ABSTRACT

Title of Thesis: AN INDUSTRIAL DESIGN INSTITUTE IN WEST BALTIMORE

David Cameron Cross, Master of Architecture, 2004

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A building can serve as a connector in many ways; it may be a simple spatial connection within the urban context. It may be a metaphoric connection between different functions or groups that are contained within it. Or it may even be a temporal connection, between the past, the present and the future.

The urban fabric, economy, and culture of Baltimore were built upon industry. The departure of many of these industries has left a void in the city's economy and culture, though much of the architecture remains. The city itself may be used as a tool for the teaching of industrial design.

The school must also teach job skills and serve the needs of the local community.

Finally, the building must have an aesthetic component that is appropriate for its function, content and responsibilities. A contemporary reinterpretation of Industrial architectural aesthetics is needed.

AN INDUSTRIAL DESIGN INSTITUTE IN WEST BALTIMORE

By

David Cameron Cross

Thesis submitted to the Faculty of the Graduate School of the University of Maryland, College Park in partial fulfillment of the requirements for the degree of
Master of Architecture
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Site Analysis.

Part 1: Baltimore

Baltimore began as a shipbuilding center in the 17th century. Throughout its history, industry has been the most important thing in its civic life. The most significant stage in its growth occurred in the age of the railroad. The Baltimore and Ohio railroad was incorporated in 1828 and by 1830 its line had reached Ellicott's Mills, in what is now Ellicott City. (figure 1) By 1852 it had reached Wheeling, Virginia (now West Virginia) on the Ohio River. The growth of the railroad encouraged industry in the towns that it touched. Wherever the tracks intersected a stream or a river, industry developed. There is, therefore, a clear relationship between human activities and the natural features of the land that are reflected in the visible urban patterns of the city. This relationship, until recently was one of exploitation by human beings of the natural landscape.

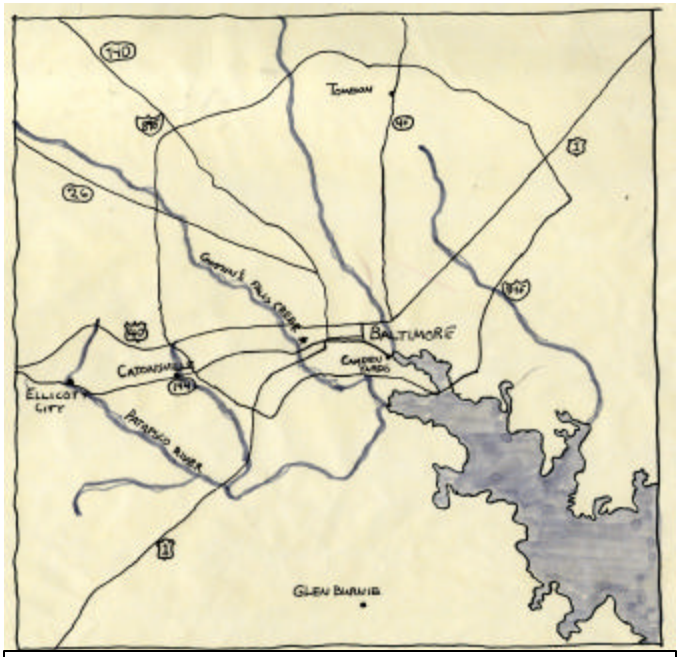

Figure 1. Baltimore, showing historical roads and waterways (by author)

Streams were used as sources of power and water for industrial processes, and as a means of removing wastes. As sensibilities changed, natural waterways became protected, and were often incorporated into regional parks. This left the industrial buildings that had been built adjacent to the streams with a strong relation to these

new parks. One of these sites occurs just outside of Baltimore's city grid, near Gwynn's Run Creek, and will be the subject of my thesis.

The map on the previous page shows some of the highways that radiate out from the center of Baltimore. The road that is now called 144 followed the same route as the B&O railroad. At Ellicott City, the Railroad began to follow the National Road (now US 40) to Cumberland, Maryland and points west. Historically, the railroad brought people and goods from the west down into Baltimore, to the Camden Station, where they were transferred to warehouses to be later loaded onto ships. Now however, the railroad has fallen into disuse, and route 144 is a more significant mover of people. Like the railroad, it was made to connect points in space by the most efficient route possible, and therefore does not conform to Baltimore's cardinal grid. On entering the city, much of its traffic is diverted onto the eastbound Pratt Street, though the road, now called Frederick Street, continues to Baltimore Avenue before ending.

Figure 2. Baltimore's Regional Park System. Project site circled. (By author)

The next diagram shows Baltimore's regional park system. This was constructed along the stream system that formerly were sites for industry. The project site is nearby the Gwynn's Run Creek park, and north of Carroll Park, which is more of a recreational

park with sports fields than a natural preserved park. However, its physical connection to these parks is poor, despite their proximity.

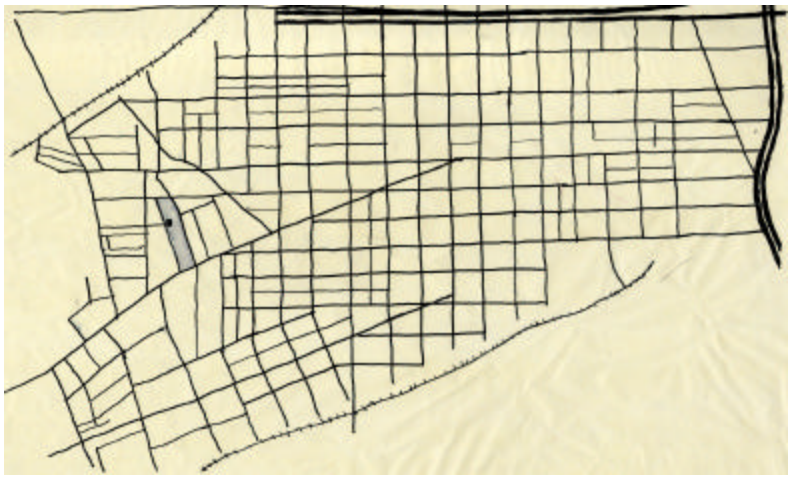

Figure 3. West Baltimore street grid. Project site in gray. (by author)

This area, referred to in this thesis as "West Baltimore" is bounded on all four sides; by the Gwynn's Falls Creek on the west, the B&O Railroad line on the south, and by two divided highways, Martin Luther King Boulevard and Franklin Street on the east and north, respectively. In Lynchian terminology, it fits all the criteria for a district, bounded by strong edges. It is important at this point to distinguish what this thesis calls West Baltimore from what the Baltimore city planning office calls West Baltimore. The City of Baltimore planning department identifies West Baltimore as being bounded to the south by Baltimore Avenue, and to the north by Druid Hills Parkway. This definition ignores Franklin Street as a divider. This street is actually a divided highway, sunk into the ground and over a hundred feet in width. In order to cross from one side to another, bridges are necessary. Clearly, what occurs to the north of this "street" is very separate from what lies to the south. The original division was probably made some time in the past, before that street took on its

present character. Present conditions suggest that it would make more sense to view the region within the boundaries listed above as a single district.

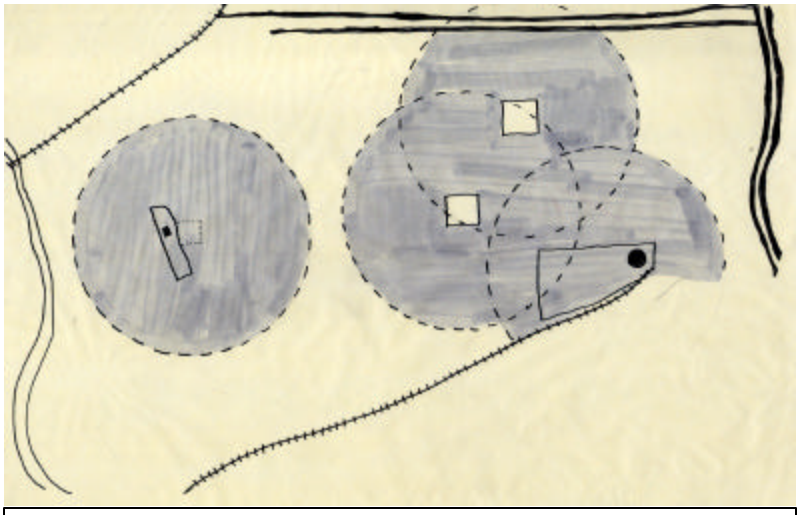

Figure 4. Diagram of existing neighborhoods with 5 minute walking radii, along with proposed new neighborhood centered on project. (by author)

To continue to analyze this area using Lynch's terminology, we also see that it has some nodes in the eastern part. The two squares, Franklin Square in the north and Union Square to the South-West are both anchors for reasonably prosperous neighborhoods. The B&O Roundhouse Museum and the associated shopping center are a landmark and a node, respectively, for a third neighborhood associated with the other two. The character of this district is fairly typical for Baltimore; an orthogonal street grid with streets defined by two to three story row houses. This character is strongest in the eastern portion of the district, closer to the downtown.

In the west, however, there are no urban squares comparable to Union and Franklin Squares, and the neighborhoods are more ill defined, broken up as they are by the intrusive rural street grid and derelict industry. If the selected site were to be considered a center for a new neighborhood, it would be discontinuous from the other, more established neighborhoods. This area is considered to be one of the

poorest in all of Baltimore. According to the City of Baltimore planning department, the median value of housing in this area is below $15,000 dollars. Up to 20% of housing in this area is abandoned, and virtually all the industries are closed. Many other houses are unoccupied, though not technically abandoned. On some streets and blocks the number of unoccupied houses exceeds fifty percent. There is some retail in the form of a suburban style stripmall whose very existence in such an urban context is a testament to the low property values. The only new construction to be seen in the area of the chosen site are a five storey apartment building to the northeast, and the stripmall and associated restaurants to the south. These economic difficulties have led to the usual social problems of declining school funding, crime, drug use and general social decay. These problems are excaberated by a deteriorating physical environment and lack of public amenities. Religious institutions abound, but public institutions, such as community centers, libraries and meeting places are lacking. The main problem stems from a lack of money in this area, a thing that a designer cannot necessarily solve. What a designer can do is create an environment that is more conducive to economic growth. One of the ways that this environment is not physically conducive to economic growth is the aforementioned intrusion of the rural street system into the city grid.

Figure 5. Existing suburban style retail in urban setting. (by author)

Several irregular blocks are created, making residential or commercial development difficult. Historically, these blocks were taken up by industry, or left vacant if they were too small. Now that all the industry has closed, this irregular area is largely dead. A solution to this problem might include the re-establishment of the city grid through this area. Since all of the industry and much of the housing is vacant, there should be little resistance to this idea from locals. The intrusion of 144 and the rural grid put an end to two of Baltimore's major streets, Pratt and Lombard. These one-way streets go from one end of the city to another, and can be seen as key connectors of the urban fabric. Yet at this point, they give way to Rt 144. Re-establishing the grid would create a better on-street environment, as well as more manageable blocks that would help encourage development. It would also eliminate many of these derelict industrial buildings, whose very presence probably deters investors.

In general, this district is very cut off from its surroundings. Rehabilitating Pratt and Lombard streets would help with this, but more should be done. The edge that is closest to my site is the one formed by the creek.

Figure 6. Photo showing streetscape. Note narrow rowhouses and well-defined building wall. (by author)

Another problem is the housing stock. Though architects and urban planners frequently applaud Baltimore for its well-defined streets, made possible by its famous rowhouses, it is this very building type that is the

problem here. These historic buildings dated from an era where the way of life was very different. The thing that makes them incompatible with a modern standard of living is their narrow width. Fifteen feet is insufficient for the modern way of life. In other, wealthier parts of town, a single owner may take up two or more of these houses and connect them together to create a satisfactory dwelling. In West Baltimore, however, in spite of the high vacancy rate, this is not being done. No-one who has enough money to own two houses would want to live there. On the positive side, most of those who live in this region own their homes.

Figure 7. The Eigenbrot Brewery. View from the south. (by author)

The specific site that has been selected for this thesis is an abandoned industrial complex. Once called the Eigenbrot Brewery, it was first openened in 1873. The buildings that remain today were built after a fire destroyed the older buildings in 1896. The most prominent of these is the six-story brew house, which is eighty feet tall. This building is visible from a wide area, as you can see from the diagram below. You can even see it from Carroll Park, which lies on the other side of the B&O tracks.

There are also several smaller buildings of quality, including a warehouse, an office building, and a mechanical building. There are also a number of low, poorly

constructed buildings that wrap around the buildings that formed the core of the brewery; many of these are in terrible condition. The brew house and the other buildings of quality are largely intact, though in a sad state of disrepair, with trees other plants growing from their roofs, and pigeons and other animals living upon them. Yet they remain visually striking, and therefore may be considered to be a landmark for the area. The most effective landmarks are associated with urban spaces, however, and the mill is surrounded mostly by derelict industry and underused housing. Furthermore, the fact that these buildings are vacant make them a negative landmark, rather than the positive feature they could be.

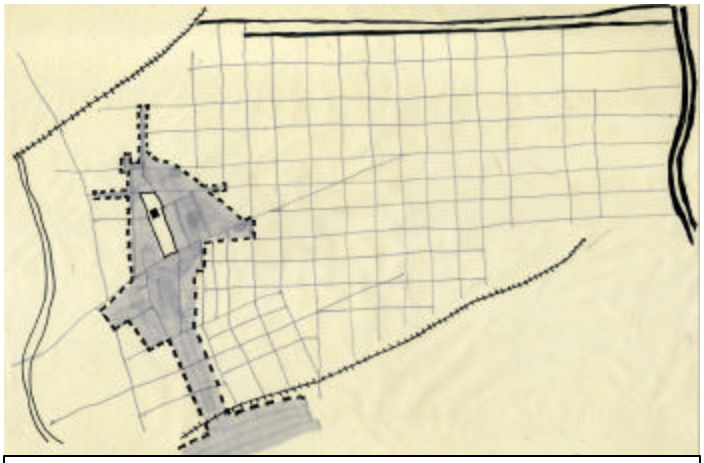

Figure 8. Diagram showing areas from which the Eigenbrot Brewery is visible. (by author)

Figure 9. View of Brew House from the east. This is approximately where Lombard Street would have run through had it continued. (by author)

Brewing was a popular industry in Baltimore; there were several breweries of note in the city, and there were two others within a short walk of the Eigenbrot brewery. All of them were closed in

1920, with the onset of Prohibition. The Eigenbrot Brewery was sold to a furniture mover. There was a plan to reopen the brewery after the end of prohibition, but this never occurred to lack of funds.

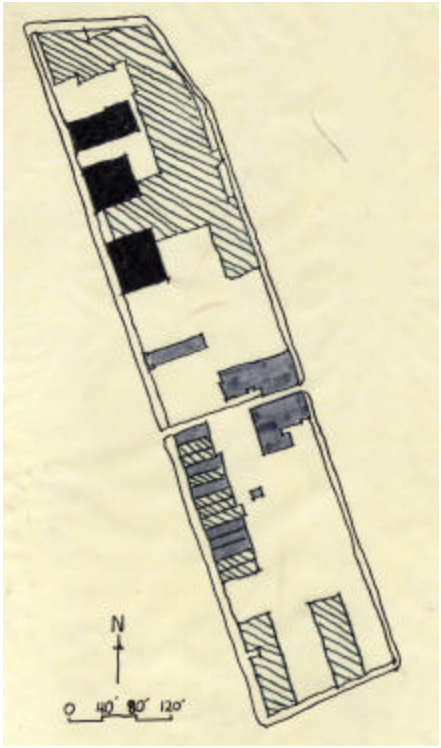

Figure 10. Diagram showing existing site conditions. Black indicates vacant buildings of quality. Gray indicates occupied buildings of little quality. Cross-hatching indicates vacant buildings of little quality. (by author)

The diagram (fig 11) shows the conditions on the site itself. It is bounded by Hollins Street to the North, Frederick Street (144) to the south, Willard street to the East, and Warwick street to the West. The block is bisected by an alley. The northern part contains the mill, which contains two types of buildings. There are three high-quality buildings, shown here in black, that are historically and architecturally valuable. These buildings are between three and six stories tall, and though neglected, are largely intact. A lower, one storey warehouse type building was built around them at a later time. This building, though newer is in worse condition, as it was not as well built in the first place. It is shown in the diagram with a cross-hatch pattern, along with other vacant buildings of little value. South of the mill, there are rowhouses, garages and two commercial buildings. The commercial buildings and roughly half of the rowhouses are vacant.

These sections show the topography of the site and its surrounds. The longer section goes along where Lombard Street should be, had it not ended at route 144.

The largest and most visually striking of the mill buildings is almost directly astride this axis. If Lombard Street were continued through to its logical end in front of the brewery, it would provide a more direct link from this area to the center of Baltimore, as well as giving one of the city's most important streets a fitting end in front of an iconic building.

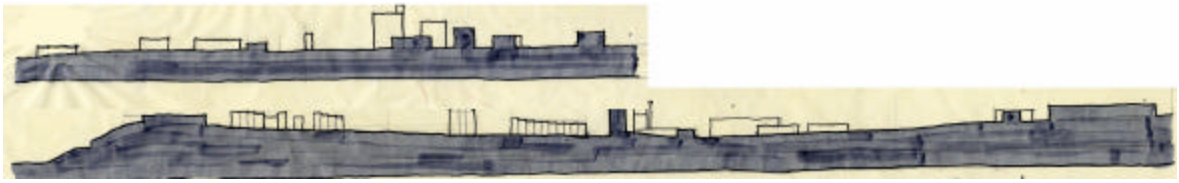

Figure 11. Sections. The upper section shows a lateral section through the site, while the lower section shows a section along the course of Lombard street. (by author)

Figure 12. Land use diagram. (by author)

The shorter section shows the perpendicular condition. It mainly shows how the elevation of the site falls toward the south. A long site with a considerable slope provides both challenges and opportunities to a designer.

The land use diagram here is more for reference to building type than an accurate portrayal of building use. After all,

virtually all buildings shown in brown (industrial) are vacant, and much of the red (retail) and residential (yellow) is also vacant. A few buildings are of note however; they are shown in purple as institutional buildings. The first is a church that lies to the west of the chosen site. It is also visible on the long section above. Placed near a high point and taller than any building around save the mill, it is very prominent visually. It is shame that it is such an ugly building, as the church and the mill share an interesting dialogue from their respective positions on the skyline. Another building of note is an elementary school which is in the lower left center of the diagram. Though not directly related to the site, its presence should be taken in account when programming the southern portion of the site. Finally, there is a church at the lower left hand corner of the diagram whose steeple is visible in an otherwise undifferentiated sea of roofs and treetops as seen from higher elevations.

Figure 13. Figure/Ground diagram. (by author)

The figure ground diagram serves to emphasize the complete lack of figural space within this area of the city. The street is the best place for definition, the parks being for the most parts faced by backs of buildings, and are often cornerless or irregular; parks made by putting together leftovers, rather than by

design. It will be one of my urban design goals to add some urban figural space.

Chapter 2:

Precedent

The study of precedent in architecture is vital to ensure the quality of our designs. Every building type has a history behind it, as does every method of construction. It is therefore most beneficial to study work that has been done previously. The issue that the precedents must address are as follows: The problem of building adjacent to a historic building, the proper way to plan and program an educational facility, appropriate urban spaces, the Industrial Aesthetic, and Baltimore's architectural character.

Figure 14: Brewery from East (by author)

The issue of building next to a historic building is probably the most immediate, for the sole reason that the site in question was selected because of the presence of the brewery buildings. The first precedent to be considered will therefore be the brewery buildings themselves. These buildings are thick-shelled load bearing masonry structures. The smallness of the windows is evidence for the fact that the walls must be very massive to reach that kind of height. The detailing is minimal, but quite fine. There is the impression that the designer was attempting to convey the feel of a frame and infill reading of the façade through the use of pilasters and projecting cornices. However, the fact that the material is the same red brick throughout belies this interpretation. Its materiality gives it a monumental character, especially when viewed from afar. All the ornamentation is done through brickwork; there is no applied ornament. The

façade is divided simply into three bays with pilasters. These are an abstraction of classical form. The most interesting thing about them is that, though they remain consistent in size throughout their height, they are articulated differently to reflect the changing amount of forces acting upon them. Thus, the pilasters in the attic story are divided with two reveal lines, implying a cluster of three slender columns, the pilasters of the second and third floor grouping show a single reveal, implying two columns, and the pilasters on the ground floor are undivided, implying a single, massive support. A wide variety of brickwork on the façade creates a fascinating play of light and shadow that help to break up the scale of these very massive buildings. Some of the cornice details rely heavily on corbelling to create shadow and to imply the existence of a frame within. In other places, detailing of a less structural character is used, such as dogtooth detailing (also called mouse tooth) to create horizontal datum lines. Thus, the designers of these buildings, while using a very traditional material, and a somewhat classical ordering system, were very interested in structural expression, and of using industrial materials to provide ornament and visual interest, while not investing in applied decoration. This, I feel, is very much in the spirit of the "Industrial aesthetic.

Figure 15: Brewery from Warwick Street

A good precedent for an addition to an existing building can be found in Lord Norman Foster's design for the Sackler Galleries of the Royal Academy of London. (Architecture Record, Oct 1991 p88) In this design, he built the concrete floor slab a foot and a half away from the existing wall, and covered this gap with glass. This allowed light to flow uninterrupted over the façade, and for it to be understood as a whole. The philosophy of touching a historic building as lightly as possible, with transparent materials seems to be the dominant method of today.

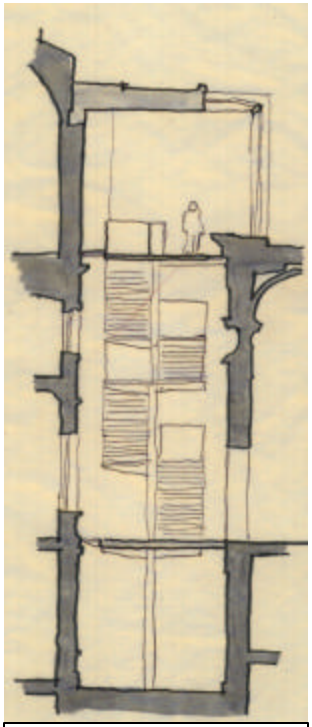

Figure 16: Section through Sackler

Another example of this sort of addition lies on the campus of the University of Wisconsin in Milwaukee. One of the academic buildings, Garland Hall, had been built in the early 20th century. A new addition was added recently to connect it to a nearby building, as well as to add features that are now required in contemporary buildings. One of these features was a fire stair. This stair was put just outside one of the existing exterior walls. It did not directly touch the wall, though a person on the stair could touch the wall. The wall of the existing building was left untouched, except for some windows that were filled in with a contrasting panel. Thus a person on the stair could study the entire wall, from the cornice to the ground level, copper flashing, shingles, and all. Though definitely of lower cost, it certainly showed a refined sensibility to the existing architecture, as well as a definite educational agenda.

The second issue, that of the design of educational facilities, is primarily a matter of plan parti. Different buildings and architects have used different organizational strategies to create schools and universities in the past. Those that seem suited for the present site and program are as follows: The Linear scheme, where programmatic elements are strung out along a more or less linear spine or space, the Courtyard scheme, elements are arranged around one or a series of courtyards, and the Double bar scheme that arranges building elements to either side of a common space that is open to both ends, suitable for emphasizing important axes.

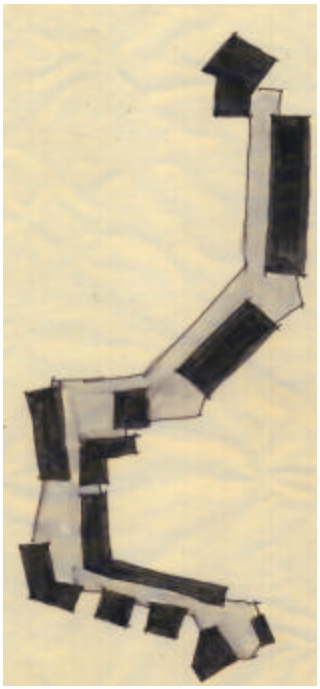

Figure 17: Linear scheme in Kresge College, University of California, by Charles Moore.

The Linear scheme, shown here, is perhaps the most flexible, as the line need not be straight, but may go around obstacles wherever there is space. The advantage of this type of parti when building around existing buildings is obvious. In this example, Kresge College, in the University of California, Santa Cruz, by Charles Moore, shows how functional elements and spaces can be united through the use of circulation space.

The Courtyard scheme is a very old idea which has remained popular in academic architecture. This modern example, the Utrecht Polytechnic Faculty of Economics and Management, by Mecanoo shows that it can work even in the example of a single building, with relatively small courtyards, as well as entire

campuses. It is an excellent way to organize a system of not necessarily compatible functions.

Figure 18 The courtyard scheme in Utrecht, by Mecanoo

The University of Virginia, designed by Thomas Jefferson was a development on the more traditional courtyard system that was common in older universities. What made his interpretation unique was the elongation of the open space, and the fact that one edge of the open space was left open. This accomplished two things; the clear connection between the university and the context, in this case the Appalachian Mountains, and the giving of hierarchical importance to the library building that was opposite the open edge. The application of this precedent to the thesis is obvious; it too has a hierarchical building and a strong axis which connects it to its context.

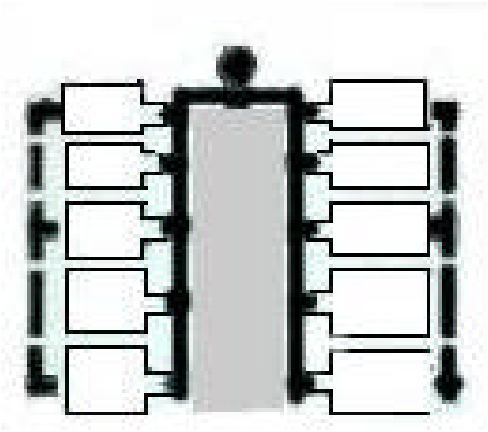

Figure 19 University of Virginia, by Thomas Jefferson.

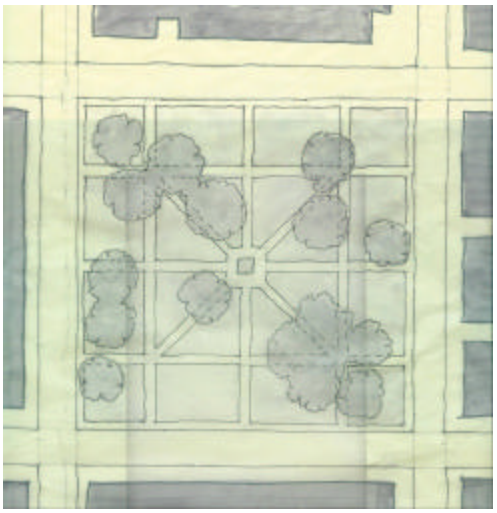

Figure 20 Franklin Square, West Baltimore.

Urban spaces, too have their precedents, and for mine I have selected Franklin Square, also in West Baltimore. This square, like the square to be created, unites educational and residential uses within it. It is also typical of Baltimore's urban squares.

The industrial aesthetic is very much a focus of this design exercise, as it is relevant both to the context and to the current methods of building construction.

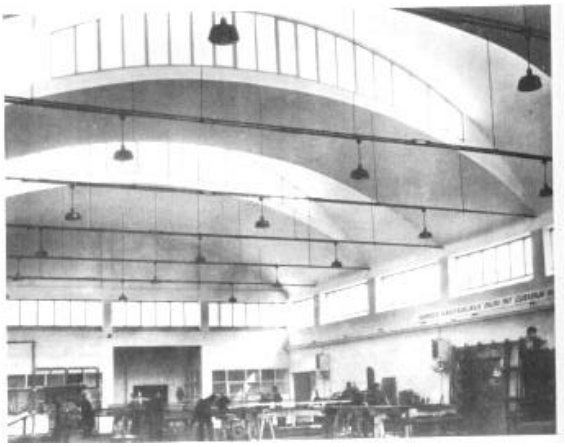

Figure 21 Romanian Factory, unaccredited photo from Munce, p102

Industrial buildings of the nineteenth and early twentieth centuries were remarkable for both their practicality and the pride and care taken in their construction. Certain elements of their form, such as the light gathering structures that lit their production floors, are very much in tune with contemporary high design. Also, the emphasis on the facts of construction is appropriate to this thesis' project application.

Baltimore itself has a rich industrial history, and many fine industrial buildings of the nineteenth and early twentieth centuries still exist to be seen today. It is noted for two materials used in industrial construction: brick and wrought iron.

Figure 22 British factory roof under construction, unaccredited photo from Munce, p83

The mill building is a fine example of brickwork, but one must look elsewhere to find the iron. Fine examples of these include the B&O Roundhouse (now the B&O Railroad Museum) very close to the site. Another good example is the Baltimore Museum of public works.

The purpose of precedent is to inform the design process. Truly it can be said that no ideas are original, all are synthesized from previous ideas. By choosing the correct precedents, this synthesis can create the best and most appropriate design possible.

Chapter 3

Theory.

The thesis abstract laid down the following goals: the creation of a link between the architecture of the past with the culture of the future, using the city as a teaching tool, repairing the urban and economic fabric, and exploration of the aesthetics of construction. To these points should be the importance of contextualism, the importance of history, and the nature of architectural theory itself. These will be the points discussed in this chapter.

Culture and the City:

It is important to connect the culture of the past with that of the future for many reasons. The first is this looming problem we are facing in our culture of over standardization and repetition of similar objects and building forms. During the modern era, this was a deliberate rejection of the past. In Baltimore, as in other places, there is a real danger that the past will be lost. Fortunately, many fine old buildings have been preserved and put to new uses, so that they will remain for the future. Baltimore has truly been exemplary in that regard, perhaps because the economy remained poor there for longer than other cities, preserving through neglect the buildings that may have been torn down had there been money to do so. Instead they remained until their value was recognized. However, there is still a danger that economic interests will prevail and other buildings will be lost, along with their cultural associations. This is particularly a danger in the areas that are far from the center of public attention, which is the waterfront. The overemphasis on the waterfront, which is now entirely for leisure activity, threatens the identity of the city as a place of industry and work.

The way to make this connection is to create a strong image through the use of existing monumental buildings of previous eras. The word "monumental" has two meanings: the one most frequently used in architecture is that a building is iconic; it is more visually prominent that it may need to be, according to its function. Secondly, it refers to a monument, which is a thing made to commemorate a past event, or shared value, or even a hope for the future. (Norberg-Schultz, p 101) These two definitions come together in a public institution. The Eigenbrot Brewery is already monumental in the first sense of the word. This thesis will attempt to transfigure it to fulfill both definitions by giving it an institutional use that will combine a hope for the future with a commemoration of the past.

Next to nature, architecture is one of the more permanent things in the human experience. Though ideas, fashions, philosophies, religions, etc come and go, frequently buildings remain as artifacts of times gone by. Though the vast majority may be lost, fragments remain here and there, and can be used to inform the present and the future. Richard Sennet introduces the concept of the city as teacher in his book, "The Conscience of the Eye." To him, the ancients built their cities as teaching tools to pass on their cultural values to later generations. The city became both a stage set and record of public events. Architect Charles Moore concurred with this view; "The spaces we feel, the shapes we see and the ways we move in buildings should assist the human memory in reconstructing connections through space and time." (Norberg-Schultz, p 86 (it gave an incomplete citation, I will track down the original)) Later civilizations adopted classical styles to associate themselves with ancient ideals, and perhaps to cultivate the perceived virtues of the ancients within

themselves. Norberg-Schultz puts it a different way: "A city is a meeting place," an assemblage of institutions. (Norberg-Schultz, p76) These institutions, through their permanence and influence, create places that have "qualitatively different characters." (op cite, 76) This also corresponds to Kevin Lynch's ideas of the city: the institutions form landmarks and the places they create become legible nodes.

To Sennet, the modern city is mute, due to the prevalence of industrial processes and the emphasis on economically driven construction. However, it is possible that the industrial city contains thoughts and lessons that are more relevant to the present age. After all, one of the ideals of the present is that everyone has the freedom to choose their own virtues and ideals, rather than accepting what the establishment would like them to believe. The lessons that the modern city teaches is not about morality and civic virtue, which seem to be relative at this time, but a more modern idea of how the world works. In our scientific age, the only real certainties are those of the laws of physics; the laws of motion, forces, gravitation, and so forth. It is natural for a society of that sort to produce art and architecture that would express the physical forces working upon them in a highly precise way. Buildings of this type are images of the forces, not symbols of values. "An image reveals rather than communicates; it illuminates and explains" (Norberg-Schultz, p113) A building designed to express the forces acting on it in the most direct and precise way can serve to teach those who study it. This also applies to aesthetics, but in a lesser fashion, as rules of style are ephemeral. It is possible, however, to synthesize general understandings of aesthetics by analyzing artifacts of different stylistic eras.

In order to use the city as a teaching tool, the students must be exposed directly to an artifact of the city, and taught to analyze it properly, and then they must be shown out to other artifacts. A part of the old industrial city is captured within the site for instructional purposes, and spatial connections are made to other parts of the city where other buildings of this sort are found. This is how the present thesis seeks to educate students by increasing their awareness of built history. This network of industrial artifacts, shown here, forms an assemblage of institutions dedicated to education about the past, the current project is the only one that will focus on the future as well.

Context:

Issues of place and context are important to any design. The site was described in specific terms in the first part of this document, but it seems necessary to revisit the topic in the context of theoretical discussions. As Norberg-Schultz puts it, "monumentality (image) and regionalism belong together and make up the dimension of *meaning* in architecture." (Norberg-Schultz 111, emphasis original, insertion mine) This is counter to what Kenneth Frampton says in his essay "Prospects for a Critical Regionalism." There he advocates an architecture that puts primacy on "*place* rather than *space*." (p481, emphasis original) He sees regionalist architecture more as a matter of "sensitivity toward local materials, craftwork and above all, the subtleties of local light," (op cite 473) rather than form or spatial definition. These two seemingly opposed ways of designing contextually can, however be brought into a happy

convergence. The existing buildings already create the monumental image; it is up to the new buildings to make a place out of it. To create a place appropriate to Baltimore, the factors Frampton listed above should be considered.

First, Baltimore is a city which historically used three materials, iron, brick and stone. Stone seems to be reserved for grand residences and civic buildings. Structural iron is concealed; most exposed iron takes the form of decorative railings, balusters, boot-scrapers and so forth. Brick is the most common material seen. In more recent years, concrete, steel, and other more modern materials have been introduced. The use structural steel has been the opposite of the traditional iron work- it is exposed in many of the most prominent modern buildings. Concrete seems to have found its uses mostly in high rises, so can be dismissed as a possibility for the present project. It would seem logical, therefore, to make use of the city's tradition of brickwork. A more challenging task would be to find a way to express structural steel in a way that would be consistent with the use of iron in the past, without concealing it completely as was often done with the structural iron. With care and good detailing, the structural members may be able to be exposed, as a form that is decorative as well as functional. Or perhaps it can be expressed in a similar way as wood is expressed in some of the works of H.H. Richardson; in many of his works, he put stone on the exterior of his buildings, while using wood on the interiors. In these applications, such as the Ames Free Library (1879) he would clad the rough, structural wood with a finer wood to reduce costs without sacrificing the expression of structure. (Ford, vol 1, p29) It would be possible to do the same here, with steel taking the place of wood, and brick the place of stone.

The issues of light in this kind of construction is quite complex. The Sun over Maryland is generally quite high in the sky, which makes it easier to control throughout the year compared to more northerly locations. The scale of Baltimore's streets is such that the streets are always wide enough in relation to the heights of the buildings around them that direct sunlight penetrates to the street. The chosen site will have some difficulties with light for two major reasons: One is the orientation of the site is closer to North/South rather than East/West. This means that more area of the site will be exposed to the undesirable morning and afternoon light, and less to the desirable and easy to control midday sunlight. Another potential problem lies in the existing buildings. Looming as they do above the surrounding context, they will shade those areas north of them during the winter months. Thus it may make sense to put the major exterior spaces to the south of them, or they may be cold and damp in the winter months. Fortunately, there are no other tall buildings or geographic features to throw shadow on the selected site.

Aesthetics of Construction:

The aesthetics of construction has always been at the forefront of architectural dialogue. There has always been a perceived tension between form and construction. Proponents of pure form prefer to omit visually complicated detailing in favor of buildings and spaces that appear to be platonic solids or other smooth shapes. The

constructivist camp revel in details that express forces and connections. The former idealize buildings that appear to have been molded out of clay, and the latter favor buildings that are obviously assembled from smaller parts. The term "aesthetics of construction," refers to the second method. This is also related to the idea of the "Industrial Aesthetic." It is not the intention of this thesis to prove that the aesthetics of construction are superior to the aesthetics of form. There is, in fact no way to do that, as it is not true. What the thesis does contend is that for the current project, constructivist aesthetics are more appropriate.

Though the constructivist aesthetic has always existed, it came to new prominence during the industrial revolution as architectural elements became more standardized and building construction became more a matter of connecting prefabricated pieces together, rather than making a unified composition out of unique pieces. Architects also felt that the introduction of new building materials, such as iron and concrete, necessitated new forms of expression. Because of these facts, many industrial buildings, especially those of the nineteenth century, have a constructed, rather than a modeled feel to them. This was the era when Baltimore achieved its greatest growth and prosperity. Because the purpose of this design thesis is to evoke the character of Baltimore, a constructivist approach is indeed better for this application.

Constructivist buildings give scale through their details. Formalist buildings do not, as the unbroken forms may be any size, relating to nothing around them. This makes a building with constructivist detailing more appropriate for an urban setting, as they respond to the scale of the buildings around them, where the formalist building is

more suited as a set piece to remain alone. The current avant-garde in architecture, led by such architects as Gehry, Liebskind, Predock, Perrault and others have tended to favor the formalist approach, leading to many fine examples of expressionist form. However, these examples are not appropriate for the setting of West Baltimore.

The intent of the thesis with regard to theory:

There are two kinds of architectural theory: That which is developed by practitioners to explain and promote their work and values, and that which is created by academics to describe architectural trends. Both kinds are useful to the practitioner, and very relevant to this thesis.

The theories promoted by practitioners is often very rhetorical in nature; excessive use of superlatives, the excoriation of opposing viewpoints, the praising of the likeminded thinkers—all these things are common in the writings of those who practice architecture. All too frequently these writings are attempts to promote a particular style. What is a style? Stripped of its ideological, social, political, and sometimes religious associations, a style is no more than a set of aesthetic values and kit of tools to achieve them. For the architects, achieving the core goals is more important than strict adherence to their stated principles. For example: The Seagram Building is an icon of the International Style. Much has been made of the intrinsically non-functional steel I-beams that clad the exterior of the building. Being ornamental in nature, they seem to be at odds with Mies Van der Rohe's stated theoretical principles. However, they do add to the buildings aesthetic compliance with International Style principles in at least two ways. One is that, as an analogous

rather than actual structure, it is easier to attach and expose them in the precise and clean manner demanded by the designer. (Ford, vol 1. p287) The other effect is to create texture and therefore contrast upon the main body of the building, while the base, being glass, and the top, being unarticulated, recede visually. This has the effect of making the building appear as a geometric shape, floating in indeterminate space, an International Style ideal. This contrasts sharply with Louis Sullivan's articulation of the Wainwright Building; here, the base and top of the building are strongly articulated and textured, while the shaft of the building remains relatively smooth. By emphasizing the two ends of the building, the architect draws attention to the building's height, while visually rooting it in place. Neither of these examples can be called better than the other. They merely represent a highly skillful deployment of architectural elements and detailing to achieve an aesthetic end. In both cases, the same elements achieve more than one goal. Therefore the styles and practical theories of the past need not seem incompatible; they can even be used on the same project, so long as the aesthetic choices that govern their application are well made.

The explanatory theories given by the more academic theorists, especially those who examine them in a historical context, serve to inform us about how to select an appropriate form of architectural expression. Few practicing theorists would say that their favored style was ever inappropriate. However, as seen in the discussion in the first part of this chapter, there are times where certain forms of expression may be better suited than others. Doubtless, a very talented designer would be able to create a successful building regardless of its style and context, but for those with more modest abilities, more care is prescribed.

This is how the thesis will use the work of architectural theoreticians; by using a set of parameters to determine the most appropriate form of architectural expression, then using the methods of detailing informed by historical precedent to achieve effects deemed appropriate within the prescribed parameters. Though the precedents may vary in style, consistency will be guaranteed by a limited palette of material and by making all the detailing as variations on a single structural theme. In this manner a contextual yet not historicist architecture can be achieved.

Chapter 4: Program

The thesis proposes a Vocational School for 600 students be built upon the site. It would have 20 permanent faculty. The course curriculum is to include: Industrial and Product Design, Industrial Arts, and History of Industry. The numbers of students and faculty has not been broken down between these different majors, as the numbers can be expected to change with time. All students and faculty are to be equally equipped with access to facilities that would suit each major.

The program breakdown follows:

Academic Component	
1 Lecture Hall for 100 students	2,800 sq ft
13 classrooms for 30 students each. 800 sq ft each	10,400sq ft
8 Seminar rooms for 15 students each 450 sq ft each	3,600 sq ft
Total Academic:	16,800 sq ft
Practical Component	
Studio Space @70 sq ft/student	4,000 sq ft.
Workshops	12,000 sq ft
Storage: 1 separate room @ 500 each	500 sq ft
Total Practical:	16,500 sq ft
Resource Component	
Library	3,000 sq ft
Quiet Study Room	500 sq ft
Library Office	400 sq ft

Computer lab	1,500 sq ft
IT office	200 sq ft
Total Resource:	5,200 sq ft
Administrative Component	
Faculty offices 27 @ 100 each	2,700 sq ft
Faculty studios 27 @ 200 each	5,400 sq ft
Administrative offices	600 sq ft
Staff conference room	450 sq ft
Staff break room	500 sq ft
Mail/file room	200 sq ft
Copy room	200 sq ft
Dean's office	200 sq ft
Assistant dean's office	200 sq ft
Total Administrative:	10,450 sq ft
Social Component	
Commons	3,000 sq ft
Gallery	1,500 sq ft
Student Café	1,000 sq ft
Student Store	1,000 sq ft
Total Social	5,500 sq ft
Subtotal	54,450 sq ft
Other	
Circulation/restrooms/janitorial	15,000 sq ft

Mechanical systems:	
Boiler and chiller	2,000 sq ft
Cooling towers	400 sq ft
Air Handlers	3,000 sq ft
Total	75,850 sq ft

The major components of this program can be divided into groups: Practical, Academic, Resource, Administration, and Social.

The Practical Component:

The Practical component includes the workshop and their associated storage and outdoor areas. In addition to a large enclosure dedicated to machinery, a large outdoor space for material storage and assembly is also desired. Part of the outdoor area should be covered, for material storage and sheltered work. This part of the program should be isolated to a certain extent from the others, for reasons of fire safety, as well as noise isolation.

This program area won't be delineated into specific zones for specific machines and activities, except in the broadest sense. Industry and technology is changing at a rapid pace, and there is no way to predict what will happen or be required twenty, let alone a hundred years from now. Therefore, in keeping with the tradition of the industrial factory type, the space will be very generic, with a high ceiling and plenty of room for mechanical equipment and ducts.

Also included in the practical component is the Studio space, where students can work on projects either on paper or by using small hand tools. This is associated with the work shops for practical reasons as well as giving greater flexibility for re-use or conversion as the school matures.

The Academic Component:

The Academic component can be thought of having three parts: the classrooms, the seminar rooms and the lecture hall. Since the bulk of the activity of the school focuses around the shops and studios, the classrooms would only have to handle students who are not currently in these areas, allowing for the school to function in shifts. The most important of these spaces are the large classrooms, where the students would witness demonstrations before they go into the shop. These classrooms are placed next to the workshops.

The Administrative Component:

The Administrative component includes the faculty offices as well as the administrative offices and their constituent spaces. One way that a school attracts competent faculty is by offering facilities for them to use on site. For this reason each faculty member is allotted studio space where they can work on their own projects.

The Resource Component:

The Resource component consists mostly of the library and computer labs. Each of these requires an office for its administrative functions. Because these are to be used by both faculty and students, they should have a relationship with the social and administrative components.

The Social Component:

The Social areas include the commons, the gallery, and other areas where students and staff might meet to socialize. These areas are integrated within various components, to encourage use throughout the time of the building's use, and to allow faculty and students to use them together.

The other component of the program, the mechanical services, are broken up throughout the building or complex. The central hot and chilled water plant is beneath the new commons area, and the cooling towers are placed on top of the tallest existing building. Each of the two major existing buildings has a 1/3rd level on top, ideal for mechanical spaces. The other air handlers are distributed around the entire building.

Grouping the program in this way provides a starting point for an idea of functional zoning, as well as an idea of how these program spaces will be articulated in building form. However, it is desirable for functions to interact with each other in ways that cross these boundaries. For example the studios to interact directly with the workshops through the outdoor work spaces.

One challenge was to program the existing buildings. The largest one on the south end of the site will now be used as an administration tower. Its rather isolated upper floors make good places for faculty offices, because the

number of people who need to access those areas are relatively few. The second floor is for the general administrative office, and the ground floor is for the library.

The second-largest building on the site also contained the most generous floor-floor height of the existing buildings. For this reason, I could put the second floor of the new buildings at a height that allowed it to be a mezzanine level of the existing building. This helped tie the new buildings together with the existing one, as well as capturing useable space that might have otherwise gone to waste in a very tall room. The ground floor became the gallery, while the second floor became faculty offices, and the third floor became the computer lab.

Between its very small floor to ceiling heights and small footprint, the other building was not worth saving. I retained the façade because of the good brickwork, as well as the fact that it lent more balance to the East Façade.

Chapter 5:

Parti

Three initial parti configurations were proposed for this project. They each begin with an urban intervention which in turn shaped the school by influencing the size and shape of its lot as well as the access to it. The following principles were used to achieve all of these parti configurations: The axis of Lombard Street was continued to terminate upon the existing brew-house, the street grid to the east of the site were regularized to be better integrated with the existing city grid, defunct industrial uses will be replaced with housing, and active buildings will try to be saved as much as possible.

Parti 1: Pedestrian Street.

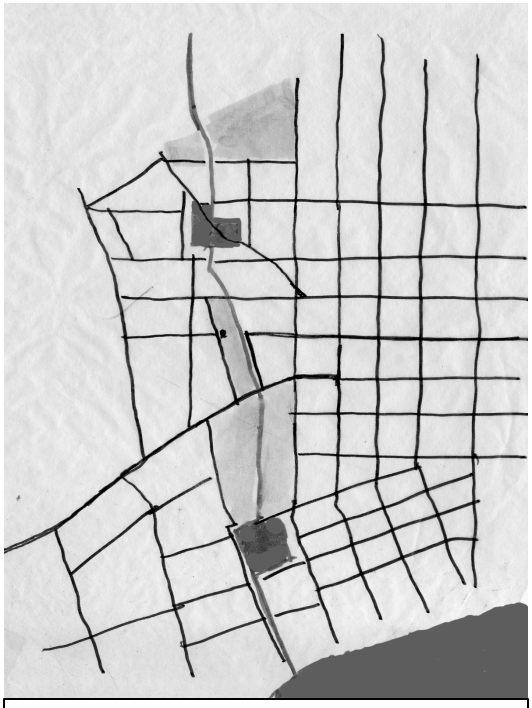

Figure 23 Urban plan parti. Black lines indicate streets, dark gray areas indicate parks. Project Site at center.

At the time when the Eigenbrot Brewery was active, it was bounded on one side by a stream, which was a branch of the Gwynn's Run Creek. This stream has disappeared, but its path is traced through the City by Warwick Street. This street rather fortuitously links the brewery site to a number of local areas of interest and amenities: at its north-most point, there is an elementary school, moving south, it encounters a series of small urban parks, then the brewery site,

then the West End Shopping area, and finally connects to Carroll Park on the south side of the B&O Railroad tracks.

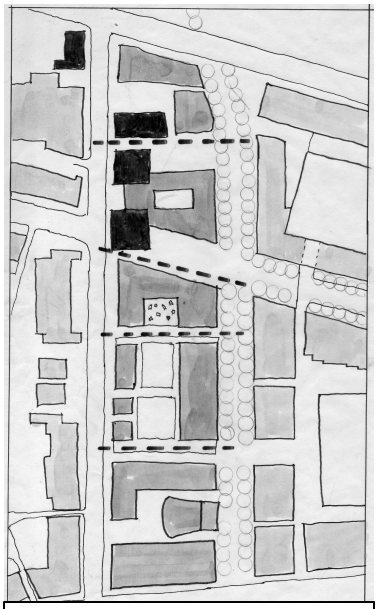

Figure 24 Plan Parti. Black indicates existing buildings on site. Light gray indicates context buildings.

The first Parti proposes that Warwick Street be transformed from an automobile street into a pedestrian street. Such a street would become a positive amenity for land redevelopment in the areas around the project site, as well as being a boon for the commercial and retail establishments in the West End Shopping area. It would also provide an alternative way for students of the school of industry as well as the elementary school to commute. Because of Baltimore's relatively dense street grid and the fact that Warwick is a rather narrow street when compared to other north-south streets such as Catherine and Bentalou, it would not disrupt vehicular traffic in this area very much.

This decision leaves the project site much the same as it is now: an elongated, mostly rectangular plot with the narrow ends facing north and south. Because the urban intervention seeks to bring people into and past the site from the various edges of the district, the parti for the site should attempt to further integrate the school into the surrounding community. Therefore, it is conceived as a campus of separate buildings that allow for pedestrian access between them. The axis of Lombard Street is addressed by making the outdoor commons area directly around the main brew house and providing a direct pedestrian link between the West Lombard Street and

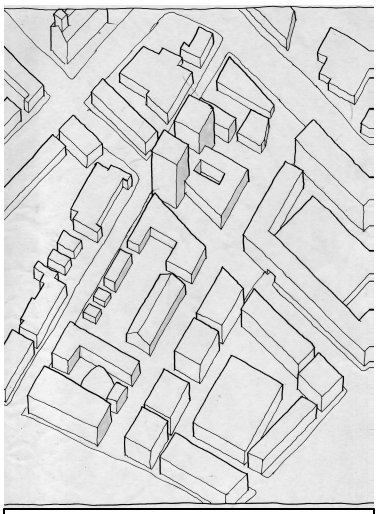

Figure 15 Axonometric showing project in context. View from South East.

East Lombard Street. This would also allow a pedestrian link to the regional park system via West Lombard Street. The school itself will be divided up into small blocks, each with a particular function. The southernmost block, on Frederick Road, will contain the classrooms, the lecture halls, and the studios. Moving northward, the next block would contain the workshops, the work yard, the chilled water plant, the boiler, and similar functions. The next block would house the commons, the gallery, the café and similar public functions. Then the library and museum functions would take place adjacent to the existing buildings. Finally, the administrative offices would occupy the north end of the site. This parti is well integrated into the surrounding neighborhood, because the resultant school would be porous, allowing people to move through what could otherwise be a long, rather impenetrable block. These breaks may take on a variety of different characters, depending on the functions that occur on either side. It would also make the buildings easier to service, as the pedestrian routes could accommodate service vehicles from time to time. Also, the smaller scale of the resultant buildings would be less disruptive to the urban condition than a single building would be, as well as simplifying construction. Some of the disadvantages to this scheme include: Due to the length of the site and its relative narrowness (830' long by 160 feet wide) functions of the school are separated by distances that might be considered inconvenient to its staff and students. Security may also be an issue, as a high degree

of access implies high vulnerability, especially as the pedestrian streets would probably not be used during the night, and would not receive any surveillance from passing automobiles. Finally, the narrowness of the site also contributes to the exposure of certain activities (i.e. the work yard) that may be better placed within a block, away from the public street.

Parti 2: The Park Scheme.

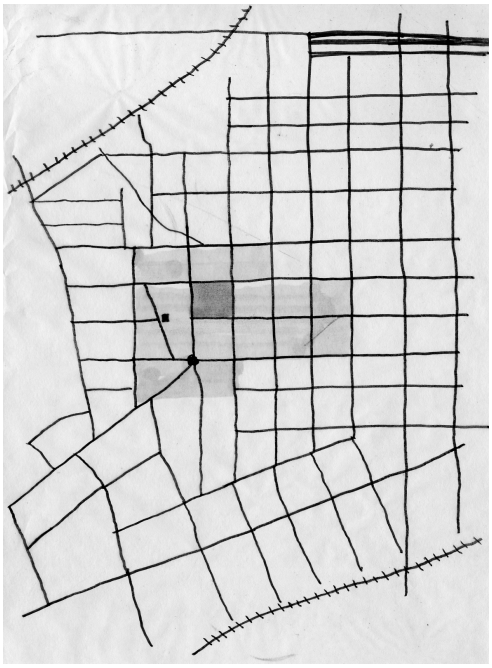

Figure 26 Urban intervention. New public park shown in dark gray. Streets shown in black. Affected areas lightly shaded.

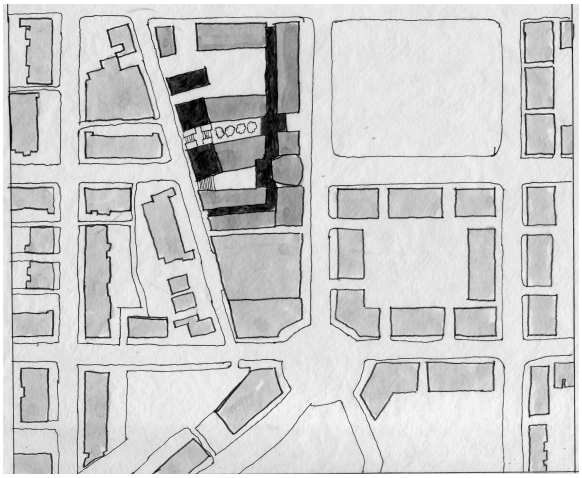

Figure 27 Plan Parti. Existing buildings to be saved and circulation shown in black. New school buildings shown in dark gray.

This parti is predicated on the idea that an urban park, based on the precedents of nearby Franklin and Union Squares, could be inserted into this area and act as front yard for the institution of the school, as well as an amenity to foster redevelopment. The park will be bounded on the south by Lombard Street, and on the north by Hollins Street. Warwick Street, so important in the previous parti, is being abolished completely south of Baltimore Avenue. Wheeler Street will instead be brought all the way south to Frederick Road to provide the west edge of the park and the east edge of the project site. The east edge of park will be provided by Bentalou Street. To the south of the site, Pratt street is brought all the way through, connecting East Pratt Street to West Pratt Street. A new traffic circle will

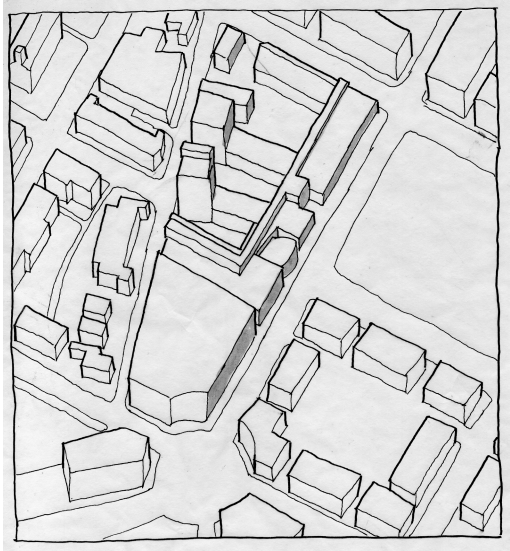

Figure 28 Axonometric view from the Southeast.

be added, which will accommodate the junction of Pratt Street, Frederick Road, Wheeler Street which will bring the outbound traffic from Lombard Street, and the entry to the West End Shopping Area.

This has the effect of doubling the depth of the project site, as well as shortening it considerably. This leads to a more internalized parti for the project itself. The circulation within the project, which was all exterior in the previous parti, would now be internal. Instead of paths linking the different streets, exterior spaces within the school take on the nature of enclosed courtyards. Here, the classrooms make a continuous street façade on the park, while the existing buildings hold the street edge on the west side. The main circulation of the building, parallel to Wheeler Street, provides a spine from which the various building functions are attached as separate bars that are oriented with their long sides facing north and south. From North to South, they are the workshops, the studios, the library, and the administration. The southernmost portion of this block would be occupied by a parking garage with housing facing the traffic circle.

In some respects this parti is the mirror image of the previous one. Where that one was spread-out, porous, and externalized, this one is compact, enclosed, and internalized. Its advantages include: the different functions would be close to one another, potentially objectionable activities would not be visible from the public way,

increased security and higher visibility due to a greater amount of open space in front of it. Its disadvantages include; difficulty of construction and phasing due to its nature as a single building, density and the removal of the dominant existing building from the public front of the complex.

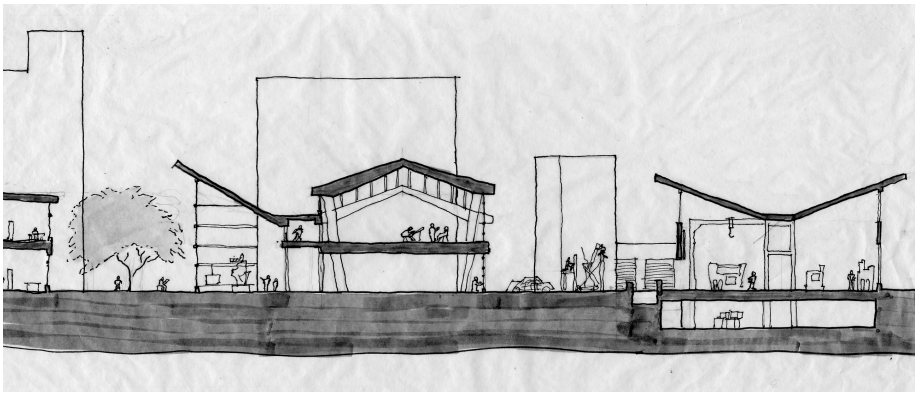

Figure 29Section through north end of project site, looking west.

Part 3: The Quad.

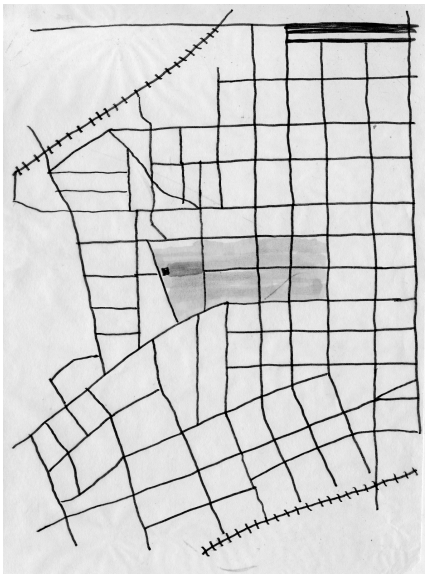

Figure 30 Urban intervention. Streets shown in black. Affected area lightly shaded. New Public open space shown in dark gray.

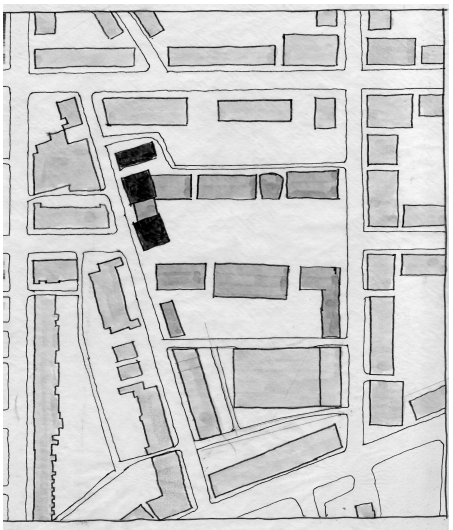

Figure 31 Plan Parti. Existing buildings to remains drawn in black. New school buildings shown in gray.

This parti puts a large open space directly in front of the existing building, continuing the axis of Lombard Street while terminating the actual drivable street some distance away. The new buildings of the parti would form this space in a manner similar to Jefferson's University of Virginia. In this Urban intervention, Gorman Street is brought through to Frederick Road, and forms the eastern limit of the project site. The effect of this is to transform what was a long rectangular block oriented East-West in the first scheme into a long rectangular block that is oriented North-South. The studios and workshops are put on the south side of the quad, with the administration and classrooms on the north. The larger block to the south will also house a large parking garage, which will block the work-yard from the housing that would line the block toward Frederick Road.

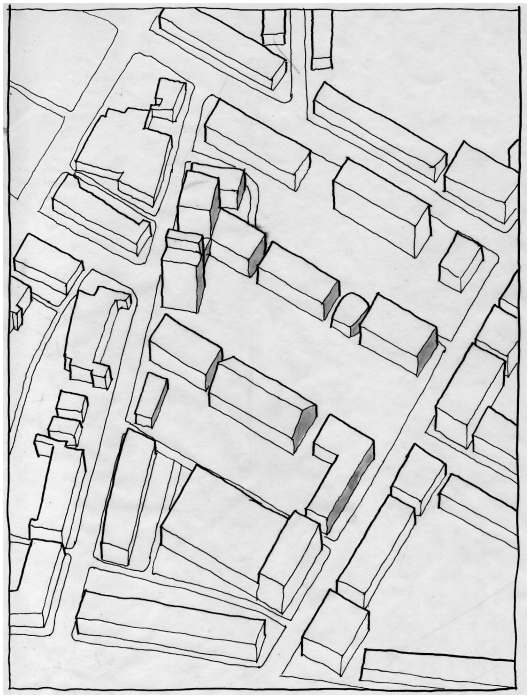

Figure 32 Axonometric view from the South East.

This sort of planning has been favored by institutions of learning for many years, largely because of its flexibility and clarity. It can organize a large number of disparate elements and uses harmoniously, while giving obvious hierarchy to a central element. It also functions well in building use, by giving primacy to one front of each building, it allows their back to be used for servicing. Furthermore, the orientation of the buildings is much better in terms of solar orientation than either preceding scheme. Though it is not the intent of this project to create a "green building," it can be considered to be part of accepted design standards to be responsible for a certain degree of energy conciousness, as well as the other benefits of good solar orientation. One of these benefits is that the outdoor spaces would have more usefulness in the wintertime, because of their better exposure to the sun. It also has many of the benefits of the first parti, being very porous to the community, creating a space that can be used by outsiders, and being contextual in the size and scale of its buildings. Like the second parti, there is a greater degree of ease of circulation between the different program elements. Its disadvantages include; the difficulty of integrating the off-axis existing buildings into the highly geometric parti, the fact that the main outdoor space may be too dominated by the school that it would not be used by the

surrounding community, and, perhaps most problematically, the issue of image. Though this is an institution for learning, it may be inappropriate for a precedent that is so strongly associated with conservative academia to be applied to such a technologically driven school, which also would have working class connotations. On the other hand, a square is a square, and its character depends more on that of the buildings around it than its shape.

These three partis each have their advantages and disadvantages. They differ in the degree of openness and integration with the surroundings, as well as how the building(s) is experienced. Many of these differences will have a large impact on overall character. For example, one of the challenges presented by the first parti would be how to create an architectural character that will meaningfully link the various buildings within the greater campus. The second parti may have the problem of articulating the difference between the various program components within the single complex and shared circulation system. The third parti creates an organizing principle that is so powerful that it may render the treatment of the individual buildings largely irrelevant; the quad could assimilate many different façade treatments, or lend itself to a uniform style. This may be viewed as either a positive or negative attribute of this parti. This is only one issue that has wide reaching implications for the initial parti decision. The issue of character, however, is of primary importance to this thesis. It aims to create a building or series of buildings that respond to the architectural environment, the building function, and the idea of the "Industrial Aesthetic" in a meaningful way. The first parti, with its dynamism and sense of movement, may foster an expression of high technology and progress. The

second parti, with its internalized circulation and disparate function, offers the opportunity to contrast differing construction types, with a wide variety of interior conditions. The third parti, with its clear organization, may accommodate a variety of differing building and façade treatments, so that the complex might become a showcase for different construction, or historical types. In this way any of these three partis may satisfy the requirements of this thesis.

Chapter 6: Design Methods.

The methods that I used this semester in design are quite different to those that I am accustomed to. Perhaps it was a little too haphazard to be truly called a "method" but I will try to describe it as best I cam.

This project, unlike all other projects that I have previously done had a certain amount of freedom to change the site and location. Even though I had identified a set of existing buildings to work around, as well as certain features I intended to preserve, the site limits were nebulous, and it took a great deal of time and effort to pin down. By the time I did, I had realized that the methods that I had been using were not working properly. It now appears that these methods were excessively linear, suited for a well-defined project. Of course, the responsibility for this is mine, for choosing such a large and open ended thesis subject.

So, with little progress being made with accustomed methods, I was forced to experiment with different ones. One of the more fruitful discoveries I made in this semester is to determine the proper role of computer versus hand drawing. It seems to be a precept of the school that hand drawing is superior in just about every respect to hand drawing, and many faculty members have noted with dismay that computer presentations have all but replaced hand drawn presentations. However, the computer has several distinct advantages over hand drawings. Aside from efficiency, its ability to duplicate standard modules easily reflects the mass-constructed and standardized modes of construction that are common today, while hand drawing is more analogous to hand craft. Standardized production is the rule in construction, so it should definitely register within the design process. Its inherent precision is also quite helpful in this respect, especially for one such as myself, who has difficulty making

precise hand drawings. However, it has some definite drawbacks: I had noted previous to embarking on my thesis that computer drawing is a left-brain activity. I say this because it requires a strong math ability to use in its most efficient manner. It also requires that the user translate the ideas into terms suitable for the program's output, thereby imposing the standards of its mathematical programming upon them. Though these are not entirely bad points, they tend to prejudice the design output toward a left-brained set of ideals. I have used the computers these years in the perhaps mistaken belief that I am a stronger logical and mathematical (i.e. left brained) thinker than artistic and creative one. By contrast, hand drawing (at least in my case) is neither precise nor logical. Its primary strengths are its persuasiveness, its speed, and the fact that when drawing, you can see the entire piece of paper with everything on it. This makes it more ideal for large scale problems, as well as drawings devoted to the character of the places being designed. One of its strengths is also a potential drawback, that is, its persuasiveness. I was once told by a professor at the University of Wisconsin that one should not become attached to drawings, because a drawing represents an idea, and not every idea is worthwhile. For this reason, the program of that school seemed to de-emphasize drawing skill in favor of tectonics and study of human behavior within the built environment. In short, a beautiful drawing can be dangerous, because it might make a poor design decision into a persuasive graphic.

At the outset, I had no intention of doing any of my final presentation drawings by hand. All hand drawings I produced during the initial months of the semester were meant to be stand-ins for later computer drawings, either line drawings

or three dimensional renderings. By making these drawings subordinate to the computer drawings, I unwittingly prejudiced the design process against the methods that would have been most useful during the early stages of the work. Later, when I came to realize the utility of the hand drawings themselves, things began to improve. However, I still used the computer to create underlays to retain a certain degree of precision. The exception to this was in regard to hand drawn perspectives, which I now consider to be superior to their computer counterparts, at least as far as design development. When used in the course of design development, they can produce a feeling of place, which helps to inform future design decisions. For example, prior to designing certain buildings in detail, I drew perspectives that occurred within them or out side of them, which led me to make decisions regarding their materiality, their horizontal or vertical emphasis, and their scale. I frequently drew them after growing bored and/or frustrated with other drawings, returning to the two dimensional drawings after I completed a perspective. More than one person has commented that these drawings are "good therapy"; they are, but more than that, they became an excellent design tool as a dialectic began to form as I alternated between two and three dimensional drawings. This process allowed me to make great strides in my design process toward the end of the semester, which was fortunate.

It would seem that the most important lessons of this semester was a greater understanding of the various tools that we have to design with. My decision to make a hand-drawn presentation is a reflection of this greater understanding. If I had stuck by my initial intention to present with computer drawings, I may have been able to create a more impressive presentation, though with a less developed design. It was

never my intention to impress anyone, however, education has always been my goal, not any notion of networking or job fishing. It would appear that the computer is suitable for use late in the design process. Indeed, it seems that my methods were crossed; I should have designed by hand in the beginning, then moved into more computer drawings near the end. Anyhow, the time spent learning this was not wasted.

At the critique, some specific objections were brought up. I have already discussed some of the issues directly related to media, but I would now like to discuss some of the other objections.

One of these objections was that my design for the façade of my building was "whimsical." I take exception to this for several reasons. The first being; I have discovered no truly objective aesthetic theory. While each of the several styles of architecture have created their own, internally consistent theories, there is no objective means to determine whether one is better than another. Furthermore, there have been many aesthetically attractive buildings not built in any particular style, or using any particular theory. So, since there is no objective method to determine which aesthetic theory, if any, to use, it can be said that all aesthetic choices are, in a sense, "whimsical." This does not mean that there are no reasons behind making them, but that no one can objectively say that a different approach would not be better. There were sound reasons behind the aesthetic decisions I made. For example, when designing the Willard Street (West) Façade, I was keenly aware of the difficulties of balancing the various existing buildings. In order to balance the preponderance of large, brick buildings on the south end of the site, having no large

masses to put on the opposite end, I attempted to draw visual emphasis to the north by placing a unique shape with a contrasting material there. There are many other ways of doing something like this, but none that couldn't be considered "whimsical" in one way or another. Even if I had adopted a very rational, classical approach, it could be say that my decision to adopt that approach was whimsical, as there are others that would have also served. This fits in with arguments against the concept of "style" that I have used previously. They are all, in a sense, whimsical, in that there is a lack of objective fact to support any particular one.

In conclusion, this semester was for me more about the process than the product. It was perhaps risky to experiment with a new method in the midst of thesis, but I felt that since my goal was to learn, I shouldn't hesitate to take such risks.

Chapter 7: Final Design

I used ideas from parti two of my original partis as recorded in Chapter 5 above. I developed this one because of its two best attributes, namely that the building produces an enclosed campus that lent itself well to the program and the site conditions, and it created a public park that added a center and identity to the community around it.

The urban design scheme is all about connecting the campus with its surroundings. The first method that it uses is the extension of Lombard Street. This has the effect of making the campus spatially connected with the downtown of Baltimore. The second is by connecting streets that had been disrupted by the seemingly random array of existing streets that disrupted the grid. Finally, the addition of the park creates an urban center to which local activities would gravitate, increasing the profile of the school in the community.

The site is segregtated into different uses, with the circulation centered on the existing smokestack near the north west corner of the site. One axis extends from this point eastwards to unite the park spatially with the school. The other extends south east to follow the existing divergent axis of Willard street, to which the existing buildings are oriented. These two axes become the primary pedestrian entrances to the site.

The uses that immediately faced the park are the workshops. These three buildings are shed like buildings with roof monitors that follow the precedents for industrial buildings given above. They form a signifier for the purpose of the campus by boldly proclaiming its affiliation with industry through their form and articulation.

These buildings are fronted by an open area that can be used for a work yard or for events and exhibitions.

Closest to these buildings are the large demonstration classrooms, that form the north boundary of the site. These are the rooms that are most closely associated with the activities of the shop.

At the joint where Hollins Street intersects Willard Street is placed the lecture hall. The lecture hall, with its wedge-shape is well suited to be put at this acutely angled intersection. To add activity and life to that corner, the lecture hall is wrapped with seating and lounge areas associated with the schools café. The mass of the lecture hall also helps add balance to the west façade.

To the south of the lecture hall, between it and the existing buildings, are placed the student store, restrooms and mechanical spaces. Inside the existing buildings are placed the gallery and the library, connected by the commons.

Thus, the campus is organized with the shop oriented spaces closer to the main entrance from the park, with the administrative and resource components located deeper within the site.

In the center of the site there's a sunken garden that has a waterfall and small trees. This is intended to contrast with the slightly harsh industrial fabric of the campus, and provide a place of quiet and refuge inside it.

A great challenge of this project was to create a campus that was both insular and protected, but also spatially linked to the surrounding context. By limiting the number of access points, I made the campus protected; yet by connecting these access points visually to the wider context, by relating them to the site's existing landmarks,

I also achieved the goal of connecting them to the wider context. In this sense I feel that the thesis was a successful one.

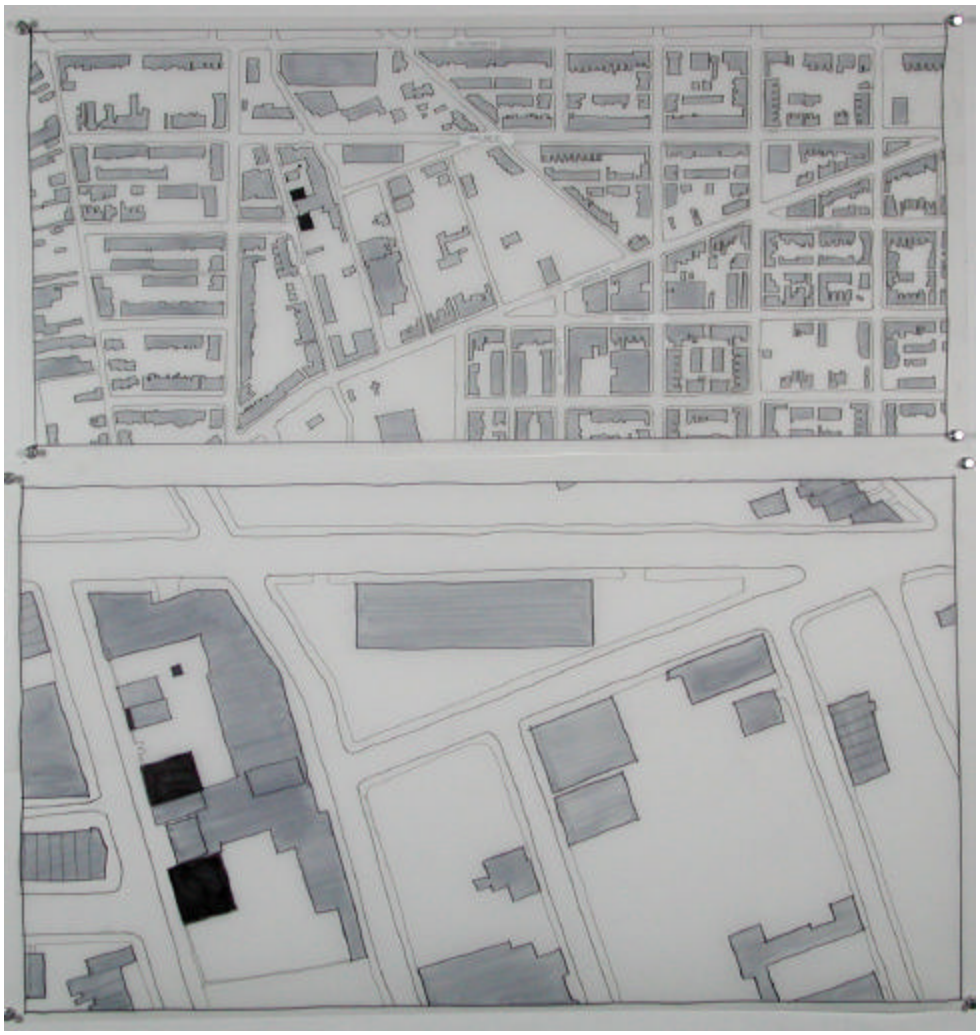

Figure 33: Existing City and Site conditions. Existing buildings to be kept are shown in black. Other buildings are shown in gray.

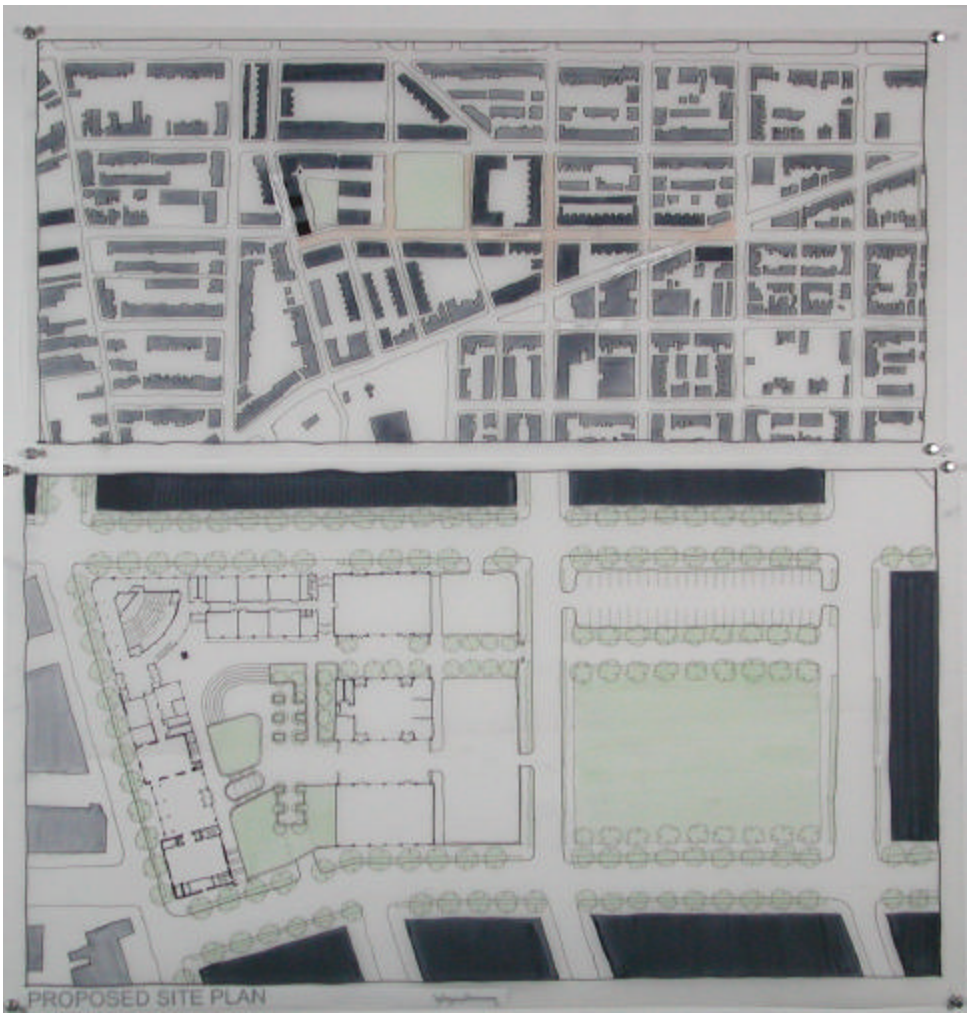

Figure 34: Proposed City and site plan. Existing buildings to remain shown in black, new buildings are shown dark gray. Existing buildings to remain are light gray. Colored streets are new.

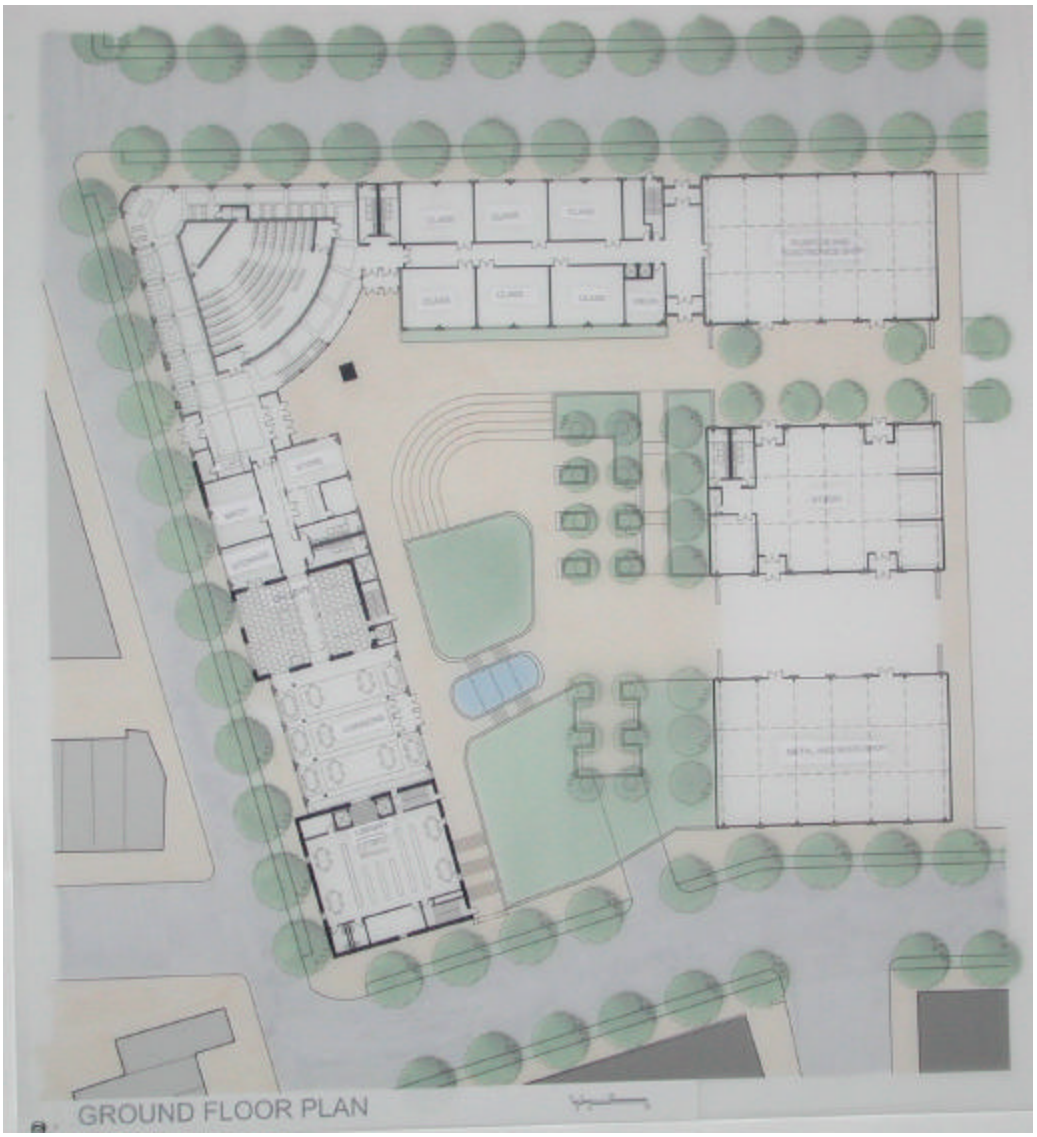

Figure 35: Site plan, existing site buildings in black, new buildings in dark gray, existing context buildings in light gray.

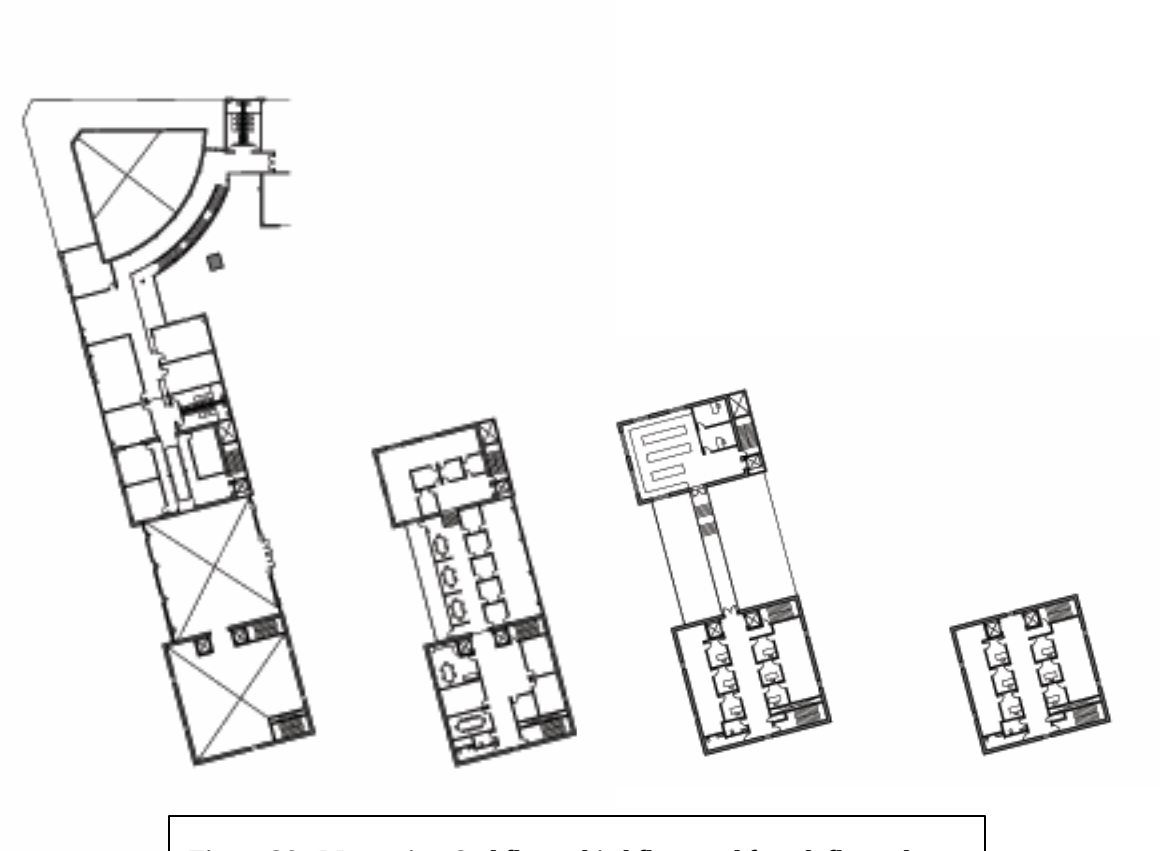

Figure 36: Mezzanine, 2nd floor, third floor and fourth floor plans

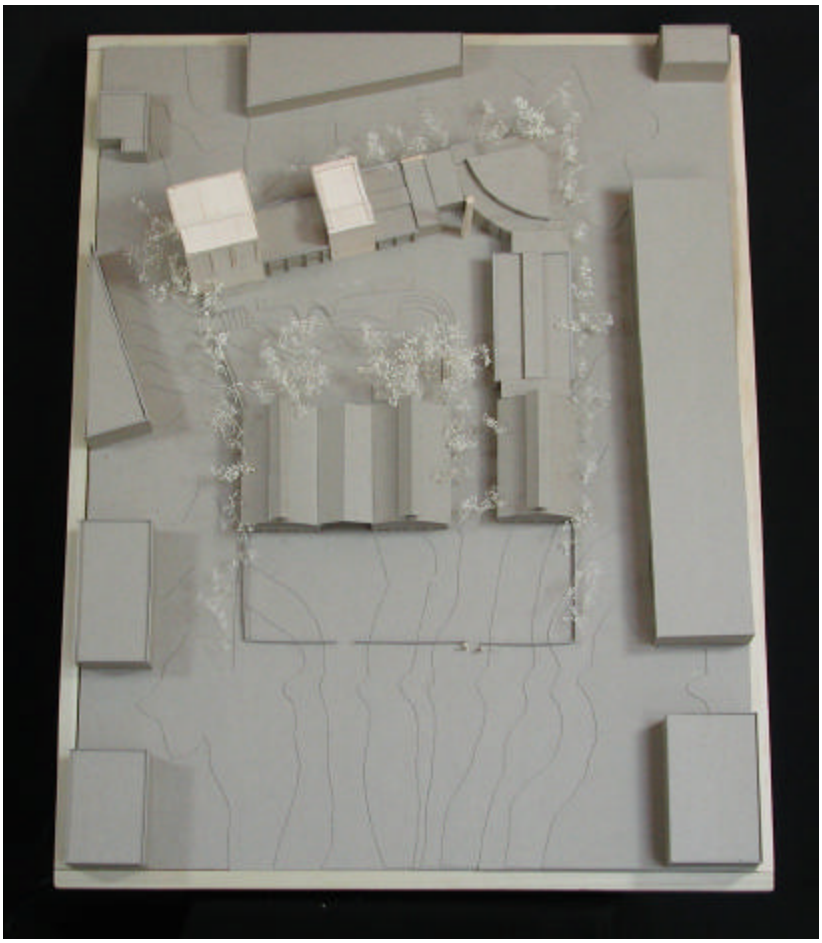

Figure 37: Site model from above. Existing buildings in wood. North is to the right.

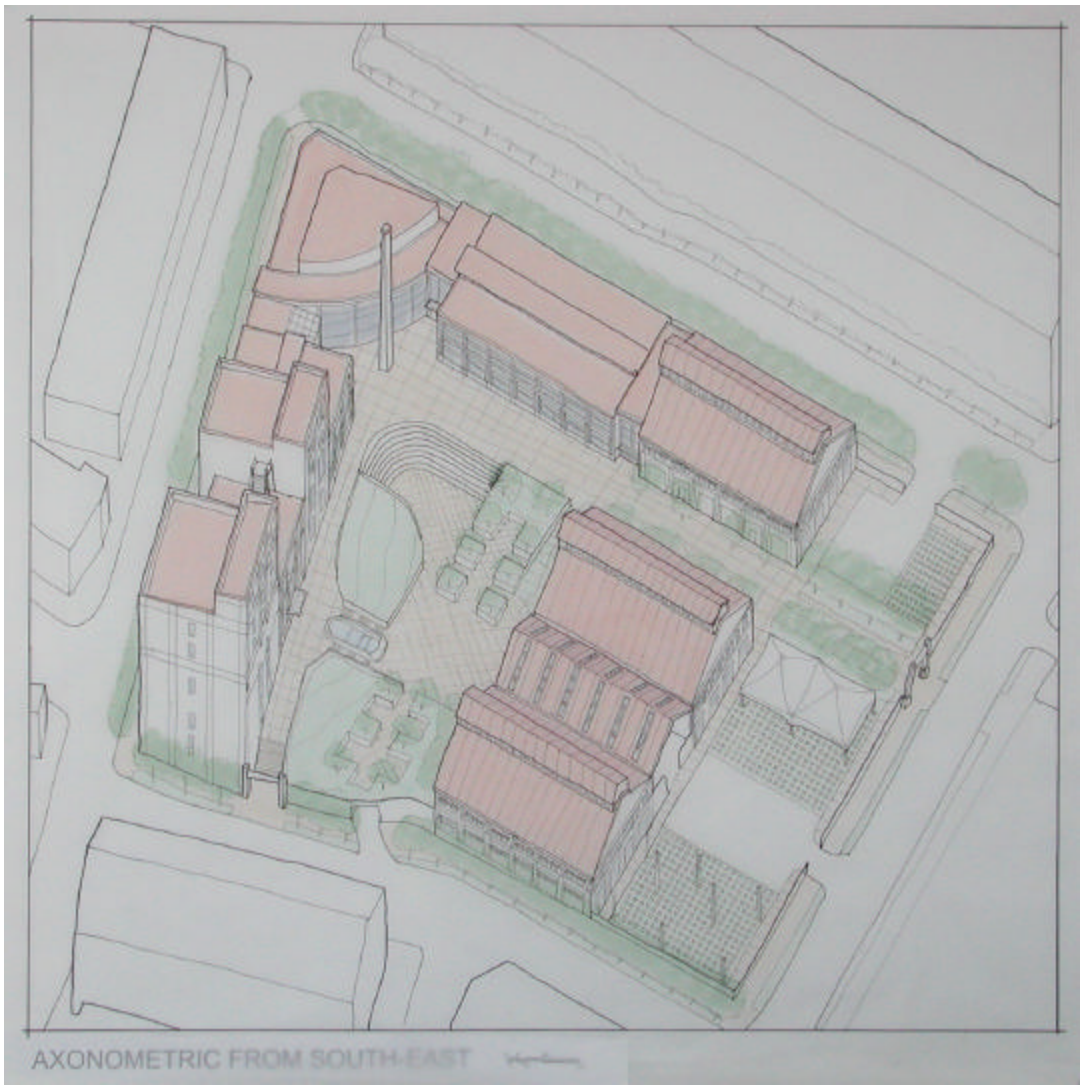

Figure 38: Axonometric from South East

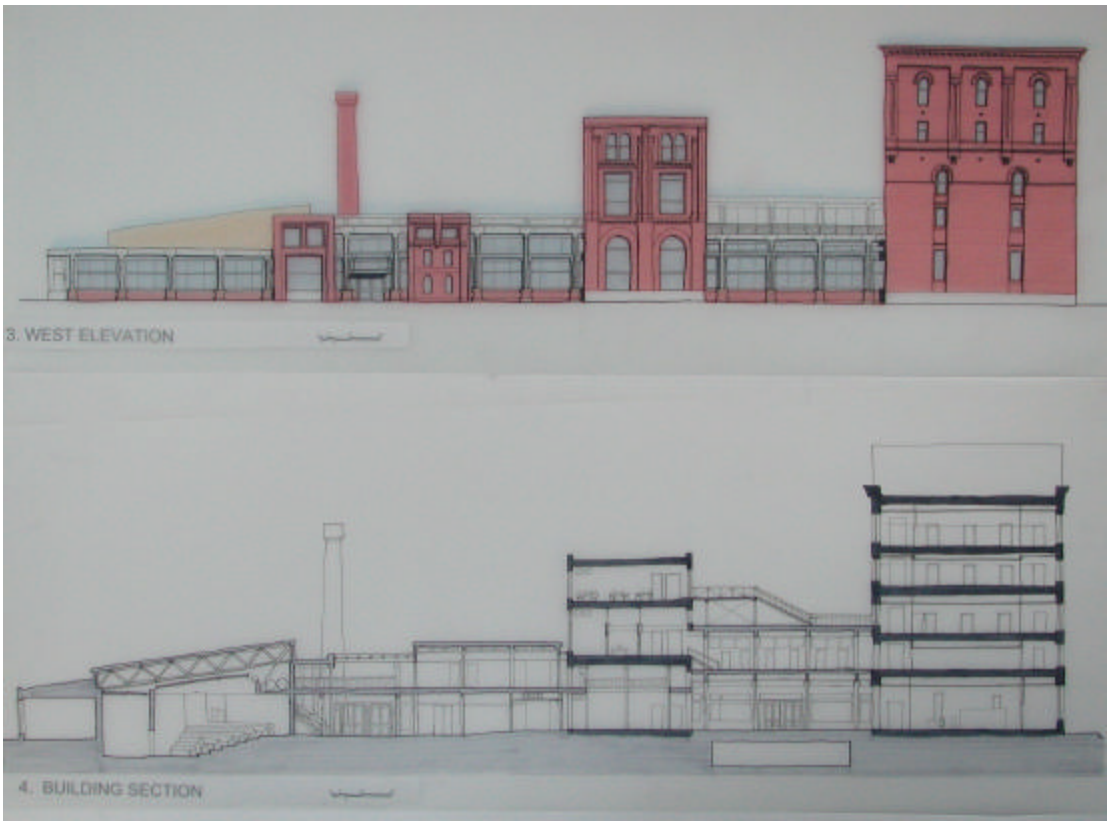

Figure 39: Elevation and section of Willard Street Facade

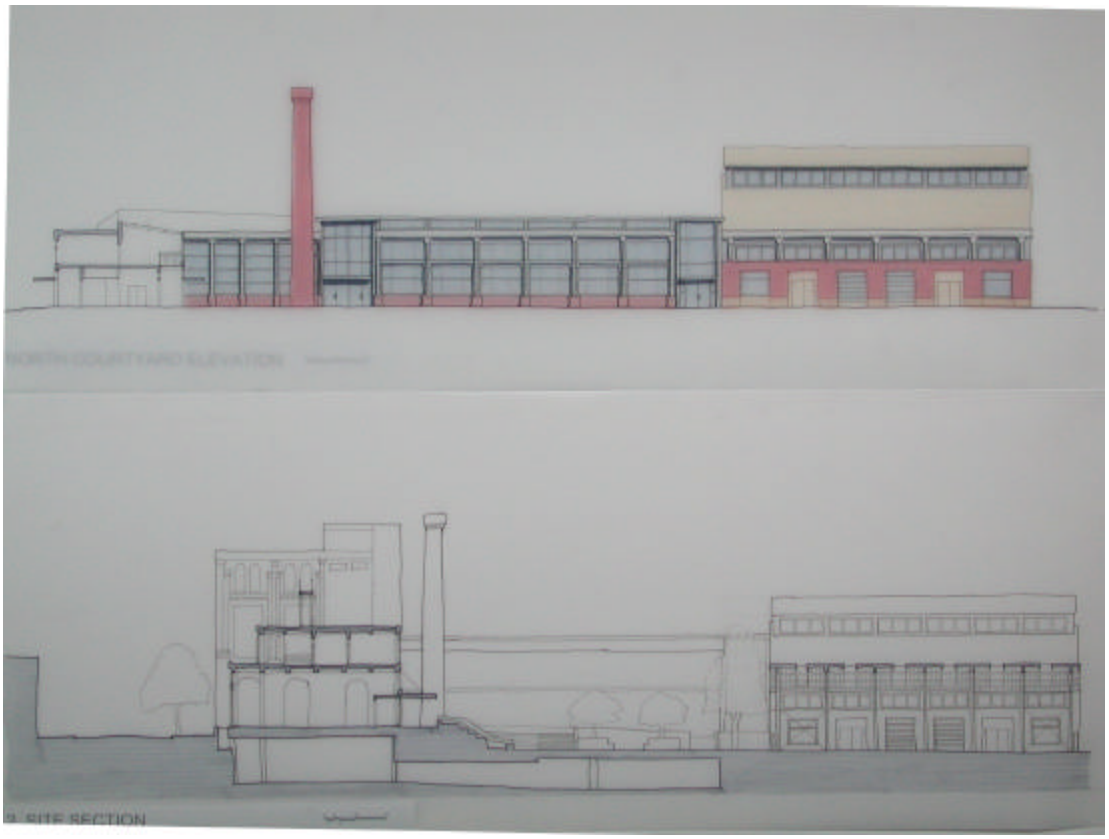

Figure 40: North Courtyard elevation and site section

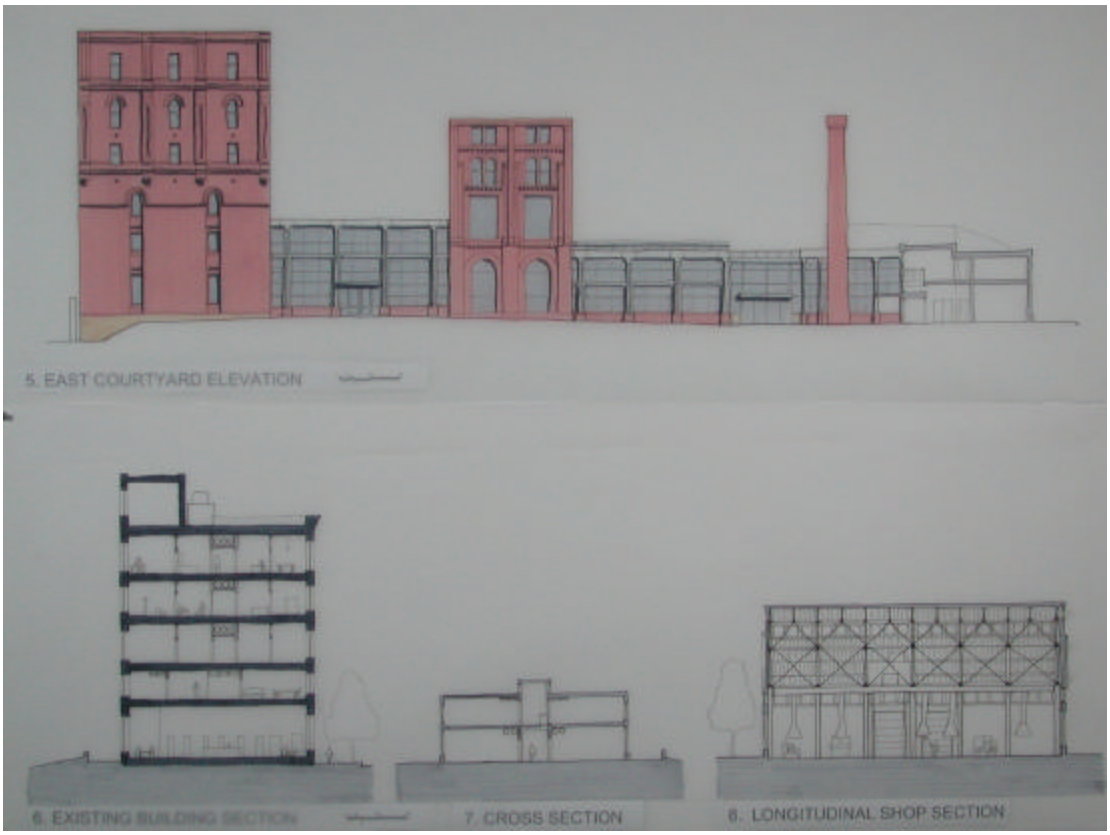

Figure 41: East Courtyard Elevation and sections through Existing Building, Classrooms, and Workshops.

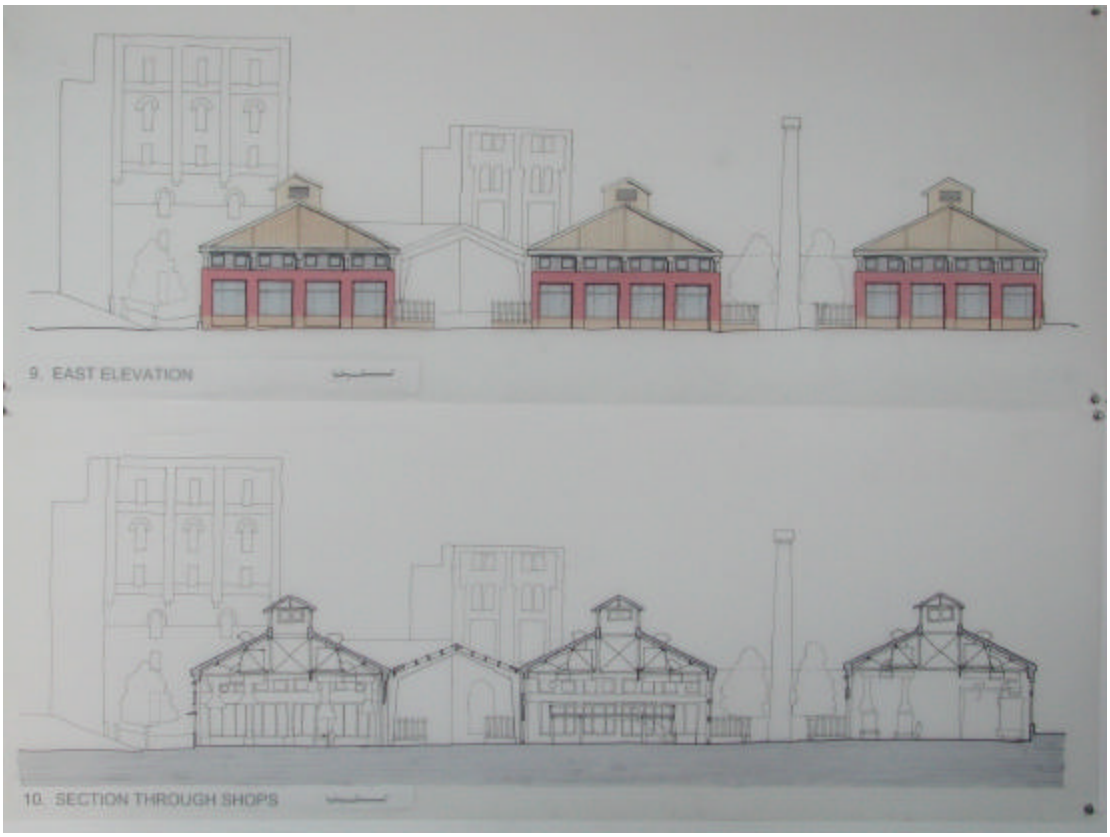

Figure 42: Elevation and Section of Workshops

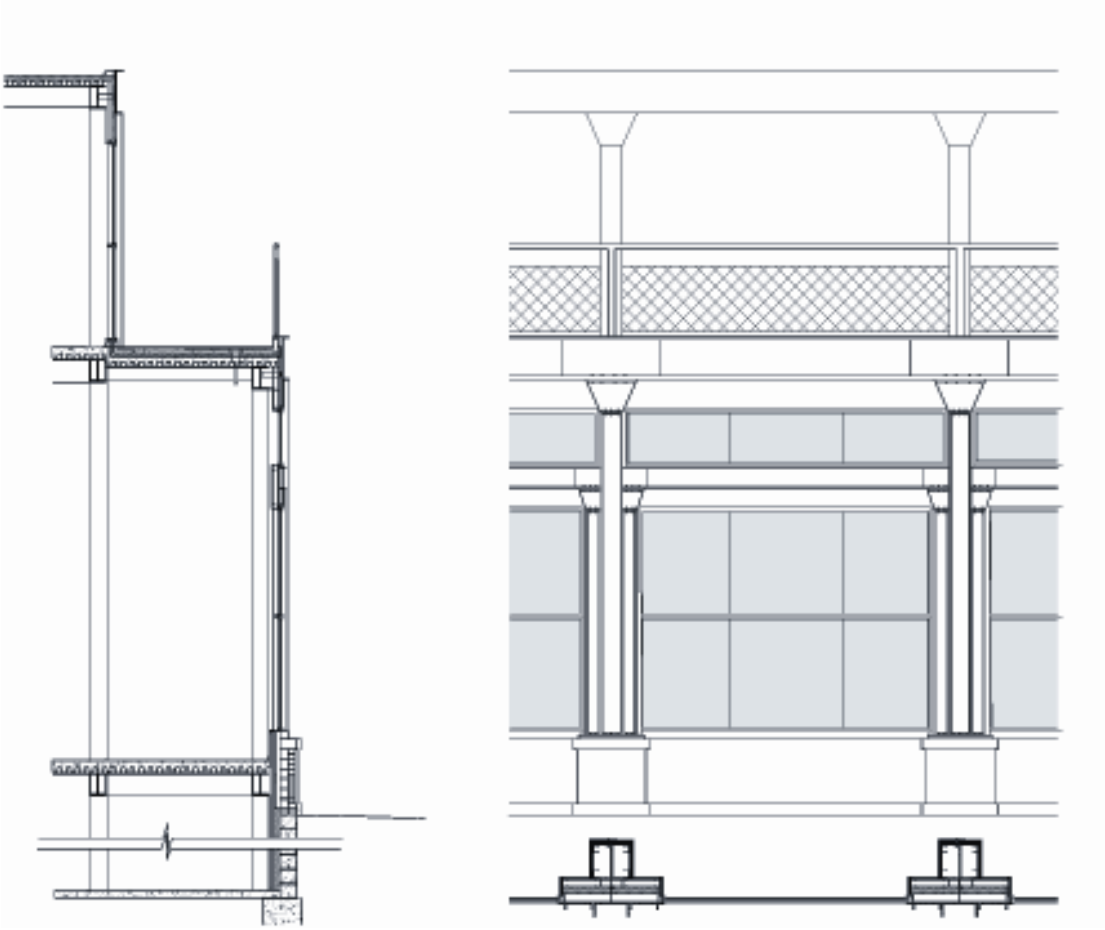

Figure 43: Wall section through West Commons wall. Typical

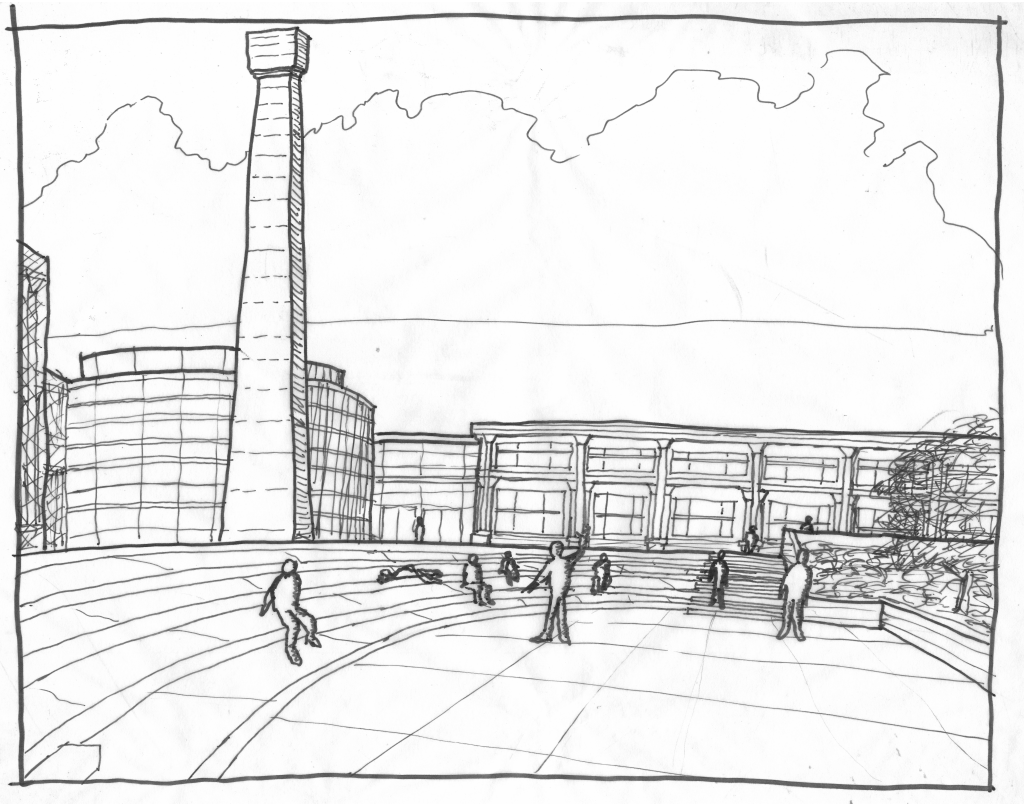

Figure 44: View of amphitheater

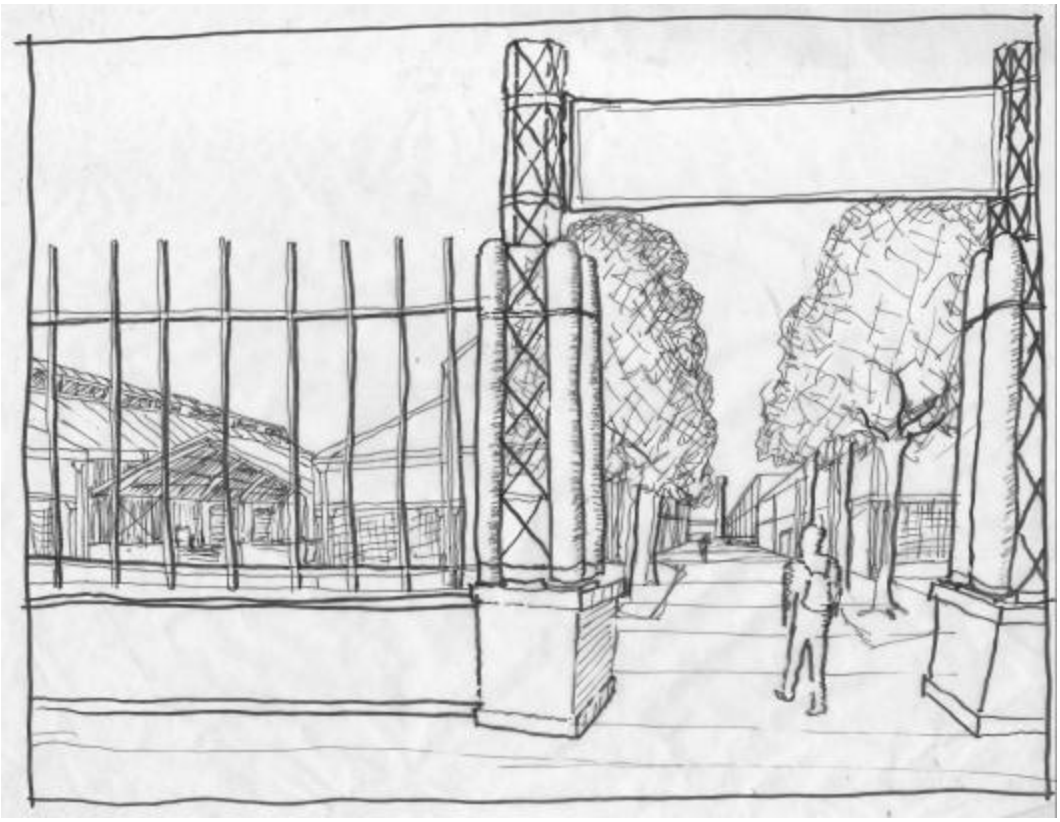

Figure 45: View from main entrance

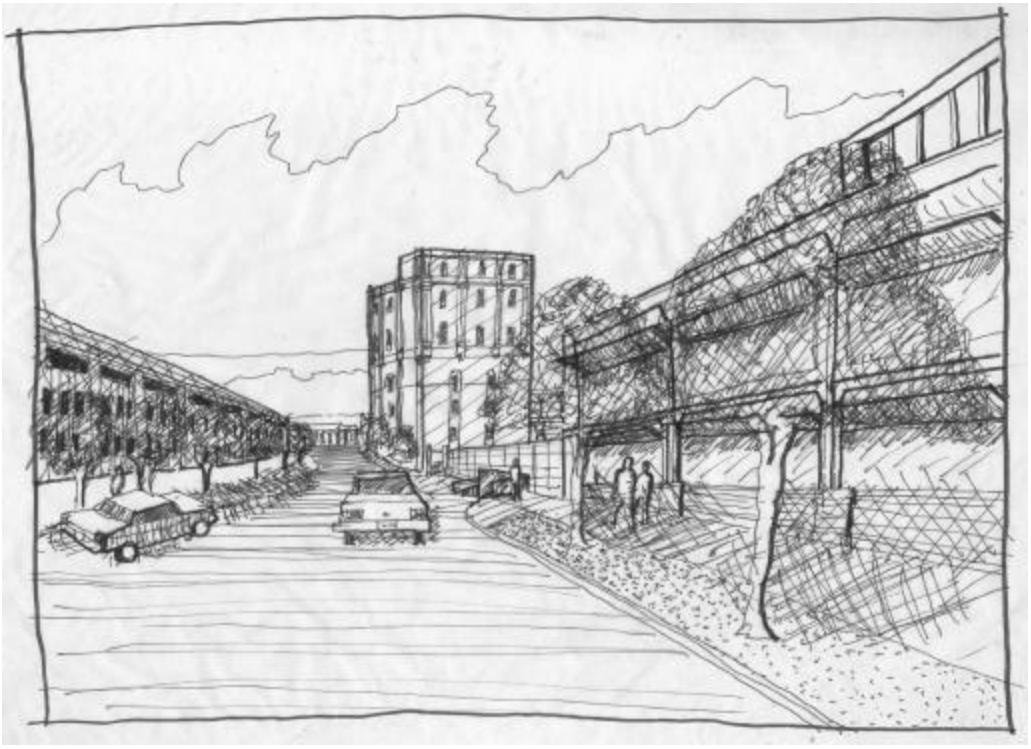

Figure 46: Exterior view on Lombard Street

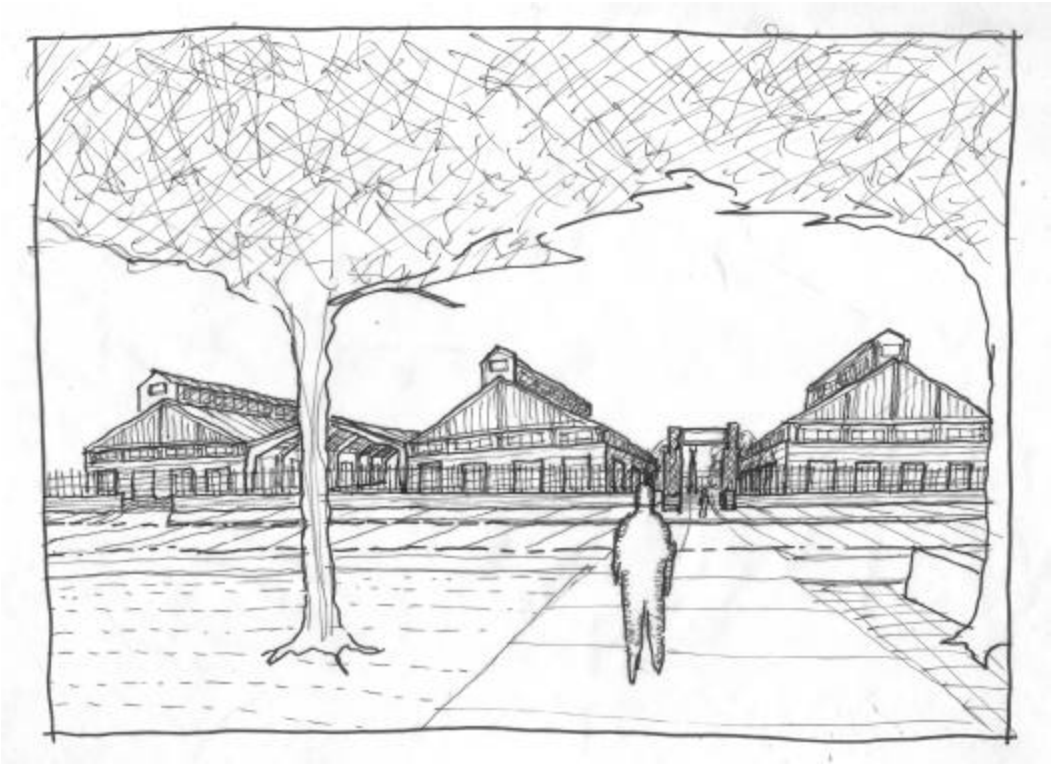

Figure 1: View from Park

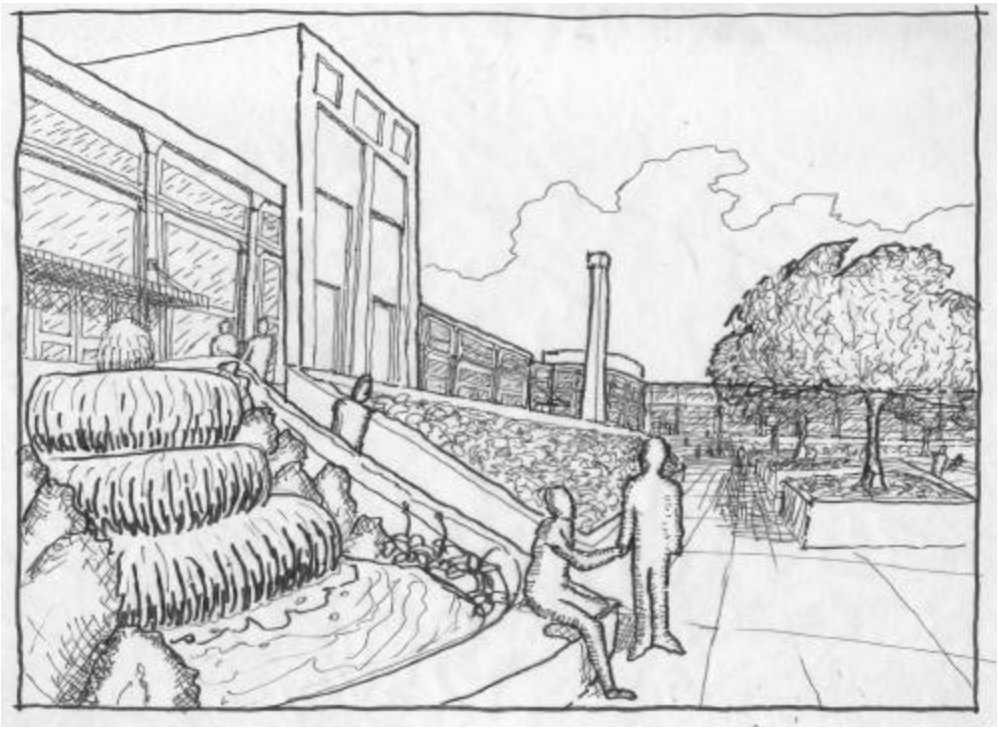

Figure 48: View of Courtyard

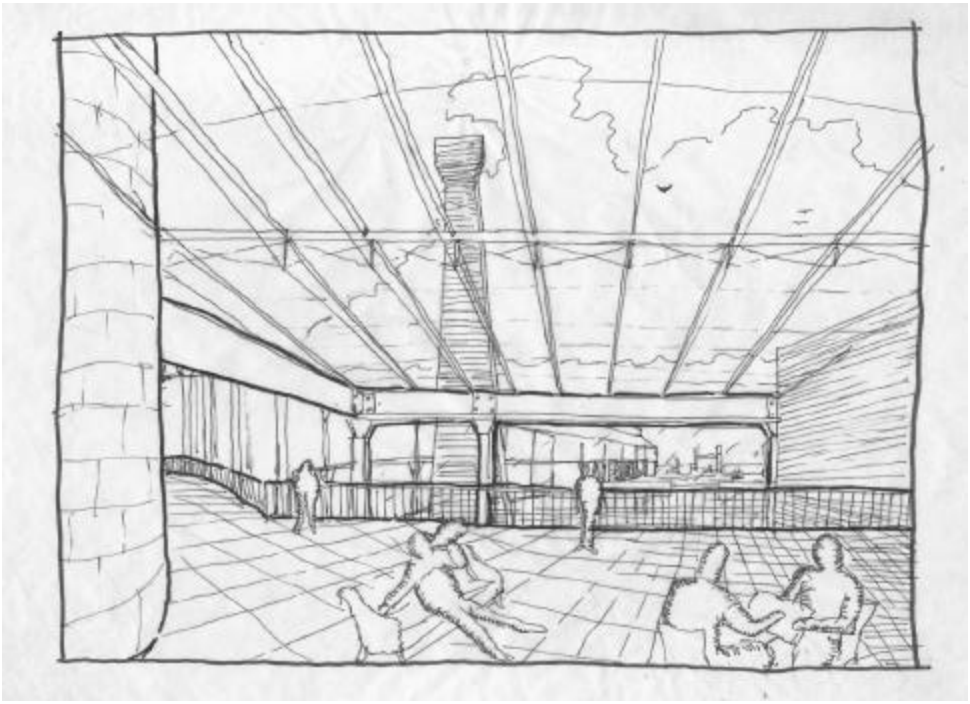

Figure 49: View of Smoke Stack from above Lobby

Figure 50: View of Lecture Hall

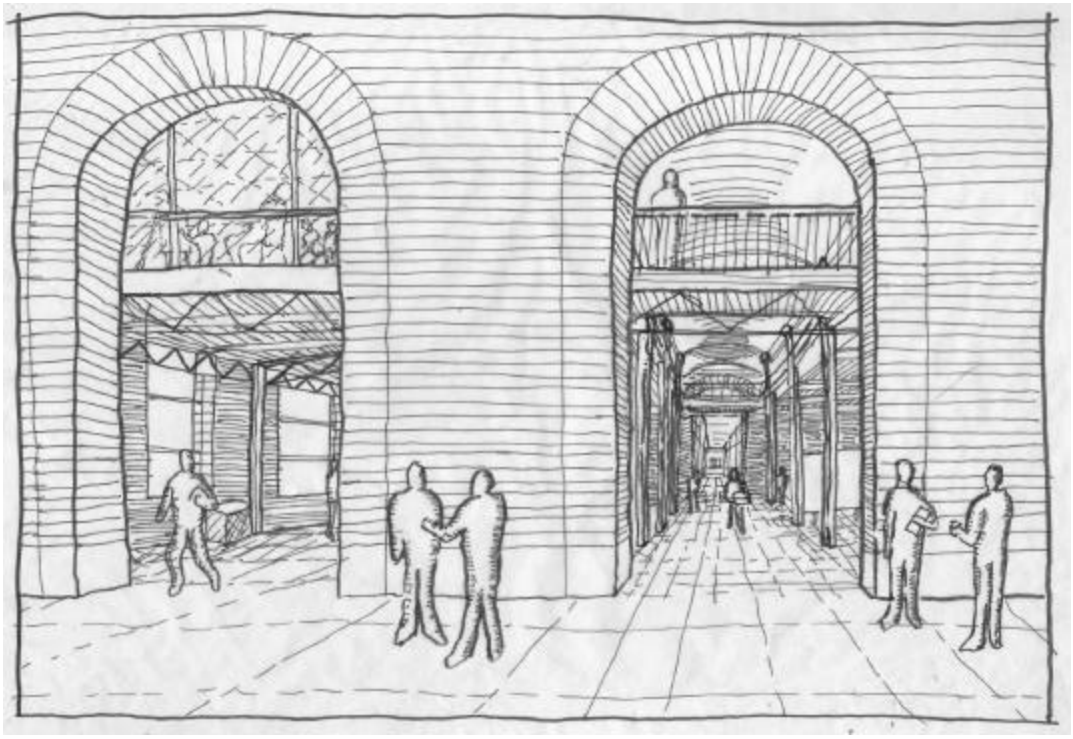

Figure 51: Interior showing Gallery and Mezzanine

Figure 52: Interior of workshop

Figure 53: Interior of Lobby

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