# School from Bench to Building: A New K-8 School in Springfield

## Winter 2012 • Architecture

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UNIVERSITY OF OREGON

SCI
Sustainable Cities Initiative

# Acknowledgements

Many thanks are due to the following members of the academic and professional community, and City of Springfield staff, who generously provided guidance and constructive critiques of our work throughout this project:

Jamin Aasum
Duncan Ballash
Brian Barnett
Rene Berndt
G.Z. Brown
Dr. Jan Cassin
Matt Coleman
Donald Corner
Erin Cunningham
Howard Davis
Jeff DeFranco
Jim Donovan
Jeanna Fribley
Thomas Gallagher
Larry Gilbert
Jim Givens
Courtney Griesel
David L. Guadagni
Daniel Herbert
R. Thomas Hille
Alison Hirzel
Chris Jones
Christian H. Kandzia
Andrew King
Lisa Kuhnhausen
Alison Kwok
Nico Larco
Michael Liebler
Amy Lynn
Clayton Mceachern
Mark Metzger
Travis Miller
Rebecca Mann
Gary Moye Ed Naylor
Kevin Nute
Carol Pecorilla
Otto Poticha
John Reynolds
Chris Reiersgaard
Heinz Rudolf
Ryan Ruggiero
John Saraceno
Tod Schneider
Marisa Silver
Philip Speranza
Scott Stolarczyk
John Tamulonis
Christine Theodoropoulos
Jeff Towery
John H Trefry
Diego Urrutia
Glenda Utsey
Ken Vogeney
Ted West
Michael B. Wilkes
Jenny Young
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# About SCI

The Sustainable Cities Initiative (SCI) is a cross-disciplinary organization at the University of Oregon that promotes education, service, public outreach, and research on the design and development of sustainable cities. We are redefining higher education for the public good and catalyzing community change toward sustainability. Our work addresses sustainability at multiple scales and emerges from the conviction that creating the sustainable city cannot happen within any single discipline. SCI is grounded in cross-disciplinary engagement as the key strategy for improving community sustainability. Our work connects student energy, faculty experience, and community needs to produce innovative, tangible solutions for the creation of a sustainable society.

# About SCYP

The Sustainable City Year Program (SCYP) is a year-long partnership between SCI and one city in Oregon, in which students and faculty in courses from across the university collaborate with the partner city on sustainability and livability projects. SCYP faculty and students work in collaboration with staff from the partner city through a variety of studio projects and service-learning courses to provide students with real-world projects to investigate. Students bring energy, enthusiasm, and innovative approaches to difficult, persistent problems. SCYP's primary value derives from collaborations resulting in on-the-ground impact and expanded conversations for a community ready to transition to a more sustainable and livable future. SCY 2011-12 includes courses in Architecture; Arts and Administration; Business; Economics; Journalism; Landscape Architecture; Law; Oregon Leadership in Sustainability; and Planning, Public Policy, and Management.

# About Springfield, Oregon

The City of Springfield has been a leader in sustainable practices for more than 30 years, tackling local issues ranging from waste and stormwater management to urban and suburban redevelopment. It is the first and only jurisdiction in Oregon to create two separate Urban Renewal Districts by voter approval. Constrained by dramatic hillsides and rivers to the north and south, Springfield has worked tirelessly to develop efficiently and respectfully within its natural boundary as well as the current urban growth boundary. Springfield is proud of its relationships and ability to work with property owners and developers on difficult developments, reaching agreements that are to the benefit of both the project and the affected property owners. These relationships with citizens are what continue to allow Springfield to turn policy and planning into reality. Springfield recruited a strong, diverse set of partners to supplement city staff participation in SCYP. Partners include the Springfield Utility Board, Willamalane Park and Recreation District, Metro Wastewater Management Commission, United Way of Lane County, and Springfield School District 19.

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# Executive Summary

This report explores issues, opportunities, and sixteen design proposals for the Jasper Natron site in Springfield, Oregon. The goal of this studio was to envision a school for Springfield that engaged its students on all scales, from furniture within the classroom to the overall site. The intent was to view the design of schools through a pedagogical lens, shaping the building to the unique needs of varied educational philosophies, while also addressing sustainability and increasing children's interaction with nature.

The research reached well beyond the spectrum of architectural issues with a primary focus on existing educational theories, as well as emerging trends and technologies. It was imperative for each design to support new teaching methods, convey community identity, and educate the users about sustainability. Providing multiple uses (including after-hours education) for the site was critically important to creating opportunities for community involvement. Focusing on flexibility of spaces, embracing the existing city infrastructure, and generating ideas about how the spaces could inform a variety of teaching methods were prevailing themes in every proposal that was positively received by the city and school district alike.

The 16 schemes developed in this studio are diverse in both formal expression and in programmatic elements. Similarities are found in ideas about site preservation as well as in sustainable strategies. Each designer felt it was important to focus on building features that would help educate users and enhance the building's response to the landscape of the site. In addition, each design considers methods to enhance the ecological function of the site; students worked to feature large areas of preserved wetlands and took advantage of the beautiful views surrounding the site. Especially prevalent in all designs was the focus on providing accessible outdoor areas for group teaching and play. In some schemes this took the form of outdoor terraces for each classroom, in others larger outdoor gathering areas. Every scheme was also able to balance the needs of both the city and the school district by seeking alternative solutions to road connectivity through the middle of the site, thereby improving safety for the children and encouraging collaboration between two groups with disparate goals. The accessible and flexible nature of every scheme displays forethought about how the Jasper-Natron site might act as a catalyst for urban growth in that area.

The schemes were presented to the city, to the school district, and to educational design professionals multiple times in order to strengthen the concepts. In the end, each scheme offered valuable insight into innovative school design beyond the built element. With these recommendations, putting to use available and cutting edge architectural and educational concepts, this school has the potential to improve the identity of a neighborhood, and produce positive, capable, and prepared graduates.

# Introduction

Sixteen undergraduate and graduate students at the University of Oregon completed the design proposals in this report for their thesis design studio. The class, led by Associate Professor Esther Hagenlocher, spanned two full terms, beginning in Fall 2011 and ending in Winter 2012. The students were asked to design a K-8 school large enough to provide educational facilities for 650 students to serve the developing Jasper Natron area of Springfield.


*Figure 1: Existing wetland conditions*

The site chosen by the school district is a former pasture composed of 14 acres, nine of which are designated as low quality wetlands. The site was chosen based on its proximity to future development sites as well as existing housing developments. A residential development lies directly to the north, with a future medium density commercial district and residential development planned to the south. Bob Straub Parkway, a well-travelled county road, borders the site on the east side, and functions as a primary connection through Springfield. With a speed limit of 45 miles per hour, Bob Straub Parkway is an important feature to consider throughout the design process. A logging road that is less frequently used anchors the site on the west.

Jasper Natron is within the urban growth boundary and is a part of Springfield's 50-year urban expansion program. There has been a longstanding need for a school in the area as the number and location of schools is currently not enough to support the growing number of families already residing or planning

to reside in the south of Springfield. This school would attract more families and businesses to the area, encouraging desired expansion to the south. In addition, the school would provide a place for community to come together outside of school hours.

City of Springfield staff and many guests with extensive knowledge of education and school design provided invaluable information that informed the studio's design work. The following report is a summary of the studio's work and recommendations.

## Existing Conditions

### Springfield Fifty Year Urban Expansion Program

With an ever-increasing population currently estimated at 59,695 people, the City of Springfield has been exploring opportunities for growth over the last few years. The final decision was made to focus expansion southward to Jasper Natron, an area within the urban growth boundary.

Springfield's population is projected to grow to 71,216 in 2020, an increase of 14% in just 10 years. With an average age of 31 and nearly a third of the population under 19, there is an impetus to build new and improved schools to serve the growing number of students and offer them the best opportunities.

### Existing School Conditions:

At the moment, there are no schools serving families living in the Jasper Natron area. This site would offer the school district the opportunity to be

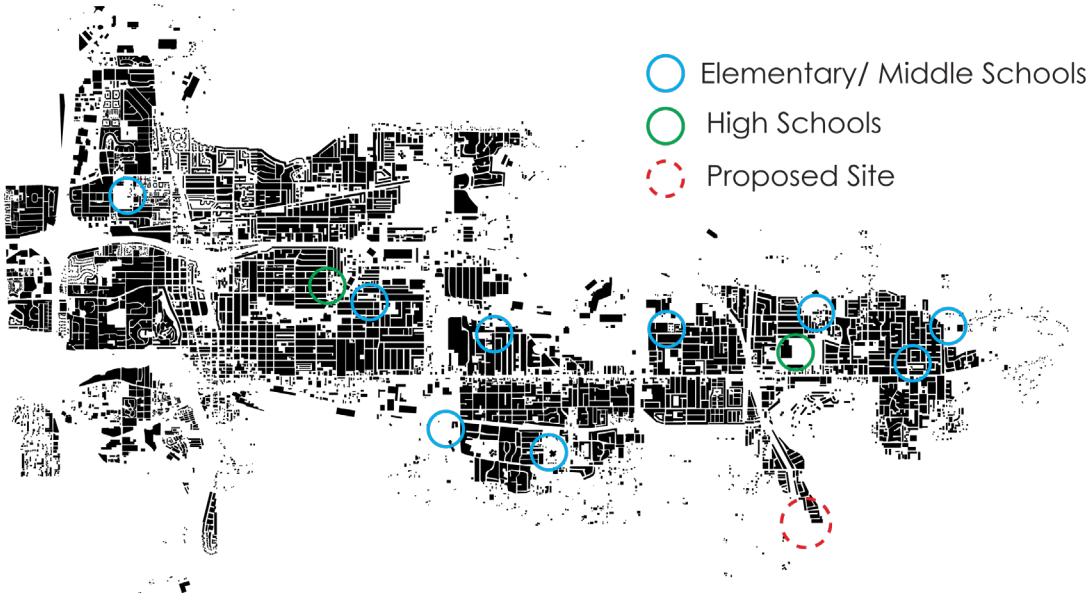



*Figure 2: Springfield figure/ground diagram*

centrally located in a newly developing community of Springfield, designed to accommodate young families. A school in this location would not only serve the students, but would also provide a much-needed meeting, activity, and event space for the whole community.

The site is located along Bob Straub Parkway, the major connection between the Springfield city center and the proposed 50-year growth area of Jasper Natron. It is positioned in a prominent visual location from the road, and will act as a symbol of and catalyst for the neighborhood.

In the next ten to fifteen years, the area closely surrounding the site is slotted for development. To the north, higher density residential and condominiums are expected to replace an empty lot. To the south, along Bob Straub Parkway, the city of Springfield is encouraging commercial and mixed-use development to provide amenities and generate more activity in the area. Finally, also to the south, along Weyerhaeuser Haul Road, single-family residential housing similar to the existing property development to the north is anticipated.

The district's vision is for the school to become the central feature and face of the new community. Each design is centered on the idea of promoting local ecology and engagement with nature among the hustle and bustle of commercial activity and learning.

*Figure 3: Wetlands, frog, heron*

## Site data and issues:

The site research led to some findings that suggest building a school on this site may be challenging or potentially cost prohibitive. While 14.99 acres is an appropriate size for a school site, taking into account the building itself, sports fields, playgrounds, open spaces, and parking, nearly 10 of the acres on the site have been designated a low quality wetland.

While the school district has tried to mitigate the wetlands impact on the site by purchasing replacement habitat through a wetland bank, it does not change the fact that the site's soil types are substandard for building construction. In addition, an extensive drainage system will be needed to manage the large amount of runoff through the site from the nearby butte.

According to soil reference guides, built elements are subject to instability and slumping, and are susceptible to structural damage from shrinking and swelling. Foundations must be built to divert runoff from structures, and footings must be placed below the claypan.

The site purchased by the school district is currently located outside city limits, and would require annexation to allow the extension of urban services needed by the school. In addition, the current zoning code of Light Medium Industrial requires that a school must be approved by the Springfield Planning Commission as a discretionary use. As an alternative, the school could also opt for the plan/zoning map amendment process, which would change the zoning designation to Government and Education.

## Road:

The studio worked closely with City of Springfield transportation department staff to design streets that would run through the site. There were three conceptual planned roadways affecting the site, which the students were required to consider in their design proposals.

First, South 60th Street is anticipated to continue south from Jasper Meadows second addition through the site. Second, another road will connect with Bob Straub Parkway near the SW corner of the property, and run through the site to its eastern boundary. Finally, the transportation division desires that the first block on both sides of Bob Straub Parkway be free of driveways, in order to increase safety and efficiency.

The initial master plan designated the extension of Quartz Avenue, to the north of the site, to Bob Straub Parkway. However, this option was found to require the relocation of a major electrical transmission line, and so the intersection with Bob Straub Parkway was moved to the southwest corner of the school property. This course of action necessitated the building of a road bisecting the school property.

After many discussions with city transportation staff, educators, and school design experts, we recommended that an alternative solution to the road be

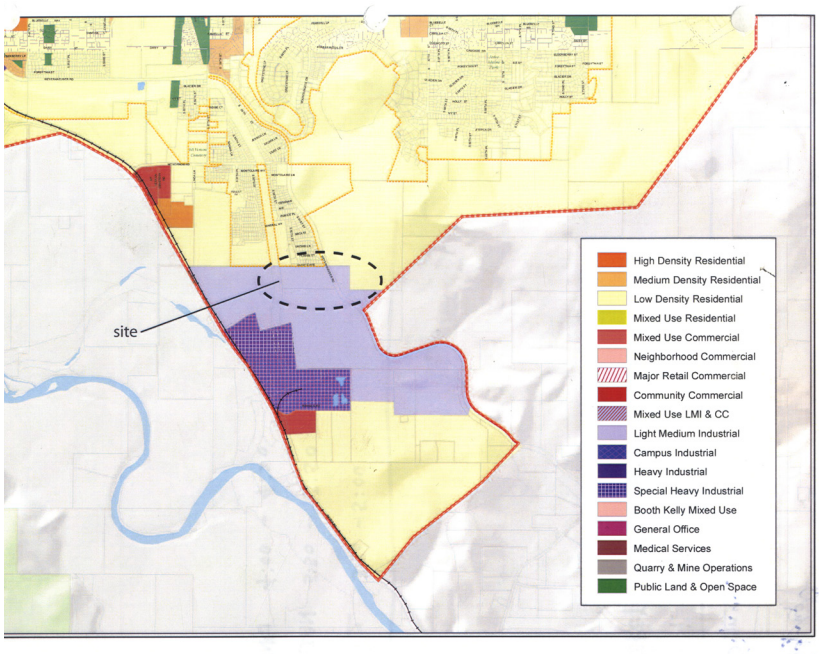



*Figure 4: Density plan*

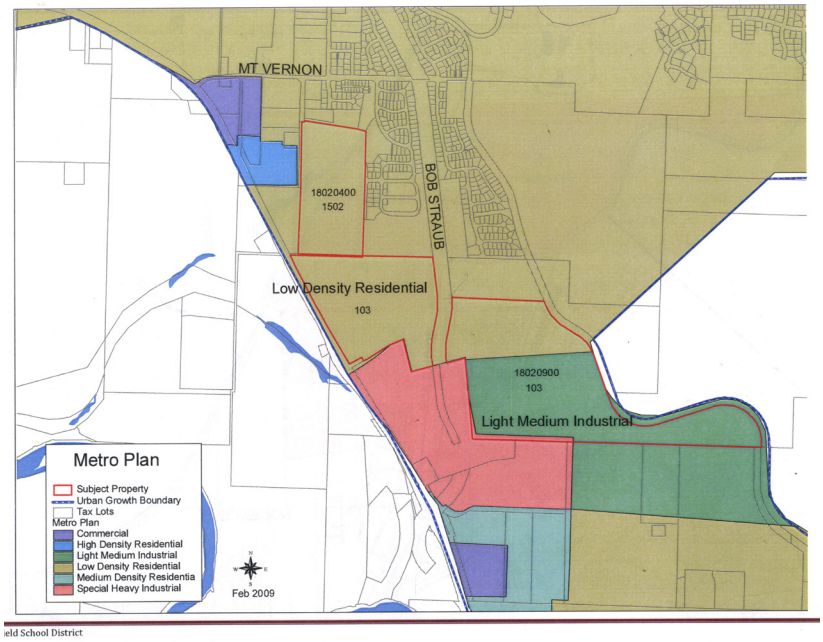



*Figure 5: Metro plan*

found, in order to ensure the safety of the students, and the integrity of the school site. The Transportation staff came to two potential solutions, from which the students could choose to base their designs.

The first option connects to Quartz Avenue at the northeast corner of the site, and continues along the east edge of the property, parallel to the Weyerhaeuser Haul Road, and connects to the planned road along the south edge of the property. With this option, Quartz Avenue would be widened to accommodate school and neighborhood traffic.

The second option proposes a road connecting to the Quartz and 60th Street intersection, continuing on the north edge of the property towards Bob Straub Parkway, then proceeding south, and bending to make the appropriate connection to the south road, at the necessary distance from the Bob Straub Parkway intersection.

## Methodology

### The Studio, the Problem & Initial Strategies:

The six-month thesis studio was composed of 16 architecture students from both graduate and undergraduate programs. Students formed concepts and designs individually, but worked in groups much of the time for peer reviews and collaboration. The fall term was primarily focused on concept development;


*Figure 6: Jasper master plan*

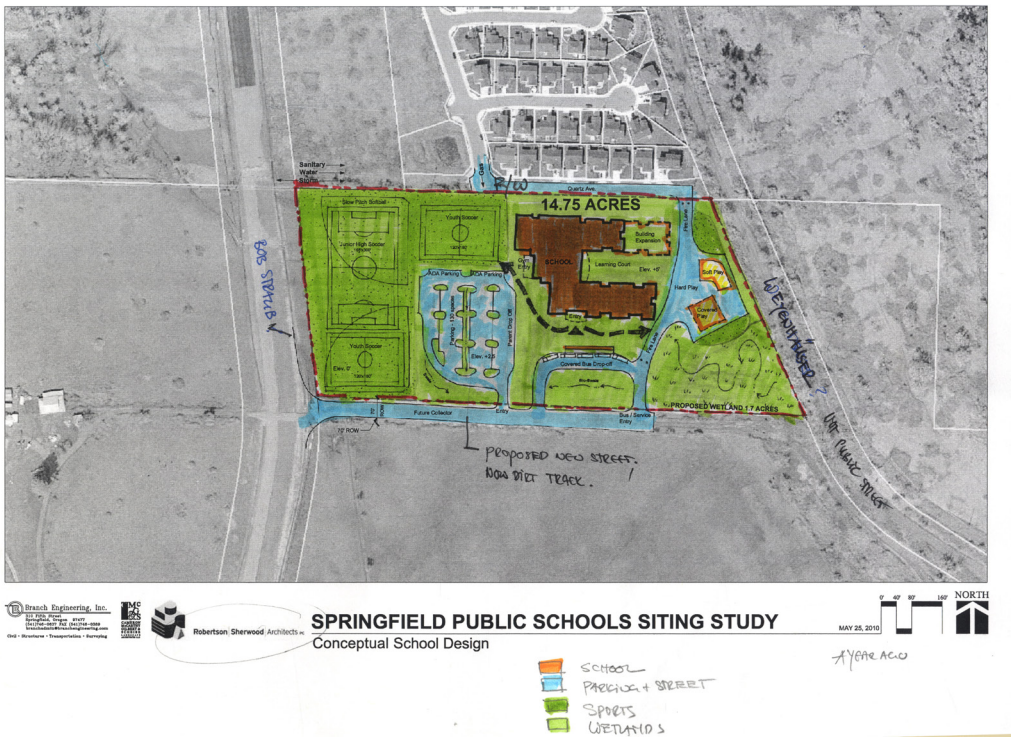



*Figure 7: Siting study*

students used this time to collaborate with specialist educational design architects, the school district, the city, SCI and Architecture and Allied Arts faculty members to formulate building concepts and schematic designs. For the remaining three months (Winter term 2012) students developed their buildings by designing the “non-classroom” spaces such as commons, libraries, and outdoor gathering spaces.

## A Pedagogical Approach:

This project was unique in the way the studio approached the conceptual phase of our designs. The goal of this studio was to envision a school for Springfield that engaged its students on all scales, from classroom furniture to the overall site. The studio’s intent was to view the design of schools through a pedagogical lens, shaping the building to the unique needs of varied educational philosophies, while also addressing sustainability and increasing children’s interaction with nature.

Students were asked to challenge the current standards associated with traditional school designs and implement innovative theories about education to be supported by their final building designs. For this reason, much of the research reached well beyond the spectrum of architectural issues with a primary focus on educational philosophies and theories. The studio emphasized starting at the scale of the classrooms early in the design process, in order to ensure flexibility. These classrooms were then aggregated in a way to form

small community-like groupings. In turn, the classroom groupings informed the overall building form and site configurations.

### Design Focal Points:

Flexibility of the school site for community use was a major focus in many student proposals for the site. Educational spaces can easily double as meeting spaces for clubs, community organizations, after school activities, sporting events and a variety of outdoor spaces for walking, gathering, and playing.

Another focus of many design proposals was accommodating progressive teaching methods. The goal was to make use of the latest educational research and progress in education, incorporating strategies to reduce bullying and vandalism, increase attendance, graduation rates, and test scores, and to foster productive relationships between students and teaching staff.

### Outcomes & Criterion:

Despite basic similarities, the final design schemes are all unique in form and in program. The city was especially appreciative of the attention that was given to the flexibility of the spaces, and for the students' creative solutions to the problem of the road through the site and park spaces surrounding the site. It is understood that many of the designs would be costly to build, but the goal of the studio was to provide innovative, sustainable, forward-thinking solutions for Springfield. Each project has a clear educational goal which, in turn, informed the building's programmatic and site layout. The aforementioned strategies are just a sample of the techniques explored in the designs for Springfield's new Jasper Natron K-8 school.

# Student Proposals

## Meghan Hawkins

The objective of this design for Springfield's new K-8 school was to provide an ideal place for a holistic approach to education; a place that could prepare its future students for the issues and opportunities they might encounter after graduation, including gross inequities in standards of living, depletion of resources, climate change, obesity and other health concerns, loss of biodiversity, and environmental degradation.

This school harnesses five concepts of collaboration, ecology, community, food production, and global learning to create an "embryonic community" within the larger community of Springfield. The school-wide focus on these concepts will provide students with the necessary skills and experience to be aware of important issues in their lives and the larger world, and to address these issues constructively.

The design places students in direct contact with their local ecosystems with indoor/outdoor spaces and courtyards, opens up classrooms to each other and to the community, and demonstrates the cyclical qualities of food, water, and waste systems on site in a responsible and educational way.

On the site, this building makes a deliberate effort to respond to the topography, and to ensure that every classroom has direct access to the landscape. Although solar orientation was impaired with this approach, each classroom receives ample daylighting from skylights, and expansive views to nature from vertically shaded windows.


*Figure 8: Hawkins, diagrams*

The school was designed to encourage collaboration and learning relationships between different age groups, and to provide a familial atmosphere that encourages participation and a sense of purpose and responsibility.

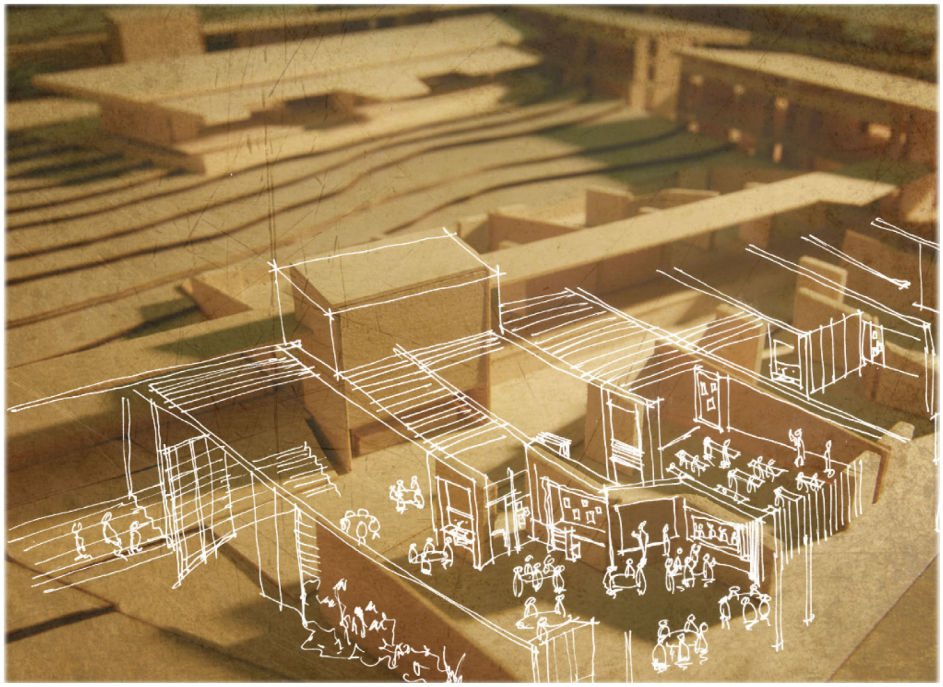


*Figure 9: Hawkins, classroom pod perspective*

Each ‘neighborhood’ of eight classrooms shares a common space with movable and storable furniture for a variety of activities, a demonstration kitchen, a small amphitheater for larger student gatherings, and a ‘nest’ area for small groups or quiet reading.

This space has the ability to function as a breakfast club for underprivileged students, a coatroom, media center and collaboration space, art studio, and as a meeting place for after school activities, including adult education.

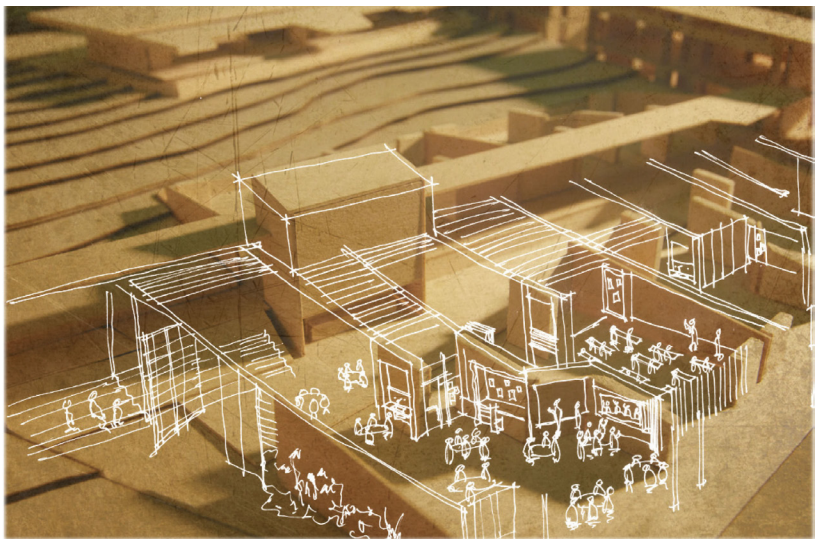


*Figure 10: Hawkins, classroom perspective*

## Adam Stephen

In this design, a main focus was to foster creative learning, and in doing so, bring the wetlands and slope into the design as an integral part of the school. Positive outdoor spaces were created to facilitate outdoor activity and learning. The goal was to make the kids aware of the site and to provide a sense of belonging within the community and the larger environment.

The building was designed to be an active flexible environment with a positive social structure with plenty of support. Housing both a middle school and an elementary school, this school maintains a certain level of hierarchy between the ages.

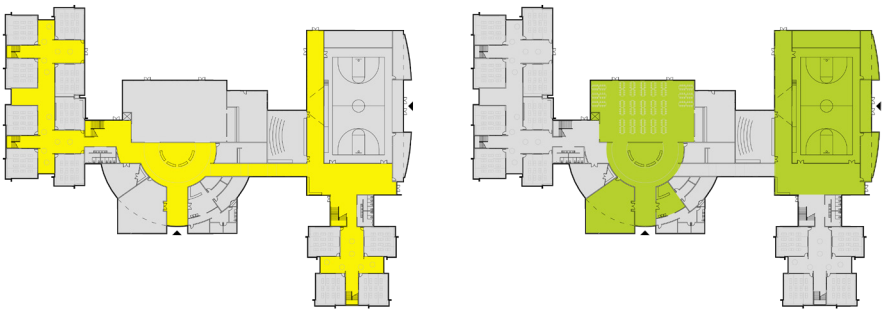


*Figure 11: Stephen, diagrams*

In the school, the public spaces are much more open, while the private spaces, like classrooms, are located down corridors and protected from the traffic of more active rooms in the center of the building. Public spaces have vibrant colors, while the classrooms and private spaces have warm welcoming colors.

All of the classrooms are designed to be flexible spaces. The older kids will use more institutional furniture that will help transition to a high school, whereas the elementary aged kids will have rounded module desks that can be spaced individually or arranged together for group activities.

*Figure 12: Stephen, classroom perspective*

## King Tang

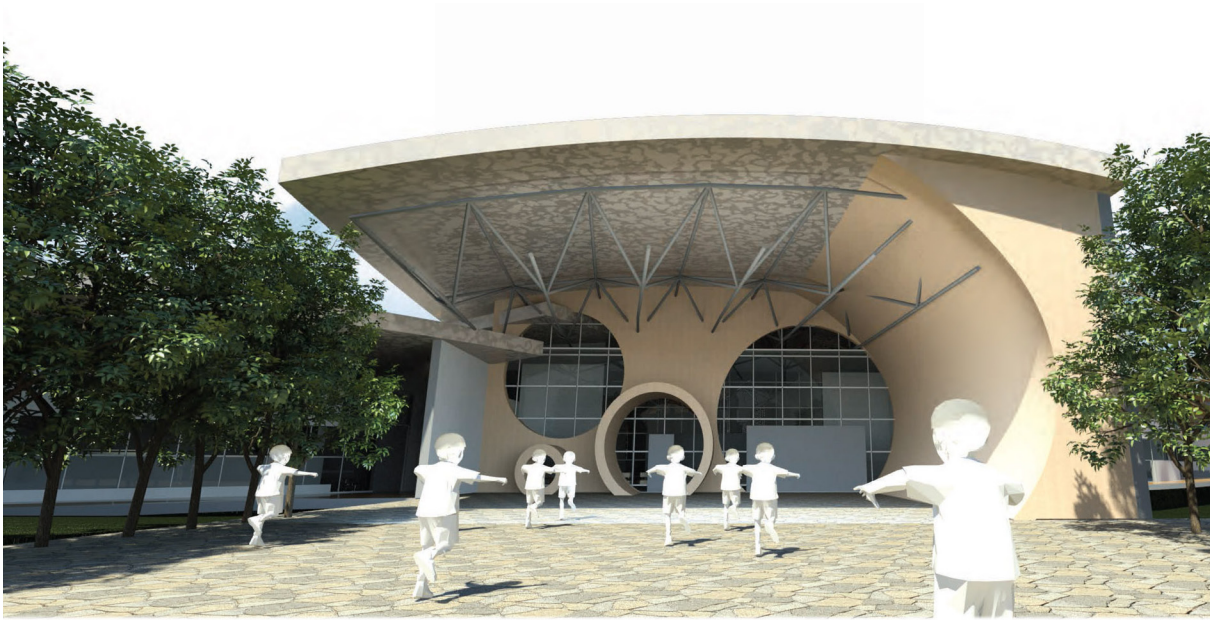


*Figure 13: Tang, entry perspective*

This proposal encourages interactive and active learning in and out of the classroom. Pedagogically, The River School revolves around the belief that the next generation of education will not be limited within a classroom where students are encouraged to learn passively. Similar to the way a real society works, students can develop their abilities according to personal interests.The resulting building design lies in line with the topography, causing minimal harm to the existing site.

Considering community identity, the school entrance was designed as a significant moment in the building. The entry sequence is designed so that students can pick their own path to go back to school, symbolic of the independent nature of the school pedagogy.

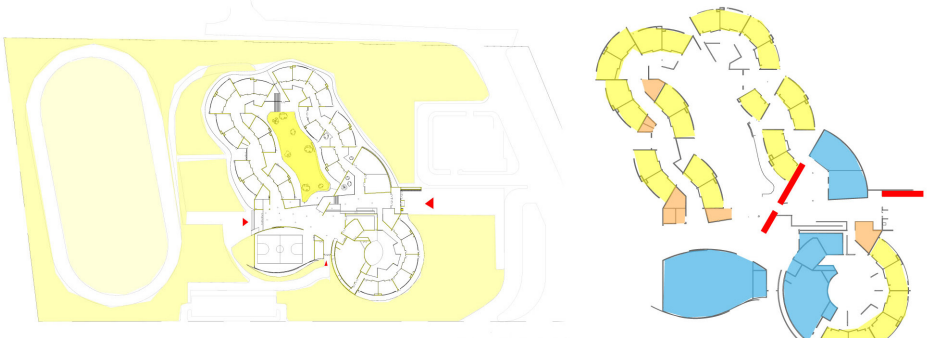


*Figure 14: Tang, zoning and parti diagrams*

## The Building

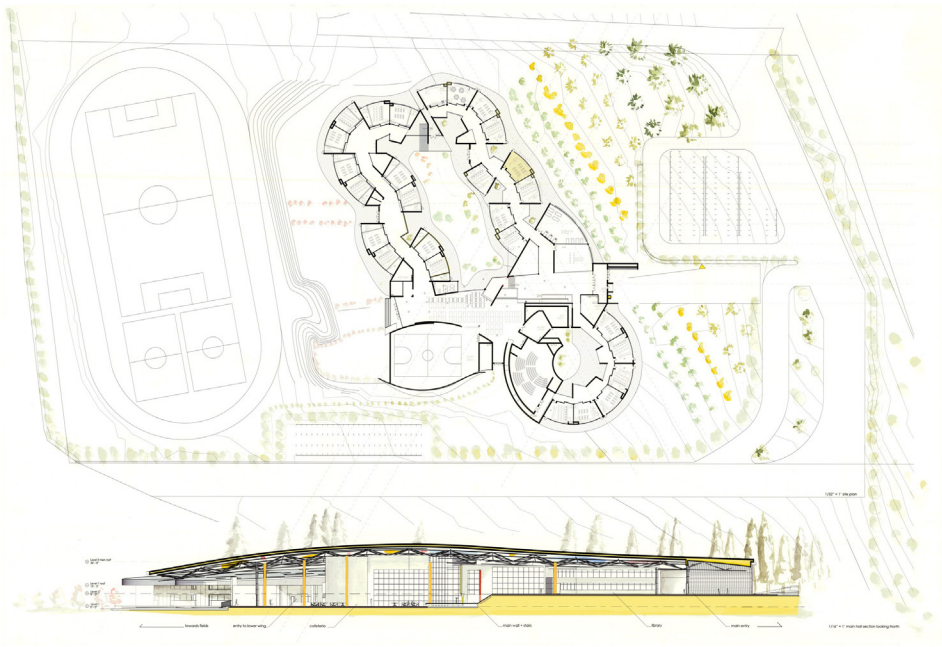


*Figure 15:Tang, site plan and section*

The main corridor outside of the classroom also provides covered outdoor spaces for student collaboration. This space acts as the common area for the adjacent classrooms, encouraging different groups to mix and work together.

## The Classroom

The main criteria for the design of the classroom are sufficiency of daylighting, connection to surrounding environment and flexibility of space usage.

The transitions between indoor and outdoor learning nodes happen from the boardwalk just outside the classroom. The boardwalk serves as the transition space between the indoor and outdoor spaces, as well as the connection from all of the non-classroom spaces. The walk encourages the children to use areas outside of the classroom to learn.

*Figure 16: Tang. Inspired by Pablo Picasso and Joan Miro, the commons area abstracts the color used by the masters and reinterprets it to express local culture and environment.*


*Figure 17: Tang, interior classroom perspective*

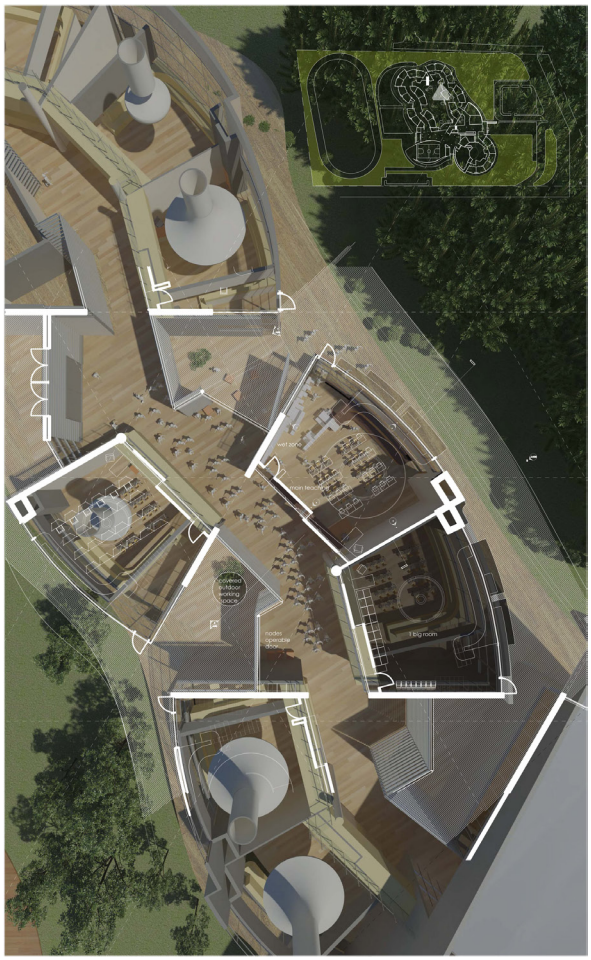


*Figure 18: Tang, axonometric view of the classroom pod*

## Mandi Vance

The Jasper Comprehensive School proposal promotes a safe, secure, home-away-from-home to K-8 students in the new communities in South Springfield. Inspired by the site itself, the surrounding hills, and Springfield beyond, the school provides varied learning hubs which cater to how each student learns best and encourages active participation in their learning and the world around them. While employing proven strategies for noise reduction, natural daylighting, and natural ventilation throughout the building, the generous common space brings together students of all ages, and the community too, for formal performances and informal collaborations alike.

*Figure 19: Vance, classroom perspective*

Jasper Comprehensive School steps gracefully up the slope towards the surrounding hills. Students wait in the southern sunshine for buses and parents to pick them up. An expansive backyard to the north, created by the consolidated building form, provides plenty of outdoor discovery and play space for students and community members.

*Figure 20: Vance, exterior perspective*

## Chelsea Karrels

The Hillside Garden K-8 School in the Springfield School District prepares children for successful and responsible futures. Beyond the educational curriculum, the vital interpersonal skills of communication and collaboration are important keystones in any school community, and are appropriately given space to develop and flourish at Hillside Garden School.

*Figure 21: Karrels, entry perspective*

The enhanced wetlands on site provide opportunities for hands-on learning in stimulating, non-traditional classroom environments in the learning pavilions. Rain gardens in between classrooms and a school vegetable garden allow for fuller integration of environmental studies in the curriculum.

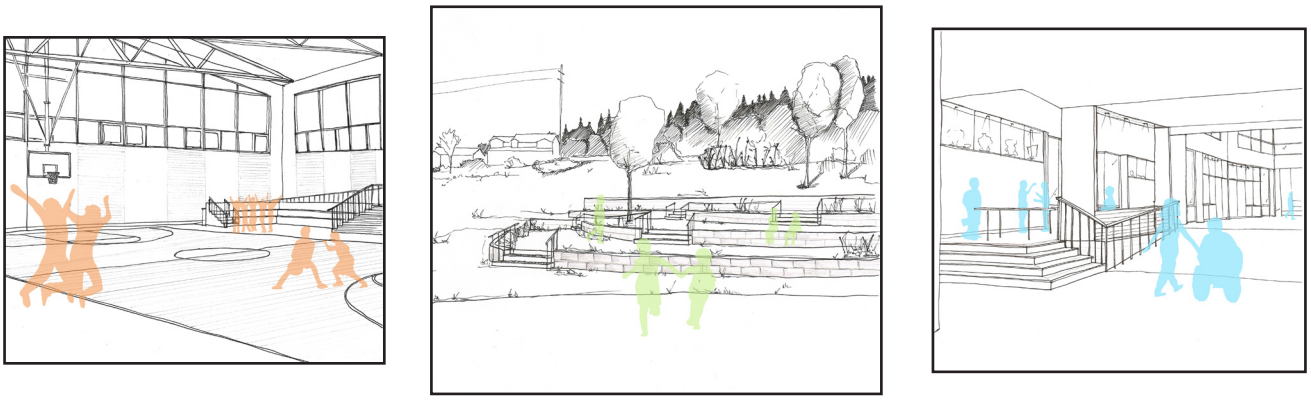


*Figure 22: Karrels, vignettes*

The school serves the greater Jasper-Natron community with a public gymnasium, sports fields, and social gathering spaces for after-hours use by community groups. Each classroom has display space to share student work with the community and represent classroom values, talent, and successes.


*Figure 23: Karrels, ground floor plan*

*Figure 24: Karrels, exterior perspective*

Informal meeting spaces in the hallway are where students from different classes engage, bridging the community scale of the whole school and that of the classroom. Special classes such as art are interspersed throughout the school, connecting students to the greater school community while in their home classroom.

*Figure 25: Karrels, vignettes*

Classrooms are arranged in groups to provide an intermediate community scale between that of the entire school and the single class unit. Breakout spaces are located between classroom pairs, defined by natural light and a view to the outdoors. The classrooms can open to the breakout space via operable glass doors for direct collaboration between class groups and an alternative teaching space for students working at a different pace.

The classroom contains three major spatial zones, including a main teaching zone, a focused study zone, and a wet zone for project cleanup and access to the classroom porch.

*Figure 26: Karrels, classroom group plan*

The edge condition of the classroom relates to the anthropometrics of the students. Elementary classrooms have a built-in bench for individual reading or group story time. The middle school classrooms have a counter height study ledge. The windows in this zone of the classroom are sized to relate to the students as they occupy the edge, giving them a focused view unique to their specific location in the school.

## Risa Beck

This scheme features a school that emphasized connection to its community and encourages interaction with the landscape. Much like a river, the building's character changes as the user walks along its winding hall; through the interior screens, the varying daylighting conditions, and the expansive views of the surrounding landscape. The classrooms act as "stops along the journey" for reflection and private instruction, while the larger outdoor areas are intended for different age groups and classes to gather and learn from one another.

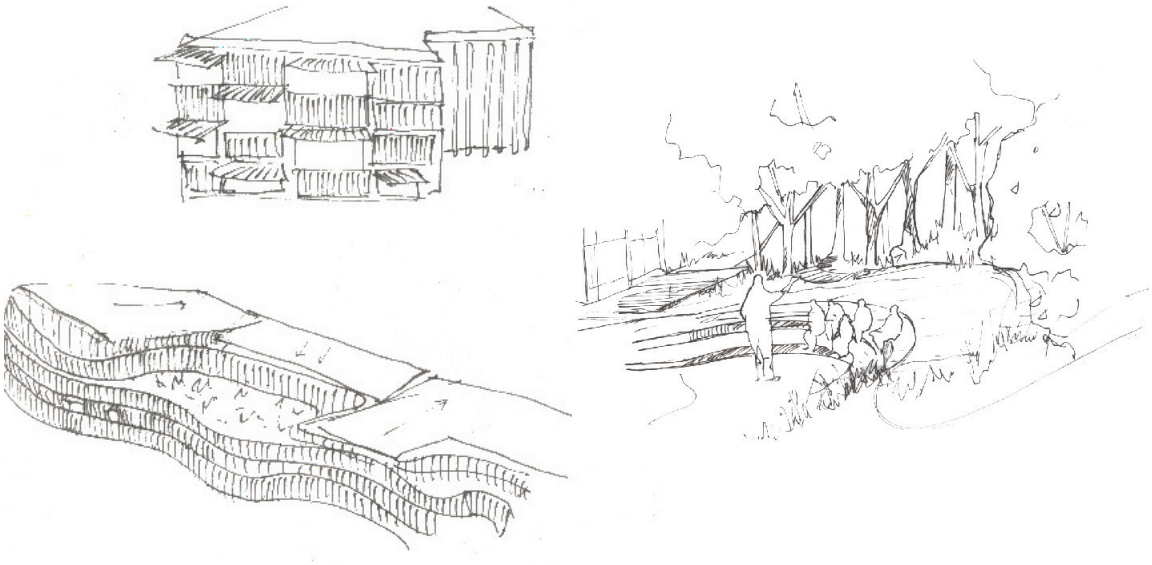


*Figure 27: Beck, facade and amphitheater sketches*

*Figure 28: Beck. Rendered site plan expresses the seamless integration between indoor and outdoor features.*

The building design addresses how learning takes place everywhere: inside the classroom, in the halls, and in nature. The weaving of the interior spaces with the exterior encourages children to explore and play to learn. Attention was given to the way light would enter the hallway and the classrooms, and it is employed as a tool in educating the building users about natural day lighting. The learning pavilions that weave along the preserved wetland area, the greenhouse and the community farm, serve as learning opportunities for sustainably responsible living.

The building is split into two parts: the lower half for the middle school, and the higher end for the elementary. The two halves are connected in the center by a covered outdoor area. A paved path meanders through the central area and acts as both a pedestrian way and access for emergency vehicles. The gym is separate from the main building and acts as a community center for times when school is not in session.

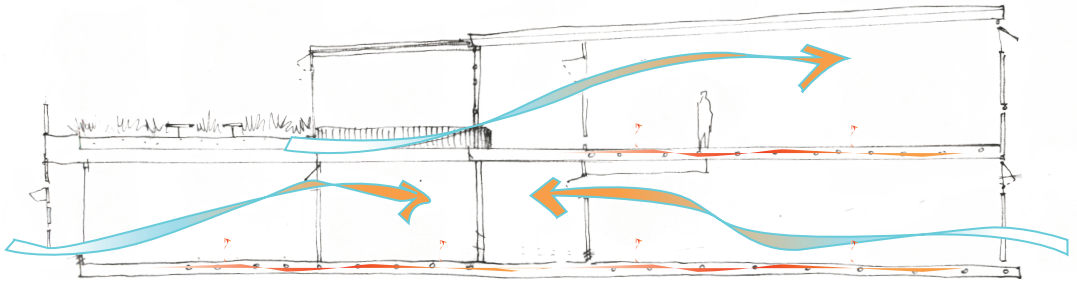


*Figure 29: Beck, natural ventilation strategies*

*Figure 30: Beck, classroom plan*

Upon entering the hallway, students are greeted with light wooden screens displaying student work. The pliable screens can be adjusted to provide a more public or private space for each pod. The screen system also allows users to control the amount of daylight let into the area outside of the classroom.

The classrooms are grouped in threes with sliding wall partitions that open up for team teaching. Special attention was paid to the floor materials for light reflectance and connections from interior to exterior spaces.

The classroom itself is illuminated by natural daylight and provides a panoramic view of the natural landscape. Each class contains a nook that can serve as a group study space for different paces of learning, or a play space for younger grades. A large door opens up to the adjacent terrace for outdoor teaching to encourage interaction with nature on a daily basis.

*Figure 31: Beck, classroom sketch*

## Corey Templeton

The “Water and Wood” scheme maximizes the connection of the city to the natural elements surrounding it. Given that the site is situated between the McKenzie and Willamette Rivers, and with 70% low-grade wetland on the chosen site, water is a significant part of Springfield citizens’ everyday lives.

The wood is addressed by using local red pine used as a prime material for the school. Springfield’s long history in the lumber industry, and the site’s adjacency to Weyerhaeuser Haul Road inspired this material choice.

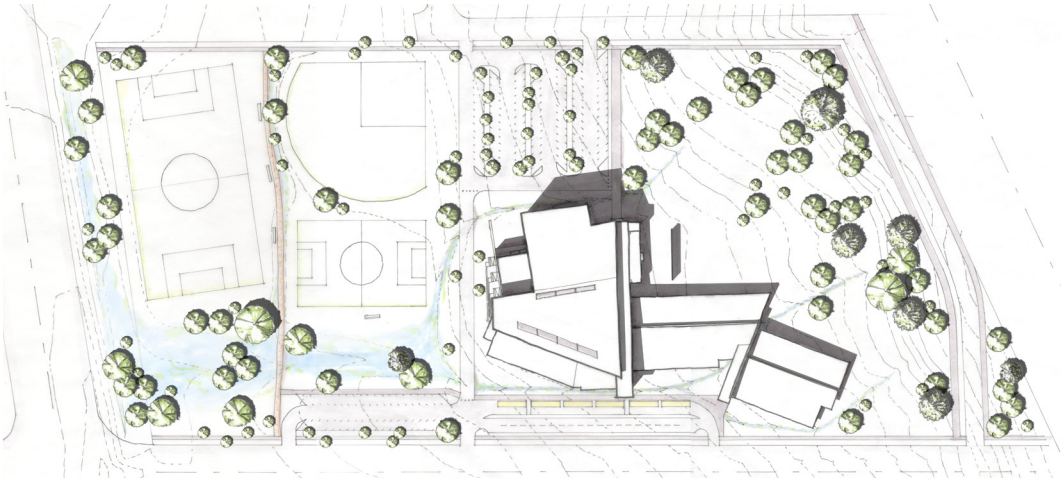


*Figure 32: Templeton, site and roof plan*

*Figure 33: Templeton, site section*

The sports fields are placed on the flattest part of the site, while the school sits at the southern edge, protecting the playground from winter winds, as it addresses the residential neighborhood to the north.

The complexities of the site encouraged a constraint-based approach to architecture, and the concepts of water and wood are carried all throughout. The lowest corner of the site to the southwest is reserved for water runoff, which will be used for an upgraded educational wetland experience.

*Figure 34: Templeton, covered entry with integrated bioswales*

Integration takes place at all levels, beginning with the connection between the bioswales and wetland, as well as in the circulation spaces. The widened hallway allows for breakout zones for each of the classrooms.

*Figure 35: Templeton, classroom pod floorplan*

*Figure 36: Templeton,breakout space*

The classrooms are set up with a zone system, allowing for various styles of concurrent learning—from reading nooks to secondary teaching walls for small groups-- while not inhibiting the functionality of the main teaching space. The walls located between central classrooms can be set up as sound-insulated folding white-board walls for increased flexibility and collaboration between classrooms.

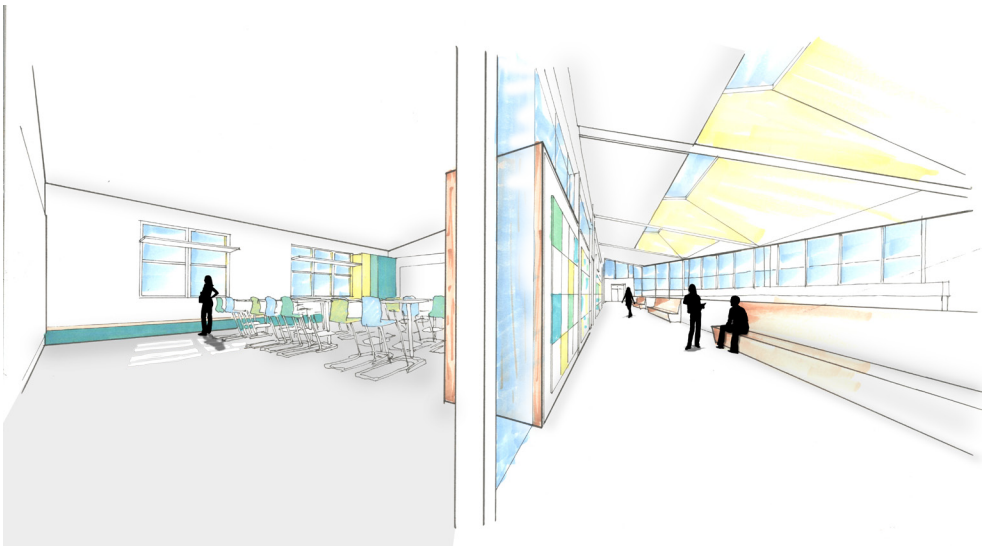


*Figure 37: Templeton, junior high classroom, corridor*

A color palette of blues, blue-greens, and light yellow was selected for the school. Blues are calming, and are conducive to thoughtful study, but also to alertness. A blue-green also comes out in the public space and junior high. Greens suggest hope, restfulness and calm, and are associated with nature, giving a peaceful secure feeling. Yellows evoke feelings of warmth and cheerfulness.

## Julia Ward

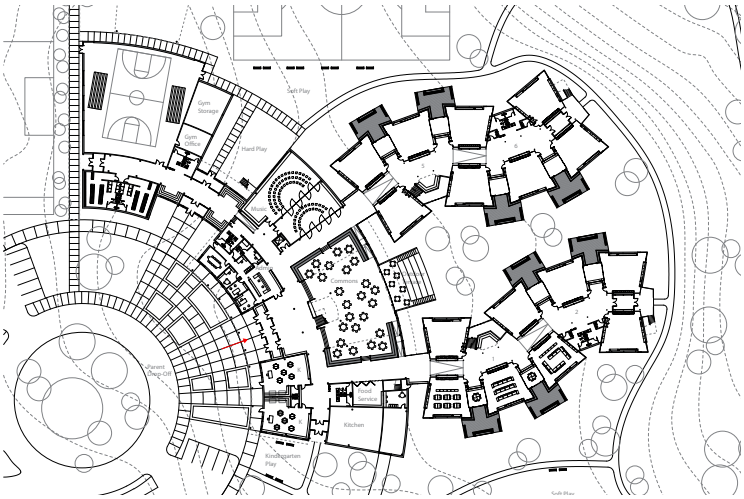


*Figure 38: Ward, site plan*

The New School for Springfield aims to create a dynamic environment where students and teachers have maximum flexibility and adaptability for any possible activity. The approach to the school is dynamic and welcoming, and leads students directly into the common central space.

The common area serves as the primary activity hub with views to the outdoor patio and amphitheater just beyond it.

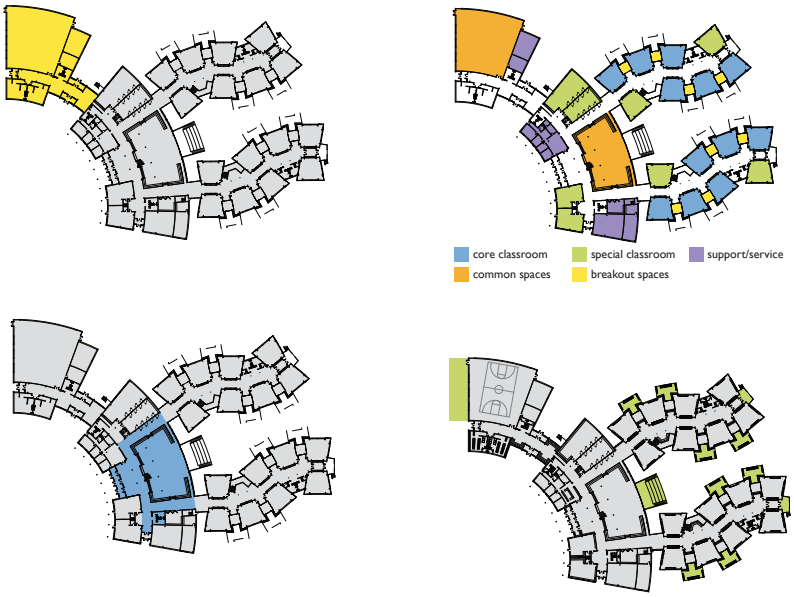



*Figure 39: Ward, diagrams*

The amphitheater seats climb up the classroom wings to lead the students to the more private, natural area of the site. The classroom wings meander and climb up the slope towards the natural wetland area to the east.

The public spaces are located to the west end of the site in order to maintain the quiet, more natural spaces to the east end. The main means of site access are kept to the west while learning pavilions, classrooms and walking paths anchor the east end.

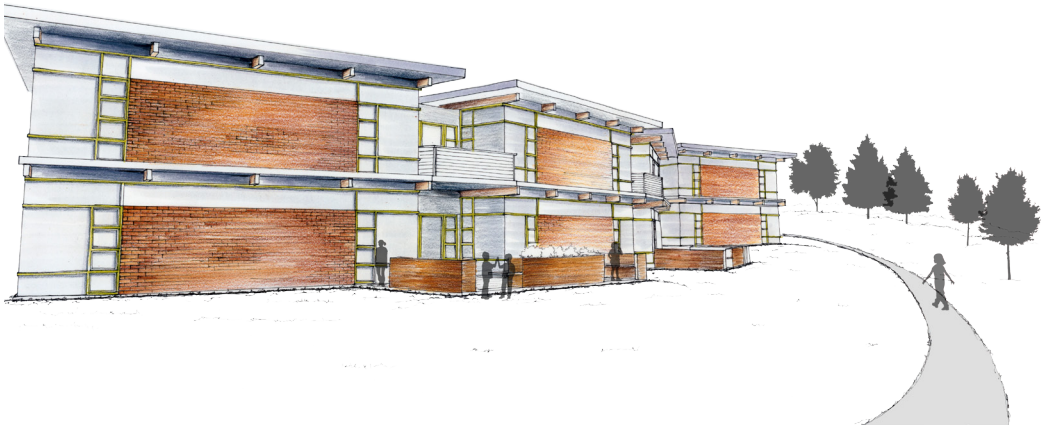


*Figure 40: Ward, exterior classroom perspective*

Classroom pods are organized in groups of three according to grade levels. Flexible breakout spaces act as connecting nodes between the classes, and flexible walls open up to create a larger area for student collaboration.

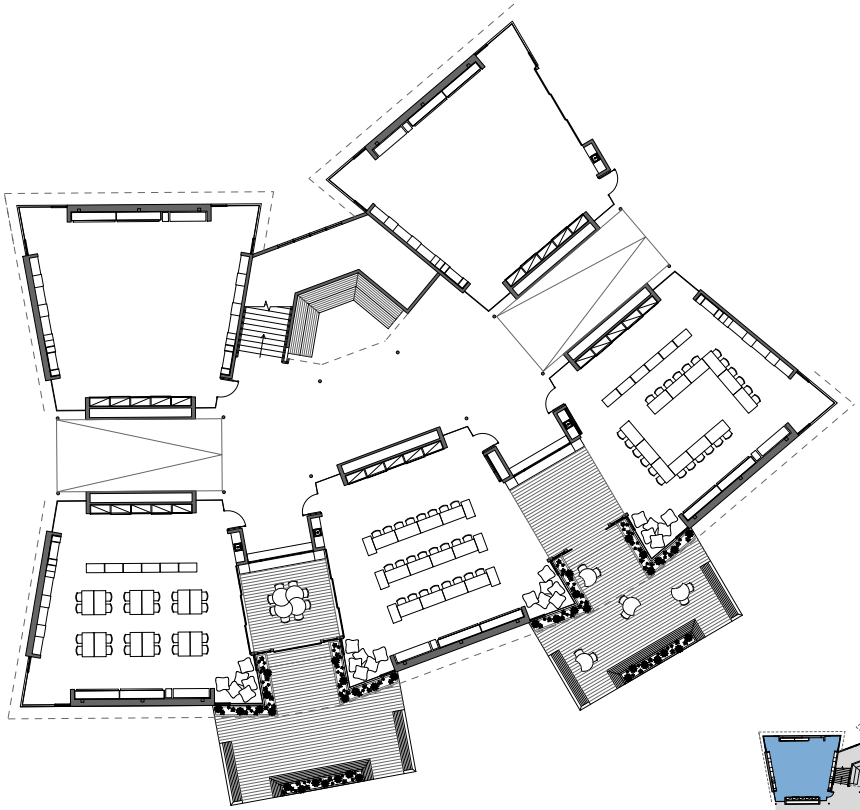


*Figure 41: Ward, classroom pod plans*

Outdoor terraces provide spaces for students to learn and interact with the outdoors. When the large doors are open, the breakout space blurs the boundary between the indoor and outdoor classroom, bringing the outdoor environment inside. Fully glazed corners allow for visual relief in every direction for views, supervision, and natural day lighting.

*Figure 42: Ward, classroom pod diagrams*

## Brian Lawler

This scheme features a design that is based around providing a variety of different nodes for community interaction within the school and surrounding neighborhoods. The design strives to provide protected outdoor areas for the students by providing access to these areas from every point of the building. The building is essentially a single loaded corridor, connected by a grouping of the common spaces.

*Figure 43: Lawler, view of main courtyard area*

The design of the school responds to the slope of the site by having each classroom group step up the site so that the building itself follows the natural slope. The common area is located directly in the center to act as the connection point between the two schools, as well as the community.

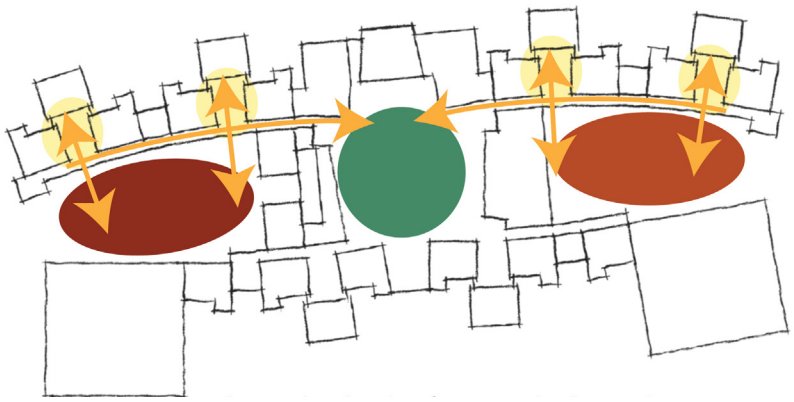


*Figure 44: Lawler, nodes for community interaction*

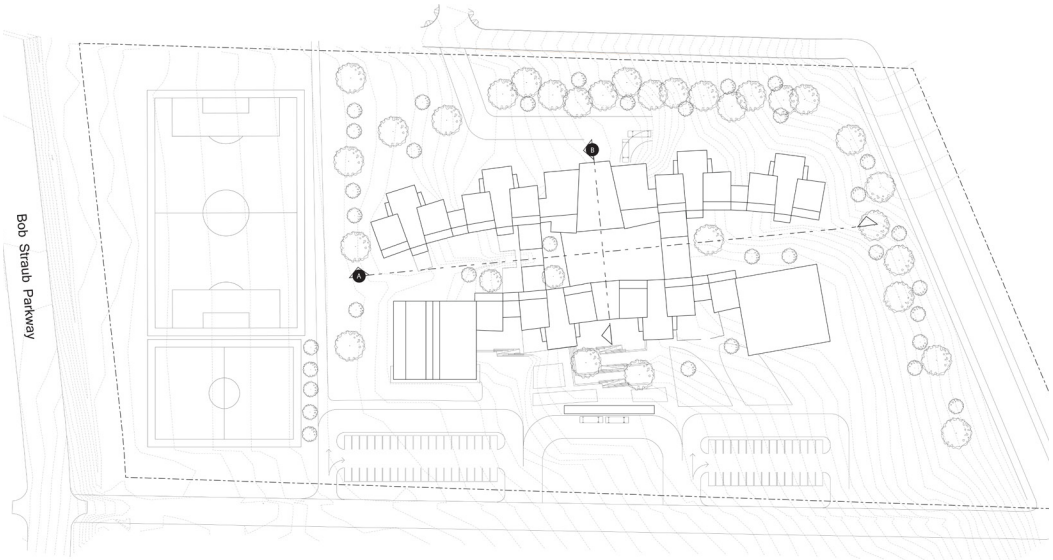



*Figure 45: Lawler, site and building plan*

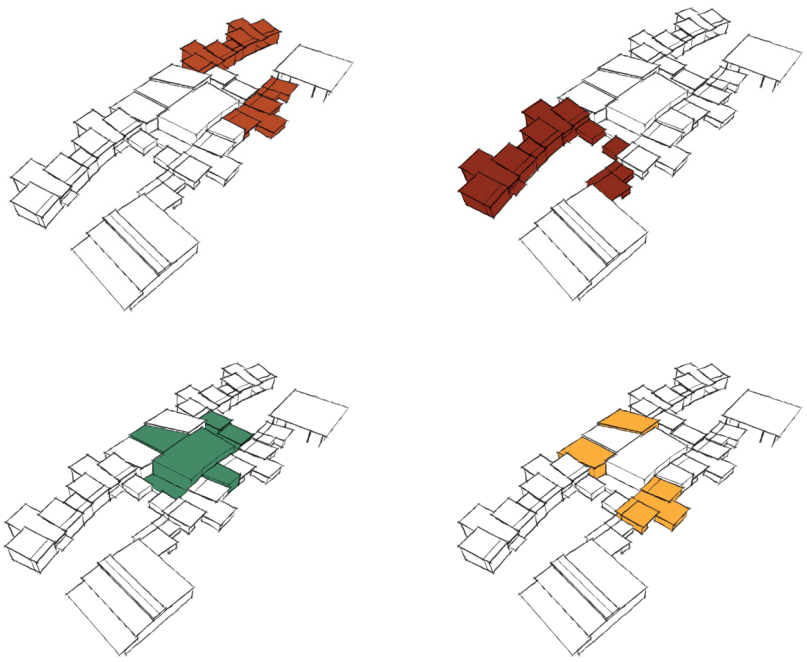


*Figure 46: Lawler. Massing diagrams express zoning conditions.*

Classrooms are arranged in groups of three, connected by a smaller central break-out space away from the main hallway. These areas allow for natural daylight to filter in through the corner windows.

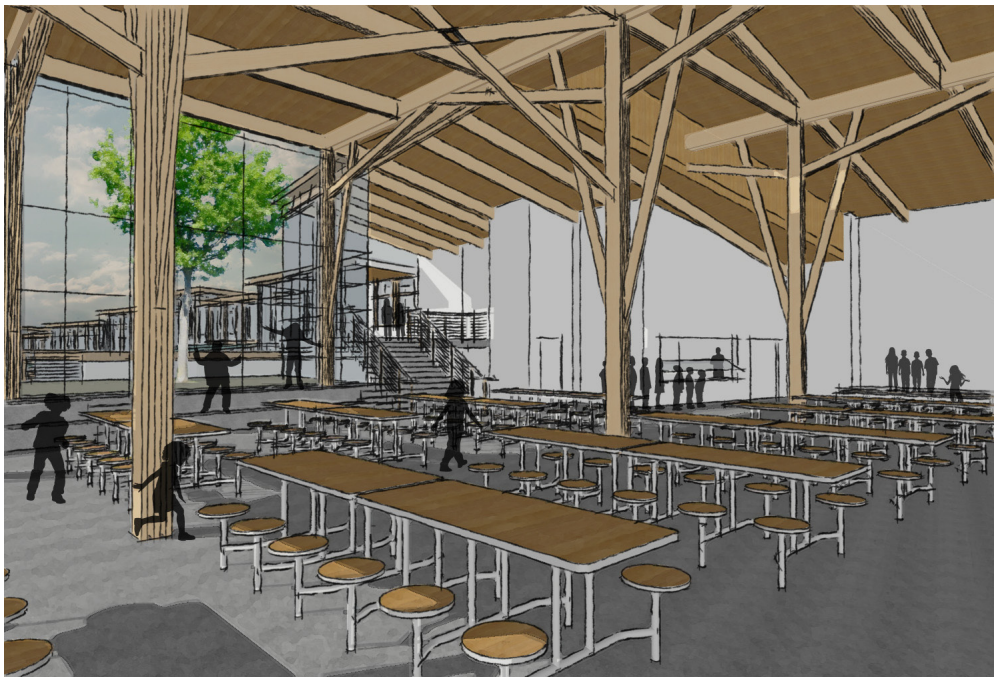


*Figure 47: Lawler. Wood, polished concrete, and glass are the primary materials used on the interior of the building.*

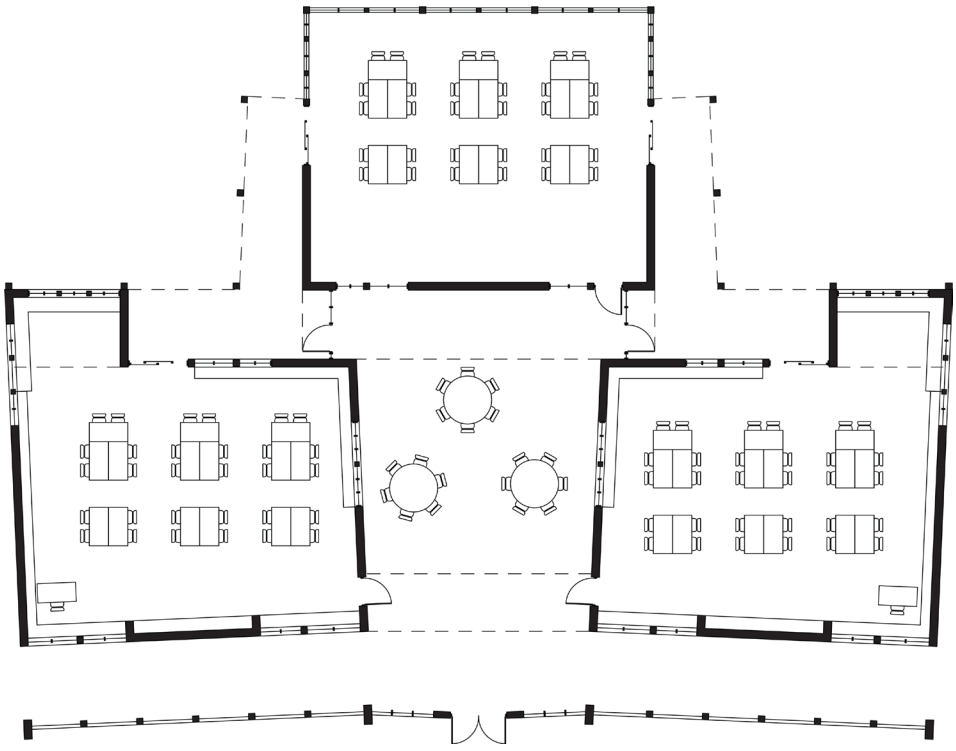


*Figure 48: Lawler. Classroom pods are arranged around a central breakout space.*

*Figure 49: Lawler, interior classroom rendering*

## Tara Ikenouye

*Figure 50: Ikenouye, entry perspective*

This scheme's concept draws inspiration from the nineteenth century pioneers who followed the Oregon Trail and settled in Springfield. The school is designed to inspire the next generation of pioneers to engage with the frontiers of knowledge. The intent of the academy is to foster lifelong learning for students and the community, focusing the shift from "knowing what" to "knowing how."

*Figure 51: Ikenouye, site plan. The site offers a variety of outdoor spaces to encourage students and faculty to actively interact with the landscape.*

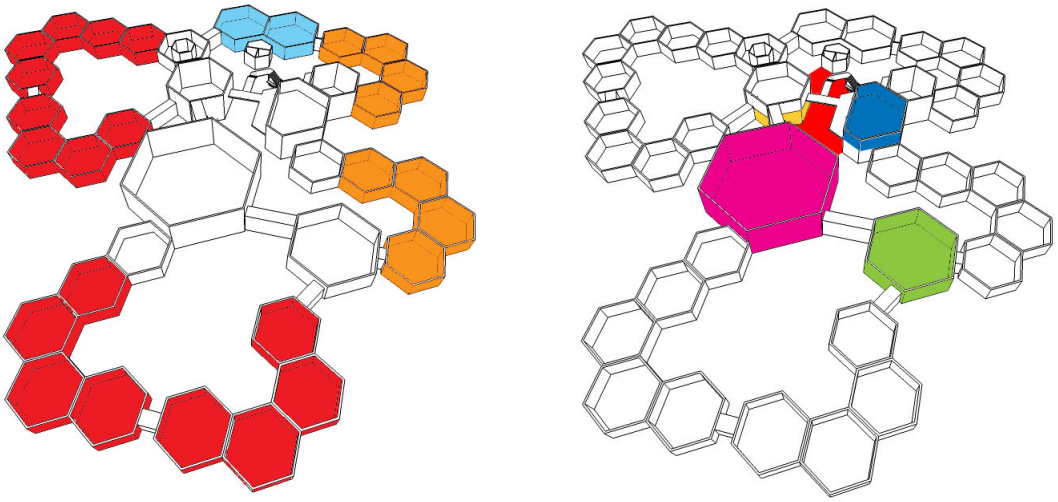
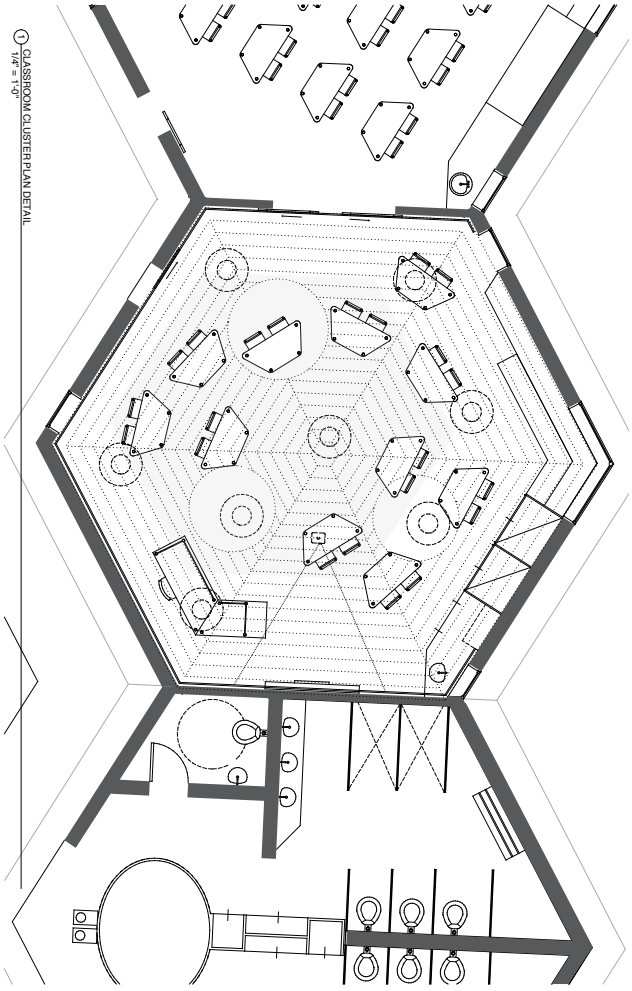


*Figure 52: Ikenouye, classroom and shared space diagrams*

*Figure 53: Ikenouye, perspective of the main stairs in the middle school*




By embracing technology and social learning environments, the school offers a range of spaces for the students and the community. Classroom clusters and open eating commons encourage students to exercise choice and autonomy. Enclosed courtyards and adjacent nature pavilions allow students and teachers to integrate acting and thinking in the classroom through gardening, exploration and demonstration.

*Figure 54: Ikenouye, classroom plan*

*Figure 55: Ikenouye, interior classroom perspective*

## Jeff Matarrese

This scheme is built from a modular classroom unit that can be expanded or contracted to fit the needs of the school. The orientation on the site allows the school to sit as flat as possible, minimizing costs and eliminating the need for ramps.

*Figure 56: Matarrese, exterior perspective with an open field for informal play*

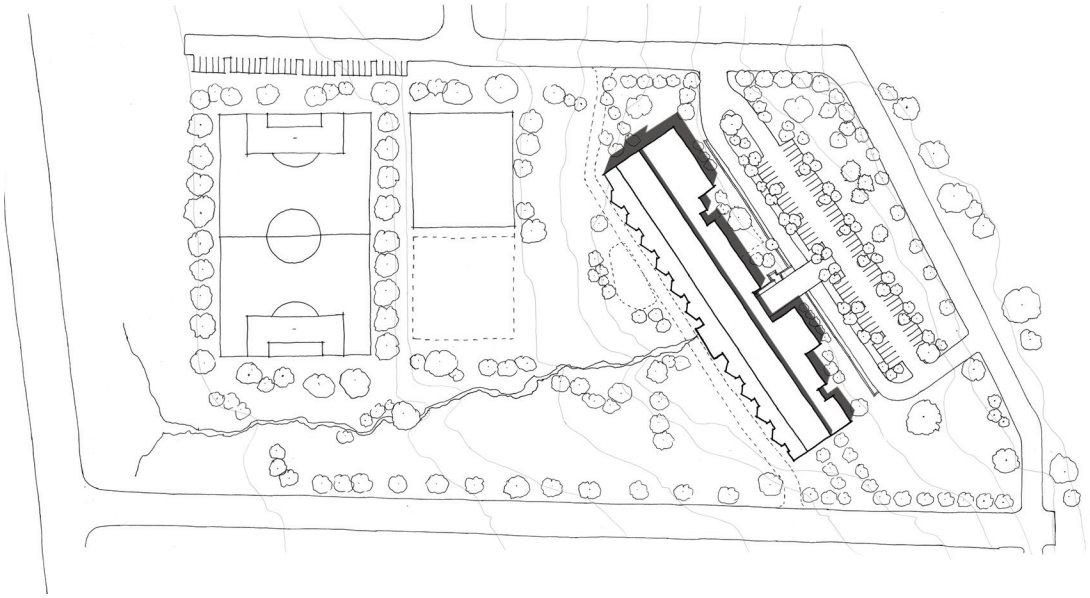


*Figure 57: Matarrese, site plan*

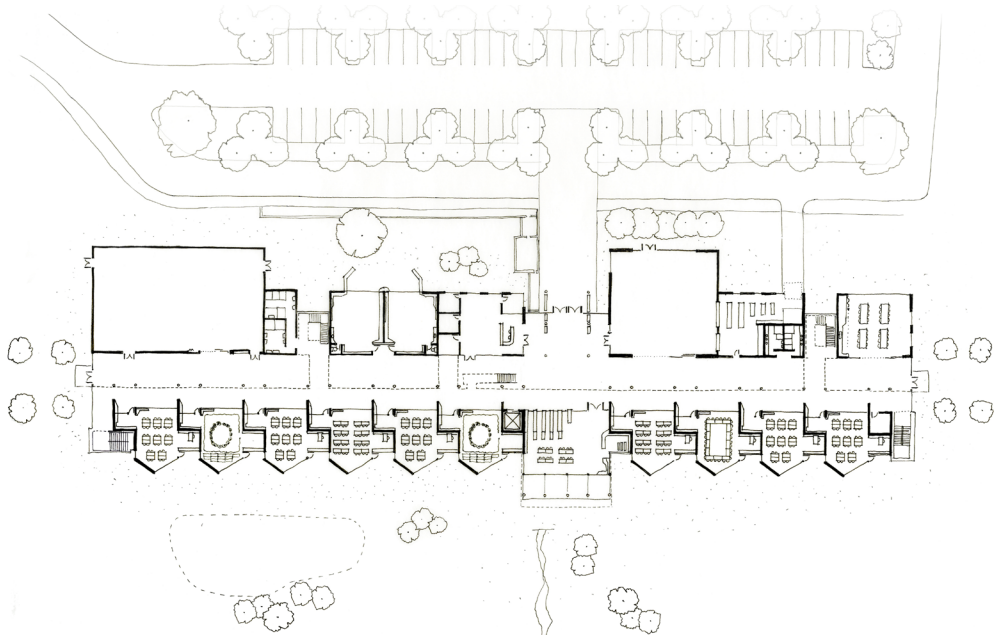


*Figure 58: Matarrese, ground plan*

The building is laid out in three bars: classrooms, service, and the indoor “street” between. The kindergartens are located immediately adjacent to the administration near the entrance of the school for easy access and safety. The services, such as the gym, band and art rooms, and the commons, are dispersed throughout the northwest wing to facilitate interaction between grades and help connect the students as a larger community.

*Figure 59, Matarrese. The compact building allows the site to be freed up for exploration, informal play, and activity that can be easily monitored from the classrooms.*

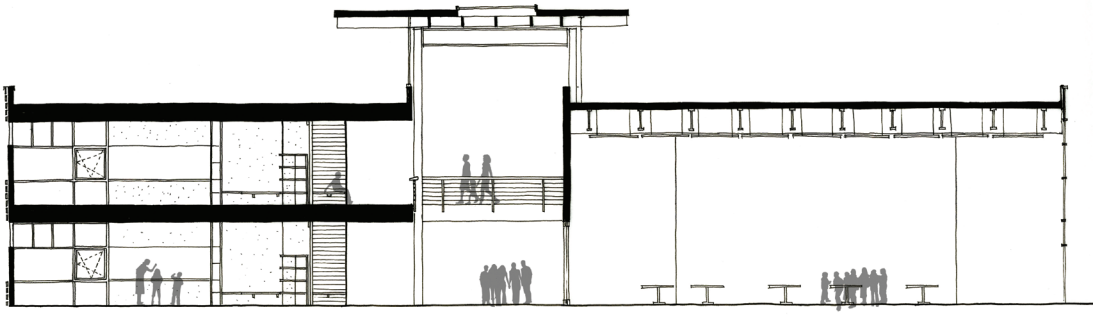
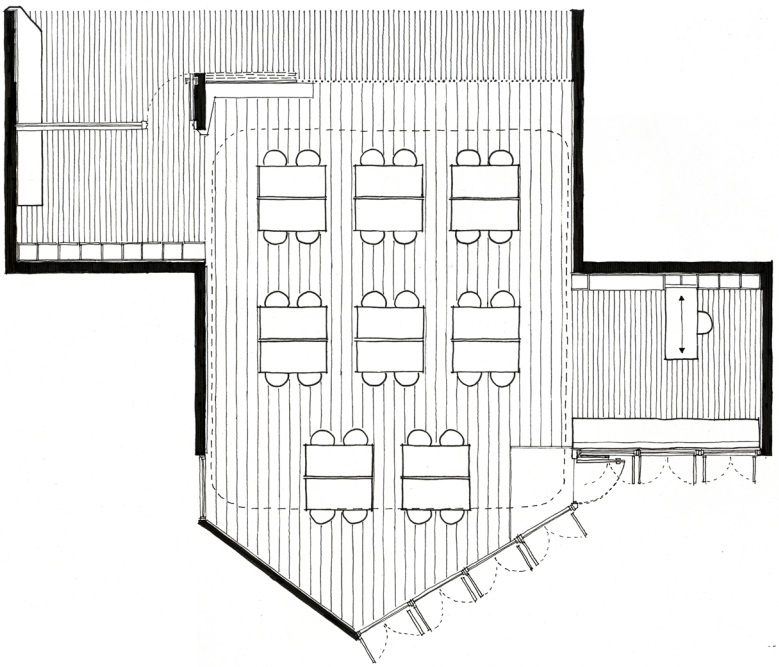


*Figure 60, Matarrese. Interaction between the class, the "street," and the commons (left to right)*

The scheme for the classroom is derived from two ideas: that it should feel like a home for the students, and that it should be flexible enough to accommodate changes throughout the days and years. Just under 1,000 square feet, the classroom contains a small mud room, a central teaching space that can be segregated with a curtain, which doubles as a projection screen, and a small break out space. This break out space can be used for private instruction, group activity, or as an office for the teacher, and is furnished with built-in shelving for a small library and a fold out desk.



Pin up space is created at the entrance and far walls, helping give identity to the room and adding to acoustic dampening. The wall facing the street can be completely opened, allowing the class to expand into the central zone.

*Figure 61: Matarrese, classroom plan*

## Terra Wilcoxson

*Figure 62: Wilcoxson, perspective of the main stairway and common area*

This proposal highlights the importance of designing a school that successfully supports both social and emotional growth while encouraging an expanded skillset.

The SAEC Learning Center focuses on Social, Academic, Environmental, and Community-Focused learning, and establishes interdependency between the student and the critical component of school architecture for facilitating healthy childhood development.

The design is founded on the principles of Positive Youth Development, an evidence-based theory that suggests children who move successfully into adulthood acquire specific internal assets at each developmental stage.

The National Research Council published eight characteristics of programs that support positive youth development (Eccles & Appleton, 2002). These were used as the starting point for this project. Four characteristics from this list were identified as impact areas for design:

- Physical and Psychological Safety
- Appropriate Structure
- Opportunities for Skills-Building
- Integration of Family, School and Community

*Figure 63: Wilcoxson, entry perspective*

Students practice an array of contemporary life skills and harness opportunities for social growth. These experiences also have emotional benefits that affect a child's self-image and resiliency. For example, when students learn to open and close windows at the appropriate time of day, they learn practical skills and engage in a collaborative process with their peers and educators. Similar approaches throughout the school are taken in relation to technology, food production and community partnership.

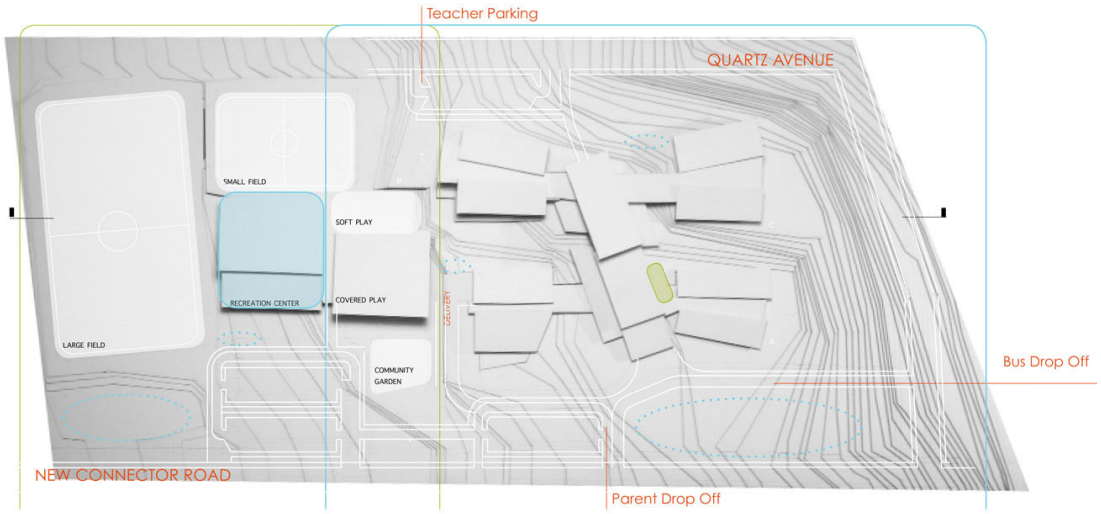



*Figure 64: Wilcoxson, site model and layout*

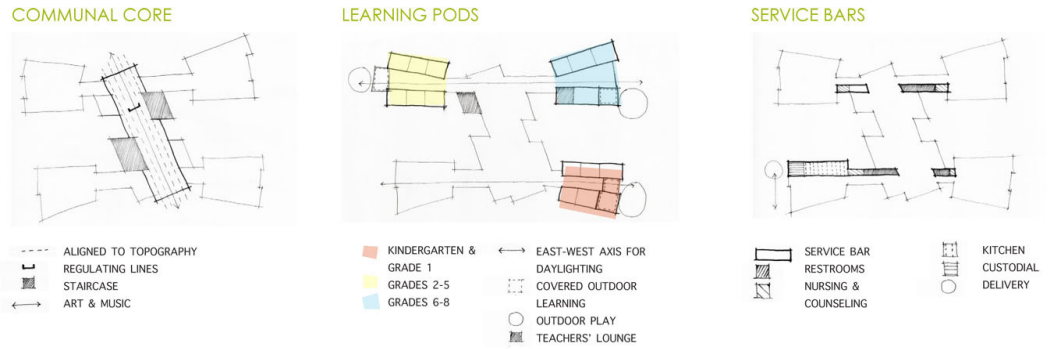



*Figure 65: Wilcoxson, school plan zoning diagrams*


*Figure 66: Wilcoxson, perspective sketches of the school and outdoor areas*

The divide between classroom and communal space is reduced and becomes largely transparent or adjustable. In addition, spaces throughout the school are designated for personalization and made adaptable to respond to activities that change throughout the day, week, or semester.

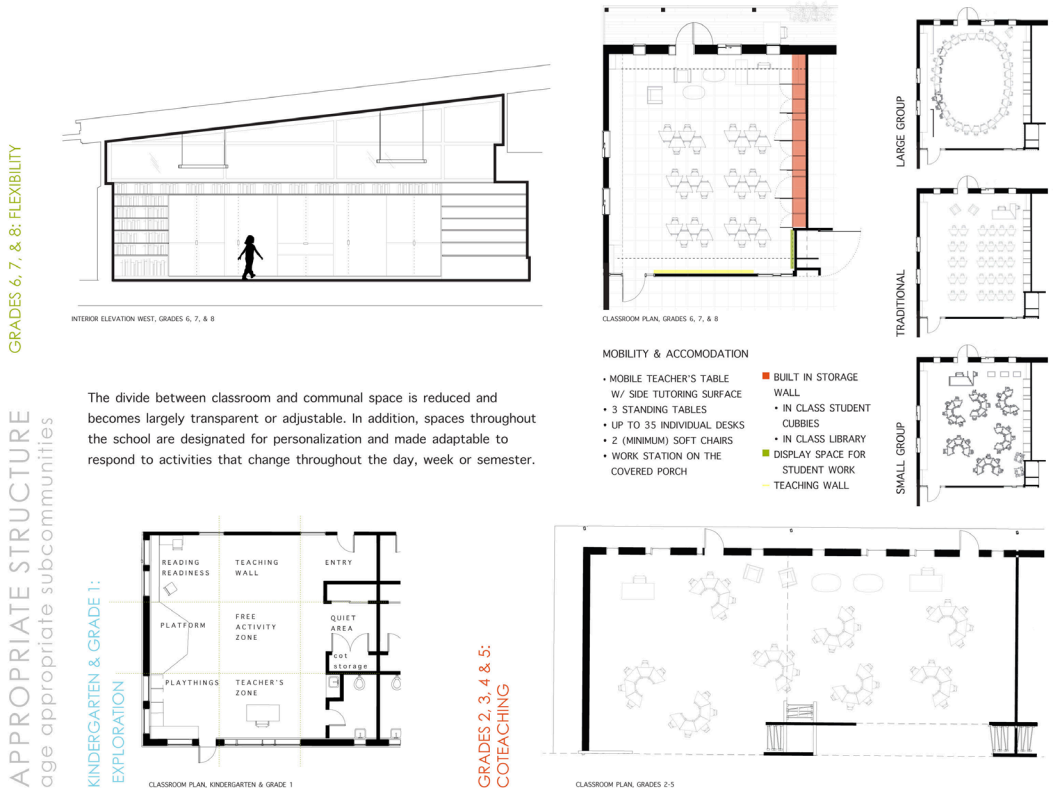



*Figure 67:Wilcoxson, classroom layout*

## Sam Goedeke

The Jasper Ridge School's focus is to foster social interaction within the learning environment between different age groups, community members, and teaching staff.

The core acts as the nexus of social activity and a catalyst of energy for the areas adjacent to it, while the main hall is the heart of the community. It acts as a place for students to eat, perform, socialize, and learn. When school is not in session, this flexible space can accommodate meetings, performances, meals, and screenings for the extended community.

Within the learning pods, classrooms wrap around a central atrium to create a smaller social node that mimics the Main Hall. The atrium is home to students' creative endeavors and exhibition. Art classes take place in the pod's main space and have the opportunity to spill out onto the outdoor patio.

The classroom is trapezoidal in shape to focus students toward the front teaching wall while providing a reading nook on the border. A separate break-out space is provided just outside the room, where the teacher can work with students while maintaining contact with the rest of the class.

The main wall separating the class from the hallway is completely transparent for maximized connection between the two spaces.

## Michael Bowles

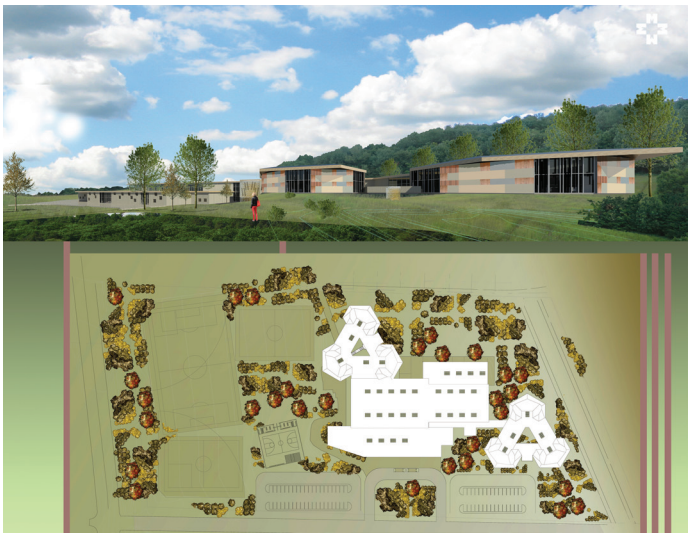


*Figure 68: Bowles, site plan and perspective*

This proposal connects people, place, and context through environmental understanding and collaboration. Situated at the edge of an urban growth boundary, the school serves to protect the surrounding natural landscape and invigorate the children inside.

The landscape design and planting pattern integrate accessibility with park-like neighborhood access from the northwest, and places a service entry to the northeast. Alleys of trees mark the western promenade, and the main entrance serves as the roundabout to the southwest.

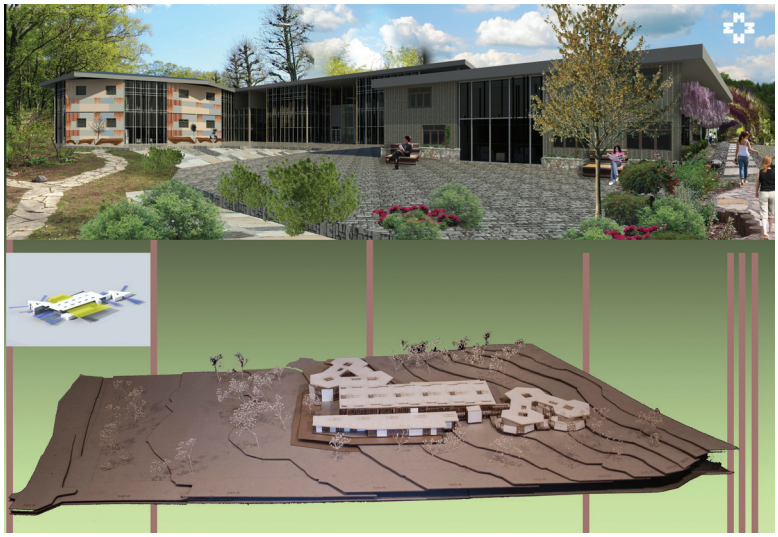


*Figure 69: Bowles, site model and entry perspective*

Panoramic views from the classrooms engage the outdoors and pavilion-style community rooms open to an inner

atrium. The school recognizes the disparate needs of the client, community, and society through transformable multi-use spaces. Sustainable design strategies include water catchment systems and greywater reuse.

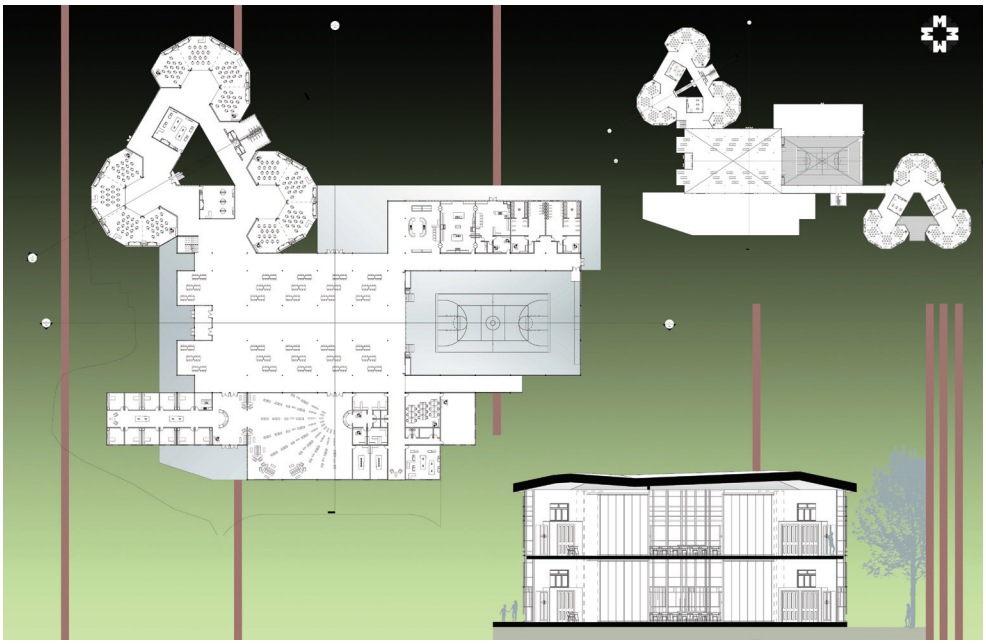


*Figure 70:Bowles, school plan and section*

*Figure 71: Bowles, classroom elevation and details*

*Figure 72: Bowles, interior perspective and building section/elevation*

Multi-use classrooms and commons use fold-away wall panels, light shelves, vegetated atriums, and interactive LED lighting and projections to encourage immersive and interactive educational environments throughout the building.

Axial views allow for transparency, and there is an emphasis on natural daylighting reaching every room. The patterns of transparency support sunlight, wayfinding, and surveillance.

## Stephen Showalter

The design of this proposal is based on three driving principles: First, that we can improve the wetlands, and make nature a part of the students' everyday lives; second, that we can make a school which, through its architecture, supports the teaching of social skills as well as academic skills; and finally, that we can make a school that is loved and used by the community daily.

The proposal seeks to engage three educational goals across all scales, including integrating the learning experience with nature, fostering peer-to-peer learning in addition to teacher learning, and strengthening the community that the school serves. Each of these ideals is enacted across the site, classroom cluster, and individual classroom scale.

The site is a stream, a melding of landscape and hardscape, which acts a connective tissue to bind the school buildings together. The wetlands on the site

have deteriorated due to years of grazing, but this is an opportunity to rebuild the landscape, and educate students about the importance of wetlands in our ecosystem. The four main pavilions contain five individual classrooms each, which would contain mixed grade levels to foster peer learning. The sense of community comes from the three main buildings in the front; they contain program elements like the gym, administration, and arts and music classrooms that act as the face of the school community, inspiring shared use for after school hours.

Each classroom cluster has its own community garden to help the students become more integrated with nature. Inside, the central community zone contains various breakout and subspaces that students can occupy together, focused around the warmth of a traditional Scandinavian Tulikivi soapstone hearth.

While still connected to the main circulation route of the wetlands, the classroom is a place of respite. The main teaching wall can be rotated out to occupy adjoining courtyards; built-in seating faces the rotated wall to allow students to sit and enjoy a class outside. Through different scales of learning, from traditional lecture style to small group to individual interactions, the classroom supports social needs as well as academic needs.

## Bryan Hollar

Contrary to the prevalent educational trends of past generations, it is clear that children do not learn by passively absorbing information in an airtight, rigidly formal classroom setting. The design of the Garden Terrace School asserts that children instead learn through exposure. This belief is enacted in three primary areas in the school design: Environmental exposure, mental exposure, and social exposure.

*Figure 73: Hollar, entry perspective*

Environmental exposure is facilitated by channeling the existing wetland on the site between the elementary and middle school buildings to create a communal outdoor gathering space that serves as an educational tool, demonstrating the process of on-site stormwater remediation, and culminating in a large visually prominent bioswale. In addition, most classrooms have individual as well as communal outdoor learning spaces.

Mental exposure is achieved by providing children access to a range of subject areas through interdisciplinary learning and opportunities for information sharing. This takes place in the Collaboration Wing, containing art, music, science,

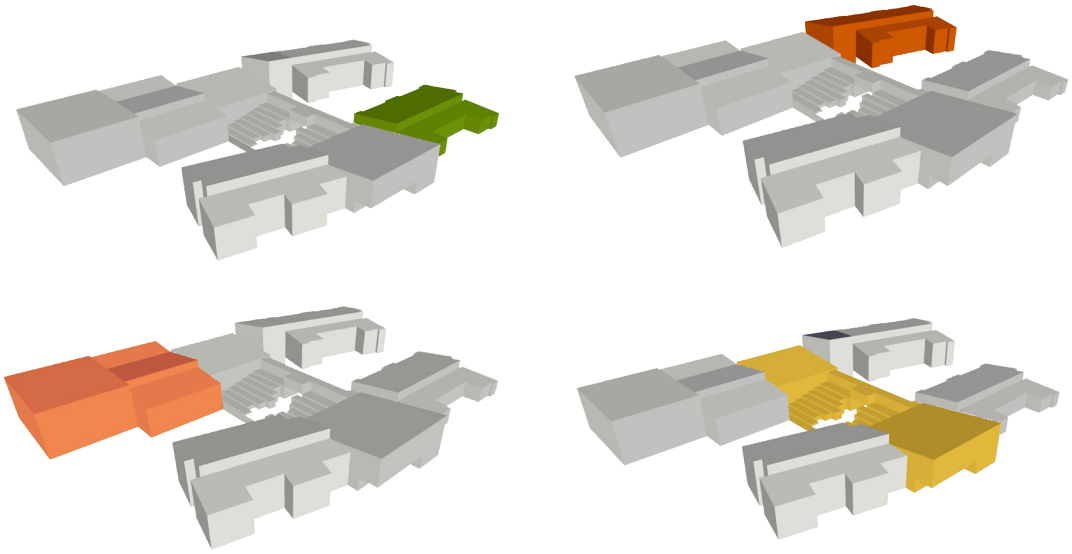


*Figure 74: Hollar, zoning diagrams*

*Figure 75: Hollar. Outdoor gathering space demonstrates stormwater remediation.*

and technology classes and the gymnasium, all of which are accessible for community use after regular school hours.

Social exposure is achieved by providing children with a physical learning environment that expands with their increasing understanding of the world around them, and by giving each age group a unique identity (conveyed through the coloring of the facade of each classroom wing) to help them understand their unique role in the larger context of the school community.

The wetland and slope issues were resolved by concentrating the level changes of the building in its centralized public zones where the stepping occurs in the

*Figure 76: Hollar, classroom perspective*

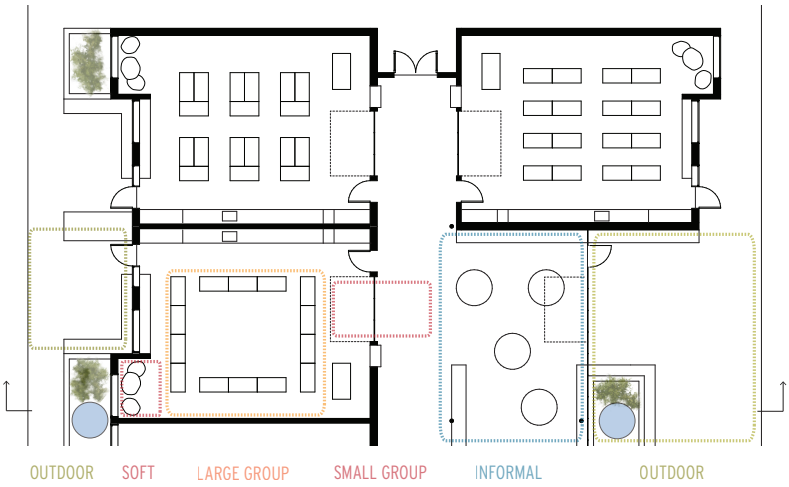



*Figure 77: Hollar, classroom plan*

form of large amphitheater seating that is bisected by the wetland stream. The steps continue into the building to form the primary elementary and middle school staircases that provide places for casual interaction to occur.

The classrooms are designed around a three classroom module with a shared flex space. Classroom wings are divided into units separated by age group that step up the site in elevation. Kindergarten through second grade classrooms are smaller and more controlled, with a small flex space.Third and fourth graders have more dynamic classrooms with a flex space shared by both grades to facilitate the students' increasing responsibility and social aptitude. Finally, students finish their journey in the fifth through eighth grade wing, in which they are part of a larger learning community that prepares them for the next step of their educational journey.

# Conclusion

The City of Springfield is dedicated to fulfilling its vision of encouraging urban expansion and fostering a sense of family and community. With these goals in mind, the designs that were developed over the six-month studio course attempted to create a sense of community identity and ownership. A strong pedagogical focus has greatly contributed to ideas of what Springfield's new K-8 school could be. Each design recommendation aims to change the face of education beyond the building design.

When the time comes to build the new school, the students hope that these recommendations will help guide the city in its efforts to design a school that will introduce new ways of approaching education.