



Northeast Junior High

Silvis School District #34

CEFPI MacConnell Award Submission • 2013



Northwest Junior High has been focused on one mission since its inception; **Support the Individual Learner.** From planning, to design, to use of the building, every decision has related to this one goal.

Wedged between the industrial areas of East Moline and the Rock River basin, Silvis, Illinois has quietly served its citizens and its county for a century. Nearby rail yards and Interstate 80 have made this area a transportation crossroads. Despite its location and other profitable advantages, such as hosting The John Deere Classic on the neighboring golf complex, much of the community is economically challenged. Over 67% of the district's students receive free or reduced food service based on their household incomes.

These realities have created unique challenges for the Silvis School District. After years of deferred maintenance due to district finances the state's building authority recognized the need to replace large portions of the aging elementary school. Having received an entitlement to the School Construction Program for FY 2002, Silvis School District #34 looked forward to the possibility of constructing a replacement school for their deteriorating K-8 facility. Unfortunately, the state's inability to fund the School Construction Program prevented this vision from becoming an immediate reality.

Determined to move forward, the school district developed a plan for the future of their facilities. School officials purchased property in the East Moline area of the District and in 2008 hired a Planning Team to begin the groundwork for a new junior high.

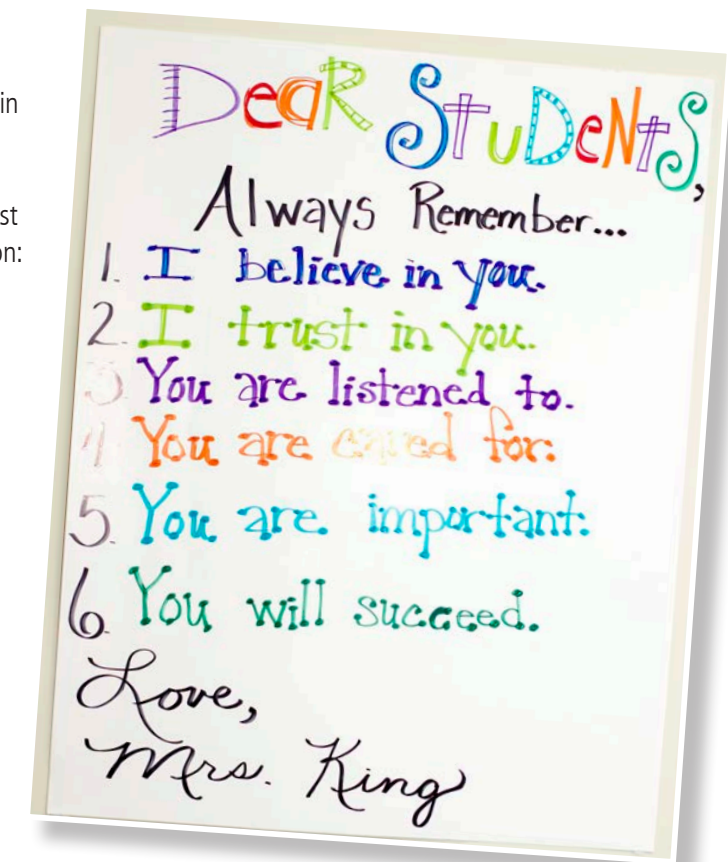
The District's unique makeup encouraged District Leaders to avoid 'rear view mirror' planning - looking to past design solutions for present and future design problems. All district personnel were asked one simple question: ***How can you reach every student?***

Over a two day period this open dialogue formed a list of **guiding principles** that every decision going forward was challenged to meet.

As the program took shape, one thing was clear, **project based learning and collaborative teaching** would become a major part of the curriculum moving forward.

Areas would be organized into studios, shaped by their development of the whole child. Primary learning studios would be supported by **Wellness, Performance, Engineering and Art studios.** These elements would meet at a social hub that works like a piazza. Serving as the collection, circulation, socialization, dining and collaboration space, the piazza would become the dynamic heart of the building. The anchor of the piazza would be the Un-Library – a space dedicated to information and self-directed learning that also happens to house the buildings reading collection.

In the end, **a facility that could respond quickly to the needs of the curriculum yet encourage collaboration** was settled upon. One that allowed the community leaders to achieve the vision they had set forth in the district's mission statement. In one simple slogan the leadership had given a clear goal....**Silvis - where students are first.** That phrase would be repeated countless times and would guide discussion and resolve conflicting ideas throughout the process.



**GUIDING PRINCIPLES:**

- **This school's primary goal is to support the individual learner and enable every student to succeed in learning, living, and playing.** It should support the student's development by enabling multiple learning styles, dynamic teaching methods, social development, and student wellness in a safe and comfortable environment that will support current and future technologies.
- **This facility should create an atmosphere that stimulates community involvement,** allows community education, and supports community recreation as it prepares students for their future lives in the local and global community.
- The facility should be a colorful, fun environment that **utilizes daylight and natural materials** to create an inviting and comfortable kid-friendly destination.
- **The building should respect and connect to the local and regional characteristics and styles** that make this area unique.
- The budget is fixed and will allow a **building cost of \$185.00 per square foot.** This requires the selection of materials, systems, and site improvements to be balanced with sustainability, durability, and operational goals.
- Since energy efficient design is important to the fiscal health of the district, **energy and resource conservation measures that show a payback within five years** or less will be given priority.
- The middle school will be **the center for the community.** It will be used for extended periods during the day and throughout the calendar year.
- Since population, economic, and curriculum changes will occur during the life of this facility, the solution should **maximize flexible and adaptable spaces and have the ability to readily expand** the facility on the current site.

UN

- Library
- Community
- TECHNOLOGY
- RESOURCES
- CONVENIENT
- OPEN
- Quiet
- LOUD
- MOVEMENT
- REAL WORLD: BORDERS/BARNES • Nob.

MODALITIES

- et, single
- (2-3 student)
- Collaboration
- (in office @ station, etc)
- Based (studio)
- Learning
- Seminar
- Presentation Space 4-1
- Performance Based
- Outdoor Space
- Offices for team teaching
- Liberal Arts.



The faculty realized that reaching each student would require them to make changes. **The idea of teacher owned space would need to be redefined.**

In the past, classrooms had acted as office, instruction, storage and meeting space. That worked when the students were mostly self-contained in the classroom. Now, **project based learning and collaborative teaching were going to transform instruction spaces**, defining them by their primary activity.

Smaller spaces were needed for individual and peer-to-peer instruction, medium spaces for team and smaller group activities and larger spaces to accommodate seminar and directed instruction.

There was also the need for large studio space to accommodate long term projects, whole grade activities and large group activities. These spaces needed to be augmented with faculty offices, large storage areas and workrooms. To make this new arrangement work, the space also had to be compact and flow. **The result? A Learning Studio. These studios allow students to explore their individual learning style preferences** and support musical, artistic, natural, kinesthetic and performance styles.

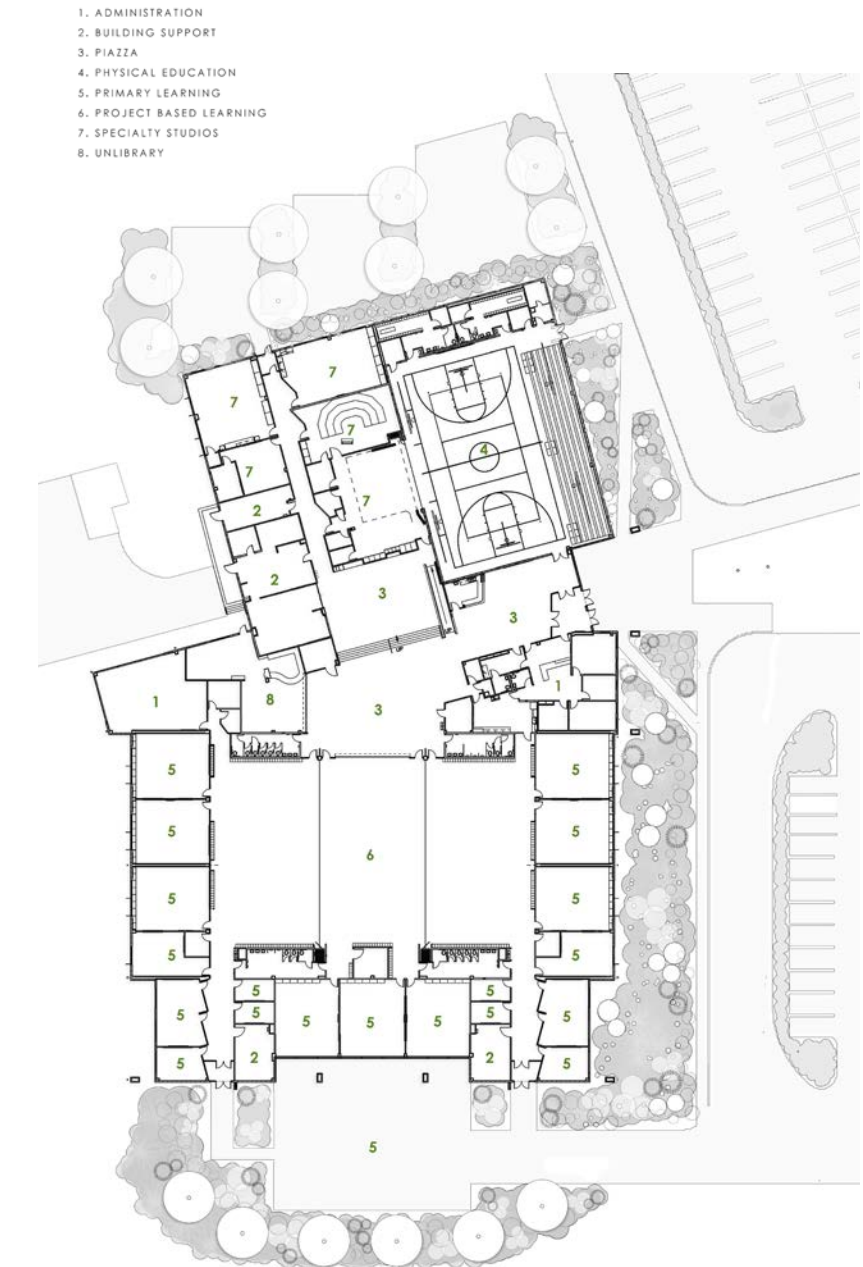
Basic spaces for lecture, discussion activities, small group instruction and individual and peer-to-peer study were developed. **Thirty square feet of space was also dedicated to each student as their home base and includes storage, a work station and display space.**

Administrative and building support functions were also included in a common area.

Total Square Feet: 52,225 s.f.

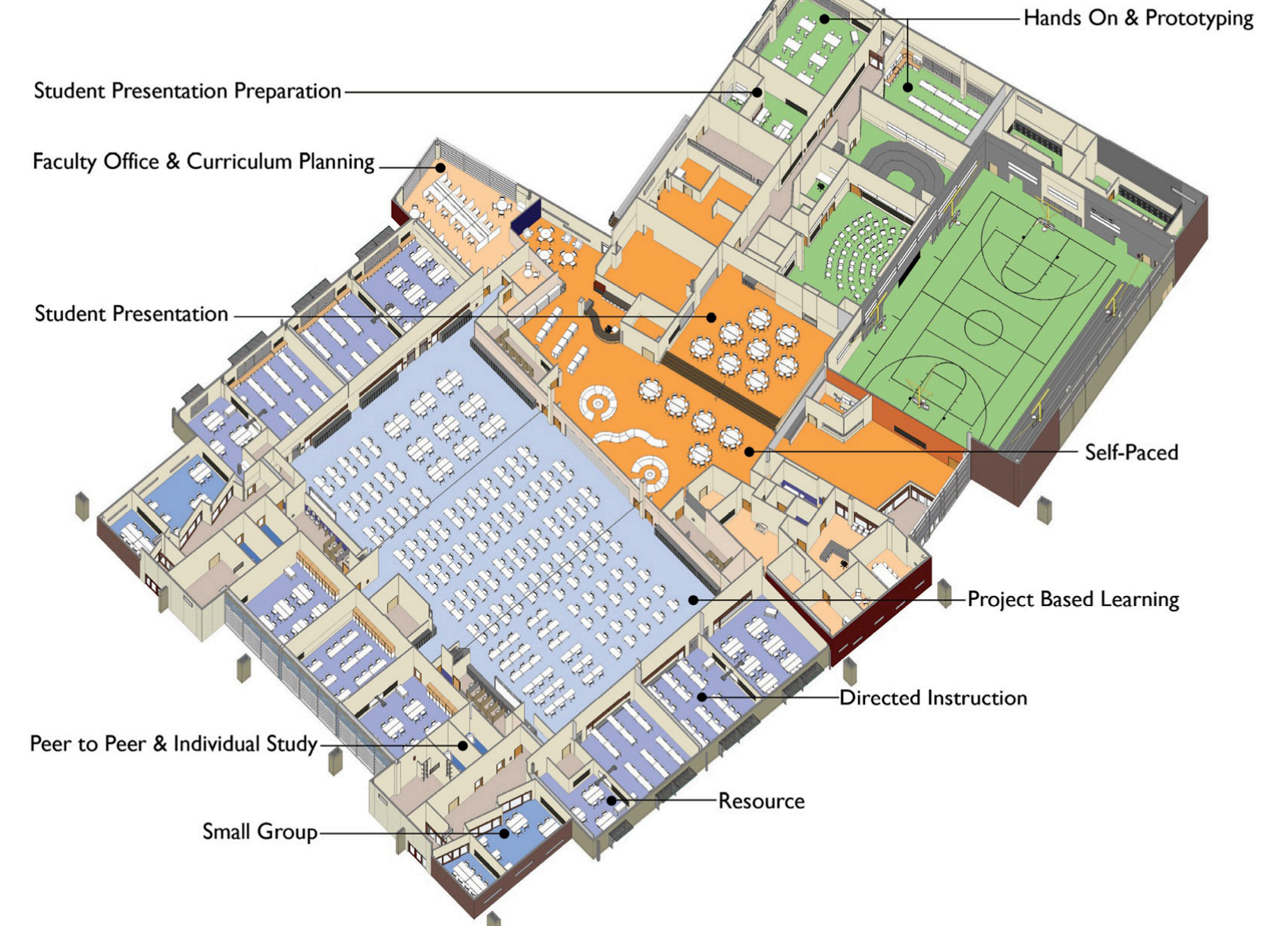
Administration:	3,560 s.f
Building Support:	7,600 s.f.
Piazza:	6,200 s.f.
Physical Education:	6390 s.f.
Primary Learning:	11,475 s.f.
Project Based Learning:	10,530 s.f.
Speciality Studios:	5,200 s.f.
Unlibrary:	1,270 s.f.

This site also required space to be allowed for a future Pk-5 facility and with all the competitive sports moving to this campus, students would benefit from having track and soccer facilities on this campus.





DETAILED DIAGRAM



A budget of \$13.1 million was established for a new 6th-8th grade facility. This budget also allowed for renovations to be made to the existing elementary and junior high school in the District.

Final Cost to the District: \$12,923,774.00

Cost per Sq. Ft

\$195.⁰⁰

	Actual
General Conditions	\$ 769,075.00
Geothermal	\$ 358,000.00
Concrete and Earthwork	\$ 635,000.00
General Trades	\$ 731,300.00
Steel	\$ 624,000.00
Roofing	\$ 192,000.00
Wood	\$ 1,094,000.00
Glass	\$ 290,660.00
Drywall	\$ 765,750.00
Flooring	\$ 215,000.00
Painting	\$ 108,781.00
Food Service	\$ 217,349.00
Fire Protection	\$ 83,200.00
Mechanical	\$ 1,470,000.00
Electrical	\$ 1,202,000.00
Site	\$ 520,000.00
Paving	\$ 313,340.00
Building Cost	\$ 9,589,455.00
Building Cost Per/SF	\$ 183.62
New Track and Soccer Field	\$ 225,282.00
Project Costs	\$ 2,523,027.00
Contingency Funds Used	\$ 326,010.00
Site Costs	\$ 260,000.00
Total Project Budget	\$ 12,923,774.00
Preliminary Budget	\$ 13,083,847.00



Once the planning team was in place it was important for the district’s leaders that the process “open up.” Despite site and budget being set several years before, going forward the development would engage a large and diverse group of community and school representatives.

Stakeholders

The Silvis School District understood the necessity of including valuable stakeholders in the community engagement process for their new facility. The Board of Education and administration tasked the Design Team with developing a program and concept lead by users and stakeholders.

Stakeholders included:

- 8 Community Members
- 3 Students
- 2 Principals
- 1 Superintendent
- 2 Custodians
- 1 Cook
- 2 Secretaries
- 1 Health Care Professional
- 14 Faculty
- 1 Psychologist
- 1 Counselor
- 1 Social Worker

Two open community meetings were held with these stakeholders where additional community members attended. A student review session was also held.

The Process

The process started with a **pre-planning questionnaire** distributed to all stakeholders. The questionnaire, developed with the administration, created an open and exploratory discussion. This form would become the primer for the discussions to come.

Pre-planning Questionnaire

This document is intended to gather the thoughts and more importantly, the aspirations of the potential users of the facility about the activities that will be housed when constructed (and in the future), and how the built environment should support those activities. To avoid designing “by looking in the rear view mirror” and developing a facility that may be functionally obsolete 10 years later, we ask that participants focus on the big picture of how students learn, how education will be delivered, and how the facility will function. There is always a powerful desire for participants to discuss those items that create real frustration in their daily use of the facility (i.e., not enough electrical outlets; not enough storage), and rest assured those conversations will occur later in the design process, as the design process begins. But for this programming exercise, we ask that participants focus on the macro issues, specifically what we want to do in this building.

1. How will instruction occur when this facility is constructed, and in the future (what will education look like in 2025)? What are the various modes of instruction that you envision will occur?
2. For teachers, how are you able to meet the varied needs of students given the (sometimes wide) range of their capabilities? What are the various educational activities that must be accommodated to allow you to meet the varied needs of your students (i.e. individual instruction; small group work; project based learning, etc.)
3. What role will the community play in educational delivery in the future? How will the building need to respond?
4. How will technology be integrated into educational delivery in the future?
5. How can your program be infused throughout the building (or put another way, can you envision other opportunities for learning throughout the facility)
6. For Non-Academic functions: How must this building function and what work processes must be accommodated to support the educational process, now and in the future?

During a 14 hour visioning session, community members, faculty, staff, administration and students were engaged in 60 minute small group (no more than three people at a time) sessions. Each session began with a short video showing students and educators working in various environments. This video was the catalyst to beginning the discussion on how their school should work.

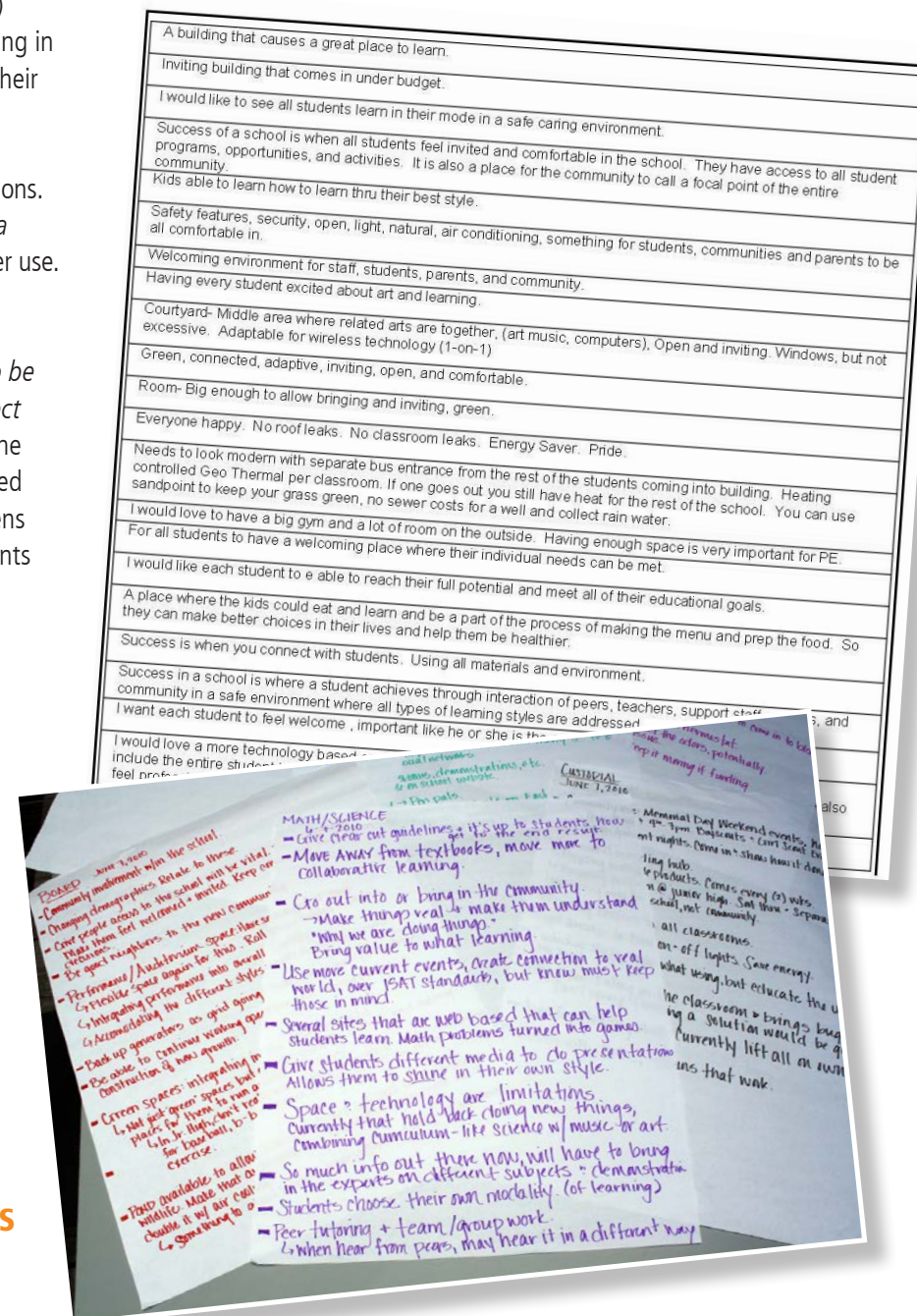
The Design Team was diligent in preventing participants from straying into design discussions. (*"I need one whiteboard at the front of the room, two tack-boards on the back wall, and a computer station at my desk,"*). All comments and discussion items were recorded for later use.

Instead, **participants were reminded to focus on functional needs to respond to the educational delivery now and in the future** (*"We need to be able to accommodate individual instruction, as well as large group instruction and project based learning, this is how we envision technology being used for instruction,"*). Once the small groups had met for about an hour of brainstorming with the team, they were asked to individually participate in a "brown paper exercise", an exercise that consists of dozens of pictures of indoor and outdoor spaces/buildings attached to butcher paper. Participants were free to offer their opinion on form, colors, spaces and arrangements of existing spaces. These comments were collected and formed the basis of the project's design language for future design solutions.

Each member was also asked to return an **aspirational statement** to guide the Design Team. Purposely, this exercise was given no governing requirements. The diverse spectrum of stakeholders was evident from the responses of the individuals. Some hoped for basic functional elements while others dreamt of a transformative building that opens doors and builds successful people.

The individual data points from these on-site interviews and exercises were synthesized and sorted into categories. The Design Team bundled like data into groups and common threads began to appear. **The Design Team then returned for a site visit and met with the groups to share the overall data results.** The raw data was re-shared to the groups for discussion, editing and in the end to build a consensus for moving forward.

ASPIRATIONAL STATEMENTS



INTERVIEW COMMENTS

At this point, **unique spaces that would be necessary to accommodate all student and faculty needs were identified.** The necessary learning modalities and pedagogies were discussed in depth. The building would hold individual, peer-to-peer, small group and project based learning as preferred pedagogies instead of directed instruction.

These spaces became the basic building blocks for the facility.

- Large Group Space
- Individual Spaces
- Small Group Spaces
- Offices
- Project Spaces
- Messy Spaces
- Social Spaces
- Quiet spaces
- Direct Instruction Spaces
- Communication Spaces
- Performance Areas

With this basic understanding of what the functional needs for the facility were, the Team began crafting a program of spaces to meet those needs. At the same time, the draft guiding principals were categorized and finalized. The Design Team would use these defining statements as a touchstone throughout the design and documentation process.

The program of spaces described a deliberately new type of school. A school devoid of classrooms, computer labs or media centers, but **a school filled with universal spaces that could be defined and redefined as time passes.** Every new space would revolve around student spatial relationships. The basic assumption of a dedicated classroom for each faculty member was not assumed. Instead, dedicated faculty office, storage and team space were provided. This allowed the faculty to have their non-instructional activities remain uninterrupted regardless of a given day's educational space needs. Mobile presentation stations that can move with the educator were provided in learning spaces.

The design goal was to make the traditional education spaces of media center, cafeteria and stage relevant to every student, everyday. These former anchors in traditional school designs would evolve into a fluid crossroads and blend into one social space more like a piazza than a commons. Functionally, the project based learning area would be the primary space for student work to occur, with learning units, small group, collaboration and individual learning spaces acting as break-out zones.



Basic spaces for large directed instruction, small group instruction, individual study, peer-to-peer and one-on-one instruction were included. **Thirty s.f. of space was also dedicated to each student for their home base.** This individual space includes storage, a work station and display space. These home bases are collected in a large flexible area that is able to accommodate an entire grade level's assembly and project based learning. This space, called the Project Based Learning Studio, is the heart of the primary learning studio area.

The program was further divided into themed enrichment studios to allow students to explore their individual learning style preferences. These studios support musical, artistic, natural, kinesthetic and performance styles, as well as the pursuit of the scientific method and traditional laboratory experimentation. The program also included administrative and building support functions in a common area accessible to all other spaces

The stakeholders continued to play a vital role as the guiding force of the design process. Once basic site plans and footprints were established, neighbors and community members were invited to a public forum to review initial concepts and offer improvements.

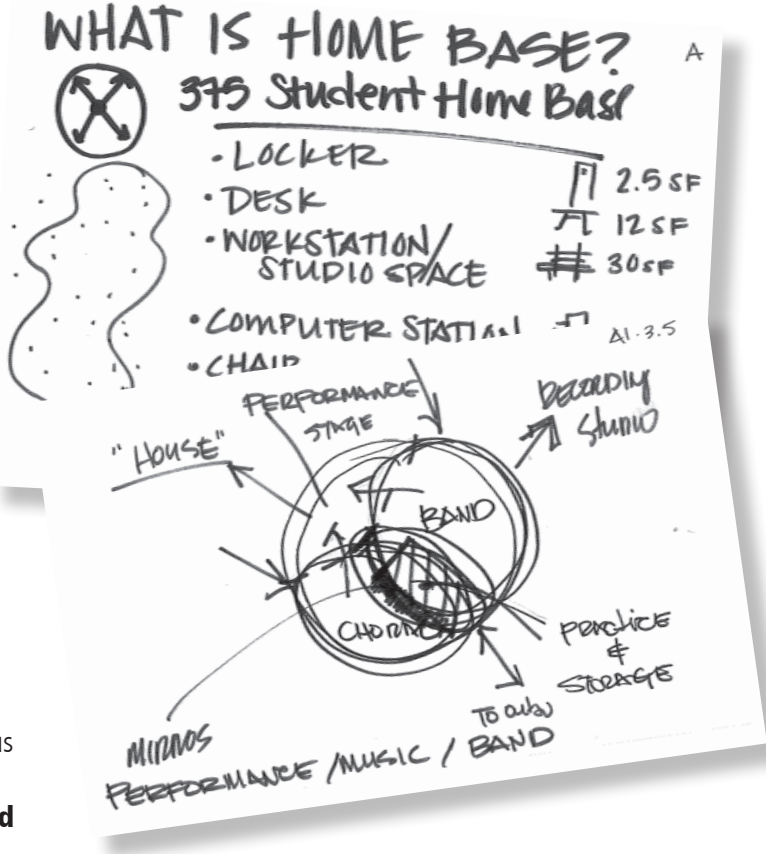
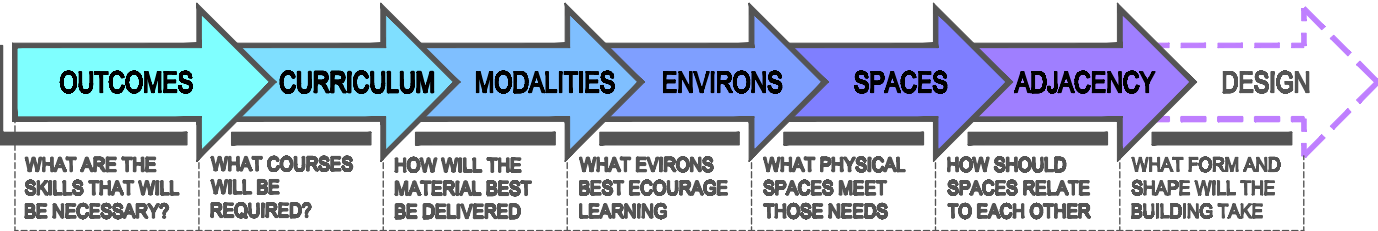
Challenges

The first challenge was getting the staff to think past, *"I need a better, bigger version of what I have,"* and focus on would will get them to the future. The objective of the Design Team was to understand what the greatest current and future challenges of the district were. **The district had not built in over a generation and the staff was conditioned to "make due" with the environment they had.**

The Design Team focused on what skills needed to be mastered by the students and then the best way to instruct those skills. **Using a backward design process,** starting with desired outcomes and working backward to define the program spaces, the Design Team was able to focus on what pedagogies needed to be accommodated. This quickly identified deficiencies in the traditional school model. Getting the teacher centered "classroom" to evolve into a student centered educational setting was a big hurdle.

The design had to provide an environment that would allow those unwilling to move away from "sage on the stage" pedagogy to use the space on day one, but also allow the majority of the educators to move out of that reality to the differentiated instruction. This took great care to meet both needs without retreating to familiar environments and layouts.

BACKWARDS DESIGN PROCESS



Available Assets

- A diverse group of educators with experience levels from beginner to master teachers.
- An open and progressive district leadership that respected the process.
- A great site with natural features that demanded preservation and respect.
- A group of local business professionals that were vocal about the changing needs for the workforce.
- A professional and talented construction industry in need of work at the height of the recession.
- A community ready for change and burdened by status quo success.
- A difficult budget that required every space to have a purpose in order to be included.
- Technology finally capable of going wireless.
- A small district and community that was nimble and non-bureaucratic.
- A \$15 million state construction grant to use for replacing and remodeling the district's buildings. (\$ 8.8 million dedicated to this project)

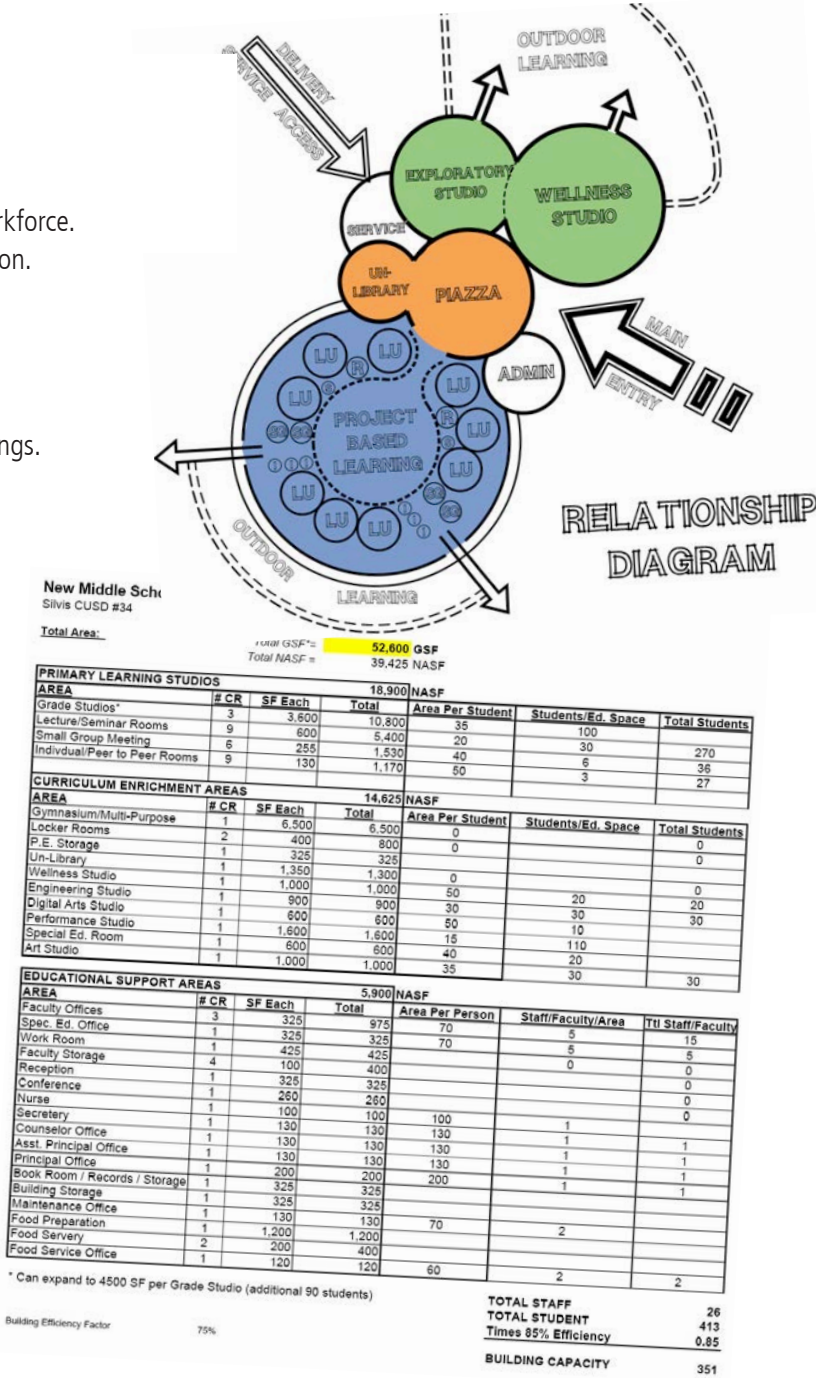
Value of Process & Project

Once the groups began to open up, many expressed their deepest fears about how they "have" to teach. Many expressed that they knew "stand and deliver" teaching methods would never reach their most vulnerable students. **Soon stories of what did work well began to take shape.**

- Engaging students by tapping into their interests
- Removing labels and boundaries to "learning spaces"
- Leveling the technology playing field
- Communicating with each other and working together
- Making a place that parents feel safe, welcome, and invested in
- Allowing the community to use the building not just pay for it

The process was remarkable in uncovering unexpected viewpoints. **Librarians who didn't want "museums for books". Music teachers sharing stories of non-music students making their own original mp3. The nurse discussing how she was the front line medical person for many of her students and their family.**

From these frank and open conversations, the guiding principals and the building program took shape.





Supporting the Curriculum

With the understanding that **collaboration, communication, creativity and critical thinking guided the design**, the building was designed to quickly adapt to the learner's needs. Unassigned space allows the students to reconfigure the area to meet the task at hand; it also provides venues for presentation, both formal and informal. Research and inquiry can take place anytime and anywhere through technology and having access to a digital studio to create films, presentations and thematic performances allows students to communicate in new and interactive ways.

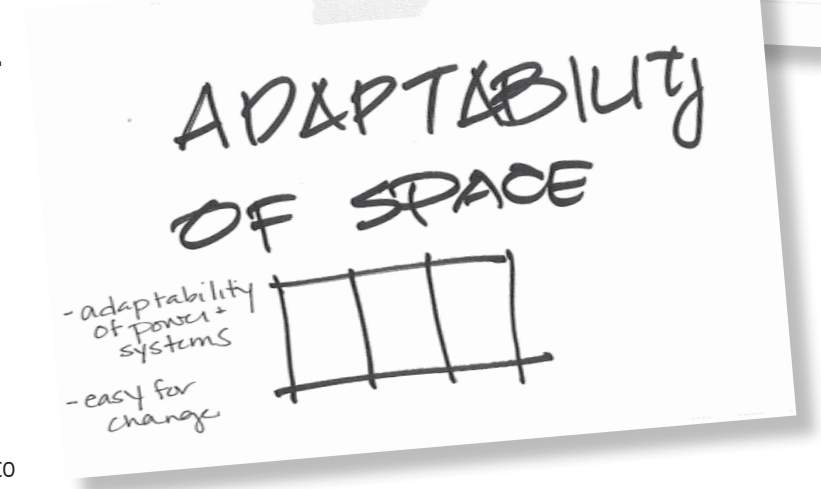
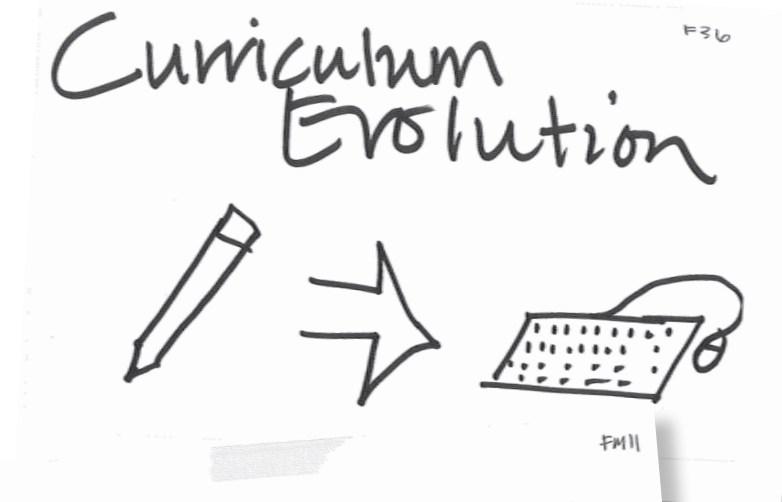
The Design Team looked away from traditional educational models developed in the late industrial age and instead used organizational concepts common in retail design, hospitality design and neighborhood planning. Learners are encouraged to "shop" for modality and resources to fulfill their individual educational needs. The building supports **the transition of the modern educator from the role of primary dispenser of knowledge toward the future role of chief facilitator and curriculum manager.**

Supporting Learning & Teaching styles

The District mandated that this building be designed to **support the individual learner.**

From the beginning, **Northeast Junior High was designed to enable small group, project based learning and self-directed instruction as well as traditional pedagogy.**

As the District integrates the Common Core State Standards, the project based areas of the facility will accommodate the entire student body. Eventually, these spaces will be the main educational area for curriculum delivery and assessment, allowing the primary units to be dedicated to directed instruction and breakout. Because of this potential change, dedicated support spaces were provided for the personal and professional faculty needs outside of the instruction. Offices and storage areas were provided adjacent to the primary learning studios to ensure the required spaces will always be available.

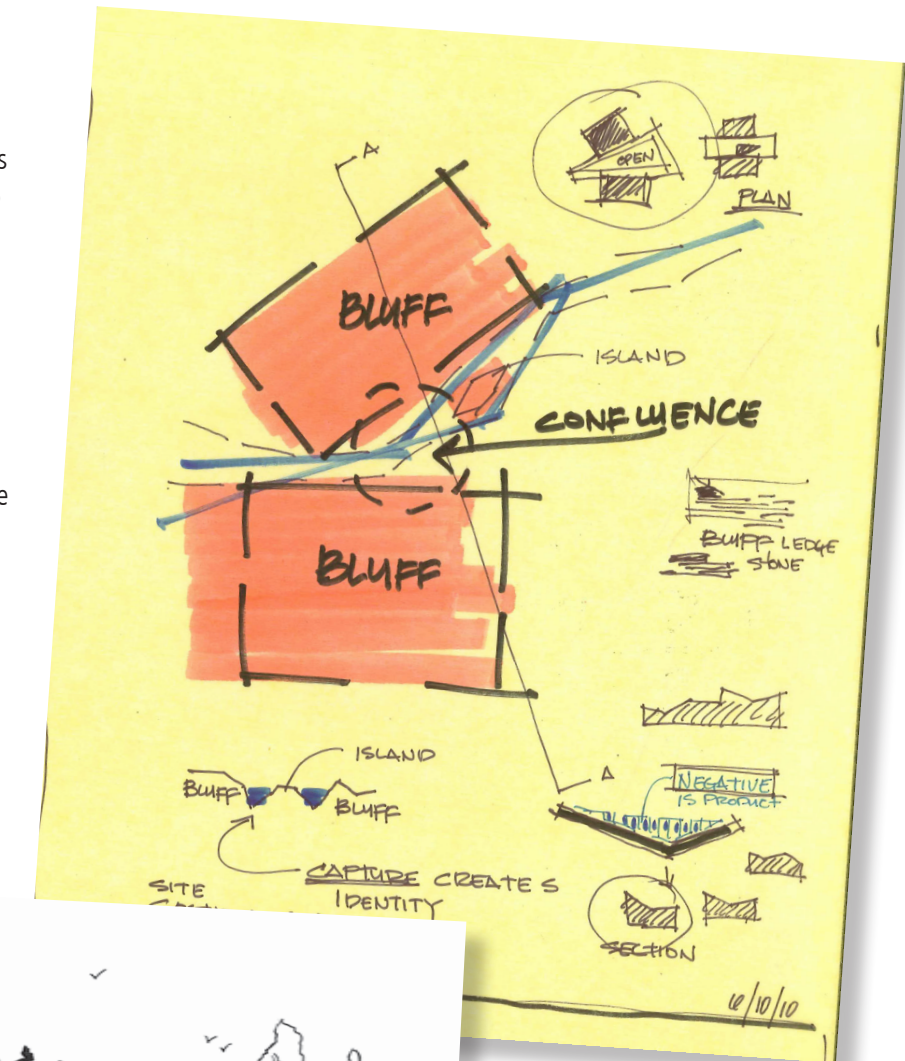


Physical Attributes of the Environment

Less than a mile from the confluence of the Mississippi River and a major tributary, wetlands required a building pad that did not disturb the nearby habitat, but allowed a connection to the unique ecosystem.

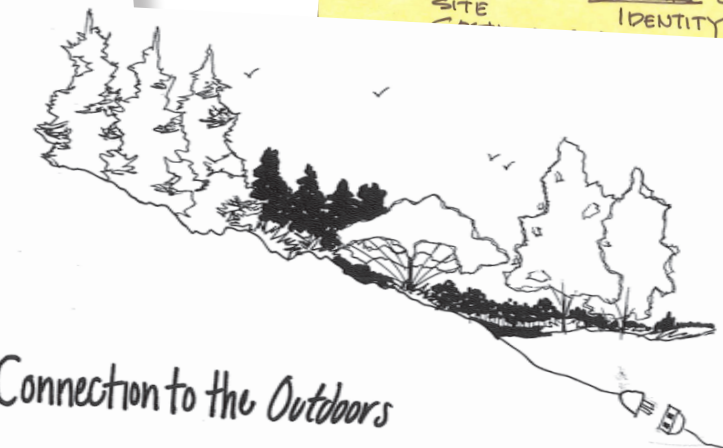
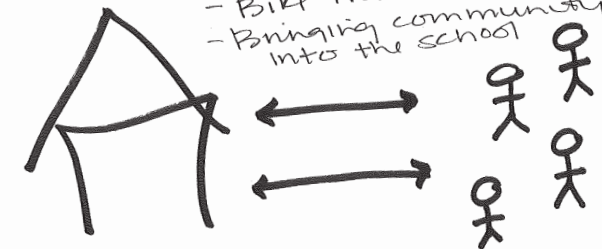
Northeast Junior High was designed to be an approachable, student scaled facility despite its soaring forms. All facades are perforated by glazing and views to make the user feel **informed and in contact with nature.**

It is the relationship between river, bluffs and the island (Rock Island- the largest island in the Mississippi River) that were the inspiration for the plan and sectional development of the programmed spaces.



Connectivity to Community

- Bike access
- Bike trails
- Bringing community into the school



Connection to the Outdoors

Fitting within the Context of the Community

Nestled between an industrial site, wetland area and an established middle-class neighborhood, neighbors were concerned the scale and traditional context of their neighborhood would be dramatically changed by the new 50,000 s.f. facility.

The building was sited to limit its intrusion on the neighbors. Play fields and outdoor learning areas were placed to allow green buffers between the school and the neighborhood. Materials and building scale were adapted to the visual language of the traditional residential neighborhood. Lap siding and small scale stone accents walls relate and recall the regional and residential feel of the area. The building exterior is regularly broken into different colors and materials to relate to the rhythm and scale of the buildings and houses of a typical suburb.

The idea of a building that would encourage corporate and community partners to use the spaces for evening and off calendar events dovetailed with the open, collaborative nature of many of the spaces.

- Corporate retreats can be accommodated in the project based areas
- Food court operations are available to support convention activities as well as before and after school community programs for seniors and low prosperity community members
- Athletic and wellness areas are available for use by students throughout the day and community members for health and wellness programs
- The lobby is designed to accommodate non-competitive and aerobic exercise
- The school nurse area is accessible for family health, insurance counseling and health and wellness screening for the entire community

Inspire & Motivate

SUSTAINABLE FEATURES

Northeast Junior High is the **first Green Globe Certified School in the State of Illinois** - incorporating several unique energy efficient and green design elements, in addition to more traditional energy saving features. The Green Globes Rating was selected as the sustainable program to be followed by the Design Team. The state of Illinois requires all grant funded buildings to follow a recognized "green building program" to receive a full allocation of funds. The Green Globes Rating System by the Green Building Institute was preferred to the USGBC governed LEED Rating System by the District due to its lower administration costs, higher focus on energy savings and requirement of third party verification of the design intent. The project received a **Two Globe rating** out of a possible four, **the equivalent of LEED Silver**.



The District's desire to prioritize energy consumption required the Design Team to find a cost effective alternative to traditional cavity wall construction. The building's exterior walls and roof are constructed of Structural Insulated Panels (SIPs) over a structural steel frame. The SIPs system was selected for its high insulation value, high recycled content and its speed of installation. The second priority was to create an evidence-based approach to the interior environment. Daylighting and its effect on student achievement was a priority. The glazing was selected to have a high visible transmittance to let the light in, but a Low-e coating to keep the heat out. Building overhangs and vertical sun shades were designed to minimize glare and excessive heat gain without limiting views.

Perhaps the most significant energy saving feature is the geothermal heat pump system. Variable frequency drives control of the pumping and heat recovery of the exhaust air. It is estimated that these two systems account for 80% of the energy savings. The building also contains CO2 monitoring of the indoor air in order to maintain fresh air levels in the most energy efficient way possible. Commissioning of the systems was completed in order to ensure that the systems are operating as efficiently as designed.

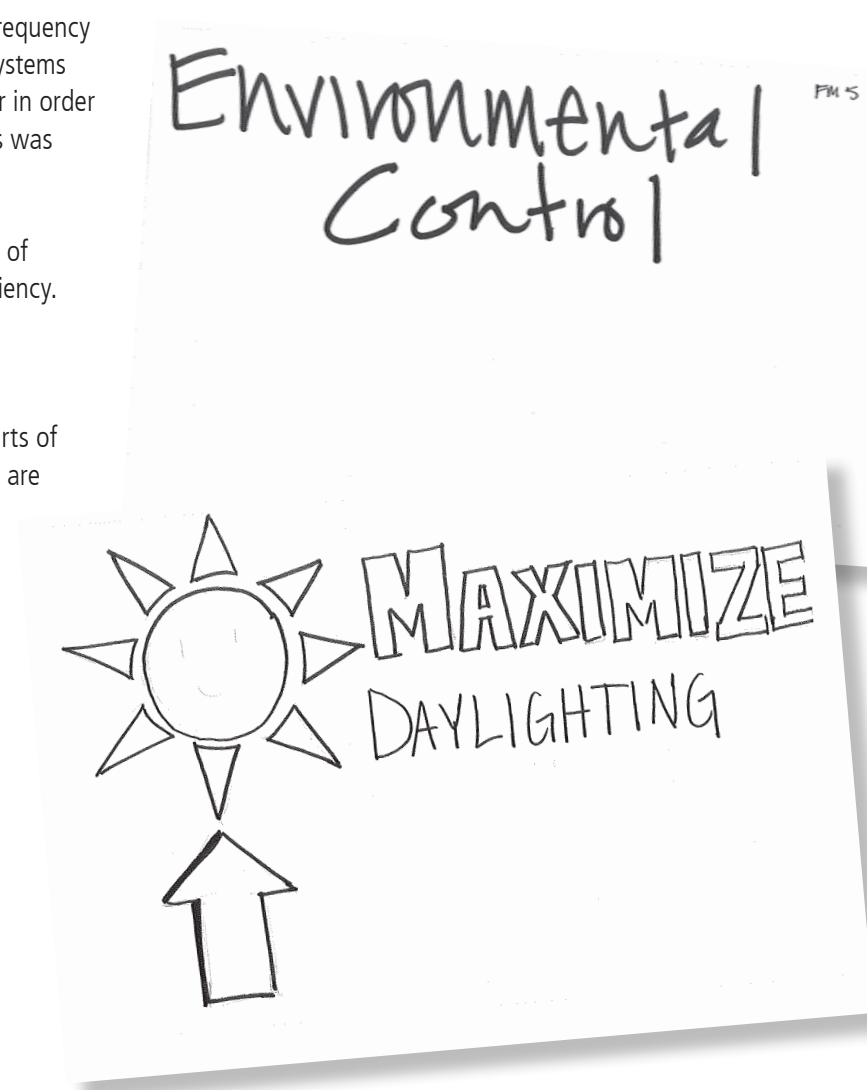
The lighting system for the building was designed with stepped lighting controls to take advantage of the ample daylight in spaces. Occupancy sensors throughout the facility maximize the lighting efficiency. Northeast Junior High also achieved a lighting design that is 10% more efficient than required.

SAFETY

The main approach to security is to limit corridors and instead rely on public spaces to access all parts of the building. This informs the user that despite their freedom to roam and access the building, they are always under passive supervision.

The building was designed to have a single control point through which all users access the building. A welcoming entry is controllable through a passageway to the office for limited access during school hours. No barriers prevent activity from spilling from all parts of the building into the Piazza. After the school day is over, overhead grilles, like you would see in a shopping mall, can be lowered to limit access to the project based learning and Un-Library spaces. This makes community use safe and secure with limited staffing.

A major challenge for the Planning Team was in creating a building that encouraged faculty to not limit their instruction to self contained classrooms, yet allowed supervision of students to occur easily. This lead to angled glass walls that permit full supervision by faculty when using the break-out areas. The team purposely avoided corridors wherever possible. Corridors not only lower the available space for instruction, but also create areas that are difficult to supervise. Where corridors did occur, alcoves were omitted to reduce blind spots that encourage misbehavior.



Achieving Goals & Objectives

During the school year, between design and construction, the District and staff devoted their professional development energies to understanding project based learning and cooperative teaching. In August 2012, prior to the start of school, the Design Team met with the staff and administration for a test drive. In a series of activities, faculty teams reviewed their instructional goals and used the building for its first project based learning exercise.

Each group developed project plans that incorporated the various spaces into their instruction. As the school year began some were **eager to take advantage of the new spaces they had dreamed of for years.**

After trial runs with smaller projects, the sixth grade decided to expand their curriculum to include a month-long cross-curricular project. **Faculty members were amazed at how the students took ownership of their project,** and the deep understanding displayed at the public exhibit astounded educators and community members alike.

The District and the Design Team created a video that further demonstrates the outcome and goals that were met with the completion of the new junior high.

<http://www.youtube.com/watch?v=NFyU99qtGHw>

Beyond the building functions, the design of Northeast Junior High also achieved the following goals of the District and the community:

1. Create an inviting and non-institutional aesthetic that respects and relates to neighboring residential areas.
2. Create a building made of durable materials that allowed the project to meet its tight schedule and budget.
3. Maximize energy efficiency and flexibility so the building may operate longer hours and extended calendars to accommodate the community's greater needs without adding life cycle burden.

As the building continues to transform to meet the goals and objectives of the curriculum it is clear that **every child is indeed engaged and learning.**

**"The students did the work,
the students did the learning.
And that is what education is
supposed to be about."**

- Ray Burgles, Superintendent
Silvis SD #34

