Architectural Asset Development

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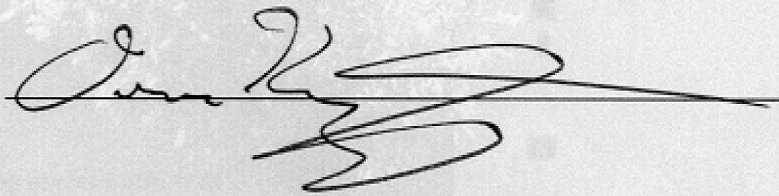
Name:  Date: 5/12/11

Table of Contents

Abstract

This thesis attempts to elucidate the connection between architecture and how well students perform academically and socially based on how much pleasure they attain from the architecture of their high school campus. The typology for this exploration is a high school campus downsize renovation. The Theoretical Premise that directs the research is: “Creating an architectural environment that allows teenage students to relish coming to school will make special opportunities available to them that allow them to contribute and feel involved in their school community emotionally and intellectually.” The Project Justification is, “It is a recollection of teachers that high school students judge their campuses as prisons they go to learn at and then escape from at the end of the day. Creating a campus environment that is mentally stimulating and encouraging will allow students to excel academically and socially at their high school by the architectural pride they take in their surroundings.”

Key Words: high school campus, downsize, renovation, teenage students, school community, campus environment, architectural pride

Problem Statement

How can high school architecture elucidate the value of higher educational attainment in the 21st century?

Statement of Intent

TYPOLOGY
Public High School Downsizing Renovation

CLAIM
Renovating an existing high school campus into an architectural environment that is more intellectually and socially stimulating will create opportunities for every student of every social background to excel in a high school community that provides a strong foundation of emotional and intellectual involvement.

PREMISES
- Architecture is important in creating a good school environment because it is art which "elevates the experience and pleasure of the places where we live and work" according to Ada Louise Huxtable in her book *On Architecture: Collected Reflections on a Century of Change*.
- Renovation gives existing buildings the power to enhance their architectural environment.
- Equal opportunity is a self evident right of all high school students who are part of any social or economic background.

CONCLUSION
Designing an architectural environment that allows teenage students to enjoy coming to school will make the special opportunities available that allow them to contribute and feel involved in their school community emotionally and intellectually.

JUSTIFICATION
Designing a Small Learning Community will encourage students to excel academically and socially at their high school as their architectural surroundings reflect the value of educational attainment.

Narrative

Originally I wanted to renovate a school district office. I was waiting in an alleyway at the District Office when I realized that this place was in need of dire improvement. I thought about how much I would dislike working in such a drab environment as this one. It made me think, if someone worked in a building that they enjoyed and looked forward to being in every day, wouldn't that improve their productivity immensely. I did not know much about the school district politics that create these circumstances.

Last summer, a friend of my parents, an assistant principal of Marysville Pilchuck High School, recommended that I do a downsizing project of the campus as my Master's Thesis. This has been a great opportunity to research the idea of improving the productivity of teenage students in high school by renovating the architecture of an existing high school campus to develop greater equal opportunity and inspirtion among all high school students.

User-Client Description

This high school renovation project will be designed for teenage students, high school faculty, and members of the community who value their high school as a perpetual asset of their community. There are no unique individual requirements for this group of users.

The high school campus will be designed for a student body of approximately 1,200 students and 40 faculty members. There will be an 8 hour peak usage of the campus between 7:00 in the morning and 3:00 in the afternoon on Mondays through Fridays during the annual season school is in session between the months of September and June. The campus will be vacant between the summer months of June and September. The existing parking stalls can support approximately 630 vehicles at full capacity.

Disabled members of the user group may have certain physical restrictions that require supplementary assistance for mobility around the campus. There are spaces on the campus established for care of autistic and mentally disabled students that will be given important consideration in the design program. There are no irregular social, cultural, ethnic, or economic issues that require the special consideration of certain users in the group.

Major Project Elements

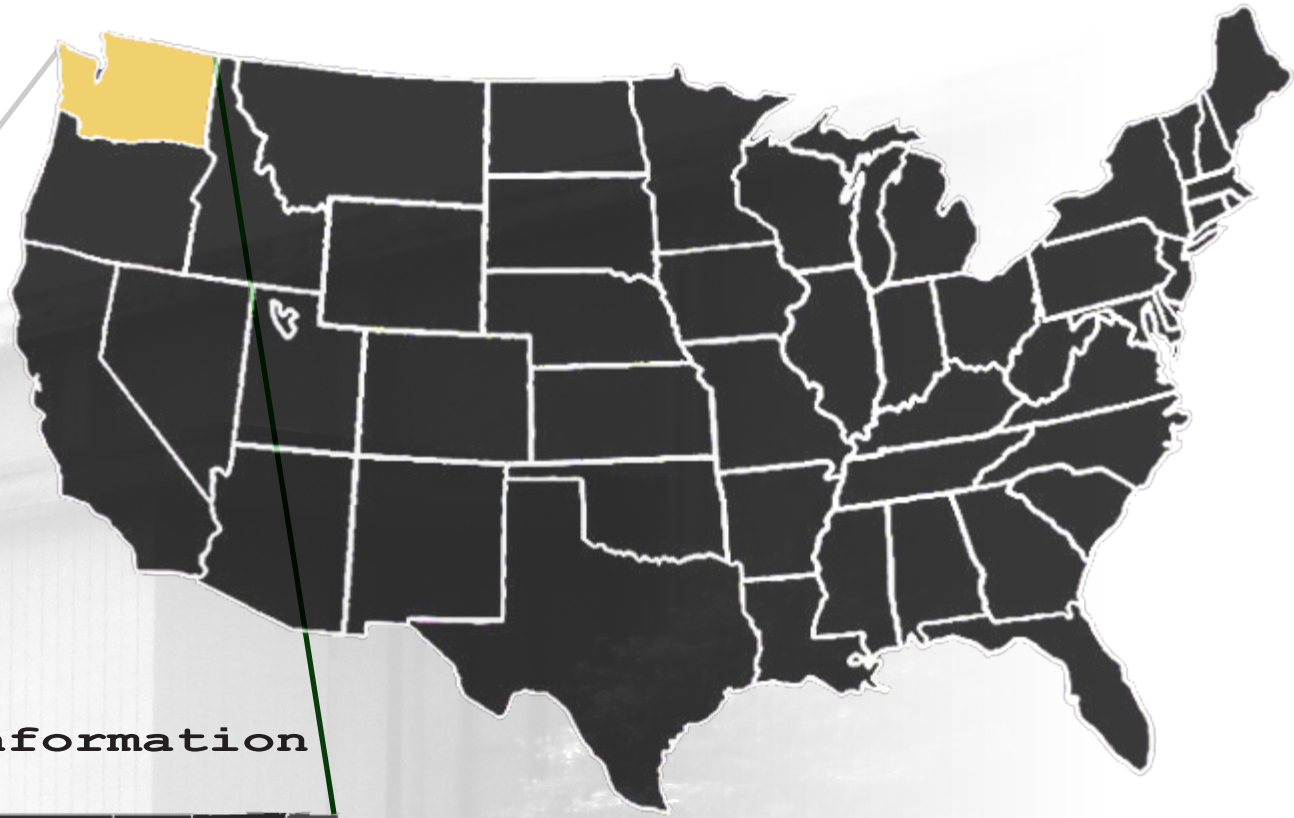
Marysville Pilchuck High School (MPHS)
Small Learning Communities (SLCs)

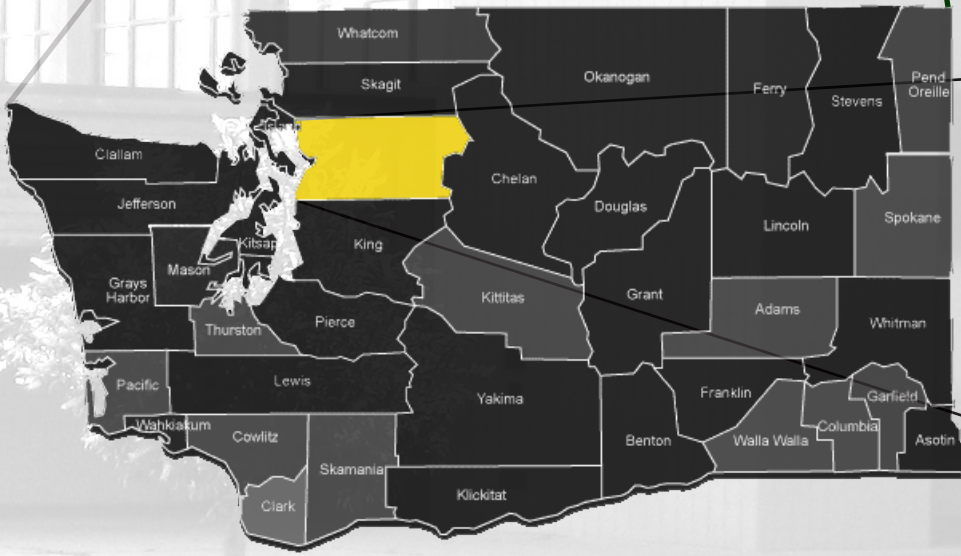
1. Bio-Med Academy (BIO)
2. International School of Communications (ISC)
3. Pathways of Choice (POC)
4. School for the Entrepreneur (SFE)
5. Teaching & Technical Academy (TTA)

Fixed Elements

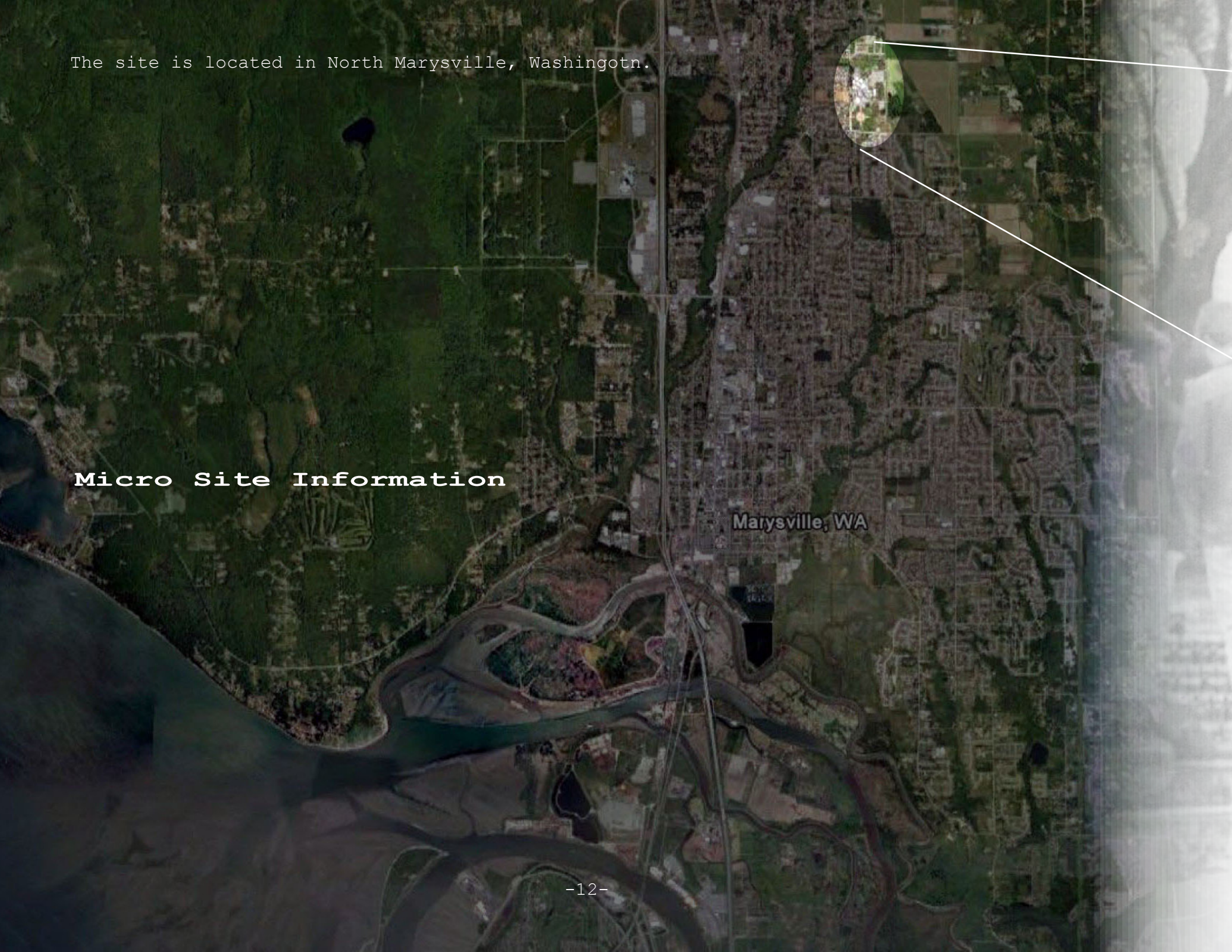
6. Green House
7. Library
8. Activity Center
9. Forum
10. Large Cafeteria
11. Small Cafeteria
12. Auditorium
13. Pool
14. Gymnasium

Macro Site Information





The site is located in North Marysville, Washingotn.

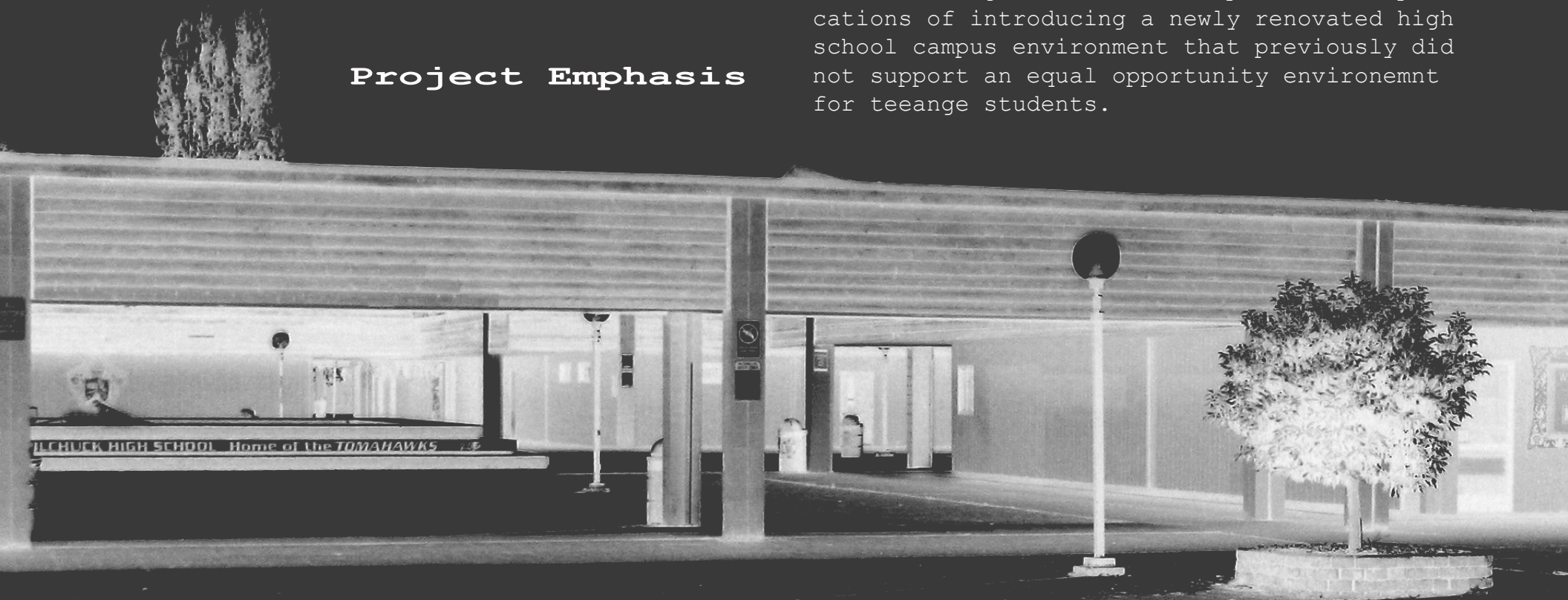


Micro Site Information


The site is the 46
acre campus at
Marysville Pil-
chuck High School

Project Emphasis

The emphasis for this project will focus on understanding the social and political implications of introducing a newly renovated high school campus environment that previously did not support an equal opportunity environemnt for teeange students.



Plan for Proceeding

Comprehensive research will be performed on existing high school campuses and the meaning to which we attribute equal opportunity in American education.

A Mixed Method, Quantitative Qualitative Approach will be utilized in the research of this project, which will be carried out by collecting sources that are deemed of at least relative importance in relation to the theoretical premise/unifying idea

Research Results and Goals

In the twenty-first century, young Americans are in the midst of a skill-biased global job market. In this critical economic climate, one would assume that attainment of higher education by young Americans is now more prevalent than ever, but this isn't the case. According to research conducted by Claudia Goldin and Lawrence Katz in their book *The Race between Education and Technology*, stagnation of educational attainment by young Americans "is the single most important factor increasing educational wage differentials since 1980 and is a major contributor to increased family inequality" (Goldin & Katz, 2008, p. 325). This research will evaluate the current economic situation in the United States and postulate about what may be the causes and influences of supply and demand between education and technology from a historical stand point.

This research will investigate the cause of this wage gap and how the education of American workers is unique from a global perspective and how these qualities are being enhanced in Small Learning Communities (SLCs) in the twenty-first century.

Pulling the United States back into a society of shared prosperity is an essential task for its own economic sustainability; therefore it is too important of an issue to be left only to the economists. Investigating the cause of this educational slowdown will be the first focus of this research.

Some scholars attribute the drop in the supply of educated workers as an effect of immigration. Since the 1970s, teenage immigration

from Mexico into the American school system has been acknowledged as a probable cause. According to Goldin & Katz (2008) "children of less-educated foreign-born parents are likely to attain a lower level of education themselves than the children of U.S.-born parents" (p. 333). The period from 1915 to 1940 was a time when immigration also made a substantial impact on the American economy. Having coincided with the two World Wars, these years signified the times of lower skilled labor, considerable innovation, and union coalition. The wage structure remained in place over this time period, and the importance of education and wages in this economy became a proven circumstance. Goldin & Katz state in their main conclusion, "when it comes to changes in the wage structure and returns to skill, supply changes have been critical, and changes in the educational attainment of the native-born have driven the supply side" (p. 323).

From 1910 to 1930, the American High School movement was in full swing, which produced an enormous supply of high school graduates. At this time, high school graduates were considered highly educated just as college graduates are by today's standards. Having a large supply of workers with equal amounts of education created lower wage earnings for jobs that could be filled very easily. The cost of a college wage earnings in 1915 was fairly close to the college wages earned in 2005. By looking back on the twentieth century through a lens of supply and demand between education and technology, we can see the economic effect it produced.

The 1960s was a time when American economic prosperity was at its peak and shared equally across all income levels. The supply of educated workers was surpassed by the supply of technology because everyone was going to college. Around the early 1970s, this pattern reached a plateau of high school graduation rates and began to reverse itself by the 1980s. High school graduates were not going on to college, which raised the cost of college tuition. While technology was becoming much more highly specialized in jobs that only individuals with higher education could fill, individuals to fill those positions were becoming increasingly scarce from a national standpoint. This was the beginning of the wage gap between highly skilled occupations and unskilled labor positions. According to Goldin & Katz (2008) "late in the twentieth century, education lost the race to technology" (p. 321). Because of this exceeding increase in the cost of college tuition, poor high school graduates now are becoming less likely to go on to college because of the cost and debt attributed to a college education. Because of this economic situation, one might wonder why students are declining the opportunity for higher educational attainment. To find answers to this dilemma, let's look at the conditions of American education when the majority of high school graduates were attaining college education.

To understand the genesis of the quality labor force that American education produced in the twentieth century, it is important to understand the assets of American education that made it

possible. In the history of U.S. education, there have been six founding "assets" that made it great: "decentralization with many fiscally independent districts, public provision, public funding, separation of church and state, gender neutrality, and an open and forgiving educational system" (Goldin & Katz, 2008, p. 337). The only criticism of a decentralizalized education system is that it reinforces the injustices that hinder the American economy and society. Wealthy families and poor families often live in separate neighborhoods, which is a reflection of the funding their schools receive. The rich get richer and the poor get poorer, which leads to lesser assets and more disadvantaged adolescents in those destitute school districts of inter city neighborhoods. Although uneven spending per student has always been an inequity of the education system in the United States, a "common" learning experience has always persisted.

The separation of church and state in American schools stems from the idea that there is virtue in giving every student a "common" experience in education. This was guaranteed by free tuition and the secular and nonsectarian control of schools, which eliminated state funding for any certain denominational affiliation in school. But in the 21st century, this founding asset of American schools has come under question. In the most destitute school districts, public education seems to be failing since parents have no other publicly funded options to send their children to. These founding assets of the American education system were models to emulate by the rest of the world

in the 2oth century, but it now seems to have lost its notoriety. Evidently our education system is in need of a reformation of sorts.

After year s of study, a book was published called *Horace's Compromise* in 1984. Theodore (Ted) Sizer was a man who had worked with hundreds of high schools since the late 1970s. In that same year, he founded the Coalition of Essential Schools, which was an organization based upon the principles he wrote about in his book. Sizer discharges direct criticism of high schools in the United States. He disapproves of the classroom scheduling blocks, which last only 50 minutes, which is not enough time to learn anything valuable when administrative tasks are taken into account like roll call and school announcements. Sizer also advised strongly against high school electives, which he says perpetuate breadth, but not depth of knowledge in particular course subjects. Ted Sizer's publication about the inadequacies of the American high school education system was a significant benchmark in the history of education. How this information has been put into action in the last decade, in public education has been through the development of Small Learning Communities (SLCs).

SLCs are very different from the traditional high schools they replace most notably in the areas of teamwork style amongst professionals, coordination, effective instruction, and student academic success. The effectiveness of converting large high schools into SLCs has been questioned. Certain beliefs have developed about SLCs that suggest negative implications. These Small

Learning Communities ignore or deprecate "the programmatic rigor, systematic skill development or learning sequences that create high levels of student achievement," ("Converting," 2009). By making this allegation, critics are forgetting the purpose of school reform, which is not to change the outcome of high school education, but make it *better.* A common deception of SLC programs has been the idea that systematic skill improvement seems to have been interchanged with inquiry, observation, or the pursuit of an individual's own interest. In other words, a student has allowance to think or learn as freely in an SLC as they once did in the "obsolete" school philosophy of electives and 50 minute classes. The failure of the status quo in this obsolete educational philosophy has brought about this opposition of teaching strategy in regard to the educational attainment of high school students. The reality is that only so much can be achieved within the space and time that is allocated for our high schools to function. An innovative approach that delves from "quality instructional practices, comprehensive skill development, and content area core knowledge and expertise" is what is needed in a new high school culture that will renovate the dominate objective of learning, commitment, and educational attainment in applications that are meaningful to the students. Developmental Assets are the key.

Developmental Assets are important tools used to provide the decisive guidance high school adolescents need to achieve educational success. These assets help adolescents become greater, more

capable individuals who can better handle the life challenges they will encounter. Society already puts extremely high expectations on the educational system "to help all students reach high levels of proficiency, to meet state and federal mandates, and to provide a safe and secure learning environment full of rich and varied academic and extracurricular experiences," (Roberts, Scales, Starkman, 2006, p.vii). Extensive research on Developmental Assets has been conducted by the Search Institute, which is an independent, nonprofit, nonsectarian organization that is committed to promoting the formation of communities that actively reinforce healthy environments for young people.

Through their work, the Search Institute has identified forty Developmental Assets that are specific to educational attainment in adolescents. Half of the assets are "internal" and the other half are "external". The twenty external assets are the "relationships and opportunities that are provided to young people," (Roberts, Scales, Starkman, 2006, p. 7) which are embodied in four categories: Support, Empowerment, Boundaries and Expectations, and Constructive Use of Time. The twenty internal assets "are the values and skills that young people develop to guide themselves," (p.11) which are embodied in these four categories: Commitment to Learning, Positive Values, Social Competencies, and Positive Identity. The great thing about these Developmental Assets is that they compare "across different racial/ethnic groups of students, between urban and nonurban students, and between wealthier and less affluent students," (p. 13), which is reflective of America's

characteristic diversity.

One study that followed Hawaiian children over thirty years discovered that the ones who were able to engage a larger number of adults who cared about them at age 10 developed a stronger sense of achievement ability than children with fewer adults in their lives (Roberts, Scales, Starkman, 2006, p.7). Since it is apparent how valuable these assets are to young people, one would hope that every student learns in an environment that has most of these assets available to them. In 2006, Roberts, Scales, Starkman states "Ideally, we believe, all youth should have 31-40; assets, that is, they would be 'asset rich'." The reality,unfortunately, is that less than the ten percent of adolescents the Search Institute surveyed reported having that many assets in their lives.

The research indicates that these developmental assets are not logically spread amongst the students who are in most need of them. To help put this important fact into perspective, let's look at the number of asset-deficient students this research is talking about from a national standpoint, which Roberts, Scales, Starkman make clear:

> *In fact, the typical student surveyed in grades 6 through 12 reports experiencing fewer than half--18.6-of the 40 assets. A nationally representative study of young people that Search Institute and Child Trends conducted for America's Promise --The Alliance for Youth confirms these findings. Looking at how many*

> *6- to 17-year-olds experience five "promises" that promote life success--caring adults, safe places and constructive use of time, a healthy start, effective education, and opportunities to make a difference through helping others--the researchers found that only 25% of teenagers and 37% of preteens are meeting four of these five promises, and that more than 20% of 6-to 17-year-olds are meeting none or only one promise. This means that more than 10 million 6- to 17-year-olds are not getting the positive developmental experiences they need, and another 23 million are getting only some of the assets they need.* (pg 14)

The most troubling circumstance of this limited amount of assets is that the greatest amount of positive impact on a student's life happens to those who already come from vulnerable backgrounds and are engaged in high risk behavior such as alcohol use and juvenile delinquency. This means that the adolescents who show the greatest academic improvement from developmental asset intervention are the ones who are already in the worst case scenarios of high-risk behavior. On the other hand, students with higher amounts of assets show the least amount of improvement since they not only avoid high-risk behavior patterns, but also do better in school academically. Roberts, Scales, & Starkman state that "when vulnerable children's experience of Developmental Assets is limited, they miss a tremendous opportunity to become resilient" (p. 15). This asset of resiliency that students gain in their youth helps expose the

"Matthew Effect" phenomenon in American education. When a young person succeeds in school they are the ones most likely to be given more attention, which lead them to further success. According to Gladwell (2008) "It's the best students who get the best teaching and the most attention" (p. 30). This educational advantage by students who have many assets at a young age are the ones who accumulate the most education. At the high school level, successful students are the result of "accumulative advantage".

So how do the students without these assets strive in the high school environment? Just like in sports, if a student believes he or she is not good enough to succeed, they quit, or drop out. Some of these individuals later obtain a GED certificate when they are much older. According to Goldin & Katz (2008) "more than 35 percent of GED certificates are earned by individuals older than 24 years of age" (p. 331). Despite their effort to achieve this certificate of educational attainment, it has been proven that those individuals who earn a GED do less well in the labor market than those who earned a "conventional" high school diploma. Goldin & Katz (2008) make note of this fact in their research when delineating between individuals who earned "conventional" high school diplomas and those who earned GEDs:

> *The main conclusion we draw from this is that adding GED certificate holders to those who received a high school diploma raises the aggregate graduation rate and is the major reason why the cross-county data in Figure 9.1*

> *are higher for the United States than are data from contemporaneous measures of graduation that include only diplomas received from conventional high schools. But the fact still stands that the rate of secondary school completion has been rather flat in the United States for more than three decades and that many other nations now have rates that are higher.* (pg 332)

So how can high schools turn disadvantaged students into successfully educated individuals? It is not so much what can be done, but rather what is not being done. Public education needs to take a more serious approach to its teaching ability towards "all" students by holding them to high expectations. This hypothesis is based on the "Pygmalion phenomenon" which was researched by Harvard professor, Robert Rosenthal. The conclusion is that students rise to the level of expectations placed on them by their teachers. Students, who are expected to succeed by their teachers succeed while students, who are expected to fail, fail. This phenomenon was proven in a double-blind study known as the Oak School experiment. At an elementary school, all students were tested for intelligence at the beginning of the school year. 20 percent of the students were randomly selected by the researchers - with no relation to their test results. These students were then relayed to the teacher as individuals "showing 'unusual potential for intellectual growth' who could be expected to 'bloom' in their academic performance by the end of the year" (Schugurensky, 2002). When all the students were tested again eight

months later, the "intelligent" children were the students who had succeeded the most.

This startling information had profound implications in the high school classroom as well as it did at the Oak School. Rhem concludes: (2001) "if the teacher *knows* that certain students can't learn, that teacher should get out of that classroom". If the student is not learning, then he needs a new teacher. Analyzing students' abilities to learn in a school environment according to their individual cognitive nature is far from our current knowledge, but it definitely has implications involving architecture. Buildings have the power to influence learning behavior in an environment of high expectations that students can raise to themselves. If students attend a high school that looks like a place where people succeed, then maybe they will rise to that level without making the conscious decision to do so.

In conclusion, high school students need to be taught the benefits of a college education. By being held to higher expectations in the classroom students become willing to academically perform at college level. If teachers, students, and their communities understand the value of educational attainment in their young people the United States will achieve the academic ground work corresponding to a well educated work force that can effectively achieve a state of economic prosperity, shared equally among all American families.

SUMMARY

Architecture doesn't make people *do* anything; it only influences how people behave. With this fact in mind, research on how high school architecture might influence students' desire to learn was a barren concept to explore for an architecural research project. Therefore, in the best interest of educational attainment from this research, it was crucial for these research results to develop upon the basis of hard evidence rather than subjective discourse into the effect architecture has on the power and style of the society we live in. To begin an understanding of the influence architecture has on a high school environment, information had to be gained regarding the meaning and purpose of high school in the United States. Discovering how unique the American public education system is from a global perspective was quite a revelation that shed much knowledge upon the educational virtues that made American education the best there was, and can be once again in the future.

The increase of high school graduates attaining higher education in the United States has ceased and shows signs of declination in the near future. This circumstance exposes a serious national issue: the supply of educated people in our country correlates directly with the value of our national economy and job market. As technology progresses into the 21st century, skilled labor is becoming

more in demand. The global job market requires a much more specific knowledge basis now than it did in the last century. The ability of applicants to fill these jobs requires the attainment of higher education. Since evidence shows that the wage gap between skilled and unskilled labor has been widening since the 1970s, economic equilibrium has become a vital issue. With the interchange of new global economic powers coming online in this new century, combined with our new found societal awareness of limited economic resources on our planet, supply and demand of educated workers is now more critical to the economic future of the United States than it ever has been before.

Providing students with the assets to succeed academically in a high school environment requires that many issues be taken into account such as a student's social, physical and mental well being. These issue are all influenced by these same aspects of his or her community in which the student's public high school abides. Discovering the conditions that will potentially make this student a successful individual in their later life is a field of study in itself. To speculate how architecture can influence a high school's environment socially, mentally and physically is a compelling prospect. Since architecture has more power over our lives than any of us care to realize, our aspiration to hone this power's influence for a specific purpose has justification from

a real world standpoint. As Ted Sizer scrutinized the unsatisfactory conditions of high schools to procure educational attainment in students, the same things must be taken into consideration about the architecture of high schools.

Through the "Pygmalion effect," students perform at the levels that their instructors expect them too. This is the metaphysical domain that falls into the realm of architecture. Architecture's influence on a high school environment can make students rise to the level of their surroundings. If students believe they are in a successful building then they will be successful. In the 21st century, public high school education has taken on a new teaching philosophy of Small Learning Communities. With this focus in mind students are more empowered to accomplish their high school education with the goal of attaining higher education or training in their field of study after they graduate. The more high school graduates attain college degrees, the more economic prosperity will be shared equally among all families in the United States.

Typological Research

Fig. 1.1

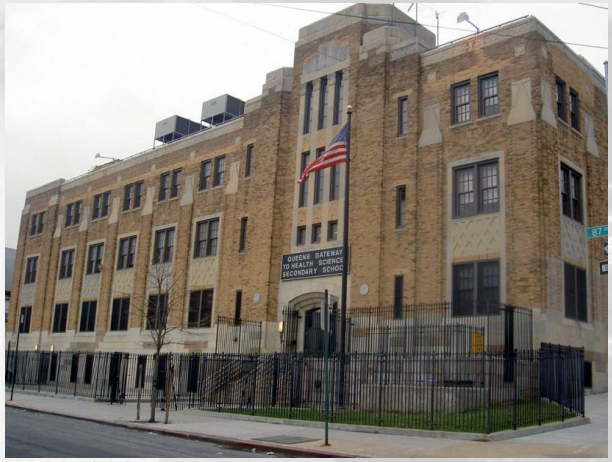


Fig. 1.2

Fig. 1.3

Fig. 1.4

Fig. 1.5

Fig. 1.6

This is a school project located in Greenwich, Connecticut that was designed by Skidmore, Owings & Merril (SOM). It was completed in September 2008 and is set on a ten acre site with 5,770 square feet of new construction and 23,516 square feet of renovated space. In the early twentieth century, this school was a single-room schoolhouse. The schoolhouse underwent many transformations to accommodate the rising student population. Each new addition over the decades resulted in a jumble of various materials and architectural styles. SOM united the campus by introducing a two-story glass walkway system to unify the campus's disjuncture. The existing gymnasium was retrofitted to supply a 400-seat auditorium and a black-box theater. Spaces that were once former locker rooms are now being used as art studios.

Brunswick Upper School
Greenwich, Connecticut
Skidmore, Owings & Merrill LLP

This case study is similar to the others because it is improving the quality of an existing school.Figure 1.7 shows the old exisitng campus plan with a southern main entrance. SOM fixed the disconnection problem by incorporating the glass walkway system, which is the main reason this case study was chosen.

Since the opening of Marysville's brand new Getchell High School (GHS) in September 2010, MPHS has been changed to match the same learning philosphy as Getchell. GHS was planned and designed as an SLC so that it would foster close relationships between the students and teachers. According to Stevick (2010), "At Marysville-Pilchuck, the concept of small schools was introduced but the closeness among students and faculty was harder to achieve because students criss-crossed the large campus". Because of this circumstance, MPHS does not architecturally match the educational philosophy of SLCs like GHS does.

This case study shows how MPHS could potentilaly be retrofitted with a glass walkway system like the Brunswick school was. Since MPHS is in need of architectural connectivity a glass walkway could be just the right solution to accomodate the necessity of its new SLC philosophy.

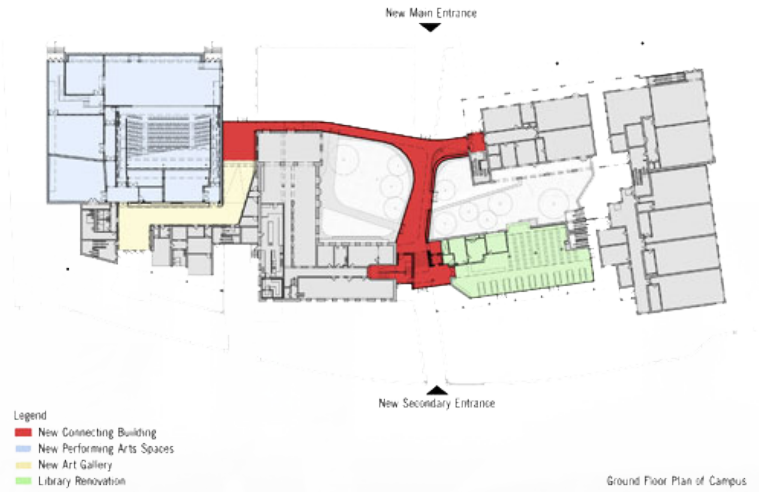


Fig. 1.9

Fig. 1.7 Original Campus Plan.

Fig. 1.8 Final Campus Plan.

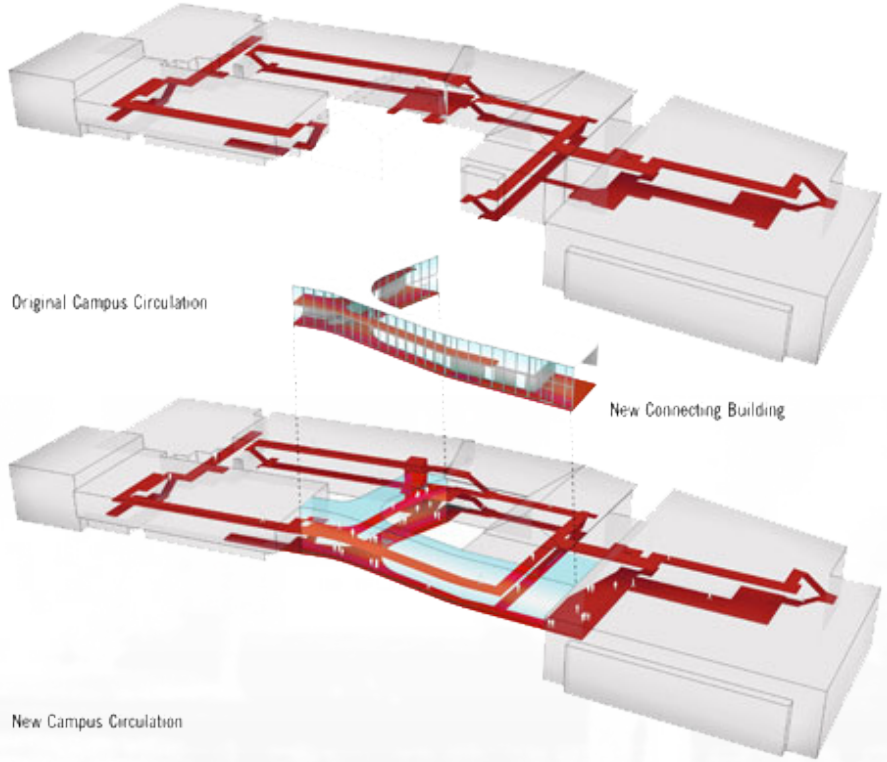

Original Campus Circulation
New Connecting Building
New Campus Circulation

Fig. 1.10

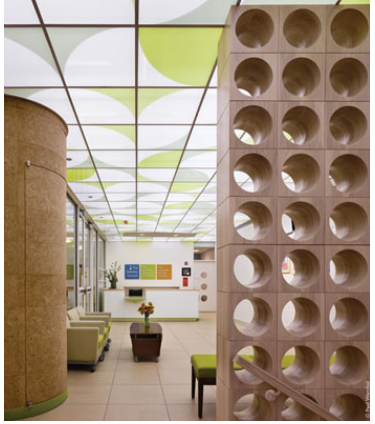


Fig. 2.1

Fig. 2.2

Fig. 2.3

This school project is in New York, New York. Andrew Bartle Architects, PC designed this 21,853-square-foot school for children with learning disabilities. The design problem for the project was converting the upper two stories of a parking garage into a school that would engage students with learning disabilities. The two-level school is connected by a central stair, which also serves as a lounge and theater with a projection screen that retracts. The school's sustainability credentials were achieved with the usage of recycled steel, wood , and drywall, a radiant floor heating system, and use of bamboo and cork.

Accomodating the needs of individuals with disabilities is a requirement of any eduational facility. This

The Gateway Schools

New York, New York

Andrew Bartle Architects, PC

case study is of great imporatance since its design assists the needs of disabled students. By studying these architectural accomdations, the potential use of spaces by students with diabilities at MPHS can be accounted for and integrated for the most beneficial results.

The esisting structure that this project was built on makes it an appealing example of adaptive reuse. MPHS has no multi level parking and will probably never need to until it outlives its school purpose. Incorporating hallway alcoves in to the renovation of MPHS will be particularly imporatant since the goal of SLCs is to promote the interaction of students and teachers outside the classroom.

On the site tour,a teacher made a comment about how she wishes high schools would return to the multi-level architecture they once were. Vertical circulation in school buildings creates much more connection physically and socially than a spread out campus does, overall. Central stairs will be the method of delivering this social and physical attribute of connectivity between the levels of MPHS just like the Gateway Schools.

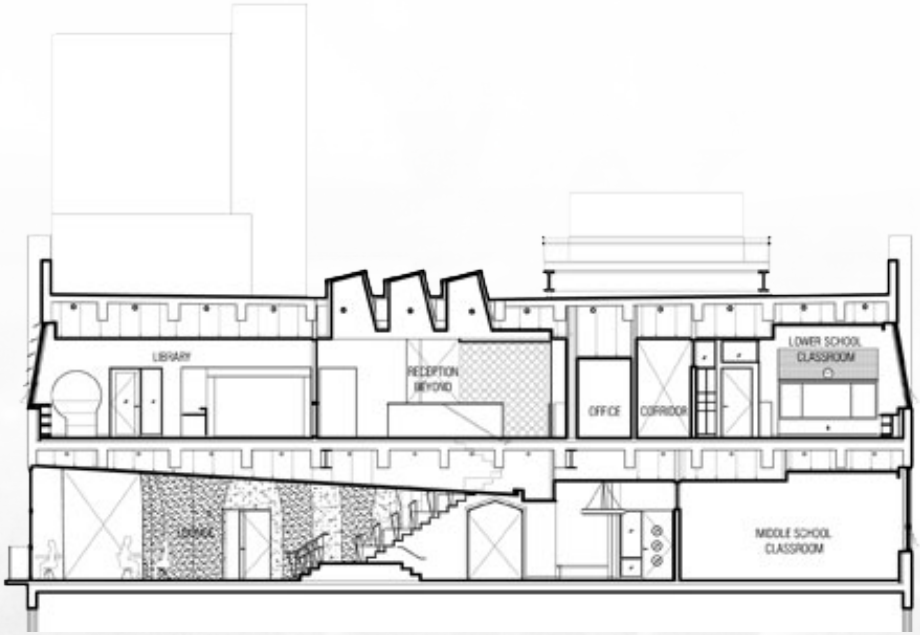

LIBRARY
RECEPTION
BEYOND
OFFICE
CORRIDOR
LOWER SCHOOL
CLASSROOM
LOUNGE
MIDDLE SCHOOL
CLASSROOM

Fig. 2.4

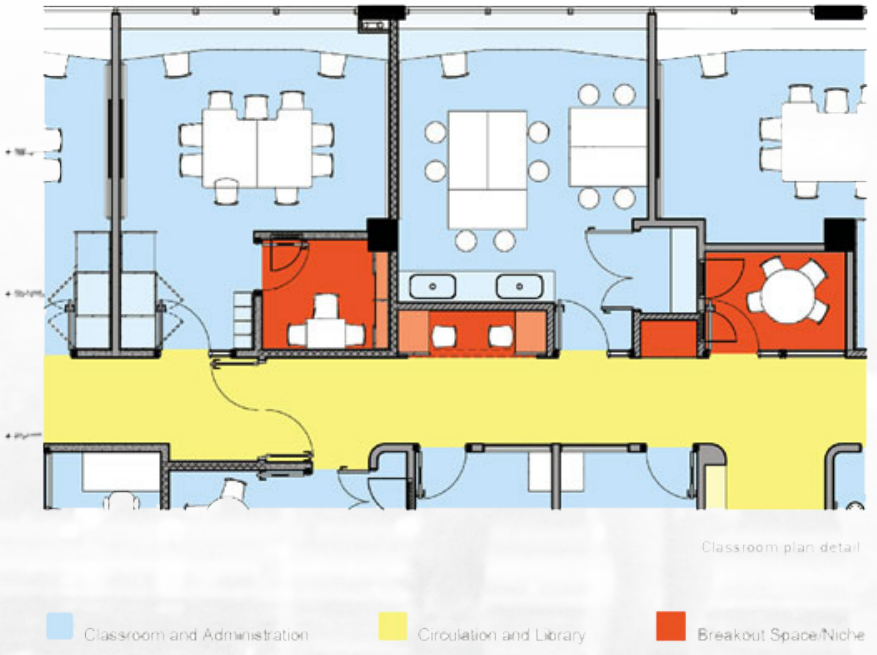

Classroom plan detail
Classroom and Administration
Circulation and Library
Breakout Space/Niche

Fig. 2.5


Section through Central Stair
Classroom and Administration
Circulation and Library
Breakout Space/Niche

Fig. 2.6

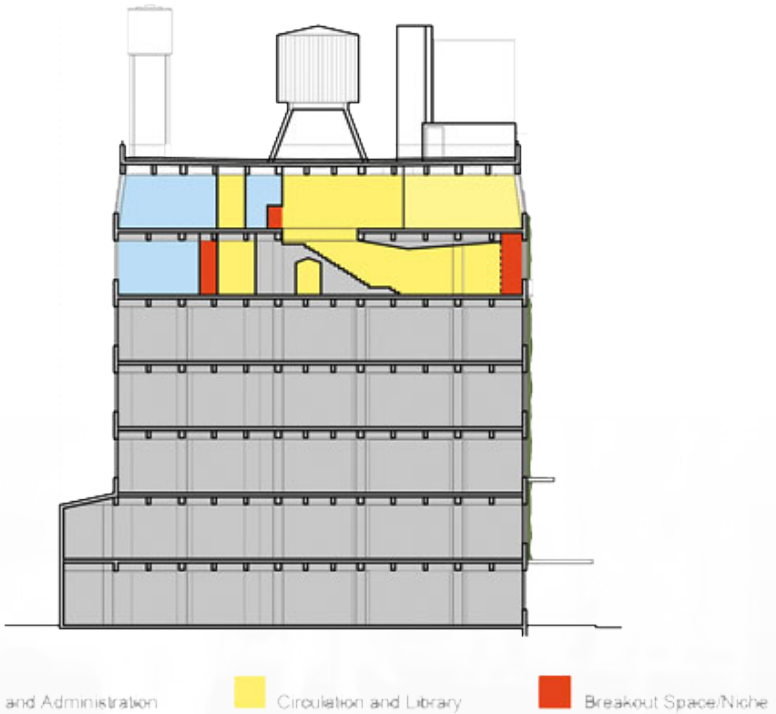

Classroom and Administration
Circulation and Library
Breakout Space/Niche

Fig. 2.7

Fig. 3.1

Fig. 3.2

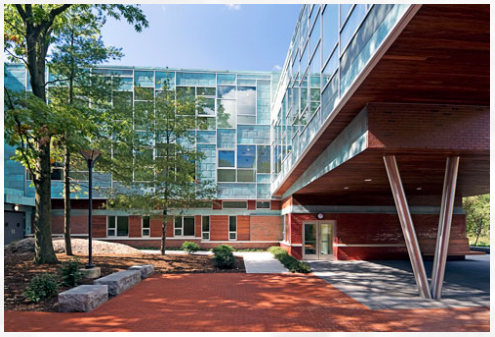


Fig. 3.3

This school project comprises 20,000 square feet of new construction, 6,500 square feet of renovated classroom space, and the 5,100 square feet renovation of a library. Portions of the brick and concrete modernist building designed by Earl Flansburgh were renovated to accommodate pre-school through ninth grade students. The architect created harmony between the older building and the addition by incorporating red brick to match the existing structure. To add texture quality to the new construction, pre-patina copper was used in the bay window bays and curtain wall system to complement the original building's surfaces of exposed concrete.

This case study has a lot of potential apects that can be incorporated into MPHS because of its large square footage renovation of calssroom space and a library.

The Park School
Brookline, Massachusetts
Chan Krieger Sieniewicz

The MPHS library is in dire need of renovation as is the gymnasium. With these two spcaes in mind, the spatial programming and circulation of MPHS have enormous potential to influence one another. The architect's attention to harmony between the old material and new is an important issue to pay considerable attention to. In regards to the renovation of MPHS, the wood siding finish and exterior concrete block masonry will be the two most important materials to harmonize with the renovated new construction.

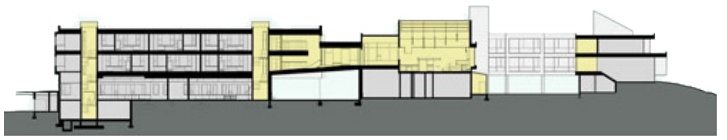


Fig. 3.4

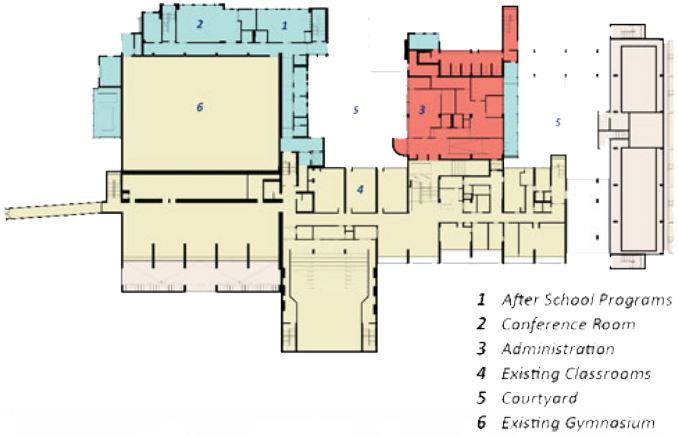


Fig. 3.6

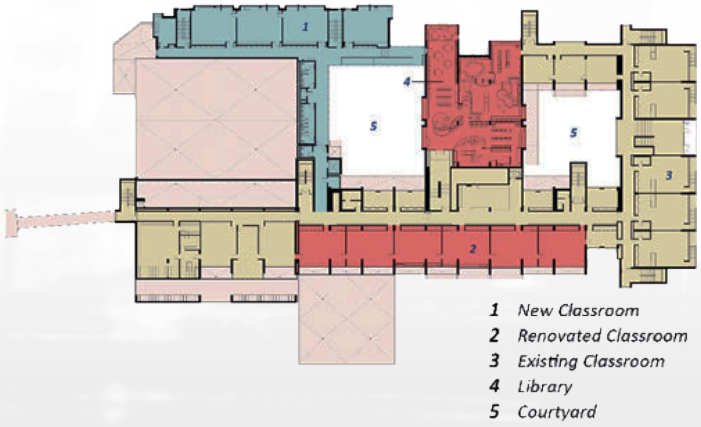


Fig. 3.7

SUMMARY

Viewing the architectural characteristics of these brand new schools makes us question what effects architecture does have on its occupants. The justification for this thesis project is the idea that architecture has an influence on people's behavior; therefore, high school architecture should be brought under the scope of examination just as teaching philosophy recently has been, most recently. The fact is, educational attainment of our youth is too important of an issue to be left to just teachers, and architecture is too powerful of a social entity to not be used to further this objective for national prosperity.

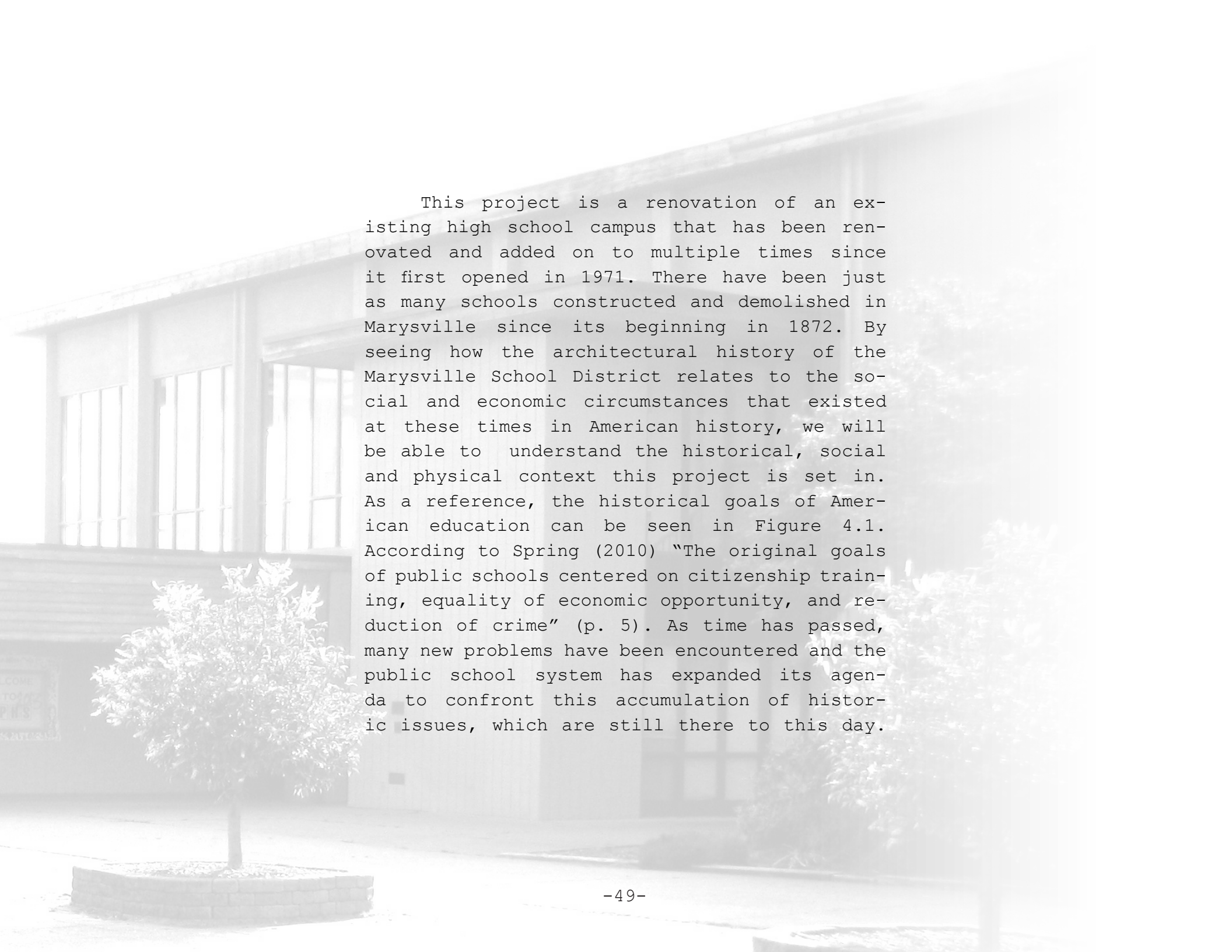
Architecture and the social harmony that it creates can influence a "Pygmalion effect" of its own. No matter what family background a student comes from, school is where they rise to their true potential. If all aspects of the high school environment work together in harmony like any good piece of architecture, then the student will rise to the level of his environment and achieve the goals that have been set for him because he knows what his high school expects from him. According to Goldberger (2009), "It takes many people to make a work of architecture and many people to use one" (p.15). What he meant is, architecture doesn't show its best qualities until it is viewed under use by the occupants it was designed for. In the case of MPHS, students will see architecture being used by other students, their teachers, and

mentors, which will create an environment built for the pursuit of higher education. If the MPHS campus can look like a place where people succeed then students might decide to academically rise to the “success” level of their campus.

The one characteristic that these case studies have in common is that they make use of existing conditions, which is what the renovation program will enable MPHS to do. Renovation is a key component that fulfills so much more than just what its finished condition has to offer. Renovation makes use of what is already there. The typology of building reuse is a common practice in sustainable design since it has a smaller carbon footprint than design programs of new building construction.

All the school clients of these projects had a relatively similar design problem, which in insufficient architecture fulfilled its intended purpose, but only in a mediocre way. These case studies all specialize in one aspect or another that has an effect on the ability of the architecture to foster social activity for its occupants whether through alcoves, wide stair cases, or a glass walkway.

Historical Context



This project is a renovation of an existing high school campus that has been renovated and added on to multiple times since it first opened in 1971. There have been just as many schools constructed and demolished in Marysville since its beginning in 1872. By seeing how the architectural history of the Marysville School District relates to the social and economic circumstances that existed at these times in American history, we will be able to understand the historical, social and physical context this project is set in. As a reference, the historical goals of American education can be seen in Figure 4.1. According to Spring (2010) "The original goals of public schools centered on citizenship training, equality of economic opportunity, and reduction of crime" (p. 5). As time has passed, many new problems have been encountered and the public school system has expanded its agenda to confront this accumulation of historic issues, which are still there to this day.

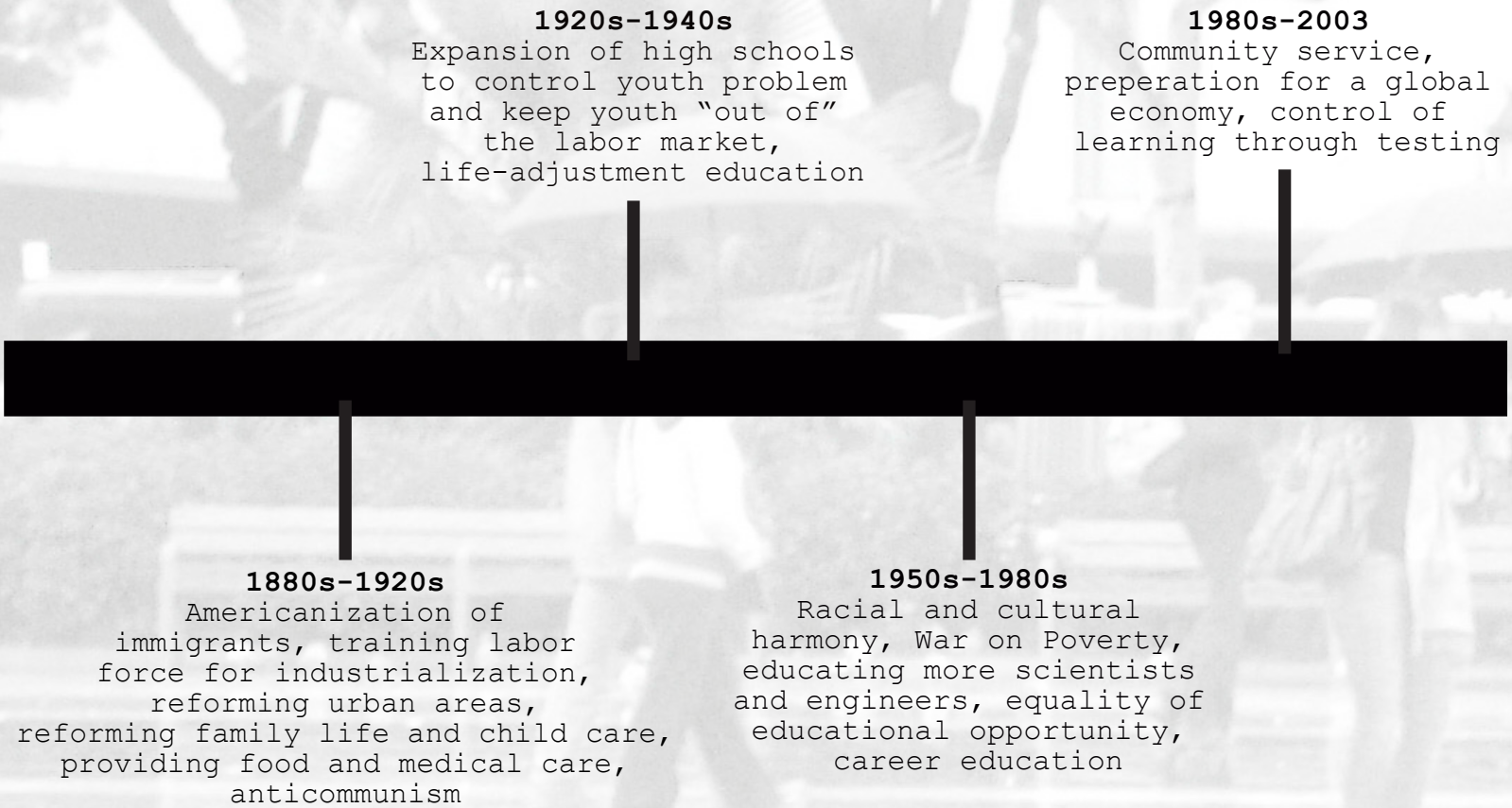


Fig. 4.1 Goals of Public Schools in the U.S., 1880-2003

The history of Marysville schools begins in 1889. The founder of Marysville, James P. Comeford donated a site for building Marysville's first school (see figure 6), which later became known as the Lyceum Building. At this time the primary role of education in the U.S. was Americanization of immigrants. There was no immigration to the area of present day Washington at this time, but rather westward expansion by Irish-Americans who discovered that the Pacific Northwest was a shifting social order with no elite social establishment. Unlike the entrenched society of discrimination and religious prejudice towards Irish in the northeastern United States, the Irish settlers who came to Washington discovered a land with abundant prospects. They were able to rapidly develop into solidly middle and high class citizens of affluent occupations. Since the United States had acquired the Oregon country in 1848, European settlers had been occupying the lands of present day Washington State after the Oregon Country had become a U.S. possession in 1846.

The flow of American-European settlers westward was attributed to several factors which created white population growth in Washington state: "the California Gold Rush in 1848; subsequent gold, silver, lead, and coal strikes in present day Washington, Idaho, and British Columbia between the 1850s and 18880s; the Oregon Donation Land Law of 1850; the Civil War; and the Homestead Act of 1862" (Burton, 2003). By 1890, the population

Fig. 4.2

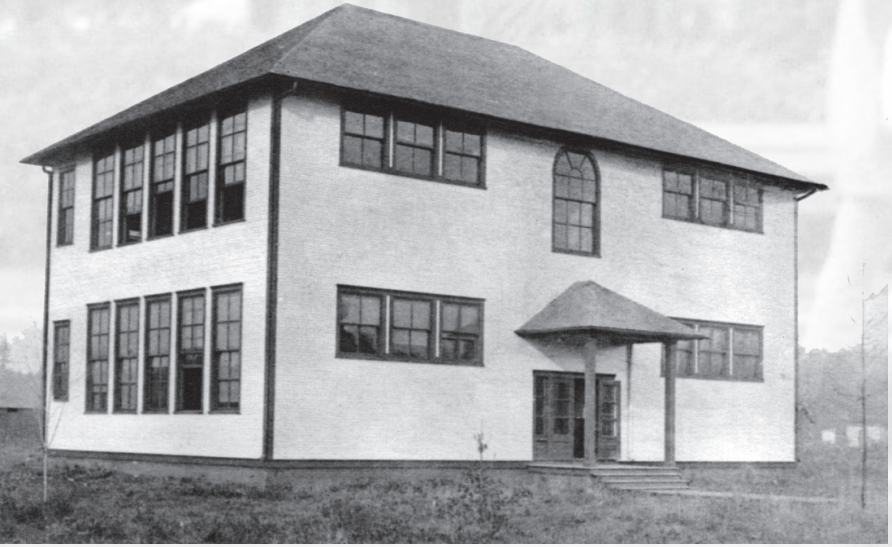


Fig. 4.3

of Washington state was composed of Chinese, Germans, Scandinavians, and Irish ranked in the order of largest to smallest. In the Seattle area, large scale Japanese immigration began in the 1890s from Hawaii and Japan. The Chinese Exclusion Act of 1882 stopped the movement of Chinese laborers into the United States, which allowed the newly arrived Japanese immigrants to fill in the labor-intensive jobs of industrial "logging, mining, fish processing, and agriculture" (Takami, 1998). Japanese immigration was stopped by the Immigration Act of 1924, which did not resume until 1956. Since national-origin quotas were ended in 1965, the influx of immigrant laborers has surged again in the last 30 years. According to Goldin and Katz (2008), "The national origin composition of immigration also shifted in recent decades and the share of immigrants coming from Asia and Latin America (especially Mexico) has increased" (p.308).

During the height of the Industrial Revolution, training young people for the labor force was a second prospect of public education in high school. The first Marysville High School graduated two students in 1907 (see Figure 4.3). In 1914 a new high school was built, which turned the first high school into an elementary school. This new three-storey building in Figure 4.4 was used as a high school until 1930. Once its educational use had ended, it was used for administration until it was demolished in 1973 after 59 years of use. The Marysville Pilchuck High School

has almost received 40 years of use since 1971. Because of knowledge about the embodied energy of demolition, it is in the best interest of our environment today to reuse existing structures rather than demolishing them and rebuilding with new materials.

From the 1950s to the 1980s, equality of opportunity was the focus of the American education system. Figure 4.5 shows the Marysville High School as it looked in 1955. At this time the virtue of decentralization was facilitating the rapid educational progress of the Marysville School District, but this was not the case for many other cities in the southern United States where racial segregation was firmly entrenched. The case of Brown v. The Board of Education, which occurred just one year earlier in 1954, made clear that high schools in southern states were separate, but not equal. Institutional racism was not a problem that ever affected the Marysville School District since it was a community composed of great ethnic diversity.

Equal opportunity is most often thought of as an idea meaning that everyone has the same job and the same income. According to Spring (2010) this is not what equal opportunity means. He elucidates this by stating that "equality of opportunity" means that all members of a society are given equal chances to pursue wealth and enter any occupation or social class" (p. 30). In the 1980s, preparation for a global economy took hold in American Education. Scientists and engineers were in high demand due to the globalizing world economy.

Fig. 4.4

PROJECT GOALS

The environment of this thesis project lies in the center of a professional, personal, and academic triad. The goals for these three points correspond to how each of them has affected my career aspirations. Academically, I plan to further the study of architecture by analyzing what makes the architecture of a small learning community fulfill its purpose. Identifying what influences an individual to attain knowledge in a small leaning community is the premise that can be of value to further the field of architecture. The academic goal of this thesis project is to set up a built environment that will influence the behavior of students to attain education is.

The professional goal of the thesis comes from the assemblage of data that yields a real-world value to the synthesis of this project. Based on the research of Goldin and Katz, this thesis will have value to the profession because educational attainment is a concern of the architecture profession. The case studies for this project show the fine institutional work that exists in the world. By distinguishing their successful characteristics and applying them to this project, a good design will be achieved with the most valuable case study information available.

People have always asked me, “what do you want to specialize in?” - “I haven’t thought about it” I answer. With today’s push on evidence based design and sustainability, the typology that I will specialize in will most likely be the one that I have the most experience in. At this point in my education, I feel most comfortable with directing my attainment of knowledge and design experience towards educational facilities. Through internship last summer at a brand new high school in Marysville, Washington I gained exposure to the personal, social, and financial environment of schools and the public education system of the United States. This had been the biggest influence on my desire to move towards school design. Since last summer, I have gained a clearer sense of political issues that can bring down the quality of a school only for the personal gain of the people who are in power who might not have the best interests of the school users in mind. My personal goal for this project is to learn as much as I can about school design so that I may attain a clear sense of direction when I get into an entry level position at a firm who specializes in school projects.

Site Analysis

The main entrance to Marysville Pilchuck High School (MPHS) is a modernist tree rowed courtyard that leads into the center of a hardscape plaza. It is apparent that it was intended to be used as a central gathering space, but based on the looks of it, that never happens. This condition reminds me of what I learned in graduate seminar about sense of place. My instructor stated, if you design a public plaza you must know what people will be doing there. If you don't as the designer, then they (the users) won't know either and hence, they'll be no one there. That fact seemed very apparent in this plaza. How to get to the offices is pretty indistinguishable which Rob, the assistant principal, said was his primary concern. Karen (the other teacher who accompanied me on the site visit) said that there should be something that visually leads newcomers to the office. The existing finish of the building at the west side of the entrance had no aesthetic qualities. Rob said that he would want to grow wisteria on the faccade to cover up and lighten the hard scenery.

The campus is composed of at least eighteen separate structures with portable class rooms hugging the northern end to buffer the overcrowded student population of 2,700 students. Since the

Fig. 5.1

Fig. 5.2

building of the new Gethchell High School was finished in September 2010, MPHS will finally be allowed to downsize its campus for a student population of 1,200. The light quality of this 1970s brick and concrete modernist building is drab. The patina of the horizontal wood siding does not work well with the daylight. The campus is pretty immune to any wind drafts based on its random layout without any symmetry. There are many apparent signs of human use on the campus, not to mention all the senior prank decorations and graffiti that still have a presence on the site. School is over and the campus will stay content over the summer until classes begin in the fall. Distress is noticeable all around the campus. It is an environment that seems in desperate need of renovation to expel the distress out of its environment. The hardscape is pretty distressed since it only adds insult to injury based on the campus's inflexible building layout.

QUANTITATIVE ASPECTS

Fig. 5.3

The vehicular and pedestrian traffic is an interchange of heavy and light that pertains to the arrival of students and staff and their departure at the beginning and end of each school day.

The topography of the campus has adequate slope for the proper drainage of storm water on the site.

The character of the site is well endowed with proper landscaping and campus maintenance on a continuous basis.

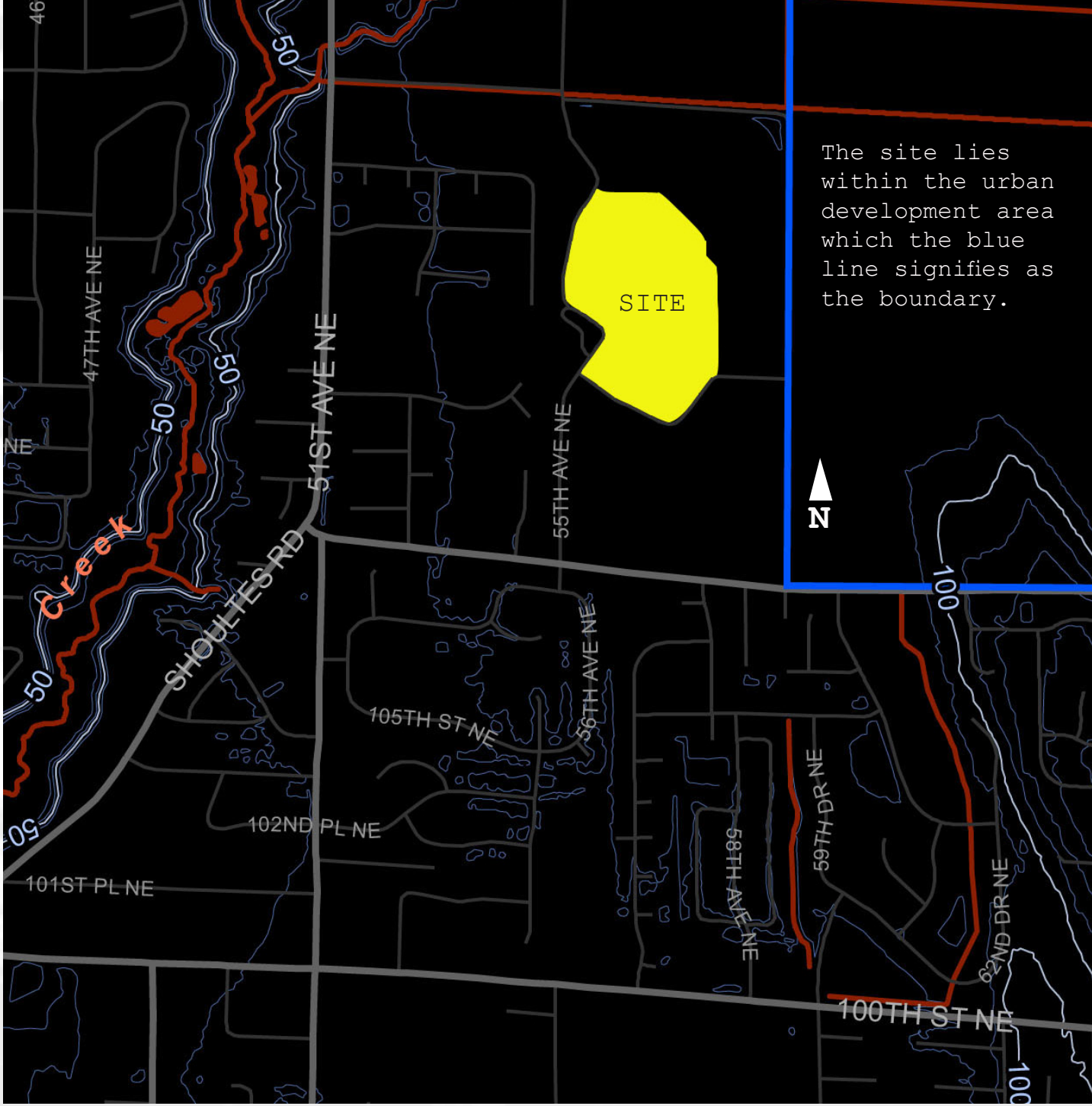
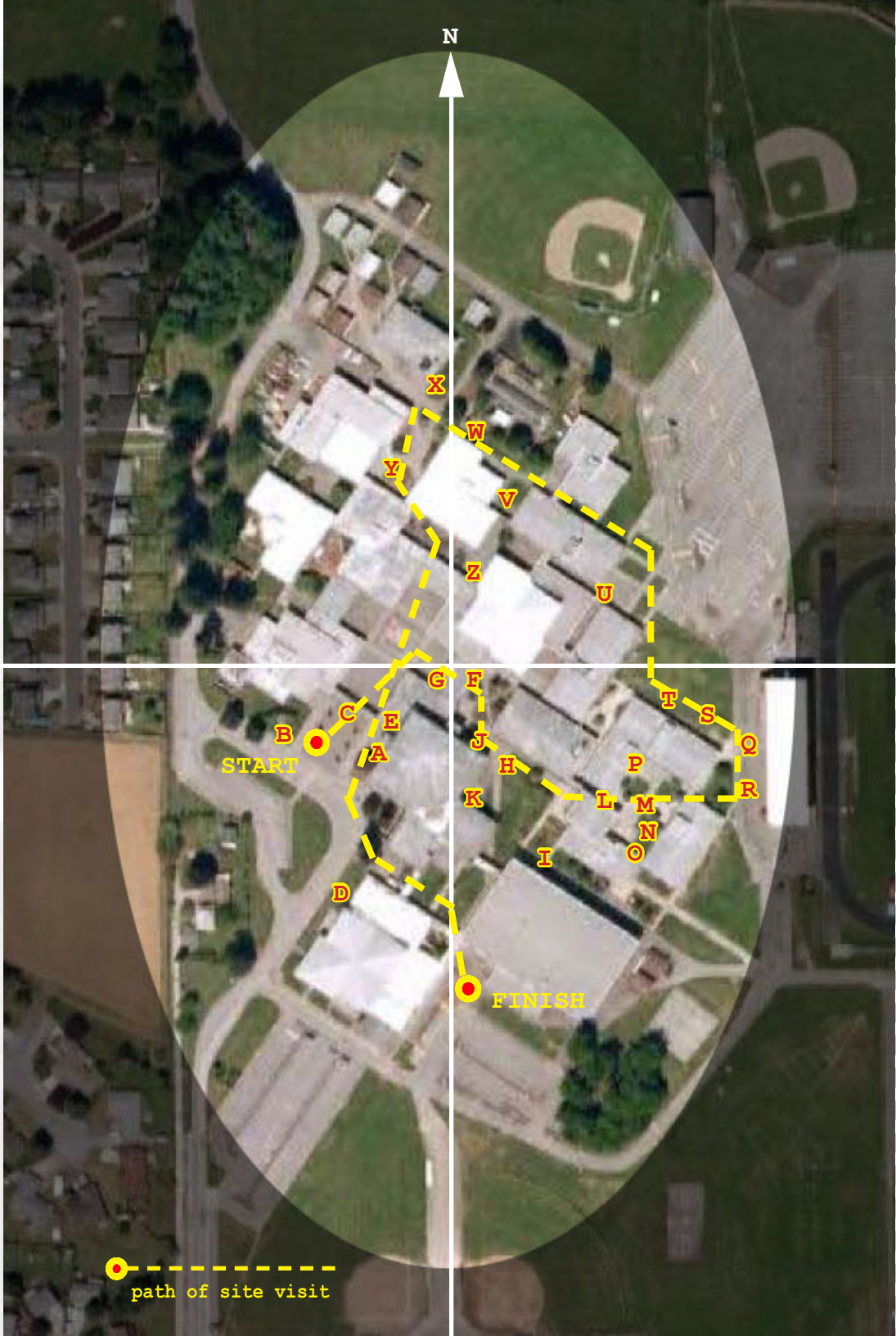
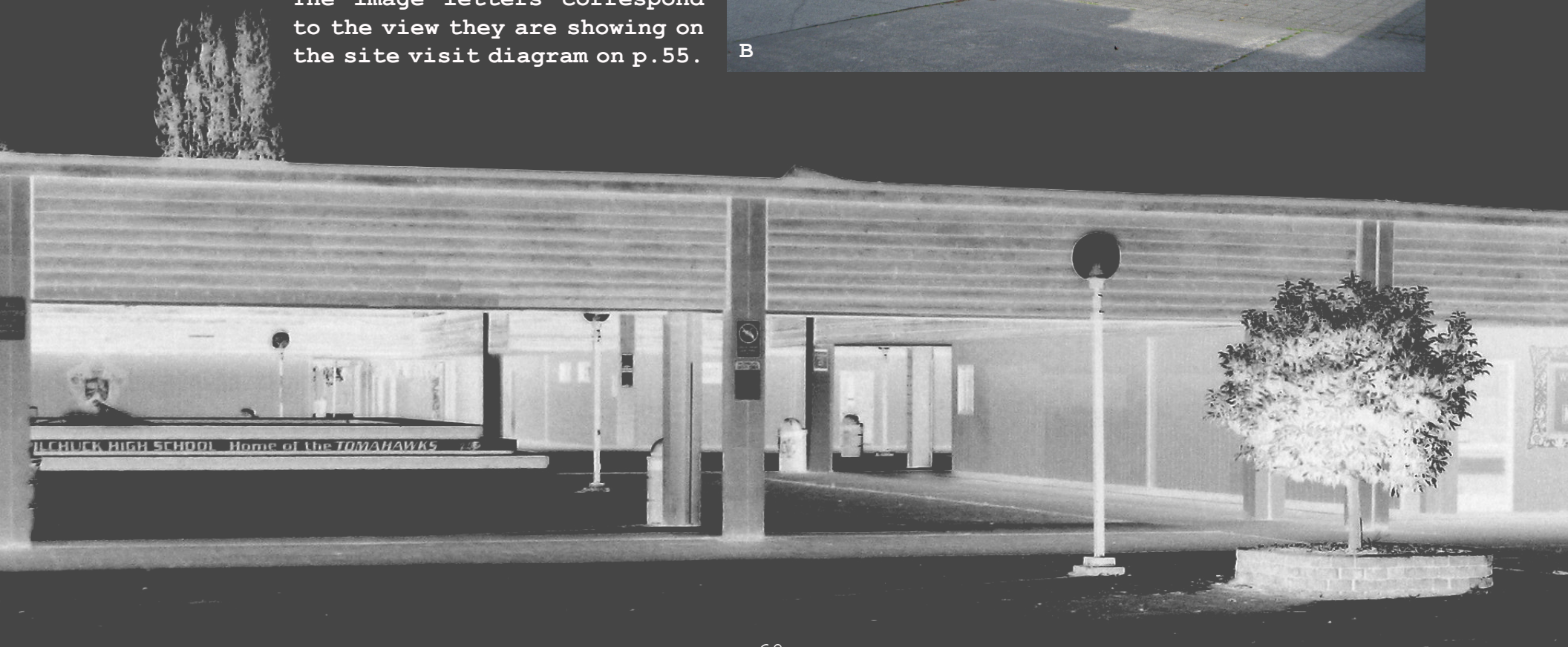

The site lies within the urban development area which the blue line signifies as the boundary.
SITE
N
47TH AVE NE
51ST AVE NE
55TH AVE NE
56TH AVE NE
58TH AVE NE
59TH DR NE
62ND DR NE
SHOULTES RD
105TH ST NE
102ND PL NE
101ST PL NE
100TH ST NE
Creek
50
100

Fig. 5.5 Aerial view of the southeast corner of MPHS.

SITE RECONNAISSANCE



The image letters correspond to the view they are showing on the site visit diagram on p.55.




C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QUANTITATIVE ASPECTS

AVERAGE TEMPERATURES (˚F)

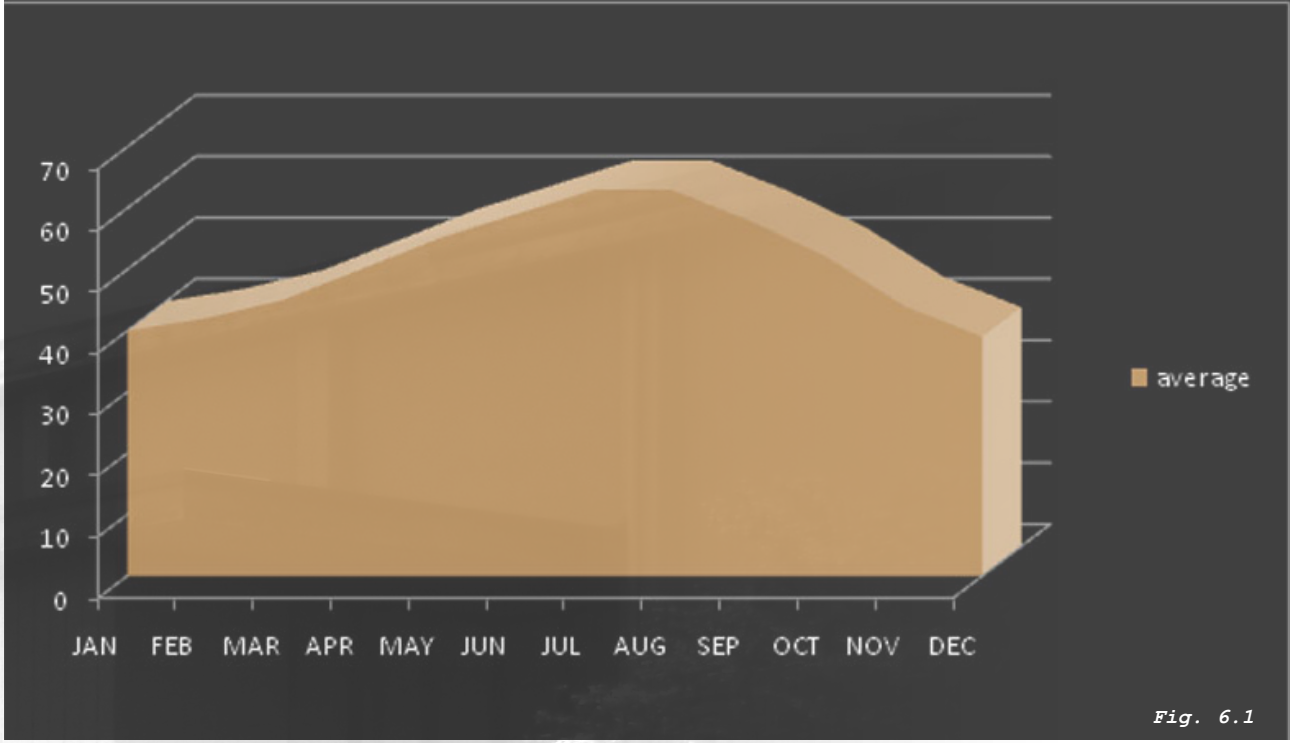


Fig. 6.1

HUMIDITY

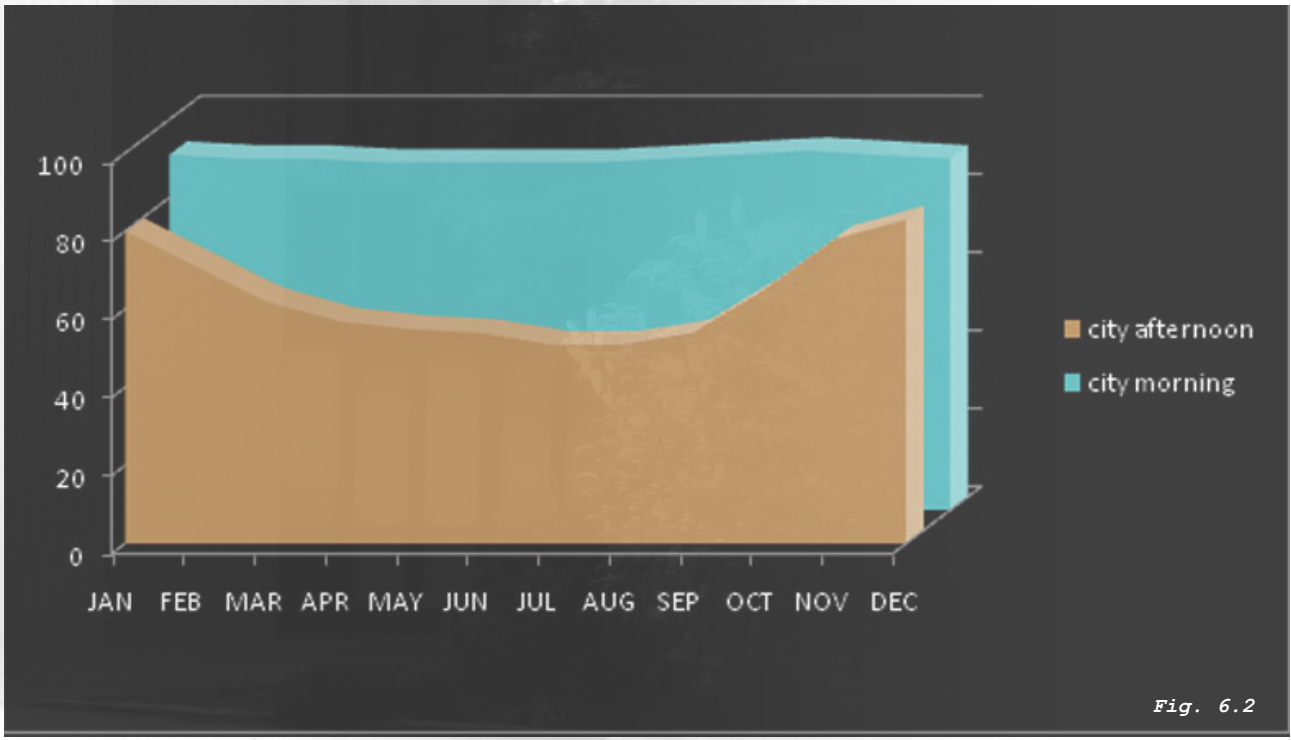


Fig. 6.2

PRECIPITATION (inches)

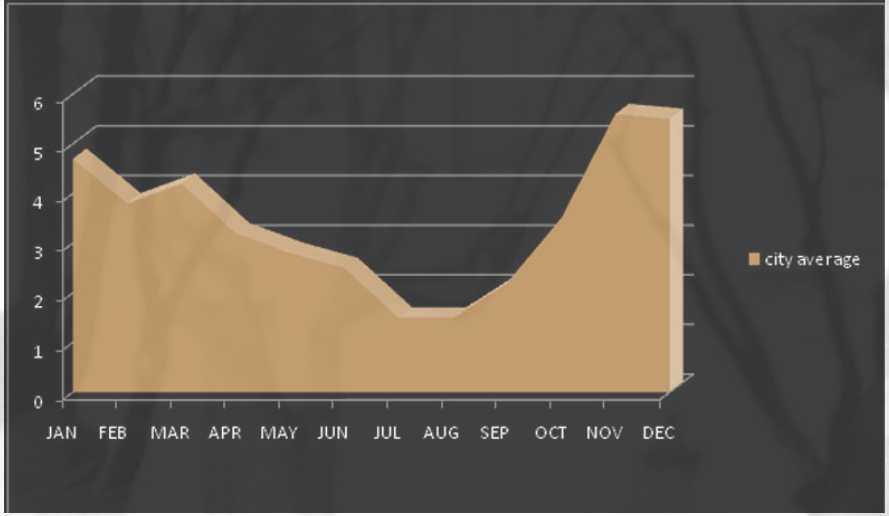


Fig. 6.3

CLOUDY DAYS (percentage)

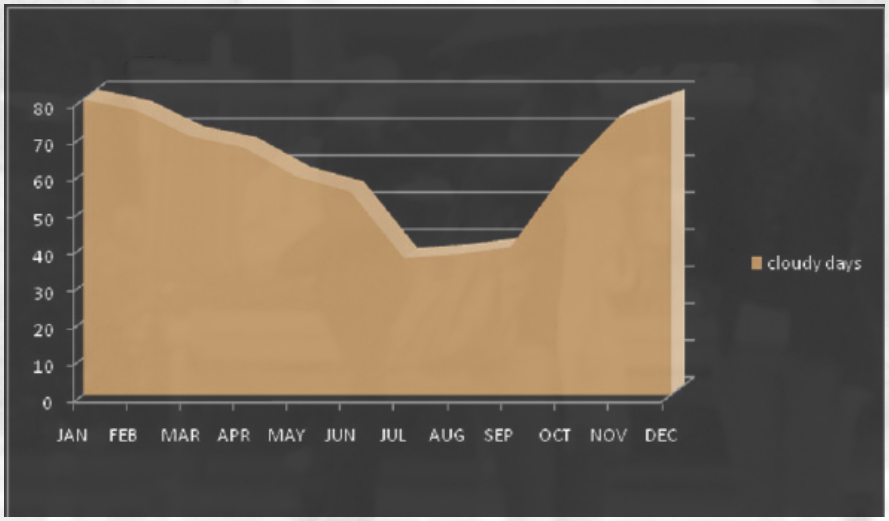


Fig. 6.4

WIND SPEED (mph)

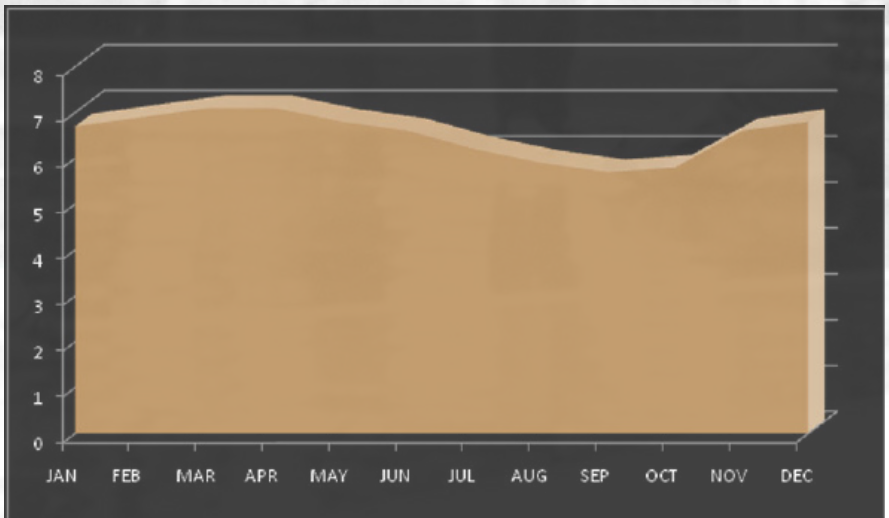
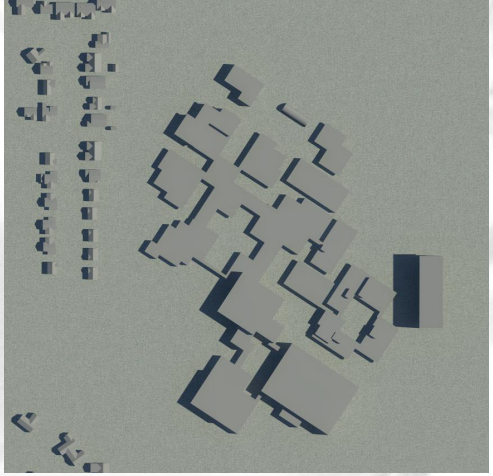


Fig. 6.5

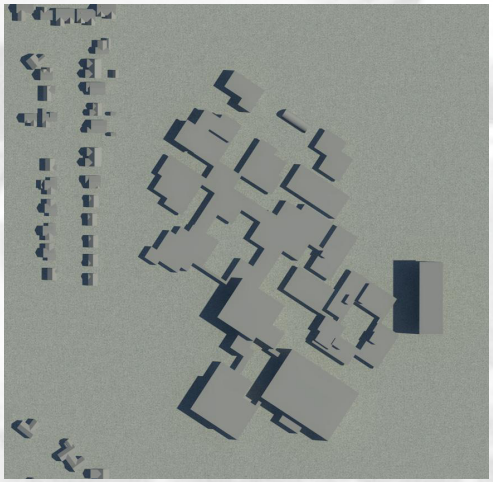
SUN STUDY

8:00 AM

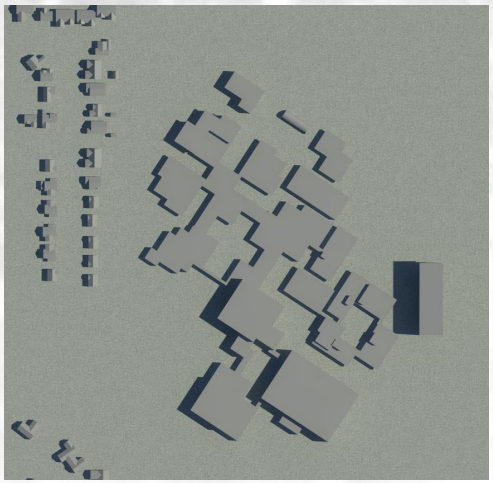


SUMMER SOLSTICE

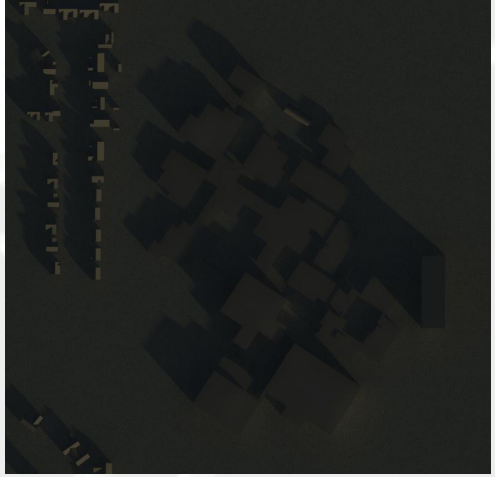
12:00 PM

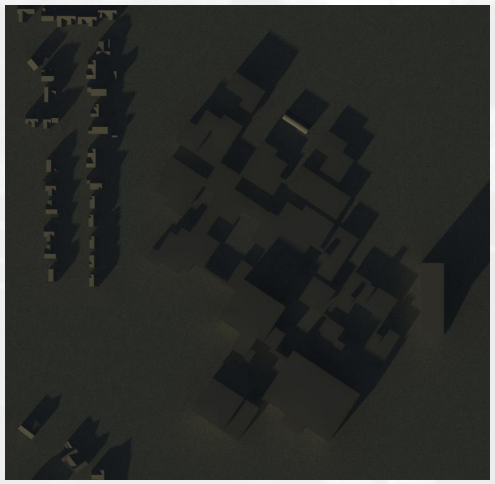


6:00 PM



9:00 AM





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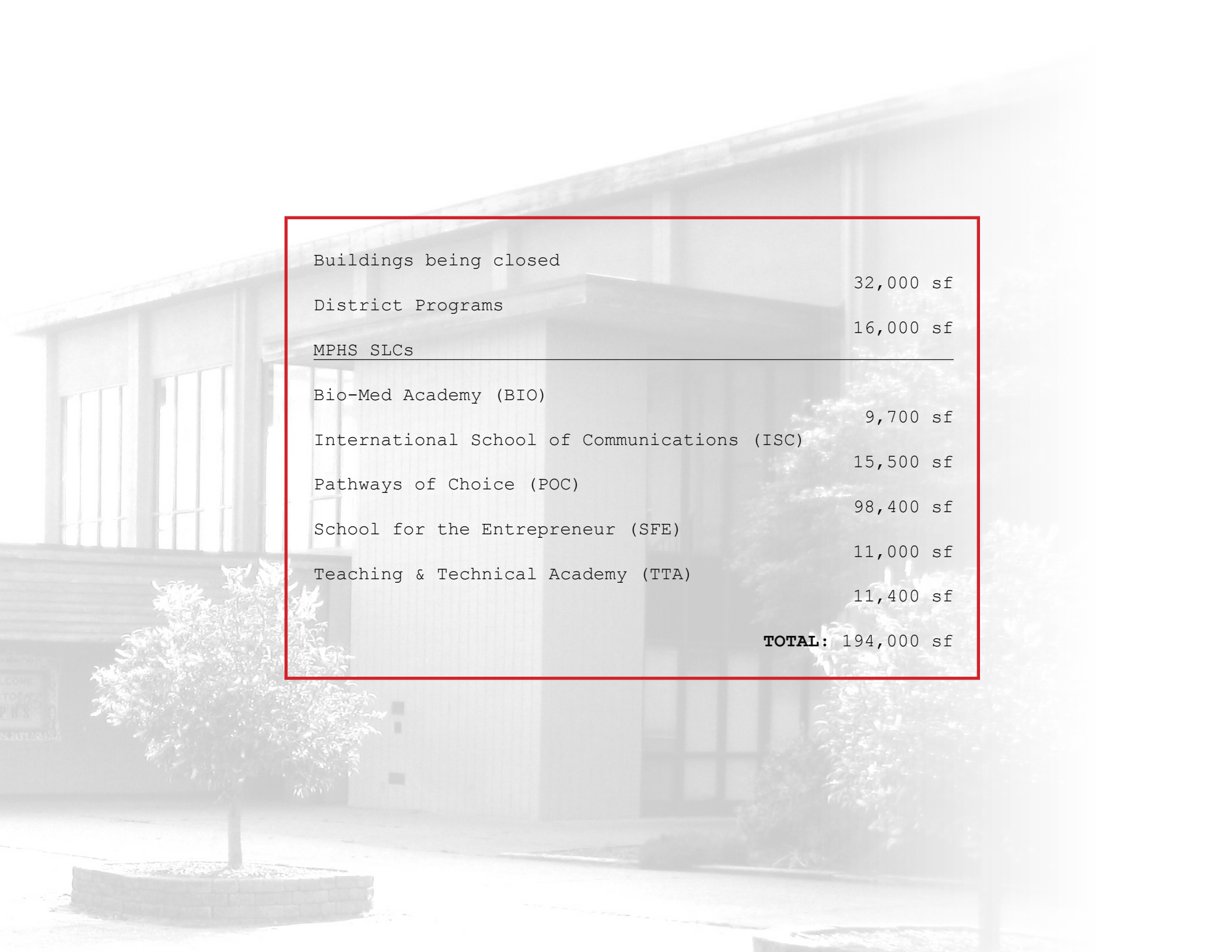
Programmatic Requirements



Buildings being closed	
	32,000 sf
District Programs	
	16,000 sf
MPHS SLCs	
Bio-Med Academy (BIO)	
	9,700 sf
International School of Communications (ISC)	
	15,500 sf
Pathways of Choice (POC)	
	98,400 sf
School for the Entrepreneur (SFE)	
	11,000 sf
Teaching & Technical Academy (TTA)	
	11,400 sf
TOTAL:	194,000 sf

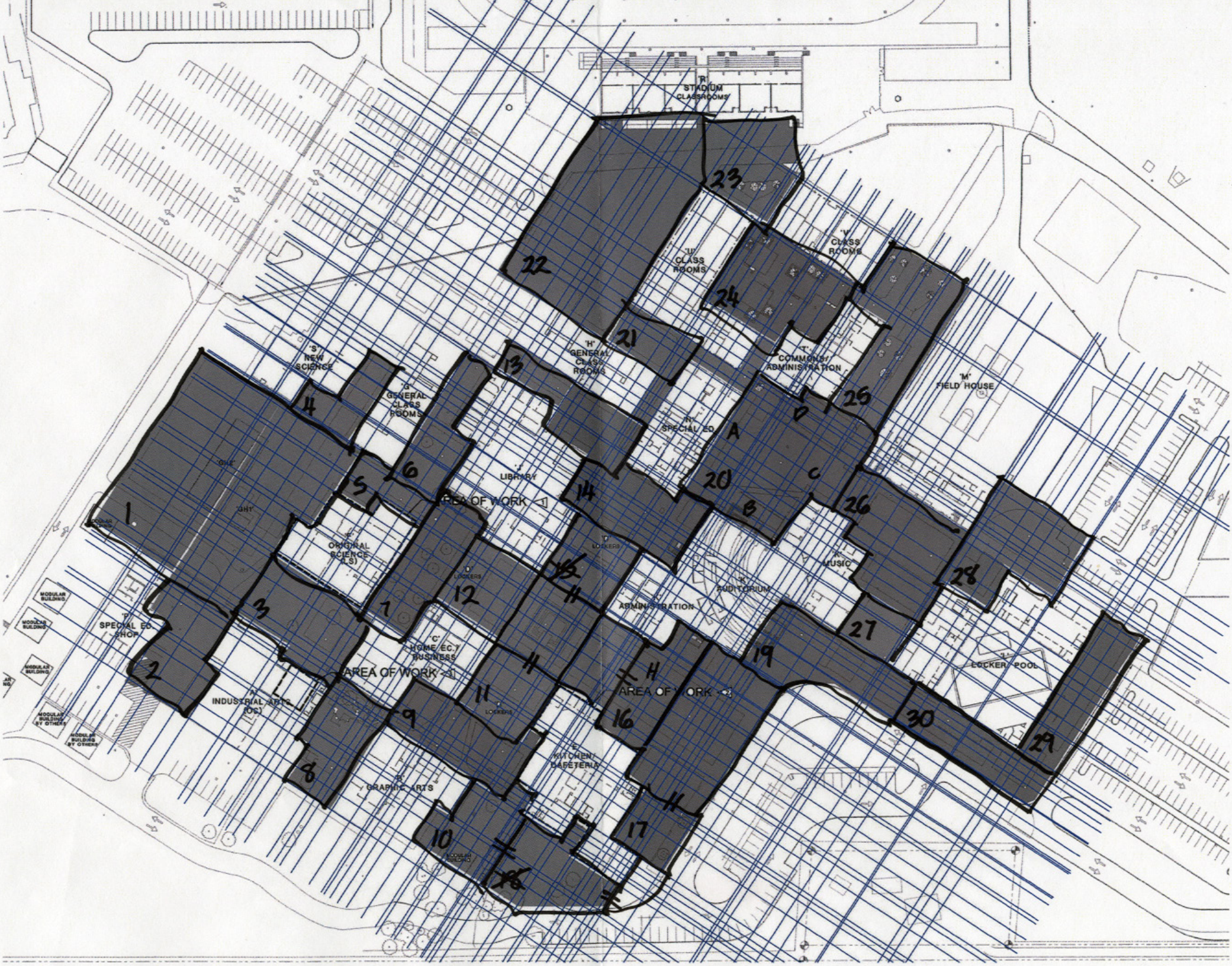
Design Process

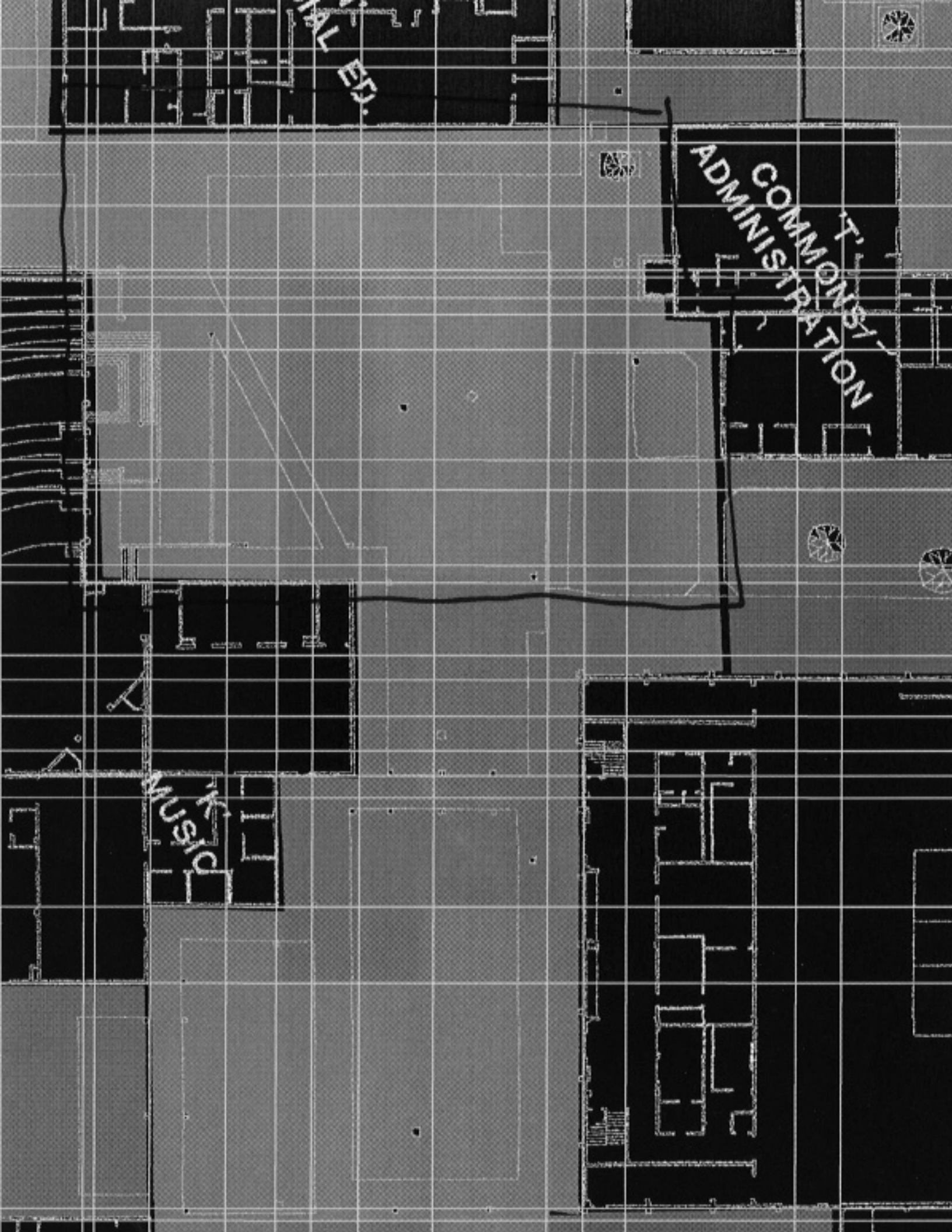

'S' NEW SCIENCE
'G' GENERAL CLASS ROOMS
'H' GENERAL CLASS ROOMS
'U' CLASS ROOMS
'V' CLASS ROOMS
'T' COMMONS/ ADMINISTRATION
'M' FIELD HOUSE
'N' SPECIAL ED.
'GH2'
'GH1'
'J' LIBRARY
AREA OF WORK 1
'F' ORIGINAL SCIENCE (LS)
'D' LOCKERS
'D' LOCKERS
'K' MUSIC
'K' AUDITORIUM
'K' ADMINISTRATION
MODULAR BUILDING
'P' SPECIAL ED. SHOP
'C' HOME EC./ BUSINESS
AREA OF WORK 3
AREA OF WORK 2
'L' LOCKER/ POOL
'A' INDUSTRIAL ARTS (OS)
'D' LOCKERS
'E' KITCHEN/ CAFETERIA
'B' GRAPHIC ARTS
MODULAR BUILDING BY OTHERS

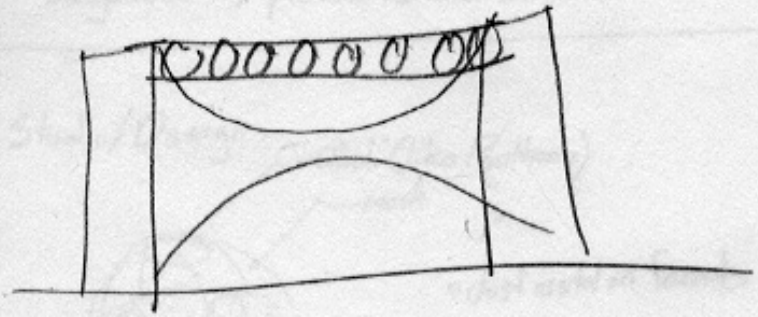
OVERALL PLAN
SCALE: 1" = 50'-0"

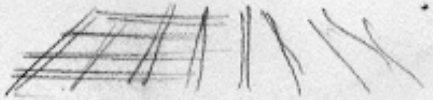
REC
THIS
CONDITIO
RECORD
CONJU

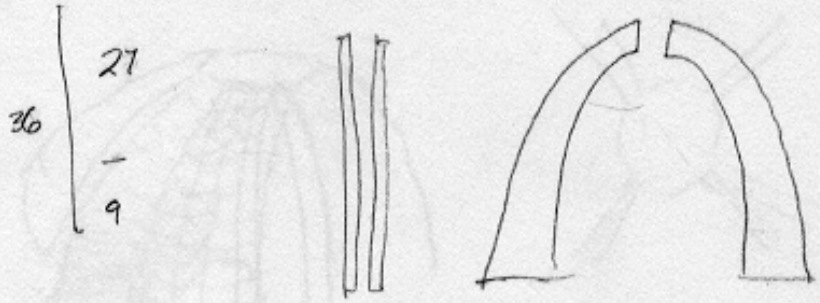

'R'
STADIUM
CLASSROOMS
'V'
CLASS
ROOMS
'U'
CLASS
ROOMS
'H'
GENERAL
CLASS
ROOMS
'T'
COMMONS/
ADMINISTRATION
'M'
FIELD HOUSE
'S'
NEW
SCIENCE
'G'
GENERAL
CLASS
ROOMS
'N'
SPECIAL ED.
'J'
LIBRARY
'GH2'
'GH1'
AREA OF WORK <1>
'F'
ORIGINAL
SCIENCE
(N.S)
'I'
LOCKERS
'D'
LOCKERS
'K'
MUSIC
'K'
AUDITORIUM
ADMINISTRATION
'L'
LOCKER POOL
AREA OF WORK <2>
'B'
SPECIAL ED.
SHOP
'C'
HOME EC./
BUSINESS
AREA OF WORK <1>
'A'
INDUSTRIAL ARTS
(OC)
'P'
LOCKERS
'E'
KITCHEN/
CAFETERIA
'B'
GRAPHIC ARTS
MODULAR BUILDING
MODULAR BUILDING
MODULAR BUILDING
MODULAR BUILDING
BY OTHERS
MODULAR BUILDING
BY OTHERS
MODULAR BUILDING

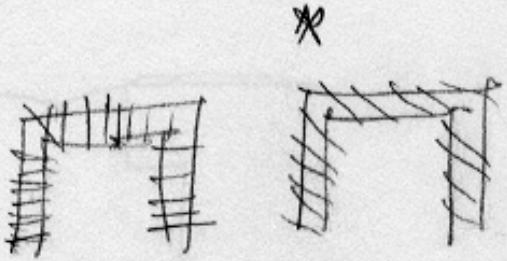

'R' STADIUM CLASSROOMS
'U' CLASS ROOMS
'V' CLASS ROOMS
'H' GENERAL CLASS ROOMS
'S' NEW SCIENCE
'G' GENERAL CLASS ROOMS
'T' COMMONS/ ADMINISTRATION
'M' FIELD HOUSE
'N' SPECIAL ED.
LIBRARY
AREA OF WORK
'F' ORIGINAL SCIENCE (LS)
'K' AUDITORIUM
'L' MUSIC
ADMINISTRATION
SPECIAL ED. SHOP
'C' HOME EC./ BUSINESS
INDUSTRIAL ARTS (OS)
LOCKER POOL
KITCHEN/ CAFETERIA
'D' GRAPHIC ARTS
MODULAR BUILDING
MODULAR BUILDING BY OTHERS

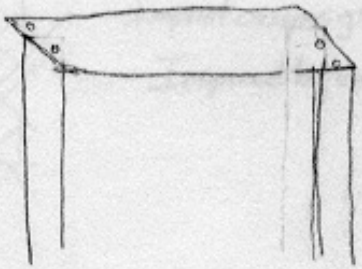

COMMONS
ADMINISTRATION
MUSIC

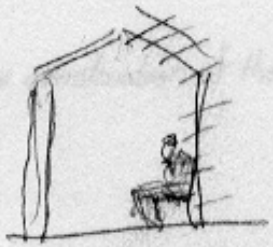












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223

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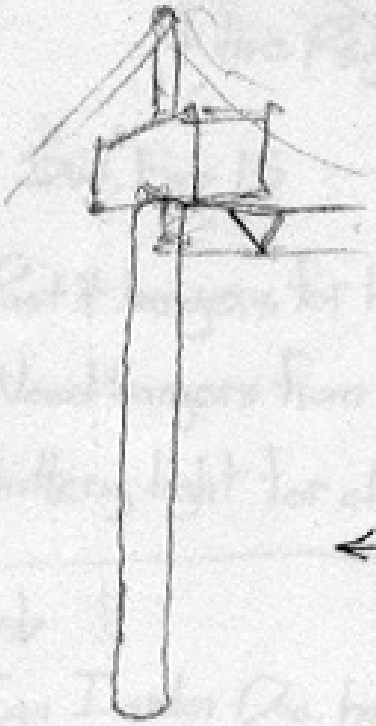
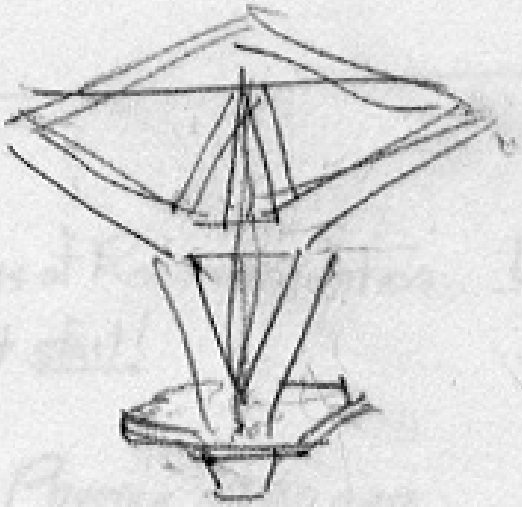
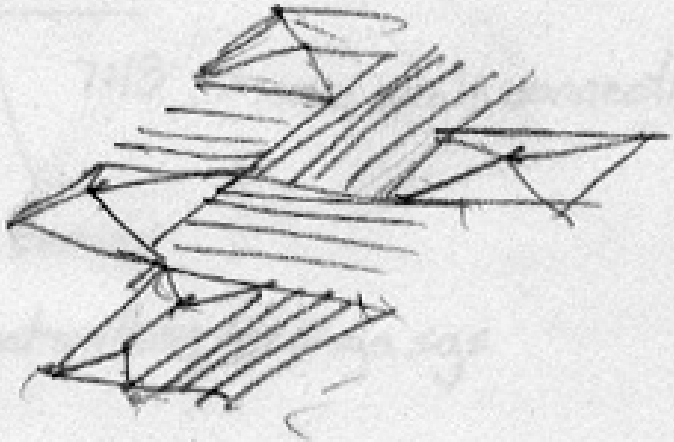


Timber holding HVAC

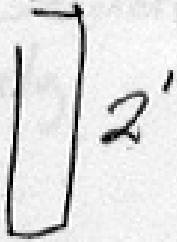
← In blue spaces

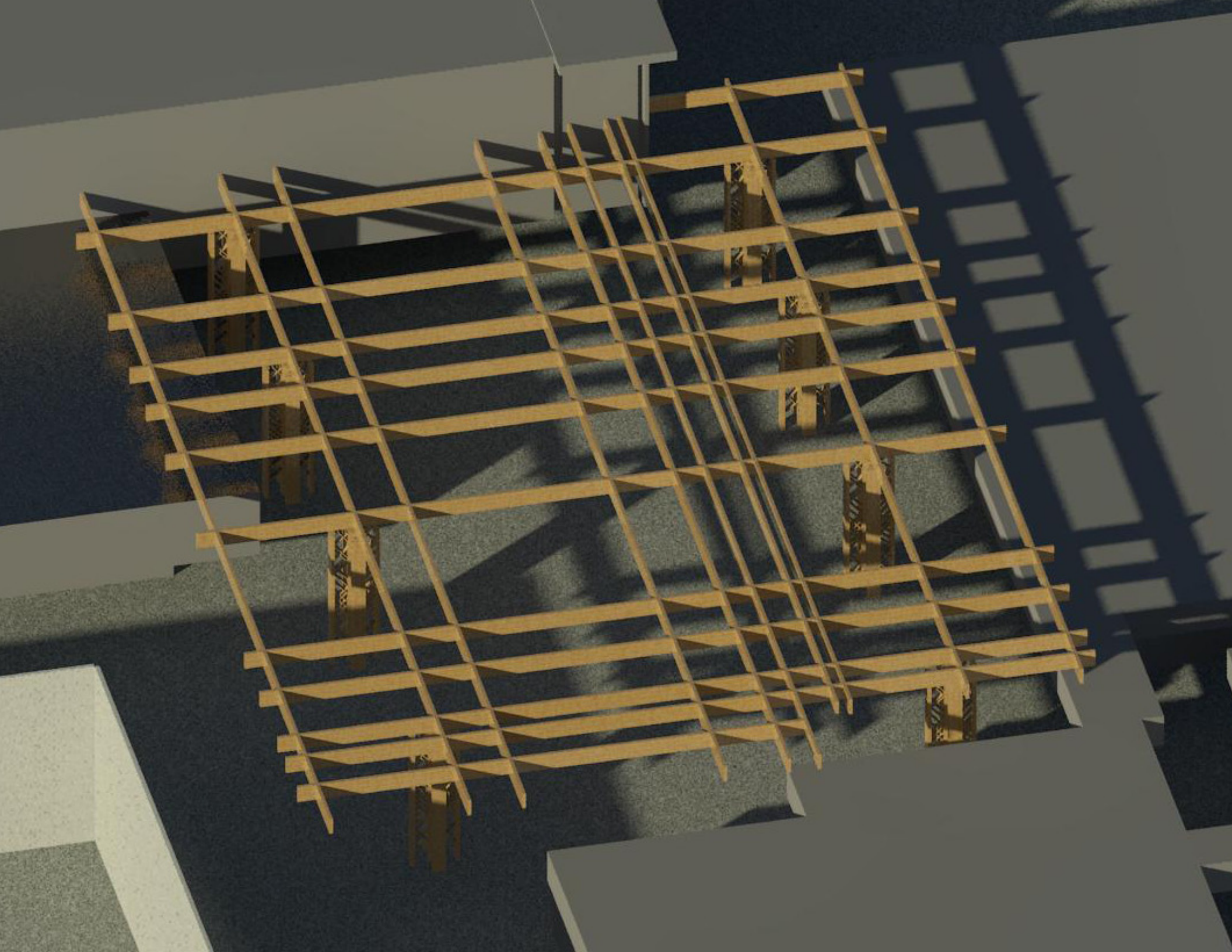


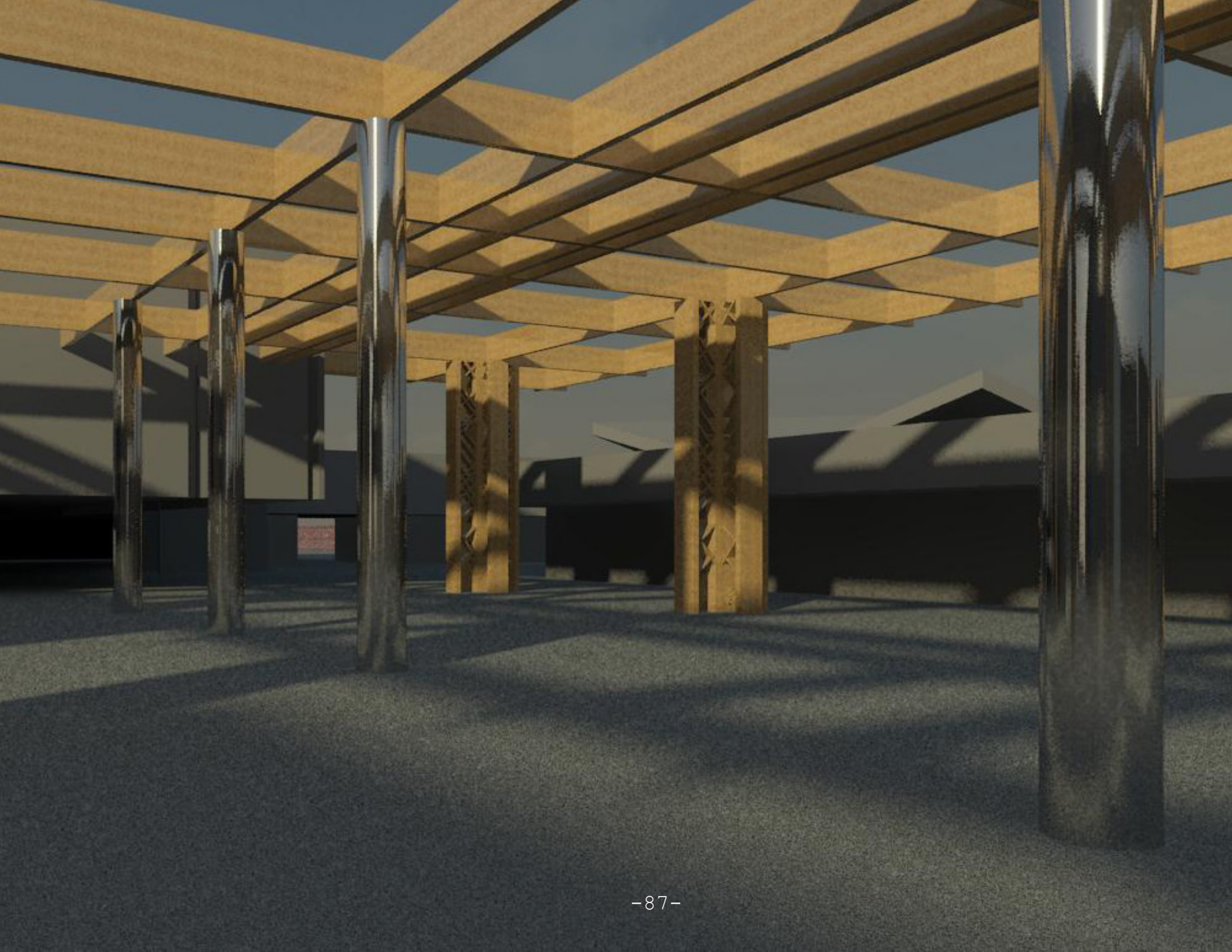
← In Gree
spaces

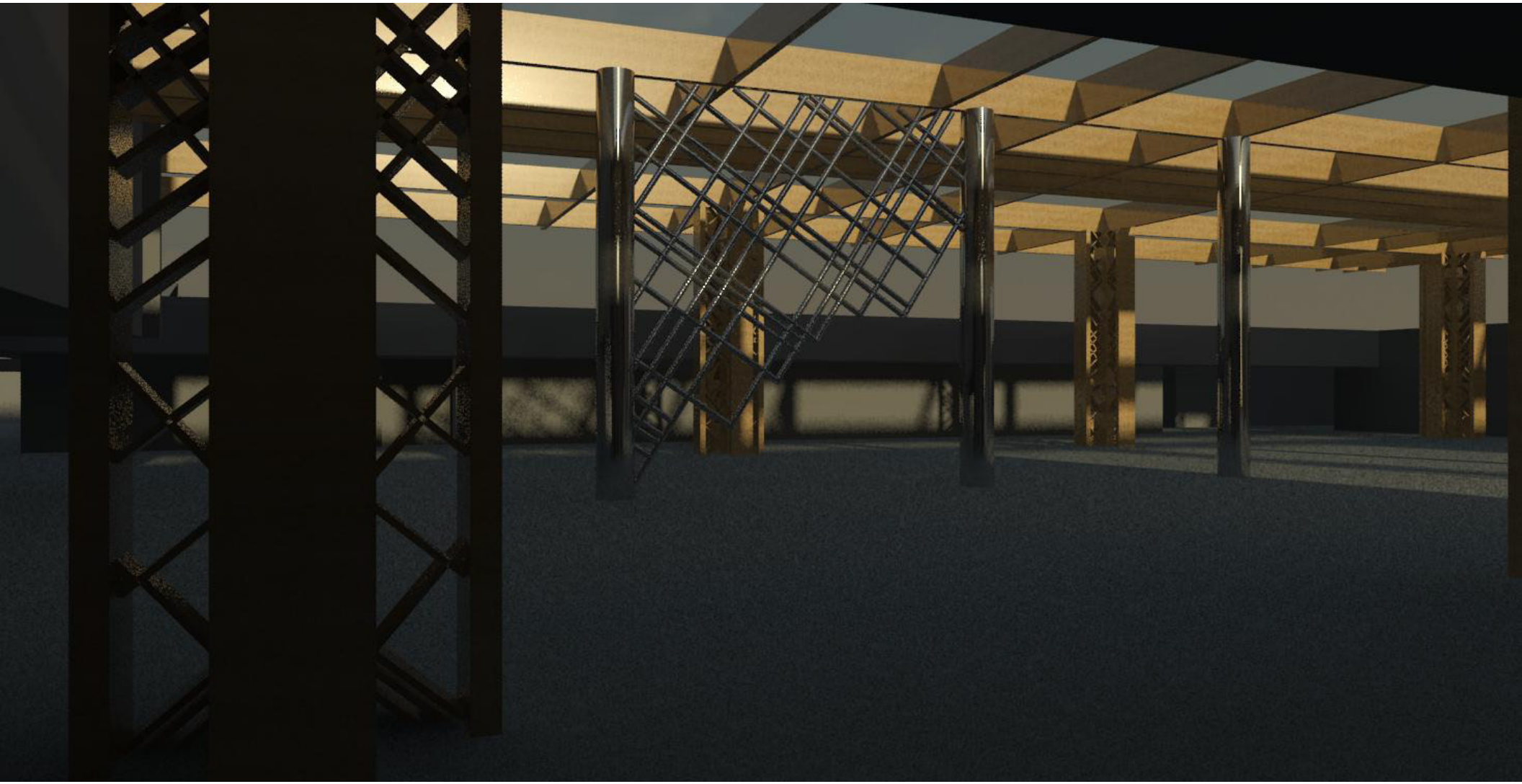


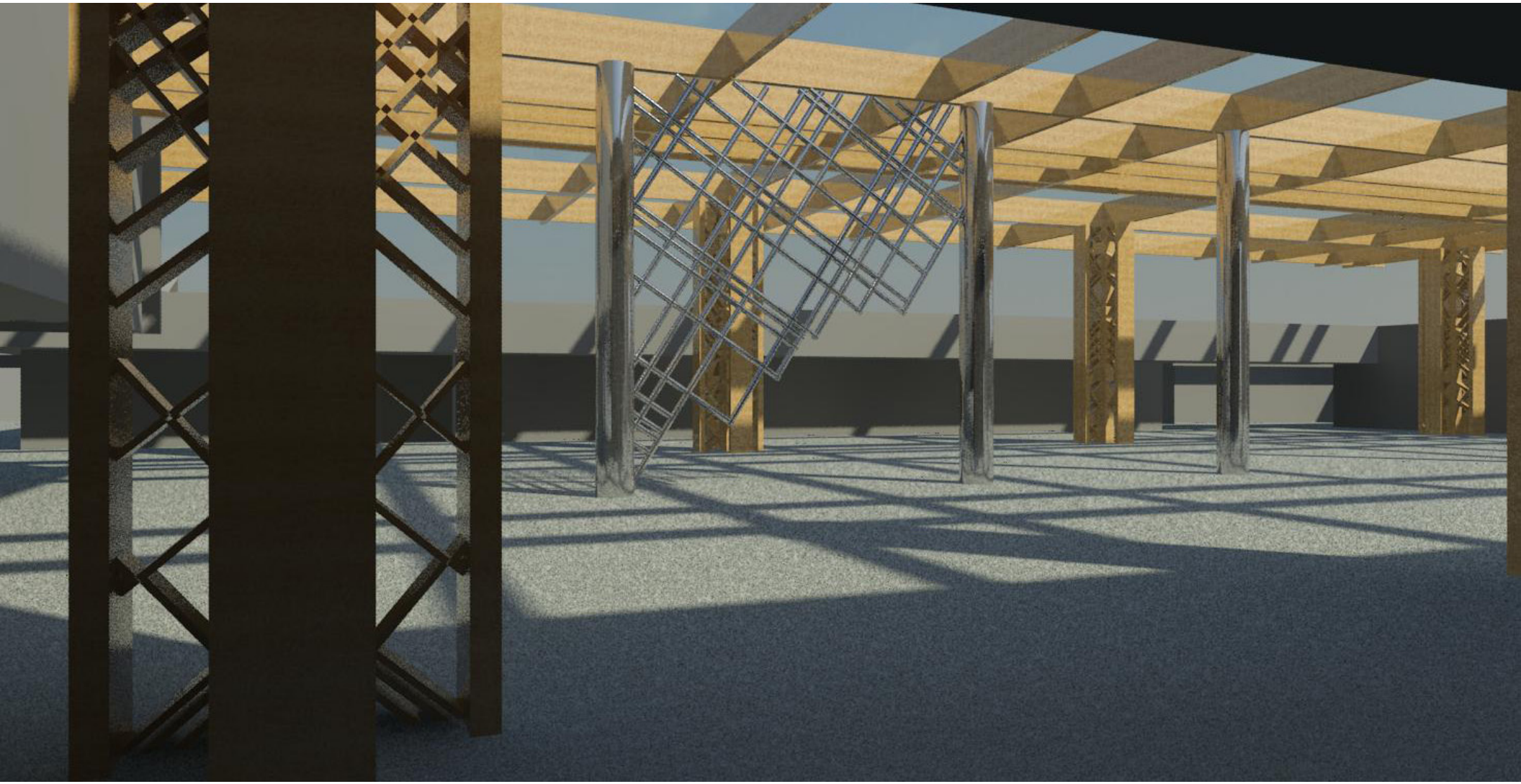
40' span / 4 colums for
24" x 30 lam - deep

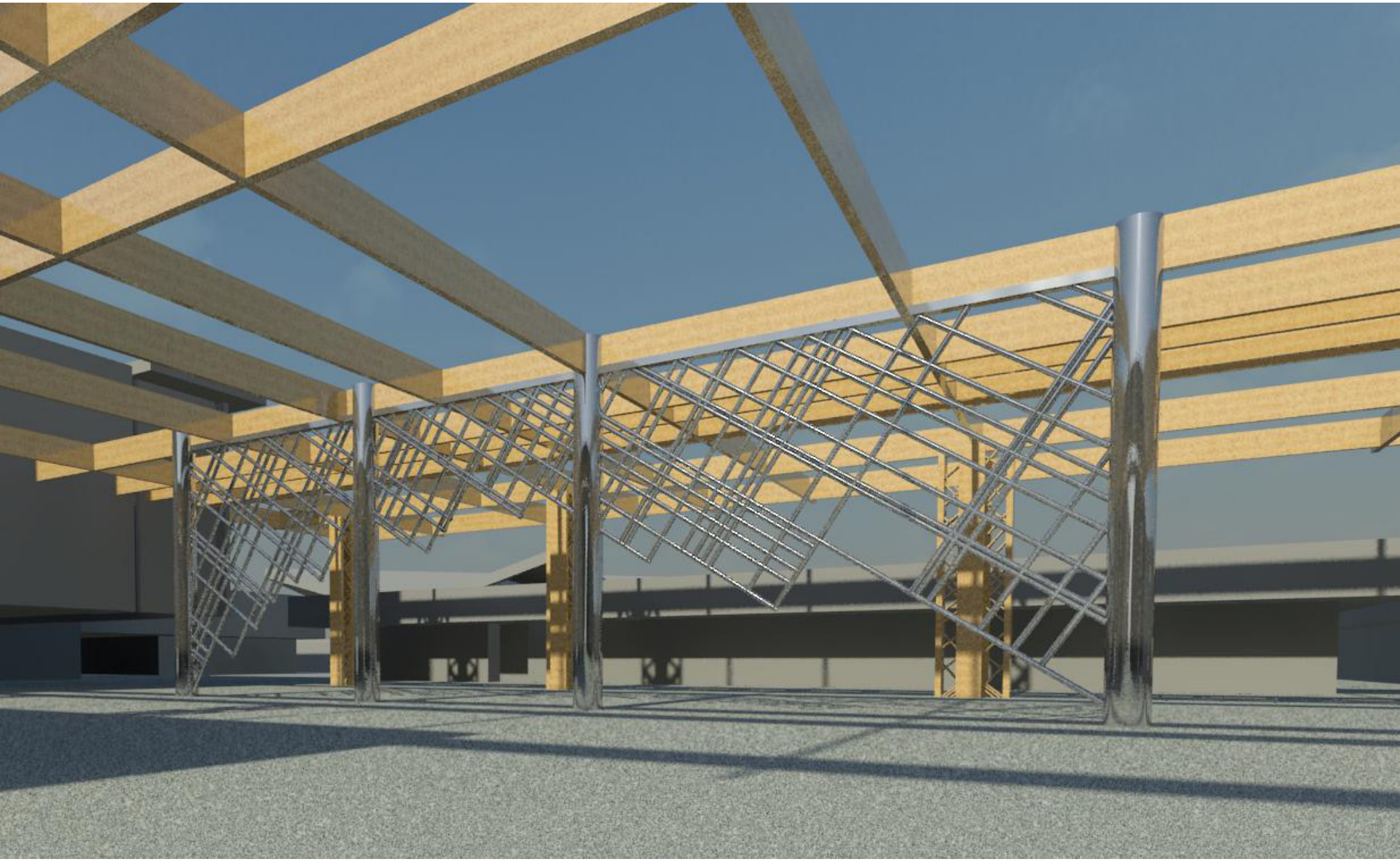


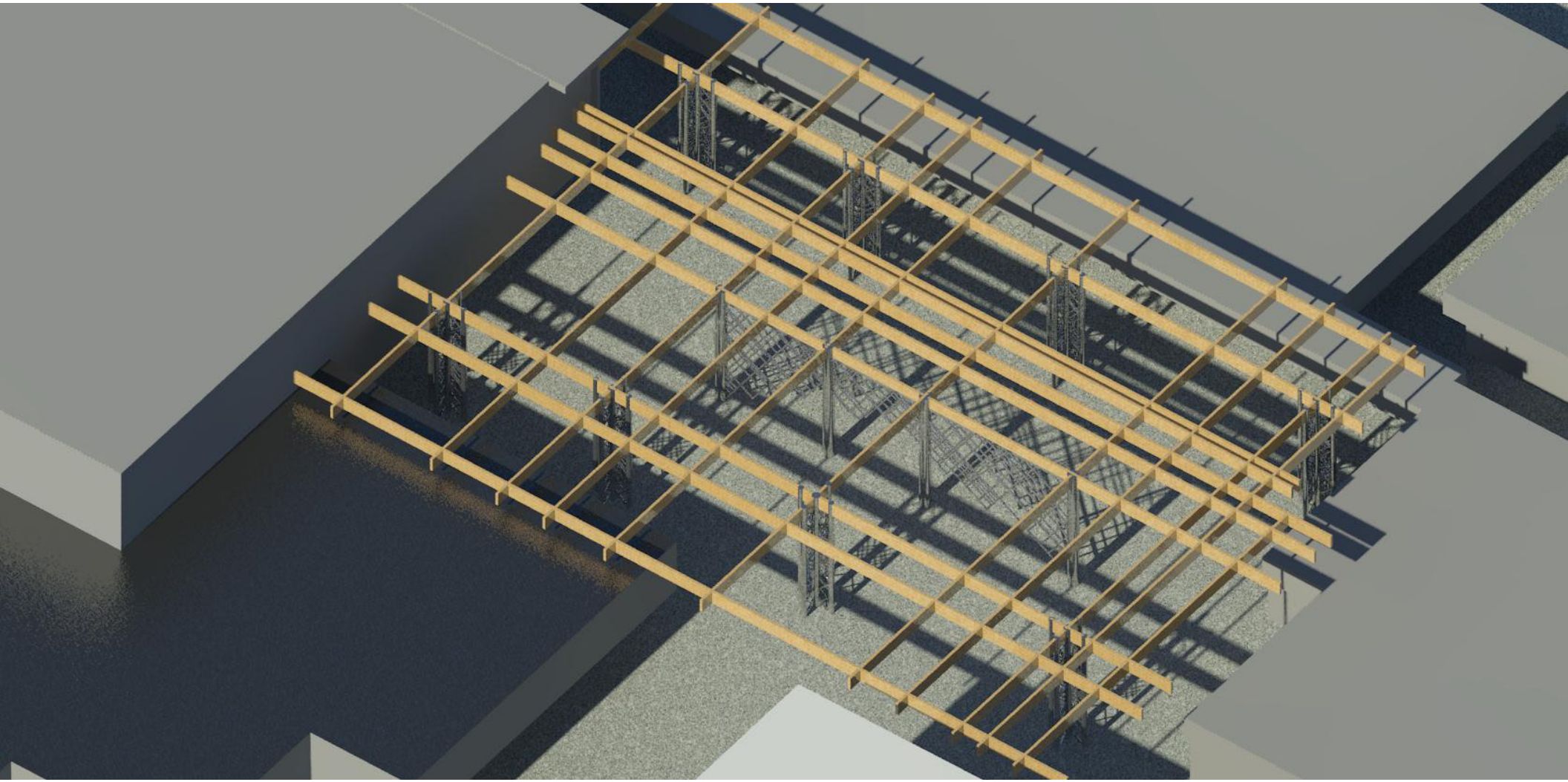






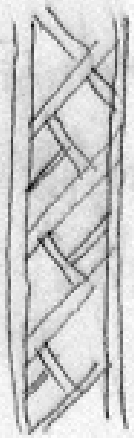


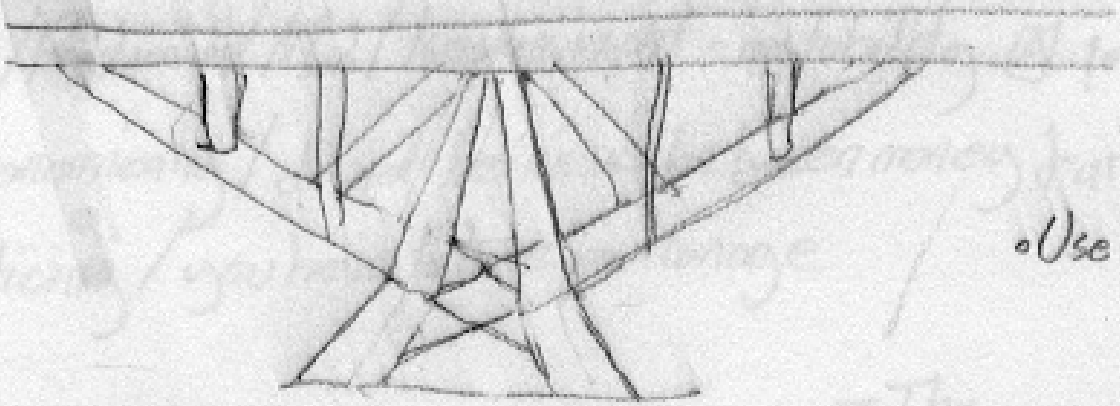




= Fri, Feb 11

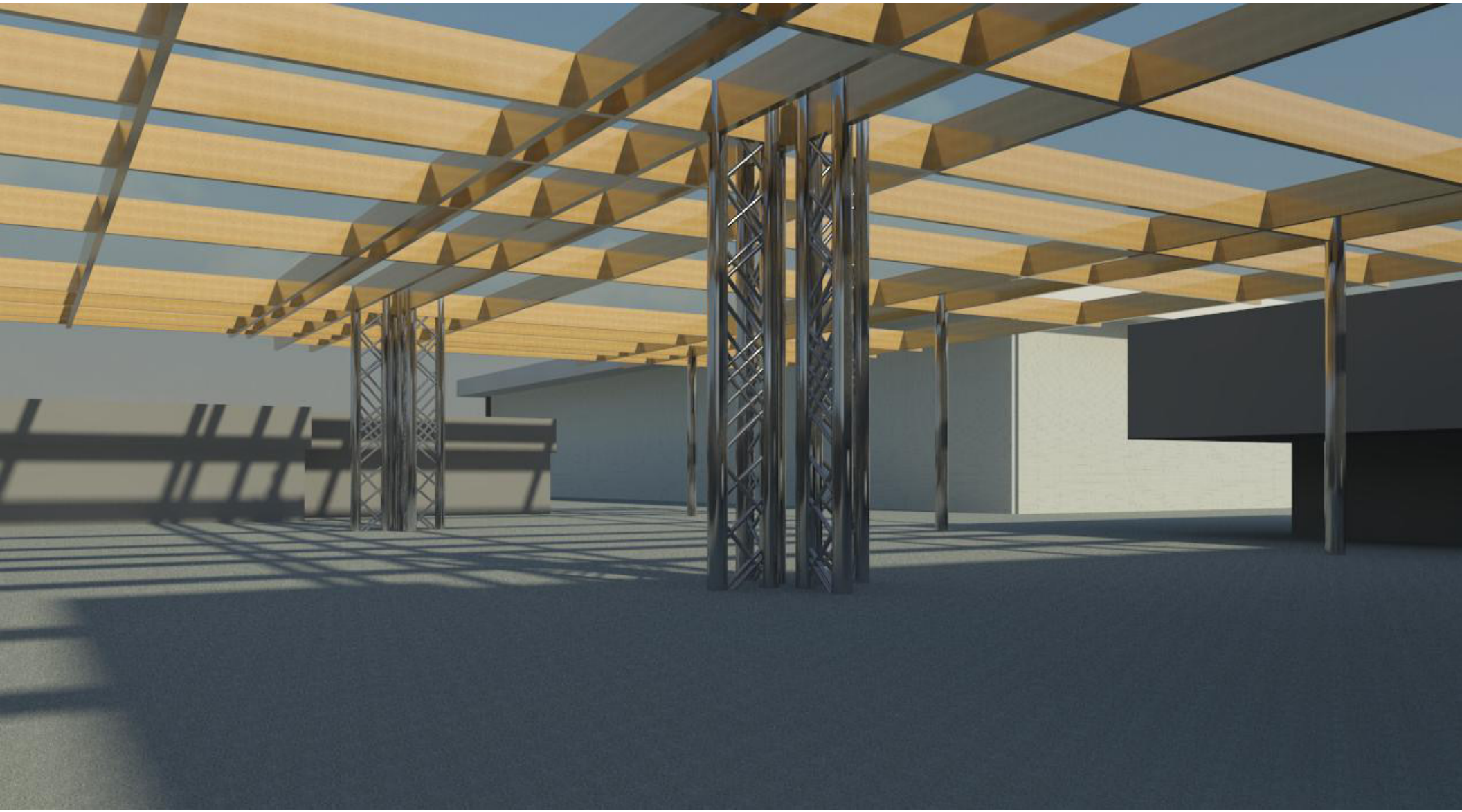
10:30 Marcel Breur's concrete structure tree at Library of St. John's

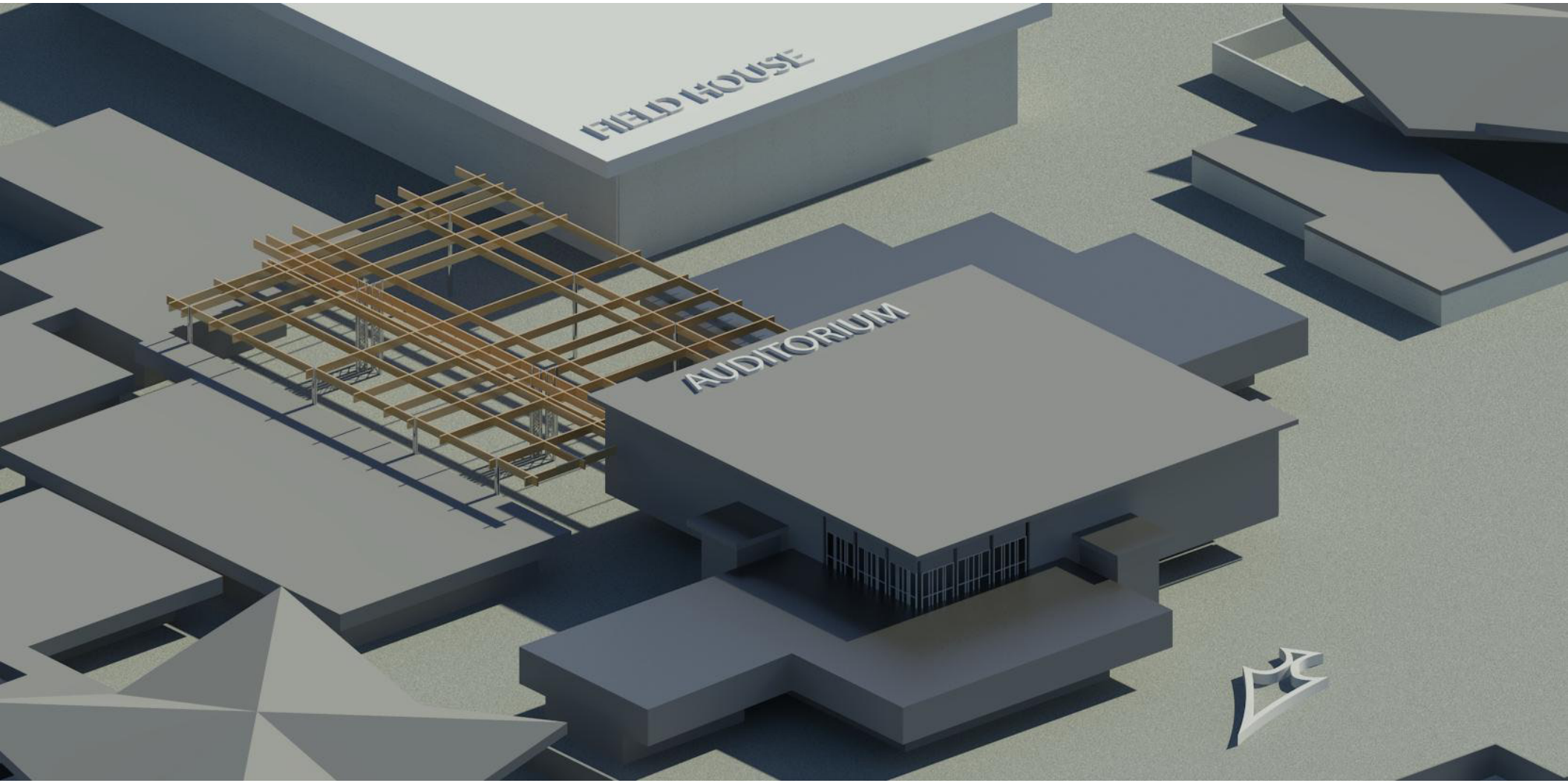


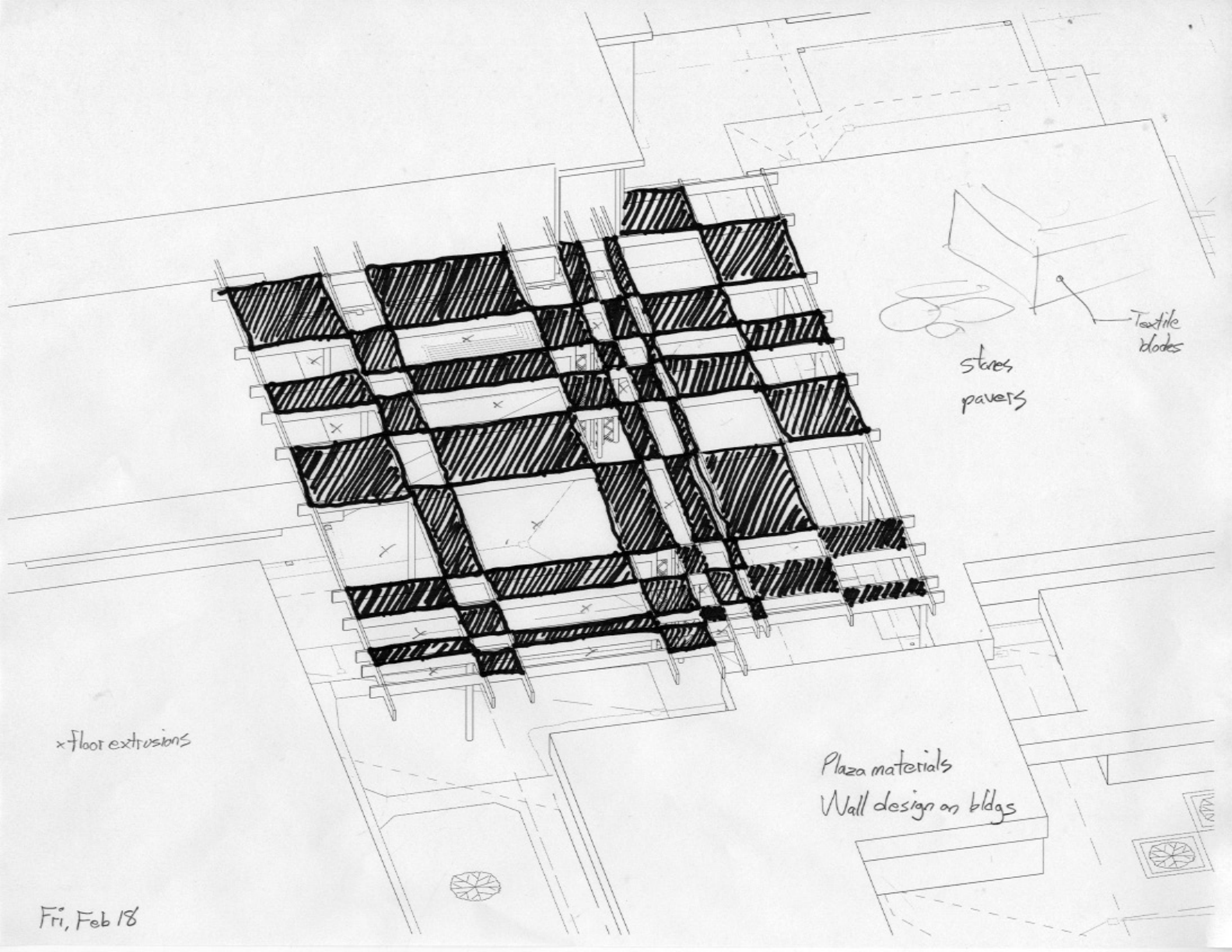


• Use grid?

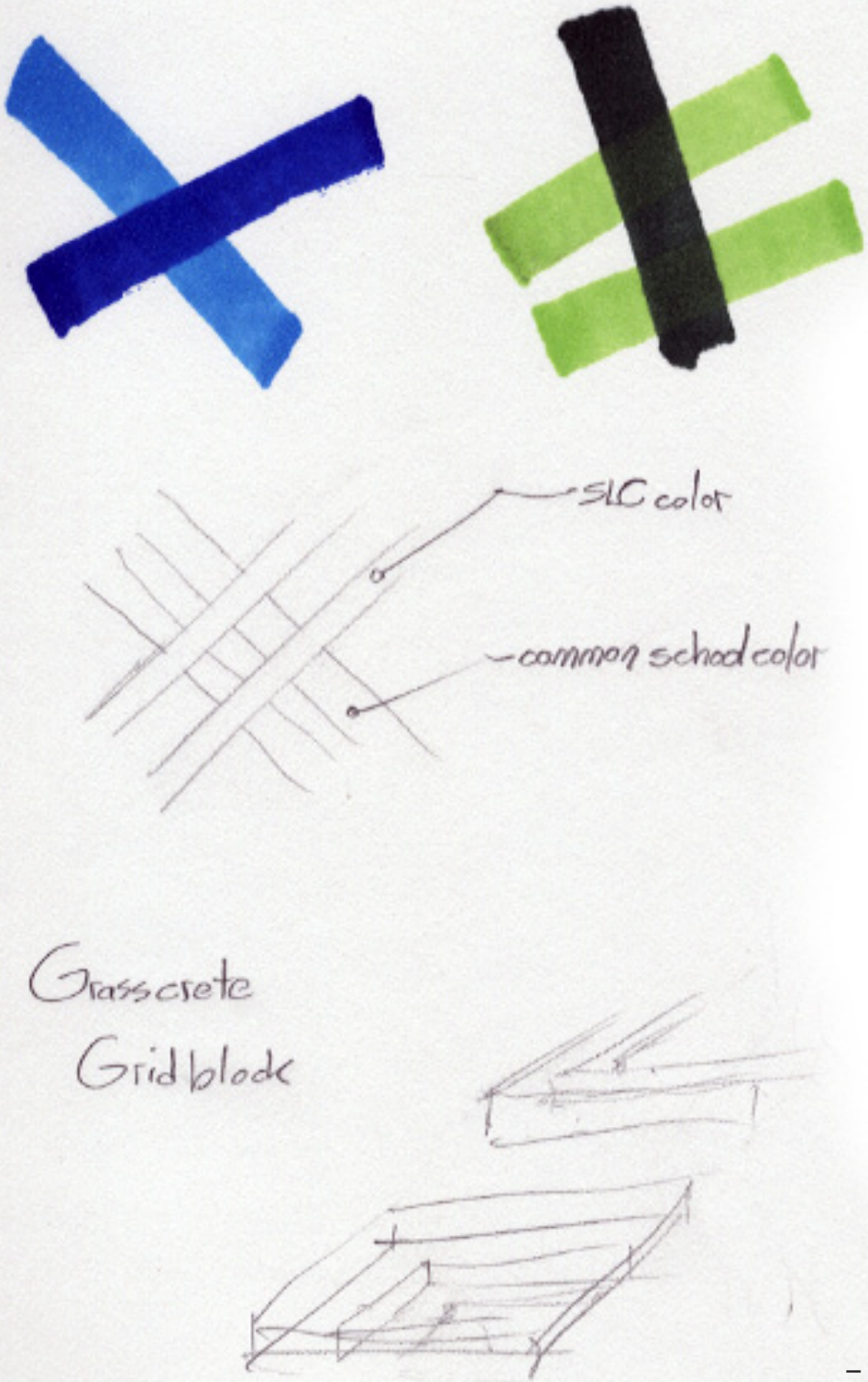
mathias.fitzer@gmail.com




FIELDHOUSE
AUDITORIUM


Textile
blades
stores
pavers
x floor extrusions
Plaza materials
Wall design on bldgs

Fri, Feb 18



Colors
Astra-Glaze-SW+®

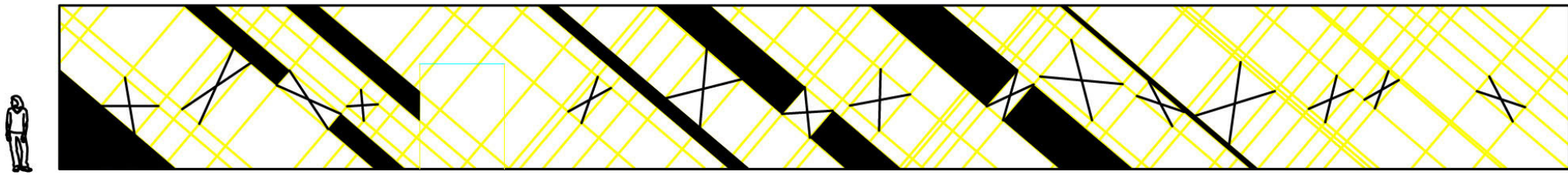
TRENWYTH
premium architectural masonry units

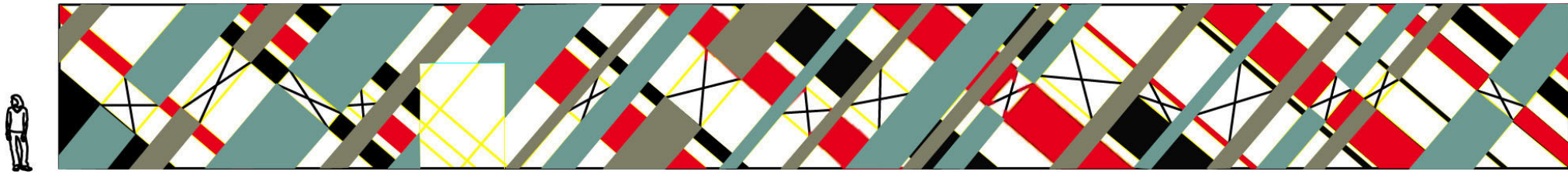
Note: Please specify from actual sample.

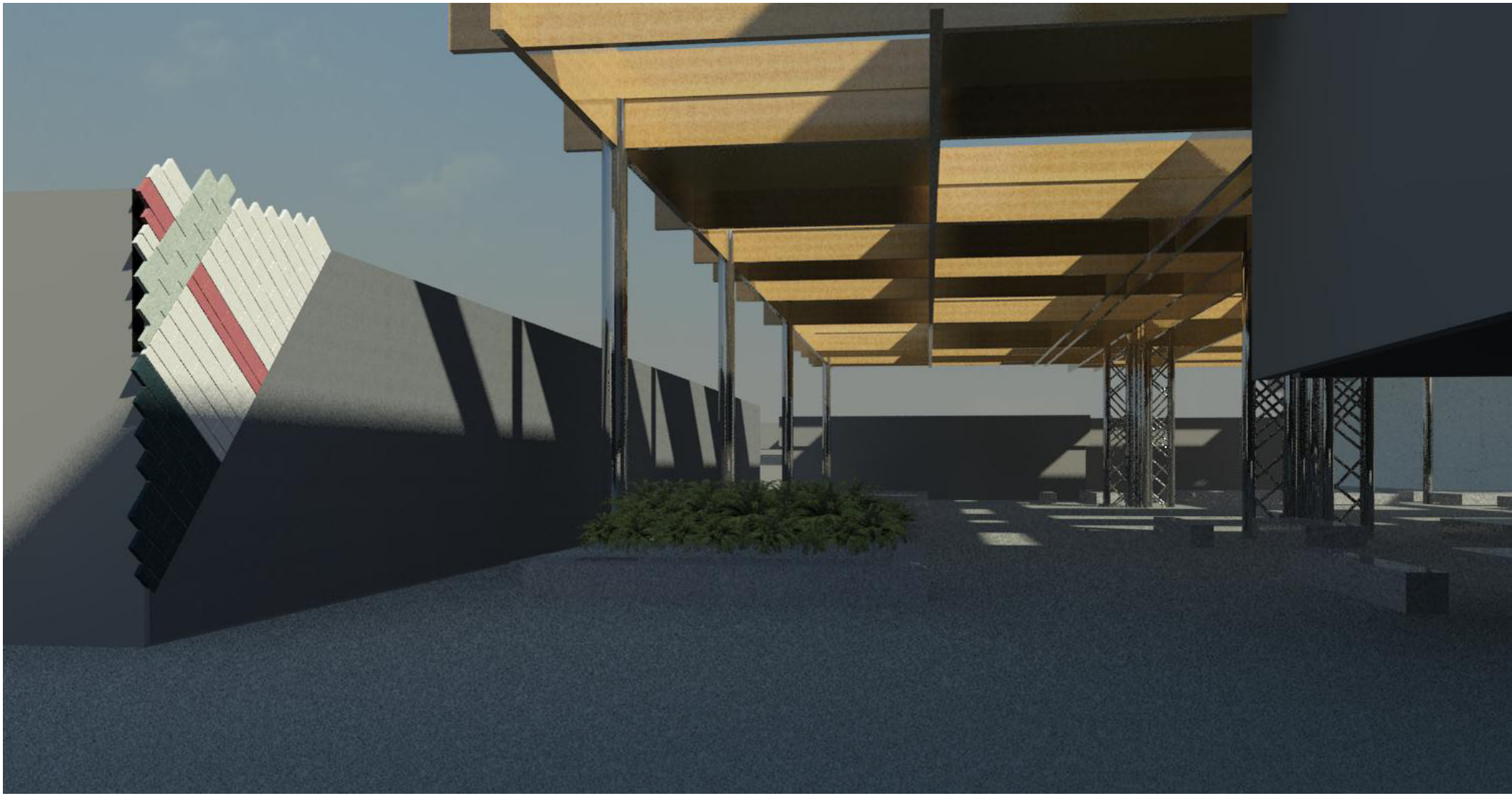
Cool Cream 51.8%	Terra Cotta 13.5%	Soft Rose 16.5%	Silver Gray 46.3%	Valley Forge Blue 9.4%	Sunbath 56.5%
Vanilla 53.6%	Vivid Red 7.8%	Chelsea Pink 25.5%	Pewter 21.1%	Cosmic Blue 8.8%	Avocado 21.4%
Buttermilk 51.8%*	Garnet 8.4%	Ruby Red 9.5%	Earl Grey 9.5%	Ultra Blue 5.4%	Mountain Meadow 26.7%
Wheatfield 41.8%	Russett 12.6%	Orchid Petal 36.8%	Charcoal 6.3%	Frosted Jade 19.8%	Willow Leaf Green 10.4%
Lemon Peel 47.6%	Chili Pepper 10.5%	Lavender 26.2%	Ebony 3.8%	Island Green 36.2%	Ivory 50.7%
Golden Honey 51.1%	Peach Fuzz 40.6%	Royal Purple 17.3%	Pastel Blue 42.8%	Misty Green 45.7%	Safari Beige 34.8%
Sunflower 35.4%	Orange Cream 42.1%	Snow White 66.4%	Baby Blue 36.3%*	Silk Green 46.7%	Sand 34.8%
Deep Marigold 31.5%	Burwick Blush 48.6%	Whitman White 61.5%	Rothwell Blue 22.8%	Caribbean Reef 21.3%	Coastline 26.3%
Coral Flower 44.7%	Cherokee Tan 29.6%	Egg Shell 54.0%	Fountain Blue 20.7%	Riviera 17.9%	Pebble 27.3%
Desert Rose 40.8%	Warm Spice 16.1%	Oatmeal 51.4%	Azure Breeze 18.2%	Teal 7.7%	Clay 28.5%
Light Sienna 23.7%	Canella 18.3%	Green Speckle 50.7%	Diamond Blue 11.0%	Sea Green 19.4%	British Fog 21.0%
Sedona Clay 29.8%	Mahogany 12.3%	Custom Red 52.3%	Rich Blue 12.6%	Mallard Green 15.4%	Dark Granite 18.1%
Paprika 29.4%	Autumn Brown 11.6%	Custom Blue 52.3%	Cobalt Blue 18.1%	Rain Forest 16.2%	Peanut Brittle 23.0%
Viking Red 17.0%	Copperstone 8.9%	Custom Speckle 50.7%	Bimini Blue 23.2%	Shamrock Green 14.2%	Wild Mushroom 11.2%
Fire Engine Red 9.5%	Coffee Bean 4.6%	Cappuccino 32.3%	Sapphire 11.4%	Holly Green 11.1%	Flint 8.2%
Banner Red 14.5%	Pink Ice 52.4%	Custom Gray 51.2%	Ocean Blue 21.5%	Moss Green 5.1%	

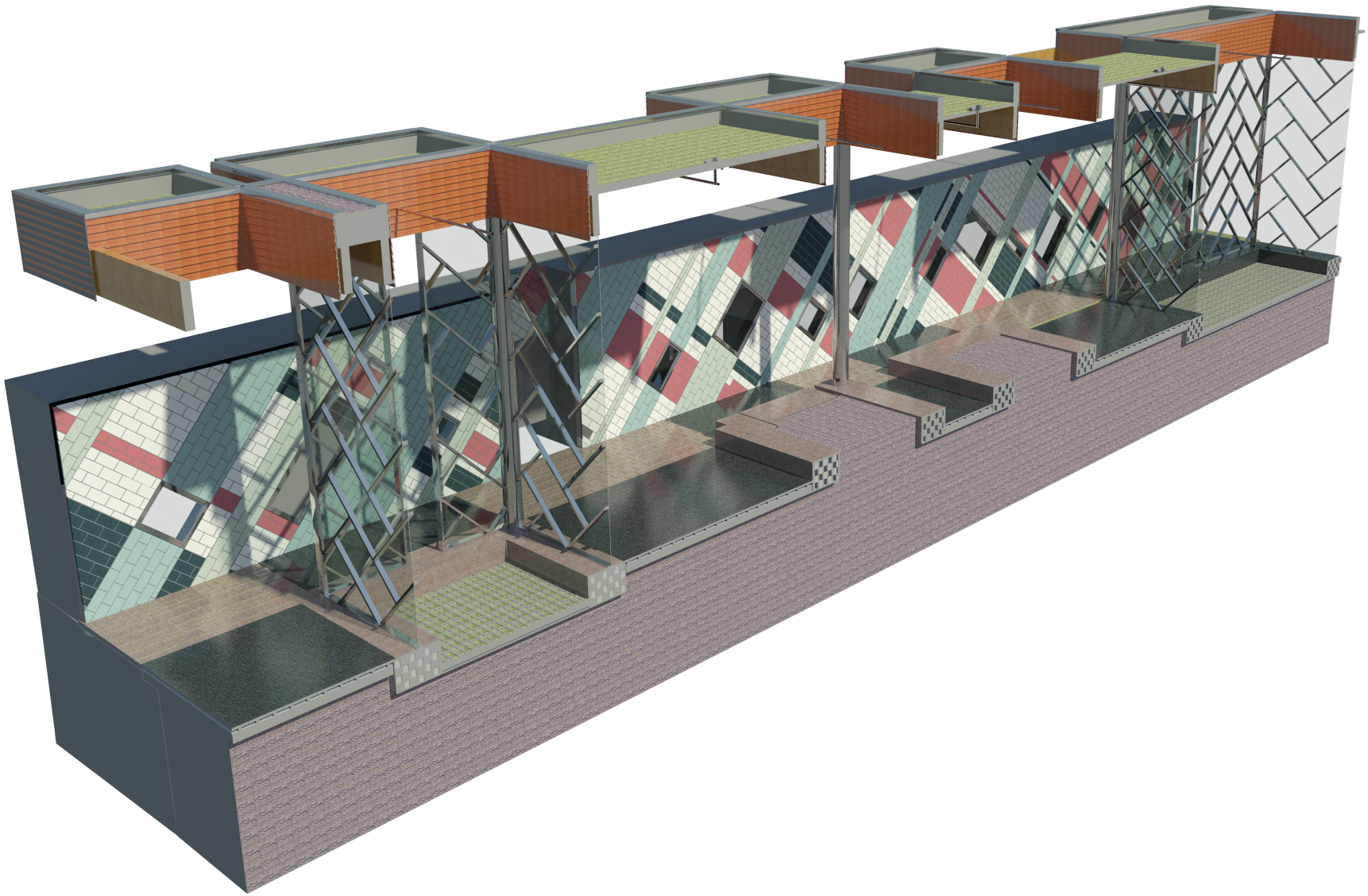
*LRV – Light Reflectance Value

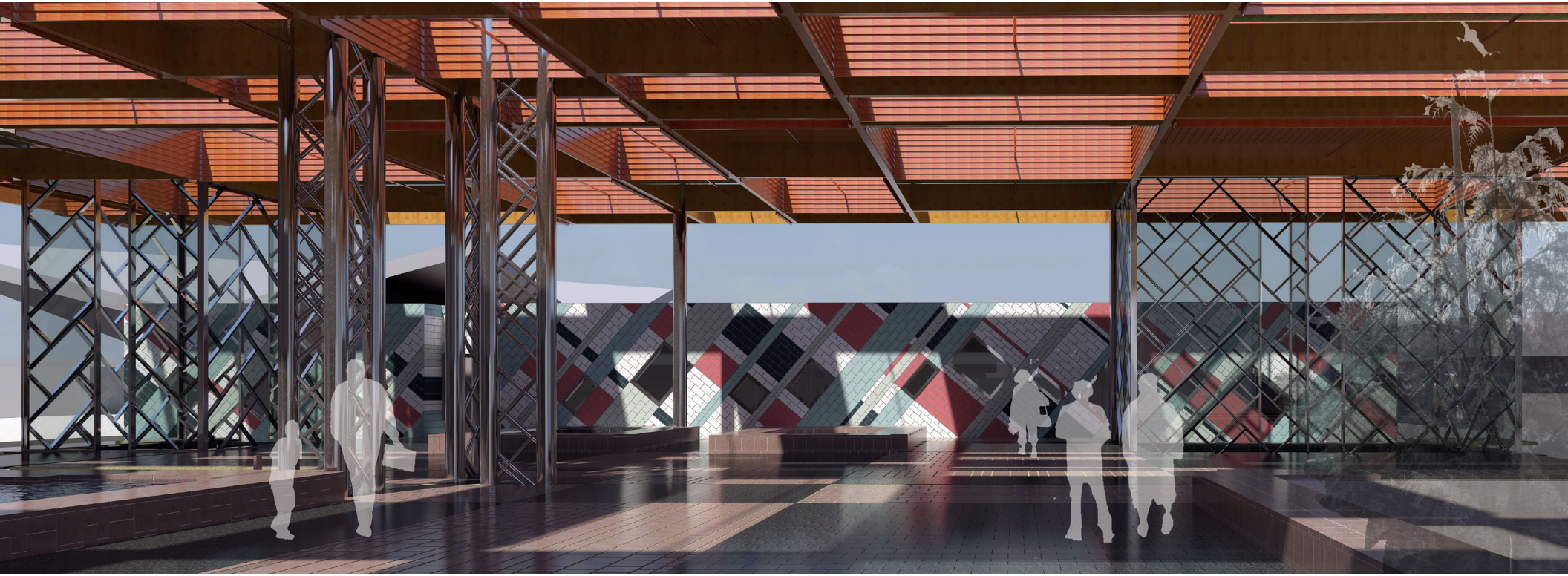
www.trenwyth.com



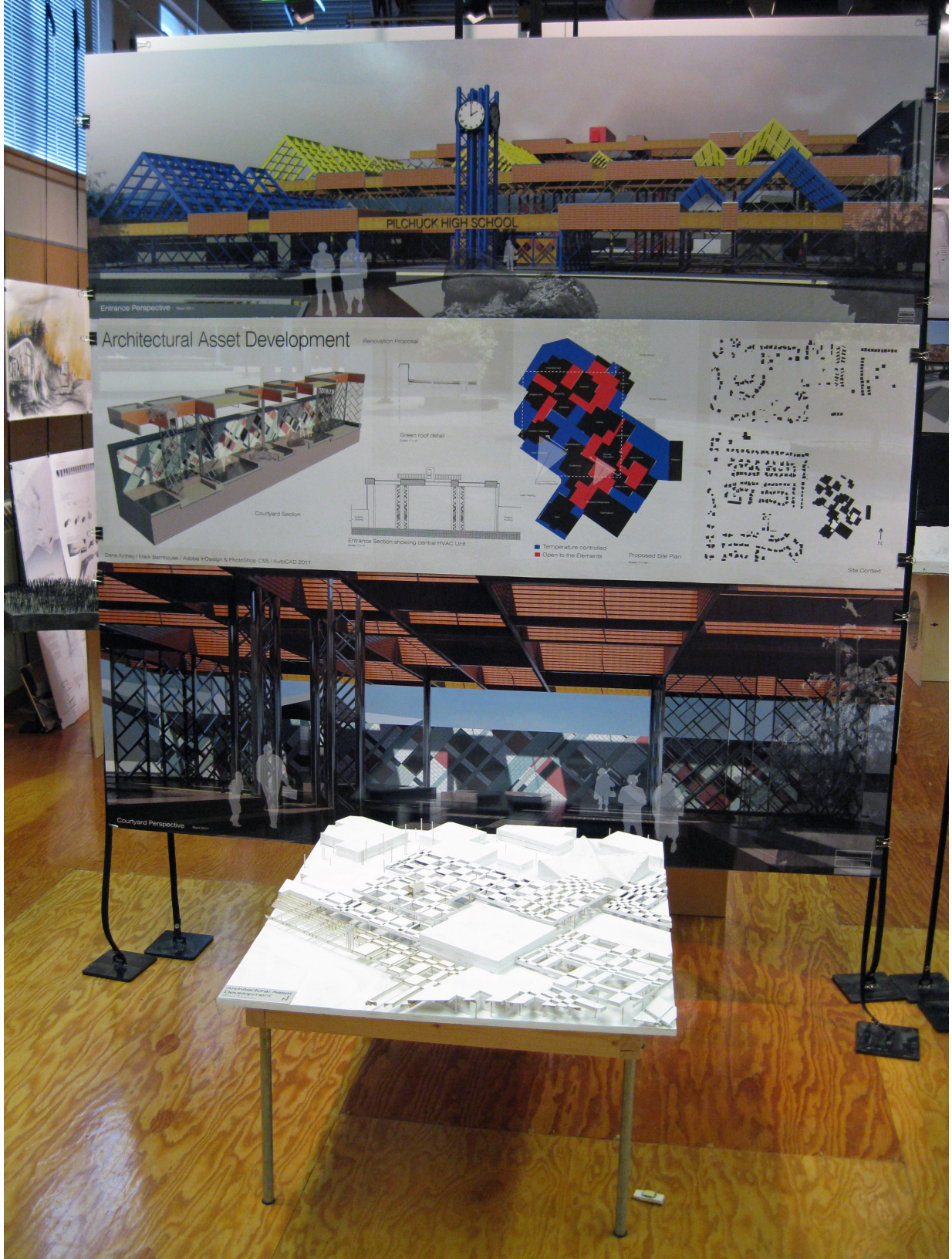


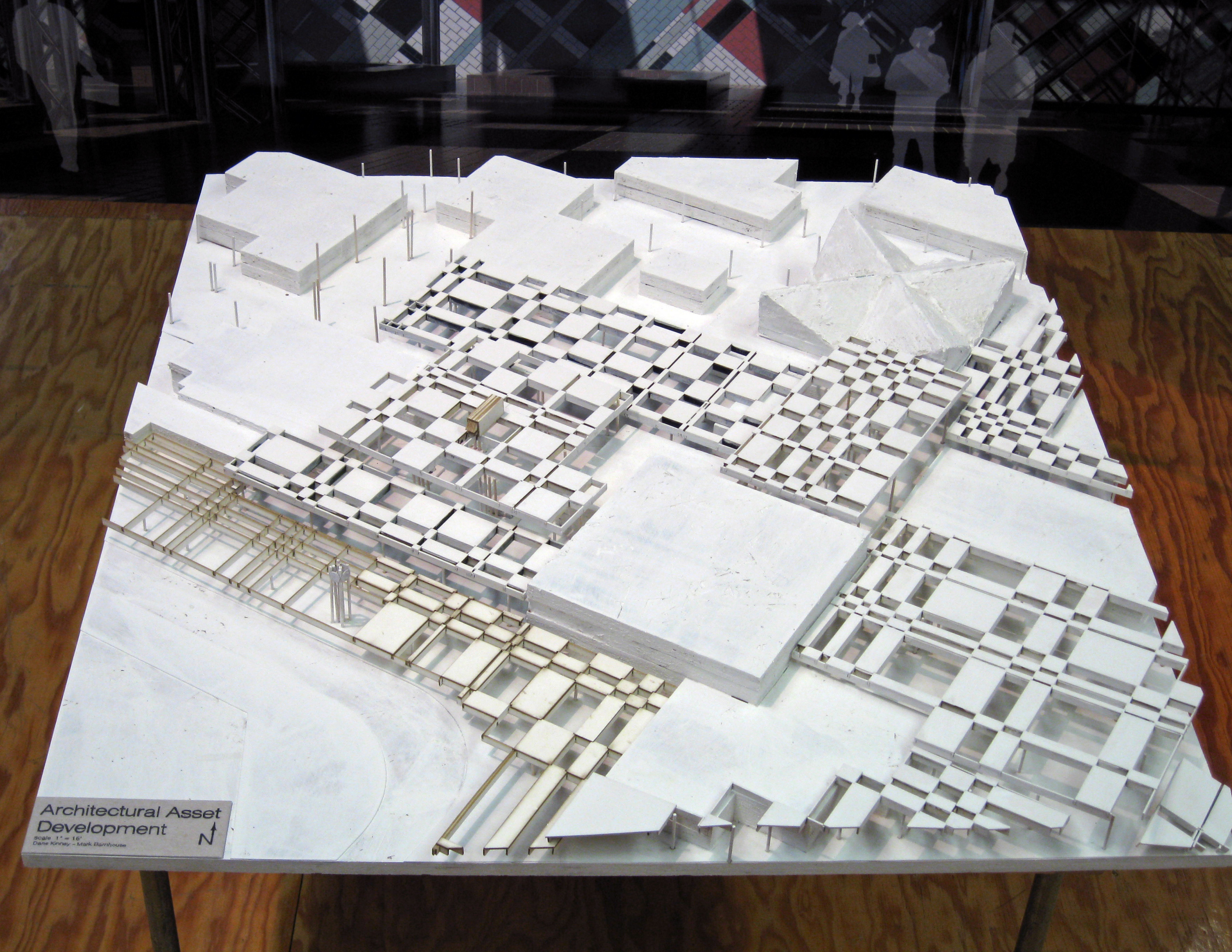


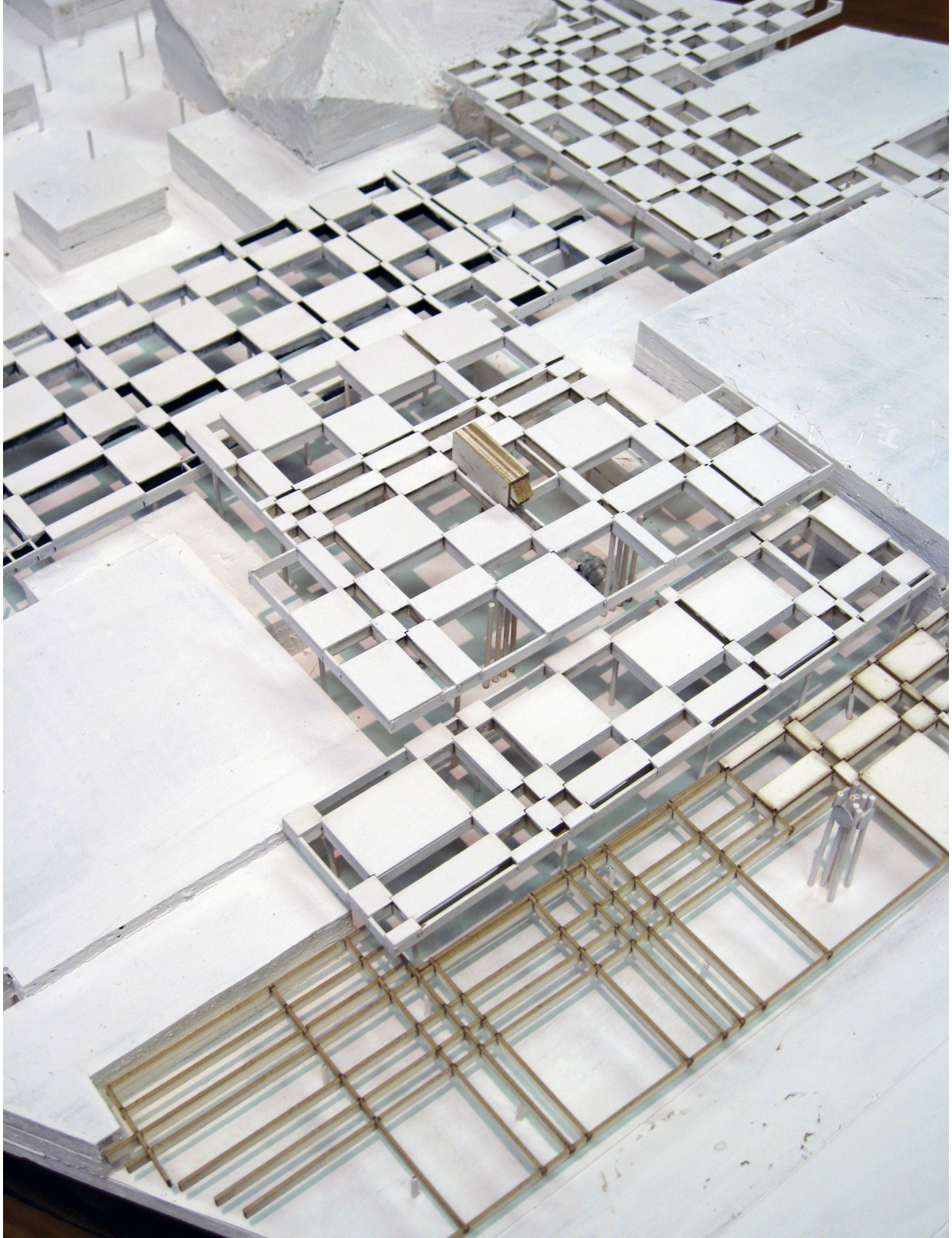





PILCHUCK HIGH SCHOOL


PILCHUCK HIGH SCHOOL
Entrance Perspective
Architectural Asset Development
Renovation Proposal
Green roof detail
Courtyard Section
Entrance Section showing central HVAC Unit
Temperature controlled
Open to the Elements
Proposed Site Plan
Site Context
Dane Kinney / Mark Barnhouse / Adobe InDesign & PhotoShop CS5 / AutoCAD 2011
Courtyard Perspective
Architectural Asset Development


Architectural Asset
Development
scale 1" = 16'
Dane Kinney – Mark Barnhouse
N



Previous Studio Experience

SECOND YEAR FALL 2006: Joan Vorderbruggen
Tea House - Fargo, ND
Rowing Club House - Minneapolis, MN
Mountain dwelling - Bear Lake, CO

SECOND YEAR SPRING 2007: Bakr Aly Ahmed
Dance Studio - Fargo, ND
Montessori School - Moorhead, MN

THIRD YEAR FALL 2007: Ron Ramsay
Fictional Town Development - Agincourt, IA
Shaker Barn Renovation - New Lebanon, NY

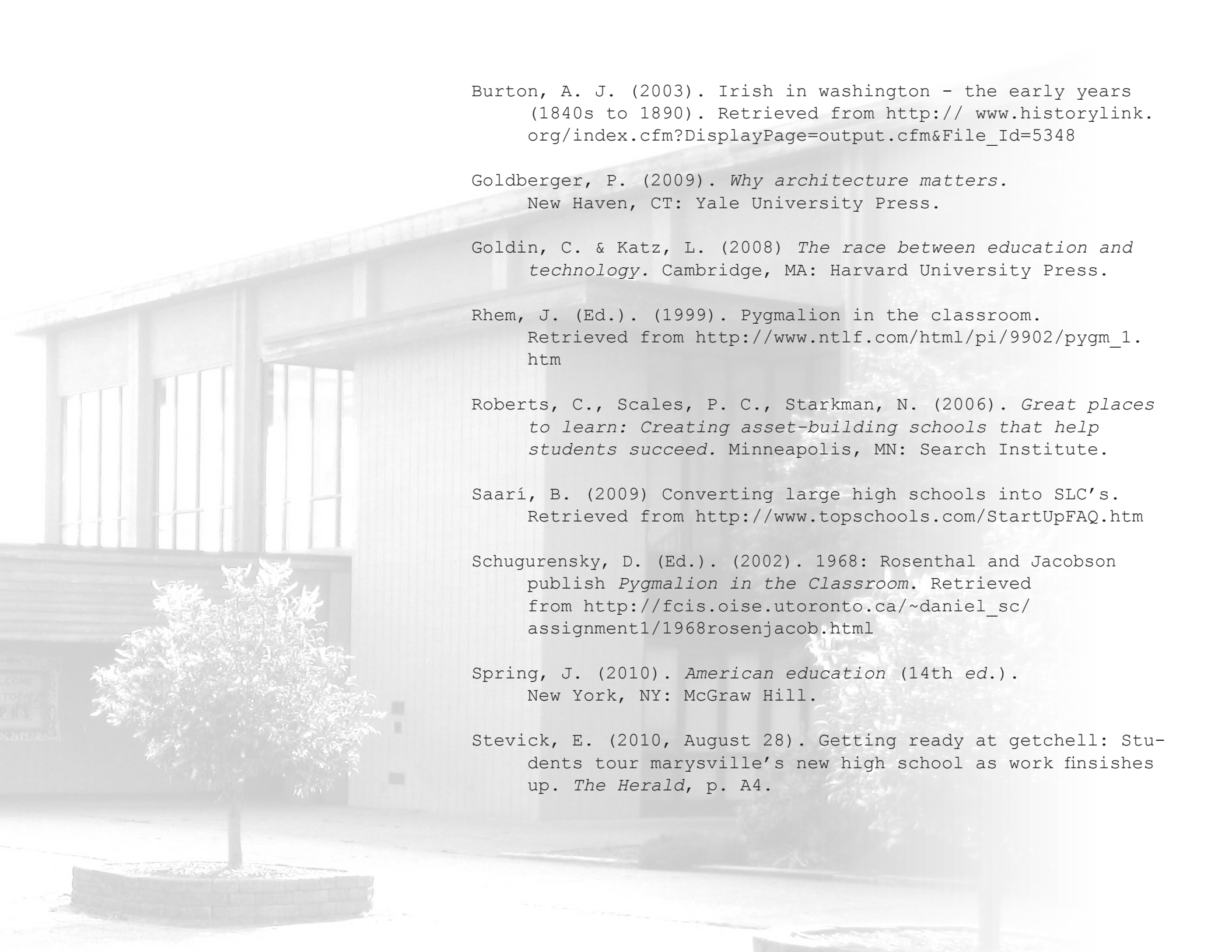
THIRD YEAR SPRING 2008: Steve Martens
Children's Museum - Fargo, ND
Fossil Conservation Laboratory
- Marmarth, ND

FOURTH YEAR FALL 2008: Darryl Booker
High-rise - San Francisco, CA

FOURTH YEAR SPRING 2009: Stephen Wischer
AVE Train Station - Barcelona, Spain

FIFTH YEAR FALL 2009: Mark Barnhouse
Water Resource Experiment Station
- Linton, ND

Sources



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(2010, December 3). The Park School. *Architectural Record.* Retrieved from http://archrecord.construction.com/projects/bts/archives/k-12/09_ParkSchool/default.asp?bts=K12

IMAGES

Figures 1.1, 1.4-1.10.
Brunswick Upper School. Architectural Record (2009). Retrieved on November 22, 2010 from http://archrecord.construction.com/projects/bts/archives/k12/09_Brunswick/default.asp?bts=K12

Figures 1.2, 2.1-2.7.
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Figures 1.3, 3.1-3.7.
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Figure 4.1
Spring, Joel. American Education: Fourteenth Edition.

Figures 4.2-4.4.
Images courtesy of Marysville Historical Society.

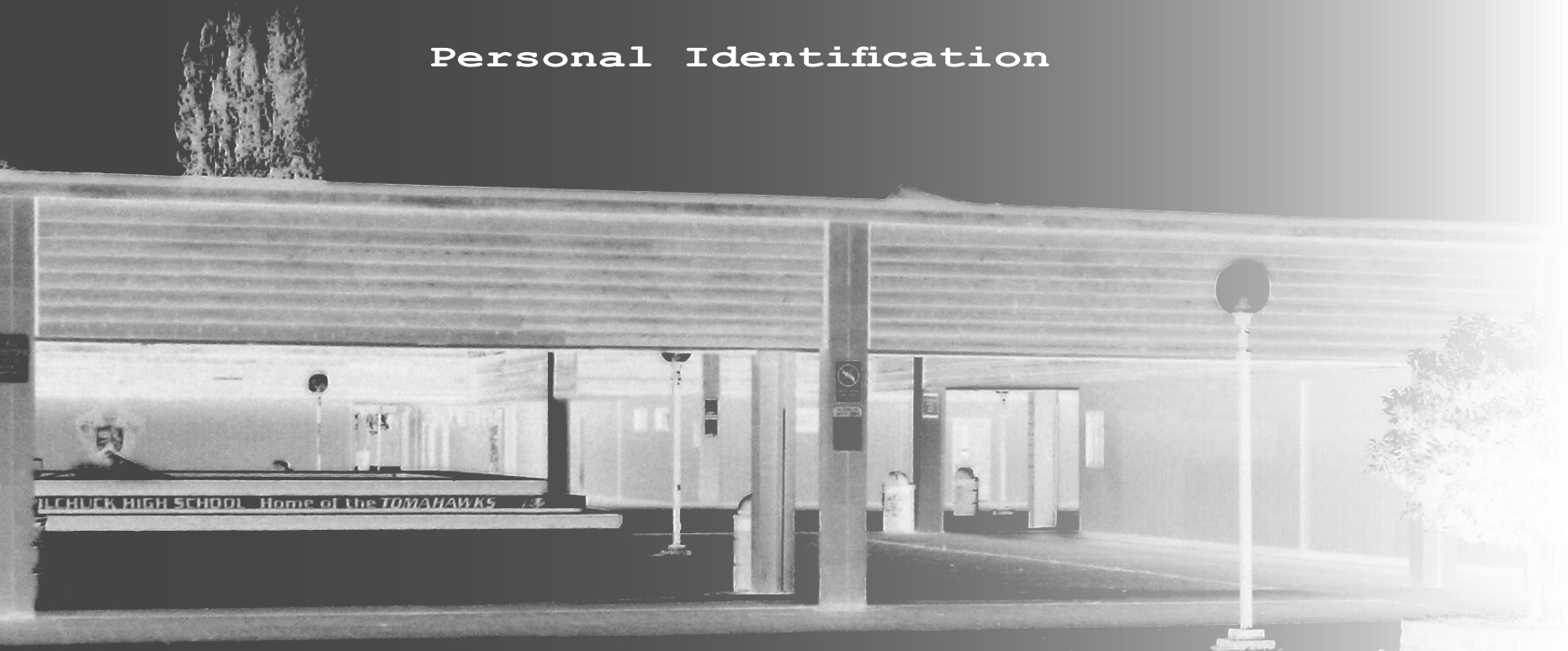
Figures 5.1-5.3
Kinney, D. Photos. 2010 August

Figure 5.5
Image courtesy of Marysville School District.

Figures 6.1-6.5.
Kinney, D. Data obtained from City-Data.com: http://www.city-data.com/city/Marysville-Washington.html

Site Reconnaissance images
Kinney, D. Photos. 2010 August

Personal Identification



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I will always be very thankful for the experiences I have collected from my world-class architecture education at North Dakota State University.