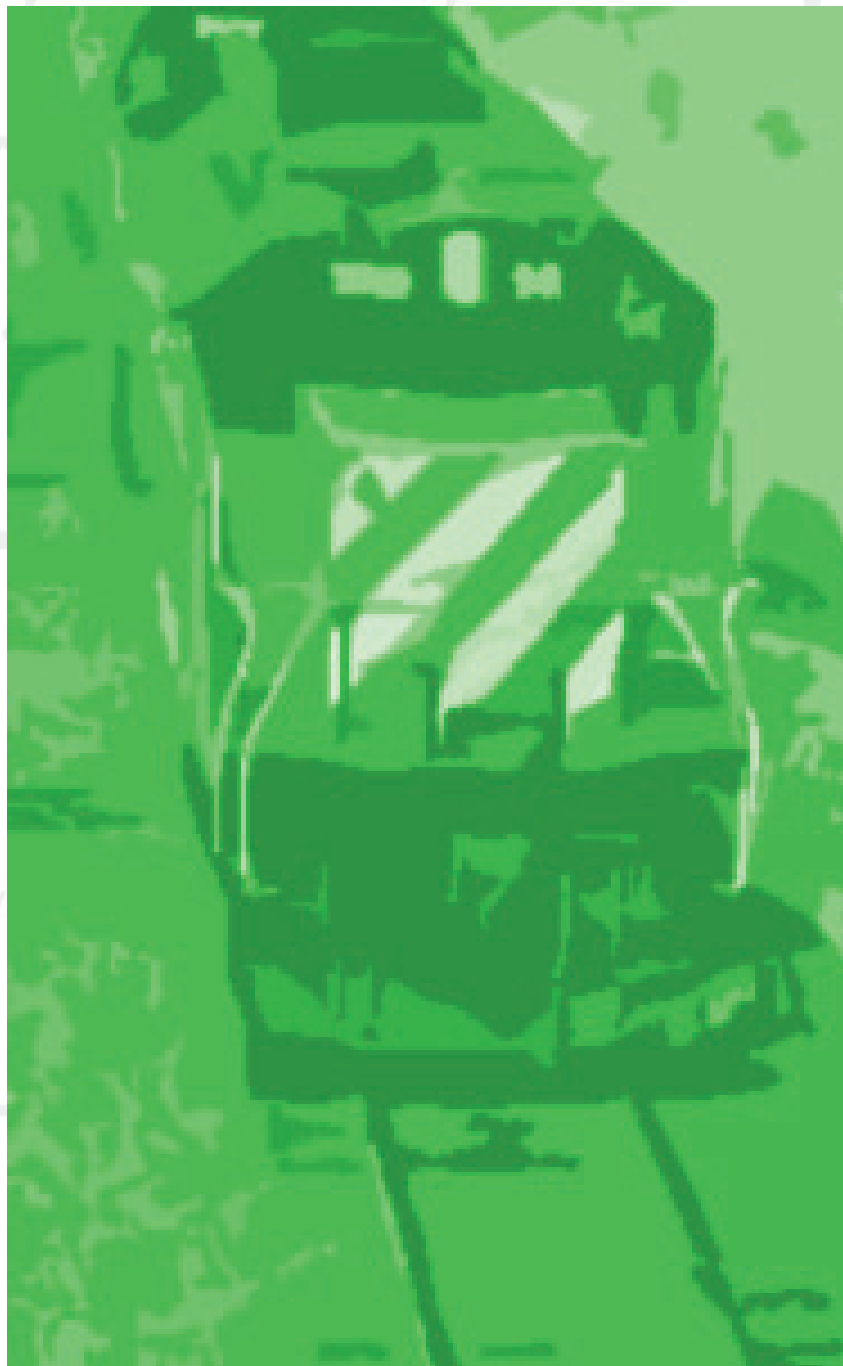


# UNION STORAGE & TRANSFER CO.

## CHARTER ART SCHOOL



UNION STORAGE & TRANSFER CO. CHARTER ART SCHOOL

A Design Thesis Submitted to the  
Department of Architecture and Landscape Architecture  
of North Dakota State University

By

Jessica Rust

In Partial Fulfillment of the Requirements  
for the Degree of  
Bachelor of Architecture

---

Bakr Aly Ahmend, Primary Thesis Critic

---

Don Faulkner, Thesis Committee Chair

May 2006  
Fargo, North Dakota



# TABLE OF CONTENTS

Thesis Abstract.....	3
Project Typology - Theoretical Premise - Project Justification.....	4
<b>Proposal Document</b>	
Narrative.....	6-7
User / Client Description.....	8
Major Project Elements.....	9
Site Information.....	10-12
Project Emphasis.....	13
Plan for Proceeding.....	14-15
Schedule.....	16
Previous Experience.....	17
<b>Program Document</b>	
Theoretical Premise Research	
Psychology.....	19
Sociology.....	20-21
Anthropology.....	22
Economy.....	23
Preservation.....	24
Summary.....	25
Case Study Research / Precedents	
High Tech High - Los Angeles, CA.....	26
Langston High School - Arlington, VA.....	27
Timberlane Performing Arts Center - Plaistow, NH.....	28
The Media and Technology Center - Boston MA.....	29
High School of Arts - Guadalajara, Spain.....	30
Cincinnati School of Creative & Performing Art - Cincinnati, OH.....	31

# TABLE OF CONTENTS

Galef Center for Fine Arts - Los Angeles, CA.....	32
Hip Hop High School - St. Paul, MN.....	33
Qingpu - Qing Dynasty, China.....	34
The Maritime Youth House - Copenhagen, Denmark.....	35
Parc de la Villette - Paris, France.....	36
Summary.....	37
Historical Context.....	38-42
Site Analysis.....	43-47
<b>Programmatic Requirements</b>	
Square Foot Allocations.....	49-52
Functional Requirements.....	53-69
<b>Process Documentation</b>	
Concept Studies.....	71-74
<b>Project Solution Documentation</b>	
Floor Plans.....	76-80
Exterior Perspectives.....	81-82
Building Sections.....	83
Interior Isometrics.....	84-85
Interior Perspectives.....	86
Structural Diagrams.....	87
Wall Details.....	88
<b>Presentation</b>	
Presentation Boards.....	90
Physical Models.....	91-92
Personal Identification.....	93
References.....	94

# THESIS ABSTRACT

This project is an adaptive re-use project for a new charter art high school in the historic Union Storage Building (Armour Creamery) in downtown Fargo. The thesis will examine the correspondence between alternative education models and alternative space making in architecture. Many existing and proposed models will be researched to provide the most comprehensive information. This thesis will create environments and spaces for students, faculty, community members and local artists to succeed in intellectually and creatively while forming a landmark quality structure from the exterior.

# STATEMENT OF INTENT

## Project Typology:

This project is an adaptive re-use project for a new charter art school in the historic Union Storage Building in downtown Fargo.

## Theoretical Premise:

The thesis will examine the correspondence between alternative education models and alternative space making in architecture. Design metaphors, analogies and/or tectonics will be developed from the examination.

## Project Justification:

Finding alternative uses for existing buildings is an important issue facing our community and this project will participate in that dialogue. Proposing a new building use for this historic building within the downtown Fargo area will not only help with the current rejuvenation of the downtown but will also bring creative young people into the area as well.

# PROPOSAL DOCUMENT

# NARRATIVE

I believe that the current public school system is not preparing students thoroughly for their next step in life, be it university, technological school or right into the working world. The classes offered are all repetitive, non-challenging and mundane. Students seem to run through the motions with not much thought just to simply satisfy their teachers and parents. The majority of the students are not genuinely interested in the classes that they are enrolled in, thus not learning or retaining the information.

There are currently numerous charter schools across the nation. These schools tend to be associated with the potential drop-outs, pregnant teens and other disenchanted youths which to some seem as the black eyes of society. However most of these teens just learn and think in a different way than how the curriculum is taught in a standard public school. It is actually a quite remarkable and successful way of thinking and teaching at these alternative schools.

At a charter school students are brought into a warm, comfortable community atmosphere where they are likely to learn at their own pace in smaller groups rather than with 30 other students. There are more specialized courses such as foreign languages, mass media, human relations plus many more professional courses that are not offered in the mainstream high schools.

When comparing an charter school side by side with a private school there are many similarities in the way that the curriculum is taught and the goals of teaching the student. However there is one blaring difference, money. Charter schools are financed by the public while the private schools are obviously privately funded thus supposedly giving their children a better education.

# NARRATIVE

To me the solution is quite simple, to create a school with all the benefits, techniques and creativity of an alternative/charter high school for not just the; potential drop-outs, pregnant teens, etc. but for any student that wants to learn in a smaller more focused environment. I would also see fit to focus this school on lovers of the arts; theater, fine arts, music and design.

This all encompassing school, art center, performing art center would also be available for public use, such as; weekend, evening or summer seminars, gallery space or individual local artist's studios.

Since Fargo has such a diverse mix of extremely talented children, adolescents and adults all the same I have selected to locate this facility in the Union Storage & Transfer Co. warehouse on NP Avenue. With the art and architecture department of NDSU, the Plains Art Museum and Mathison's Art Supplies all within a matter of blocks it seemed to be a natural fit.

# USER / CLIENT DESCRIPTION

This charter art school will be designed primarily for high school age people within the community. However this school will also impact the student's parents, the community and local artists of all ages.

An outside source within the community is needed to help fund the school, this could be a business professional/entrepreneur who has a strong belief in young children's education or the local Fargo public school district.

The art school will accommodate approximately 200 students, 25 staff members and space to host community members in the public auditorium for events.

The school will be used mainly during a typical school day, 7:30 a.m. to 5:00 p.m. However there will be events often in the evenings until approximately 10:00 p.m.

There will be adequate parking spaces for all staff members with a portion of parking available for students. Students are encouraged to take busses or carpool to school. Since there will be public events held in the evenings there is also a need to accommodate these people.

Some of the special requirements/needs for the facility would include an exceptional venting system to release the toxins from the different art techniques. The entire building will be accessible for all people. There will be a full commercial kitchen with the appropriate plumbing and venting. A professional style TV studio will be located within the facility. The entire building will have the capabilities of the latest and up to date technology resources.



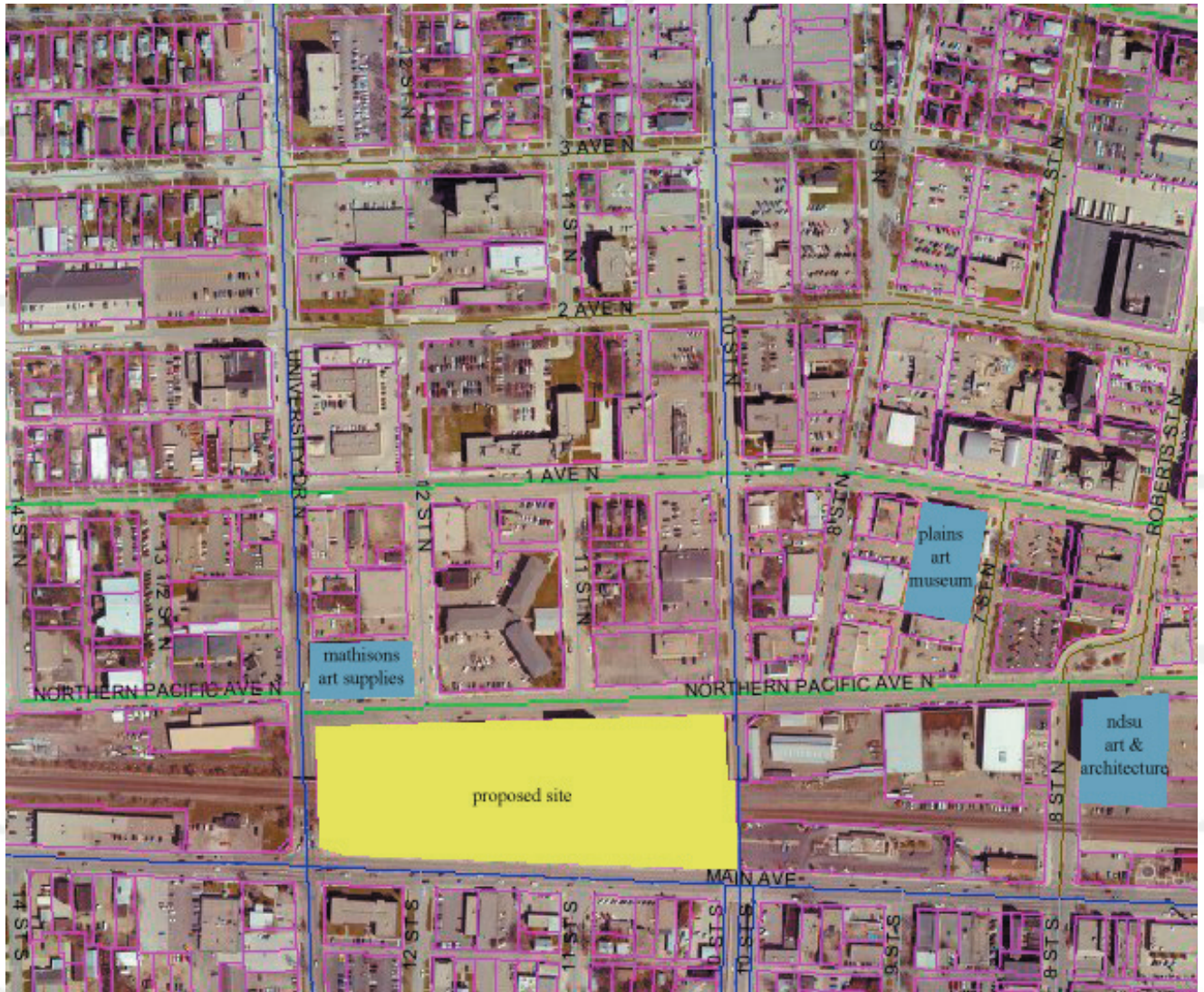
# MAJOR PROJECT ELEMENTS

There are many parts and pieces that make up this exciting charter art school. Some of the major elements include technologically advanced classrooms/computer labs, art studios to accommodate painting, ceramics, drawing, printmaking, photography, sculpture, prop construction and costume sewing. In addition to these spaces there will also be a professional TV studio with the appropriate editing boards and cameras and a full commercial kitchen to assist in training for a culinary career and to provide lunches for staff, students, artists and the community. A large auditorium is programmed for this facility to create an environment for the students and artists to perform and celebrate their experiences. Many gallery spaces will be available throughout the facility for the students and artists to display their pieces.

# SITE INFORMATION

The proposed charter art school will be located with the Midwestern United States in Fargo, ND at the sites between 1026 – 1106 Northern Pacific Avenue to Main Avenue. This site was selected due the historic value of this existing warehouse as well as the green space on either side of the building with exceptional potential on the south side of the railroad tracks for development. This site is located in the downtown district which is currently going under a major rejuvenation process. With the incorporation of this proposed art school the building will be historically renovated and this area of the community will get a fresh new look. This site lies adjacent to a set of Burlington Northern train tracks which will help emphasize the warehouse feel of the structure as well as prove prevalence and importance in the community.

# SITE INFORMATION





# SITE INFORMATION



# PROJECT EMPHASIS

The emphasis of this project entails incorporating new methods/techniques of teaching architecturally within this alternative/charter art high school. This will be developed in functional space planning with these techniques in mind as well as creating an overall exciting, stimulating and professional environment for all users, students staff, artists and the community.

# PLAN FOR PROCEEDING

My research and analysis will be a Mixed Method, Quantitative, Qualitative Approach:

A Concurrent Transformative Strategy will be employed:

This strategy will be guided by my theoretical premise.

## Implementation

Both quantitative and qualitative data will be gathered concurrently.

Priority will be assigned by the requirements of my theoretical premise.

Integration of the data will occur at several stages in the process of the research and will depend on the requirements of the examination of my theoretical premise.

Analyzing, interpreting, and reporting of results will occur throughout the research process.

Quantitative Data, including but not limited to:

### Statistical Data:

Gathered and analyzed locally or obtained through an archival search.

### Scientific Data:

Measurements obtained through instrumentation and/or experiment:

Gathered directly or through an archival search.

Qualitative Data:

Gathered from direct observation

Gathered from local survey

Gathered through an archival search

Gathered from direct interviews

# PLAN FOR PROCEEDING

Design Methodology:

Two types:

Graphic Analysis, All may be explored with aid of software:

- Interaction Matrix
- Interaction Net
- Venn Diagramming
- Morphological Charting

Language based:

Philosophical Logic

Adduction - To bring forward as an argument or as evidence

Deduction - concluding from a set of premises

Phenomenology:

An examination of objects or events as they appear in experience

Dialectical:

A logical argument

Documentation of the Design Process:

By digital means:

Photography

Models

Scanned images of sketches

Digital drawings

# SCHEDULE

schematic design  
design development  
construction documents

Thursday	October 13	Rough Draft of Proposal
	October 20	
	October 27	Final Draft of Proposal
	November 3	Case Studies Research
	November 10	Case Studies Research
	November 17	Case Studies Analysis
	November 24	Case Studies Analysis
	December 1	Rough Draft Program
	December 8	Final Program Complete
	December 15	Draft Thesis
	December 22	&
	December 29	Prepare for Design
	January 5	Review Program, background
	January 12	Schematic Design - identify forms from the program
	January 19	Finalize Site Relationships
	January 26	Functional arrangements - concepts
	February 2	Space Planning - finalize
	February 9	Volumes & Massing
	February 16	Circulation (vert. & hor.) - Structural Concepts
	February 23	Int. & Ext. Elevation Sketches
	March 2	Material Palette Studies
	March 9	Wall, Building, Perspective Sections
	March 16	MIDTERM REVIEW
	March 23	Structural / HVAC layouts
	March 30	Finalize Interior Space Studies
	April 6	Finalize all drawings
	April 13	Layout Graphic Presentation
	April 20	Work, Work, Work
	April 24	Plot / Finalize presentation
	May 11	Thesis Project Due @ 4:30 p.m. Thesis Document Due



# PREVIOUS EXPERIENCE

Interior Design 1998 - 2001

Children's museum

Wine Lounge

Residence

Restaurant

Third Year Architecture: Fall 2003

Bridge Structure

Art Museum

Cultural Center

Third Year Architecture: Spring 2004

Rammed Earth Residence

Montessori School

Fourth Year Architecture: Fall 2004

Urban Planning – Lowertown St. Paul, MN

Fourth Year Architecture: Spring 2005

Skyscraper

Dakota Flooring Building/Marvin Windows Competition

Fifth Year Architecture: Fall 2005

Historic Renovation of the Valley City Auditorium & Armory

# PROGRAM DOCUMENT

# THEORETICAL PREMISE

## PSYCHOLOGY

Are high schools expecting too much from their students?

At Bedlingtonshire Community High School there is a stress policy enforced. The document states, “this document lays the foundations for ensuring that no member of the schools suffers through facing excess stress.” ([www.bedlingtonshire.northumberland.sch.uk](http://www.bedlingtonshire.northumberland.sch.uk)) The document also states, “the intention of the stress policy is not to eliminate stress from the work place, not to reduce it to the lowest possible level, but to ensure that it exists at a level commensurate with balancing the good health and well being of the members of the school.” This idea to me seems quite ridiculous, as a society we are under a lot more stress however we all “deal” with it. Incorporating a policy of this nature seems a bit much and absurd to me. However I found numerous articles on the stress level of high school age students today.

I do believe that the stress and expectations put onto high school age people today is quite intense and possibly a bit extreme. At New Trier High School in Winnetka, Illinois the administration is trying to slow down their students by enforcing a mandatory lunch period and requiring the students that come in for “early bird” classes to take a free period later in the day. If these were not enforced students would work themselves through lunch and the entire day without taking a break. It is said that this is the nature of the community, “burning the candle at both ends”, however starts at the parents and trickles down to the children who are in turn going to have a hard time getting out of this fast paced way of life.

Some of the students GPAs have suffered because of these intense lifestyles that they lead, school all day, extra curricular activities after school, sometimes part time jobs all in addition to applying for colleges and taking the entrance exams. A couple of high schools have done away with class rank and weighted GPAs saying that comparing students to one another serves no purpose.

These ideas will be taken into consideration in my design by creating a less structured yet professional environment. This concept will help the student transition from school to the work world or college. There will be no bells, no lockers, no hand holding.

# THEORETICAL PREMISE

## SOCIOLOGY

Are our schools and teachers not keeping up with the constant, rapid changes in society?

“Our ideas about educating young people are still shaped by tradition, whereas the realities they have to confront are changing rapidly.” (Becoming an Adult: How teenagers prepare for the world of work. page 3.) High school age people are leading a completely different type of lifestyle than previous generations. “Families are not as stable as they were a generation ago, the information needed to thrive in our culture differs greatly from what was necessary 40 years ago, and the kinds of jobs that will be available a decade from now are hard to imagine and even harder to predict.” (page 3) So who is training this generation for their future? “Families, schools and the broader cultural environment that supposedly prepares youth for the future still operate with an outdated understanding of what it takes for a child to reach a productive adulthood.”

“For most of human history, young people were not faced with deciding what to do when they grew up. Adult careers were few and predictable, and the division of labor was simple: women gathered, men hunted.”(page 4) Granted times have changed since then, however there are constantly new jobs being created which require new and important skills. If our schools are still teaching in the “hunting and gathering” era how will our students ever get trained for the “real world”? “Young people today have little idea of what they will actually do when they grow up, and they do not know which role models, if any, are valid. They do not know what expectations are realistic, what skills are useful, or what values are relevant to their futures.” (page 5)

“Now more than ever young people must learn the skills and values necessary to build successful careers. We have delegated our schools the responsibility for preparing youth for the future, yet few would claim that schools are well equipped to prepare youth for realistic careers even in the present, let alone years to come.” (page 5) We have to start in the schools revamp not only the students but the teachers as well. The teachers also have to be taught and informed of the new careers available to each generation and the skills and values required to succeed at each. Individual communities and of course families are also playing a vital role in helping our youth today succeed.

# THEORETICAL PREMISE

## SOCIOLOGY CONT'D

Since society is constantly changing in respect to future careers, technology, psychology and many, many others we have to keep our teachers, instructors and professors up to speed. These people are shaping our future generations, however if they are not given adequate or even correct tools how can any of them succeed. My goal with this project is to use the building environment as well as the community as learning tools. This can be achieved by simply exposing structure, sustainability issues and the administrative hierarchy. By allowing the students to view how the actual school works from the mortar to the headmaster they will learn many invaluable skills. By allowing community members to come into the environment to speak and teach will give the students a chance to ask questions of careers that interest them. And the most important aspect of keeping the building and it's users up to date is to implement the most current technology with room for future improvements.

# THEORETICAL PREMISE

## ANTHROPOLOGY

Do high school age people have too much on their plates in regards to family life and community issues to concentrate on school?

“Today children are growing up under great stress and adversity such as neonatal stress, poverty, neglect, abuse, physical handicaps, war and parental schizophrenia, depression alcoholism and criminality.” (Fostering Resiliency in kids: Protective factors in the family, school and community. Page 2) When high school students enter school in the morning none of us know exactly where they are coming from. Were they just at home raising their younger brothers and sisters and possibly their parents? There are many more issues today that adolescents are dealing and coping with. All of these issues in turn weigh heavy on their minds, hearts and souls and eventually impact their lives and futures.

“In the last decade the literature on the power of the school to influence the outcome for children from high-risk environments has burgeoned. The evidence demonstrating that a school can serve as a protective shield to help children withstand the multiple vicissitudes that they can expect of a stressful world abounds, whether it is coming from a family environment devastated by alcoholism or mental illness or from a poverty-stricken community environment, or both.” (page 2) A school does not only function as a safe place for high-risk children but for all children. School is a place not just for learning but also for making friends, socializing and interacting.

“Among the most frequently encountered positive role models in the live of children today, outside of the family circle, was a favorite teacher.” (page 2) This proves not only how important the actual structure of the school as a safe haven is but also the extremely important role that teachers play in the students lives. This in turn can have a dramatic impact on the student’s success in the future. “As with family environments, research has identified that schools that establish high expectations for all kids—and give them the support necessary to achieve them—have incredibly high rates of academic success.” (page 4)

Schools today have an extremely important role to play in the lives of our adolescents. As mentioned previously they can sometimes function as a safe place for one to go as well as creating a stimulating, exciting environment to learn the skills needed to succeed for their future.



# THEORETICAL PREMISE

## ECONOMY

Why is the high school graduation significantly declining over the years?  
And is this creating non-trained, unintelligent people in our work force?

“...almost one-third of all high school students don’t graduate on time...” (The education trust, June 2005. page 1.) This is a staggering statistic which is not widely known throughout the U.S. It seems as though most public schools adapt their reviews and don’t provide accurate numbers in their data reports given to the U.S. Department of Education.

There have been many studies performed throughout the U.S. and world to verify how many high school students start and finish high school. However even the students that do graduate, the training and knowledge that they have received in their four years of secondary education is “...the bare minimum requirement for successful participation in the workforce, the economy, and society as a whole.” (page 2)

“The unemployment rate for high school drop outs is more than 30 percent higher than that of graduates.” (page 2.) With these kinds of rates this has a huge impact on the economics of individual communities as well as society as a whole. If students were not only properly trained in high school but could just graduate the statistics of society supporting them would decrease tremendously. The people would also be living a more fulfilling engaging life.

This ongoing and worsening situation needs to come to a halt. This problem is being looked at by government officials, however how much are they actually doing? This problem needs to be looked at also by each community. Members in the community, state and city officials, educators and the students themselves all need to get involved to solve this issue to help our future generations, communities and ourselves.

# THEORETICAL PREMISE

## PRESERVATION

What is the benefit of historic preservation?

“With old buildings we can often create unique spaces and then find, unexpectedly, that it is these special places that remain with us and enrich us long after memories of more standard schoolrooms blend together and fade. Old buildings can surprise and delight us. They can teach us lessons about the past and they can send powerful messages to future generations about what an enduring civic building means to a community. They can provide hope and inspiration in a faltering neighborhood and they can create some unlikely community bonds both during the planning process and through their ongoing use. Old buildings however, often do require vision, flexibility and ingenuity. Sometimes they even require that we think about learning in different ways.” (Old buildings: obstacle or opportunity. HMFH Architects, Inc. page 1.)

According to Stephen Spector, there are however some drawbacks to using an existing building for a future school. These include; wanting to start with a clean slate, the unknowns associated with renovating an older building, the need to meet strict school health and safety regulations, and state-mandated minimum school acreage requirements have limited adaptive reuse’s popularity. These are definitely some items to think about in the planning process, however they can be conquered.

“Schools and communities are realizing that adaptive reuse can bring more than just good new schools. Reuse can create valuable community resources from unproductive property, substantially reduce land acquisition and construction costs, revitalize existing neighborhoods, and help control sprawl. The unusual demands of adaptive reuse projects help schools and community leaders develop skills and relationships that can be transferred to other endeavors, opening other avenues of opportunity for learning and community growth.” (Creating Schools and Strengthening Communities through Adaptive Reuse. page 1.)

In choosing to reuse an existing building there are many positive aspects with a few drawbacks. The end product that is created will ultimately give the users a home as well as help rejuvenate that portion of the community.



# THEORETICAL PREMISE

## SUMMARY

While looking at all of these different situations, stories and reports a few common threads appeared to me. It seems as though there is either a lack of interest and excitement about learning and school because there are too many other things going on in our high school age people's lives or they are completely submerging themselves into school to the point where they may not be getting all of the useful and important data out of high school. The solution that I am proposing at my Charter Art School is to create a warm, comforting environment for those students who are not receiving this at home. To create a professional atmosphere to prepare the students for their future, whether it be college or straight into the workforce. This can be accomplished by finding out what specifically "they want to be when they grow up" and then equipping them with all of the communication, graphic, technological, psychological skills and tools that they will need to succeed. Another goal of the Charter Art School is giving them the technology, machines, equipment, software, etc. that they will actually be using in the "real world", this will create a jumping off point and a less intimidating feeling when they begin their next chapter in life.

In addition to making all of these wonderful situations available to them, I must also take into consideration the situation as it is now, today, not yesterday and not tomorrow. To realize that there are many different career options and paths available that need the most up to date training and comprehension of the subject.

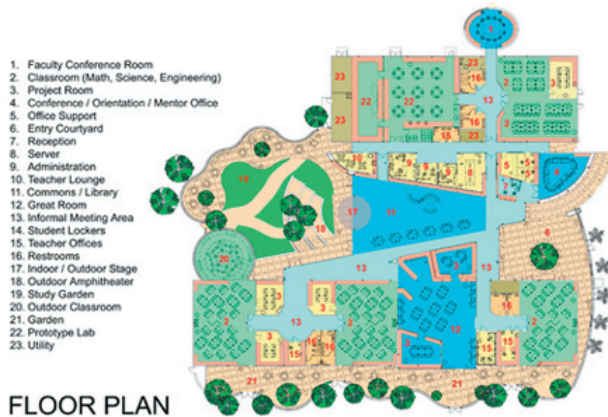
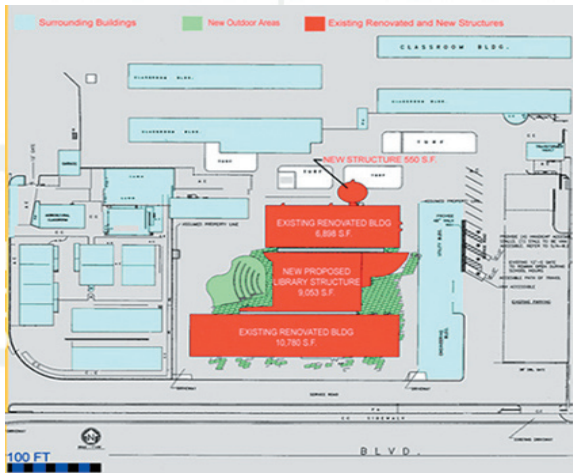
# CASE STUDY / PRECEDENT

## HIGH TECH HIGH LOS ANGELES, CALIFORNIA

Capacity	325 students
Square Feet	27,500
Acreage	1
Cost PSF	\$370.00
Construction	New & Renovation

Goal: Train students for the high-tech careers of tomorrow

The architect modeled the school after a corporate research center to create a more realistic environment to prepare the students for their future. Another objective was to create a community atmosphere where the students and administration could interact and see each other freely. This was achieved by incorporating a lot of glass throughout the school. Another major concept was to use the school as a learning tool. The ceiling was left exposed throughout for the students to be able to study how their school functioned. The architect's drawings and construction photos were displayed prominently in the school for students, teachers, community members and visitors to view at their leisure. Flexibility of spaces was also another theme incorporated to create the most dynamic and functional spaces without a lot of work. Natural daylight and colorful paints were also used to create a warm, welcoming environment.





# CASE STUDY / PRECEDENT

## LANGSTON HIGH SCHOOL ARLINGTON, VIRGINIA

Capacity	185 students
Square Feet	5,050
Acreage	2.46
Cost PSF	\$136.00
Construction	Renovation

Goal: Redevelop the site to be a “gateway” project, bringing identity to their community

After many charrettes with community members, users, architects and the public the main concept was to embrace a “new urbanism” by creating an oasis at the pedestrian scale of the streetscape. Along with this goal the community decided that creating a safe, healthy, high performing and sustainable building while using technology as a learning tool was the best idea. During the construction of the school 83% of the debris was recycled or reused. In helping receive the silver rating for LEED stained concrete was chosen over VCT, previous asphalt was used in the parking spaces, rainwater and runoff was collected for onsite irrigation, low flow water closets and lavatory faucets and waterless urinals were selected. A saw-toothed roof configuration was designed to provide additional daylighting in upper classrooms. Multi-switched lighting with high efficiency lighting ballasts were used for control zones. An Energy Star compliant roof system was used as well as light colored/highly reflective materials to reduce the structure’s heat island effect. There were also large external shading devices, which drastically improved solar heat gain while maintaining views. A highly efficient HVAC system and water heaters were selected in addition to operable windows throughout the building. Because of all the “green” elements in the school the community chose to use it as a learning tool for the students and the community members.



# CASE STUDY / PRECEDENT

## TIMBERLANE PERFORMING ARTS CENTER - PLAISTOW, NEW HAMPSHIRE

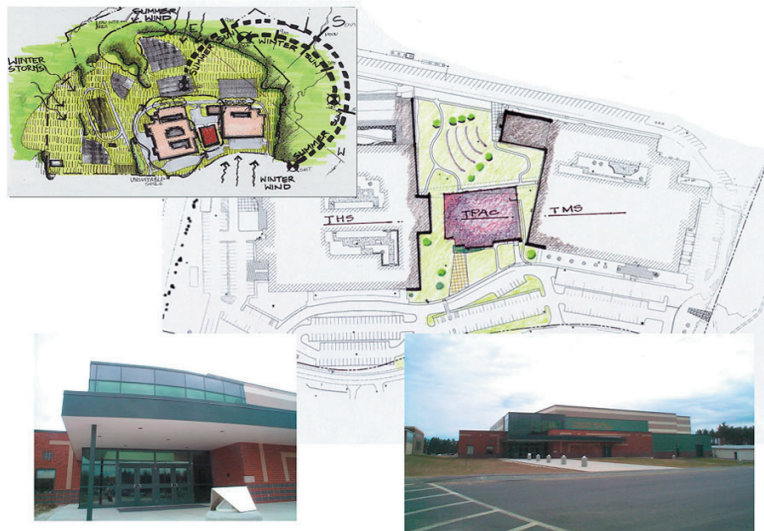
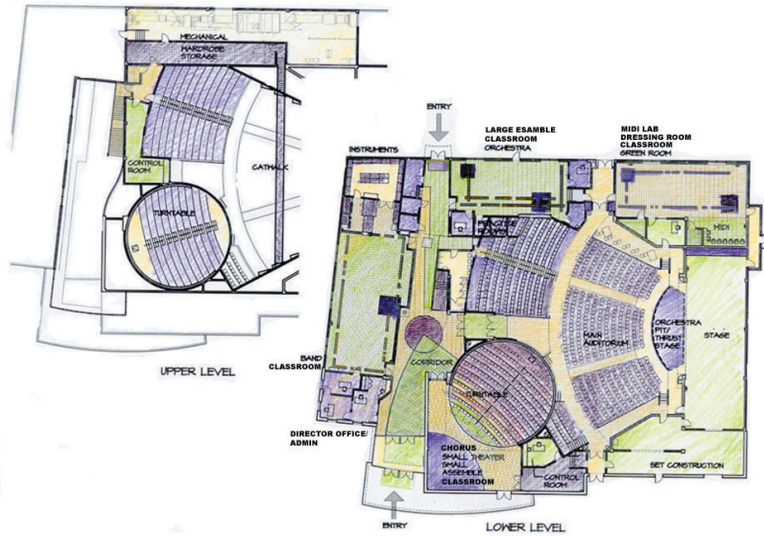
Capacity	NA
Square Feet	30,000
Acreage	NA
Cost PSF	\$193.00
Construction	New

Goal: Create an Arts Center that supports peer groups, promote MS and HS collaboration with the capabilities to deliver high quality performances to the community.

One of the main features of the Art Center was the use of a turntable system. The use of a turntable makes it possible to create 3 house configurations of 240, 700, and 940 seats. Along with this feature the overall concept was to create enhanced learning environments without compromising the performance areas.

Oversized windows were selected and placed to maximize daylight penetration while minimizing glare. Color, form and texture were used throughout the school to create dramatic effects. Greens and brick tones were carried from the exterior to the interior of the building. These materials were selected because of low maintenance, indoor air quality and energy conservation qualities. An energy-efficient envelope system was designed that incorporated a continuous thermal break system and multiple drainage planes with a siding system that was not dependent on sealant.

A fairly unique mechanical system was selected which delivered slightly cooled air at a low velocity across the floor of the spaces and exhausting the air from the top of the space, thus allowing the occupants the breath fresh air. Energy was conserved by use of exhaust air energy recovery and DDC-VAV control systems with maintenance ease designed as a priority.





# CASE STUDY / PRECEDENT

## THE MEDIA & TECHNOLOGY CHARTER HIGH SCHOOL BOSTON, MASSACHUSETTS

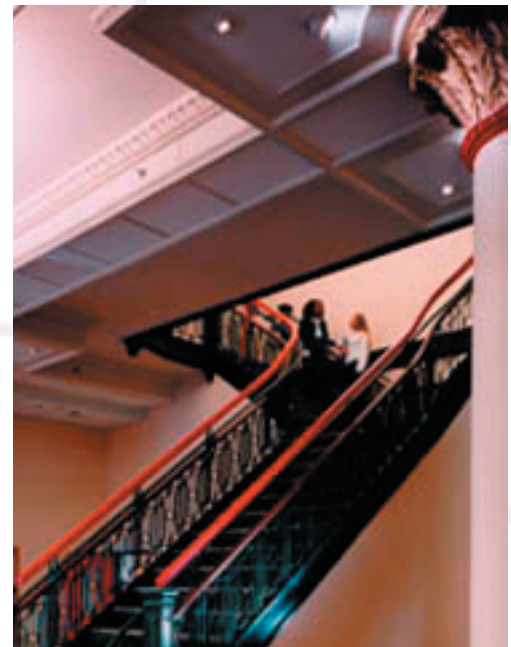
Capacity	NA
Square Feet	31,000
Acreage	NA
Cost PSF	\$132.00
Construction	Renovation

Goal: Use media and technology to facilitate instruction of the basics and actively engaged college-bound students in their education

The school was designed for the students to have the freedom to engage with media and technology in many different academic and informal spaces throughout. There are a couple of hard-wired computer stations and classrooms in the building with a wireless network throughout. 160 laptops will be provided to some of the students who come from disadvantaged homes.

Flexibility and adaptability were key to accommodating the school's interdisciplinary needs. The assembly space was designed to function as an auditorium, cafeteria, study hall and have the ability to house broad ranges of groups. Break out rooms were placed adjacent to classrooms for group and individual project work. There are many different shaped and sized areas within the school to support diverse modes of learning and add exciting dynamic to the school program such as widened corridors for enhanced socializing spaces.

The original details from the building such as the marble grand staircase with iron grillwork, Egyptian inspired columns, and egg-and-dart mouldings create a unique historic feel within the school. The high ceilings and 10-foot windows enliven learning spaces and create a sense of openness.



# CASE STUDY / PRECEDENT

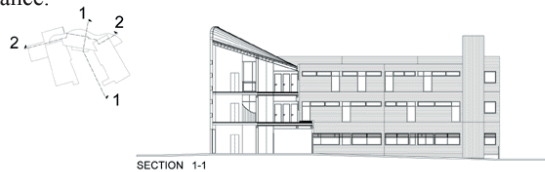
## HIGH SCHOOL OF ARTS GUADALAJARA, SPAIN

Capacity	350 students
Square Feet	2,770
Acreage	NA
Cost PSF	NA
Construction	New

Goal: To break the scenery up from the bland residential neighborhood

The concept of the High School of Arts was based on a curvilinear spine functioning as the main access with two adjoining volumes on either side creating an open courtyard. Exterior and interior merge together with the classrooms and corridors to create an exciting and stimulating environment. Zinc and concrete were chosen on the exterior creating prismatic volumes looking like a “dreams factory.”

The school was strategically placed on the site with the two wings oriented to the south and southeast with sunshades protecting the direct sunlight. Bright circulation corridors were located on the north side allowing the natural daylight to stream inside while being able to view the scenery outside. The classrooms and workshops were located on the ground floor because of the heavy machinery and equipment needed. The lecture hall was created to serve many different activities, conferences, exhibitions with moveable furniture. All materials selected in the building were chosen because of their ease of maintenance. Acoustic panels were used within the classrooms to avoid resonance.



FRONTAL VIEW



CENTRAL COURTYARD



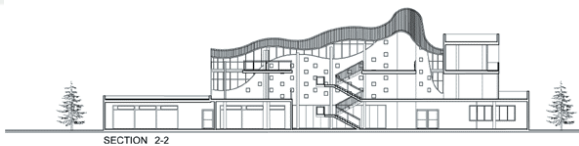
NIGHT VIEW



MAIN ENTRANCE



LIBRARY AND LECTURE HALL ENTRANCE



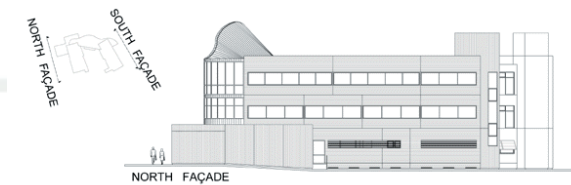
SECTION 2-2



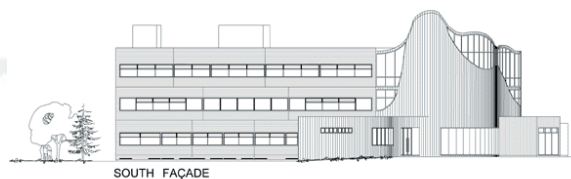
WEST FAÇADE



EAST FAÇADE



NORTH FAÇADE



SOUTH FAÇADE



# CASE STUDY / PRECEDENT

## CINCINNATI SCHOOL OF CREATIVE & PERFORMING ARTS CINCINNATI, OHIO

Capacity	NA
Square Feet	319,473
Acreage	2.2
Cost PSF	\$120.00
Construction	New

Goal: Re-birth/redevelopment of the "Over the Rhine" district downtown Cincinnati, adjacent to existing historic Music Hall

The main concept for the building of this school was to locate it directly adjacent to the existing Music Hall. This was a challenge because the site was quite small and it is always difficult to meld a new building with an existing historic building, especially one of this stature in the community. Musicians, conductors, performance artists from the Music Hall would have direct contact with the school, thus architecturally needing direct access as well. Since this building was located in a downtown some concerns arose about parking and security. This was an added challenge that was successfully accomplished by making use of an elevated garage across the street.



# CASE STUDY / PRECEDENT

## GALEF CENTER FOR FINE ARTS LOS ANGELES, CALIFORNIA

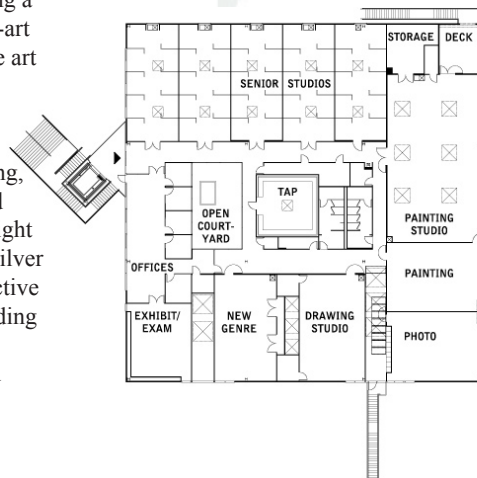
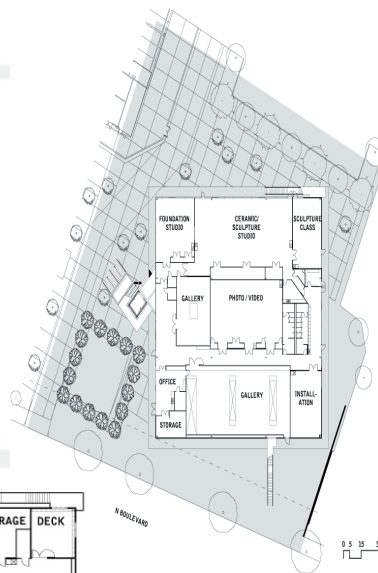
Capacity	NA
Square Feet	40,000
Acreage	NA
Cost PSF	\$125.00
Construction	New

Goal: To create enduring spaces that inspire spirited exchanges between students and faculty, as well as create a sense of campus community and pride

Group and individual studios for painting, sculpture, photography and new genres; workshops, classrooms, two art galleries and faculty offices were accommodated for in the interior. There were also a variety of outdoor activities planned for including: art production, exhibitions, special events, casual gatherings and a glass walled outdoor courtyard. Since there was a tight budget and schedule the building was looked at as an “art factory.” The building was designed to be fully digitally wired, and in compliance with LEED Green building standards.

There were four key design concepts used in this school; site orientation, overlapping programming and multi-disciplinary. Site orientation was critical because there were other existing buildings on the campus. The configuration selected allowed for easy access to the building creating a plaza area with student’s access to the exterior from their studio spaces via roll up metal and sliding glass doors. The overlapping of program spaces promotes creative interchanges between classrooms, galleries, studios and administrative areas. Using a multi-disciplinary approach would assist in non-art students feeling comfortable and invited into the art school.

Light and temperature climate are key design features for the structure. Floor to ceiling glazing, glass paneled flooring, skylights, courtyards and upper level patios create varied patterns of daylight and fresh air. The exterior façade consisted of silver painted corrugated metal which is visually an active and reflective material. Since there are surrounding buildings that are taller then the art center the four facades as well as the roof were considered thoughtfully.





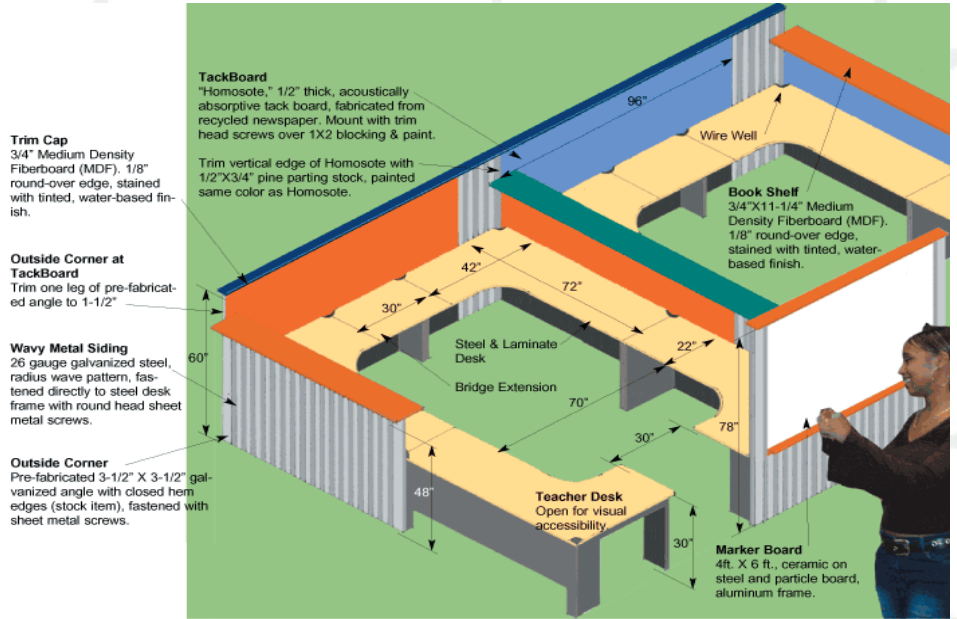
# CASE STUDY / PRECEDENT

## HIP HOP HIGH ST. PAUL, MINNESOTA

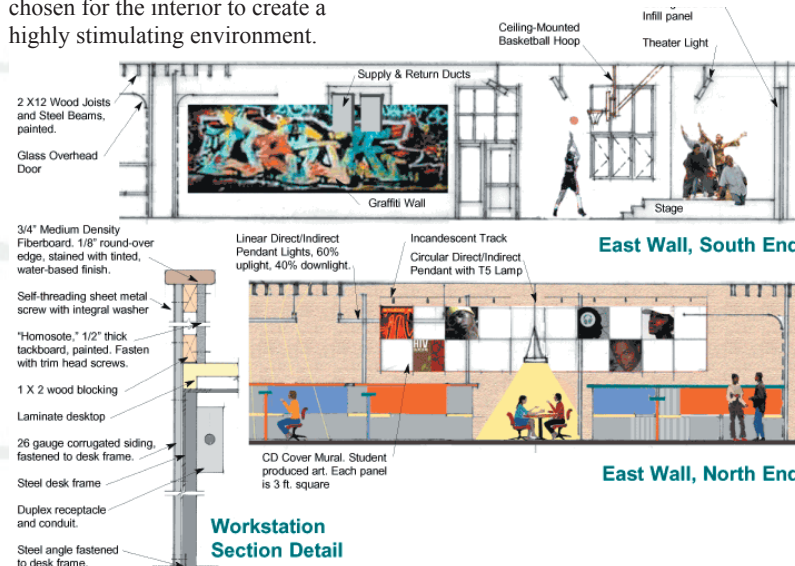
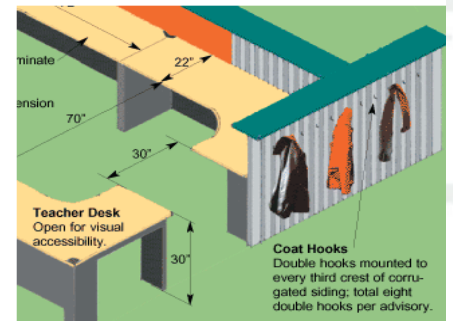
Capacity NA  
 Square Feet 1,500  
 Acreage NA  
 Cost PSF NA  
 Construction Renovation

Goal: To create an environment for at-risk kids that is project-based about real world learning and hip-hop.

Students are not average high school students attending this school, most are former dropouts and have jobs and families. Students must master math, science and language arts before they are given studio time. Since a different style of teaching was necessary in this facility a different design was required as well. A more open individual based atmosphere was desired where students worked in teams of 15 with one teacher. Custom workspaces were created from donated desks, corrugated metal, a book shelf, white erase board and coat hooks. There is a group assembly space located adjacent to the workstations that is closed off by large glass overhead doors. Bright colors were chosen for the interior to create a highly stimulating environment.



Alternate version with coat hooks rather than white board

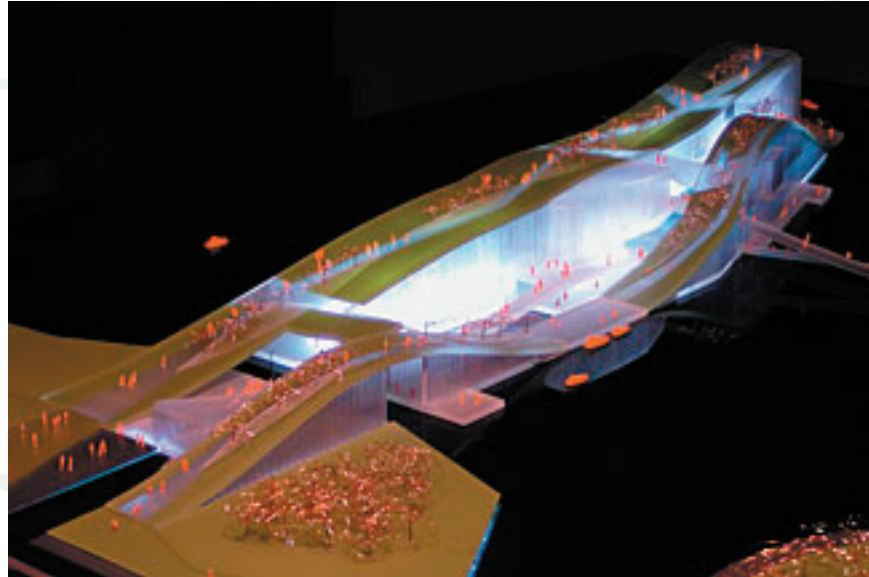


# CASE STUDY / PRECEDENT

## THUMB ISLAND QINGPU DISTRICT, SHANGHAI, CHINA

Goal: create a community center that floats on a lake

The island consists of two buildings that rise and fall gently like two glass-encased mounds. The roofs of the two structures which simulate two rolling hills will become public parks.

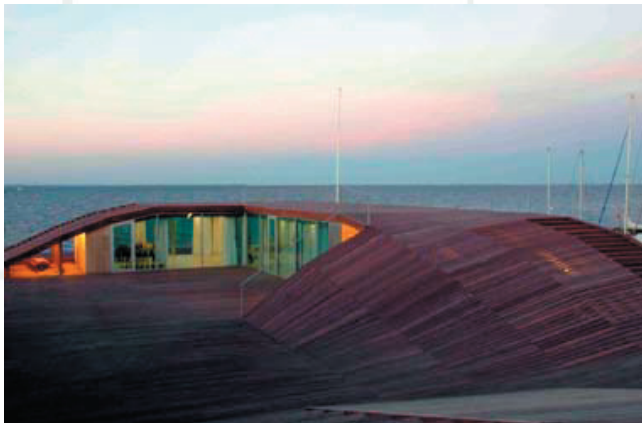


# CASE STUDY / PRECEDENT

## MARITIME YOUTH HOUSE COPENHAGEN, DENMARK

Goal: Use the polluted site to their benefit

The site chosen for the youth house and sail club was polluted with heavy metals. 25% of the budget would have had to be used to remove this debris. However since these metals were heavy and stable it was decided that wooden decks would cover the entire surface, in turn being able to use the entire budget for the program and the architecture. The rising and lowering creates an exciting environment for the children while creating boat storage underneath.





# CASE STUDY / PRECEDENT

## PARC DE LA VILLETTE PARIS, FRANCE

Goal: an urban renewal on the old national meat market and slaughterhouse

Bernard Tschumi won the competition consisting of a landscaped complex housing music and science centers, commercial offices, and public open spaces. Tschumi's vision manifested from an "avant garde Disney Land." The deconstruction aspect was achieved by anti-hierarchy, anti-structure, and anti-form in Tschumi's words. The inside of structures are exposed on exteriors and used as decoration. Many "follies", unprogrammed spaces were constructed on the park for numerous events. This "park" pushed the envelope and definition of the term in the sense that it was simply not just greenspace. There is plenty of grassy areas to lounge in addition to the sculpture like structures.



# CASE STUDY / PRECEDENT

## SUMMARY

There were many different styles of schools, buildings and structures studied during the case study process. Some were charter high schools, performing art schools, public high schools, landscaped environments and others. New construction and renovation projects were also studied to get a variety of different ideas.

Some of the main ideas that were similar in all buildings were sustainability issues in the school and on the sites, creating a community atmosphere for students and teachers alike and also using the building as a learning tool for the students and community members.

There were many sustainability solutions used in almost all of the examples. Some of these ideas were photovoltaic panels and/or heat reflective paint on the roofs, operable windows in the classrooms and administrative offices, stained concrete in lieu of any vinyl floorings, low flow water closets, waterless urinals, multi-switched lights, sunshades on the exterior of the building and many windows and skylights for natural daylighting.

Some of the themes that were intriguing in the landscape works were the large free flowing spaces with the use of grass, wood or other materials with the structures “peeking” out. Since this site is such a large expansive area many different landscaping features and ideas are going to be used. This will create community areas as well as places for the students of the art school to study, get inspiration as well as feel safe and secure. Since there is the Burlington Northern train track running through the site some of these similar landscape ideas will be implemented to travel above and below the train track as well as help to acoustically suffocate the sounds.

# HISTORICAL CONTEXT

## UNION STORAGE & TRANSFER CO FARGO, NORTH DAKOTA

Downtown Fargo is currently undergoing significant rejuvenation of some of their old, historic buildings. Many of these buildings have been renovated to their original look with new restaurants, retail and office spaces making their home in them. The renovation of the Plains Art Museum was one of the first historic buildings to receive a face lift. After the community saw the success and beauty of the building more soon followed including the Hotel Donaldson, NDSU Art and Architecture Department/Northern School Supplies, Vogel Law Firm plus others. The current Union Storage building has the same beauty hidden underneath it's rundown exterior and interior.

The Union Storage and Transfer building has a rich history that dates back to 1929 when it was designed by architect William F. Kurke. William F. Kurke & Associates came to be one of the most prominent architecture firms in Fargo and possibly all of North Dakota. Kurke's firm designed the Ivers Apartments and Funeral Home, the Graver Hotel, the Pioneer Mutual Life Insurance building in addition to being the largest contributing architect to the campus of NDSU.

Two buildings were constructed at the same time by the general contractors, Meinecke Johnson with an expectation of completion by June 1, 1929. The warehouse building on the east side which was to be used for cold storage is a four story building with a complete basement, 100' x 115'. The building to the west was to be leased out to Armour and company as a creamery and poultry packing plant, this building was to be 76' x 132' with three floors and a basement.

At the time this project was quite costly at \$250,000. This figure was given to project by only creating cold/refrigeration at the top two floors of the warehouse with the intention of doing the other two and basement at a later date bringing the buildings value to \$300,000 to \$450,000. Kurke state throughout the process that the brine system (salt) of refrigeration would be used instead of ammonia. According to the February 20, 1929 Fargo Forum, that the cold storage plan is expected to be an important business builder, not only for Fargo, but for the poultry and dairy business of the northwest. Both the Northern Pacific and Great Northern railways had established a guideline which allowed shippers to stop carloads of butter, eggs and poultry in Fargo, store them here for a period of time and the ship them to eastern markets.

# HISTORICAL CONTEXT

## UNION STORAGE & TRANSFER CO FARGO, NORTH DAKOTA

The Union Storage & Transfer Building was an important addition 75 years ago to the local and out-reaching communities of the Fargo/Moorhead area as a business and economic venture. Today this wonderfully well constructed, history rich building is a bit dilapidated but has an extreme amount of potential with the large open structural bays, soaring ceilings and Art Deco style.



# HISTORICAL CONTEXT

UNION STORAGE & TRANSFER CO  
FARGO, NORTH DAKOTA



Women hard at work at Armour Creamery, 1930's.

# HISTORICAL CONTEXT

UNION STORAGE & TRANSFER CO  
FARGO, NORTH DAKOTA



Chickens waiting for slaughter in the Armour Creamery, 1930's.

# HISTORICAL CONTEXT

UNION STORAGE & TRANSFER CO  
FARGO, NORTH DAKOTA



Refrigeration Plant in the basement, 1930's.



# SITE ANALYSIS

1026 - 1106 NORTHERN PACIFIC AVENUE  
FARGO, NORTH DAKOTA

The site is currently bound by 4 major roads in the Fargo/Moorhead Area. University Drive is a one-way travelling South running along the western side of the site. Main Avenue is a two-way travelling East-West runs along the southern edge of the site. 10th Street is a one-way traveling North running along the east edge and Northern Pacific Avenue is also a one-way travelling East that runs along the northern side of the site.

Mathison's Art Supplies sits directly across NP Avenue to the North as well as low income housing and a local bar. Both University and 10th street have underpasses accommodating The Burlington Northern train tracks that run through the center of the site on both the East and West sides. There are currently light commercial buildings setting just West of the Union Storage and Transfer Building as well as running along the South side of the site on Main Avenue that are proposed for demolition. Other beneficial adjacencies are the Plains Art Museum and the NDSU Art & Architecture within walking distance. Downtown Fargo proper is also just a short walk away with fabulous restaurants, boutiques, bars, banks, jewelers plus many other amenities.

Since portions of the topography of this site are up to 8' higher than surrounding sites a landmark situation is created. The current Union Storage and Transfer building can be seen from multiple streets/blocks away. Some of the surrounding views include from Broadway and Main Avenue looking West, from 13th Street and Main Avenue looking East as well as many others.

Wonderful daylighting effects are present due to the height of the building especially on the West and South facades. One drawback to height of the building and little protection from surrounding buildings or vegetation are the harsh winds that are frequent in the Fargo area.

# SITE ANALYSIS

UNION STORAGE & TRANSFER CO  
FARGO, NORTH DAKOTA



North West Side of Site



South West Side of Site



East Side of Site



East Side of Site



# SITE ANALYSIS

## UNION STORAGE & TRANSFER CO FARGO, NORTH DAKOTA



East Side of Building



North Side of Building - East Half



North Side of Building - West Half



North West Side of Building



# SITE ANALYSIS

UNION STORAGE & TRANSFER CO  
FARGO, NORTH DAKOTA



North West Side of Building



West Side of Building



South West Side of Building



South East Side of Building



# SITE ANALYSIS

## ENVIRONMENTAL IMPACTS

The average temperature of Fargo, ND is 37 degrees. This is figured by the average 2 degree temperature in the coldest month of January and the average temperature of 67 degrees in July the warmest month. The annual snowfall is difficult to assess because of the minimal topography and high wind speeds. There may not be large numbers in regards to inches falling, however the blowing and drifting of the accumulated snow is quite prevalent and a bit of a nuisance. Due to the cold temperatures in the winter the average frostline is 4.5' however footings are suggested to go as deep as 6'.

Since the Fargo, Red River Valley area is not a fluctuating topographic region the wind speeds are 10 to 20 percent higher than the rest of the state. The mean wind speeds range from 10.9 to 14.9 miles per hour with a strong incoming north and north-northwest flow and a strong south and south-southeast return flow. These strong wind speeds and directions have a large impact on the design of buildings and window locations within the area.

Another main environmental impact within the Fargo, area is the Red River. Because this river has a tendency to flood and with minimal topography changes within the Red as well as over it banks it can crawl for quite a distance. The proposed location of this site is out of the current floodplain, it currently lies in the 500 year floodplain.

The extreme temperatures and wind speeds can be detrimental to any building type within Fargo. All of these environmental impacts should be carefully considered when planning a project.

# PROGRAMMATIC REQUIREMENTS

# PROGRAMMATIC REQUIREMENTS

## SQUARE FOOTAGE ALLOCATIONS

Space Summary							
Area		Quantity		Square Feet			Total SF
<b>Instruc-tional Spaces</b>							
	classroom	2 @		800			1,600
	project Rooms	1 @		300			300
	lecture hall	100 seats @		1,200			1,200
						<b>total</b>	<b>4,500 SF</b>
<b>Art Labs</b>							
	<b>Drawing Studio</b>	1 @		1,500			1,500
	spray booth	1 @		300			300
	<b>Painting Studio</b>	1 @		1,500			1,500
	office	1 @		100			100
	<b>Ceramics Studio</b>	1 @		1,500			1,500
	kiln room	1 @		300			300
	storage-wet/ dry-clay	1 @		300			300
	<b>Sculpture Studio</b>	1 @		1,500			1,500
	storage	1 @		300			300
	office	1 @		100			100
	<b>Photography Studio</b>	1 @		800			800
	darkroom	1 @		800			800
	individual darkrooms	3 @		50			150
	storage	1 @		300			300
	office	1 @		100			100
	<b>Video Studio</b>	1 @		800			800
	entry	1 @		300			300
	studio	1 @		800			800
	control room	1 @		300			300
	multi-media rooms	2 @		75			150
	storage	1 @		200			200

# PROGRAMMATIC REQUIREMENTS

## SQUARE FOOTAGE ALLOCATIONS

	office		1 @		100			100
	<b>Graphic Design Studio</b>							
			1 @		1,500			1,500
	computer lab		1 @		800			800
	office		1 @		100			100
	<b>Wood shop/prop shop</b>							
			1 @		3,000			3,000
	storage		1 @		800			800
	offices		2 @		100			<u>200</u>
							<b>total</b>	<b>18,600 SF</b>
<b><u>Music Dept.</u></b>								
	entry/gathering		1 @		1,000			1,000
	<b>Band</b>		1 @		3,000			3,000
	instrument storage		1 @		600			600
	uniform storage		1 @		600			600
	<b>Choir</b>		1 @		1,800			1,800
	storage		1 @		300			300
	<b>Orchestra</b>		1 @		500			500
	practice rooms		5 @		100			500
	resource library		1 @		700			700
	offices		2 @		100			<u>200</u>
							<b>total</b>	<b>9,200 SF</b>
<b><u>Performing Arts</u></b>								
	makeup room		1 @		300			300
	toilets/dressing		2 @		200			400
	costume storage		1 @		650			650
	office		1 @		100			<u>100</u>
							<b>total</b>	<b>1,450 SF</b>
<b><u>Auditorium</u></b>								
	lobby		1 @		1,000			1,000
	stage		1 @		3,000			3,000
	seating		650 seats @		6,000			6,000
	orchestra pit		1 @		450			450
	lighting platform		1 @		700			700

# PROGRAMMATIC REQUIREMENTS

## SQUARE FOOTAGE ALLOCATIONS

	control room		1 @		300			300
	box office/ ticket booth		1 @		75			75
							<b>total</b>	<b>11,525 SF</b>
<b>Adminis- tration</b>								
	reception		1 @		700			700
	headmaster		1 @		175			175
	toilet		1 @		75			75
	conference room		1 @		400			400
	workroom/ mail/copy		1 @		200			200
	career center		1 @		1,200			1,200
	guidance counselor		1 @		135			135
	nurse office/ testing		1 @		350			350
	cot room/ toilet		1 @		350			350
	assistants		3 @		135			405
	records		1 @		120			120
							<b>total</b>	<b>4,110 SF</b>
<b>General Building</b>								
	storage				1,500			1,500
	outdoor stor- age				500			500
	maintenance office				800			800
	receiving/ recycling				800			800
							<b>total</b>	<b>3,600 SF</b>
							<b>overall total</b>	<b>52,985 SF</b>
Net to Gross Factor								<u>x 1.5</u>
	mechanical							<b>79,477 SF</b>
	electrical							
	public toilets							
	circulation							
	jantiorial closets							

# PROGRAMMATIC REQUIREMENTS

## SQUARE FOOTAGE ALLOCATIONS

<b>Com- mons</b>								
	active com- mons		1 @					
	lockers/ homes							
	vending		1 @		200			200



# PROGRAMMATIC REQUIREMENTS

## INSTRUCTIONAL SPACES

### Classrooms:

- Located on exterior wall for natural light
- Operable windows for natural ventilation
- Open to outdoors for patios/balconies
- Retractable dividers for easy manipulation of room size
- Lockable cabinet and closet storage
- Adjacent project rooms for individual/group work
- Wireless computer options
- Markerboard with tackstrips
- Projection screen
- Overhead projectors
- Tables and chairs for students
- Mobile teaching station
- Motion sensed lights

### Lecture Hall:

- Tiered permanent seating
- Markerboard with tackstrips
- Projection Screen
- Overhead Projector
- Portable podium with computer
- Motion sensed lights
- Lights on dimmer switches
- Surround sound speakers

# PROGRAMMATIC REQUIREMENTS

## ART LABS & STUDIOS

### Drawing:

- Located on exterior wall for natural light
- Operable windows for natural ventilation
- Markerboard with tackstrips
- Adjustable height workstations and chairs
- Lockable student cabinet storage
- Low maintenance, easily cleanable floor, wall finishes
- 2 stainless steel utility sinks
- Floor drains throughout
- Spray booth on exterior wall for ventilation near junction box
- Still life arrangement area
- Lockable instructor cabinet and closet storage
- Tote storage
- Horizontal and Vertical paper storage
- Pin up space
- GFCI ceiling mounted pull down duplex receptacle
- Wireless antennae GFCI ceiling mounted pull down duplex receptacle
- Track lighting
- Motion sensed lights

# PROGRAMMATIC REQUIREMENTS

## ART LABS & STUDIOS

### Painting Studio:

- Located on exterior wall for natural light
- Operable windows for natural ventilation
- Markerboard with tackstrips
- Adjustable height workstations and chairs
- Lockable student cabinet storage
- Low maintenance, easily cleanable floor, wall finishes
- 2 stainless steel utility sinks
- Floor drains throughout
- Still life arrangement area
- Lockable instructor cabinet and closet storage
- Tote storage
- Horizontal and Vertical paper storage
- Pin up space
- GFCI ceiling mounted pull down duplex receptacle
- Wireless antennae
- Track lighting
- Motion sensed lights

# PROGRAMMATIC REQUIREMENTS

## ART LABS & STUDIOS

### Ceramics:

- Located on exterior wall for natural light
- Operable windows for natural ventilation
- Markerboard with tackstrips
- Adjustable height workstations and chairs
- Lockable student cabinet storage for work in progress
- Clay storage room
- Glaze mixing area with ventilation for dust
- Low maintenance, easily cleanable floor, wall finishes
- Standing height counter with lockable storage below
- 2 stainless steel utility sinks with clay traps
- Floor drains throughout
- Lockable instructor cabinet and closet storage
- GFCI ceiling mounted pull down duplex receptacle
- Wireless antennae
- Track lighting
- Motion sensed lights

### Kiln Room:

- Located on exterior wall for ventilation
- Appropriate GFCI receptacles for kilns
- Storage shelves



# PROGRAMMATIC REQUIREMENTS

## ART LABS & STUDIOS

### Sculpture:

- Located on exterior wall for natural light
- Operable windows for natural ventilation
- Markerboard with tackstrips
- Adjustable height workstations and chairs
- Lockable student cabinet storage for work in progress
- Low maintenance, easily cleanable floor, wall finishes
- Standing height counters with lockable storage below
- 2 stainless steel utility sinks
- Floor drains throughout
- Lockable instructor cabinet and closet storage
- GFCI ceiling mounted pull down duplex receptacle
- Wireless antennae
- Motion sensed lights

### Welding Room/Stations:

- Located on exterior wall for ventilation
- Appropriate GFCI receptacles for equipment
- Storage shelves

# PROGRAMMATIC REQUIREMENTS

## ART LABS & STUDIOS

### Photography:

- Located on exterior wall for natural light
- Operable windows for natural ventilation
- Adjacent to Video Studio
- Markerboard with tackstrips
- Adjustable height workstations and chairs
- Lockable student cabinet storage for work in progress
- Low maintenance, easily cleanable floor, wall finishes
- Standing height counter with lockable storage below
- 2 temperature controlled stainless steel Utility sinks with chemical storage

### above

- Tall cabinet for negative storage
- Small closets/rooms for removing film from cameras
- Pinup space
- Floor drains throughout
- Lockable instructor cabinet and closet storage
- GFCI ceiling mounted pull down duplex receptacle
- Wireless antennae
- Hardwired computer connections
- Track lighting
- Motion sensed lights

### Dark Room:

- Snake entrance
- Walls painted black
- Island style temperature controlled sink with access around
- Paper cutting station
- Individual enlarger stations with open shelving below
- Eyewash station
- Light switch at elevated height
- Safe light
- Appropriate GFCI receptacles for kilns
- Storage shelves

# PROGRAMMATIC REQUIREMENTS

## ART LABS & STUDIOS

### Video Studio:

- Located in an interior space
- Adjacent to Photography Studio
- Directly adjacent to Control Room
- Acoustical foam around perimeter of room and ceiling
- Curtain and curtain track around perimeter of room
- Glazing for viewing from Control Room
- Carpeted floor
- Lockable storage cabinets
- Adjustable lights on light track
- Wireless antennae
- Floor box receptacles
- Lights on dimmers
- Microphones mounted to light track

### Control Room:

- Directly adjacent to Video Studio
- Glazing for viewing into Video Studio
- Sitting height counter 36" deep to accommodate control panels
- Wireless antennae
- Hardwired computer connection
- Double duplex receptacles at counter height
- Adjustable height chairs

### Editing Rooms:

- Work desk
- Adjustable height chair
- Side chair
- Double duplex receptacles

# PROGRAMMATIC REQUIREMENTS

## ART LABS & STUDIOS

### Graphic Design Studio:

- Located on exterior wall for natural light
- Operable windows for natural ventilation
- Markerboard with tackstrips
- Adjustable height workstations and chairs
- Standing height counter/workspace for large drawings
- Lockable student cabinet storage
- Lockable instructor cabinet and closet storage
- Tote storage
- Horizontal and Vertical paper storage
- Pin up space
- Space for multiple printers and large scale plotter
- Multiple duplex receptacles
- Floor boxes throughout room
- Wireless antennae GFCI ceiling mounted pull down duplex receptacle
- Track lighting
- Motion sensed lights

# PROGRAMMATIC REQUIREMENTS

## ART LABS & STUDIOS

### Wood shop/Prop Studio:

- Located on exterior wall for natural light and ventilation
- Operable windows for natural ventilation
- Markerboard with tackstrips
- Adjustable height workstations and chairs
- Standing height counter/workspace
- Lockable student cabinet storage
- Lockable instructor cabinet and closet storage
- Tote storage
- Wood storage
- Low maintenance, easily cleaned flooring and wall finishes
- 2 Stainless steel utility sinks
- Floor drains
- Vacuum style ventilation mounted at ceiling and floor
- Multiple ceiling mounted hanging duplex receptacles
- Floor boxes throughout room
- Wireless antennae
- GFCI ceiling mounted pull down duplex receptacle
- Track lighting
- Motion sensed lights



# PROGRAMMATIC REQUIREMENTS

## ART LABS & STUDIOS

### Office:

- Located on exterior wall for natural light
- Glazing for viewing studio
- Lockable door
- Wireless antennae
- Duplex receptacles

# PROGRAMMATIC REQUIREMENTS

## MUSIC DEPARTMENT

### Entry/Gathering:

- Lockable Instrument Storage
- Lockable Uniform Storage
- Drinking Fountain
- Practice Rooms
- Music Library

# PROGRAMMATIC REQUIREMENTS

## MUSIC DEPARTMENT

### Band Room:

- Markerboard with tack strip
- carpeted floor
- Acoustical panels on perimeter walls
- Tub sink
- Drinking fountain
- Mobile folder storage
- Lockable cabinets and closet for instructor
- Lockable stereo cabinet
- Microphones mounted in ceiling
- Speakers mounted in ceiling

# PROGRAMMATIC REQUIREMENTS

## MUSIC DEPARTMENT

### Choir Room:

- Markerboard with tackstrip
- Hard surface floor
- Portable risers
- Acoustical panels on perimeter walls
- Drinking fountain
- Mobile folder storage
- Lockable cabinets and closet for instructor
- Lockable stereo cabinet
- Microphones mounted in ceiling
- Speakers mounted in ceiling

# PROGRAMMATIC REQUIREMENTS

## MUSIC DEPARTMENT

### Orchestra:

- Markerboard with tackstrip
- Hard surface floor
- Portable risers
- Acoustical panels on perimeter walls
- Drinking fountain
- Mobile folder storage
- Lockable cabinets and closet for instructor
- Lockable stereo cabinet
- Microphones mounted in ceiling
- Speakers mounted in ceiling



# PROGRAMMATIC REQUIREMENTS

## MUSIC DEPARTMENT

### Offices:

- Glazing for view classes
- Adjacent to Choir, Band and Orchestra Rooms
- Lockable door
- Lockable cabinetry with sink
- Wireless antennae

# PROGRAMMATIC REQUIREMENTS

## PERFORMING ARTS

### Makeup Room:

- Adjacent to Stage and Dressing Rooms
- Mirror with lights mounted to sides
- Seated height counter with lockable storage
- Separate thermostat
- Lights on dimmers
- Duplex receptacles

### Toilets/Dressing Rooms:

- Adjacent to Makeup Room and Stage
- Low Maintenance, easily cleaned floor
- Lockable tall cabinets

### Costume Storage:

- Lockable room
- Adjacent to Dressing Rooms

### Office:

- Adjacent to Makeup and Dressing Rooms
- Lockable door
- Wireless antennae

# PROGRAMMATIC REQUIREMENTS

## AUDITORIUM

### Lobby:

- Large open space to accommodate heavy traffic flow
- Restrooms
- Drinking fountains
- Concessions
- Box / Ticket office

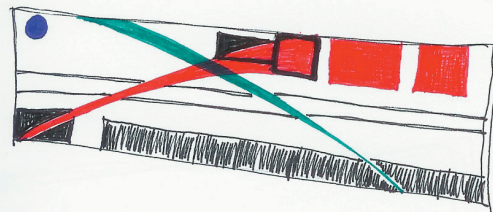
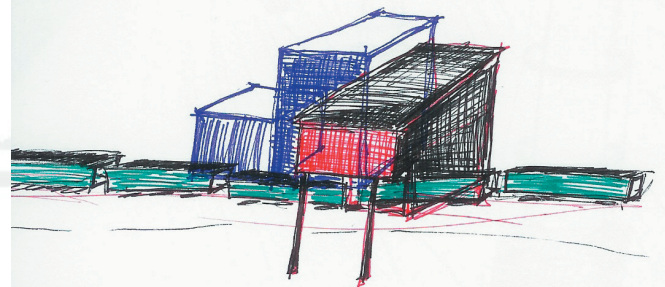
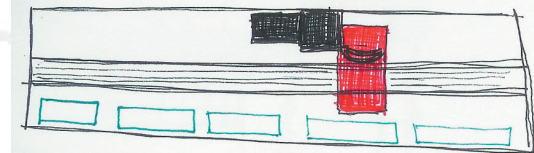
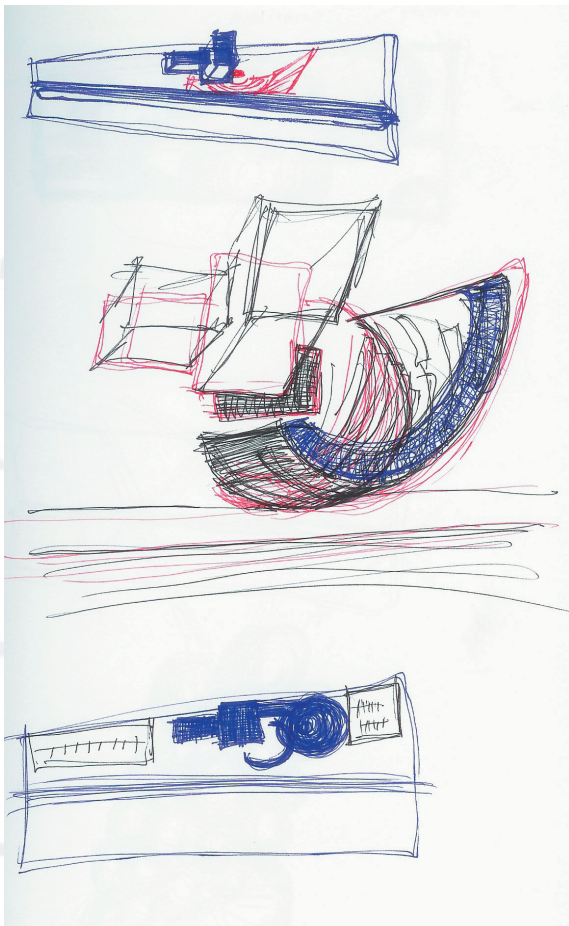
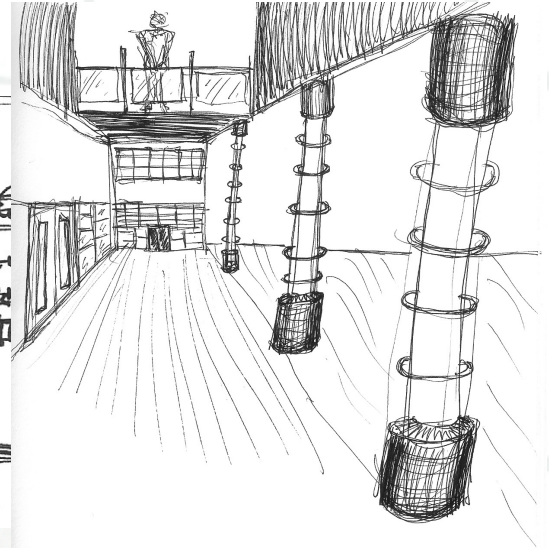
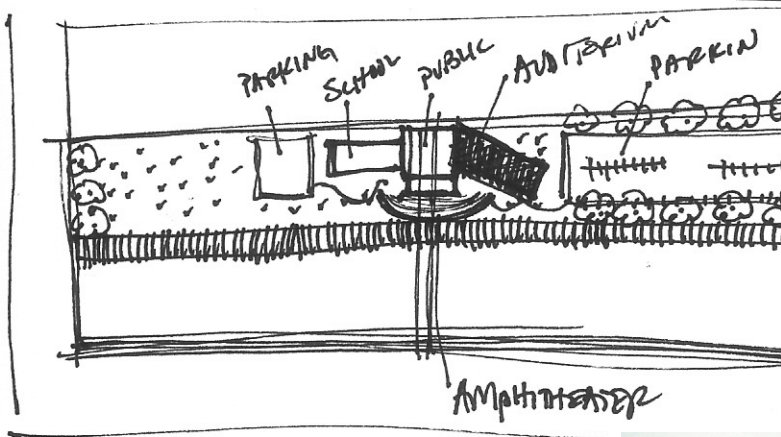
### Control Room:

- Seated height 36" deep counter
- Adjustable height chairs
- Carpeted floor
- Lockable door
- Glazing to stage
- Lights on dimmers
- Duplex receptacles mounted at counter height

# PROCESS DOCUMENTATION

# PROCESS DOCUMENTATION

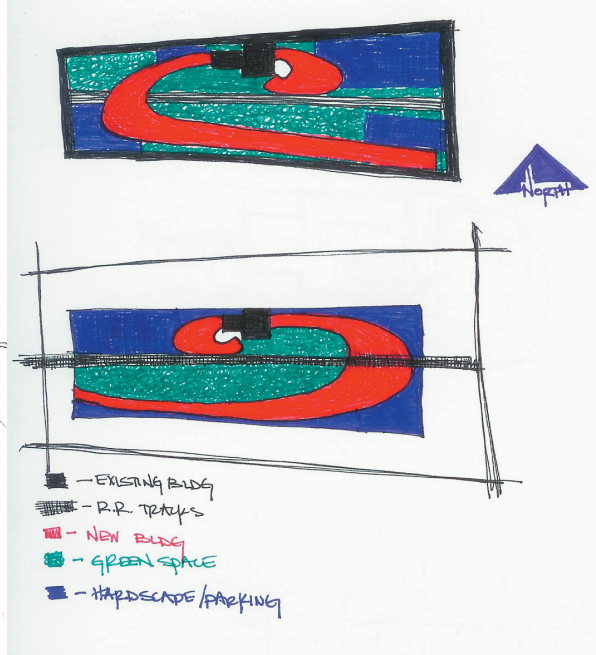
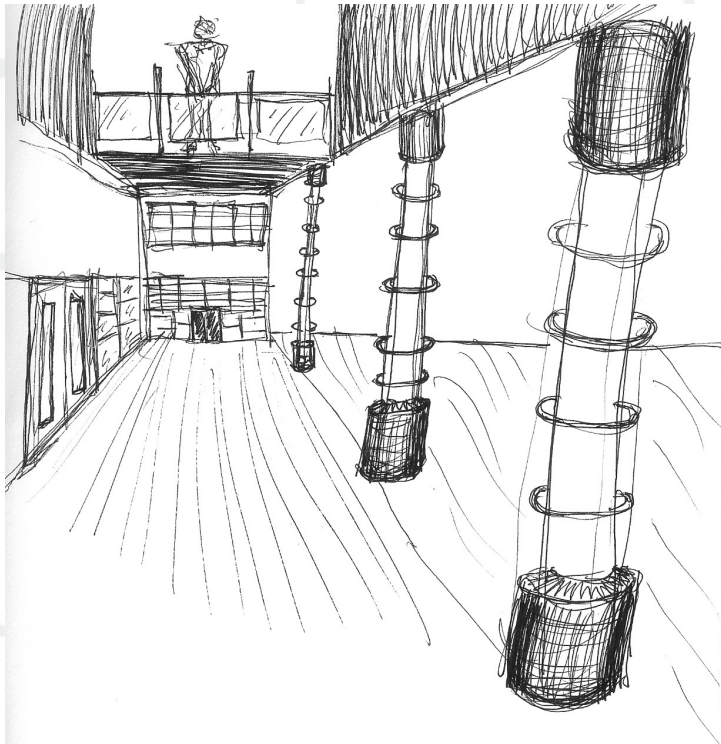
## CONCEPT STUDIES



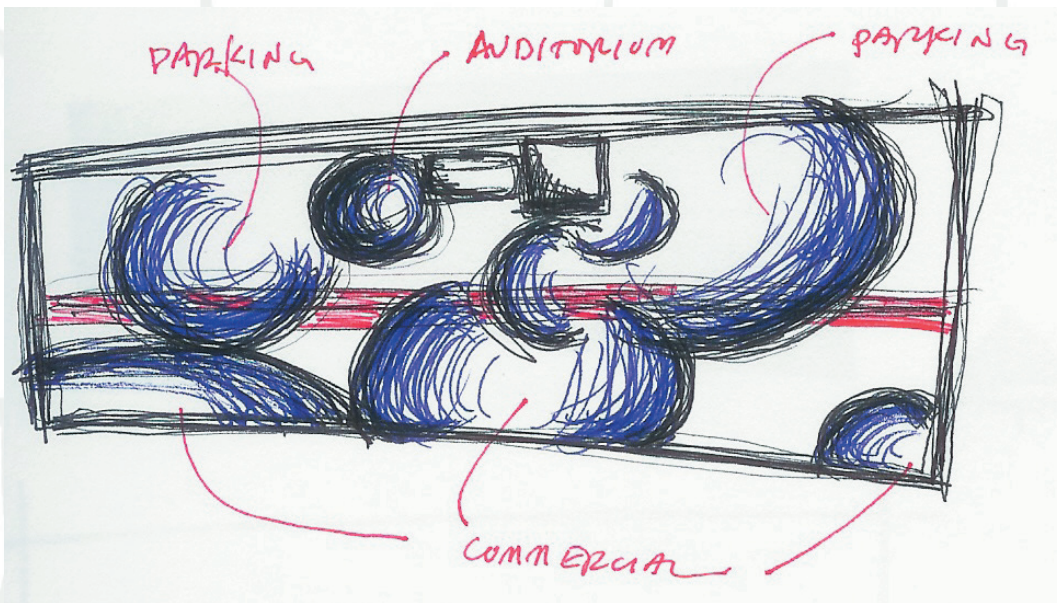


# PROCESS DOCUMENTATION

## CONCEPT STUDIES

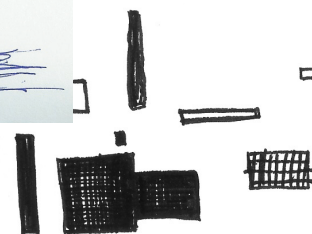
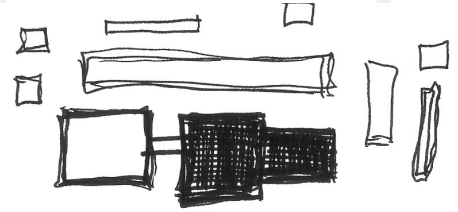
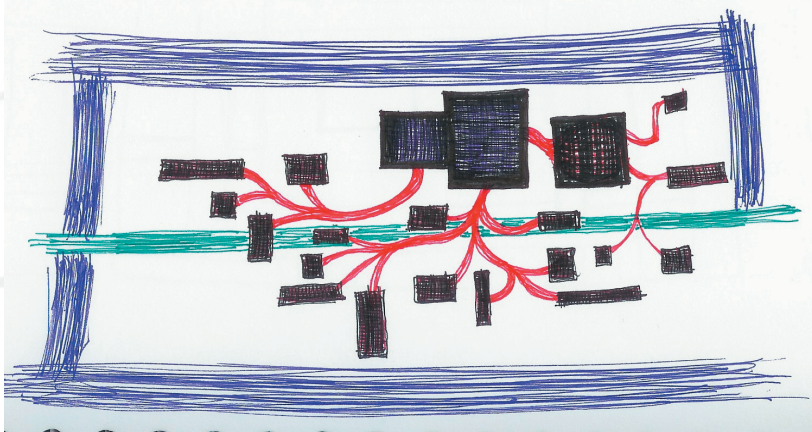


- EXISTING BLDG
- R.R. TRACKS
- NEW BLDG
- GREEN SPACE
- HARDESCAPE/PARKING



# PROCESS DOCUMENTATION

## CONCEPT STUDIES



AROUND

- BUS STOP
- BENCH
- SHADE
- SUN

- CATERPILLERS
- STUDIOS
- GARDENES
- RECEPTION HOUSES

- THINK TANKS
- CREATION HUTS
- REVELATION SHAKES

- BOOTHS
- VESSELS
- BOXES

OVER THE U.S.  
NOW THE  
SCHOOL  
DOES!

- BRING STUDENTS FROM THE COMMUNITY, U.S. WORKS  
TO THE SCHOOL.  
- RELEASE STUDENTS TO THE COMMUNITY, U.S. WORKS  
AS OTHER MAGNETS TO ATTRACT OTHERS.

ATTRACT  
• NEW MATERIALS

RELEASE  
• NEW + OLD  
MATERIALS

- NDSU - campus  
DUTY
- P.A.M.
- SCHOOLS
- MSUM - CONC.

MAGNET

↳ ATTRACT OTHERS

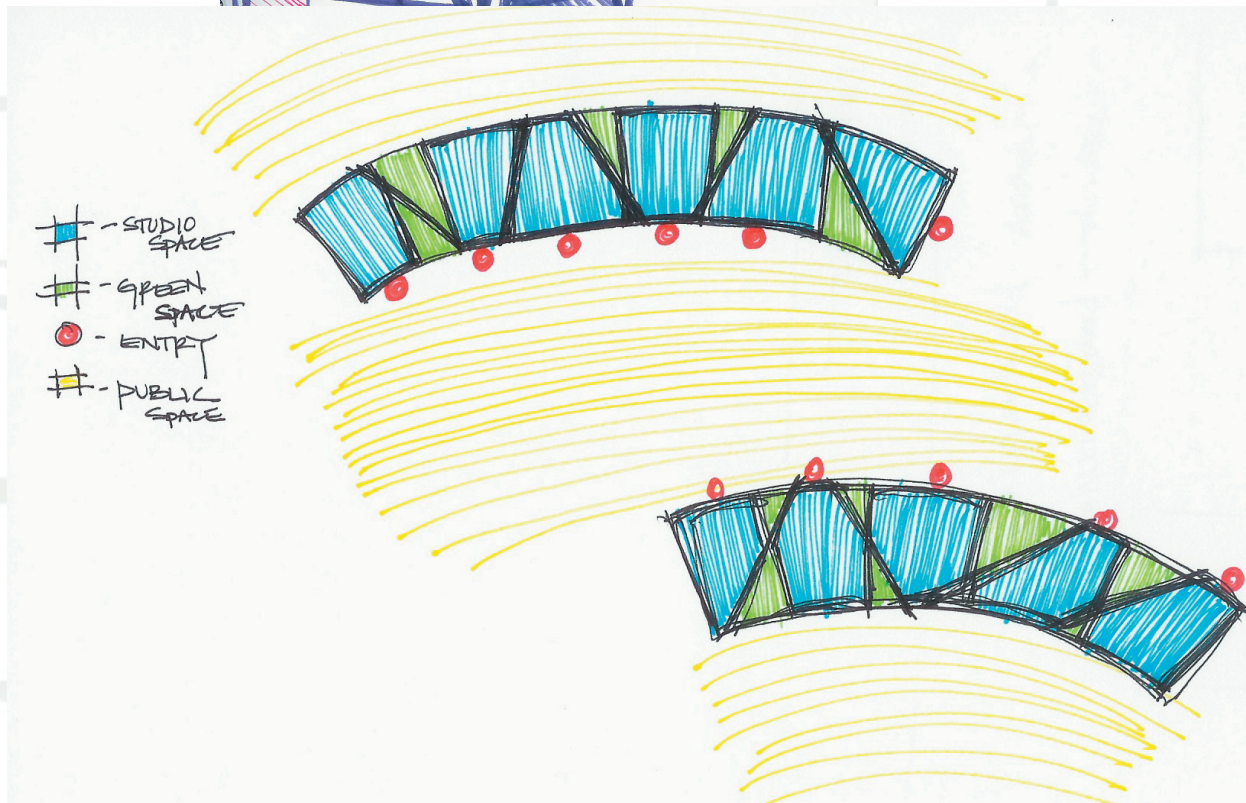
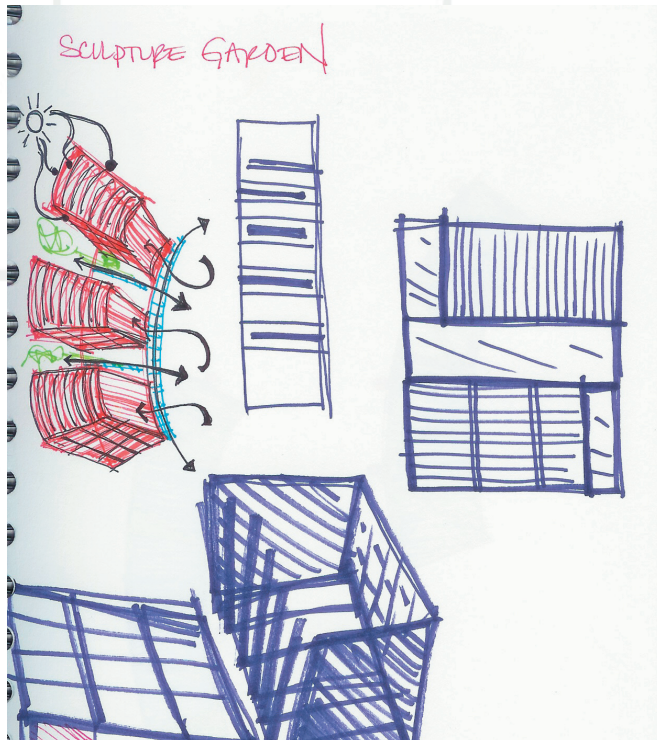
↳ ~~PER~~ RELEASE OTHER MAGNETS

MAGNET School



# PROCESS DOCUMENTATION

## CONCEPT STUDIES

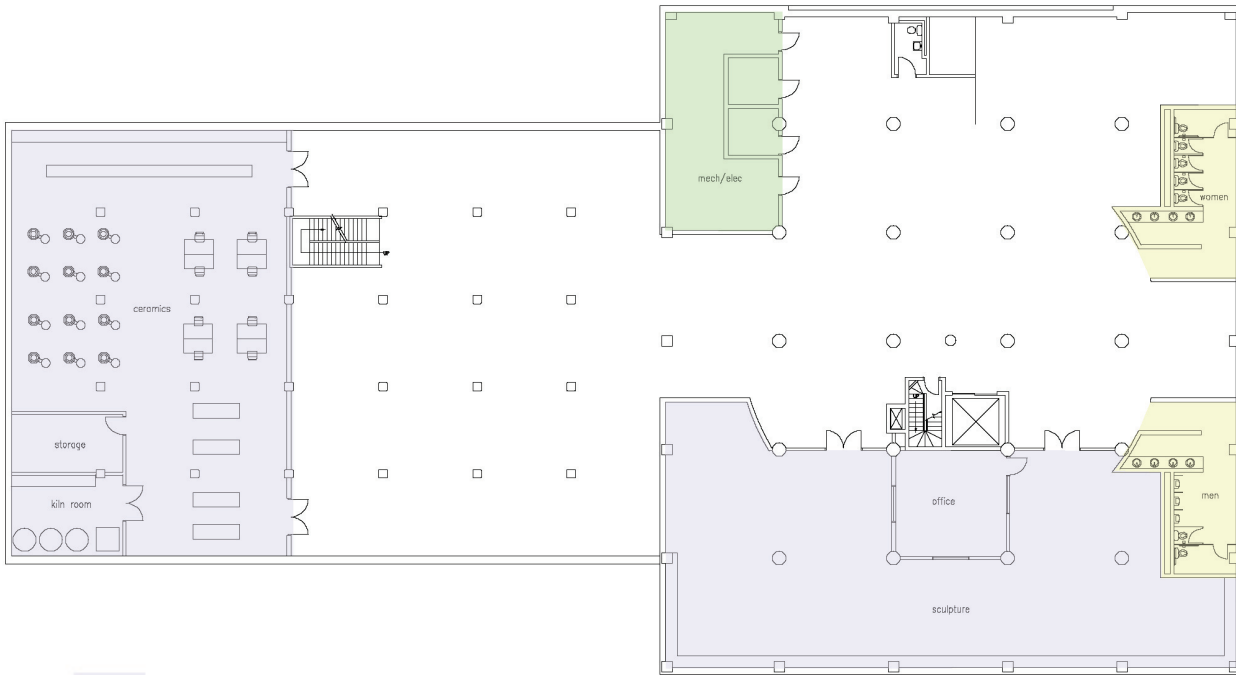


# PROJECT SOLUTION DOCUMENTATION



# PROJECT SOLUTION DOCUMENTATION

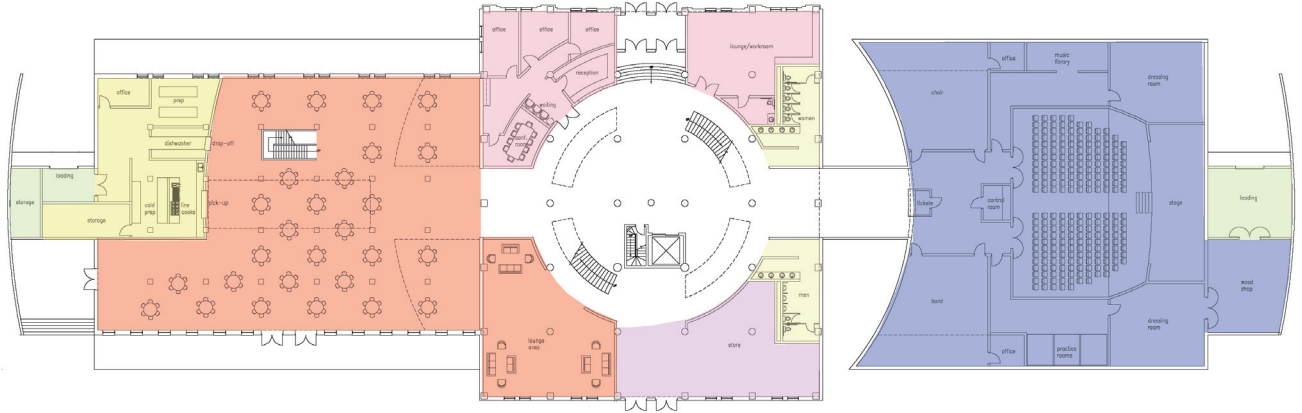
## BASEMENT FLOOR PLAN



- studios**
- commons / lounge**
- kitchen**
- school store**
- performing arts / theater**
- loading / stor**
- restrooms**
- admin**
- classrooms**
- gallery**

# PROJECT SOLUTION DOCUMENTATION

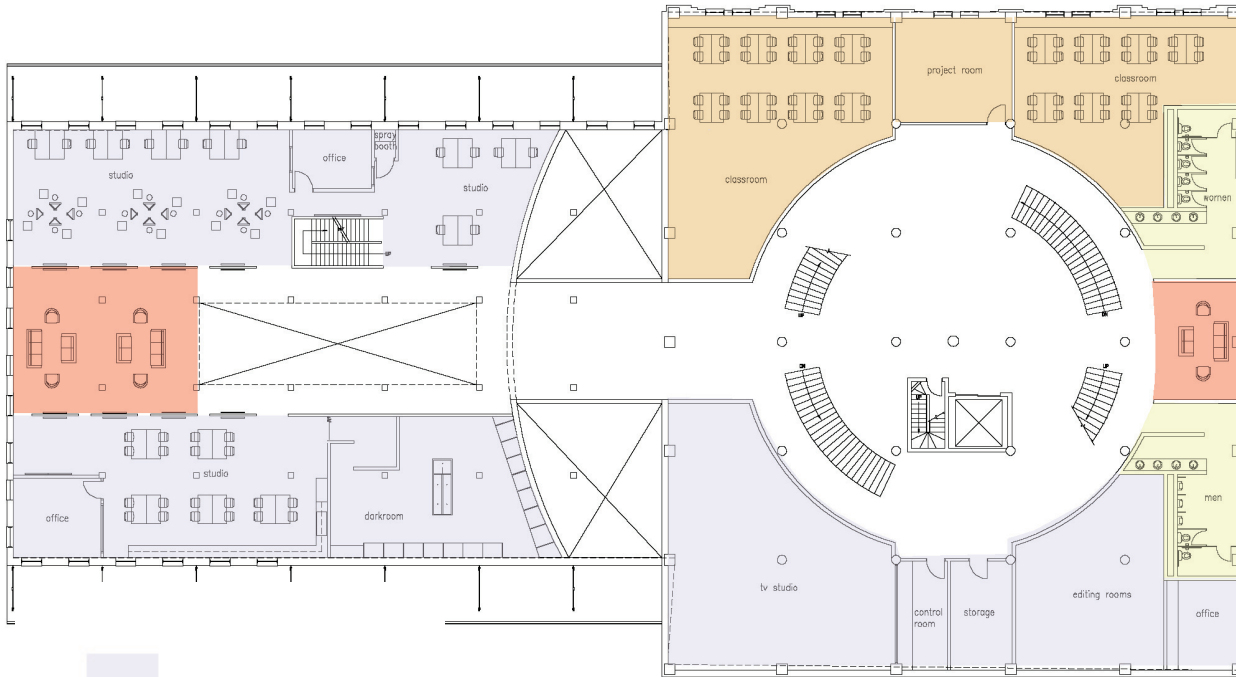
## FIRST FLOOR PLAN



- studios
- commons / lounge
- kitchen
- school store
- performing arts / theater
- loading / stor
- restrooms
- admin
- classrooms
- gallery

# PROJECT SOLUTION DOCUMENTATION

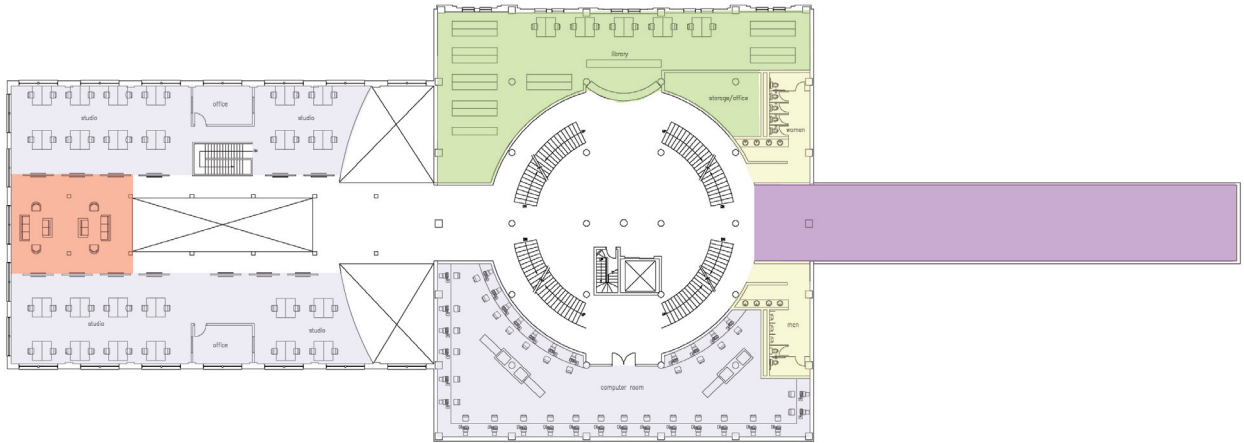
## SECOND FLOOR PLAN



- studios
- commons / lounge
- kitchen
- school store
- performing arts / theater
- loading / stor
- restrooms
- admin
- classrooms
- gallery

# PROJECT SOLUTION DOCUMENTATION

## THIRD FLOOR PLAN

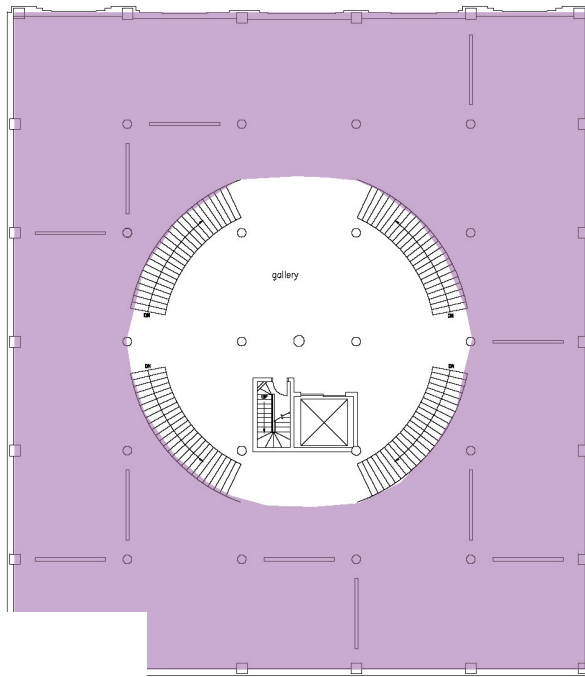


-  studios
-  commons / lounge
-  kitchen
-  school store
-  performing arts / theater
-  loading / stor
-  restrooms
-  admin
-  classrooms
-  gallery



# PROJECT SOLUTION DOCUMENTATION

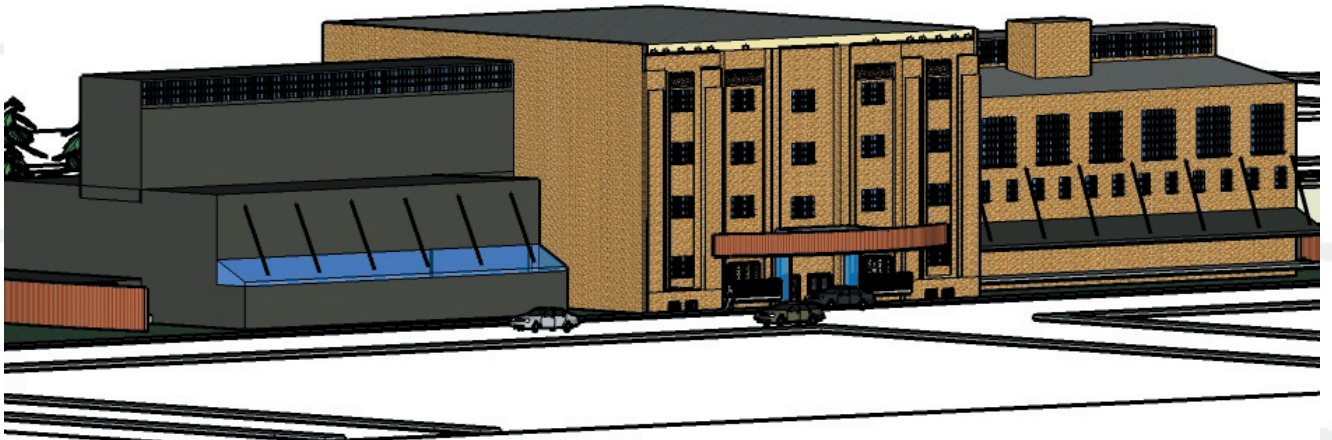
## FOURTH FLOOR PLAN



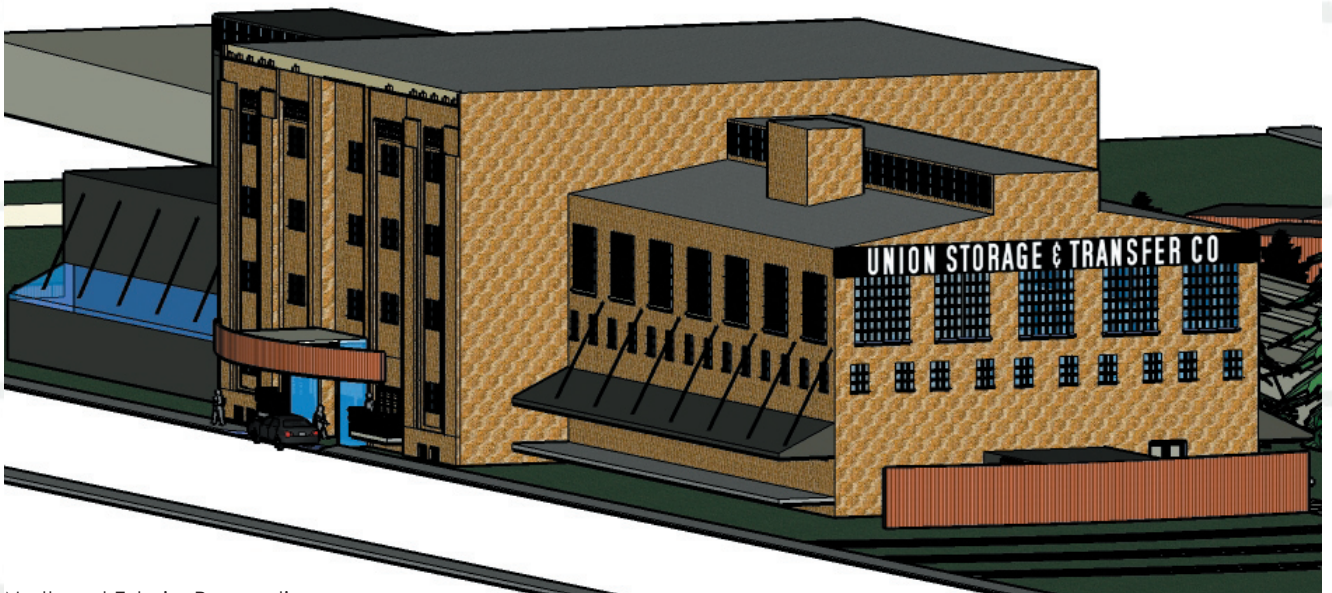
	<b>studios</b>
	<b>commons / lounge</b>
	<b>kitchen</b>
	<b>school store</b>
	<b>performing arts / theater</b>
	<b>loading / stor</b>
	<b>restrooms</b>
	<b>admin</b>
	<b>classrooms</b>
	<b>gallery</b>

# PROJECT SOLUTION DOCUMENTATION

## EXTERIOR PERSPECTIVES



Northeast Exterior Perspective

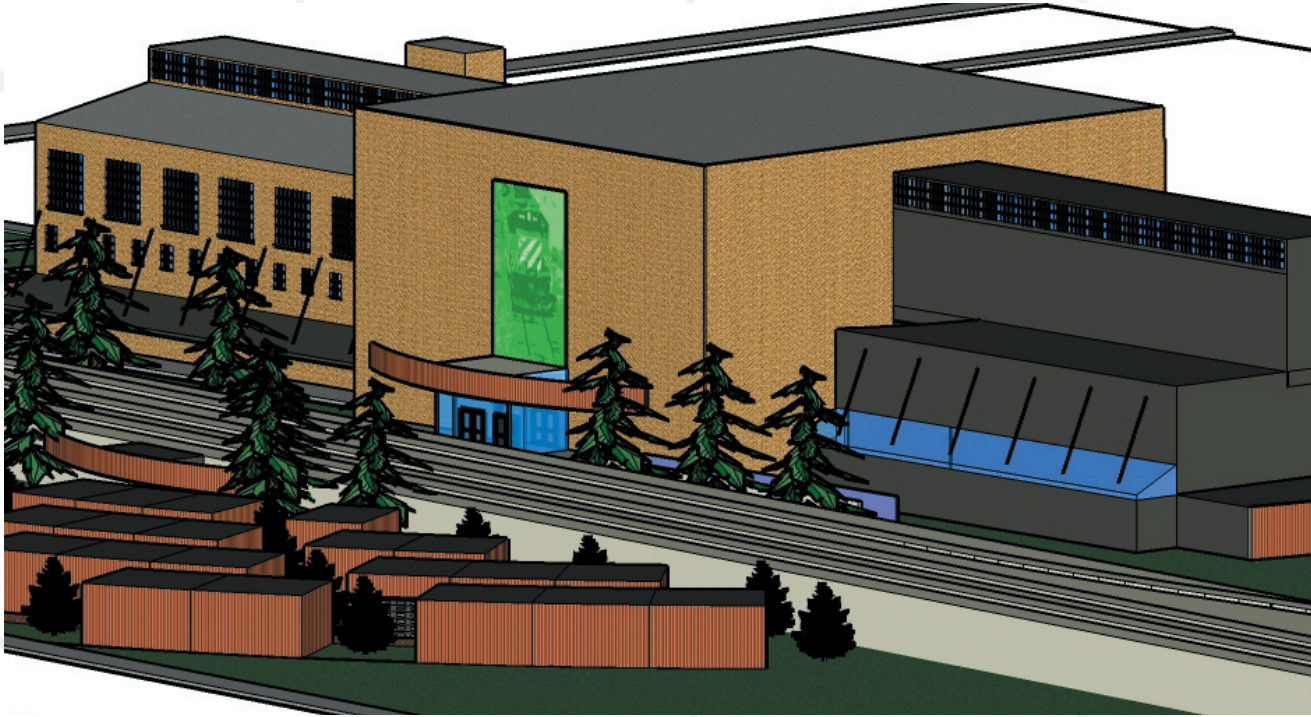


Northwest Exterior Perspective

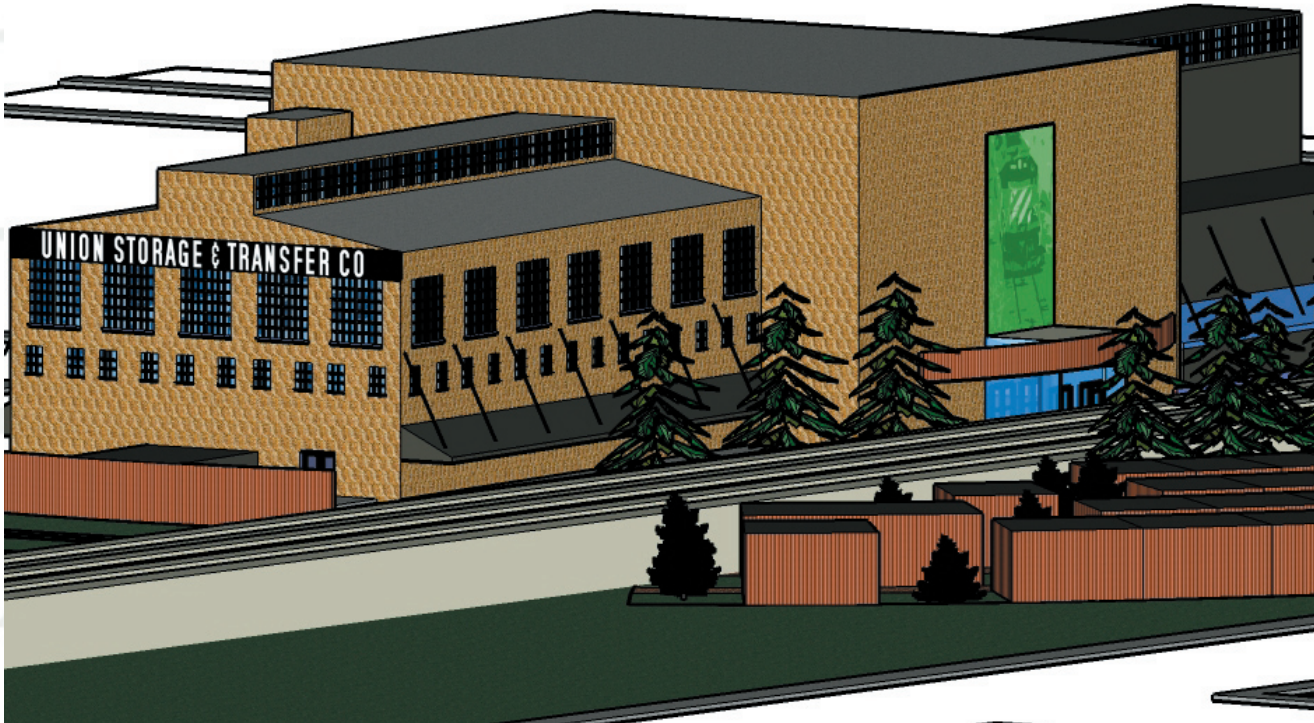


# PROJECT SOLUTION DOCUMENTATION

## EXTERIOR PERSPECTIVES



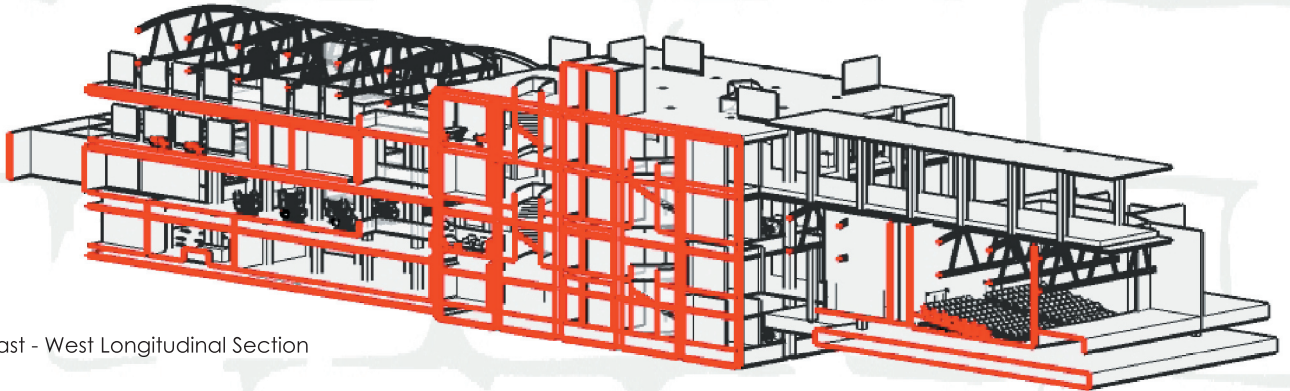
Southeast Exterior Perspective



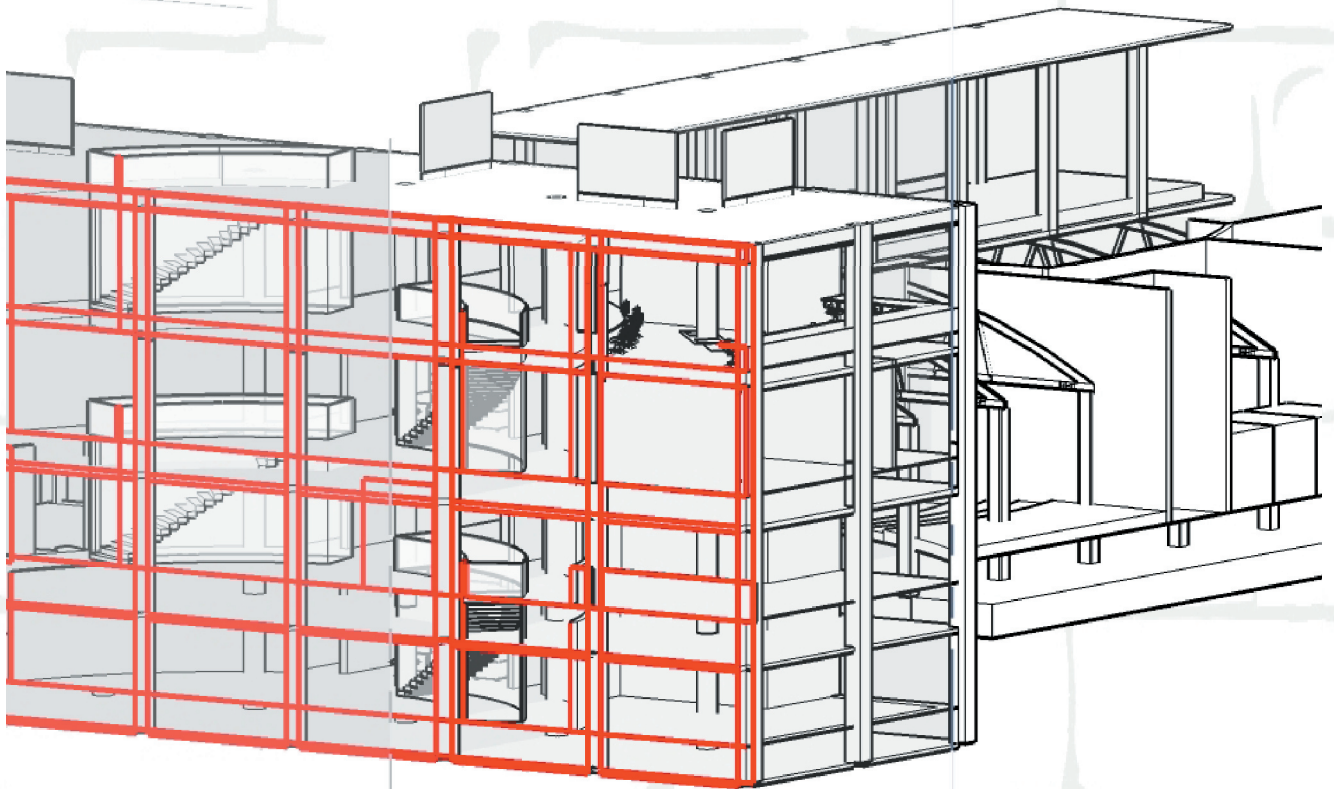
Southwest Exterior Perspective

# PROJECT SOLUTION DOCUMENTATION

## BUILDING SECTIONS



East - West Longitudinal Section

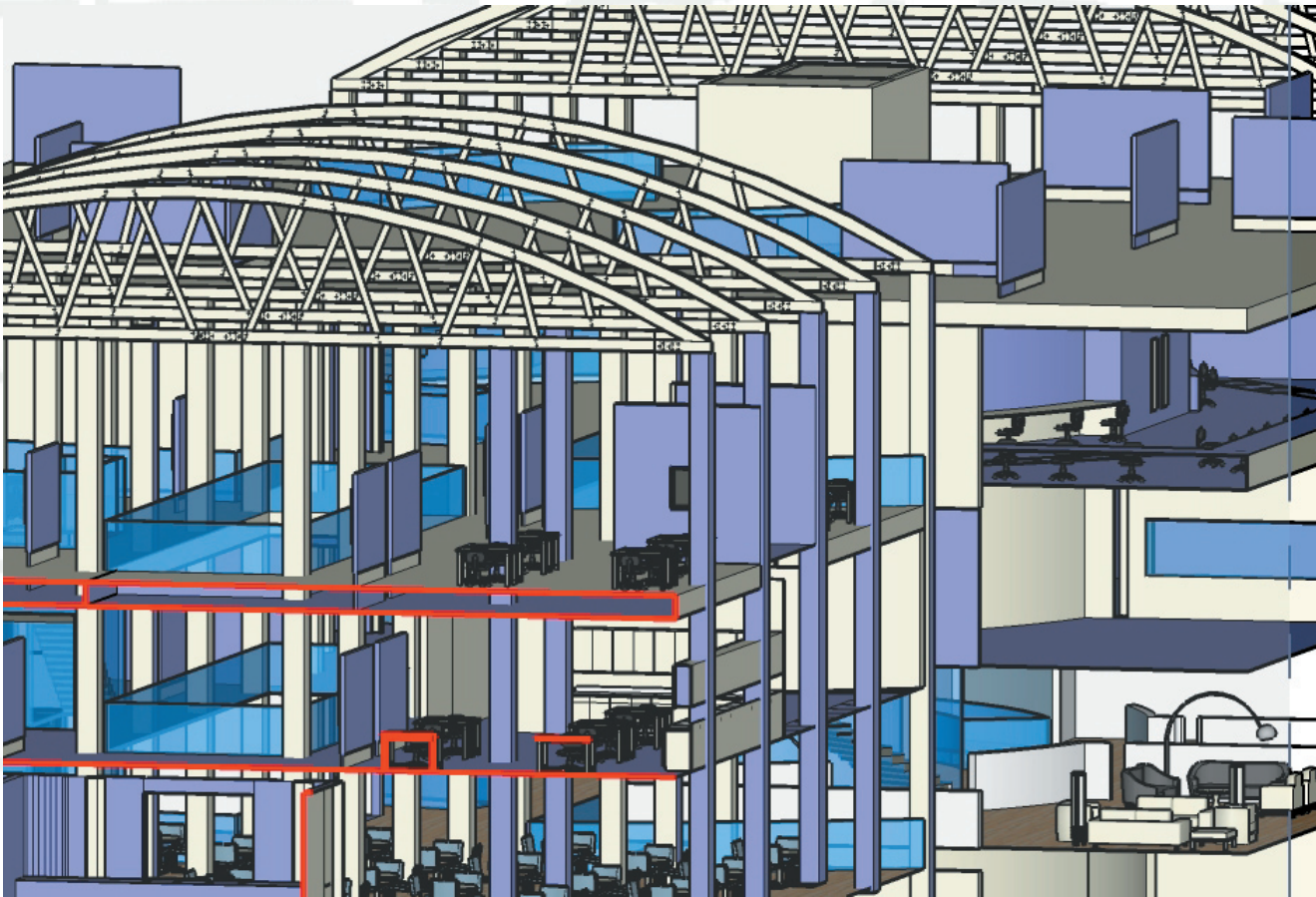


Center Core Section



# PROJECT SOLUTION DOCUMENTATION

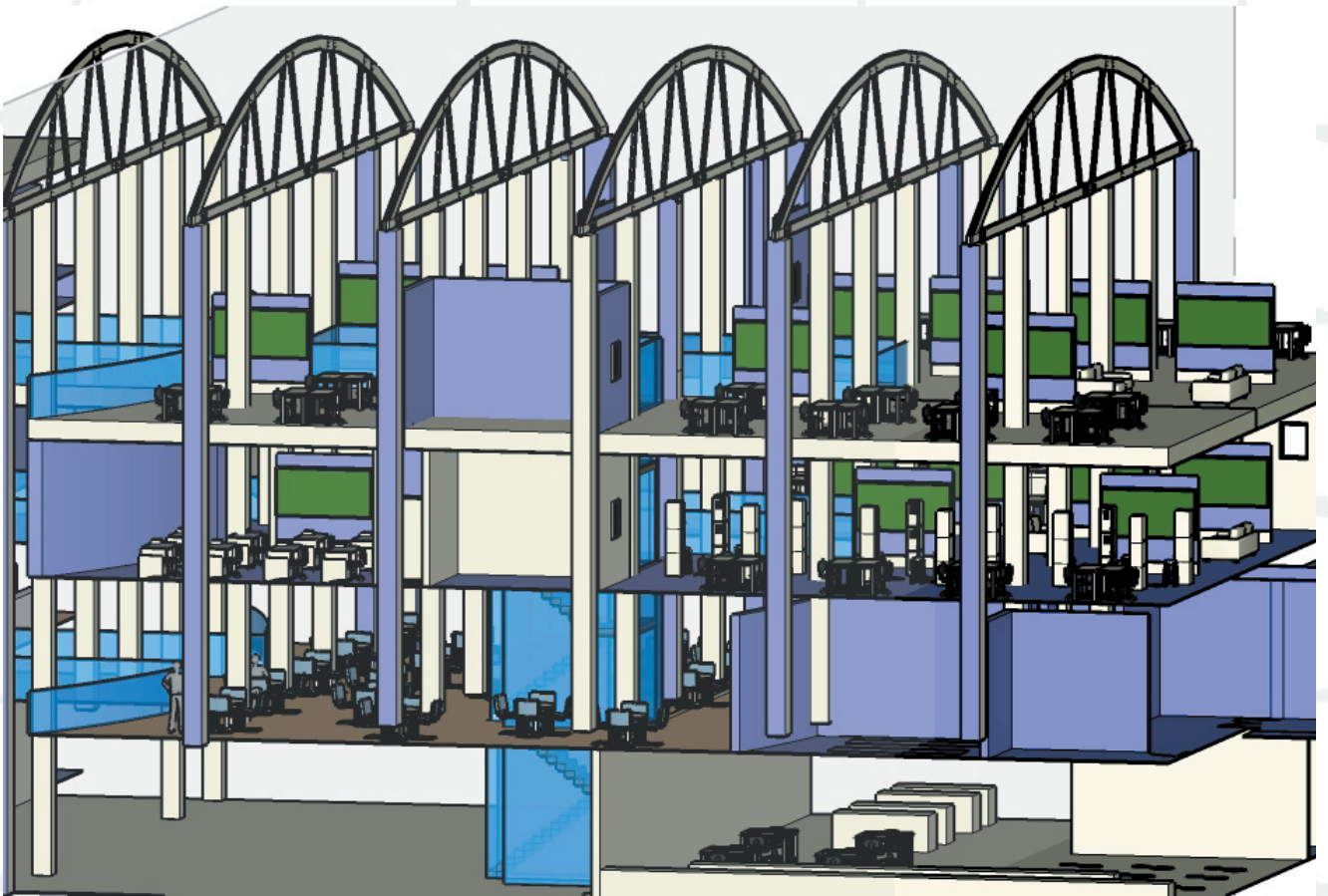
## INTERIOR ISOMETRIC



East - West Longitudinal Section

# PROJECT SOLUTION DOCUMENTATION

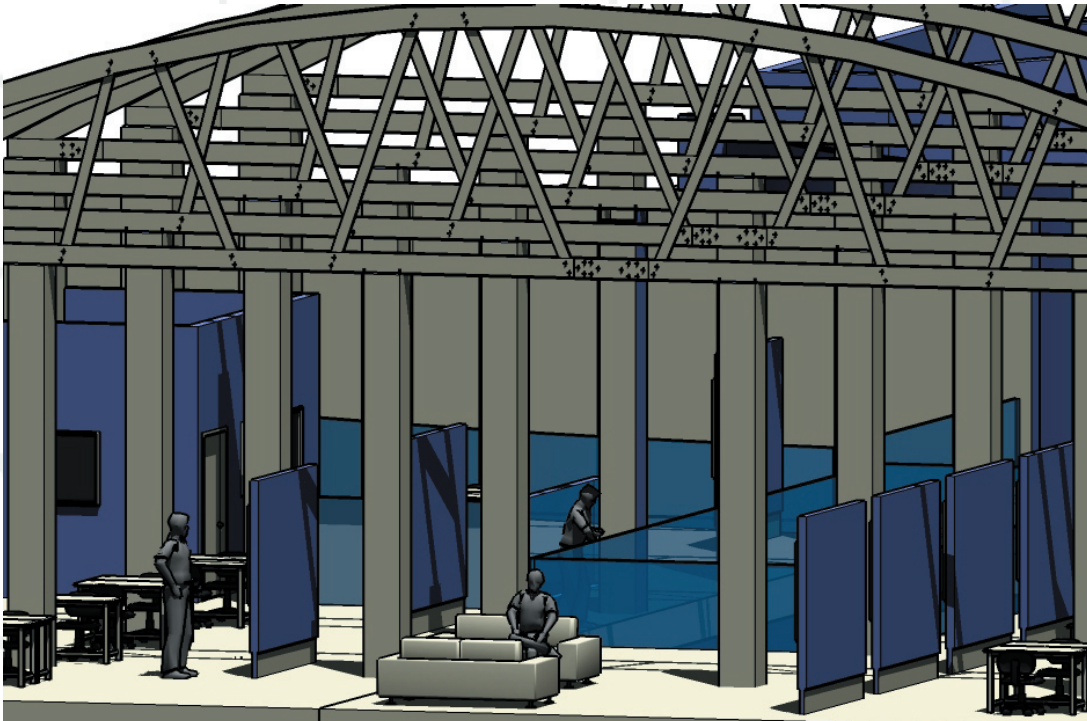
## INTERIOR ISOMETRIC



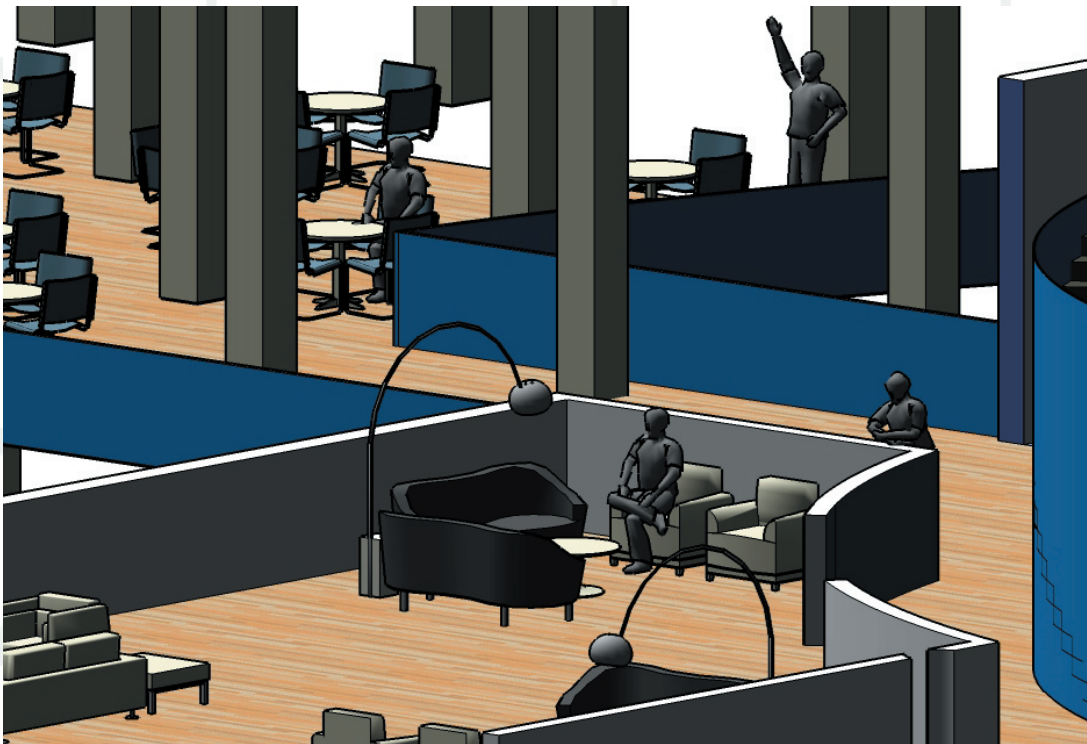
Center Core Section

# PROJECT SOLUTION DOCUMENTATION

## INTERIOR PERSPECTIVES



Interior Perspective

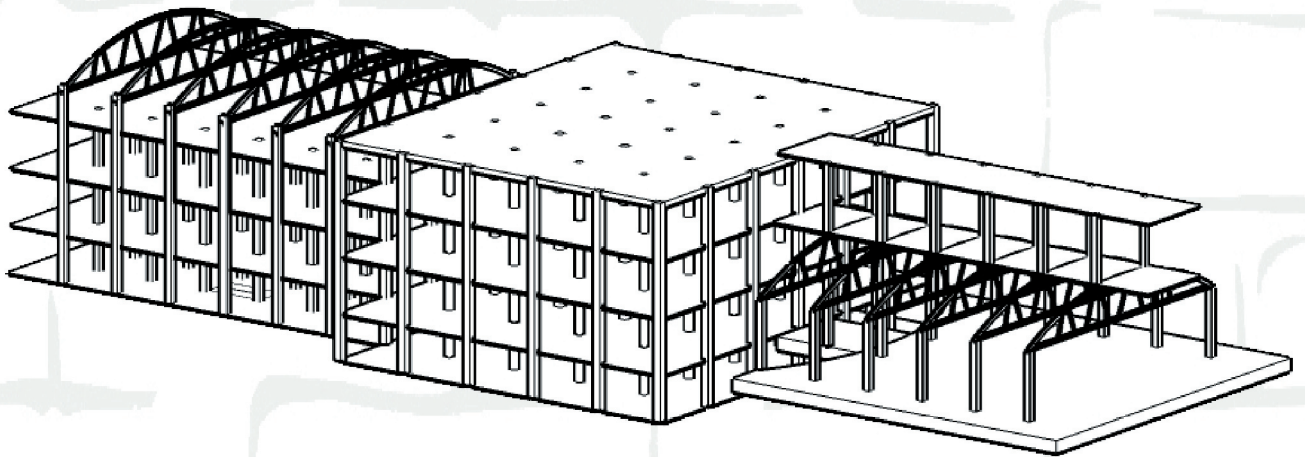


Interior Perspective



# PROJECT SOLUTION DOCUMENTATION

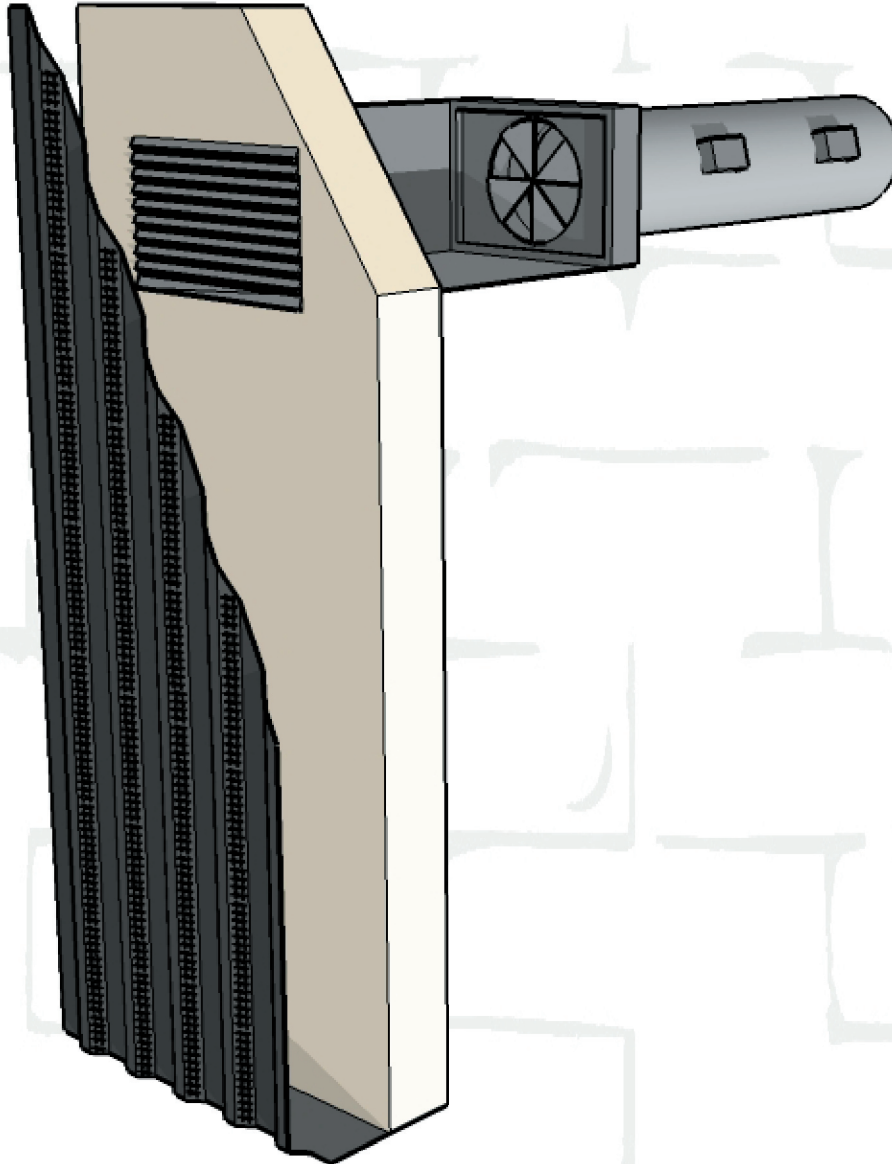
## STRUCTURAL DIAGRAM





# PROJECT SOLUTION DOCUMENTATION

## SOALR COLLECTOR WALL



# PRESENTATION

# PRESENTATION

## PRESENTATION BOARDS





# PRESENTATION

## PHYSICAL MODELS





# PRESENTATION

## PHYSICAL MODELS



# PERSONAL IDENTIFICATION



JESSICA RUST

“NDSU HAS BEEN AN INTREGRAL PLAYER IN HELP-  
ING ME GROW INTELLECTUALLY AND CREATIVELY  
AS WELL AS HELPING TO PREPARE ME FOR MY  
FUTURE AS AN ARCHITECT.”

# REFERENCES

- Knutson, Gay G. (1999). Alternative High Schools: Models for the future? Retrieved August 23, 2005 from source.
- Hall, Daria. (2005). Getting honest about grad rates: How states play the numbers and students lose. The Education Trust, June 2005. Retrieved September 9, 2005.
- Gannon, Todd & Kipnis, Jeffrey. (Eds.) (2001). Morphosis/Diamond Ranch High School. New York: The Monacelli Press, Inc.
- Haar, Sharon & Robbins, Mark. (Eds.) (2002). Schools for cities: Urban strategies. New York: Princeton Architectural Press.
- Kohn, Sherwood D., (1969). Experiment in planning an urban high school. The Baltimore Charette. New York: Education Facilities Laboratory.
- Leggett, Stanton. (1977). Planning flexible learning places. New York: McGraw-Hill Book Company.
- <http://www.npwrc.usgs.gov/resource/othrdata/climate/wind.htm> (weather conditions at Fargo)
- <http://www.lib.ndsu.nodak.edu/ndirs/collections/manuscripts/arch&hp/ndregister/index.html> (institute for regional studies)