

A4LE PROJECT AWARDS

NEW CONSTRUCTION

MILLBROOK EARLY LEARNING CENTER

WAKE COUNTY PUBLIC SCHOOL SYSTEM



1 | EXECUTIVE SUMMARY

Co-located on the existing Millbrook Elementary School campus, this Early Learning Center is the first freestanding public Pre-K for the Wake County Public School System (WCPSS). Eight classrooms filled with natural light surround a shared, dynamic play space to create safe and nurturing indoor and outdoor learning environments. This building addresses the needs identified by the North Carolina Governor's Early Childhood Action Plan to provide access to high quality early education, food security, emotional support, and academic support. Designed to exceed the standards for pre-k education spaces in the County, this building also meets the Five Star Daycare rating requirements.

The eight classroom spaces and administrative services wrap around an outdoor-play landscape, blurring the line between indoor and outdoor learning. The program creates a safe and nurturing learning environment, builds racial and cultural equity, and provides affordable access to early learning. This building is designed to enhance the work of early childhood educators and early learning students and will have an impact for the children many years beyond the foundations of their pre-k education.

This project provides multiple benefits across the triple bottom line. This building provides access to high quality early education, food security, emotional support, academic support and promotes sustainability in the county.

As part of the Wake County Public School System, the Early Learning Center strives to make high quality early education accessible to the entire county. The location of the building was determined by a thorough study to identify the highest area of need in the county - providing early education to Title 1 students. The center serves multiple needs beyond early education which include providing food, emotional support, early identification of additional support to students and a safe nurturing environment.



the caterpillars at millbrook
we grow, learn and transform...



1 | EXECUTIVE SUMMARY

The design team worked closely with the Director of early learning, teaching staff, and stakeholders to design a new prototype for the county that is tailored to early learning instructional needs. In addition to the classrooms there are evaluation rooms, spaces for speech therapists and teaching specialists, and a movement room for indoor active play. Vibrant apertures emerge from the roof to provide access to ample natural light- allowing each classroom to change throughout the day. Shared learning spaces build community by allowing children to engage, learn and discover the beauty and lessons of nature.

The plan organization is generated by the requirement that each classroom have direct access to the outdoor play area. This allows the teachers and students to spend ample amount of time outdoors and encourages the early learning pedagogy to extend to the landscape and nature. The classrooms are designed in pods, each with a bathroom and a shared observation room, which is a key component of the program. There is a ninth classroom space that is used as an evaluation room for new students to be evaluated in a classroom environment so the teachers and staff can identify any additional needs and the support for the student to be successful.

Each space is unique, yet part of a community where children engage, learn and discover the beauty and lessons of nature. A distinctive skylight forms the fifth facade of each classroom - informed by the need to maximize wall space for learning materials. The uniquely colored apertures emerge from the roof to provide access to ample natural light. Every classroom will change throughout the day - reflecting the movement of time and nature, and enhancing the learning environment.

Another project goal was to enhance the overall quality of the existing campus and improve the existing outdoor play spaces for elementary school students. With the new Early Learning Center construction the campus was improved overall. Contaminated buildings were removed from the site, new playgrounds and play fields were constructed for the existing elementary school and a new wetland was installed on the campus to manage stormwater and provide opportunities for environmental education learning opportunities.



2 | SCOPE OF WORK AND BUDGET

The Early Learning Center construction included 8 classrooms with direct outdoor access to an age appropriate play area, a 9th classroom for new student evaluation, and the first on site pre-k staff offices in Wake County.

The building was integrated into the existing campus of Millbrook Magnet Elementary. This school has an environmental learning focus. The scope of the project included demolition and removal of two contaminated and unoccupied buildings.

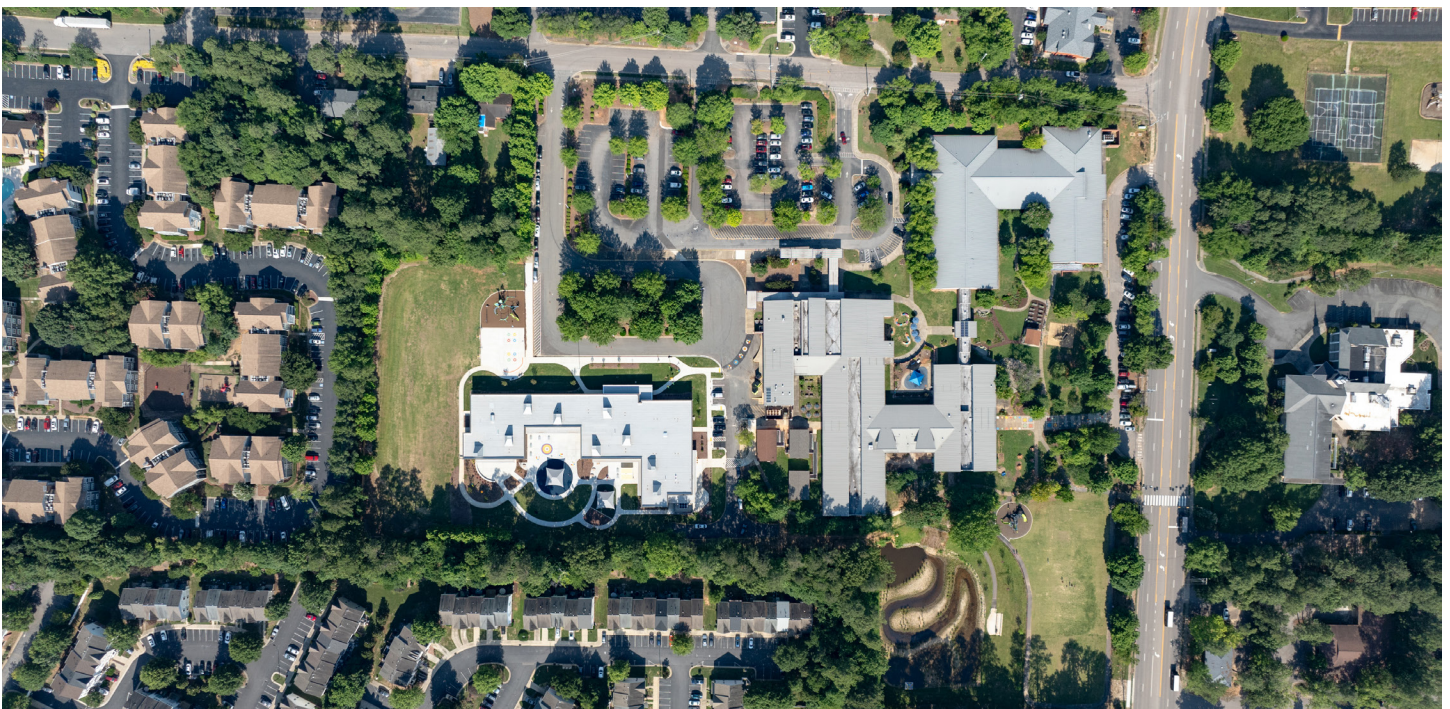
In their place, a new play field and wetland areas were installed, and the Early Learning Center was sited on more suitable land, with no addition to the amount of impervious surface on the campus. It was also sited to take advantage of existing bus and carpool lanes, requiring no new vehicle circulation.



The scope of the construction included new playground spaces and play fields for the existing school, as well as installation of the wetland area and new stormwater control measures. The design team worked with school staff to include a learning pathway and outdoor classroom as part of the wetland scheme, tailored to Millbrook Elementary's environmental focus.

Each classroom includes an attached observation room and a unique skylight. The classrooms are arranged in pods of two, each with individual bathrooms and outdoor storage. Every classroom has a unique skylight, enhancing the learning environment and creating a sense of place for students to connect with educators.

The budget for the project was \$14,600,000. The project was publicly bid and awarded to the lowest bidding contractor. The elementary school campus remained active during construction, therefore the design team was required to carefully plan the sequence of project areas so that the existing students would still have a place to play.



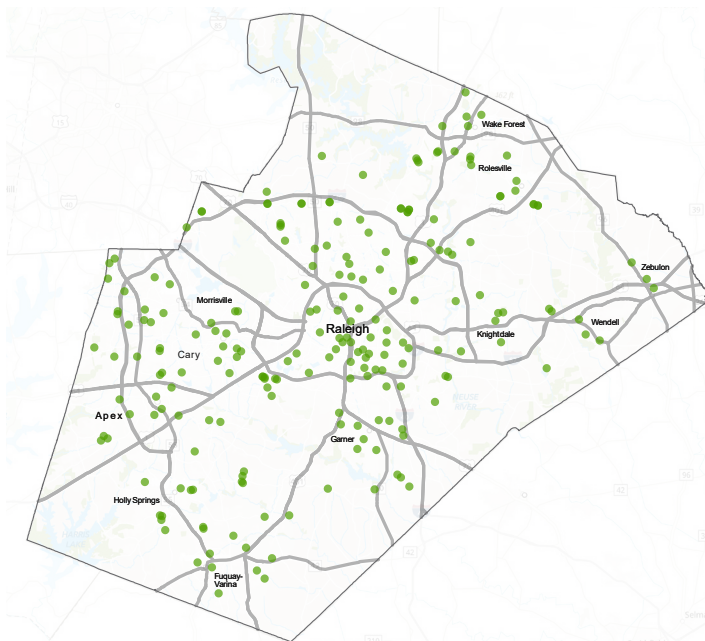
3 | SCHOOL & COMMUNITY RESEARCH AND / OR ENGAGEMENT

CONTEXT

Previously Pre-k care and education was divided between all elementary schools in the county, meaning effective specialized care was not possible. Over 3,500 pre-k students were served at 119 schools. With only two classrooms per school, special needs children could not be served, and additional needs could be hard to identify and support. Children with emotional needs, speech therapy needs, academic and day care needs were not able to be introduced into their first learning environment with the appropriate care level. Special needs staff were required to travel between schools to provide care, limiting student potential.

The early learning staff in North Carolina worked to create a plan of action to overcome hurdles with critical early learning in the state. The plan for freestanding pre-k education emerged as the result of years of feedback from educators. The agenda specifically engages Title 1 and special needs students who may have been left behind by the current system of early learning.

The goal of the Early Learning educators was to provide an exceptional educational experience for all children in an inclusive, safe, and stimulating learning environment that builds a foundation for life-long learning and effectively supports the diverse needs of the children and families that are served by the building. The design team was charged with creating a building that was positive, safe, welcoming and inclusive to foster a sense of belonging for all children. The building was also designed to exceed the requirements of the Five-Star Daycare program.



The Center's location at Millbrook Elementary was strategically chosen due to its high concentration of at need children and proximity to working families. Millbrook Elementary is located in central Raleigh, surrounded by a mix of multi family housing and commercial development. As the first of 4 early learning centers, this location is a case study for other regional areas with high pre-k need. The Wake County Public School System currently includes over 200 schools and many dedicated educators, willing to take advantage of new agendas to increase learning potential - especially important as the County population rapidly increases. This Early Learning Center is the first Wake County project to put early learners first, and represents a collaborative project for WCPSS leaders, educators, families, and young learners.

Early learning staff were critical to the design process, as their knowledge of child development and needs would directly influence the design of the building and future early learning centers.

The Early Learning Center already serves its maximum of 132 students, with parents eager to take advantage of programs critical to their child's long term learning potential.

3 | SCHOOL & COMMUNITY RESEARCH AND / OR ENGAGEMENT

PROCESS - VISIONING

The North Carolina Early Childhood Action Plan centers on three themes: that North Carolina's young children are healthy, grow up safe and nurtured, and are well-supported to be learning and ready to succeed.

It provides a framework for galvanizing coordinated action across public and private stakeholders throughout North Carolina and centers around making measurable changes in early childhood outcomes. It includes 10 data-informed goals and will continue to grow and develop over time.

Source: ncdhhs.gov/about/department-initiatives/early-childhood/early-childhood-action-plan



The Early Childhood Action Plan ensures that NC schools develop with equitable learning in mind. This project in particular was important to WCPSS as it will inform the future of early childhood learning.

PROCESS - COMMUNITY VALUE, DIVERSITY, EQUITY, + INCLUSION

The design process was a true collaboration between the design team, early learning educators, the WCPSS Planners and head of early learning. In order to achieve maximum results with the given constraints, the design process was participatory and inclusive. The design team facilitated many meetings with the teachers, staff and principals to develop a shared list of goals through a transparent process. The head of Design & Construction at WCPSS and the Head of Early Learning at WCPSS were two figures who were especially critical in the design process.

There were many choices involved in working with existing conditions and it was important that all users of the project were enrolled in the decision-making process so everyone understood why we made design choices. The design team made presentations and received feedback from the teachers, staff, planners and the school PTA so that good ideas could be heard from all stakeholders of the project. The pre-k staff were involved from the beginning of the process, from site selection to classroom construction. This is a new school type for Wake County, so building innovation into the walls of each classroom was critical for future developments of the typology.



On site with current educators and facilities staff - Understanding the assets of the site and sharing potential building locations. Early plans were adjusted for site and organizational feedback with Pre-K educators. Aligning the new building to the learning focus of Millbrook Elementary was another influence on the new construction.

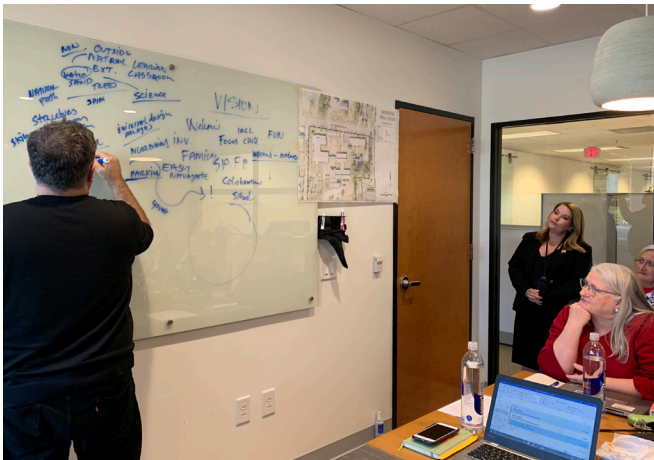


Educators and WCPSS department heads become acquainted with newly constructed spaces.

3 | SCHOOL & COMMUNITY RESEARCH AND / OR ENGAGEMENT

EXHIBITS

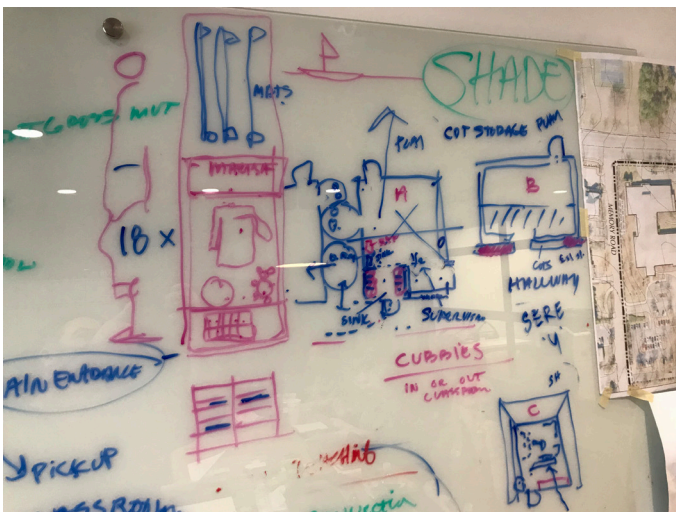
The design team involved school leadership and pre-k teachers from visioning through construction - teachers were shown their new classrooms prior to completion. The design process deeply respected the knowledge held by educators, who helped inform, plan layout, building circulation, security, program, material choices and individual classroom resources.



Early learning vision board is created with educators



Educators and administrators weigh in on building location



Necessary program and amenities are discussed + diagrammed



School leaders and educators comment on classroom spaces with building contractors present.



Pre-k educators provide feedback on material palette



Staff become acquainted with skylights

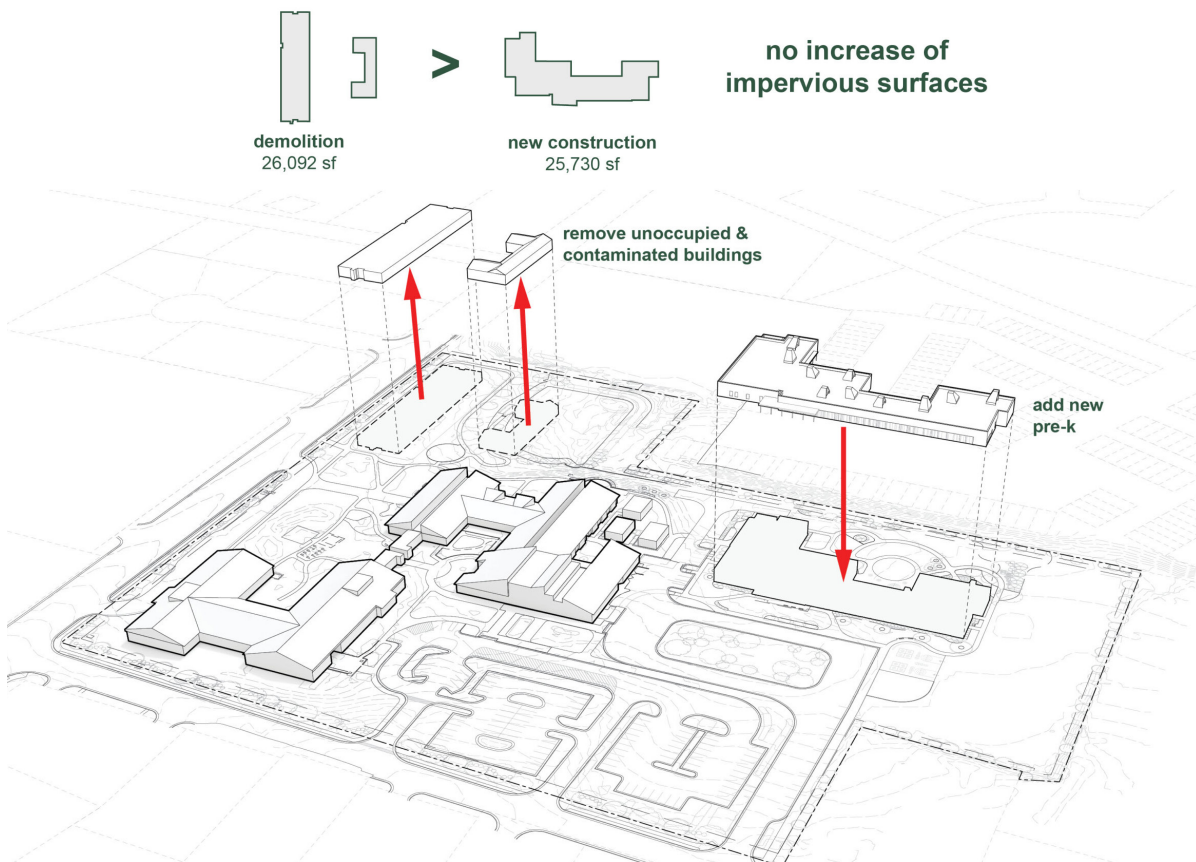
4 | PHYSICAL ENVIRONMENT

CONTEXT

Millbrook Magnet Elementary is an environmentally focused magnet school in central Raleigh. It consists of two main educational buildings with learning gardens, sensory gardens, and two pre-k classrooms.

The Wake County Public School System lacked a separate pre-k center, meaning these two classrooms had to serve all early learning students for the area, regardless of special income, emotional, daycare, and academic needs. This scenario is common between all public elementary schools in Wake County.

The new pre-k fits into the Millbrook campus, which is situated in a growing area, bounded by a mix of multifamily housing and businesses. The area is largely populated by working families with a critical need for daycare and after-school care. The new Early Learning Center takes the place of two unoccupiable buildings, which were removed and replaced by a wetland area, open for environmental educational opportunities.

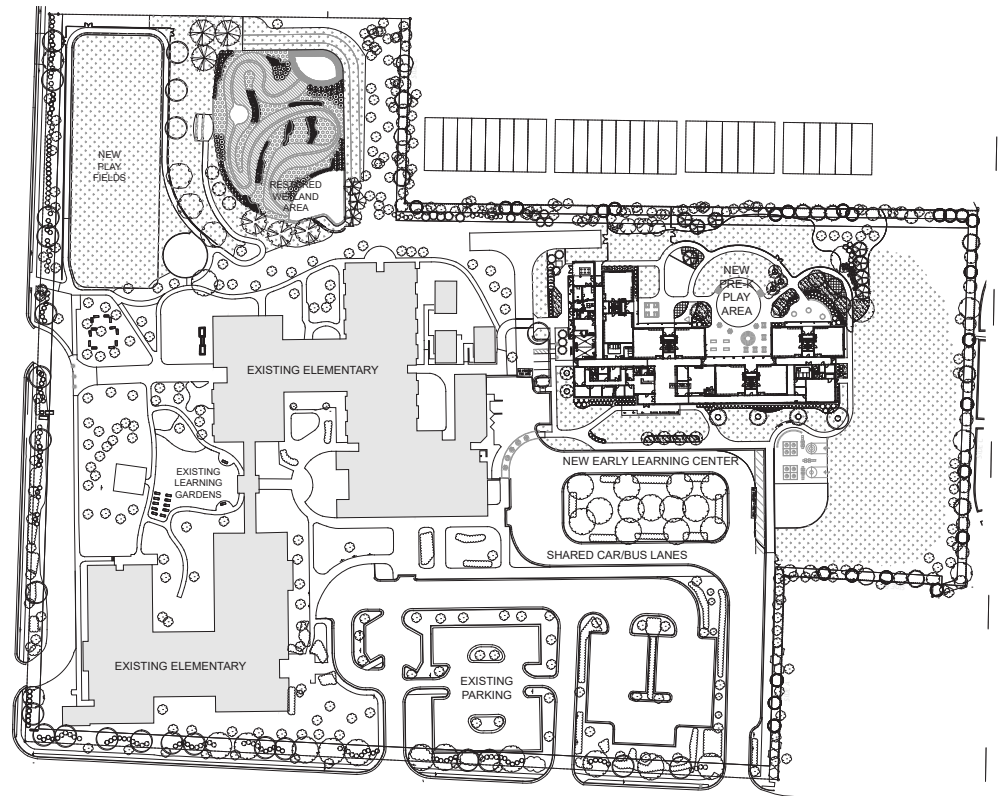


4 | PHYSICAL ENVIRONMENT

CONTEXT

The new building is located on a relatively flat portion of the site for seamless outdoor learning opportunities. It is placed to take advantage of existing nutrition services in the elementary school. Food is prepared and then distributed to a small warming kitchen and then to each Pre-K classroom for breakfast and lunch. The siting also allows the Early Learning Center to take advantage of existing bus and car drop-off lines, and leaves all existing parking in place.

The plan of the building allows all classrooms to share a singular large garden and play area. This creates a sense of community among students, and a sense of security and care in which students can learn and grow. The play area is bounded by quiet residential streets, which are separated from the campus by a mature vegetated buffer zone.



4 | PHYSICAL ENVIRONMENT

RESPONSE - INSPIRATION + MOTIVATION

The entry sequence of the learning center is designed to invite early learners as they engage in learning outside of home, and away from their parents for the first time. The multicolored facade greets students from the car and bus approach, while a skylight creates a welcoming lobby for students to greet teachers and classmates, and eases the difficulty of leaving home for students with emotional needs.

The apertures in classrooms create a sense of center, bringing together all members in the classroom. The unique appearance of each room creates a sense of belonging and a tie to the children's first learning space. On darker mornings and evening, the apertures glow from within, signaling the safe space within to students who have the most need for daycare services.



RESPONSE - DIVERSITY, EQUITY, + INCLUSION

By placing the building on a flat grade, all classrooms share the same finished floor elevation, making access between inside and out seamless for children of all abilities. The proximity to the existing bus drop-off also means that some children can ride the bus with siblings, increasing flexibility, and therefore the availability of early learning for students needing the transportation network of typical public school systems.

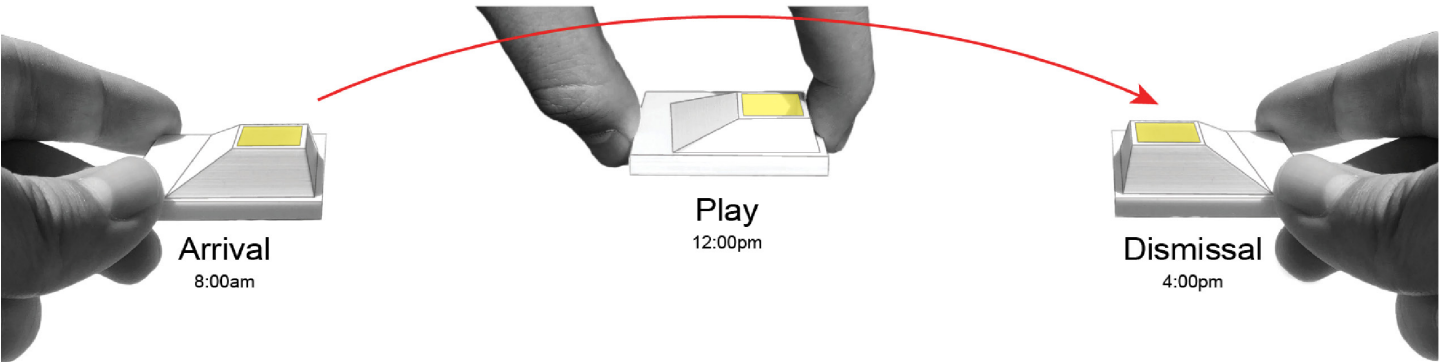
Softly curving furniture, both inside and out contributes to a safe and comfortable environment for the age group.



RESPONSE - SUSTAINABILITY AND WELLNESS

The project included wellness measures for Millbrook Elementary, such as new playground equipment, a new play field, and a wetland education area with outdoor classroom. The Early Learning Center's age appropriate play areas, specialized care facilities, and access to daylight create an ideal learning environment for pre-k education. Low flow water-closets were installed in the bathrooms, and an air cooled chiller was installed to reduce water usage - important to the project's sustainability goals as no rainwater collection is present on the campus.





5 | EDUCATIONAL ENVIRONMENT

CONTEXT

The early learning center responds to the increasing need for special education in early learning, which has increased by over 30% since 2019. The early learning center is located to serve the highest number of Title 1 and special needs children as possible, and to serve as a model for future early learning in a growing public school system.

The center also aims to address staff commuting issues caused by the distribution of pre-k centers at elementary schools throughout the county. By consolidating more pre-k students into one location, children with varying needs can be served, and affordable daycare services can be provided without spreading educators thinly across the county.

The Early Learning Center is designed to work towards the goals of the NC Governors Early Childhood Action Plan, from its siting, plan form, program, and individual classroom design.



5 | EDUCATIONAL ENVIRONMENT

RESPONSE

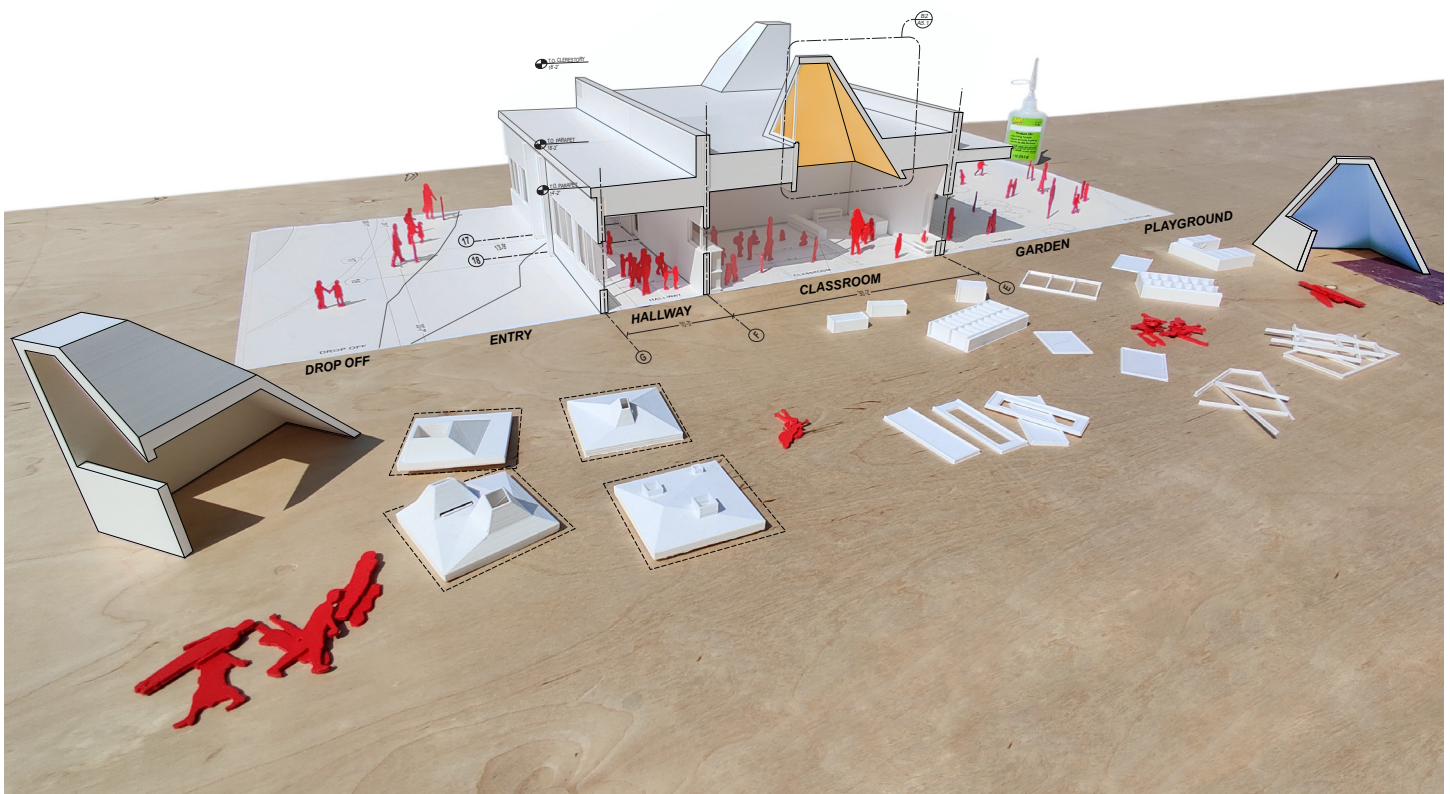
The goal of the Early Learning educators was to provide an exceptional educational experience for all children in an inclusive, safe, and stimulating learning environment that builds a foundation for life-long learning and effectively supports the diverse needs of the children and families that are served by the building. The design team was charged with creating a building that was positive, safe, welcoming and inclusive to foster a sense of belonging for all children. The building was designed to exceed the requirements of the Five-Star Daycare program.

A clear building plan creates a sense of security; as children move into the space, each layer increases their ability to learn and socialize successfully. The recognizable facade welcomes early learners, then a single hallway simplifies navigating to each classroom. Each classroom feels special, with a unique skylight orientation and color. Finally, all the students share a large outdoor space, wrapped by familiar classrooms and clear indicators of entry.

The building integrates teaching and observation spaces, allowing for identification of student needs - something that was not possible in previous pre-k facilities in the county. The Early Learning Center is poised to meet special needs if they are identified.

Teachers have permanent spaces to prepare their lessons. Classrooms are tailored for Title 1 students, special needs students, or a mix of both groups. Interior spaces have been adapted to include bright places for indoor play and socialization when outdoor play is unavailable. The roof apertures reflect outdoor conditions into the classrooms, creating a sense of security and awareness. This connection to nature parallels the curriculum of Millbrook Elementary.

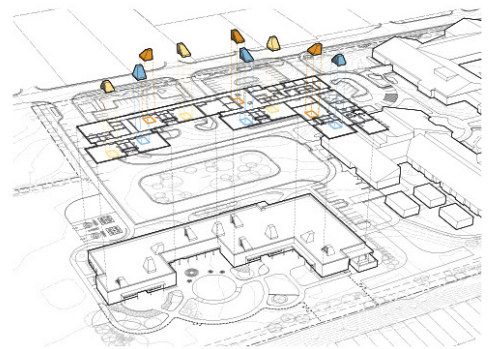
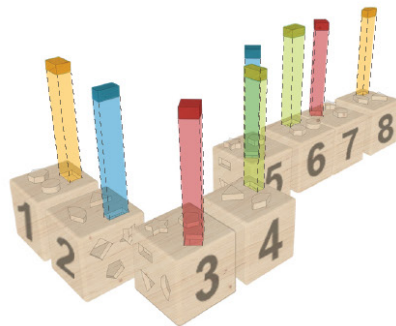
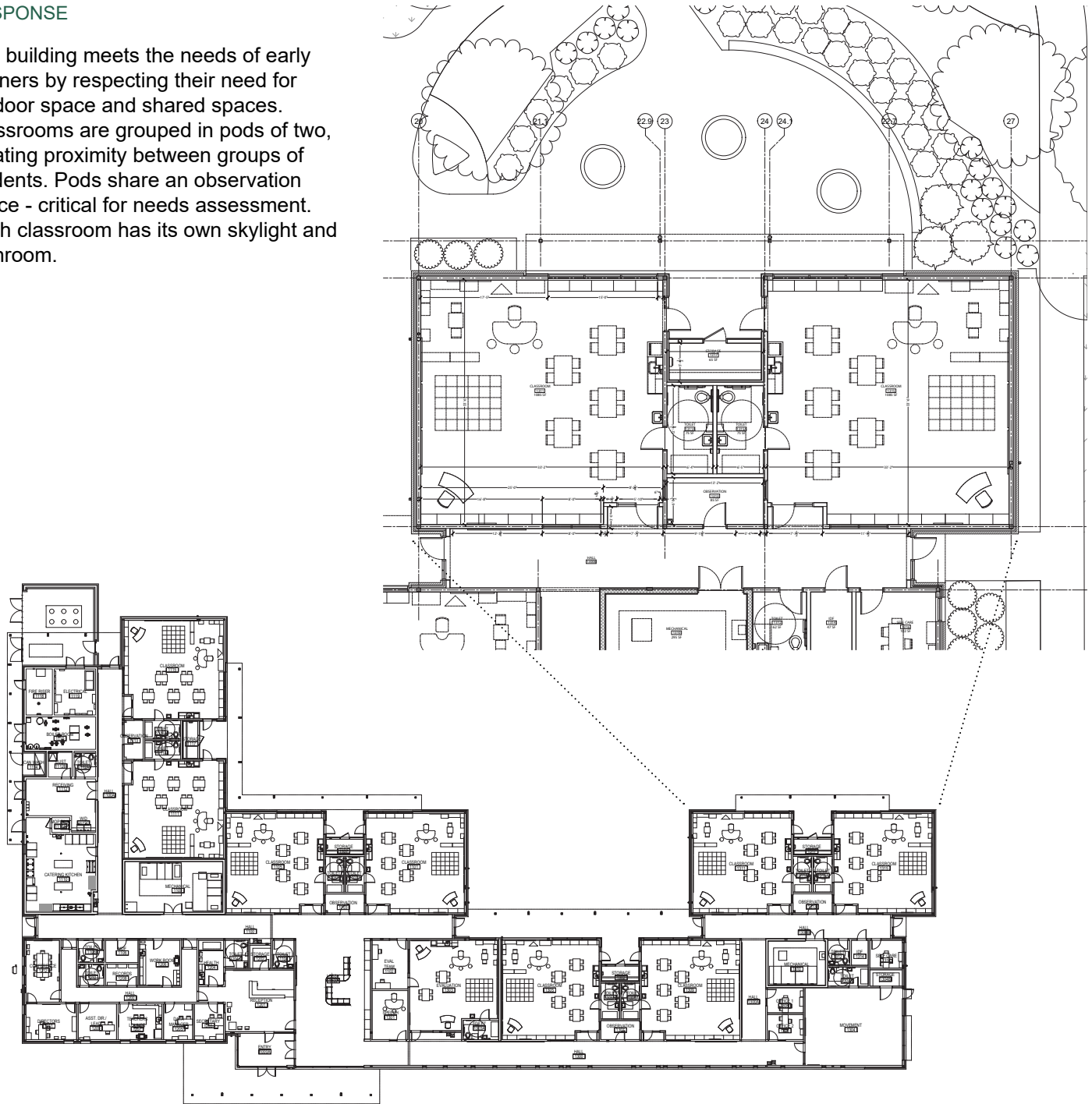
The educational spaces are innovative because they are grouped in pods, and share an observation room amenity. The observation room allows parents and early learning staff to evaluate students without disturbing the students in the classroom. The teachers can teach in a team or as a separate classroom. This layout allows for the flexibility. Each classroom provides 50% more natural light then required by the NC Department of Public Instruction. Natural light in early learning classroom was a highly desired characteristic of the early learning staff.



5 | EDUCATIONAL ENVIRONMENT

RESPONSE

The building meets the needs of early learners by respecting their need for outdoor space and shared spaces. Classrooms are grouped in pods of two, creating proximity between groups of students. Pods share an observation space - critical for needs assessment. Each classroom has its own skylight and bathroom.



5 | EDUCATIONAL ENVIRONMENT

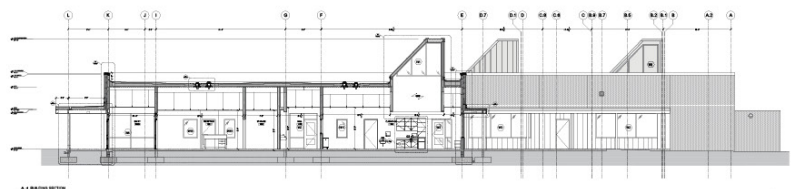
RESPONSE

The colorful apertures within each classroom bring in a greater amount of daylight, while maximizing learning display space. The apertures also contribute to the uniqueness of each classroom, creating a sense of place of belonging for students.

Additionally, students are exposed to didactic education from the sun's motion - the daylight changes with the time of day and the seasons.

Each skylight creates a gathering space within classroom, centering the group within the space.

Just as the lobby skylight celebrates arrival at school, each classroom's unique skylight celebrates the beginning of the individualized learning session.



6 | RESULTS

The design team met the goals of the schedule and the budget. The project was completed on time for the student to return to class. The project was complex and from these constraints came the design opportunities.

This project successfully completed the first prototype for this project type and set an example and a standard for early learning centers in the county.



6 | RESULTS

ACHIEVEMENT OF EDUCATIONAL GOALS

The Early Learning Center was created to serve 3-5 year olds with greater needs than could be served by the existing system of public pre-k classrooms. Parents have seen their children's academic and social skills grow since their time at the Center. The goal of creating an "equal playing field" has been achieved, as students with Title 1 financial need have access to after school care, speech therapy, emotional support, and academic support. The Center is specifically designed to serve these early learners, giving them a long term learning impact that they would otherwise have been left out of. Early learning provides a foundation for kindergarten learning, so welcoming all students is critical.



The Millbrook Early Learning Center works towards a number of the Early Childhood Action Plan's goals:

Goal 3: Food Security

Goal 5: Safe and Secure Relationships

Goal 7: Social-Emotional Health and Resilience

Goal 8: High Quality Learning

Goal 9: On Track for School Success

Goal 10: Reading at Grade Level



ACHIEVEMENT OF SCHOOL DISTRICT GOALS

The demand for Wake County's public school enrollment is the highest in the state of North Carolina and growing rapidly. Needs for special services at the pre-k level has grown by over 30% in the last 5 years. Wake County has succeeded in aligning this project with the goals of the Governors Early Learning Agenda, while adding to the total enrollment of pre-k students and efficiently redistributing early learning resources. Preparing students for kindergarten will serve WCPSS in the future by engaging students from the earliest ages.



6 | RESULTS

ACHIEVEMENT OF COMMUNITY GOALS

County Commissioners, Board Members and WCPSS facilities staff gathered at the Early Learning Center Ribbon cutting ceremony. Many were impressed by the space, many discussed the future of early learning in the county and all emphasized the long term impacts of Pre-K education on all of these students. The impact will be exponential.

WCPSS and the architect have already led multiple tours of the building at the request of surrounding Public School systems that are eager to or in the process of building their own Early Learning Centers. This building is a model and prototype for the growth of Early Learning in our State.

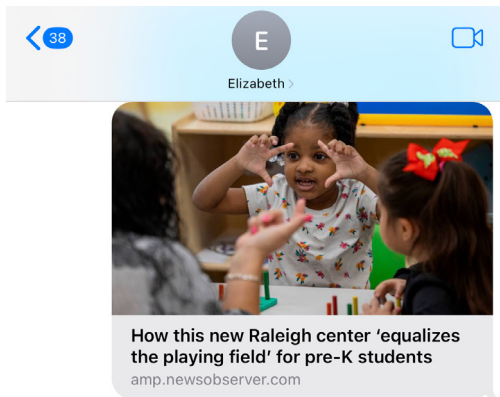


6 | RESULTS

UNINTENDED ACHIEVEMENTS - WCPSS DESIGN FEEDBACK

Elizabeth Sharpe, Head of Design and Construction at the Wake County Public School System, was influential in the entire design process for the Early Learning Center. Her feedback regarding the design of the spaces had a clear impact in creating a successful project. She serves as just one of many inside voices testifying to the success of the Center by early learning educators, families, and early learners.

Sherry Williams, the school's director also spoke to the tangible feeling of place that the center creates - "The Early Learning Center is an inviting environment for families and children. This is a wonderful way to introduce families to the school system so they can be an active partner in their child's educational journey."



Wed, Dec 20 at 9:44 PM

Oh wow, this is a great article. You and your team were a huge part of its success. Thank you for the creativity, patience and love you and your team bring to every project. This is what it's all about!!! 🥰🥰🥰🥰



Sat, Jan 20 at 9:34 AM

Oh my, this fills my heart!! This just reminded me why I do what I do everyday!! I hate I missed this. Looking at all the smiles in that room is so special. You did great guys. This is a space is so special. The day before the ribbon cutting Dawn was telling me how she loved the way it makes her feel driving up to the front door of your building. She said it was warm and inviting, which is what these kids need. She also told me how she absolutely LOVES the lobby, she loves the light in the rooms, how visible it is through out the building and the connection from the inside to the outside. KHA is going places and I love what you are doing for WCPSS. You are putting a mark in our school system and I appreciate everything you do for us!!!! Thank you and I can't wait to be having this very same conversation at the Fuquay Varina completion. 😊😊😊😊

UNINTENDED ACHIEVEMENTS - NC STATE ARCHITECTURE STUDIO

The planning process was completed partially alongside a Design Studio at NC State's College of Design. 30 architecture students learned about the collaborative process, cost effective design with public funding, the bidding process, and siting strategies. This studio gave exposure to Wake County's future planning goals, and gave students a look into the realities of architecture, planning, and construction. These students now have a successful project with which to view their work, and a model for the design of future early learning centers.



6 | RESULTS

FINANCIAL RESOURCEFULNESS

This project was completed for the Wake County Public School System, and was bid through a public bid, awarded to the lowest bidding contractor. In addition to the cost of a new building, the project budget included many site upgrades, specifically designed to enhance and provide additional environmental educational opportunities to the existing magnet elementary school.

A cost saving advantage was to share the existing cafeteria space within Millbrook Magnet Elementary. This was a cost-saving measure that allowed for more instructional space in the Early Learning Center. The food is prepared in the elementary school kitchen and distributed to all of the Pre-K classrooms for both breakfast and lunch.

Color was used as a design tool, allowing costly and complex detailing to be avoided. The simplicity of the building envelop and siting allowed for the implementation of a light monitor in each classroom and the lobby. Exterior materials were cost effective and placed with the highest impact possible, creating a welcoming facade for students being dropped off.

WELLNESS

This project is serving an identified need for early childhood education and the related support systems. This building is designed for the public school system and strives to make high quality early education accessible to the entire County. Physical aspects of this include access to natural light and green space, age appropriate play areas, and the provision of specialized spaces for needs assessment. A welcoming skylight is present in the building lobby, easing the transition into learning away from home. This project included upgrades to Millbrook Elementary's outdoor play areas and expanded their environmental learning capacity to include the wetlands on the site. This was done through the construction of learning pathways and a new outdoor classroom.

Emotional attributes of the building's wellness measures are the ability for the building to serve staff as they provide academic, emotional, speech, and special needs care to the youngest learners, creating a lifelong impact for under-served children. Staff wellness is addressed through the provision permanent on site offices, limiting the travel to individual pre-k centers across the county that was necessary before the early learning center was constructed.

Design was completed in accordance with Five-Star Daycare standards, and the NC Governors Early Learning Agenda. Access to afterschool care was especially important for the Early Learning Center, due to its focus on serving Title 1 families.



6 | RESULTS

SUSTAINABILITY

This project is located on an existing elementary school campus. Trading off impervious surface by removing buildings that were deemed uninhabitable, this new structure shares resources of carpool, bus loop and parking that already existed on the site. There was no increase to impervious surface on the site. The building ties into existing resources on the campus, such as nutrition services and playgrounds.

The stormwater control measures were upgraded with a wetland area and stormwater retention pond, a marked improvement considering no additional runoff area was created with the new building construction. The wetland construction benefits the early environmental education provided to students at the Millbrook campus. In parallel with the long term learning impact of early learning services, the environmental impact of providing opportunities for wonder and learning with nature is equally impactful at the pre-k level.

The design of this project focused on water conservation within the boundaries of a public school budget. As such, low flow fixtures (e.g. 1.28 GPF water closets) were utilized throughout the project and while this may seem mainstream, it does show the intentional nature of the design. Additionally, a chiller was needed for space temperature control and a high-efficiency, air-cooled chiller was used. The selection of an air-cooled machine allows for substantial fresh water savings (especially in an area with no reclaimed water service) as the design does not have the water losses associated with a cooling tower.



