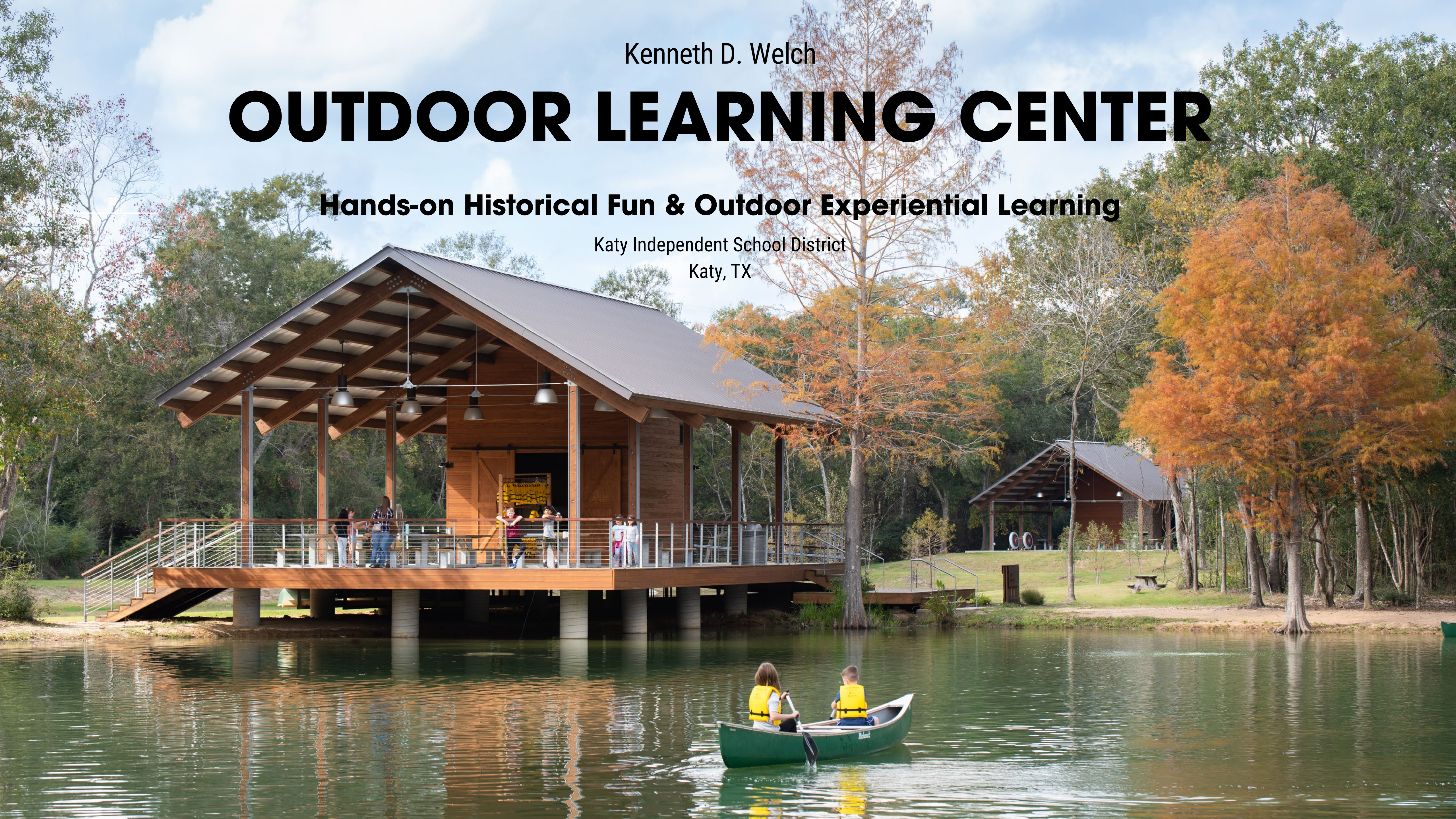


Kenneth D. Welch

# OUTDOOR LEARNING CENTER

**Hands-on Historical Fun & Outdoor Experiential Learning**

Katy Independent School District  
Katy, TX





**"Here, kids spend time in the wilderness and do all types of outdoor activities, from fishing and canoeing to archery, outdoor cooking, and farming."**

*Kenneth C Welch  
First Director & Creator of the Welch Outdoor Learning Center*



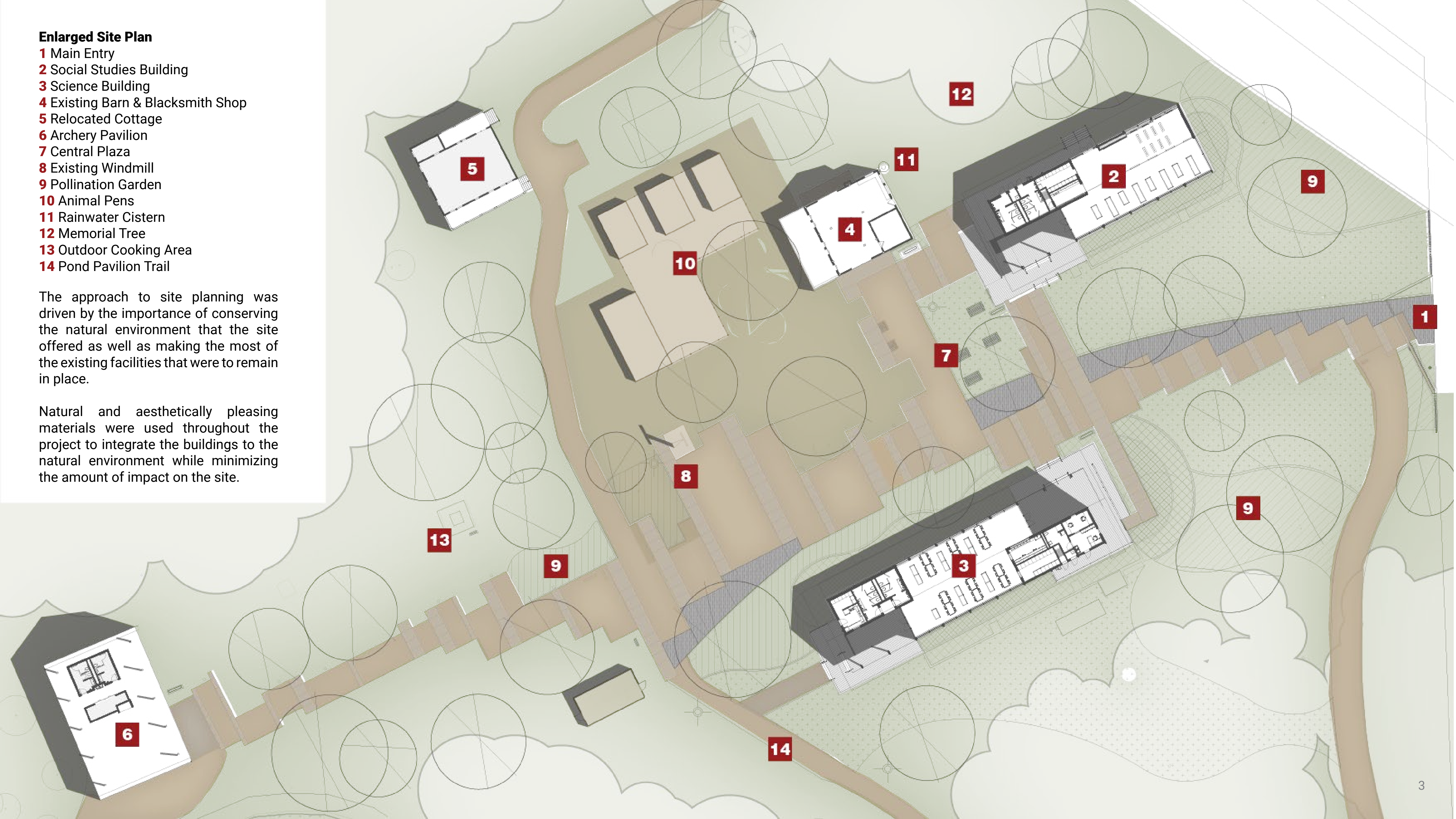


**Enlarged Site Plan**

- 1** Main Entry
- 2** Social Studies Building
- 3** Science Building
- 4** Existing Barn & Blacksmith Shop
- 5** Relocated Cottage
- 6** Archery Pavilion
- 7** Central Plaza
- 8** Existing Windmill
- 9** Pollination Garden
- 10** Animal Pens
- 11** Rainwater Cistern
- 12** Memorial Tree
- 13** Outdoor Cooking Area
- 14** Pond Pavilion Trail

The approach to site planning was driven by the importance of conserving the natural environment that the site offered as well as making the most of the existing facilities that were to remain in place.

Natural and aesthetically pleasing materials were used throughout the project to integrate the buildings to the natural environment while minimizing the amount of impact on the site.



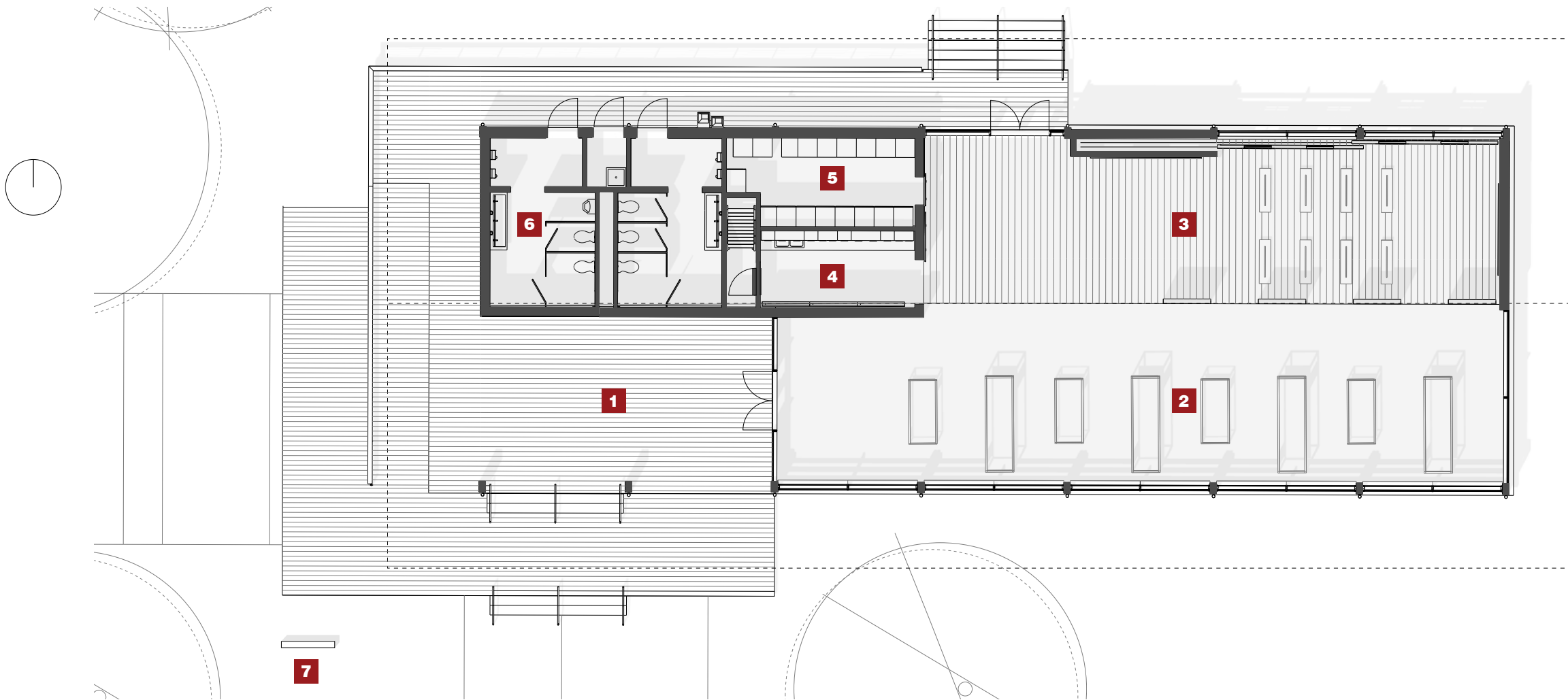


# Social Studies Building



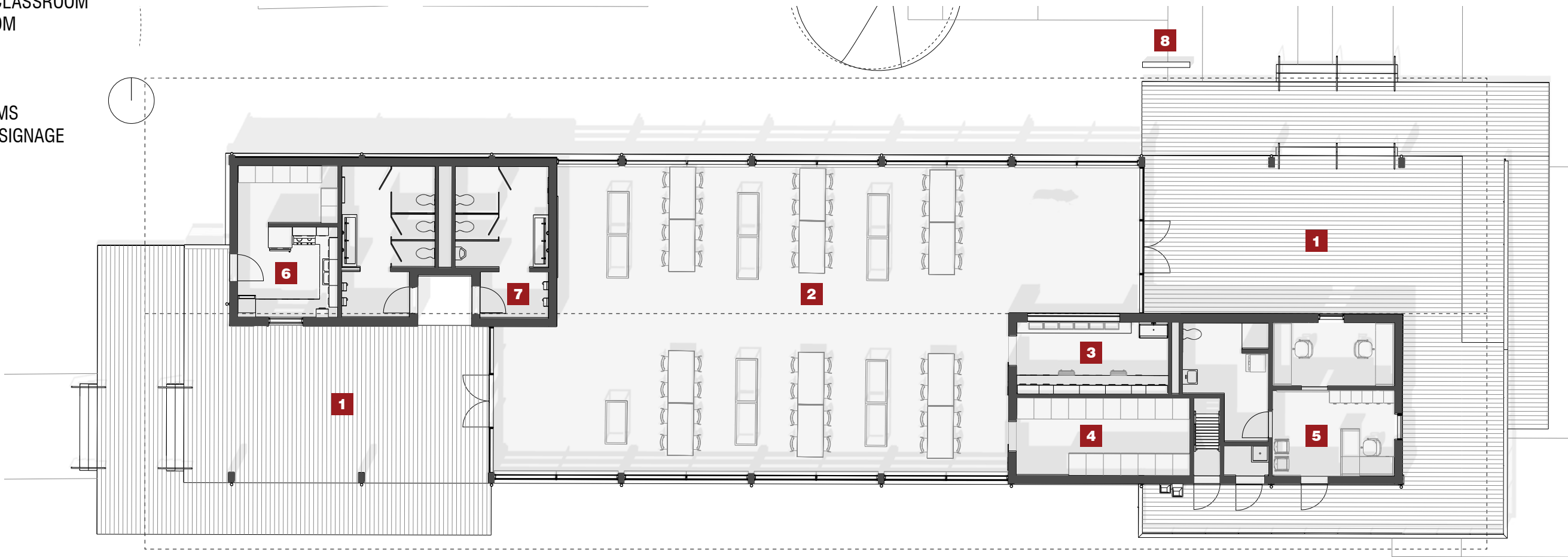
# Social Studies Building

- 1 OUTDOOR COVERED AREA
- 2 ARTIFACTS EXHIBITION
- 3 ONE ROOM SCHOOL HOUSE
- 4 WORKROOM
- 5 STORAGE
- 6 RESTROOMS
- 7 BUILDING SIGNAGE



# Science Building

- 1 OUTDOOR COVERED AREA
- 2 SCIENCE CLASSROOM
- 3 WORKROOM
- 4 STORAGE
- 5 OFFICES
- 6 KITCHEN
- 7 RESTROOMS
- 8 BUILDING SIGNAGE





# Pond Pavilion

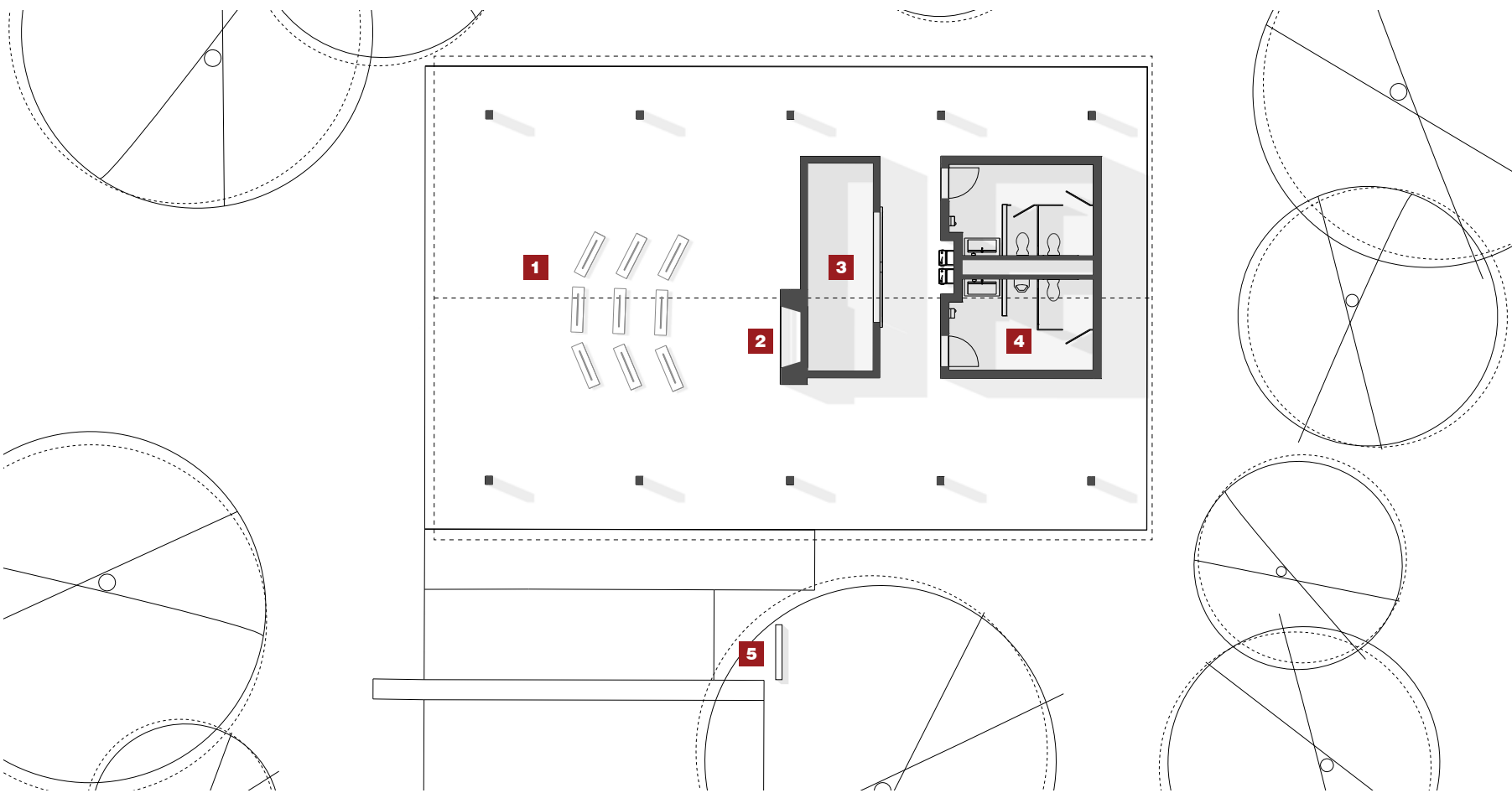


“The OLC is a place where students have an opportunity to learn from doing, touching, and watching, all in an outdoor setting that provides a meaningful change of pace and place from their typical classroom setting.”

*Alton Frailey*  
*Former Superintendent, Katy Independent School District*

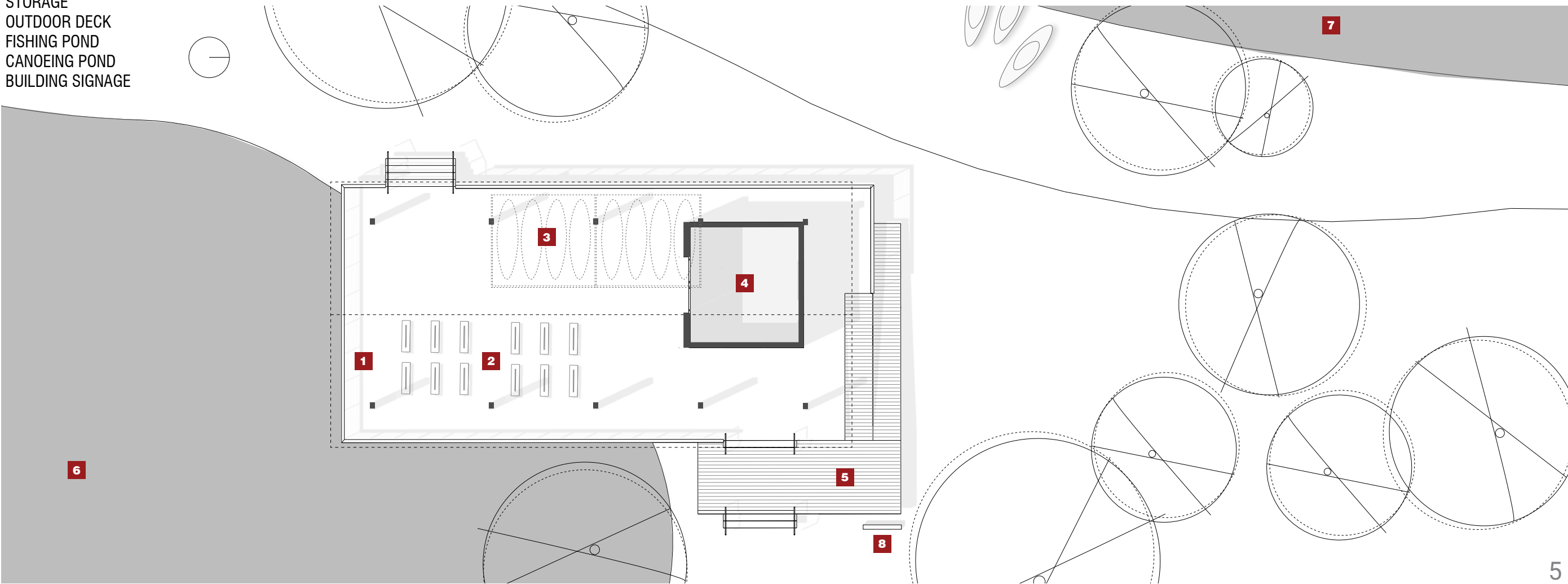
# Archery Pavilion

- 1 OUTDOOR COVERED AREA
- 2 FIREPLACE
- 3 STORAGE
- 4 RESTROOMS
- 5 BUILDING SIGNAGE



# Pond Pavilion

- 1 FISHING DECK
- 2 OUTDOOR COVERED AREA
- 3 CANOE STORAGE UNDER THE DECK
- 4 STORAGE
- 5 OUTDOOR DECK
- 6 FISHING POND
- 7 CANOEING POND
- 8 BUILDING SIGNAGE





# 01

## EXECUTIVE SUMMARY



## Early Beginnings

Recognizing the benefits of outdoor play and fostering a connection to nature has always been a long-standing tenet of Katy Independent School District (KISD).

Most adults have childhood memories of time standing still as they played outdoors building forts, climbing trees, playing in a stream, or digging for worms. Through these outdoor experiences, we learned about the natural world around us, engaging in imaginative play, taking risks, and simply enjoying nature.

**The Welch Outdoor Learning Center (OLC)** began with the vision of a group of District officials, teachers, and coaches who believed **a facility fully devoted to outdoor education and experiential learning** would make a difference in the lives of their students and the growing Katy community.

Since opening its doors in 1982, the OLC has offered **instructional opportunities that enrich and extend the District's science, social studies, and physical education curriculum in a unique and stimulating learning environment outside the traditional classroom**. As the District population grew, so did the OLC's popularity – **but the lack of capacity and inability to support varying grade levels eventually drove the Center to narrow its programs and offerings**.





## Learning Moves Beyond the Classroom

Throughout the years, the Center continued to offer the popular “Adaptations” field trip, where fourth-graders rotate through stations to learn about Texas wildlife and history. Welch OLC also offers recreational and educational opportunities for K-12 students, community members, scout groups, including a variety of summer recreation programs for children in the surrounding community and community events such as the annual Folk Life Festival, a tradition that goes into its 30th year.

**Even though the Center was widely enjoyed by its visitors, and had an outpouring of support from the District and the community, it was in need of major renovations and improvements.** In 2017, with the passing of the \$609 million bond, the District had the funding to tackle the OLC’s most pressing needs: upgrade building systems, and address infrastructure issues and the buildings’ desperate need for renovations.

With the determination to continue serving as an outdoor oasis that fosters learning in a unique setting, **Katy ISD’s vision for renovating the existing OLC campus sought to preserve the Center’s natural resources and pioneer living character** from conversion to a typical suburban K-12 learning facility.

The design team worked closely with the District and community stakeholders **to create a facility that retained the Center’s historical sentiment while continuing to deliver unparalleled learning experiences that engage students with nature.**





# 02

## SCOPE OF WORK & BUDGET

The original Welch OLC consisted of two classroom buildings, a caretaker's cottage, a barn, and a barnyard on 34.5 acres of beautifully wooded land. The Center also contained a pond for fishing, a bridge, and nature trails.

Without any renovations in 40 years and with its existing structures quickly deteriorating, the Center was in dire need of improvements. The buildings had infrastructure deficiencies and the site had flooding issues. True to its vision of supporting the instructional needs of 21st-century learners, the District joined forces with the design team to reimagine the renovated OLC.

**In addition to major infrastructure and building system upgrades, the original scope of work included renovation of the four existing structures. After conducting a facility assessment, it was discovered that the classroom buildings had foundation problems, and repairing them would exceed the budget. After a few sessions of intense work, the design team developed a better, more cost-effective solution. The revised scope of work included:**

- Demolishing the existing science building and social studies building and constructing new ones with additional square footage
- Relocating and renovating the existing caretaker's cottage
- Renovating the existing barn and barnyard
- Building a new fishing pavilion, and archery pavilion with restrooms and storage to support the Center's outdoor programs
- Building a new, longitudinal pond for canoeing and draining the existing fishing pond to increase its capacity
- Building new animal pens and pollination garden
- Site improvements, including installation of new lighting and signage throughout, and new pedestrian/fire lane access

The design team was able to work with the revised scope while maintaining the original budget.

**CONSTRUCTION COST: \$6,286,600**



03

## SCHOOL & COMMUNITY ENGAGEMENT







# Meet Katy ISD

Katy ISD encompasses 181 square miles west of Houston, Texas, and is home to over 88,000 students enrolled in 9 high schools, 17 junior high schools, and 43 elementary schools. The District strives to provide unparalleled learning experiences to prepare and inspire each student to live an honorable, fulfilling life.

**As a top-performing school District in Texas, the Katy community takes immense pride in all the District offers and is highly involved in school activities.** For example, since its inception, the daily administration of the Welch OLC has included the extraordinary work and dedication of parent volunteers, teachers, administrators, student leaders, and community members who are committed to student success. Therefore, **when the design team led the visioning and planning process, they included a broad base of stakeholders** to ensure the renovated facility effectively supported and benefited the District and the community as a whole.

**In addition to the academic success of the Welch OLC, the community has strong ties to the Center because it further fills community amenity gaps.** It provides gathering green spaces and hosts community events, including their Annual Folk Life Festival, a popular event that showcases Katy's rich pioneer history, traditions, and culture. **Understanding the Centers critical role within the context of the community, the design team ensured the festival's needs were incorporated into the design.**

Since the Center also supports the community throughout the summer with outdoor learning programs and camps for children, **the design team identified the stakeholders and the summer programs that catered to the community and integrated them into the programming and design process.**



Owned and operated by Katy ISD, Welch OLC offers fun and attractive summer recreation programs open to kids in 3 - 7 grades in the area.

The OLC also serves as the home of the annual Folk Life Festival, a very popular event that draws people from all over the region each spring.







Summer Camp



Folk Life Festival





THE CENTER PROVIDES AN OPPORTUNITY TO ENGAGE IN:

- ✓ A stimulating and meaningful environment outside an ordinary classroom
- ✓ Inquiry experiences which enhance higher order thinking skills
- ✓ An environment where skills and knowledge are applied in the real world
- ✓ A connection to the great outdoors

04

## EDUCATIONAL ENVIRONMENT



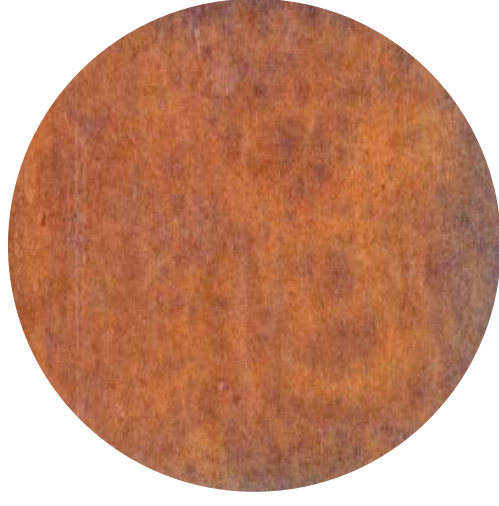




# NATURAL MATERIALS



Wood Siding



Corten Steel



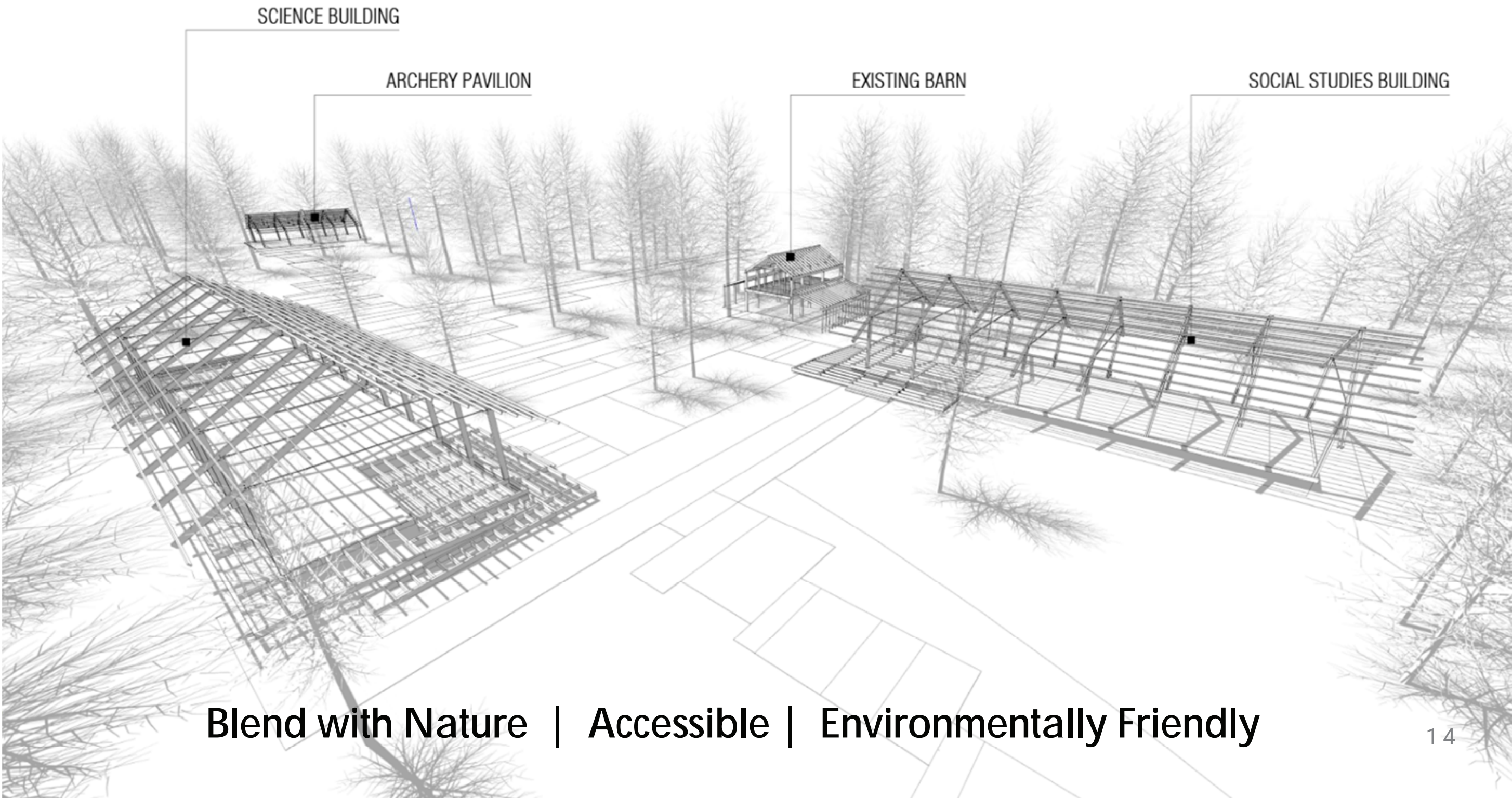
Decomposed  
Granite



Salt Finish  
Concrete



Natural Concrete  
Edges



Blend with Nature | Accessible | Environmentally Friendly



# Classrooms without Walls

Working collaboratively with the District and stakeholders, the design team focused on creating a facility that represented the Center's vision, while acting as a steward of the natural environment. The team explored different **environmentally conscious design alternatives that maximized the available resources** on the site to **help lessen the carbon footprint, while keeping the connection to the outdoors as the highest priority**.

The result was a project that physically embodies the Center's mission to offer children instructional opportunities in a stimulating natural environment. **The bold and visionary design of the new structures responds effectively to the programs and functions** offered by the Center, and to the principles and practices of environmental planning and design.

The design features **attractive outdoor instructional areas and indoor open-concept spaces that support learning through observation, engagement, and active participation**. Most importantly all spaces allow for flexibility, whether learning is taking place inside or outside, **students are surrounded by nature, making it an essential component of the learning framework**.

The **intermediate platforms and the exterior covered decks integrate the indoor spaces with the surrounding landscape**, expanding the interior space to the outdoors. Panoramic views unfold across the classrooms' **floor-to-ceiling windows to reinforce an immersive experience** and integrate the indoors with the landscape beyond. The glass expanse stretches not just vertically but horizontally, **allowing natural light to fill the buildings, preserving luminous learning spaces throughout the day**. Overhangs are strategically located to protect from direct sun that could damage the display elements, while helping minimize heat gain.





# Flexibility at its Best!

The science building houses **a diverse collection of exhibits, plants, and specimens arranged in custom-made display cabinets—designed by the team specifically for this project—** to encourage inquiry-based learning while deepening children’s awe and sense of wonder. Students engage in scientific exploration outdoors, collecting specimens from the pond and the natural wooded areas. These **investigative experiences, combined with a stimulating environment outside an ordinary classroom,** enhance children’s higher-order thinking skills.

In the social studies building, **students experience what it was like to be a Texas pioneer through access to a one-room schoolhouse simulator, a blacksmith shop, pioneer tools, and Indian artifacts.** Meaningful historical artifacts are incorporated into the room for students to experience them, while others are arranged in custom display cabinets designed uniquely for this project.

The new classroom buildings have **movable furniture, sliding wall panels, and display cabinets on casters providing maximum flexibility** and allowing teachers to accommodate different functions and group sizes. Changing the classroom assemblies promotes student engagement and stimulates diverse learning styles and approaches.

With deep overhangs that accentuate the outdoor integration, **the new buildings and pavilions feature large covered areas that serve as shaded outdoor classrooms.** Teachers and students utilize these calming, inviting spaces for various instructional activities or a picnic while enjoying the scenic surroundings.

**Students and campers visiting the OLC also get the opportunity to experience barnyard menagerie and the ins and outs of animal husbandry.** Children learn about keeping birds, homing pigeons and rabbits. **Animal pens that were custom designed for the project allow students to interact safely with the many barnyard animals.**





05

## PHYSICAL ENVIRONMENT







## Rebuilding a Dream

Located in the geographic heart of the Katy ISD, the OLC sat delicately on 34.5 acres of heavily wooded land, and **its existing buildings blended beautifully with the site. However, the existing facility showed decades of wear.** From the instructional perspective, the buildings lacked capacity and were inadequate for the Center's programs. The OLC was due for major renovations and upgrades. **After conducting a facility assessment, it became apparent that the buildings had deteriorated beyond repair, and rebuilding them would be more costly than replacing the aging buildings.**

With a tight budget, the project team proposed a cost-effective design solution that included two new classroom buildings and two new pavilions while staying within the original budget. **The new design respected and incorporated what the site offered, including relocating and renovating the old but structurally-sound caretaker's cottage.** Understanding the communities emotional connection with these buildings, the design team

proposed **a creative solution to maintain the Center's identity while incorporating modern features** that respond to the communities current and future needs.

As students and visitors alike enter the site, a welcoming plaza unfolds, with the new structures serving as a backdrop to the wooded landscape. Attractive signs designed specifically for this project serve as easy way-finding and an eye-catching feature to the front of the buildings.

**The entry portal connects to a wooded central plaza to accentuate the connection to nature as soon as visitors enter the campus.** All the programs offered at the Center are broken down into separate buildings to maximize the opportunities for the students to stay continually immersed in the beauty of the natural habitat. Similarly, **all the new structures foster a connection to nature** in a welcoming way, and are **elevated above the flood plain to prevent flooding** due to the site's location on a flood plain.







Designed thoughtfully to sit lightly on the land, **all four new buildings are wood-skinned structures with wood siding and wood decks that blend in gracefully with the landscape.** The classroom buildings were intentionally located close to the entrance to avoid long fire lanes that could have impacted the natural vegetation. **The existing barn was renovated and remains the central focus that ties the entire campus together within the plaza area.**

In the social studies building, enclosing the main room on two sides are large glass walls that integrate the interior space with the outdoors. **Transparency dominates the learning spaces, except for solid, wood-skinned boxes that conceal restrooms, storage, and mechanical closets.** Wood floor throughout the one-room schoolhouse reinforces the historical component. Big doors can be opened to allow maximum ventilation through the central open space and along the porches. **The large open-air covered areas are equipped with adequate furniture to serve as outdoor classrooms or lounge areas.**

**A new pond and a fishing pier provide the District an opportunity to enhance its science and summer camp programs.** The outdoor pavilions with steel structures cladding with timber for structural optimization and matched aesthetics provide storage and restrooms to support outdoor programs. They also offer shelter for campers in the hot summer months while they learn all about fishing, canoeing, or archery. **The new fishing pavilion hangs over the pond, giving the impression it is floating in water.** Because visitors were emotionally attached to a fireplace located in the old science building, **the new open-air archery pavilion boasts a wood burning fire place, which has become one of the favorite spots of campers and visitors.**

**Site improvements encompassed better drainage** to prevent flooding after heavy rains and **a low-maintenance landscape design** that included native plants and **a pollination garden** to support instruction. **All spaces are ADA accessible.**



06

## RESULTS OF THE PLANNING PROCCESS & PROJECT





# Hats Off to Katy ISD

The COVID-19 pandemic has affected the world around us in ways no one ever thought possible, and schools have not been the exception. **The pandemic has profoundly and permanently changed the way students and teachers learn, play, and interact with one another.** In that sense, the timing for the renovation of the OLC could not have worked better.

**Serving as a model for outdoor instruction, the renovated Welch OLC seems to be ahead of the times in safely bringing students back to a District facility.** Without knowing, Katy ISD was a pioneer among school Districts in **transforming a facility from recreational areas to a necessity for safe operation while offering programs aligned with the school's curriculum.** Today, very few educational facilities can attest to this fact.

The renovated OLC has become **a valuable educational and community asset that serves as a demonstration site for science and social studies classes and Texas history** through the famous Annual Texas Folk Life Festival. This community event draws large crowds from all over the region each spring. **The OLC also offers fun and attractive summer recreation programs open to kids in 3-7 grades in the area.** In these camps, kids develop skills outside the typical school curriculum, including archery, canoeing, candle dipping, flying homing pigeons, making hand-cranked ice cream, nature trails, outdoor cooking, farm animals, air rifle skills, gardening, etc. **Two new pavilions and a pier will allow campers to learn fishing and archery!**

Katy ISD envisioned a renovated Center that provided **a safe, hands-on environment for kids to escape into nature.** The result was **a beautiful facility that promises years of enjoyment for the District** and its massive stakeholder volunteer support system.





07

# EDUCATIONAL SPECIFICATIONS



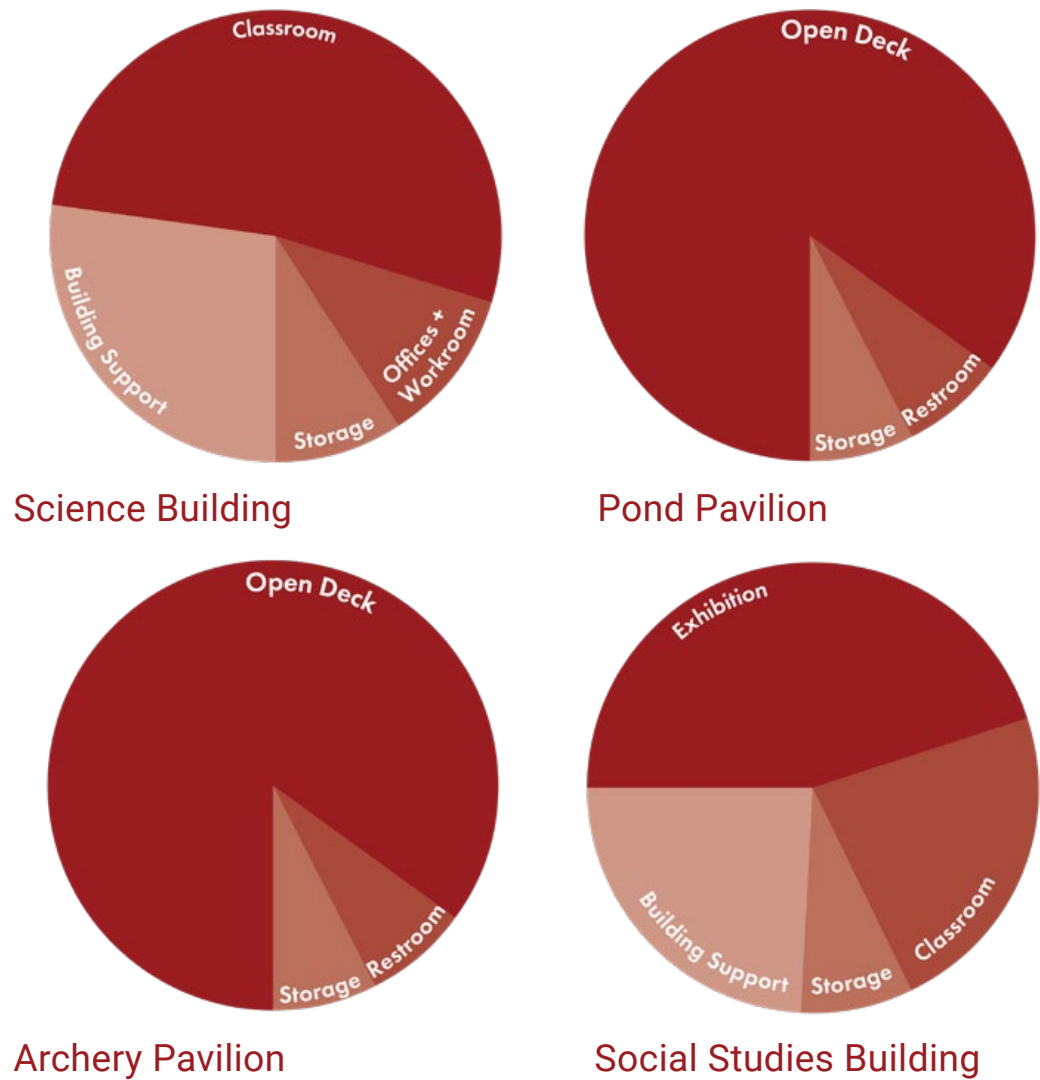


# Better Educational Spaces

Because this was such a unique program for the district, and one that was established years ago, the education specs and program needed revisiting. **The design team worked closely with the client to establish the aspirations and goals for the project, and shaped the program around that.**

The programs main focus is History, Science, and Outdoor Learning. A key priority that emerged in discussions with the client was identifying and supporting key program adjacencies. These relationships were key to the function of the outdoor learning center and ultimately drove the buildings' placement and orientation on the site (as seen on site plan to the right). **By prioritizing these functional adjacencies, the OLC can better support learning for the students.**

The design team documented all the artifacts, their specific storage requirements, and wall mounting requirements to establish the number and type of display cases required. Though the buildings are separated and spread across the site to promote an immersive experience of the landscape, each one still uses its square footage very efficiently. The pie charts below indicate that the square footage dedicated to each building's core function is high, thus ensuring learning and flexibility takes priority.





08

# EDUCATIONAL VISIONING



OUTDOOR  
LEARNING AREA





# District Vision + Design Goals

## 1. KISD Message - Unparalleled Learning

*Brings Science, Social Studies, and Physical Education **alive***  
**Authentic** collaborative experience  
*Fostering respect and **curiosity** of nature*  
*Visual **connection** to outdoors*

## 2. Outdoor Instructional Experience

**Hands on** engaging experience encouraging discovery  
*An **escape into nature** with real world outdoor experience*  
*Facilitate outdoor learning for students, staff, and community*  
**Flexible outdoor settings** for kids to engage in learning

## 3. Historical Perspective

**Step back in time** through Texas History  
**Experience** what it is like to be a pioneer: One Room School House, Blacksmith Shop, Pioneer Tools, Indian Artifacts, etc.  
**Engaging** artifact displays

# Every Voice Matters

With a solid stakeholder support network and a lot of interest in the realization of the project, the **District and the design team created a broad-ranging subcommittee to ensure everyone was represented. Collaborators included District leadership, teachers, curriculum leads, student leaders, design team members, parents, and OLC administrators – including the distinguished namesake, Mr. Welch**, who served as the facility’s first director and whose passion, commitment, and dedication to the facility has remained strong, even after his retirement a few years ago.

With active participation from the subcommittee, the design team led collaborative visioning and planning sessions to gather input and arrive at critical goals for the project. **The subcommittee’s knowledge of the Center’s needs and challenges drove the design response, with their efforts focused on identifying the highest priorities for**

## QUESTIONS WE ASKED THE COMMUNITY

- ✓ What do you like about OLC?
- ✓ What would you want to change?
- ✓ Why did you select the inspiration images?

**the renovated facility.** Additionally, the varying needs of these groups were identified, which **created the framework to discuss future expectations of the facility** not only for the District but also for the community. **This inclusive process ensured every voice was heard and integrated into the design. It also inspired stakeholders to carry their knowledge to the broader Katy community, creating excitement about the renovations** at the Center.

After multiple sessions of intense work, the design team unveiled detailed design renderings of the proposed facility. **The new design captured the hearts and minds of everyone who saw it.** Highly-realistic images depicted a vision that restored the original intent of the facility, while capturing and elevating the essence of what the OLC was all about.