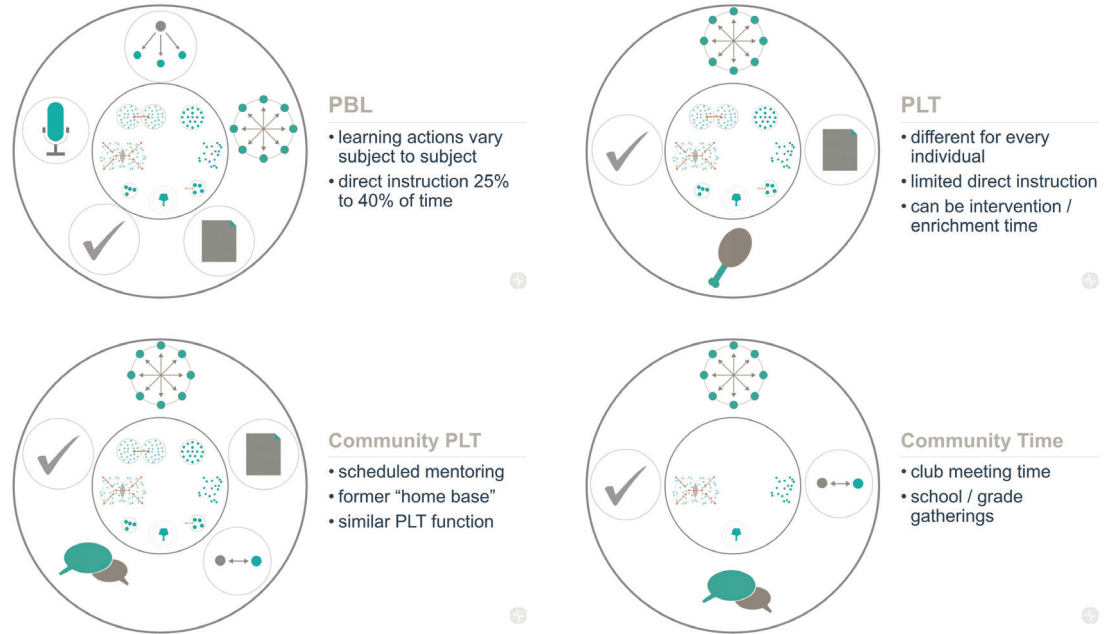
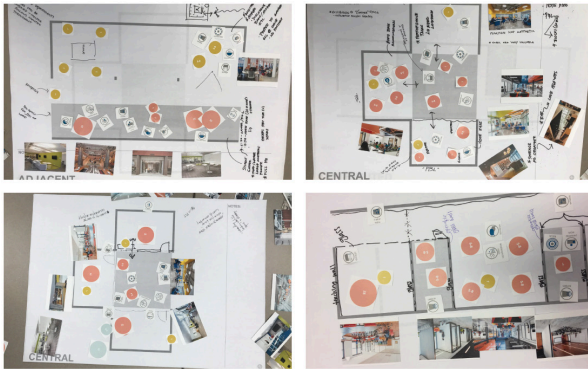
LEAD: Lead, Empower, Aspire Dream

The new LEAD building created an opportunity for the district to innovate through discovery, both for students and the community. The vision for the program was a grounded, rigorous curriculum providing opportunities for community-based, client-connected projects and a different option for students. Intentional flexibility and collaboration spaces help students develop key future-ready skills such as teamwork and communication, while also offering them a choice in their learning environment. At the same time, flexible learning labs offer educators a choice in their teaching community.



PLANNING PROCESS

The district needed a solution for growth beyond its current capacity, but didn't have a large enough need for an entire new high school. Through co-creation and a long-range planning process with extensive community engagement sessions, surveys, etc., the team began a journey of exploring spaces to relieve crowding and looked at programs from across the country, including building tours, to find out what could work well in the Park Hill community.



Park Hill staff worked with the design team to diagram a typical morning, lunch and afternoon to understand how the day is divided between project-based learning and personalized learning time, and how it looks differently for each student.



Student Observation + Engagement

The LEAD program was in a temporary leased space during the design process where the design team was able to observe and conduct hands-on activities with students and staff. One major challenge to this project was the ongoing development of the curriculum and program while the building was being designed. To better understand how to work most efficiently, curriculum iterations, schedule iterations, and student responses were monitored to inform the design of the new building. Flexibility and professional spaces were identified as key needs, while being able to use spaces as tools without being prescriptive of behaviors.



Upper Commons Area

SPECIAL CHALLENGES & SOLUTIONS

One challenge faced was the fact that the building was being designed at the same time as the program and curriculum. Our team increased engagement and collaboration to iterate and build spaces maximizing flexibility to fit varying needs. The outcome of flexible learning labs and breakout spaces rather than traditional classrooms has complemented the curriculum and allowed the program the opportunity to continue evolving to best fit student needs.

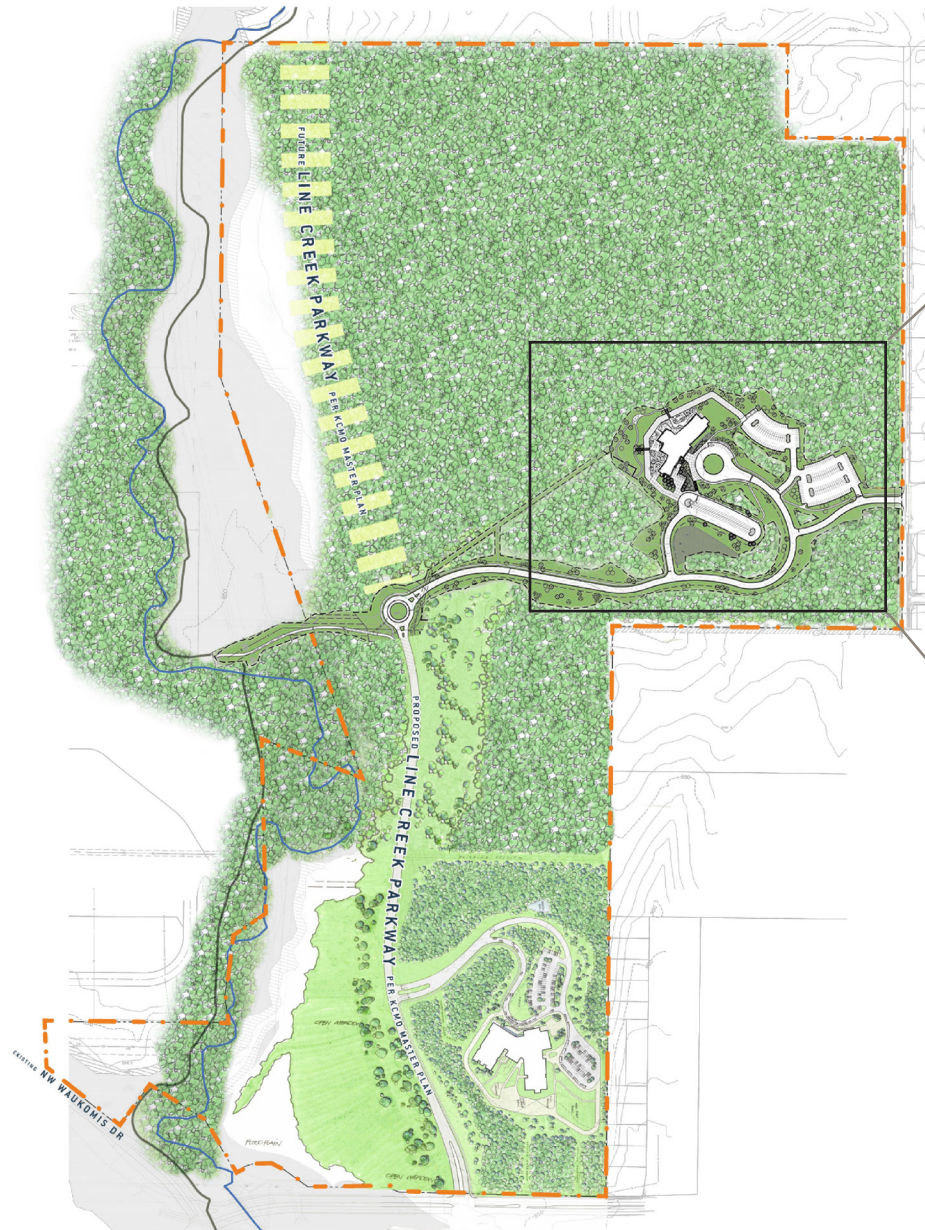
The site and budget posed additional challenges, designing an atypical high school on an atypical site. Focusing on the feel of the building, we pivoted our exercises, presentations, zoning, massing and more to act on the community's sensitivity to the location. We commissioned teams to conduct archaeological studies, a wetlands study, a cultural analysis review and more to maintain the integrity of the natural site and work with the community. The building fits into a tight footprint to minimize disturbance and build a connection to the outdoors.



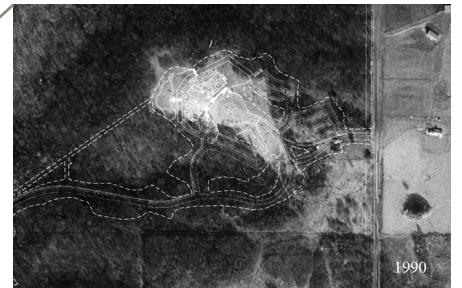
75% smaller footprint than traditional high school

SITE PLAN

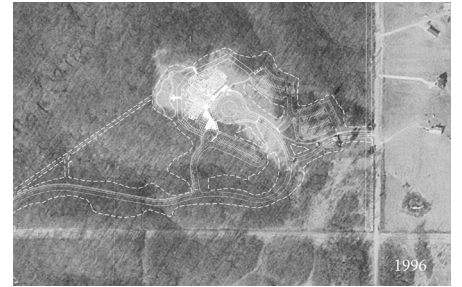
A primary project goal was to minimize site disturbance as much as possible. A three-story building was designed to minimize the footprint, and bussing allows the 700-person school to only need 250 parking spots.



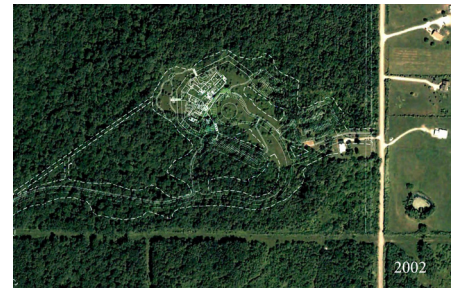
These images show the progression of the forestation on the land from 1990 to 2018. The team chose the area with the least amount of trees to develop the new site.



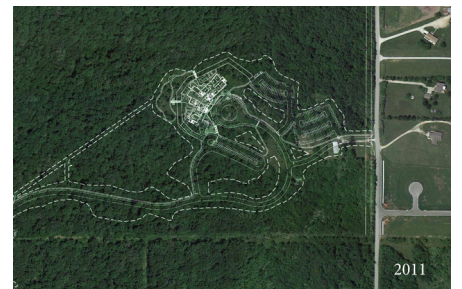
1990



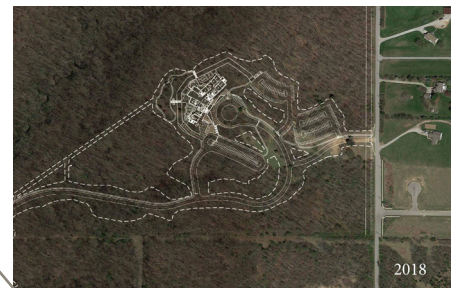
1996



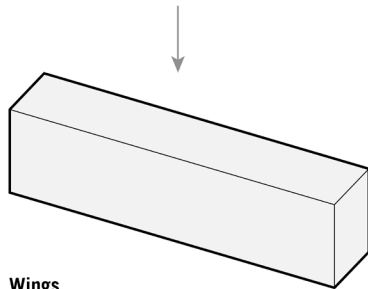
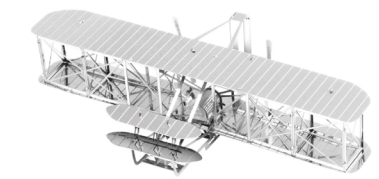
2002



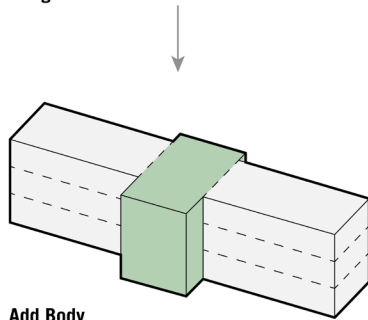
2011



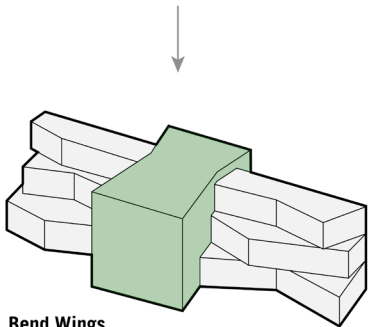
2018



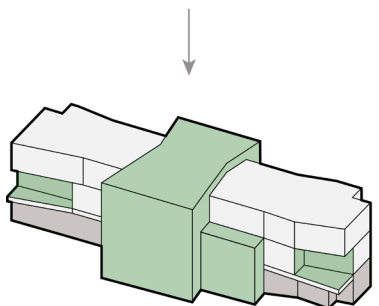
Wings



Add Body



Bend Wings



Add Outdoor Spaces

DESIGN SOLUTION

As intended, nothing about LEAD is conventional. It is a professional setting focusing on giving students a hold of their own learning experiences. The exterior does not look like a high school, and does not function like a high school, but rather provides resources for students to drive their own autonomous experience with the support of mentors. Students still receive a well-rounded experience with arts, athletics, and more at their home high school, but LEAD provides project-based learning communities they cannot find at their standard school. Classrooms are designed as learning labs, and flexible furniture and customizable breakout spaces allow students to configure their own teams or study independently.

The concept was developed from the idea of an airplane. The bend of the building lends itself to outdoor views and connects students and educators to nature throughout the day, while also keeping the perpendicular relationship of the commons to the academic wings.



Admin Reception



Corridor & Display Showcase

BREATHE CONCEPT

In addition to the bending corridors, a “breathe” concept was a defining part of the design, as the building was thoughtfully planned to allow ample daylighting and circulation throughout the building. Active corridors put learning on display and provide additional learning space while daylight permeates the commons, bringing light throughout the building. Operable walls and flexible furniture allow spaces to flex as needed.

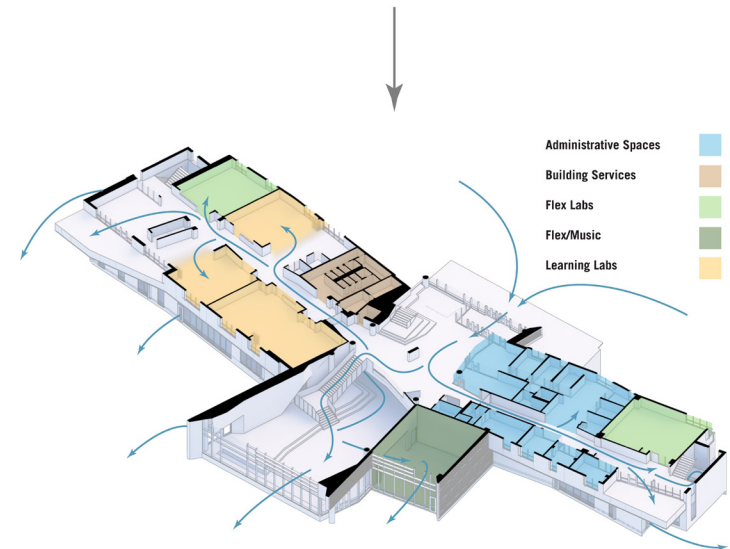
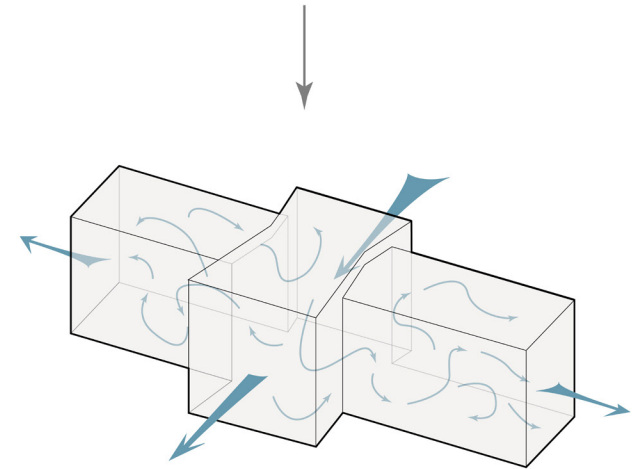
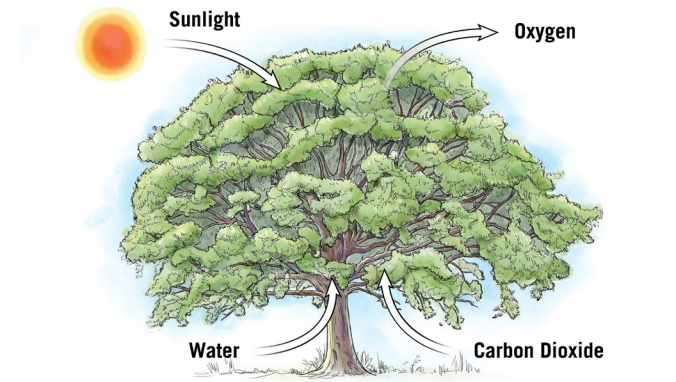


Collaboration Areas



Commons

Operable walls allow the space to open up to the multi-purpose space for additional activities or close off for small group needs.

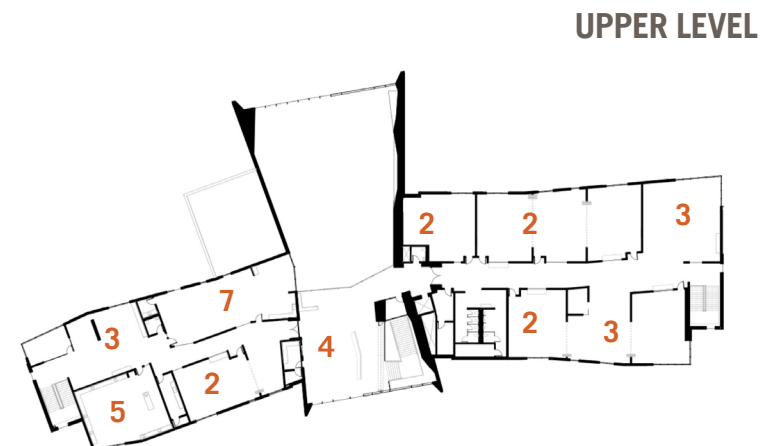


FLOOR PLANS

KEY

- 1 Administration
- 2 Learning Lab
- 3 Collaboration/Flex Space
- 4 Commons
- 5 Bio/Chem Lab
- 6 Outdoor Learning
- 7 Facilitator Planning
- 8 Gender Neutral Restrooms*
- 9 Kitchen

*Gender neutral restrooms on the main floor complement traditional restrooms on the upper and lower levels, offering students a choice. Additionally, LED lights illuminate outside the doors to show when a stall is occupied.



FLEXIBILITY & FURNITURE

Designed to maximize flexibility, learning labs incorporate operable walls and flexible furniture. This offers educators an option for various lessons, and also provides students with a choice in their learning environment. Given the autonomous nature of the project-based curriculum, collaboration spaces of various sizes were a must to accommodate various learning styles.



Collaboration Area



Learning Lab



Makerspace



Upstairs Commons



CONNECTION TO NATURE

Every part of the building has a view of the outdoors, offering a serene, calming sense to the environment. Outdoor balconies and patios offer nontraditional learning spaces, while surrounding trails give students the opportunity to reflect and exercise during the day. The surrounding connections to nature have allowed the school to forge relationships and learning opportunities with the Missouri Department of Conservation and KC Water to learn about the ecosystem, and have partnered with the City of Kansas City for students to be involved in the plan to become carbon neutral.

DETERMINING THE BIODIVERSITY

During science class, students learned about the ecosystem by gathering data on plant and animal life around the building. Rita Crocker with the Missouri Master Naturalist program assisted the students.



“Having natural light has made a palpable difference in teacher and student moods, as well as mental health. I think the building inspires collaboration and openness inspired by the openness of rooms having so many windows. My favorite part is the outdoor spaces and outdoor classrooms – the ability to engage with nature, to get fresh air and just the rejuvenation of nature has been a blessing.”

Daniel Motta, LEAD Teacher





SUSTAINABLE DESIGN

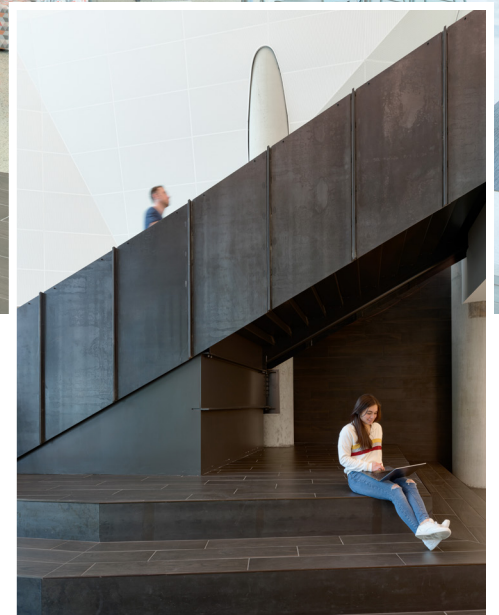
Projected to achieve LEED v4 certification, the biophilic design of the building blends interior and exterior spaces with ample daylighting and connections to nature. From nearly every point in the building, users have a view of the outdoors where the entire surrounding landscape is native plants. Energy efficiency and air quality were important topics throughout the design, and the small building footprint – smaller than a typical elementary school – minimized site disturbance. The team also studied water filtration and designed termination points to connect and disperse water.





COST EFFECTIVENESS

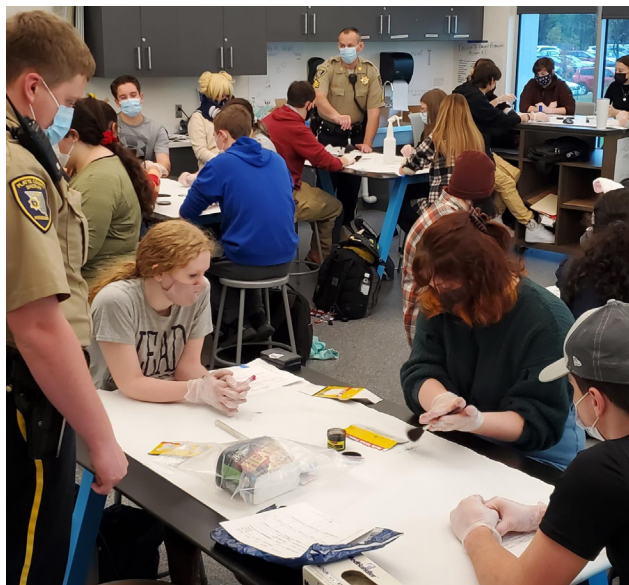
LEAD is a hyper-efficient building at 100 square feet per student, and capitalizes on flexibility to maximize space. Boasting a very high learning square foot to gross square foot ratio, the building cost much less than a traditional third high school would have cost, and provides parity for students at the other high schools as well as maximizes the resources at other schools. Focusing on biophilic design, the materials were chosen purposefully for easy maintenance and multi-purpose capabilities.





ADVANCING INNOVATIVE LEARNING ENVIRONMENTS

LEAD is an unconventional building housing an innovative program. The professional setting is meant to impact the students' mindset to prepare for the future and facilitate skill development outside of what would be found in a typical high school. The program is also an experimental way to teach – having facilitators rather than teachers with owned classrooms. The entire project is a testing ground for a new way of doing things, and the district embracing change is, in and of itself, innovation. After the first year in use, many concepts from LEAD are rippling through the district into other schools and programs, effectively evolving learning communities.



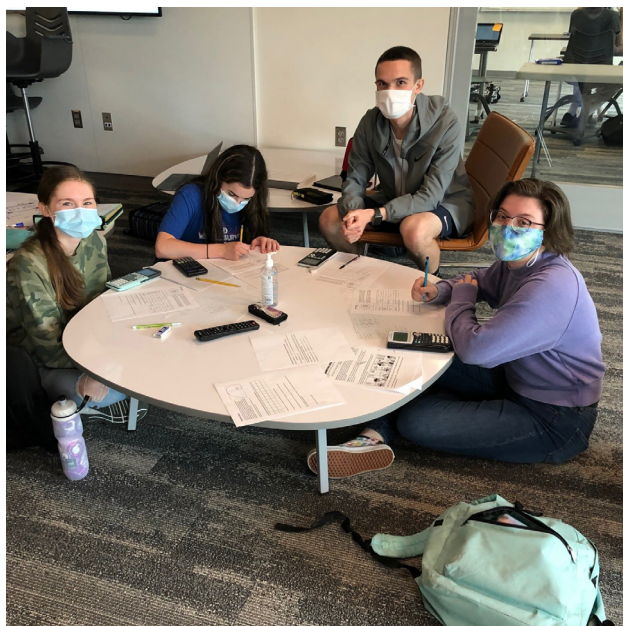
Forensic Science class learned about fingerprinting from local officers.



Students practiced client-ready presentations after conducting research projects with local companies.



Students determined the moles of calcium carbonate needed to write their names using sidewalk chalk.



Students using trigonometry and functions to solve various steps of a scavenger hunt.



Accelerated chemistry students studied the reactions in automobile airbags and put their stoichiometry skills to work determining the correct proportions of vinegar and baking soda to inflate bags. The bags were wrapped around eggs and dropped simulating car airbags.



Virtual meeting with the City of Kansas City assisting in the development of the city's long range plan and presenting to city planners.

“It really feels more like a community here. I don’t have to worry about the social hierarchy and the cliques at LEAD like at other schools.”

– LEAD Student

