

ABSTRACT

Title of Document: A NEW LIFE FOR STEVENS ELEMENTARY
SCHOOL AND ITS NEIGHBORS

Colleen Elizabeth Gove,
Masters of Architecture, 2006

Directed By: Professor Karl DuPuy,
School of Architecture, Planning and
Preservation

A powerful school environment unites an entire community. This thesis addresses ways to bring together neighborhoods; in particular to strengthen the relationship between the child and the city. It focuses on children in an urban atmosphere and the connection at many levels between home and school, between the public and private realm. In studying this connection, this thesis explores a site located where business district and residential zone meet.

In Washington, D.C., city schools have long been the core of the urban community, today, however, most of these schools are old and lacking in amenities. This thesis program explores a new school model where the existing infrastructure of historic schools is used as the core of a new community center within the school. In addition to the historical school, program elements to help foster new growth on the site for the school and community include outdoor play areas, a gymnasium, theatre, and library.

A NEW LIFE FOR STEVENS ELEMENTARY SCHOOL AND ITS NEIGHBORS

By

Colleen Elizabeth Gove

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
Colleen Elizabeth Gove
2006

Advisory Committee:
Professor Karl DuPuy, Chair
Associate Professor Isabelle Gournay
Professor Tom Schumacher
Lecturer Julie Gabrielli

© Copyright by
Colleen Elizabeth Gove
2006

Dedication

To the children of Stevens Elementary School.

Thank you to everyone that has helped me through this thesis. Thanks in particular to my parents and sister, friends, and classmates. Thank you to my committee and to Karl for his continued belief in my project and never-ending support. Thanks to JC and Steve for sticking it through the past four years with me, and to Jonathan for helping me believe in myself. Thanks to everyone who helped with the thesis production; Kathleen, Beret, Fiver, Lisa, Lin, Carl, Scott, and Jonathan.

Table of Contents

Abstract	
Dedication	ii
Table of Contents	iii
List of Tables	iv
List of Figures	v
Chapter 1: Introduction	1
Chapter 2: Elements of a new school model	4
<u>Needs of the Urban School</u>	4
<u>Ideal setting for the new school model</u>	8
Chapter 3: A site of opportunity	9
<u>The Urban Neighborhood: Washington D.C.</u>	9
<u>Intervention and the plight of historic schools</u>	11
<u>A Strong Site History: Stevens Elementary School</u>	12
<u>Site description & analysis</u>	14
Chapter 4: Support through Program	49
<u>School as Educator</u>	49
<u>Community center as Core</u>	51
<u>Place for Recreation</u>	53
<u>The Home Base</u>	59
<u>Program Requirements</u>	60
Chapter 5: Mixed-Use and Preservation Examples	65
<u>Swans Marketplace</u>	65
<u>Harlem Public School 90 – Design Entry 1</u>	71
<u>Nina West Homes by Sylvester Bone in London</u>	76
Chapter 6: Design	79
<u>Scheme 1</u>	79
<u>Scheme 2</u>	80
<u>Scheme 3</u>	81
Chapter 7: Final Design and Conclusions	82
<u>Design Decisions</u>	82
<u>Conclusions</u>	110
Bibliography	111

List of Tables

Program Requirements.....60

Outdoor Program Requirements.....61

Park Times of Use and User Conditions.....62

Park Type Requirements.....63

Program Adjacencies.....64

List of Figures

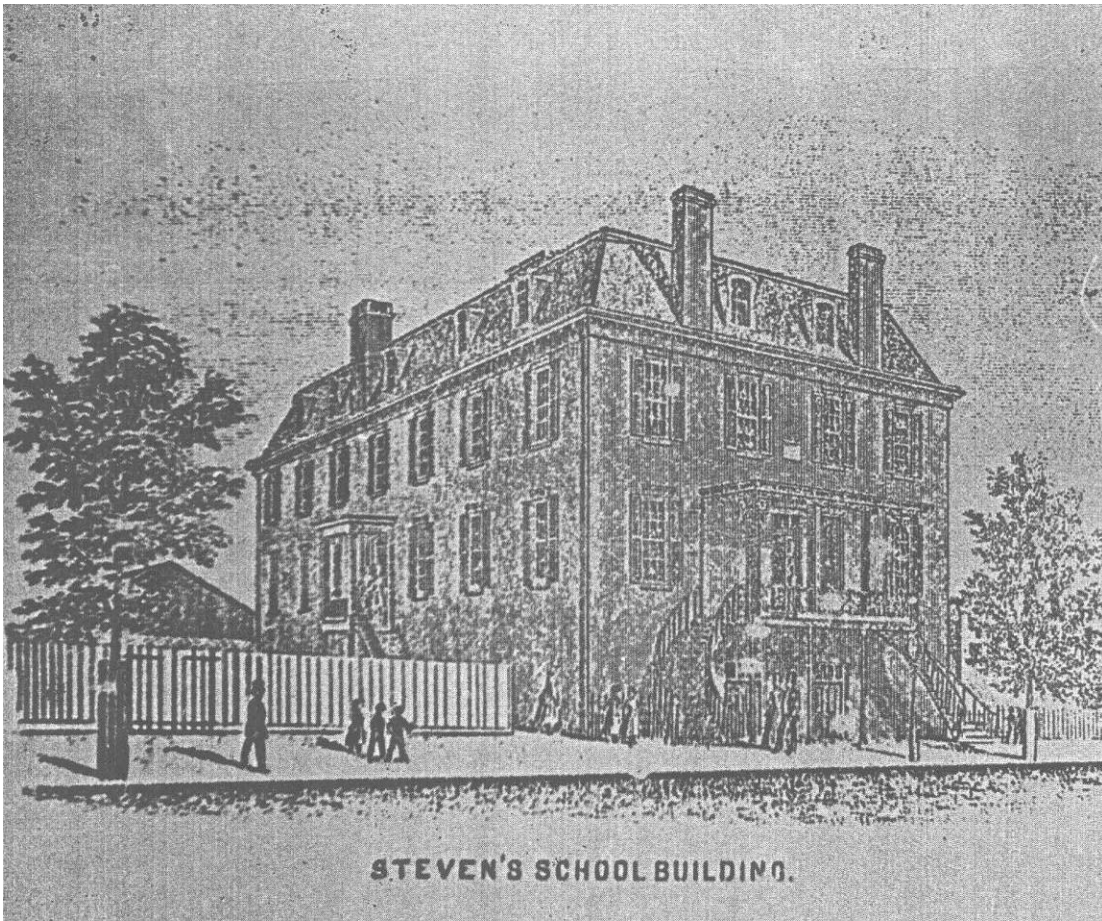


Figure 1 – Image of first Stevens School building from 1868.....	11
Figure 2 – Map-quest image of the thesis site.....	12
Figure 3 –Aerial view of the site.....	14
Figure 4 - Sanborn Map showing the site in 1888.....	14
Figure 5 – Diagram showing a figure ground of the DuPont Circle, Foggy Bottom, and Business District regions of Washington D.C.....	14
Figure 6 –Diagram showing nearby points of interest.....	16
Figure 7 – Diagram showing Metro access to the site within five and ten minute walking radius.....	20
Figure 8 - Diagram showing green spaces and parks surrounding the site.....	21
Figure 9 – Figure ground of site and surrounding context.....	22

Figure 10 – Diagram showing main streets around the site.....	22
Figure 11 – Diagram showing retail frontage	22
Figure 12 - Axon showing existing buildings on the site.....	23
Figure 13 - Diagram showing approach to the site from three main metro stops and a bus stop.....	24
Figure 14 - Diagram showing traffic patterns around the site.....	25
Figure 15– Land use Diagram of the site.....	26
Figure 16– Parking diagram showing both surface and structured/ garage parking...	27
Figure 17– Existing site plan block.	28
Figure 18– Diagram showing street dimensions.....	28
Figure 19– Site showing buildings to be demolished.....	29
Figure 20 – Diagram showing the site dimensions from inside edges to sidewalk.	29
Figure 21 – Diagram highlighting lack of green planted open space.....	29
Figure 22 – Stevens Elementary School existing basement floor plan.....	30
Figure 23 – Stevens Elementary School existing first floor plan.....	30
Figure 24 – Stevens Elementary School existing second floor plan.....	31
Figure 25 – Stevens Elementary School existing third floor plan.....	31
Figure 26 – Diagram showing adjacent building condition.....	33
Figure 27 - Diagram showing noli condition of school entry sequence.....	33
Figure 28 - Diagram showing first floor and the main circulation.....	33
Figure 29 - Stevens Elementary Boundary Map.....	34
Figure 30 – Map of elementary schools (ES), junior high schools (JHS), and senior high schools (SHS) in planning area F.	35
Figure 31 – Stevens School Front East Façade 2005.....	36
Figure 32 – Humane Society Building located North of Stevens on the Site.....	36
Figure 33 – Existing playground for Stevens Elementary School Students	37
Figure 34 - Sidewalk on L Street.....	37
Figure 35 – Building on the Western edge of the block.	37
Figure 36 - Building across from the site on the north side.....	38
Figure 37 - Parking garage located in the building on west side of the site.....	38
Figure 38 - Corner of L Street and 21 st across from the site.....	38

Figure 39 - Building on 21 st Street north-east from site.....	39
Figure 40 - Building on the southwest corner of the site.....	39
Figure 41 - Retail on southwest corner of the site.....	39
Figure 42 - View looking down K Street to the west.....	40
Figure 43 - View down K Street to the east.....	40
Figure 44 - Corner of 21 st Street and Pennsylvania.....	41
Figure 45 - Sidewalk in front of Stevens School.....	41
Figure 46 - Front entrance of Stevens Elementary from across 21 st Street.....	42
Figure 47 - Alley between L Street and K Street.....	42
Figure 48 - Examples of historic town homes along surrounding streets.....	42
Figure 49 - Historic residential units along 22 nd Street.....	43
Figure 50 - Historic homes in Foggy Bottom.....	43
Figure 51 – Sun Diagram of the site with demolition buildings removed.....	44
Figure 52 - Diagram showing possible courtyard condition based on south sun angles and shaded areas.....	45
Figure 53 - Parti 1: extending beyond soft edges of proposed site.....	46
Figure 54 - Parti 2: extending beyond soft edges of proposed site.....	46
Figure 55 - Existing open space figure ground.....	47
Figure 56 - Open space Diagram 1.....	47
Figure 57 - Open space Diagram 2.....	47
Figure 58 - Open space Diagram 3.....	47
Figure 59 - Open space Diagram 4.....	48
Figure 60 - Open space Diagram 5.....	48
Figure 61 - Open space Diagram 6.....	48
Figure 62 – Anna Elementary School diagram.....	50
Figure 63 - Anna Elementary School diagram.....	51
Figure 64 - San Francisco Courtyard.....	53
Figure 65 – Battery Park City Playground.....	53
Figure 66 – Bleeker Street Playground.....	53
Figure 67 - Boston Commons Images.....	54
Figure 68 - Elementary School class visiting Rock Creek Park.....	54

Figure 69 - Image of a private school yard attached to a day care center.....	55
Figure 70 - Elementary school play yard in Texas that is also open for public use. .	56
Figure 71 - Asphalt behind Stevens Elementary School.....	56
Figure 72 - Image of children gathering on front stoop.....	58
Figure 73 - Swans Market Residential Court.....	65
Figure 74 - Swans Market Ground floor plan.....	66
Figure 75 - Swans Market Second floor plan.....	66
Figure 76 - Swans Market interior view.....	67
Figure 77 - Swans Market Main courtyard.....	67
Figure 78 - Swans Market Exterior Street Elevation.....	68
Figure 79 - Swans Market Section.....	68
Figure 80 - Swans Market Section showing dimensions of interior courts.....	69
Figure 81 - Swans Market Section showing sun angles and light penetration.....	69
Figure 82 - Diagram showing dimensions of open space courtyards	69
Figure 83 - Adaptation of Swans Market housing onto thesis site.....	70
Figure 84 - Public School 90 existing site plan.....	71
Figure 85 - Public School 90 Entry 1 - First floor plan.....	72
Figure 86 - Public School 90 Entry 1- Plan showing lobby connection.....	73
Figure 87 - Public School 90 Entry 1 - Section.....	73
Figure 88 - Diagrams reinforcing connections to entry volume.....	73
Figure 89 - Public School 90 Entry 1 - Added circulation.....	74
Figure 90 –Public School 90 Entry 1 – Façade alteration	75
Figure 91 – Public School 90 Entry 1 – Window alteration	75
Figure 92 – Nina West Homes Axon.....	76
Figure 93 – Nina West Homes – Diagram showing views into play area	76
Figure 94 – Nina West Homes – Diagram showing dimensions of the play space....	77
Figure 95 – Scheme 1 – Verticle Parti A.....	79
Figure 96 – Scheme 1 – Verticle Parti B.....	79
Figure 97 – Scheme 2 – Horiz. Program Scheme – Option A Grouped Housing.....	80
Figure 98 – Scheme 2 – Horiz. Program Scheme – Option B Linear Housing.....	80
Figure 99 – Scheme 3 – Non-Figural School Parti – Lower floor plans.....	81

Figure 100 – Scheme 3 – Non-Figural School Parti – Upper floor plans.....	81
Figure 101 – Traffic Diagram.....	82
Figure 102 – Entry Diagram by user group.....	83
Figure 103 – Proposed Figure Ground.....	84
Figure 104 – Nolli Diagram.....	85
Figure 105 – Model Aerial	86
Figure 106 – Approach shot from corner of 21 st and L Streets.....	87
Figure 107 – Stevens Elementary School Proposed Demolition Plan.....	88
Figure 108 – Stevens Elementary School Proposed Classroom Layout.....	89
Figure 109 – Lobby Atrium Diagram.....	90
Figure 110 – Circulation around Courtyard Diagram.....	90
Figure 111 – Ground Floor Plan.....	91
Figure 112 – Courtyard Level Floor Plan.....	92
Figure 113 – Third Floor Plan.....	93
Figure 114 – Fourth Floor Plan.....	94
Figure 115 – Fifth and Seventh Floor Plans.....	95
Figure 116 – Sixth and Eighth Floor Plans.....	96
Figure 117 – Lower Level Floor Plan.....	97
Figure 118 – Lowest Level Floor Plan.....	98
Figure 119 – View from Running Track into the Gymnasium.....	99
Figure 120 – Section A.....	100
Figure 121 – Perspective in the Housing Shared Terrace.....	101
Figure 122 – Section B.....	102
Figure 123 – Diagram showing Connection between Community and School.....	103
Figure 124 – Section C.....	104
Figure 125 – Interior View of Upper School.....	105
Figure 126 – Section D.....	106
Figure 127 – View of Community Alley at Night.....	107
Figure 128 – Façade model of L Street	108
Figure 129 – Model aerial photo showing massing.....	108
Figure 130 – Perspective showing the daycare and lower school courtyard.....	109

Chapter 1: Introduction

This thesis explores a new model for city education where urban schools use their location as a learning tool. Socrates taught in the agora of Athens, the commercial marketplace of the city. So why today do we move schools out of the heart of activity, knowledge, and correspondence, and move them into the outskirts in isolation? Louis Kahn once said that “when children walk thorough a city they should get a feeling of what they want to be when they grow up. A city should provide the resources so they can do that.”¹ In order to keep children engaged and experiencing the city, we need to create a new model for urban schools.

The new urban school should be small to provide for a more intimate connection. It should be a place where students and adults from the community can interact with each other, share resources, and coexist in the urban realm together. What would this type of school look like and what type of support will it need nearby to succeed?

Many school districts have turned to co-located schools as the answer to financial demands and population decreases for pubic schools. A co-located school combines more typical classroom spaces with program pieces such as a branch library, an Olympic sized swimming pool, or a performing arts center. These amenities are used by the community as well as the school. Co-located community schools provide money for new school facilities, promote a sense of community, and allow for public/private partnerships. However, they are seldom built in urban areas because of high property values and little available space. As a result, co-located

¹ Louis I Kahn as told by Robert Venturi and Denise Scott Brown

schools are typically located at the edge of a community. They are arrived at by car, rather than being centrally located and accessible by foot, and inhibit walking to school, community involvement, and spontaneous play among children.

As the trend toward large co-located schools increases, more parents choose to send their children to these state-of-the-art facilities rather than existing facilities. In response, our historic public schools, both inside and outside the city, have seen a decline in student enrollment. Additionally, the city allocates more money for new construction than for renovation of existing structures.

For schools that are in need of renovation the city sets aside few resources to modernize a historical school considered way past its prime. Schools such as Thaddeus Stevens Elementary School are negatively impacted by this policy. The Council of Educational Facility Planners, International reinforces that “often the victims of deferred maintenance, consolidation, development pressure, inadequate government funding, policies promoting the construction of mega-schools in outlying locations, and an often misplaced belief in the superiority of new school construction, the loss of historic schools has irreparable impacts on communities.”² Schools such as Stevens struggle with student retention and are often forced to close.

For Stevens, in the heart of the city surrounded by amenities such as metro and bus access, the national zoo, and numerous national museums, closing down should not be an option. Historic city schools should be saved, renovated with public and private funding, and used as a cornerstone for a new co-located intimate community school that takes advantage of strong history and a prominent site in the city.

² Press Release: Preservation of Historic Schools Gains International Prominence

In the next chapter, this thesis will focus on the needs of an urban school model and the benefits as well as challenges of building a school in the urban realm. Chapter three outlines site information and demonstrates the strength of this thesis site as a location for a new model. In chapter four important program pieces to nurture an urban school will be outlined and discussed in further detail. Chapters on precedents and design schematics will complete the document.

Chapter 2: A new school model

Needs of the urban school

Support for urban schools will come when parents, community members, and school administration unite in a shared vision for public education, and when the community around the school begins to use and support the facility. Is there a way to have a new school model that allows for both of these changes to take place?

The urban school needs four ingredients for the urban school to thrive in the city; an updated facility with amenities for the community, a shared educational and community vision, adequate open space, and access to the site.

Updated facility for school and community -

Amenities for the surrounding community should be used to create a strong tie between the urban school and its neighborhood. The neighborhood will in turn be willing to take an interest in the needs and programs of the school. One method of getting the community invested in the school has been the advent of co-located schools. These schools are able to use public as well as private funds to create state-of-the-art facilities. In addition, co-located schools are highly efficient and are used more hours of the day than the typical school building. “Co-locate the school with a public library, fine arts center, senior center, community college branch, soccer stadium, public park, museum, or zoo, and you create a valuable new community asset that reaches beyond the traditional function of a public school. Suddenly the

whole is greater than the sum of its parts.”³ Schools such as James F. Oyster School in Washington, D.C., have been built according to this model, helping to make the most of a community investment.

A shared educational and community vision –

In order for any school to succeed, the community and school administration must all be working toward a common goal. Parents, teachers, students, and community members should support the objective and vision of the program. This common philosophy is reinforced by architecture through a multi-use building and interlocking spaces.

While there will always be parents who will choose to send their children to private schools, alternative forms of learning and new public programs are providing more appeal for public education. The success of Charter and Magnet Schools all over the country has prompted cities such as Washington, DC, to expand their support for specialized schools. A new co-located urban school model will not just be about “co-location,” it will be about a “shared vision, a focus on common results, and the integration of strategies and services to support student learning, families, and the communities” in which they exist.⁴

Open Space -

Adequate open space is another obstacle facing urban schools. Parking lots cover space once used for outdoor play and school boards have sold off land, unable

³ Romeo 4-5

⁴ Romeo 9

to pass up high property value in the city. Consequently, few urban schools have enough land for their students to exercise, wear off energy, or even to allow for recess. The lack of land also becomes a factor when small historic schools have the need to expand. Small classrooms and a lack of amenities in older school facilities often force them to shut down.

Overcoming this obstacle is particularly prevalent in New York City, where public school boards along with architects have had to become inventive in their thinking about open space in the city. Competitions such as New Schools for New York prompted designers to build open space in courtyards, over parking garages, and on rooftops.

The challenge of creating open space within the city lies in high property values and meeting FAR requirements. Fortunately, the benefits of building playgrounds and parks in the city far outweigh these difficulties. In Minneapolis, when faced with a lack of urban land, “new schools were located next to city parks so that the parkland could be used for playfields and recreation.”⁵ A co-located school complex that opens up land for the community as a whole will be more likely to get funding in addition to adding a valuable asset to any neighborhood.

Access -

New co-located models for public schools are even more beneficial when put downtown where there is a “greater use of public transit and reduced travel distance.”⁶ A national report published in November 2000 found that less than one in

⁵ Romeo 6

⁶ Romeo 7

eight students nationwide walks or bikes to school.⁷ Through locating schools in dense areas, there are more students per acre to supply schools.

Access to public transportation and jobs is also important for families that cannot walk to the school or live in another area of the city. “Parents who can get to a school easily are more likely to participate in their children’s education.”⁸ Therefore, children and parents both benefit from urban schools. This is particularly convenient for parents who may work in the business district and want to bring their children with them on the way to work.

⁷ Why Johnny Cant’s Walk to School

⁸ Romeo 7

Ideal setting for the new school model

Sites that allow for sustainable design, through adaptive reuse or renovation of existing structures, are ideal for co-located urban schools. The ideal site would utilize existing buildings and infrastructure, while capitalizing on public transportation systems. Older schools in cities such as Chicago, New York, and other areas of Washington D.C, are good examples because they have existing infrastructure built into the site and mass transit access nearby.

An urban school site should capitalize on the amenities of the city; a mix of good land use, density, diverse visual experiences, and access. A location within the urban realm will help to prepare students for their role in the community by exposing them to a functional understanding of how the city operates.⁹ Access to attractions such as museums and parks, are also important surroundings for this urban school model. “The city is in itself an environmental education, and can be used to provide one, whether we are thinking of learning *through* the city , learning *about* the city, leaning to *use* the city, to *control* the city or to *change* the city.”¹⁰ Urban areas provide a variety of experiences outside of the residential and school setting, and are a good way for parents to encourage children from a young age to use public transportation and other forms of environmentally friendly transportation.

For this new urban model, the ideal site is located within walking distance of a dense residential area. Close connections between dwell and learning environment can therefore work visually, physically, and programmatically to create an expanded home base that provides added support within the city.

⁹ Ward 177

¹⁰ Ward 176

Chapter 3: A site of opportunity

“Fifth and sixth graders of Stevens Elementary School took a walk around Pennsylvania Avenue yesterday to look at the buildings. ‘I like the buildings the best when they go all different ways,’ said Amy Carter. . . The walking tour started in front of the Martin Luther King Library at 10th and G streets N.W. Amy’s group of 10 children (there were 30 in all) was led by Nancy Muller, a trained guide of ArchiTours. . . Muller got her group to huddle and with eyes closed, imagine an old fashioned market with small houses and horse carts and people selling and buying things and meeting each other. Then they all looked up and – boy, has the city changed. But when the children got through discussing what had happened . . they decided the city was still a market-place”¹¹

An Urban Neighborhood: Washington D.C.

To study the connection between school, family, and community, this thesis explores a site located in the urban setting where the business and residential zones meet. An existing historical school located on-site provides the opportunity for sustainable design through adaptive reuse. An adequate amount of open land on site creates the occasion for some green space within the dense urban environment. This urban neighborhood is a prime location for a new co-located urban school and playground.

Urban schools are often the center of a historical community. Richard Moe, the president of the National Trust for Historic Preservation, reiterates that through historical schools we can provide a “cultural continuity for generations past and present. Tied through a shared educational experience, communities look to their schools for sustenance.”¹²

¹¹ Von Eckardt

¹² Press Release: Preservation of Historic Schools Gains International Prominence

Stevens Elementary was at one time the center of a community located in the downtown area. First hand accounts from students who attended Stevens Elementary from 1935-1953 describe the students' sense of "great pride for the school and for the community."¹³ The school participated in activities to help clean up and beautify the community.¹⁴ Stevens had a presence in the community that is now lost among bland office buildings, and workers who retreat to the suburbs after work hours. A new community center, possibly located at the corner of 21st and L Street, might help to bring renewed interest from the community.

¹³ Stevens on Stevens 11

¹⁴ Stevens on Stevens 11

Intervention and the plight of historic schools

“If an older building can be equated with a poor education, why would anyone want to send a child to an Ivy League school?”¹⁵

Historic schools throughout the country face problems of decreasing population and lack of support from municipalities. Their influential past is often lost in their deteriorating states. Luckily, as historic renovation reshapes our cities through condominiums, marketplaces, and museums, historical schools can also be used to communicate about the past. Stevens Elementary is no exception. Named after the Pennsylvania congressman who promoted public education in Philadelphia, Thaddeus Stevens Elementary was added to the National Trust for Historic Preservation in 2000. Built in 1868, Stevens was in danger of being sold to a developer, but luckily its historic state as one of the oldest surviving elementary free schools for African Americans prompted the National Trust to add it to its list of endangered schools.¹⁶

¹⁵ Why Johnny Can't Walk to School 8

¹⁶ Williams - Facilities Re-Assessment Report

A strong site history : Stevens Elementary School

The original Stevens Elementary School was built in 1868; however in 1896 the original school was either added on to or demolished. The rendering below shows the only image of the original Stevens school building.

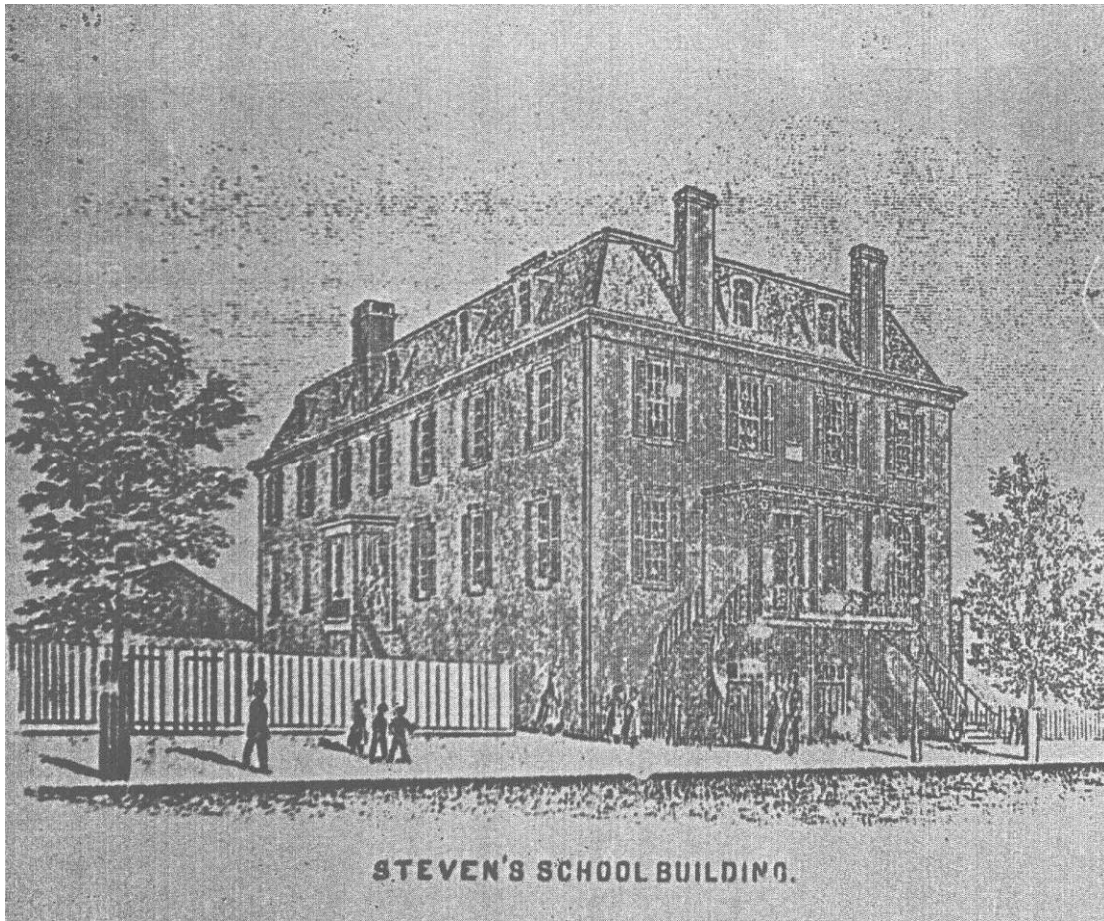


Figure 1 – Image of first Stevens School building from 1868¹⁷

A 2003 report by the District of Columbia Public Schools Board listed Stevens Elementary in poor condition. The slate roof is in a deteriorating condition and the building is not ADA compliant. It is time to use this existing structure to create a new core for the children and community in this area of the district.

¹⁷ Stevens on Stevens 2

Site description

The site is located in downtown Washington D.C. at the corner of 21st Street and L Street N.W. The site is in a dense urban area of downtown Washington with almost no topography. The White House can be seen to the east of the site while Rock Creek Parkway is located to the west. The Potomac River is only a fifteen minute walk from the site. George Washington University borders the site on the southern edge. The neighborhoods of Foggy Bottom and DuPont Circle run alongside the site boundaries to the north-west. K Street, and Pennsylvania Avenue are the main thoroughfares that connect to the site.

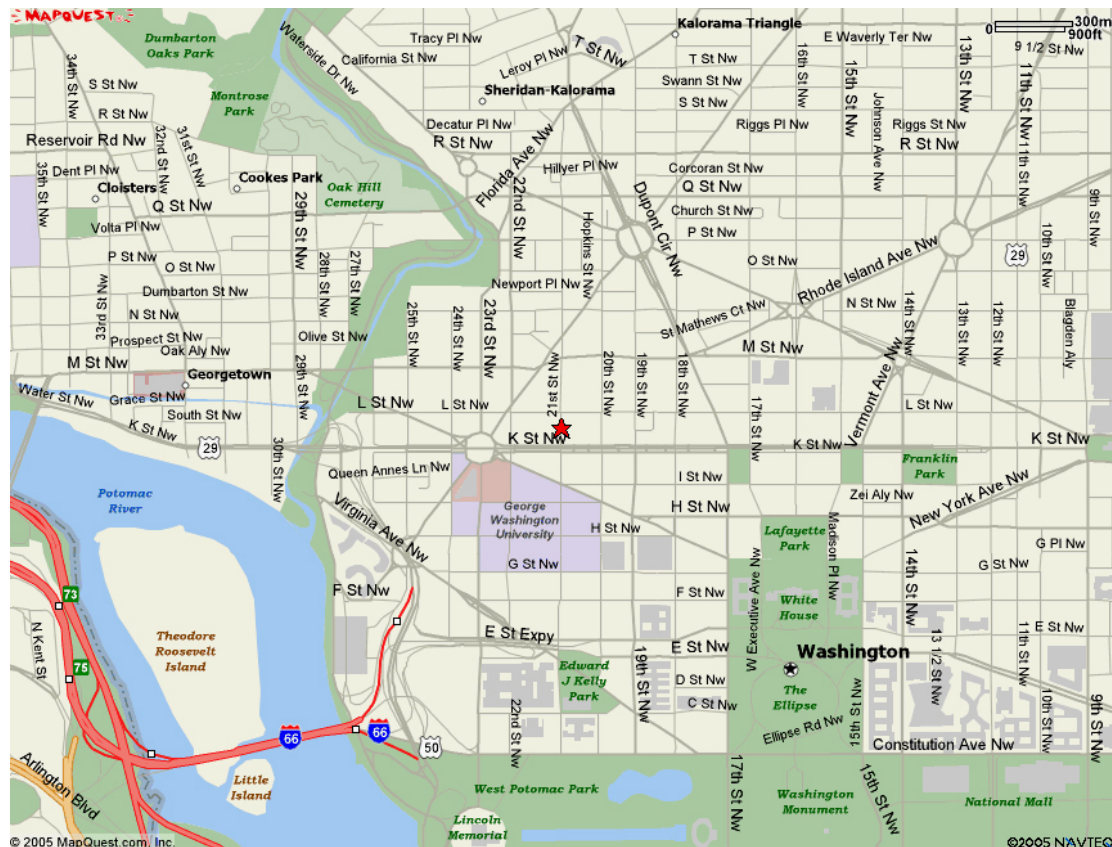


Figure 2 – Map-quest image of the thesis site.
www.mapquest.com



Figure 3 – Aerial view of the site looking toward Rock Creek Park.
www.google.earth.com

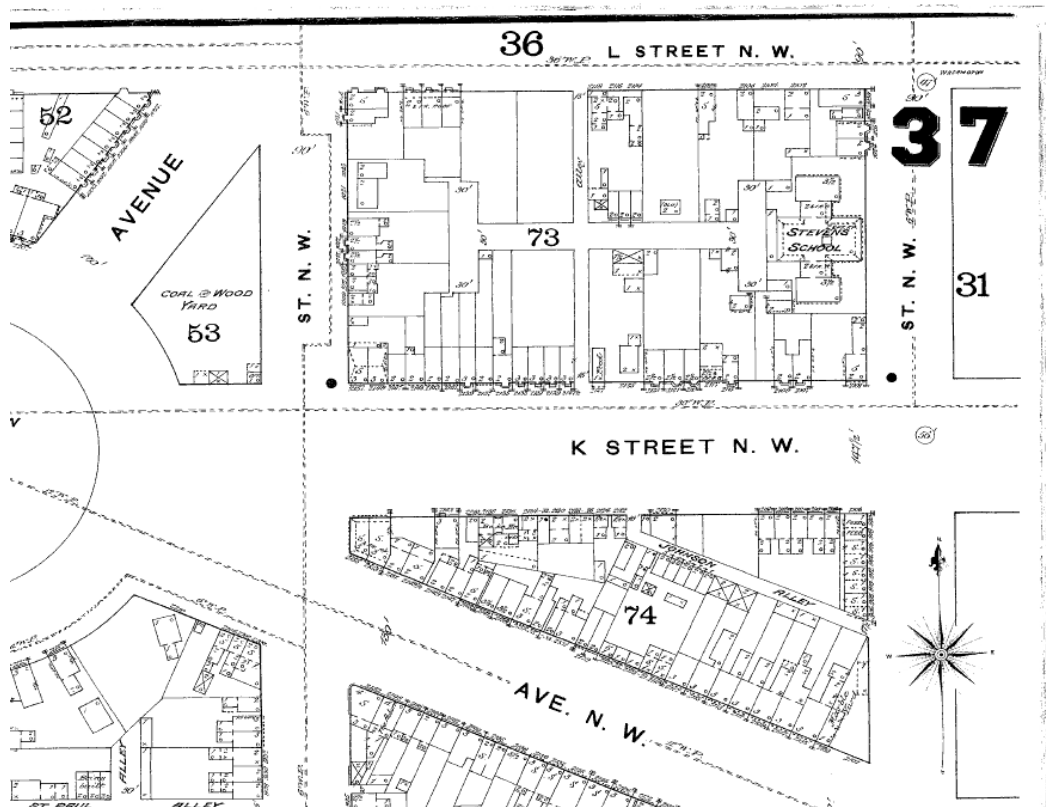


Figure 4 – Sanborn Map showing the site in 1888¹⁸

At this time the site was surrounded by narrow town houses. The school is the largest building on the block. An alley that runs from L Street to K Street still exists today.

¹⁸ Williams – Facilities Re-Assessment Plan



Figure 5 – Diagram showing a figure ground of the DuPont Circle, Foggy Bottom, and Business District regions of Washington D.C.

Washington, D.C., is broken down into clusters by the D.C. Office of Planning. The site of this thesis is located at the edge of Clusters five and six. Cluster 6 includes the central business district, and DuPont Circle. A recent Strategic Neighborhood plan highlights the attractions and amenities of this Cluster.

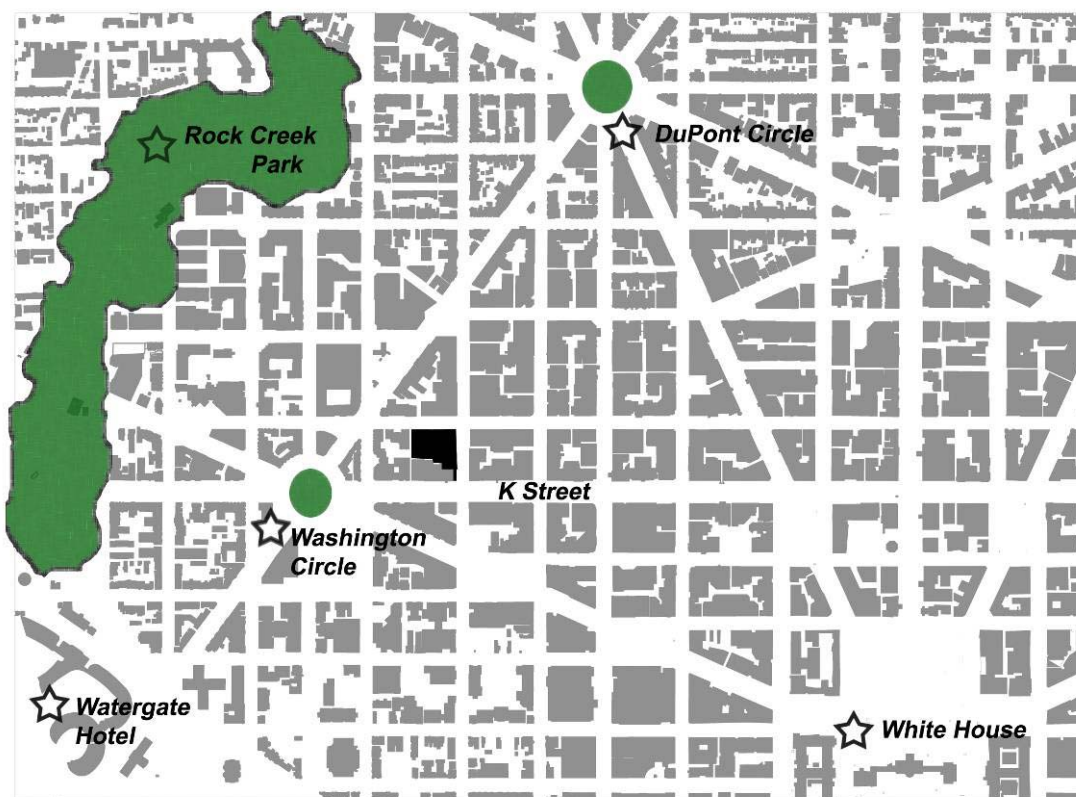


Figure 6 – Diagram showing nearby point of interest

The vision for this Cluster outlined by the Strategic Neighborhood Plan outlines priorities for the area that include “adding commercial and office space to the downtown area, retaining residential areas, preserving a mix of local-serving retail.”¹⁹ Urban assets of the neighborhood include the dense urban business district, a strong residential mix of single family and apartment units, and mixed use buildings along Connecticut Avenue.

The D.C. Office of Planning calculated the demographics of this Cluster in 2000. The 2000 Census looked at age, race, ethnicity, income, and housing statistics. Only 4% of this cluster is under the age of 18, which demonstrates the need to bring

¹⁹ D.C. Office of Planning Strategic Plan 6

17

The zoning of the site is C-3-C. C-3-C zoning permits matter of right development for major businesses and employment centers of medium to high density development, including offices, retail, housing, and mixed uses to a maximum lot occupancy of 100%. A maximum FAR of 6.5 for residential and all other permitted uses is allowed on the site. Maximum height is 90 feet.²¹ Where a courtyard is provided for a building or portion of a building, the width of the court shall be a minimum of three inches per foot of height measured from the lowest level of the court or 12 feet, whichever is greater. In the case of a closed court, the minimum area shall be at least twice the square of the width of the court based upon the height of the court, but not less than 250 square feet. All buildings with a gross floor area between 30,000 and 100,000 square feet require a minimum of one loading berth that is 30 feet deep, one loading platform that is 100 square feet and one service/delivery space that is 20 feet deep.²²

Directly to the west and south of the site are more residential zoning districts of R-5-B and R-5-D. R-5-B zoning permits “matter-of-right moderate development of general residential uses, including single-family dwellings, flats, and apartment buildings, to a maximum lot occupancy of 60%, a maximum FAR of 1.8, and a maximum height of fifty (50) feet”²³ R-5-D zoning is very similar to R-5-B however it calls for more density with a “maximum lot occupancy of 75%, a maximum FAR of 3.5 and a maximum height of ninety (90) feet.”²⁴

²¹ D.C. Office of Planning

²² Firstenberg 46

²³ D.C. Office of Planning

²⁴ D.C. Office of Planning

There will be only a few necessary zoning changes related primarily to parking requirements. The parking requirements for C3C zoning indicate that all buildings zoned in excess of 2000 square feet require one parking space per each additional 800 square feet of gross floor and cellar floor area. There are some exceptions to the parking requirements that allow for a 25% reduction in required spaces when the building is located within 800 feet of a metro rail station entrance. Parking shall be located in either a permitted garage or in an open area lot located within a rear or side yard.

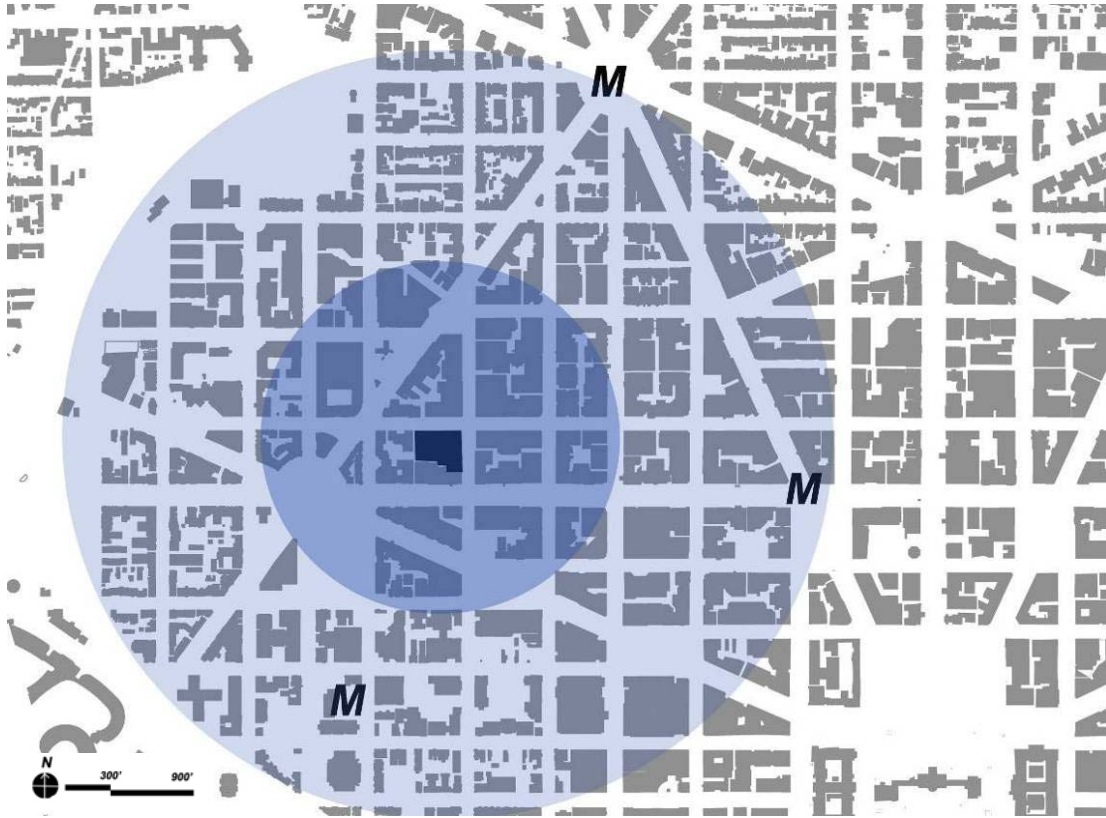


Figure 7 – Diagram showing Metro access to the site within five and ten minute walking radius.

Farragut North is located approximately ten minutes to the east of the site; DuPont Circle ten minutes to the north. Foggy Bottom/GWU metro stop is the closest to the site located within seven to eight minutes walking.

Metro access adjacencies can be found in every direction within a ten minute walking distance of the site. Parking requirements will be much less important as a result of readily available public transportation.

This thesis promotes the use of public transportation and carpooling. Students traveling to the school will either be dropped off or walk from home or a metro rail stop. The rest of the site will be used for housing. As most of the housing will be for low income families, they will rely primarily on public transportation for access to jobs and other amenities. In addition, most families living on site will work in the downtown business district and therefore will have no need for a vehicle. This

project recommends one parking space per every 4,000 square feet of building area; or approximately 50 spaces.

There are a shrinking number of public parks in the city for children and often these parks are located within monumental traffic intersections which are not as conducive for child play. Ironically, in this Cluster, where the business district is pushing against the edge of a historical residential core, one of the most prominent parks in the city is located nearby, Rock Creek Park.



Figure 8 – Diagram showing green spaces and parks surrounding the site.

1. Rock Creek Parkway; 2. Washington Circle; 3. Farragut Square; 4. Edward Murron Park;
5. DuPont Circle

Other prominent physical resources include Washington Circle adjacent to the site, Farragut Square ½ mile from the site, and less than ½ mile away is the Edward Murron Park. Dupont Circle and Stead Memorial Park are also within walking distance.



Figure 9 –Figure ground of site and surrounding context



Figure 10 – Diagram showing main streets around the site.

Pennsylvania Avenue , K Street, and New Hampshire all connect at Washington Circle. Connecticut Avenue connects to K Street and then back at DuPont Circle also runs into New Hampshire.

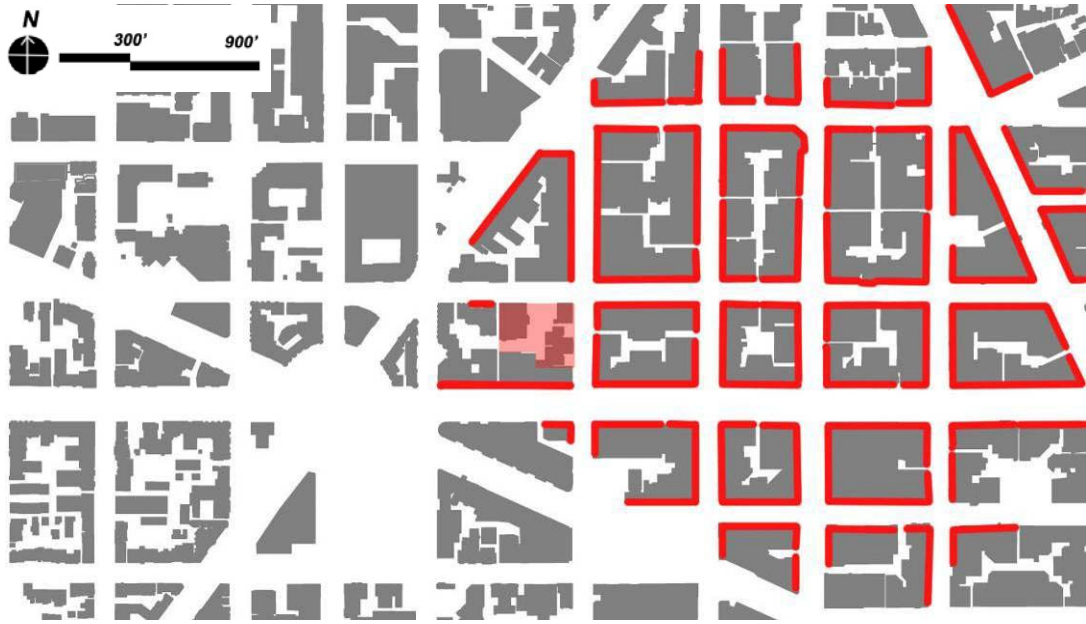


Figure 11 – Diagram showing retail frontage.

Retail frontage typically exists to the east of the site throughout the central business district.

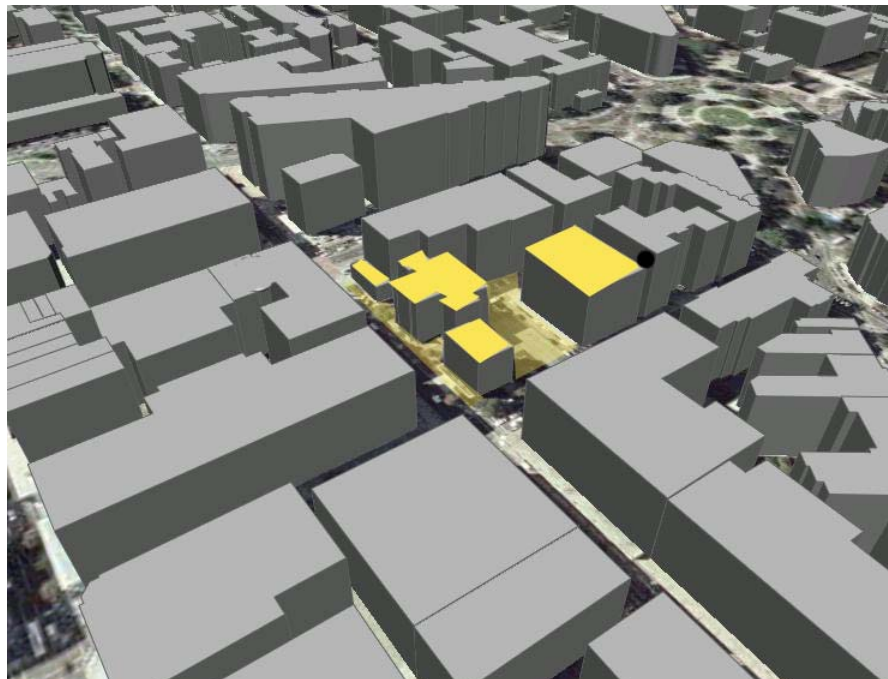


Figure 12 – Axon looking Southwest showing the existing buildings on the site.

This site at present contains four buildings. The Humane Society Building located on the corner of L Street and 21st Street, Stevens Elementary School, The Gelman Office Building and a small two story bank building located on the opposite corner.

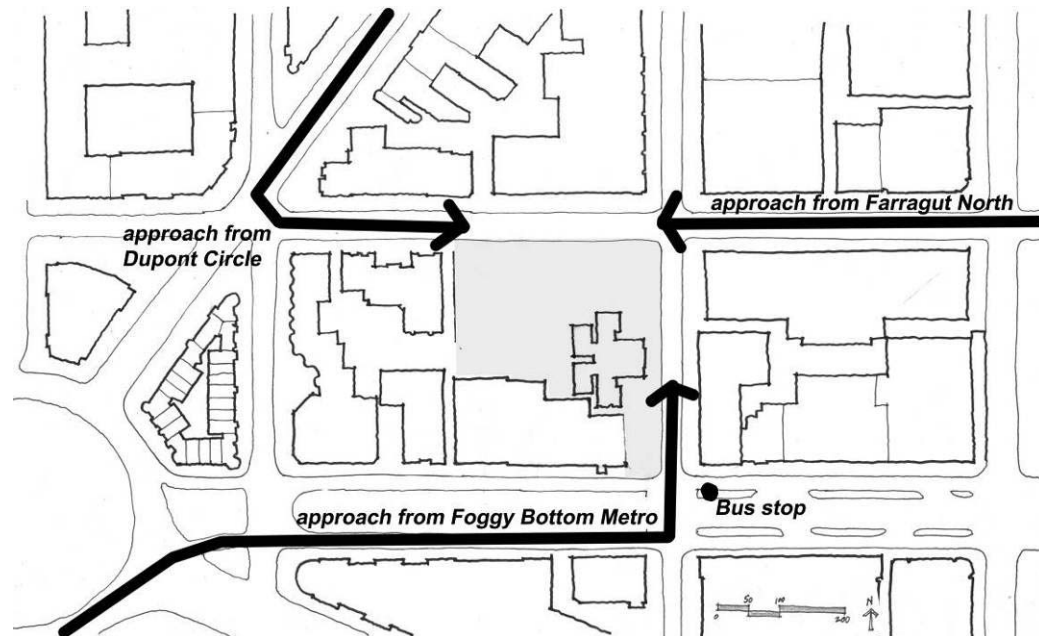


Figure 13 – Diagram showing approach to the site from three main metro stops and a bus stop.

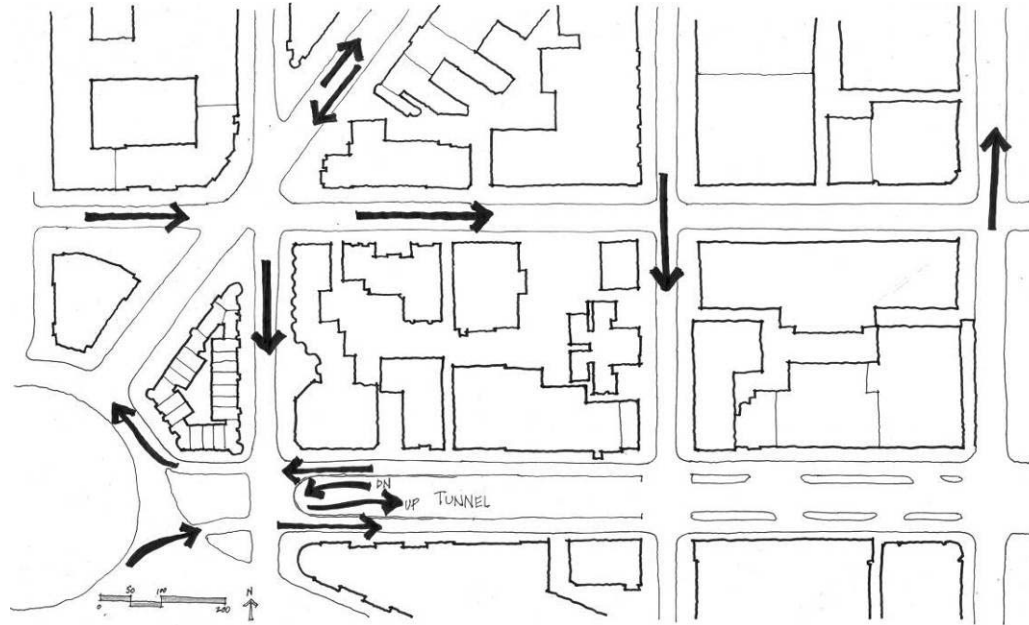


Figure 14 – Diagram showing traffic patterns around the site.

One-way traffic along L Street and 21st Street will help enhance a residential atmosphere. Parking along L Street and slower traffic will help to make the streets easier to cross and safer for children. Major traffic will use K Street which connects under Washington Circle toward Georgetown. Pennsylvania and New Hampshire Avenue are also both major thoroughfares that keep traffic off of L Street and 21st Street, making them more pedestrian friendly.



Figure 15 – Land use Diagram of the site.

Yellow – Residential; Purple – Institutional; Red- Commercial

The site for this thesis borders both the business district and the urban residential zone. The needs of the business district and the Foggy Bottom community will both have to be considered. There is potential for this piece of property to make a tie between two different zones through program pieces that may be used by Foggy Bottom residents as well as Washington D.C. employees.

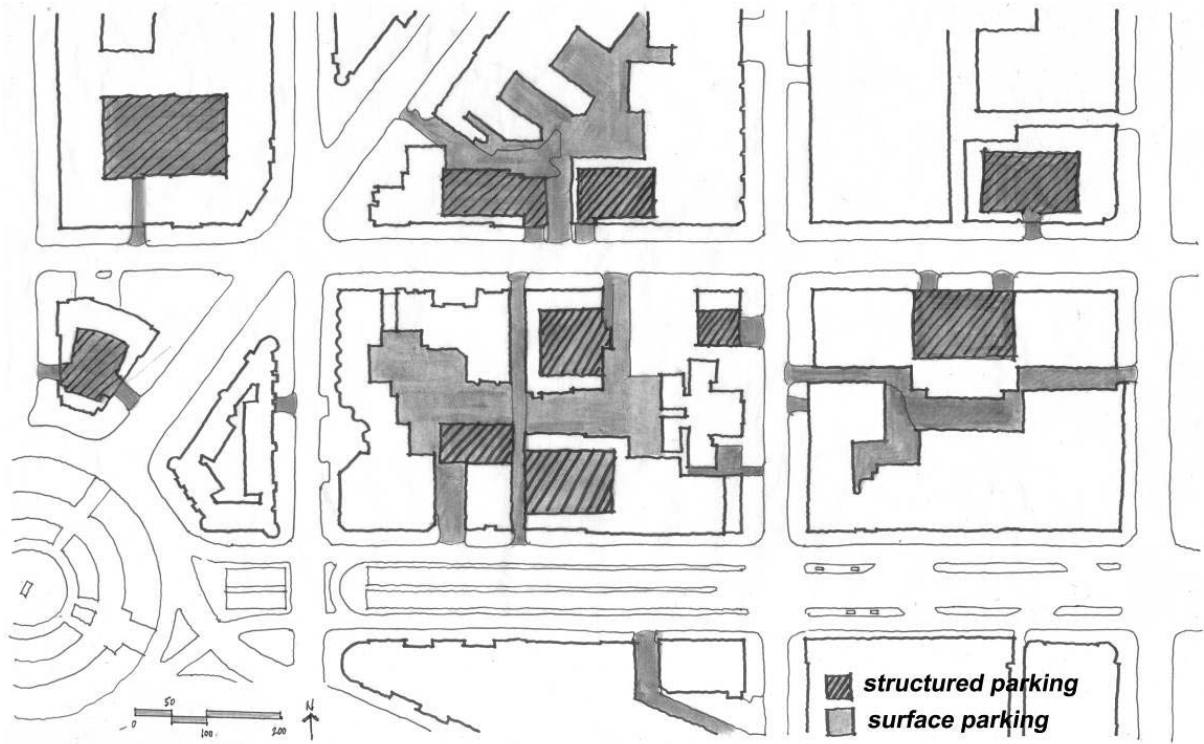


Figure 16 – Parking diagram showing both surface and structured/ garage parking.

Structured parking currently exists underground on portions of the site. Existing garages will likely be maintained and used in the project. All surface parking on the site will be eliminated in return for green outdoor space.



Figure 17 – Existing site plan block. The shaded area showcases the site limitations.

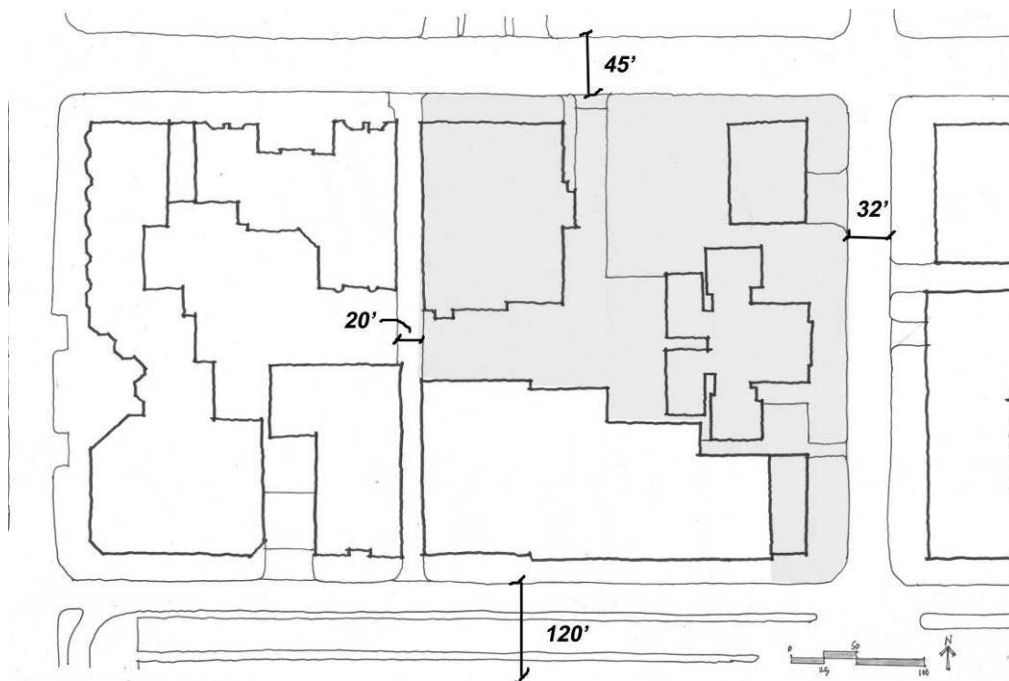


Figure 18 – Diagram showing street dimensions.

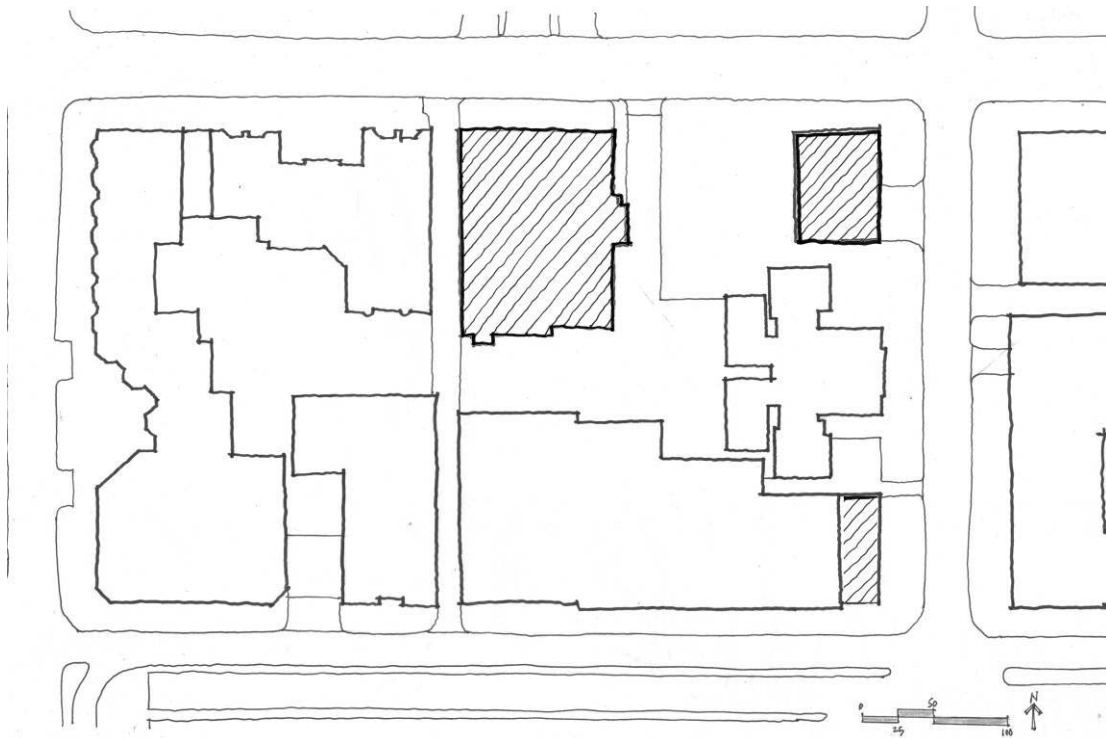


Figure 19 – Site showing buildings to be demolished. Buildings that are hatched will be removed.

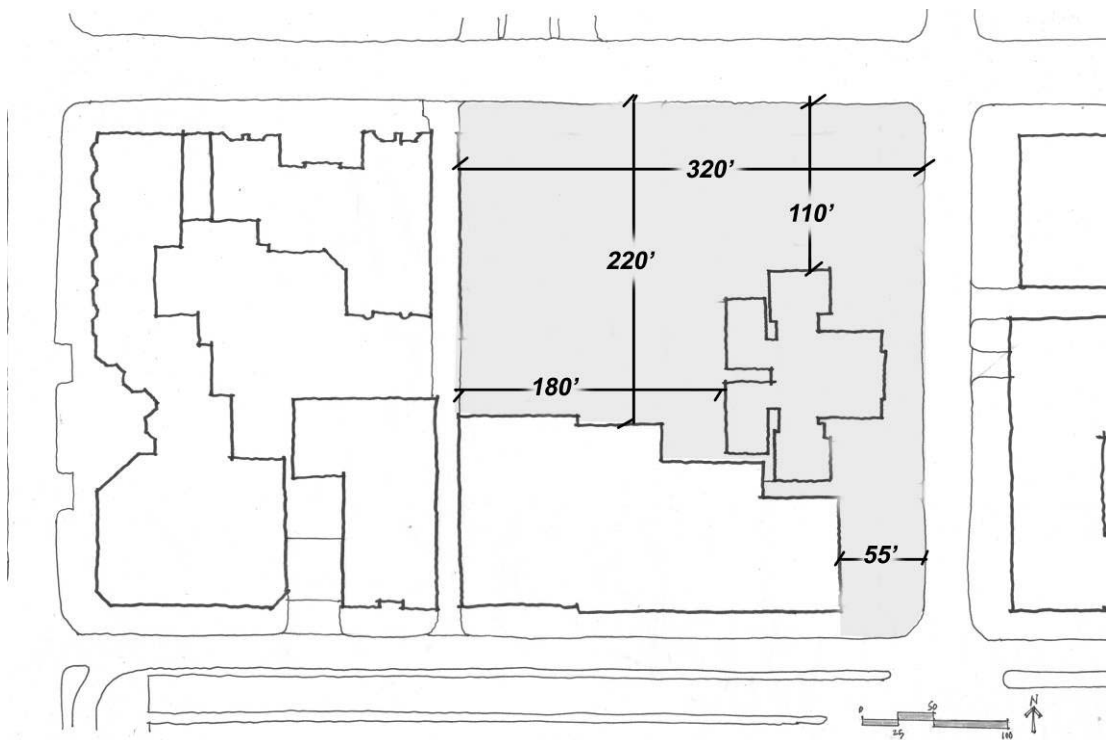


Figure 20 – Diagram showing the site dimensions from inside edges to the sidewalk.

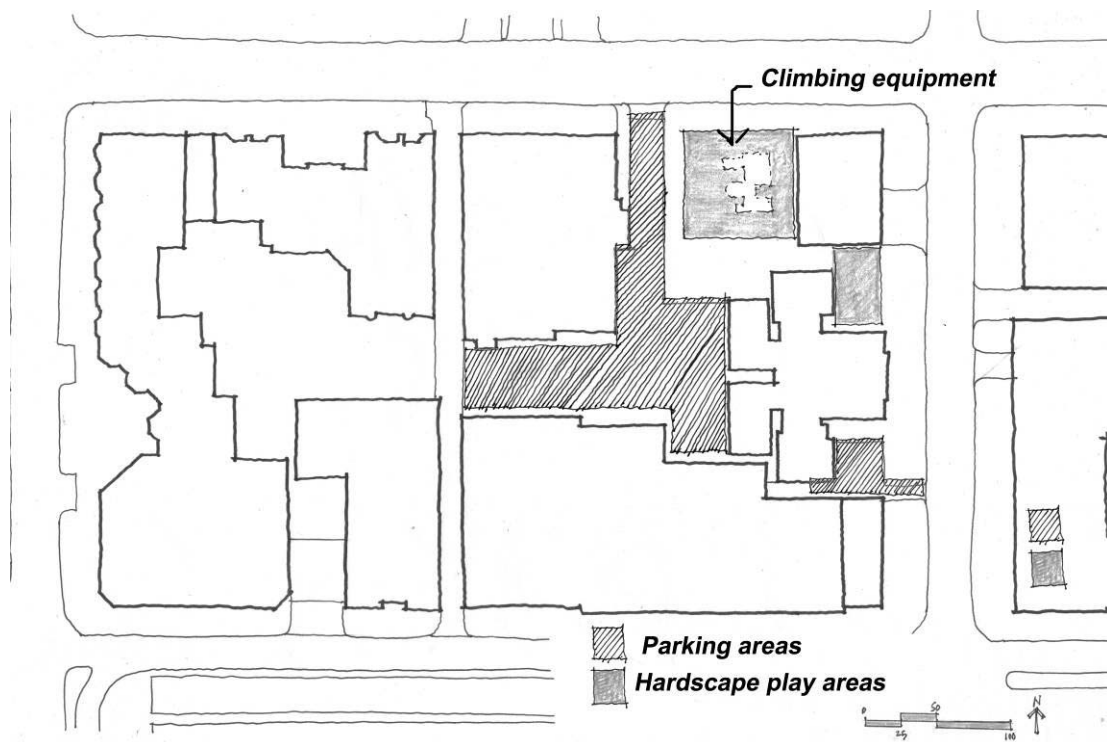


Figure 21 – Diagram highlighting lack of green planted open space.

The site contains two areas for outdoor play. A small asphalt area located at the front of the school contains a miniature basketball court. To the north of the school the primary “playground” contains some climbing equipment on a black rubber mat. Currently, the majority of the outdoor space is given to parking area.

Stevens Elementary is a 39,500 square foot building with brick bearing wall with one-way concrete beam and slab construction. Existing floor plans for Stevens are shown below.²⁵

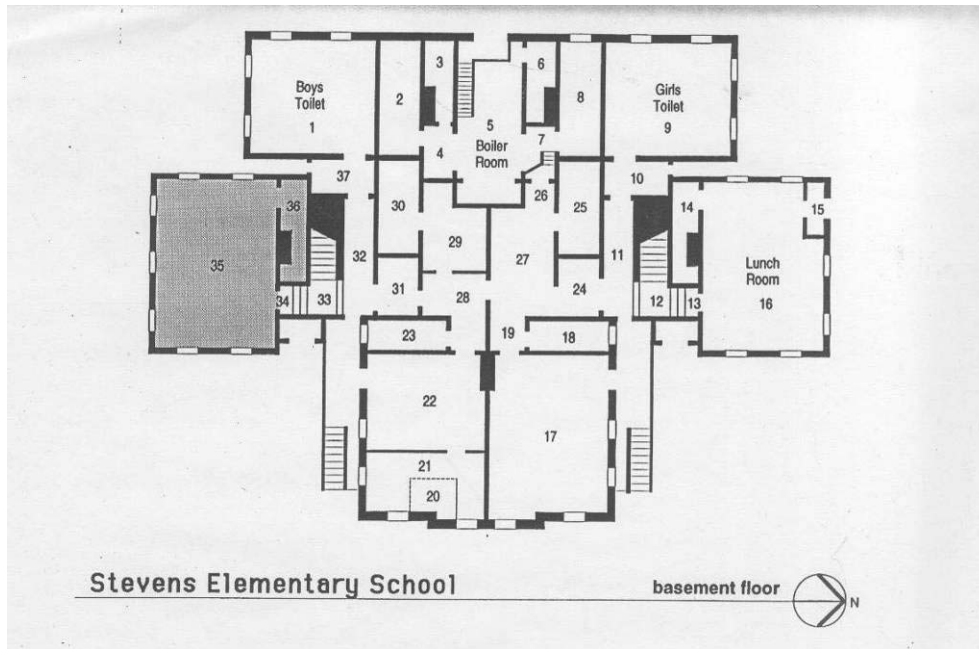


Figure 22 – Stevens Elementary School existing basement floor plan

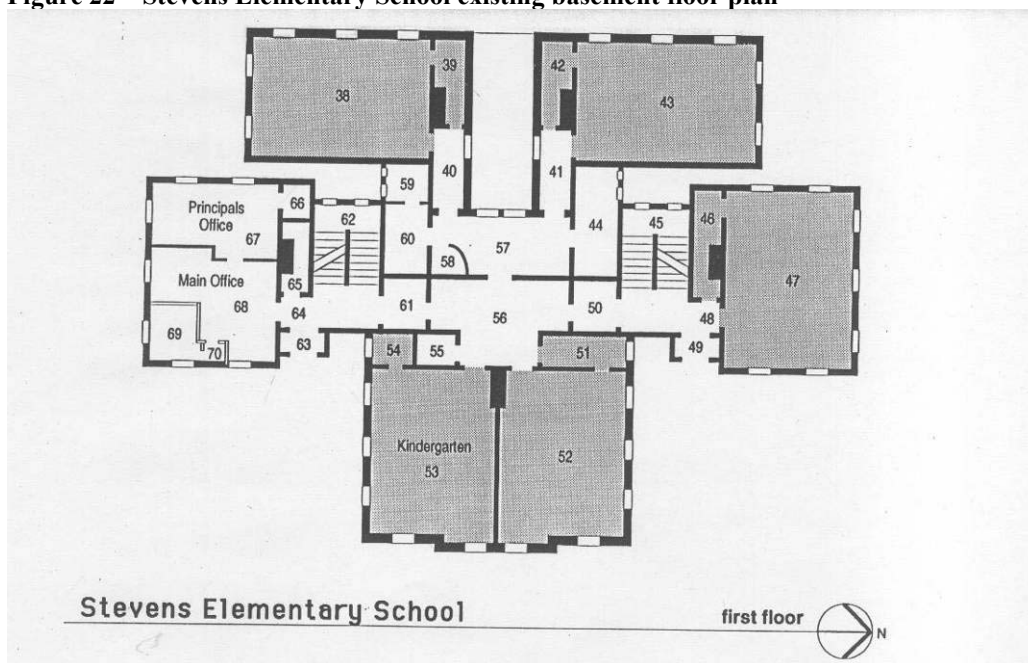


Figure 23 – Stevens Elementary School existing first floor plan

²⁵ Facilities Re-Assessment Report

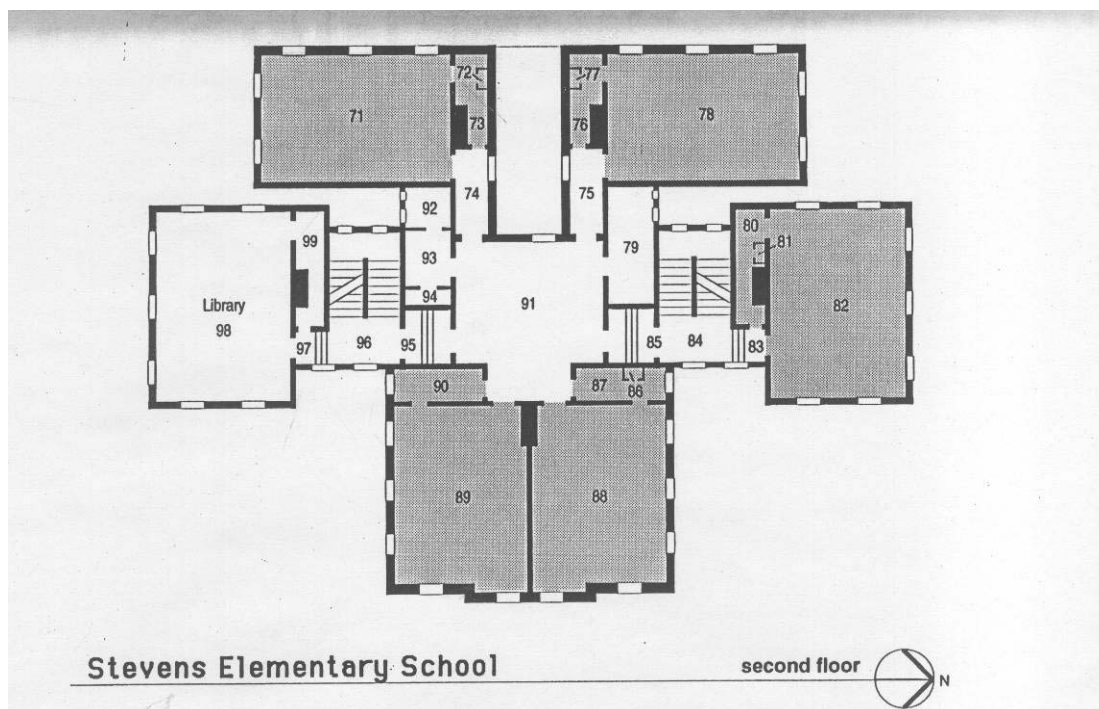


Figure 24 – Stevens Elementary School existing second floor plan

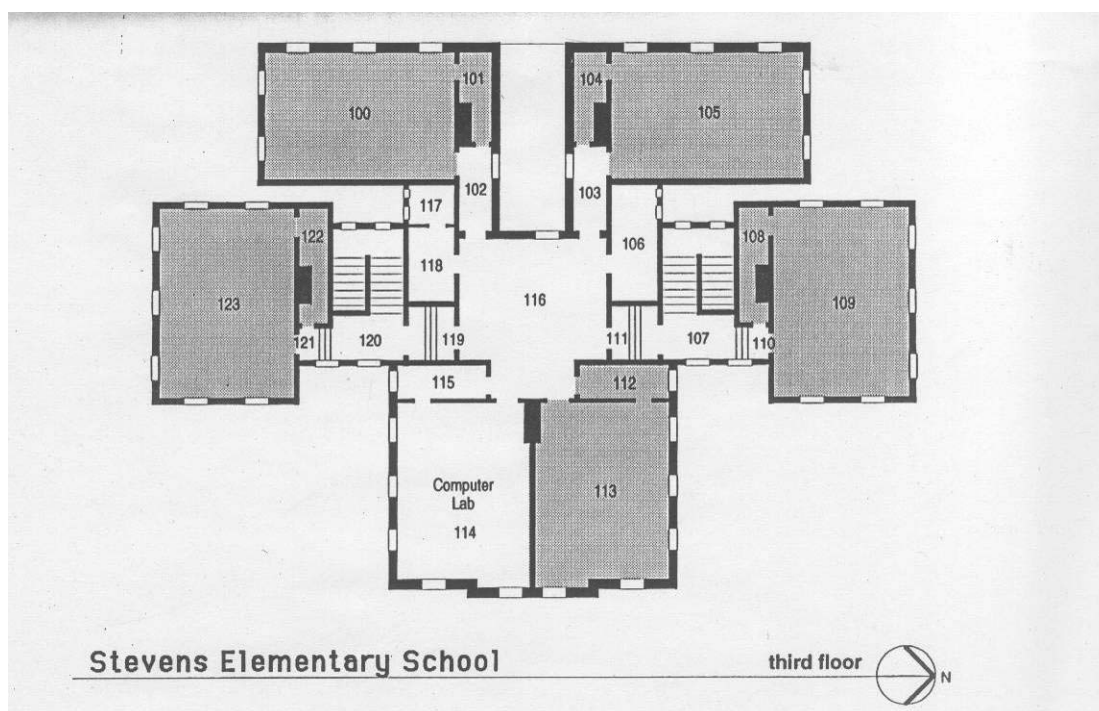


Figure 25 – Stevens Elementary School existing third floor plan²⁶

²⁶ Facilities Re-Assessment Report

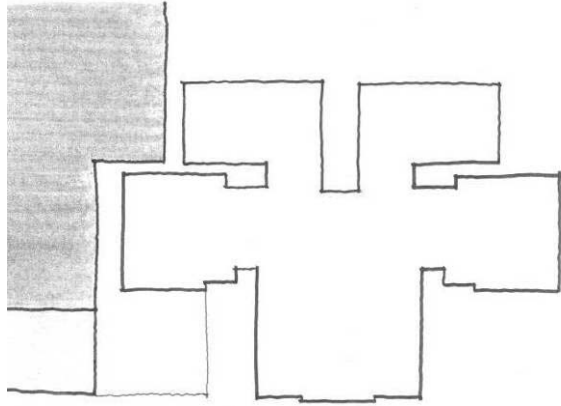


Figure 26 – Diagram showing adjacent building conditions

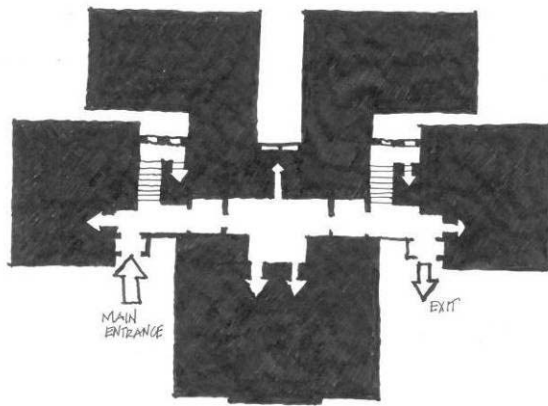


Figure 27 – Diagram showing noli condition of school entry sequence.

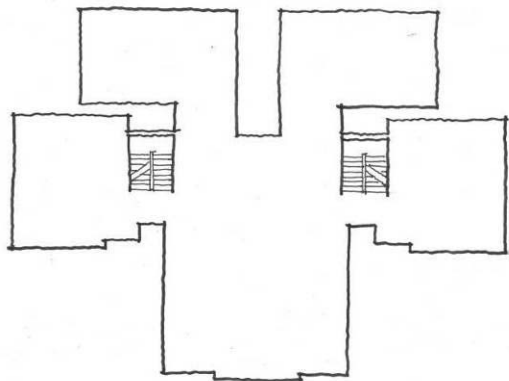
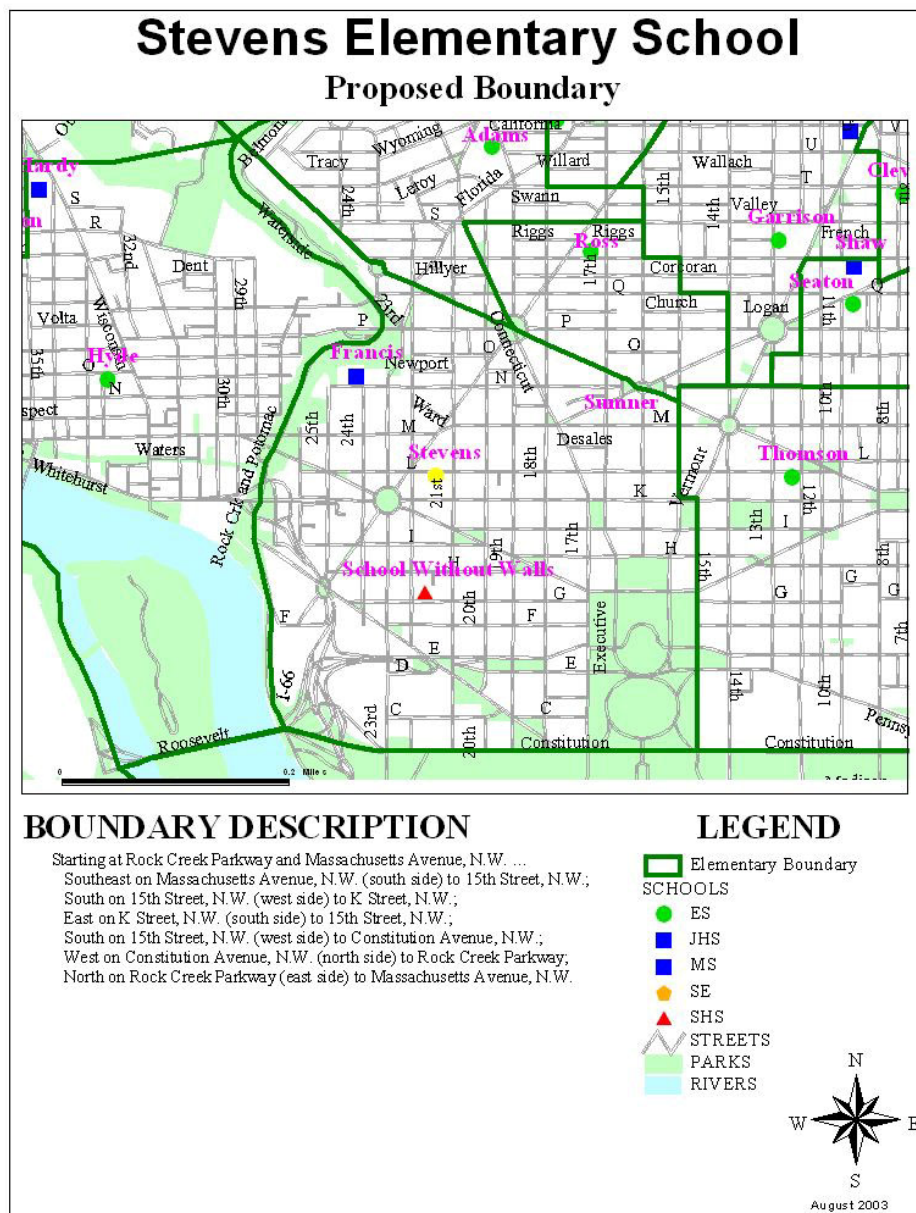


Figure 28 – Diagram showing first floor and the main circulation throughout the building.

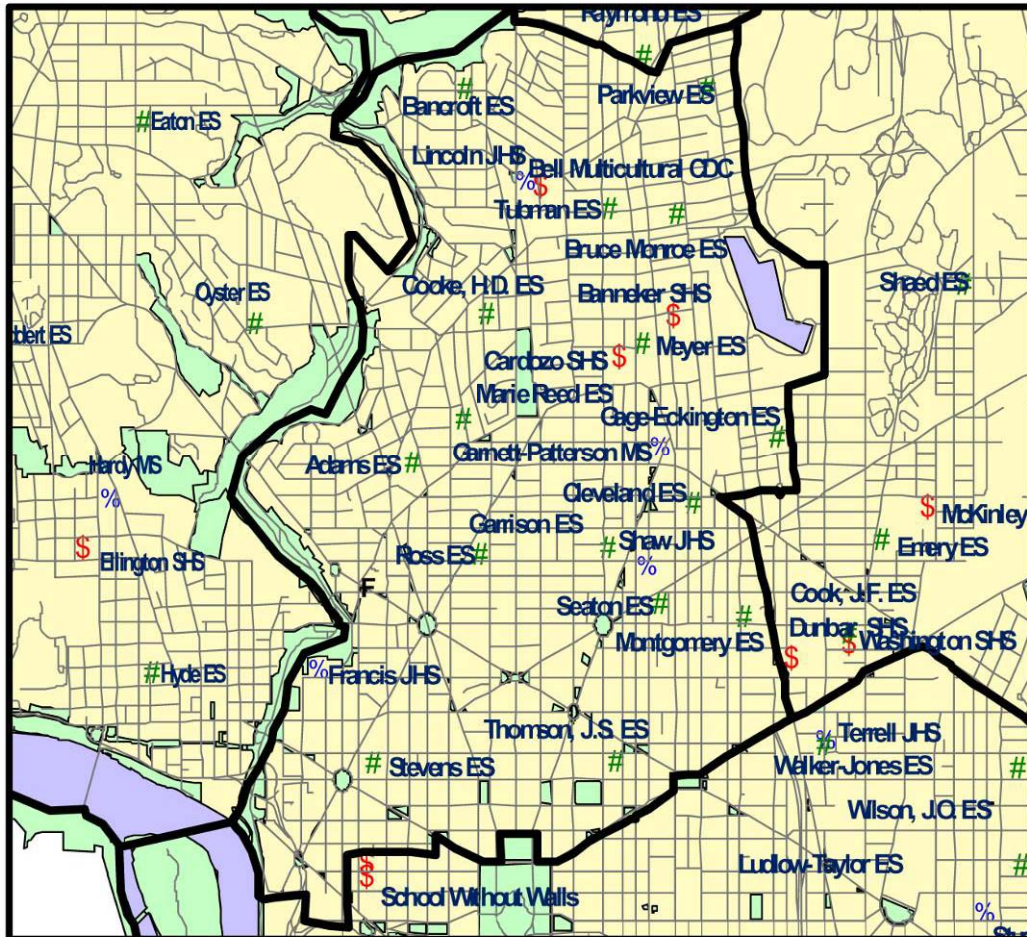
Stevens Elementary pulls students from a large region of the district. The proposed boundary for the school extends from Constitution Avenue to the south to Massachusetts Avenue to the north; Rock Creek Park to the west and 15th Street to the east. However, as the child population is low in this area, Stevens pulls over half of its students from outside of its specific boundary.²⁷

Figure 29 – Stevens Elementary boundary map





Planning Area F



District of Columbia Public Schools
Facilities Master Plan Update
Fall 2003

Figure 30 – Map of elementary schools (ES), junior high schools (JHS), and senior high schools (SHS) in planning area F.²⁸

²⁸ D.C. Office of Planning



Figure 31 – Stevens School Front East Façade 2005

View across 21st Street. The main façade of the building does not contain the main entrance. The first floor of the school is made of red brick while the upper portion of the building has a white brick façade.



Figure 32 – Humane Society Building located North of Stevens on the Site
This building will be removed in order to allow for more density and character on the corner of the site. This building currently has limited parking spaces and no retail. The Humane Society Building is only five stories in height. The building has no windows on the South Facing façade because it is a party wall.



Figure 33 – Existing playground for Stevens Elementary School Students
 This image shows the fence located around the paved playground and the lack of plantings. There is no delineation of separate play spaces. The windows on the rear of the building to the South of the site start at the third floor.



Figure 34 – Sidewalk on L Street

The sidewalk on this portion of L Street is much narrower. However, the Humane Society Building maintains a setback more consistent with other buildings along L Street. Is this because of an existing lot line for the school property? School ground equipment can be seen in the photograph up against the rear of the Humane Society Building. Is the equipment in this location to allow for whatever shade possible created by the building?



Figure 35 – Building on the Western edge of the block.

This building has both residential and condo units that are used for office space. The ground floor has some limited retail.



Figure 36 – Building across from the site on the North side.

This residential building has a corner lot. It has not ground floor retail. The entrance is at the corner of L street and 22nd Street. Units are located on the ground floor with small recessed patios.



Figure 37 – Parking garage located in the building on west side of the site

This parking garage is located in one of the buildings that will be demolished. This garage could possibly be used for the new building.



Figure 38 – Corner of L Street and 21st across from the site

This office is located across the site to the north. The photo also shows how active this corner can be during the daytime. However, this is the farthest west that many business workers venture. Retail can be seen on the ground floor.



Figure 39 – Buildings on 21st Street north-east from site

The buildings have retail frontage. These buildings are all around 7-9 stories in height.



Figure 40 – Building on the southwest corner of the site.

This view is taken from near Washington Circle. The building has condominium units, and retail on the ground floor. Some units are used for residential and some are used as private offices.



Figure 41 – Retail on southwest corner of the site



Figure 42 – View looking down K Street to the west.

Larger buildings are located along K Street / Pennsylvania Avenue. Multiple lanes of traffic feed into Washington Circle. The site is located adjacent to the building in the right of the photograph.



Figure 43 – View down K Street to the East

An extra lane down K Street is for on street parking and bus traffic. This bus stop provides public transportation access to the site.



Figure 44 – Corner of 21st Street and Pennsylvania

The image shows the large building located next to Stevens on the south of the site. A small bank, only two stories high, fronts 21st Street. This small building will either be removed or renovated to possibly house some of the proposed program. This narrow plot might be a good spot for a community center entrance or library addition.



Figure 45 – Sidewalk in front of Stevens School

The gate that exists around the niche openings in the façade can be seen from this photograph. There is a small space for busses to pull up in front of the school. The main mass of the building comes all the way to the sidewalk; however, the main entrance is not located in this portion of the building.



Figure 46 – Front entrance of Stevens Elementary from across 21st Street

Twenty-first Street is one way and allows for three parking spaces directly in front of the school. The current entrance is bland and non-hierarchical. The hyphens of the front façade step back to allow for small open spaces between the neighboring buildings and the central core of the school. This space is currently used primarily for parking.



Figure 47 – Alley between L Street and K Street. It borders the Western side of the site.

The Alley is approximately 15-20 feet wide and allows access to the rear of the site. The building on the left will be removed.

Figure 48 – Examples of historic town homes along surrounding streets





Figure 49 – Historic Residential Units along 22nd Street

These historic townhouses back up to the site block and help to make the transition from downtown business district to the more residential Foggy Bottom

Figure 50 – Historic homes in Foggy Bottom



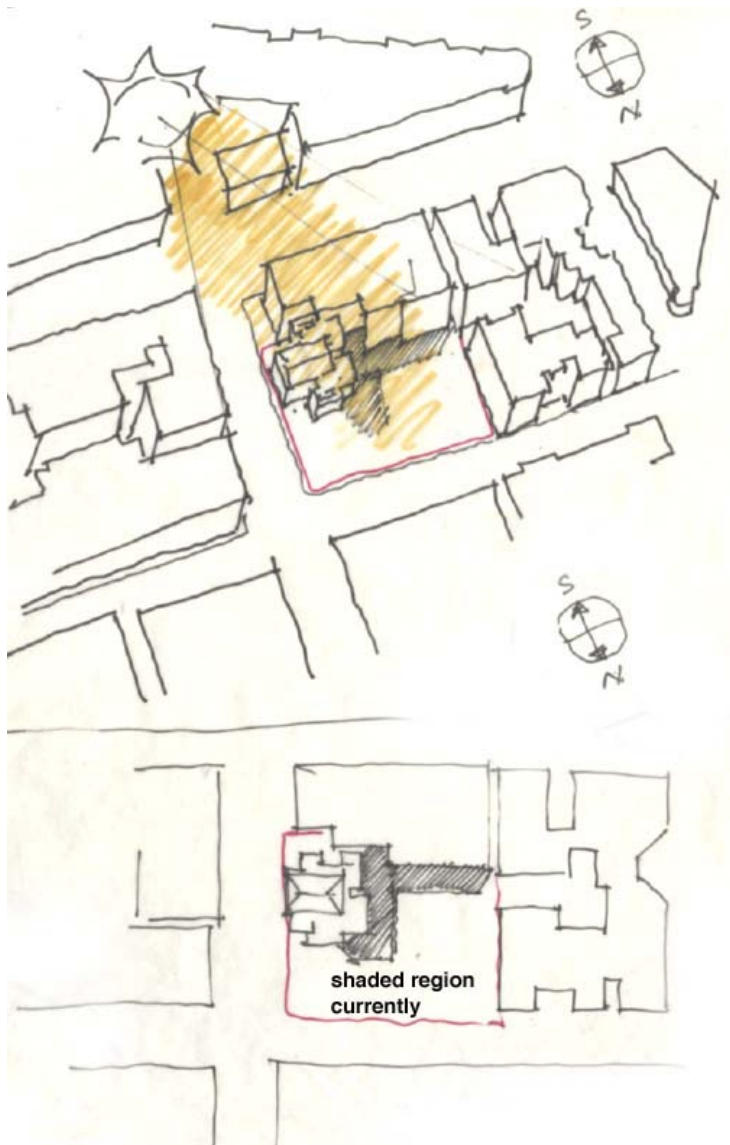


Figure 51 – Sun Diagram of the site with buildings removed.

This diagram shows shaded regions of the site. These shaded regions may not be as conducive for a park area.

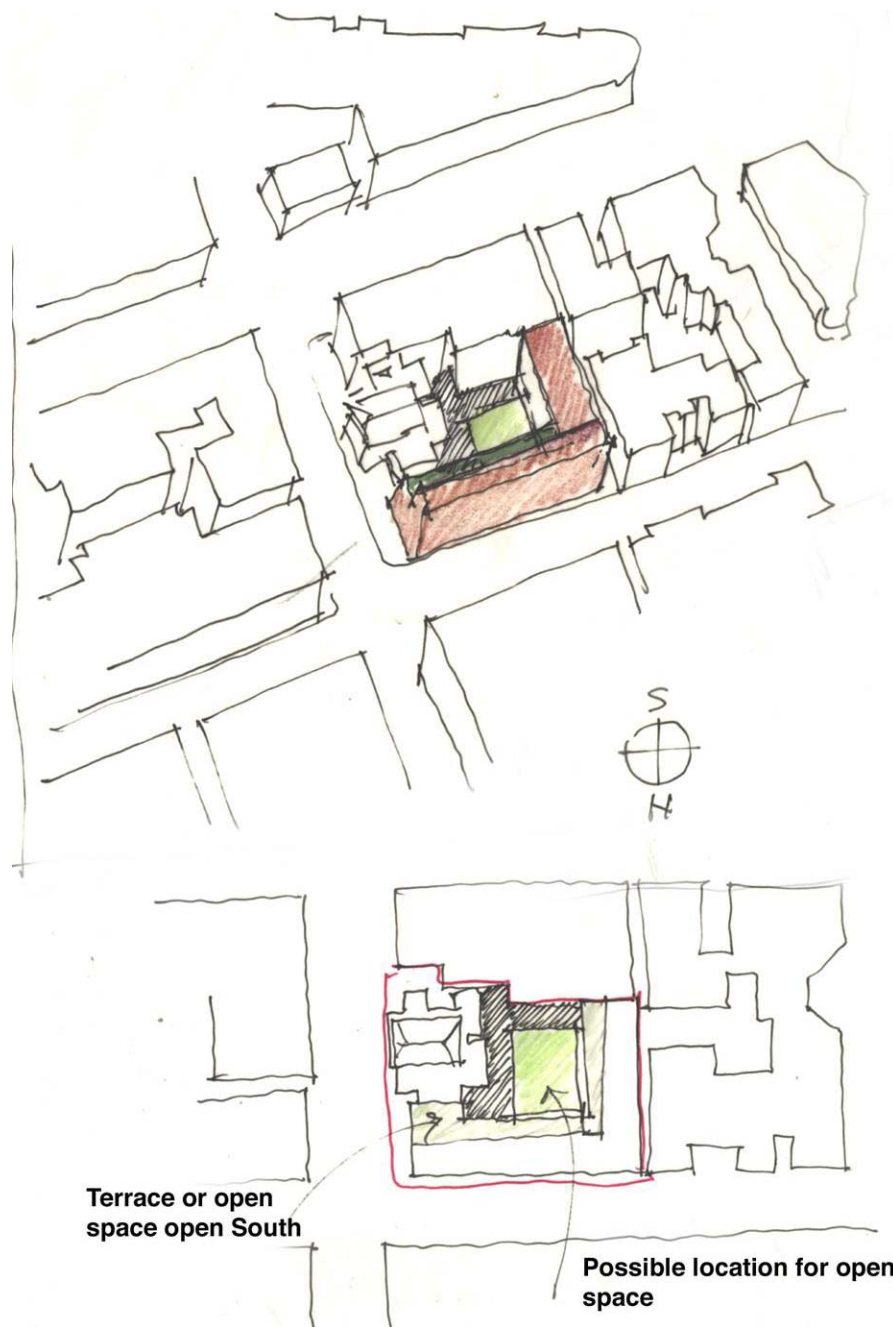


Figure 52 –Diagram showing possible courtyard condition based on South sun angles and shaded areas.

Diagrams showing possible open space parti's for the site are shown below. Initially, before focusing on just the site within its hard edges, I looked at the entire block and different open space conditions. After analyzing this extended site, the office building on the south of the site will not be demolished. Figure ground and open space parti's for the final site are discussed on the following page. It is also important to note that some park areas might be located on terraces, roofs or within balcony space.

Figure 53 – Parti 1 extending beyond soft edges of proposed site

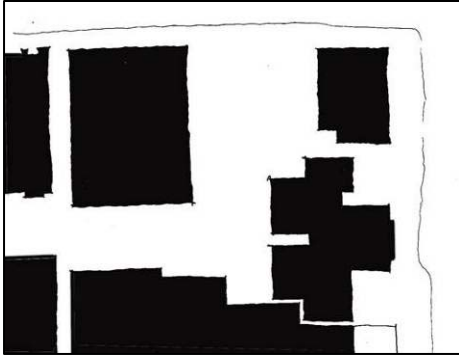


A continuous park throughout the block would allow for more access from the business community; however there would be greater security problems.

Figure 54 - Parti 2 extending beyond soft edges of proposed site

Housing could also close off the north and south sides of the site to allow for a contained courtyard. School program would therefore be located at the left side of the site with open space in between.





**Figure 55 – Existing Open Space
Figure Ground**

Only hardscape conditions exist.

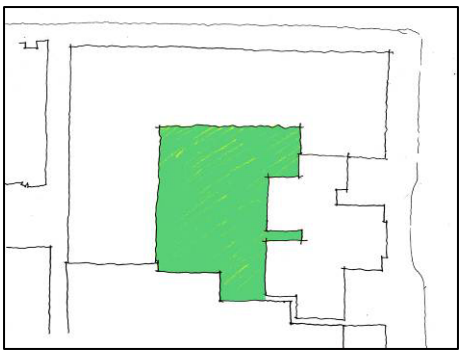


Figure 56 – Open Space Diagram 1

A large courtyard would allow for south light for the courtyard. But should multiple park spaces be contained in one open volume?

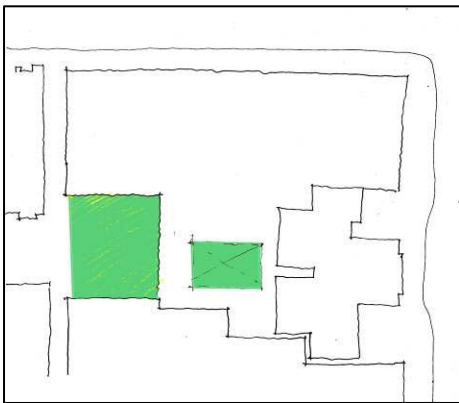


Figure 57 – Open Space Diagram 2

The courtyard is moved to the Southwestern edge of the site. What are the ramifications of having the park space off of an alley? Should there be another interior open space?



Figure 58 – Open Space Diagram 3

Smaller parks are located within the north building. Are these public or private parks? Can there be a bridge or walkway piece that ties the school with other program but also helps to break up open space for different uses?

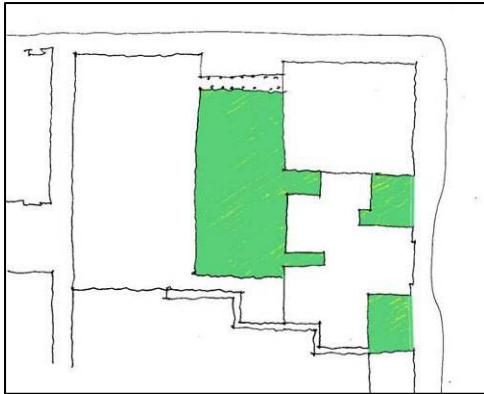


Figure 59 – Open Space Diagram 4

A longer linear park might allow for more sunlight. Should there be an entry piece that gives the park a presence on L Street? Should there be smaller parks introduced onto the niches within the Stevens façade?



Figure 60 – Open Space Diagram 5

Small courtyards within the residential area allow for mothers to watch their children while still within the home. These parks that are open on L street could also have terraces above that allow for more light and air in residential units. Should there be a more defined sequence of smaller space? What does this do for allowing light into the open space? Are some of these areas too narrow or can they are usable open space?

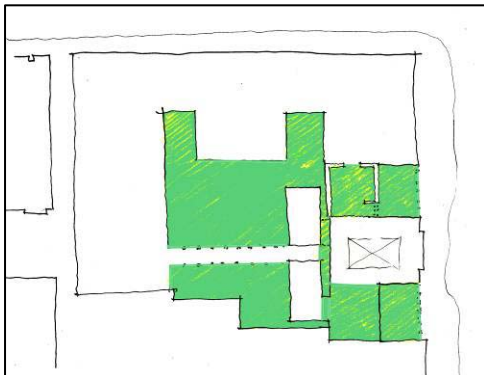


Figure 61 – Open Space Diagram 6

In this scheme, the school walls are used as park enclosure. Can the school walls be used to create interesting enclosures that set up a sequence of spaces? Can there be open spaces within the school? Any historical review board would likely not approve this scheme.

Chapter 4: Support through Program

School as Educator

Schools play an integral role in shaping a community. For families with children, a good public school is often the most important factor for home buying decisions. As a good education and positive learning experience become more important to success, parents and society are creating added pressure for public schools to provide adequate facilities, strong teachers, and enriching programs. Stevens Elementary will support the needs of its students through updated technology throughout the facility, new specialty rooms, and improved outdoor space. The project will also promote a shared vision of community involvement and support.

First and foremost the school will need to be updated to current safety regulations. The school has no gymnasium or auditorium, the highest priority for additions. Outdoor space, as discussed earlier, should be expanded if possible whether through roof space, outdoor space on plinths, or new courtyard areas.

Stevens currently holds approximately 250 students in grades pre-kindergarten through sixth grade. The school can hold 380 students at capacity. The new community co-located urban school will be a public magnet school. It will serve students attending pre-kindergarten through fourth grade. Fifth and sixth grade students need more space for outdoor gym classes and after school sports programs which cannot be accommodated on this site. Classroom sizes will range between 15-20 students per class with three or four classes per grade. The new school will be home to approximately 380 students. The school will be open to all children within the designated boundary as well as a diverse mix of students from other areas of the

district. All students must live in the District of Columbia to be eligible for the magnet school.

Approximately fifty percent of the students should come from within surrounding neighborhoods. The remaining half will be children of parents who work within the immediate business district surrounding Stevens. This will promote both communities to take interest in the school and expand the community base making Stevens an amenity to the entire district.

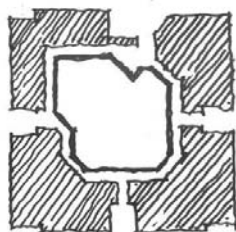
Center as Core

As public buildings move out of the central core to commercial strips arrived at by car, it is important that a community center stay accessible to all members of the community. A community center serves to bring neighbors together, provides a place for safe after-school recreation, and gives residents a place to meet. For some community members who may not be religious, community centers can provide a place of support and stability.

A new community center should make ties with existing public services: churches, recreational centers, public buildings such as post offices, and most importantly, schools. When located in close proximity to the school, and especially when within the same building, children and parents will be more likely to use the community center. At Anna Elementary School in Ohio, the school is wrapped around a community center space. The gym, music school, and media center are all located in a central core surrounded by a loop of classrooms and school facilities. The school rooms can be gated off after hours to allow for community uses such as senior citizens that walk laps in the hallways before school starts and on weekends.²⁹

Figure 62 – Anna Elementary School diagram

Hatching shows school space surrounding a community center



The dark ring corridor separates uses.

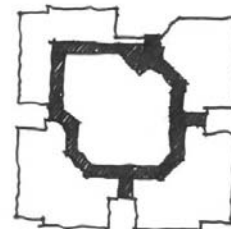


Figure 63 – Anna Elementary School diagram

²⁹ Managing School Businesses

The ARC located in Southeast Washington, D.C., was used to promote positive activities during after-school hours which was once deemed “crime time.” The ARC is a particularly a good example of a community center attached to a school. Ballet and dance rooms, game rooms, two gymnasiums, and a music education program are all used during the day by a small girls school located within the building. Children from a middle and elementary school only a few blocks away attend the boys and girls club after school. On weekend nights the gym is open for pick-up basketball games. The ARC is particularly accessible to residents of the Parklands complex located nearby, however, because it is metro accessible, teens from all over the district can benefit from its programs.³⁰

Stevens Elementary has no community building located nearby. The neighborhood surrounding Stevens on the north and east is extremely different than the community located to the west. To the east and north of Stevens are the communities of Foggy Bottom and DuPont Circle. To the west of the site is the business district. The new facilities at Stevens will help to bring these three communities together.

Program pieces for community and school use will include an auditorium, a fitness center with a gymnasium, a library, and a day care center. Foster care offices and community rooms, including a social services and juvenile services help center, will be used solely by the community center.

³⁰ Rucker

Place for Recreation

The community playground owes its beginnings to a response to dense urban conditions. Today, use of the urban park is clouded by parental fear of strangers and physical injuries. Neighborhoods that lack a sense of community often struggle with these problems more frequently, as there is no sense of defensible space.



Figure 64 – San Francisco Courtyard

A good example of defensible space; courtyard enclosed by housing with balconies³¹

Four main types of parks and/or playgrounds exist in the urban realm. The public play yard, the public park, the play yard attached to a childcare center, and the public play yard next to a school. **Public play yards in an urban setting.³²**



Figure 66 – Bleecker Street Playground



Figure 65 – Battery Park City Playground

³¹ Hendricks

³² Project for Public Spaces

Adult demands for a public park are primarily focused on safety and security considerations. Playground expense and variety of equipment for all users are typically top considerations for public park design.



Figure 67 – Boston Commons Images³³

The ducks in Boston Commons are a small detail, however they are enjoyable by both children and adults.

Although there are many public parks specifically designed for children in the suburbs, there are seldom enough urban public playgrounds. Public parks are often designed as monuments or large spaces for adults. Rock Creek Park and Boston Commons are good examples of parks that are designed primarily for adults but also hold some interest for children of all ages.



Figure 68 – Elementary school class visiting Rock Creek Park

This photograph shows a classroom of approximately eight students ages three or four.³⁴

³³ Project for Public Spaces

³⁴ Project for Public Spaces

A private school yard attached to a day care center usually allows for more freedom and variety as far as safety and maintenance; it can be regulated and secured by adults. In a day care center playground there is a more defined program, because the age and development level of users can be identified. Therefore, adult concerns for this type of playground typically focus on how the park should enhance learning.



Figure 69 – Image of a private school yard attached to a day care center.

A schoolyard that is also used by the community is much more difficult to design because the space is used by both students and neighborhood residents. This park type should above all be an amenity to the community and provide for the needs of every age group.

³⁵ Project for Public Spaces



Figure 70 - Elementary school play yard in Texas that is also open for public use.

The school façade is used as a background for colorful artwork.³⁶

What are the guidelines for a park that serves a housing complex and a schoolyard as well as the surrounding neighborhood? Aspects of each park type can be applied to the parks on the site of an urban school. A chart below lists the program requirements, and highlights proposed users for each park type, use times, and security conditions. Program park types are listed in order from those spaces needing the most security to those areas most accessible to the public.



Figure 71 – Asphalt behind Stevens Elementary School

Stevens
Elementary School
has no planted
outdoor space or
grass areas. The
playground is

located on the site and extends from the rear of the school to the sidewalk of L Street. The Humane Society Building occupies the corner of the site at present. Improved outdoor play space for recreational time and outdoor classroom activities are needed to bring the school up to current demands. There currently exists limited playground equipment located on asphalt and rubber padding. The padding is dark and absorbs the heat of the sun. The shaded area of the lot has no

There is no green space, inventive climbing equipment, or trees are located in the play yard. Additionally, at present there is only one area of play that is used by children who are at some points five and six years apart. This space is clearly not properly meeting the needs of each age group.

³⁶ Project for Public Spaces

The Home Base

Researchers tend to focus their attention on playgrounds and parks, but in reality children spend the majority of their time in residences. Although typical suburban atmospheres are widely accepted as a desirable place to raise and teach a child, there are many drawbacks to this model as discussed earlier; a mix of land uses, density, diverse visual experiences, and access.

Dwellings in the urban realm are particularly affected by density. Although many adults prefer the home and garden suburban approach to living, children benefit from living in close proximity to other children. Children make their first friendships typically through neighborhood playmates.³⁷

A report produced in 2002 by the National Trust for Historic Preservation links affordable housing with sites similar to the Stevens site because it is urban, historic and accessible.³⁸

Affordable housing is an important component for this site because it will bring a diversity of students into the school and

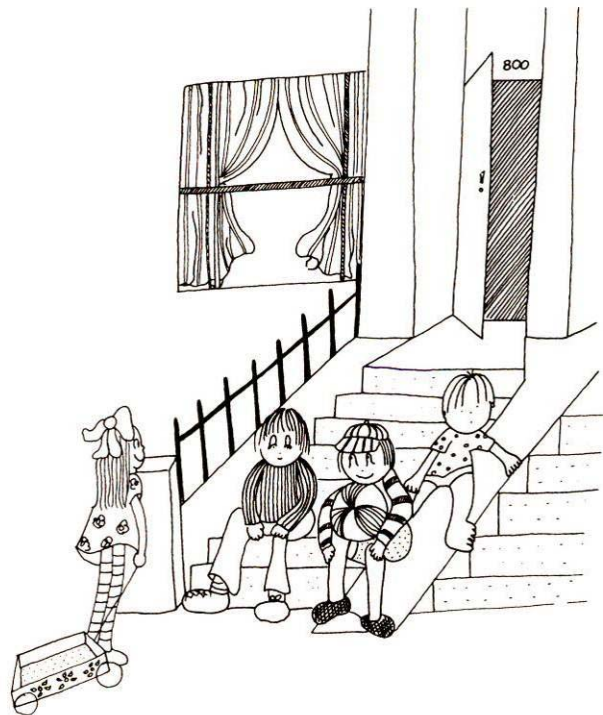


Figure 72 – Image of Children gathering on a front stoop (Hendricks 41)

³⁷ Hendricks

³⁸ Historic Preservation and Affordable Housing: *The Missed Connection* 7

community that might not otherwise have had the opportunity to live in an urban atmosphere. Housing will consist of affordable units for both foster parents and single mothers. Approximately forty units will be located on the site consisting of one, two, and three bedroom unit types. Foster families will primarily occupy the two and three bedroom apartments. The housing units, while on an urban site, should still have the ability to be personalized by tenants. This is particularly important when assuming that children will be living in each unit and will need to visually, whether through shape, color, or texture, recognize their home base.

Program Requirements

Preliminary Program Requirements:

Student use space:

New classrooms	2,000 sq ft.
Administration space	500 sq ft.
Specialty rooms	
Music space	800 sq ft.
New Art room	800 sq ft.
Science room	800 sq ft.
Nurses office	500 sq ft.
<u>Total : 5,400 sq ft.</u>	

Community use space:

Fitness center	3,625 sq ft.
Fitness center front office/ lobby	900 sq ft.
Locker rooms	2,400 sq ft.
Community Rooms	2,500 sq ft.
(ex. Juvenile services, social services)	
Foster care center offices	4,200 sq ft.
Branch youth library	5,000 sq ft.
<u>Total : 21,625 sq ft</u>	

Student and Community use space:

(2) Gymnasium	8,500 sq ft.
(small gym 50'x50'; large gym 120'x65')	
Equipment Storage	500 sq ft.
(2) Locker rooms/ bathrooms for school use	2,000 sq ft.
(2) Locker rooms/ bathrooms for community use	2,000 sq ft.
Office spaces	300 sq ft
Upper level recreation space	3,000 sq ft.
Day care center	1,000 sq ft
Auditorium for performances- fixed seating	5,000 sq ft.
(auditorium will have a sloped floor	
and small stage area – seating for approx. 250 ppl)	
<u>Total: 19,800 sq ft.</u>	

Housing Component:

- Mail room/lobby for housing	800 sq ft.
- Housing	90,000 sq ft.
(Two and three bedroom for foster families)	
(One bedroom apartments or co-housing for single mothers)	
Approximately 60 units	
<u>Total: 91,400 sq ft.</u>	

Circulation space @ 15%	26,439 sq ft.
--------------------------------	---------------

Mechanical and Electrical @ 5%	8,812 sq ft.
<u>Subtotal</u>	<u>173,476 sq ft.</u>
Parking @ (Subtotal/4000 sq ft) 50 spaces x 350 sq ft. (includes loading dock)	18,100 sq ft
Existing Stevens School:	39,500 sq ft.
<u>Gross Total Sq Footage:</u>	<u>Total: 231,076 sq ft.</u>

Outdoor Program Requirements:

School and Community

- Community outdoor space
(possibly a terrace off of community room) 1,500 sq ft.
- School yard – younger children *
(½ natural, ½ structured play equip.) 3,200 sq ft.
- School yard – older children* 4,000 sq ft.
- (1/2 natural, ½ structured play equip.)

Commercial

- Outdoor area (possibly on roof) 2,500 sq ft.

Residential

- Roof top paved 2,000 sq ft.
- Roof top non-paved 2,000 sq ft.
- Outdoor space for units/
(balcony's or shared play areas/terraces) 10,000 sq ft.

<u>Total Outdoor Spaces</u>	<u>29,900 sq ft.</u>
------------------------------------	-----------------------------

Park Times of Use and User Conditions

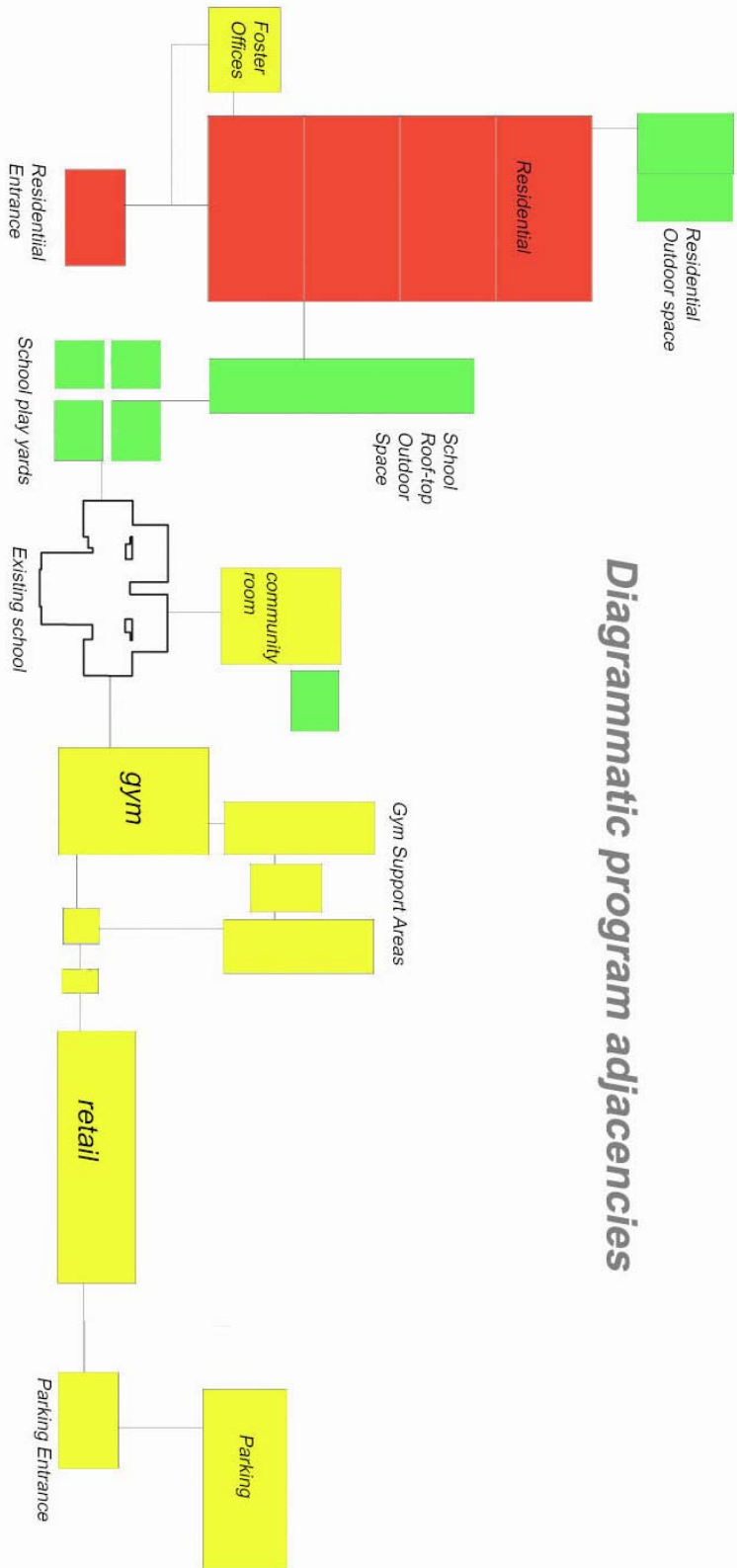
Park Type	Time use and User Conditions
Residential Play Space	Located among units and only for residential use. This space includes private balconies used by residents. (may also include some roof space)
Stevens Elementary Toddler and Pre-School Play Space	Only to be used by Stevens children during school and after school hours. During the summer a daycare center would occupy the school and would use this space.
Stevens Elementary Toddler and Pre-School Recreational Area	Used during the day for school recreational time with a specific gym teacher – Open after hours for community (may also include roof space)
Gymnasium	Open to Stevens students during school hours and all other hours accessible through the community center.
Community Center Park Open Space	Accessible through community center offices daily and accessibly from the residential units at all times.
Public Street Park	Accessible to community and business district employees at all times.

Park Type Requirements³⁹

Park Type	Requirements
Residential Play Space	<ul style="list-style-type: none"> • Safe/ secured from outsiders • Little or no maintenance necessary • Provides for supervision but also allows children to move about freely • Promotes interaction among children • Pleasant view for adults
Stevens Elementary Toddler and Pre-School Play Space	<ul style="list-style-type: none"> • Nurtures curiosity • Stimulates senses • Encourages children to interact with resources • Supports social and physical needs • A place where children can wear off energy and get fresh air • Secured from outsiders
Stevens Elementary Toddler and Pre-School Recreational Area	<ul style="list-style-type: none"> • Serves the needs of students as well as teachers • Encourages play • Promotes social and intellectual development • Provides for the needs of all ages • An amenity to the surrounding community • A place where children can wear off energy and get fresh air • Provide children with examples of well designed, lively settings • Provide for a variety of sensory experiences through the use of varying textures and materials
Gymnasium	Same as above Recreational area
Community Center Park Open Space	<ul style="list-style-type: none"> • Promotes children's interactions with adults • Amenity to the surrounding community • Affords children the opportunity to explore and wander • Provides for a variety of sensory experiences through the use of varying textures and materials • Secured from outsiders/ controlled by the community center
Public Street Park	<ul style="list-style-type: none"> • Requires little or no maintenance • Can be used by all age groups and may want to be more oriented toward adults • Pleasant view for adults • Promotes civic pride • An amenity to the surrounding community • Invites old and young to visit and interact

³⁹ Chart supplemented with information from Hendricks 54-57

Diagrammatic program adjacencies



Chapter 5: Mixed-Use and Preservation Examples

Swans Marketplace

Swan's Market as a precedent is comparable through similar adjacent site uses, site size, adaptation of an existing structure, and mixed-use programmatic difficulties. Swan's Market addresses the concerns of a community that is similar to the Foggy Bottom community where middle class flight has abandoned the urban core of residential.⁴⁰ The urban core has subsequently been taken over by primarily commercial buildings eliminating the more vibrant mixed-use streets that once existed on the site.

Swan's Market occupies one city block and adapts a historic market structure into a mixed-use block of commercial, housing, museum space, parking, and retail. Historic preservation tax credits, grants, donations, and debt financing are all used to secure the project. In addition, market-rate units are included along with the affordable housing section of the project, which includes for sale and co-housing units.⁴¹



Figure 73 – Swans Market Residential Court

⁴⁰ Affordable Housing

⁴¹ Affordable Housing



Figure 74 - Swans Market Ground floor plan⁴²



Figure 75 - Swans Market second floor plan

⁴² Design advisor

An interior court that is approximately 20 feet wide is built on a secondary ground plane that housing parking below. The court provides open space for each unit, enables a sense of security with eyes on the street, fosters a sense of community, and allows for added light and air. Units are located on the second and third floor with parking and retail below.⁴³



Figure 76 – Swans Market Interior View

This precedent is extremely helpful in looking at how uses were zoned. Parking underground behind retail could be a possibility for my project. A mix of both affordable for sale units and co-housing shows adjacencies on a site of similar size.



Figure 77 – Swans Market Main Courtyard

⁴³ Affordable Housing

The most important comparison looks at land use adjacencies in the surrounding sites and the similar project objective to bring housing to a primarily business zone that has had a loss of activity on nights and weekends.



Figure 78 –Swans Market Exterior Street Elevation

Retail is located on the main street of the complex. Does the housing that exists have enough of a presence on the façade? The entrance to the courtyard is an open arcade that follows the same rhythm as the rest of the façade.⁴⁴

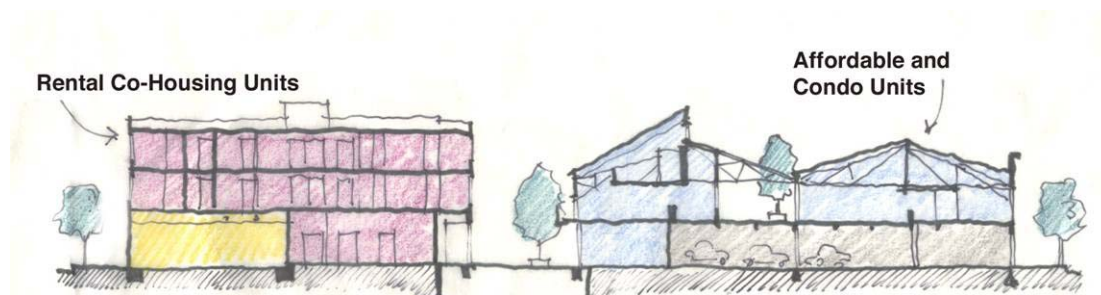


Figure 79 – Swans Market Section

The section shows the breakdown of uses that are mixed within the site. The Condo units share a courtyard with the co-housing units.

⁴⁴ Design Advisor

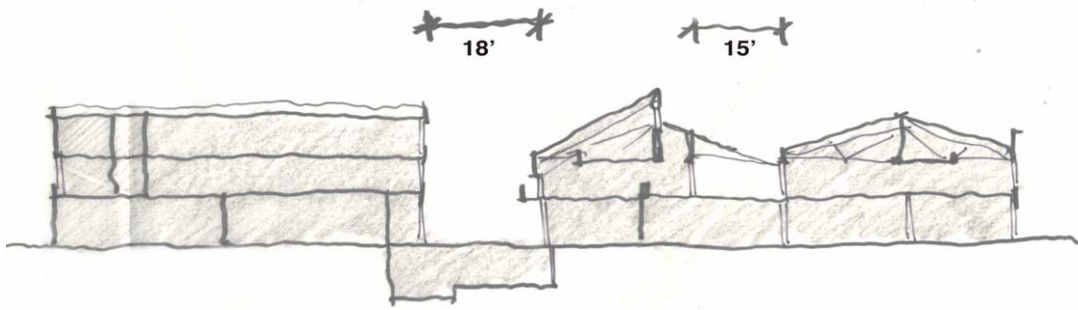


Figure 80 – Swans Market Section showing dimensions of Interior Courts



Figure 81 – Swans Market Section showing sun angles and light penetration

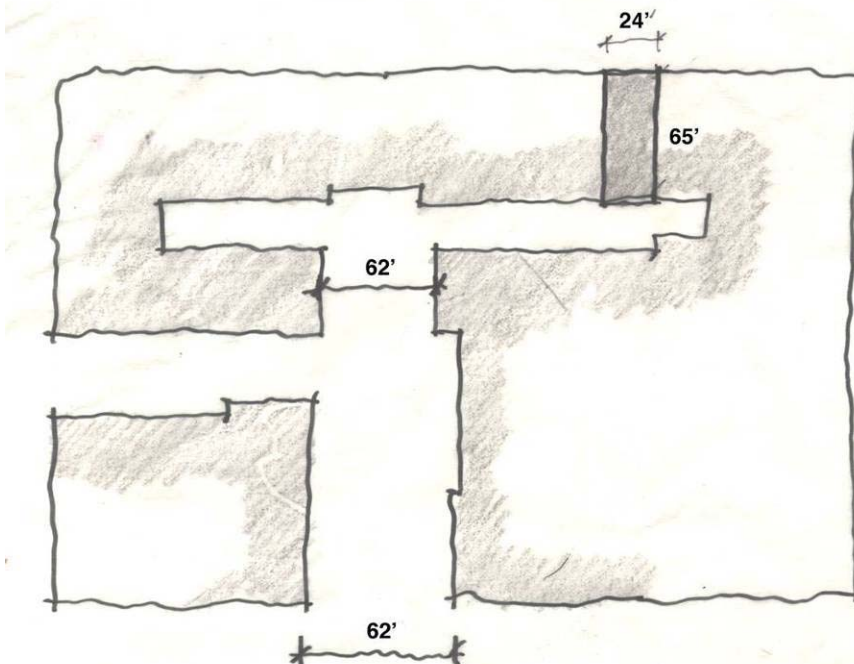


Figure 82 – Diagram showing dimensions of open space courtyards and townhouse dimensions.

This diagram shows how more private areas have a more narrow open space. The sequence of spaces across the site from public to private also narrows to allow for more privacy.

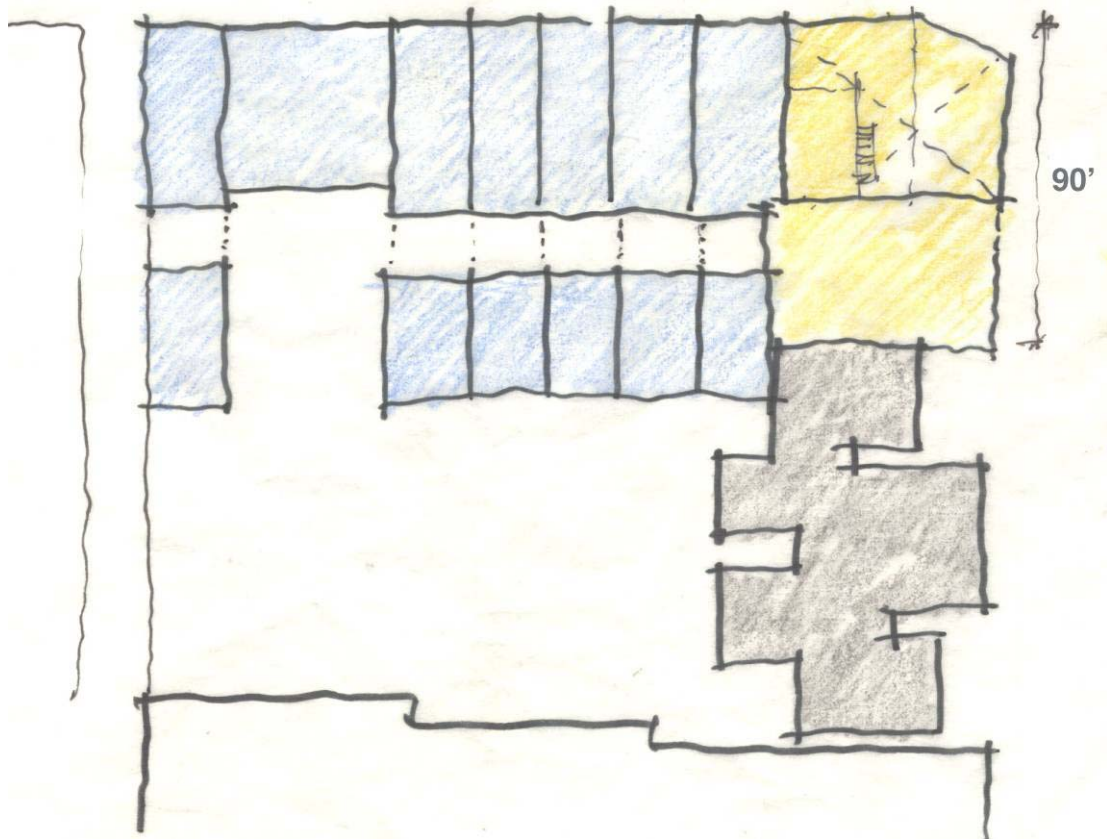


Figure 83 – Adaptation of Swans Market housing onto thesis site.

This drawing shows that there might be room for an interior residential court on the north side of the site.

Harlem Public School 90 – Design Entry 1

Public School 90, built in 1906, is located in Harlem, New York. It was originally a high school. In the 1970's it was closed and declared obsolete.⁴⁵ The school is an H shaped plan with masonry bearing walls of brick and limestone. This area of Harlem is in the process of being restored for housing for the homeless and low-income families. A competition was held to re-develop the site including new program requirements. The competition called for day care facilities, social services offices, adult education facilities, a health clinic, a branch library, and an alternative high school for 250 students.

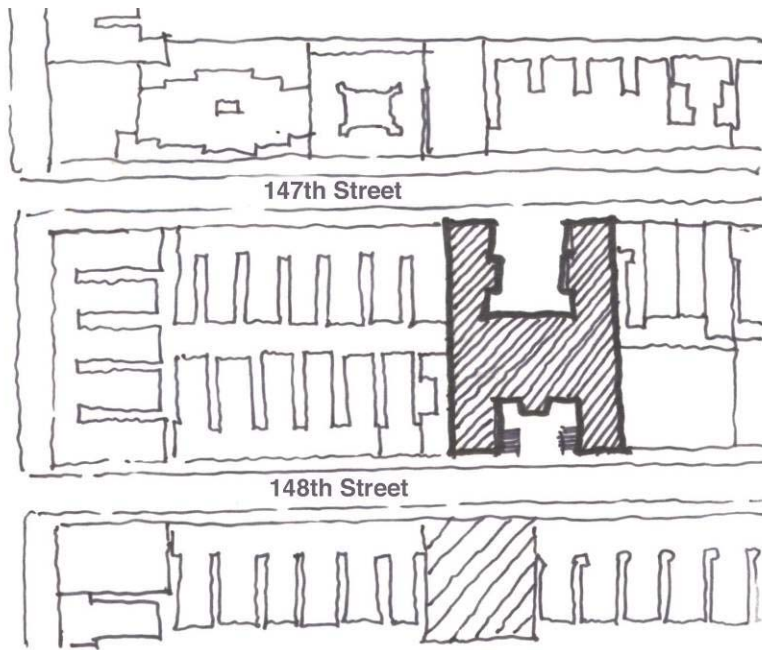


Figure 84 – Public School 90 existing site plan

The school occupies the entire block between 147th and 148th Streets in Harlem. Town houses are adjacent to the site. Across from the site is a vacant lot that was also part of the competition.⁴⁶

⁴⁵ New Schools for New York 84

⁴⁶ New Schools for New York 37

Because this competition focused on adding onto an existing school structure with a mix of uses and shared facilities, it is a very relevant precedent. The main issues in designing P.S. 90 were access, security, circulation, combining public and private uses, and designing a facility that could be used by people of all ages. I chose only one competition entry to focus on as a precedent, however other entries did bring up some important things to consider when designing mixed-use facilities. One competition entry in particular was not as successful because there were too many entrances to the building. A front and two rear entrances lead to confusion for patrons but did do a good job at securing each use in the building. Is there a way to have fewer entries and still have security?

The entry submitted by a group from City College Architectural Center seems to solve this idea of access simply with one main lobby that accesses each separate area of the program. The main community areas are

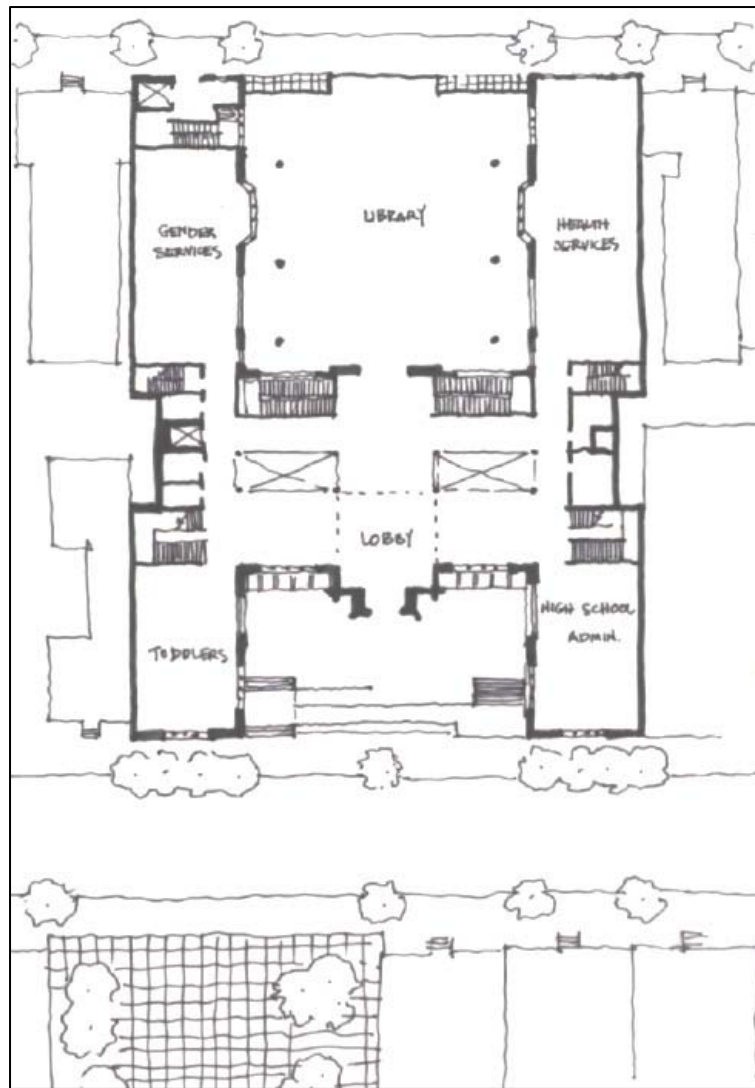


Figure 85 – Public School 90 Entry 1 – First floor plan

located on the ground floor with the library directly off of the main entrance. The existing exterior walls of the school enclose the library. Structure is added to support the upper floors of the library. A portion of the floor is removed on the second floor to allow for a connection with the lobby below.⁴⁷

Figure 87 – Public School 90- Entry 1- Connection with the lobby

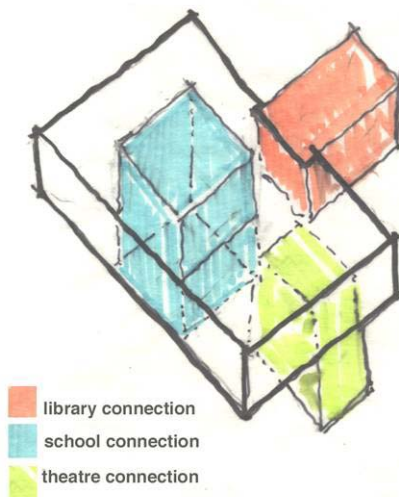


Figure 86 – Public School 90 – Entry 1 plan showing lobby connection

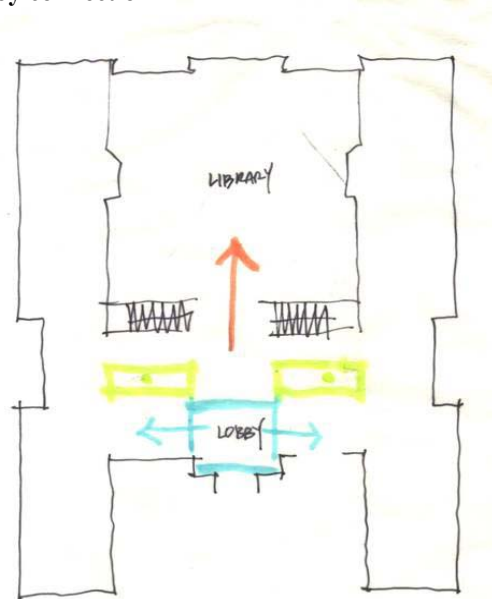


Figure 88 – Diagrams reinforcing the volumes of the library, school and theatre and their connection through the lobby.

⁴⁷ New Schools for New York 86

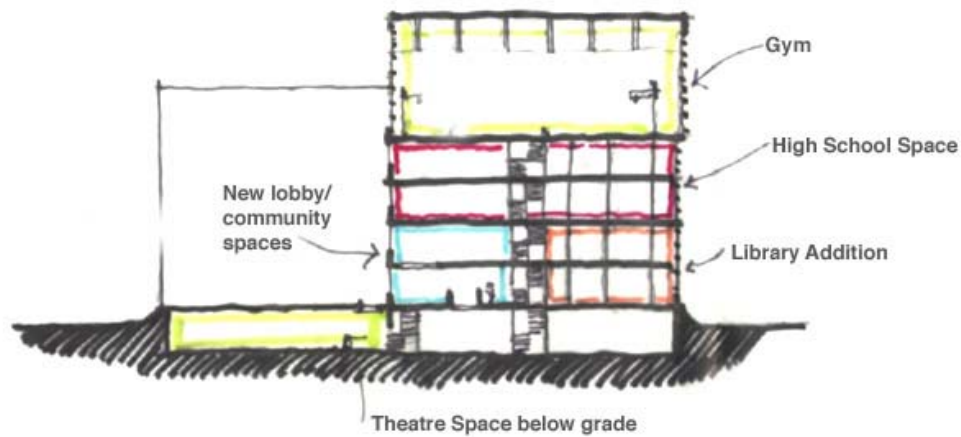


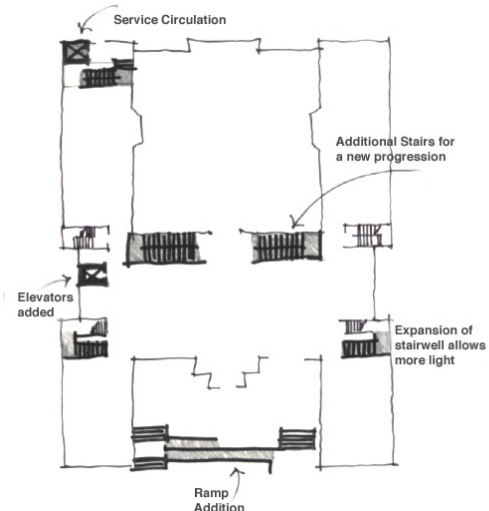
Figure 89 – Public School 90 Entry 1 – Section

The gym is also designated as community use. Should it be located on the ground floor closer to the rest of the community spaces? Was the gym located on the top floor for easier access for the high school, because it was easiest to add a large space to the building there, or because of façade aesthetics?

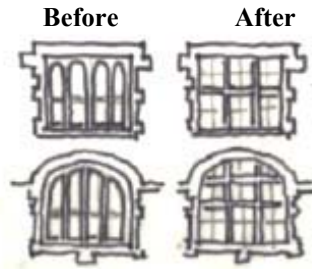
One complaint with this scheme might be the lack of attention given to the high school. There is nothing to tell us what the main circulation is for the school or where the high school portion is represented in the school. In addition, should the high school administration be located on a separate floor from the school? Possibly too much circulation and a lack of outdoor space adjacent to the toddler area are other problems with this scheme.

Figure 90 – Public School 90 Entry 1 – Added Circulation

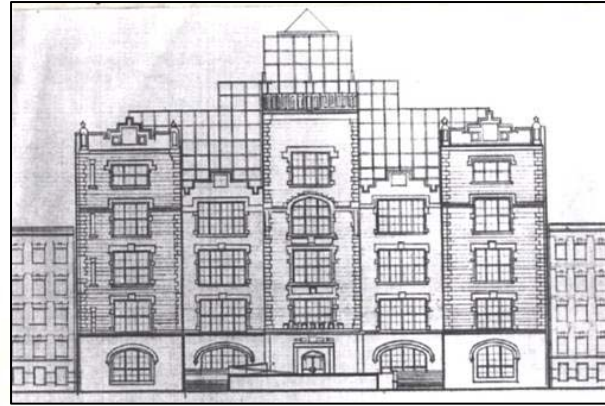
This diagram shows the added circulation highlighted in gray. The new central stairs are more prominent but are these to be used by the high school as well? Are the existing stair necessary after adding the new central stairs?



An addition of a glass enclosure to the top of the existing façade for Entry 1. The glass encloses parts of the high school as well as a gymnasium that is located on the top floor of the building. Windows were also altered to accommodate those that had been previously blown out. As with many historic buildings, it is difficult to find replacements for windows. Therefore newer, simpler windows may be added in the rough opening of the existing structure.⁴⁸



**Figure 92 – Public School 90
Entry 1 – Window Alteration**



**Figure 91 – Public School 90 Entry 1 –
Façade alteration**

⁴⁸ New Schools for New York 87

Nina West Homes by Sylvester Bone in London

Nina West Homes is a project in London for single mothers. Twelve flats were created for this project in order to help unwed mothers “find understanding and avoid loneliness; a place where their children will be looked after during the working day.”⁴⁹ A nursery school is located on site to provide care for children during the day. At all other times children have access to shared playrooms. Playrooms are shared by eight families and are accessed from the staircase of each unit. The playroom is a half level off of each unit entrance, enabling all eight mothers to see into the playroom area from their kitchen windows.⁵⁰

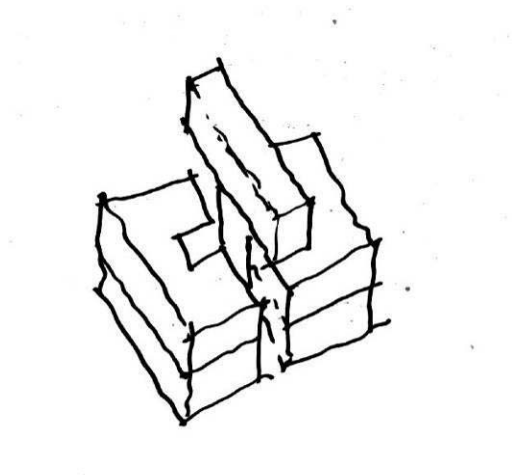


Figure 93 – Nina West Homes Axon

The U-shaped volumes contain living spaces while the bar piece that ties the two halves together serves to connect the housing and creates an entrance portico and passageway underneath the volume.

⁴⁹ Bridge Over Troubled Water

⁵⁰ Bridge Over Troubled Water

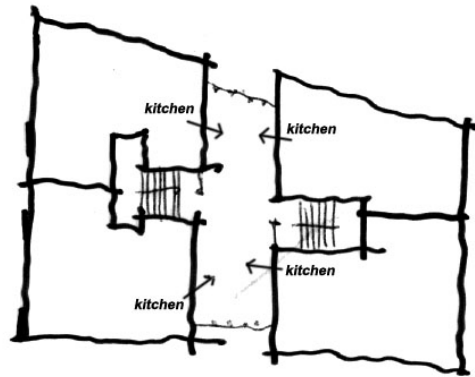


Figure 94 – Nina West Homes - Diagram showing views into play area

Windows from the kitchen of each unit into the play space allows for a sense of security for the mothers while children feel a freedom to play with friends outside of the home.

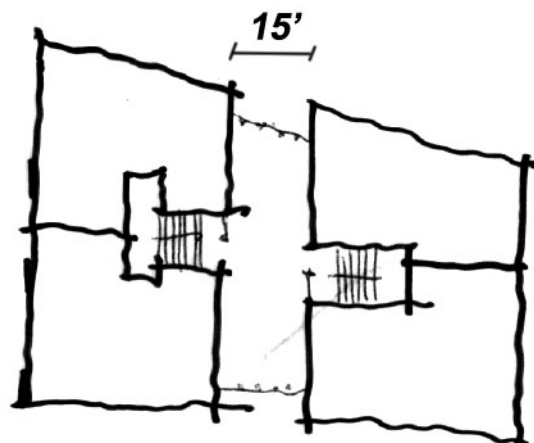


Figure 95 – Nina West Homes – Diagram showing dimensions of the play space

Families living at Nina West Homes are supposed to leave the facility when the children are old enough for school. In response, a second project was considered to help mothers with older children. The nursery center is located on the rear of the

site and a garden in between the flats and the nursery is used by other children throughout the neighborhood.⁵¹

This project is particularly interesting because it shows a simple way to create play space that is accessible and safe for children, connects visually and physically to the home, and promotes a sense of community. It is also interesting to note that the mothers were asked to leave the facility after their children reached a certain age. This also might be a factor with this thesis project; what if a family decides to adopt their foster child? What if the family goes an extended period of time without receiving a foster child assignment? Nina West homes demonstrate successfully strong connection between school and home.

⁵¹ Bridge Over Troubled Water

Chapter 6: Design

Scheme 1: Verticle Program Scheme

This scheme is best described in section. The two main program types; housing and school/community space are divided into separate buildings on the site. This allows for segregated and therefore more secure circulation and mechanical systems. The residential tower would either be located on the north or west portion of the site.

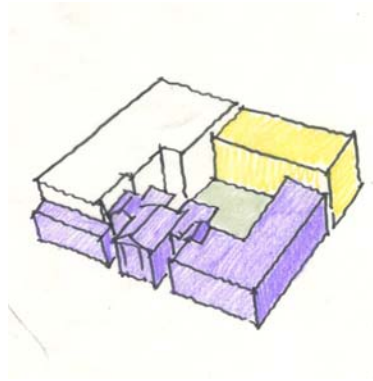


Figure 95 – Scheme 1 - Vertical Parti A

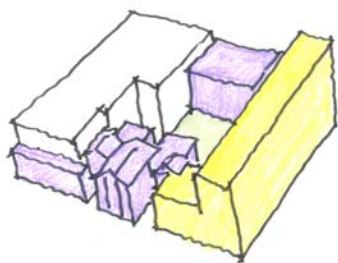
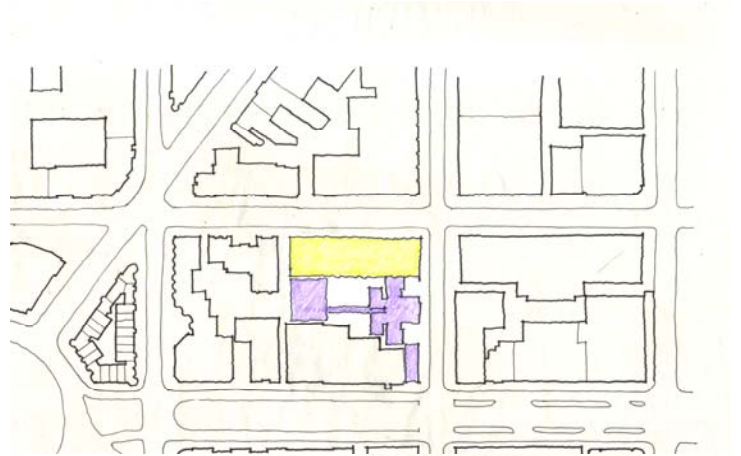
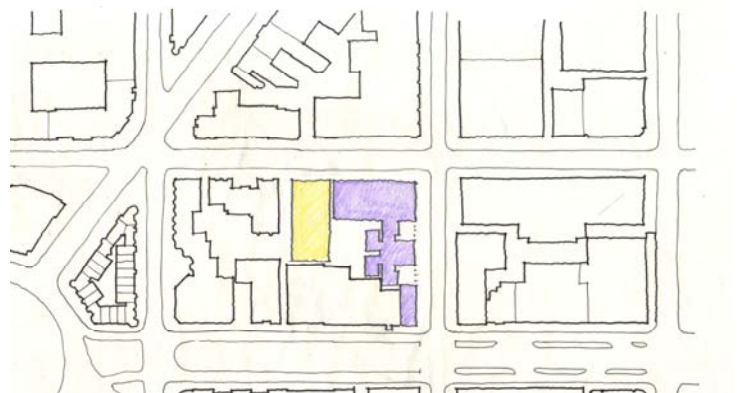


Figure 96 – Scheme 1 - Vertical Parti B



Scheme 2: Horizontal Program Scheme

This scheme uses a plinth of community and school program on the first three floors and then incorporates residential program on to the upper floors. These schemes allow for all school and community uses around the courtyard which is a big positive. However, separation of uses becomes more difficult with one large mixed-use building.

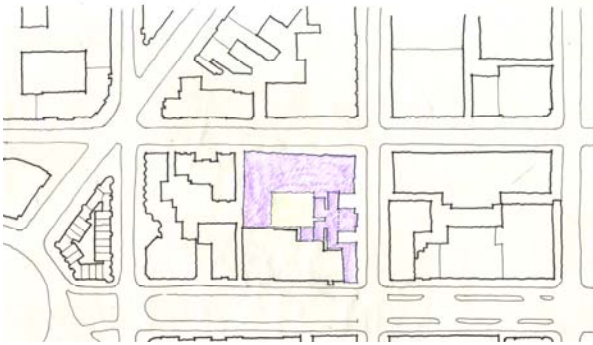


Figure 97 – Scheme 2 Horizontal Program Scheme- Option A Grouped Housing

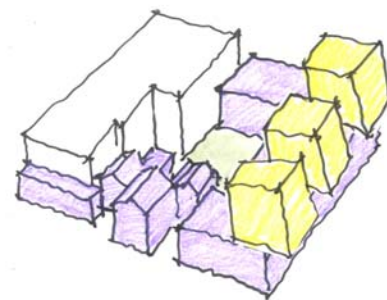
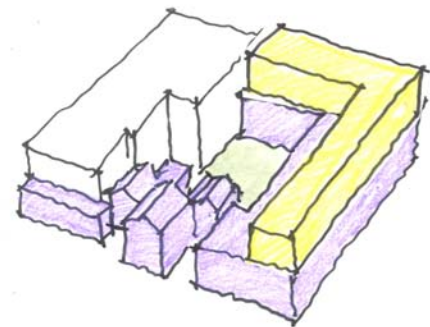


Figure 98 – Scheme 2 Horizontal Program Scheme – Option B Linear Housing

Scheme 3: Non-figural school scheme

This scheme looks at using the existing school not as an object building but as a contained piece of the new building. This scheme is by far the most radical. It would utilize air space above the existing school. Instead of using the school as a figure piece, this scheme encloses the school within the new building. The central front façade would be maintained as a figural piece. Contrast between new materials and the historical school would be an added challenges but also an opportunity for this scheme. Two residential bars above the community/school space would face into and enclose the courtyard.

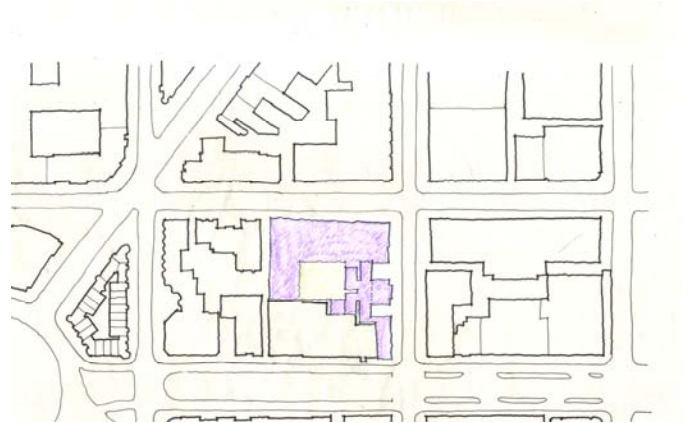
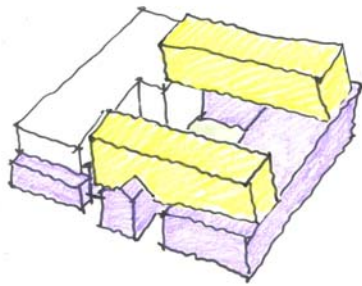


Figure 99 – Scheme 3- Non-figural school parti

Lower floor plans – Community/School program

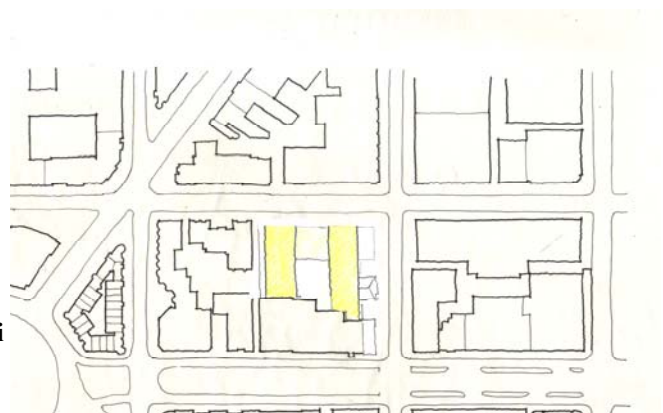


Figure 100 – Scheme 3- Non-figural school parti

Upper floor plans – Residential

Chapter 7: Final Design and Conclusions

Design Decisions-

In studying open space on this site, I quickly realized that with different user groups accessing the site, there would have to be different types and/or areas of open space. As a result, the site is organized around two large open spaces, a courtyard and a community alley. The courtyard is used primarily for the school and the community alley is used for the residents of the community center and as a break out space for the boys and girls club.

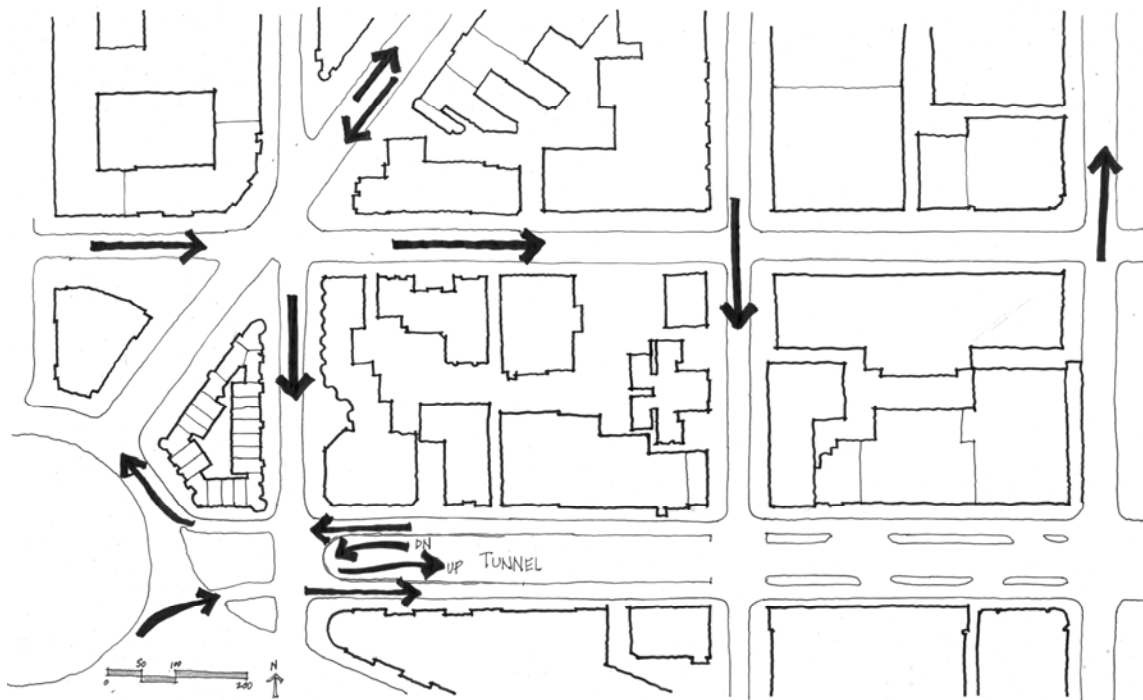


Figure 95 – Traffic Diagram

One way traffic on L Street and 21st Street was important for determining access areas to the site. The community center is accessed through L Street. Residential entrances are also located on L Street. The community alley opens to 21st Street and the business district beyond. The community alley is then seen as an extension of the city that still provides a safe haven for children.

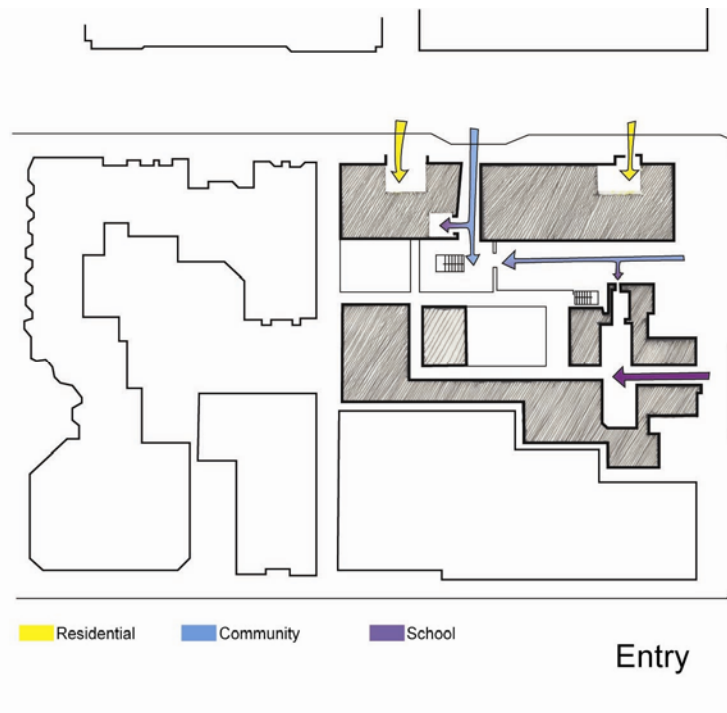


Figure 102 – Entry diagram by user group

After analysis of the existing school, I realized that with the large amount of amenities I was adding to the facility, it was more economical to add a larger population of students. The existing school building is turned into an upper school with children in grades one through four. A lower school occupies the western edge of the site. The western portion of the site is perfect for additional school program because the orientation was not ideal for housing and the courtyard now joins and unites the upper and lower school.

Stevens Elementary School should be seen as an icon and therefore was left primarily standing on its own. Instead, the community alley, gymnasium volume, and courtyard are the only program elements that are physically connected to the building.

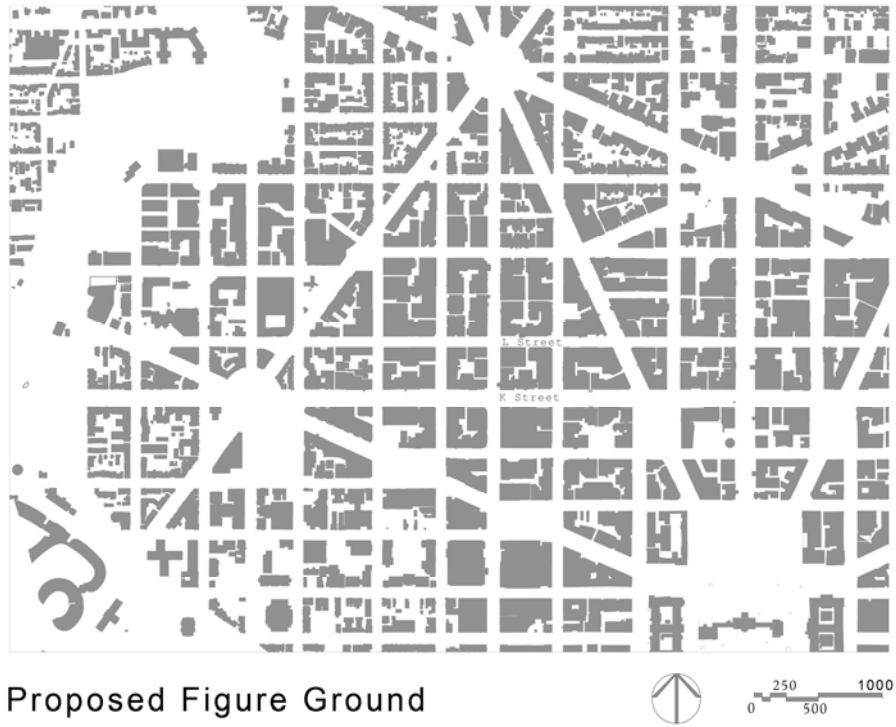
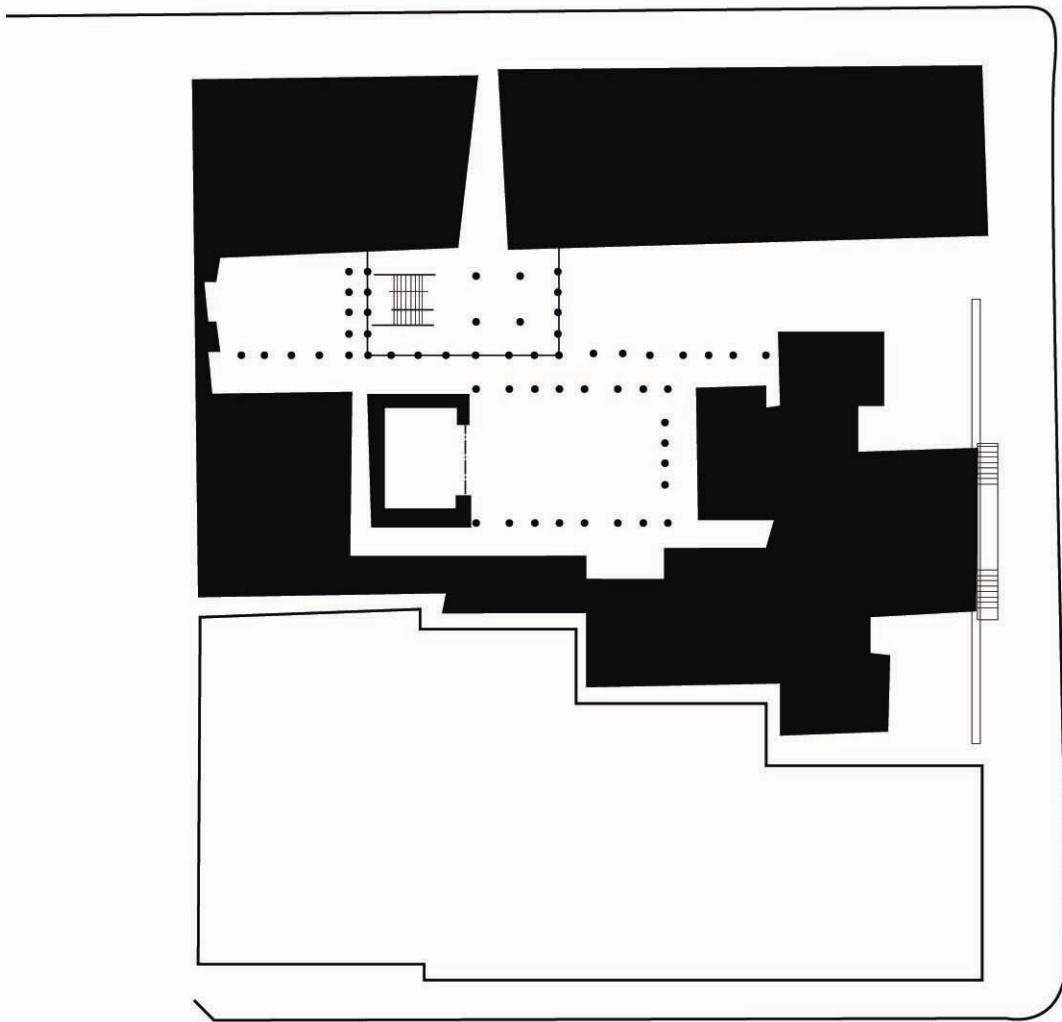


Figure 203 - Proposed Figure Ground



Nolli

Figure 304 – Nolli Diagram of the site showing open spaces

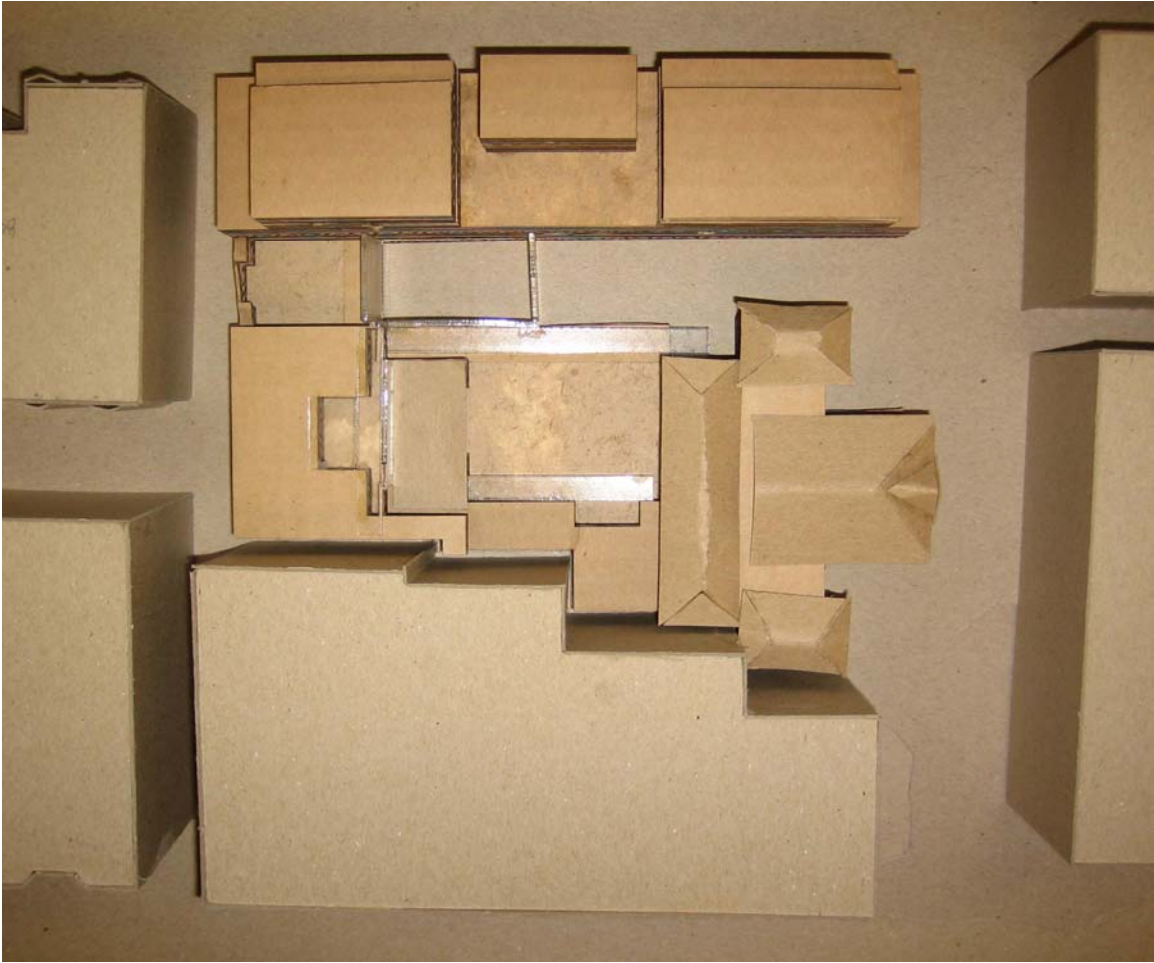


Figure 405 – Model Aerial



Figure 506 – Approach shot from the corner of 21st and L Streets

Stevens Elementary can be seen in the center of the rendering. The façade is made up of concrete textured panels on the ground floors and in the residential levels the panels are terra-cotta. A glass façade element wraps the end of the building to denote areas of community center program within.

On the interior of Stevens, two staircases were removed as was the floor in the center portion of the building. New bridge-like hallways stretch between the main existing volumes of the school. Two new fire stairs and an elevator occupy the inner core. The main office is located on the first floor along with the cafeteria. Classrooms for first through fourth grade are located on the second through fourth floors. On the fourth floor is a library that connects through a reading room to the community library in the community center building through a bridge. This bridge also helps to define the space of the community alley.

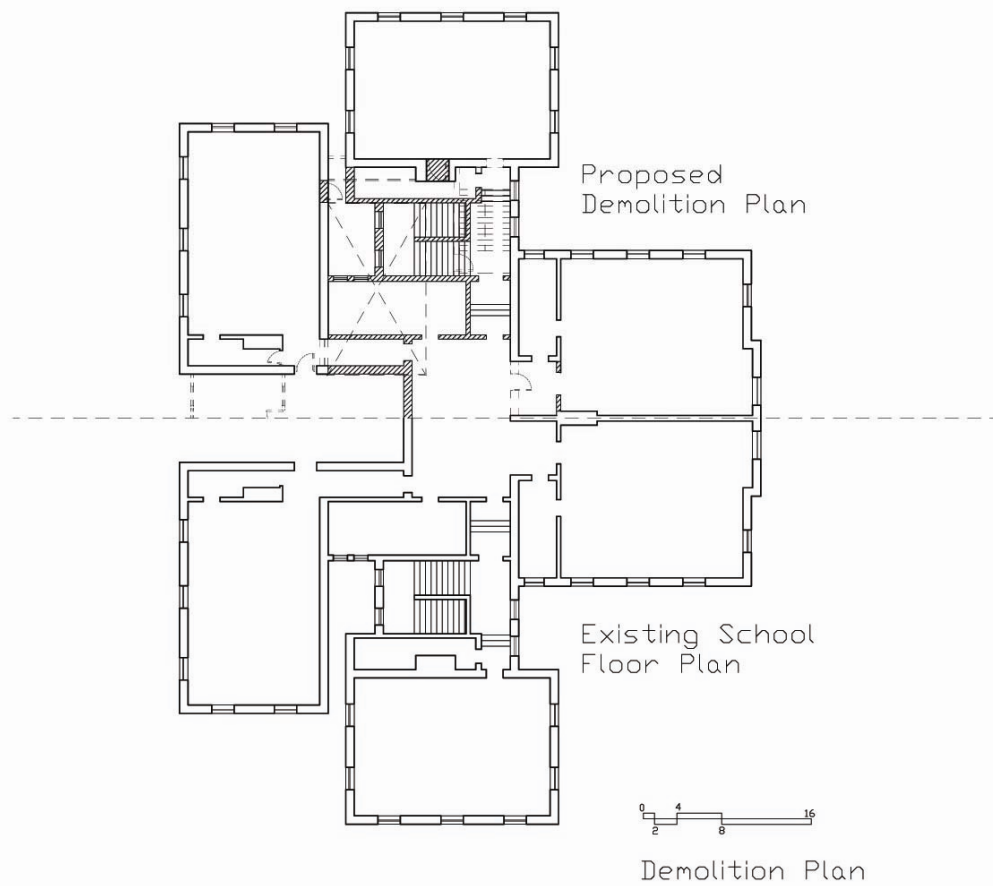


Figure 607 – Stevens Elementary School Proposed Demolition Plan

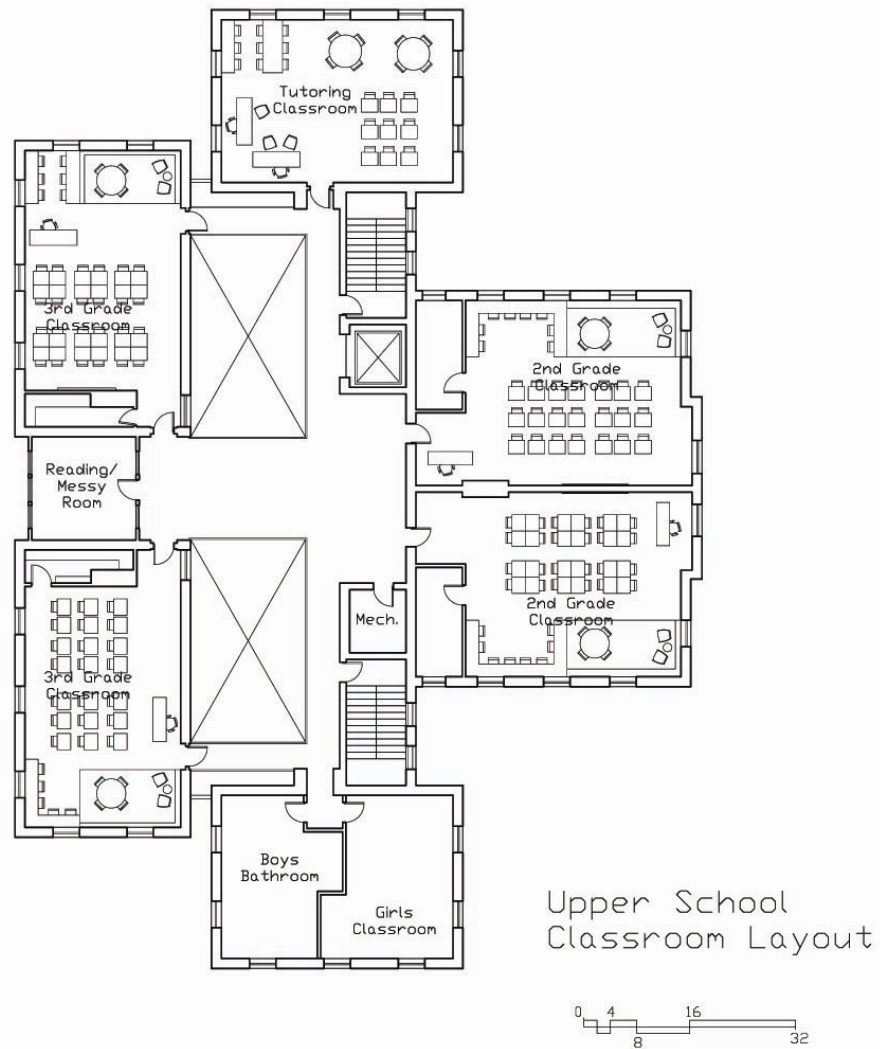


Figure 708 – Stevens Elementary School Proposed Classroom Layout

Bathrooms are located on the side of the school which receives the least light as a result of the large building on the south of the site.

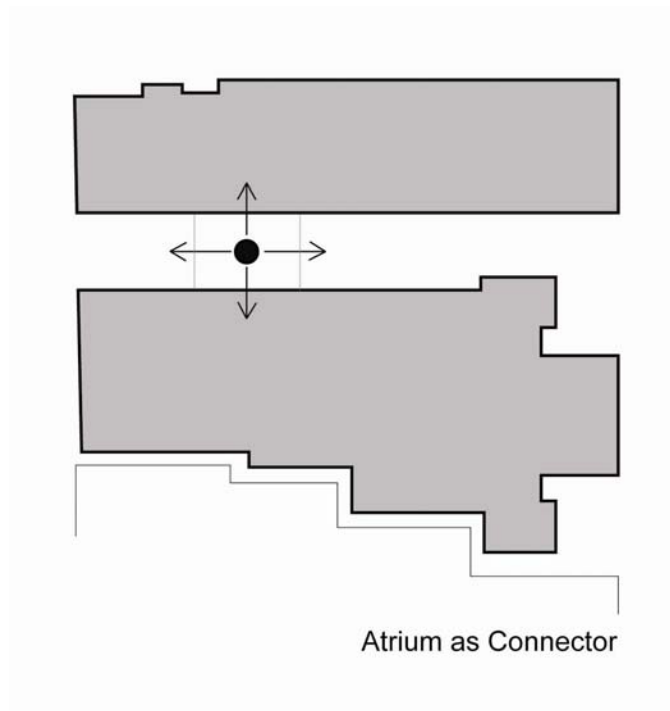


Figure 809 – Lobby atrium Diagram

As an organizing element for the site, a lobby atrium is on direct access with entrances from 21st Street and L Street. This atrium provides a connection between the community center and the courtyard.

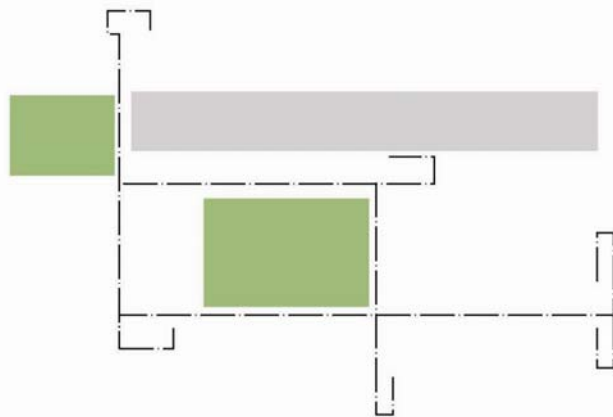
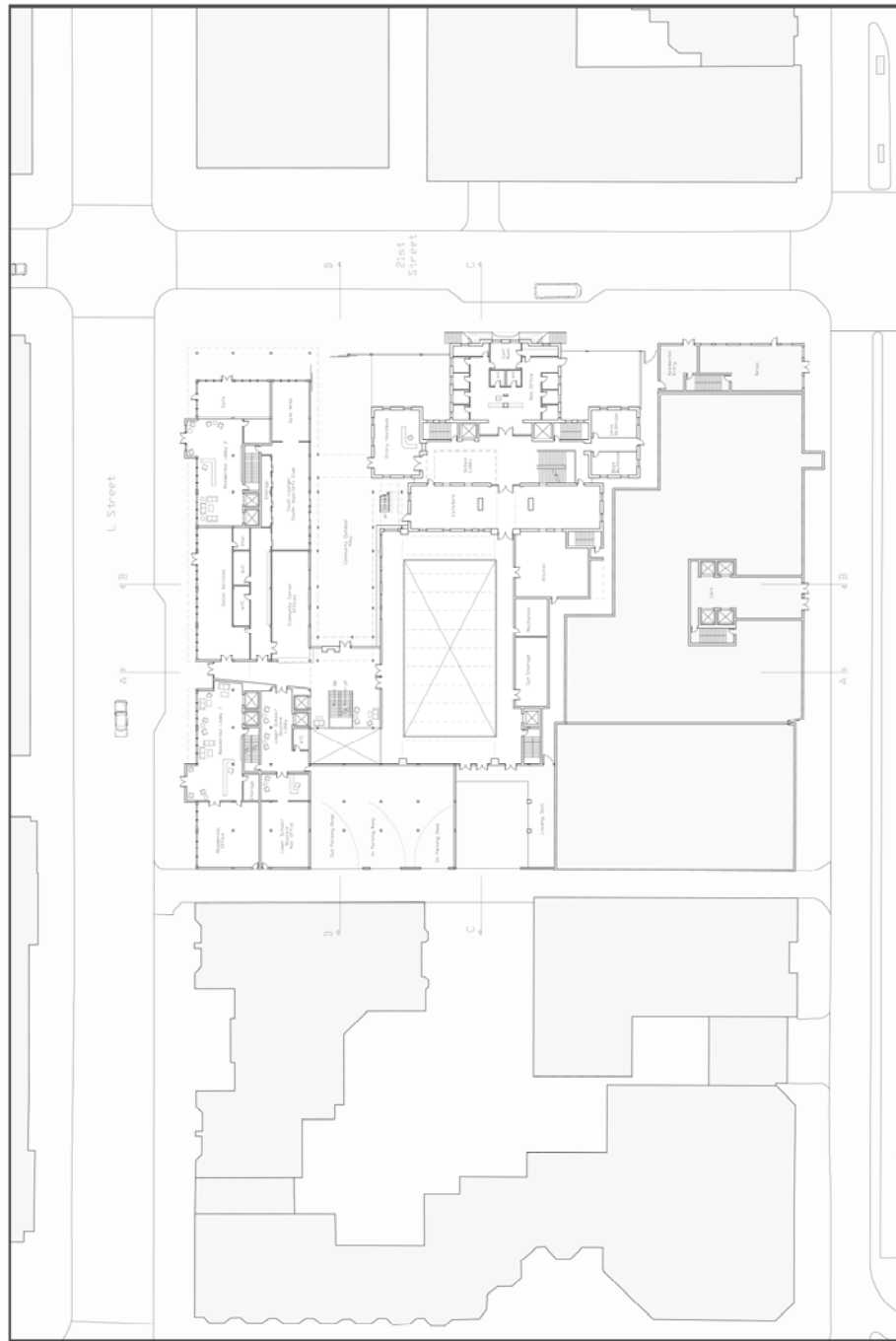


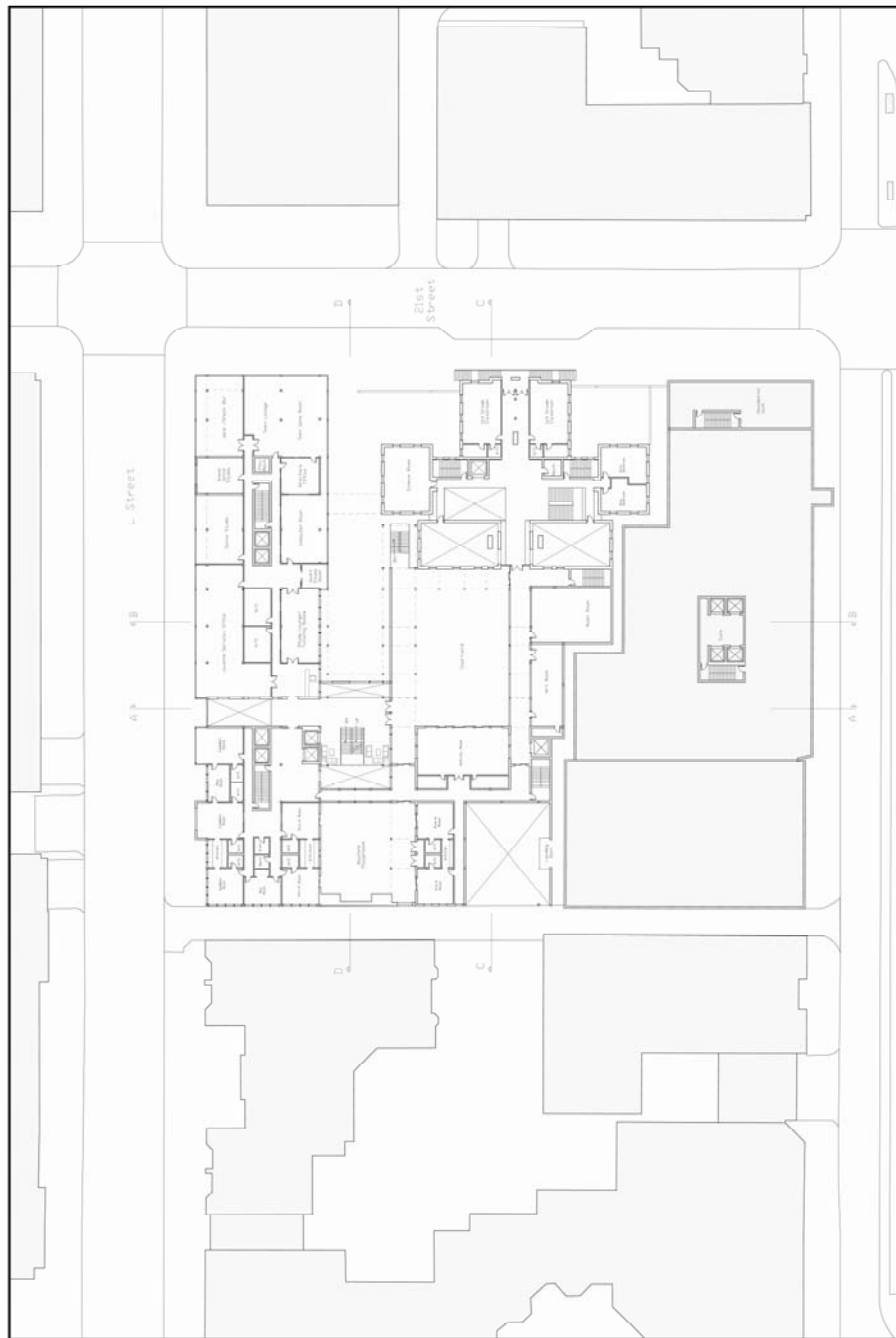
Figure 910 – Circulation around courtyards diagram

Piano Nobile Circulation



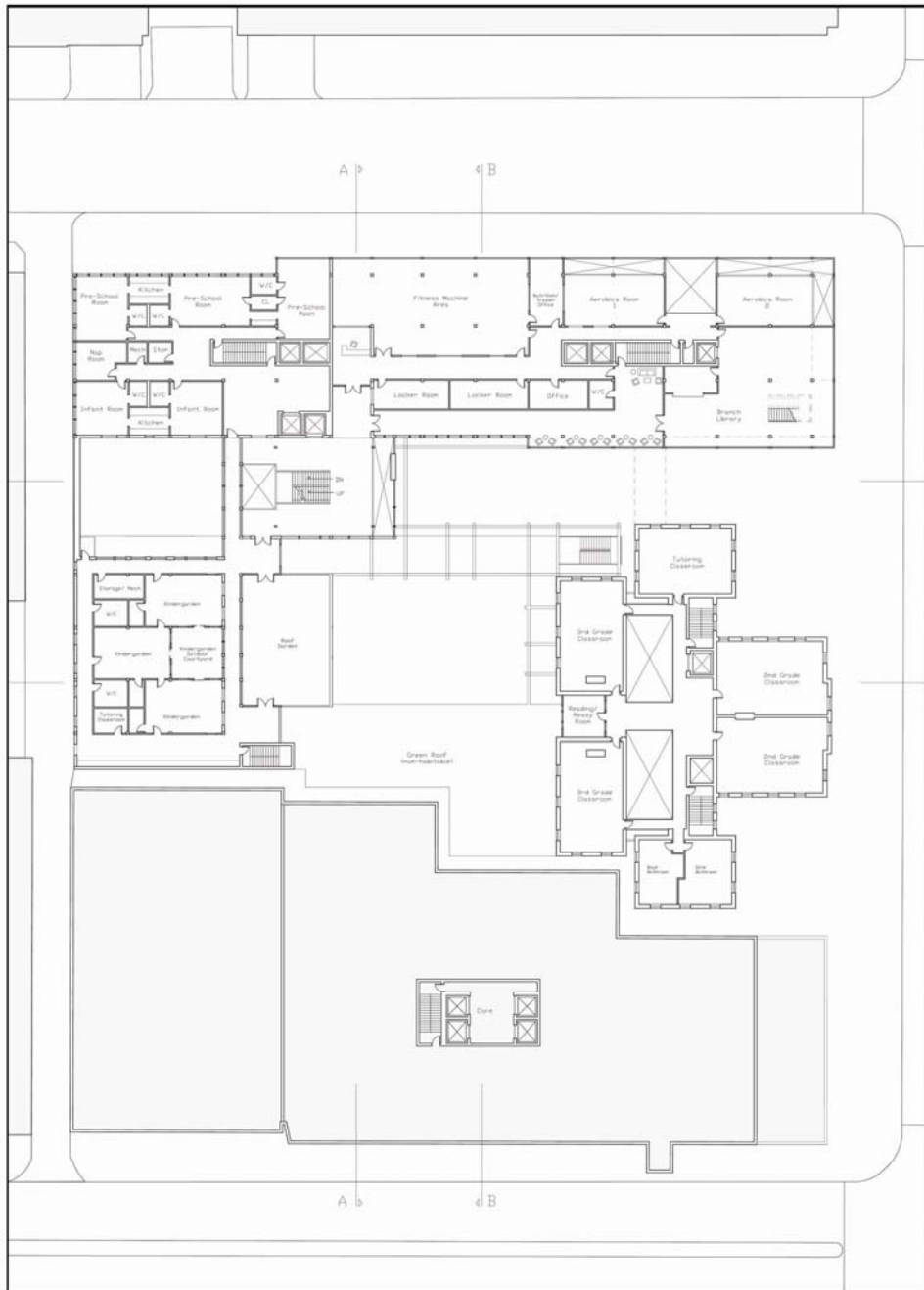
Ground Floor (Street Level)

Figure 1011 – Ground Floor Plan



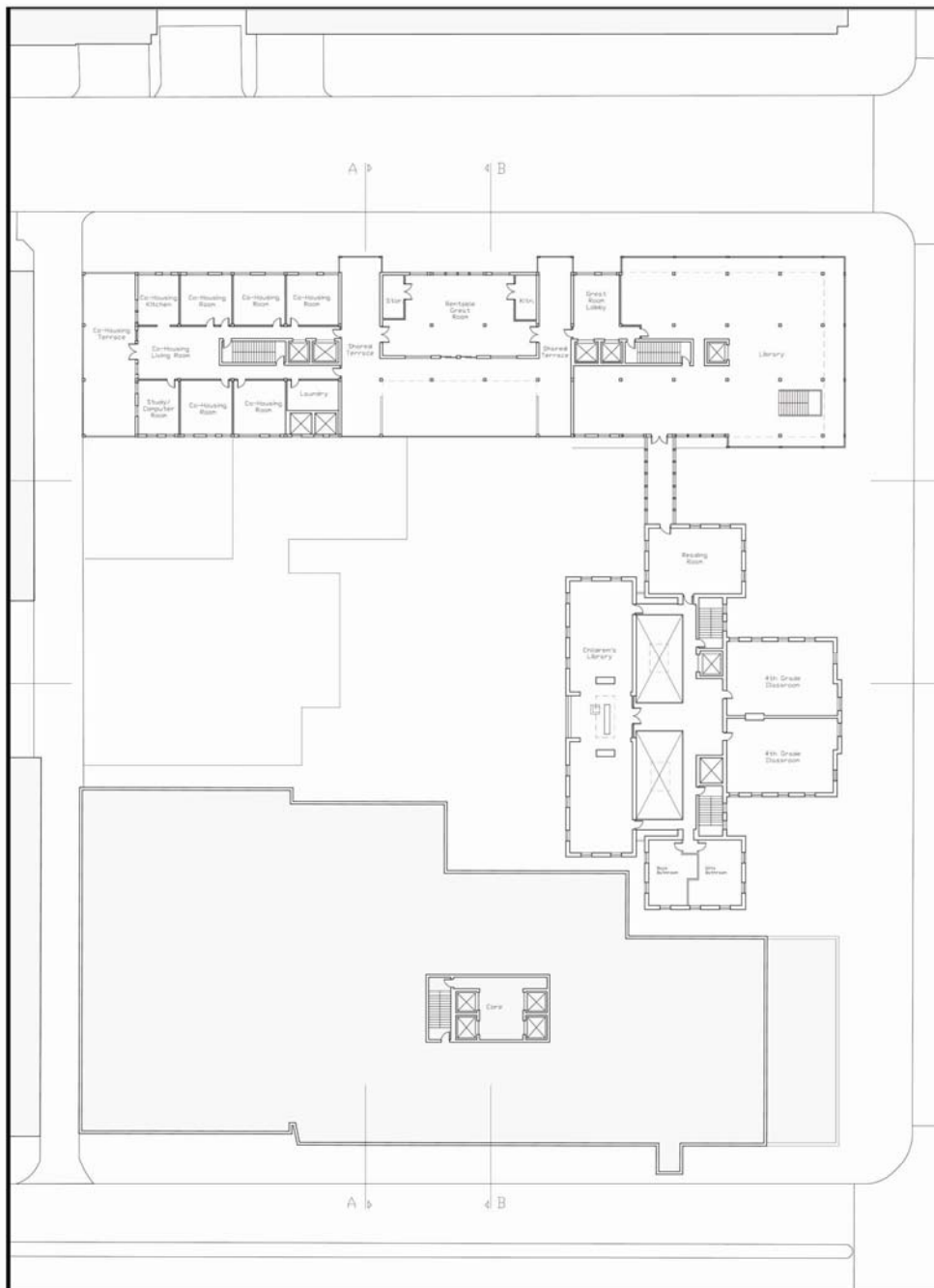
Second Floor (Courtyard Level)

Figure 112 – Courtyard Level Floor Plan



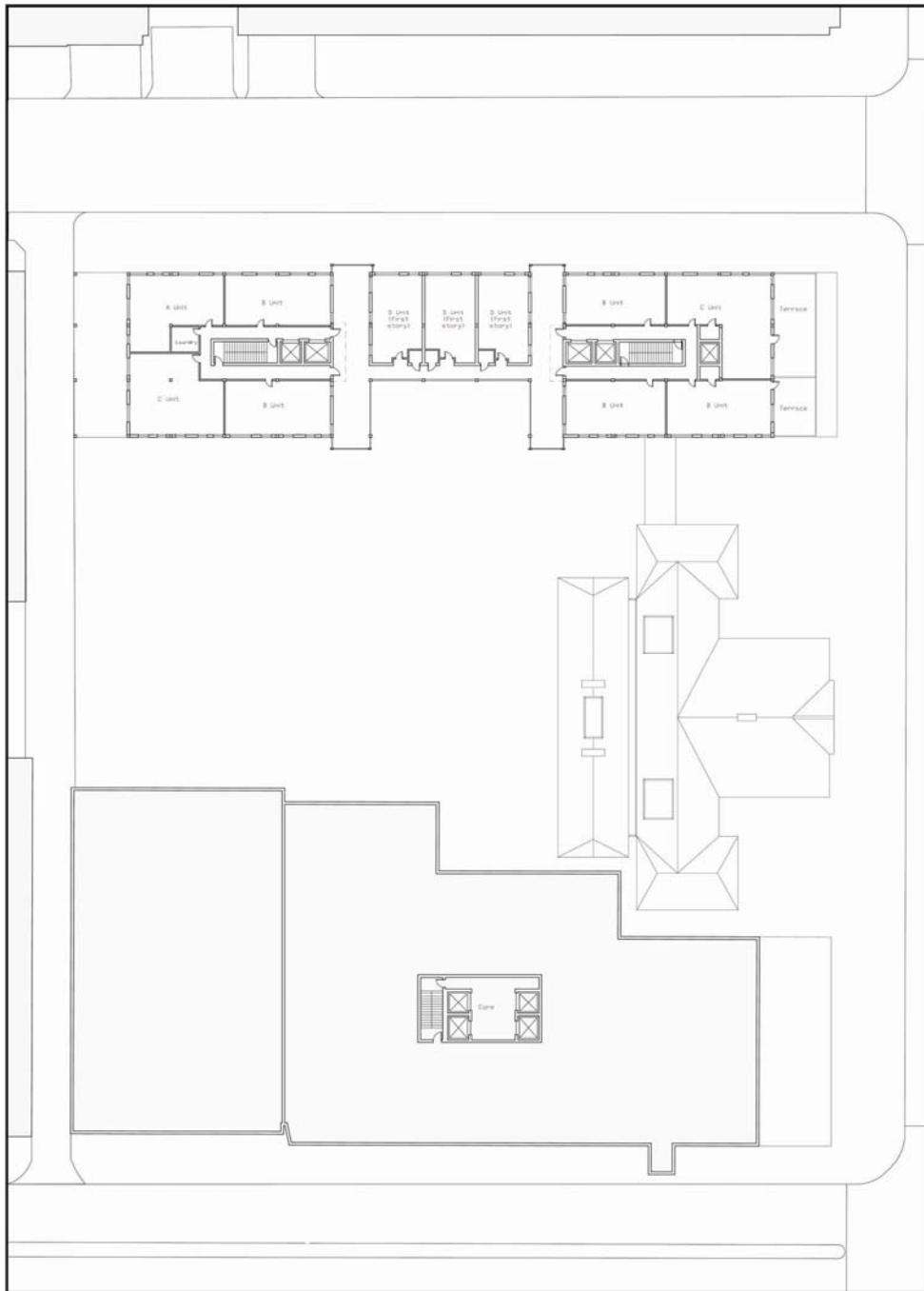
Third Floor

Figure 1213 – Third Floor Plan



Fourth Floor

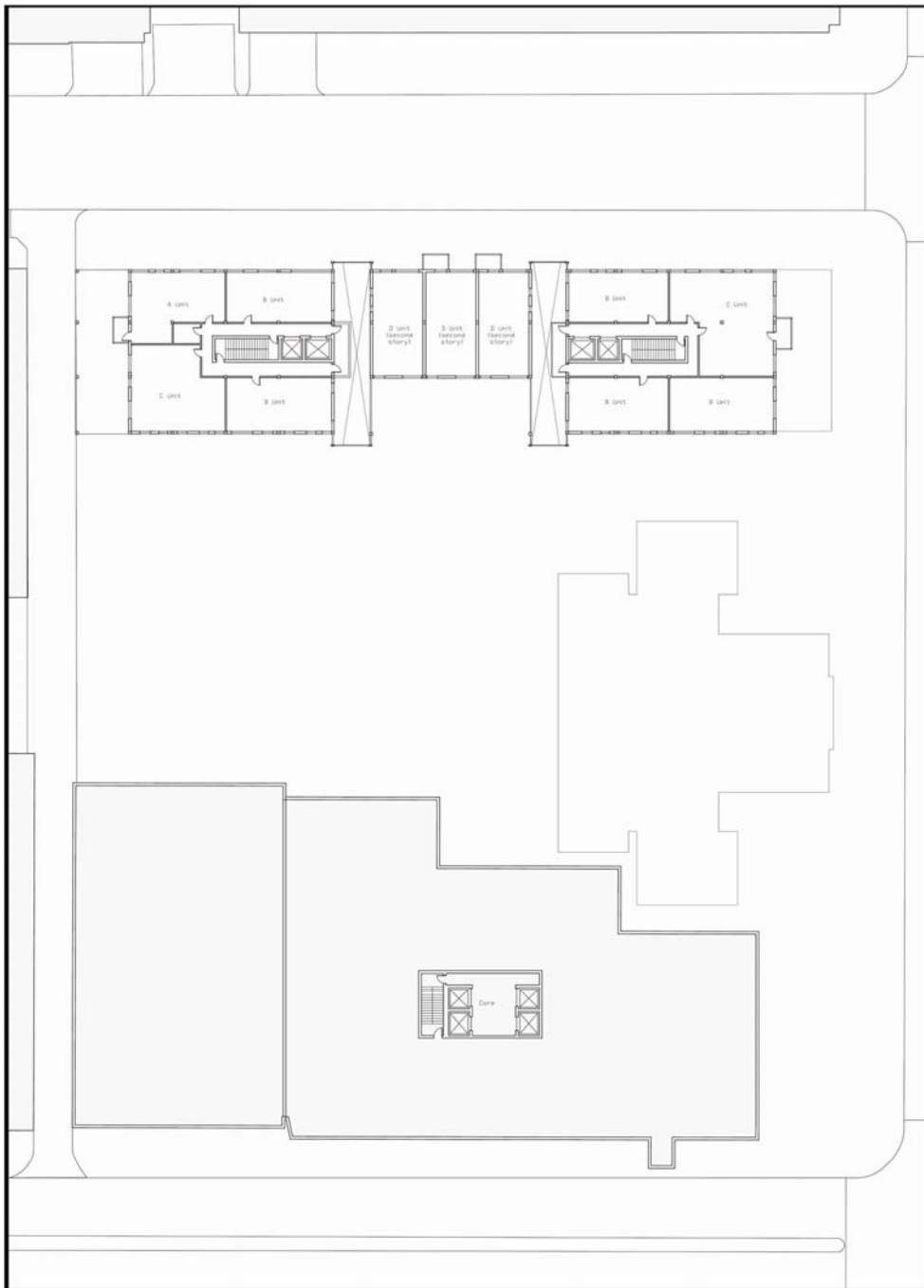
Figure 1314 – Fourth Floor Plan



Fifth & Seventh Floors



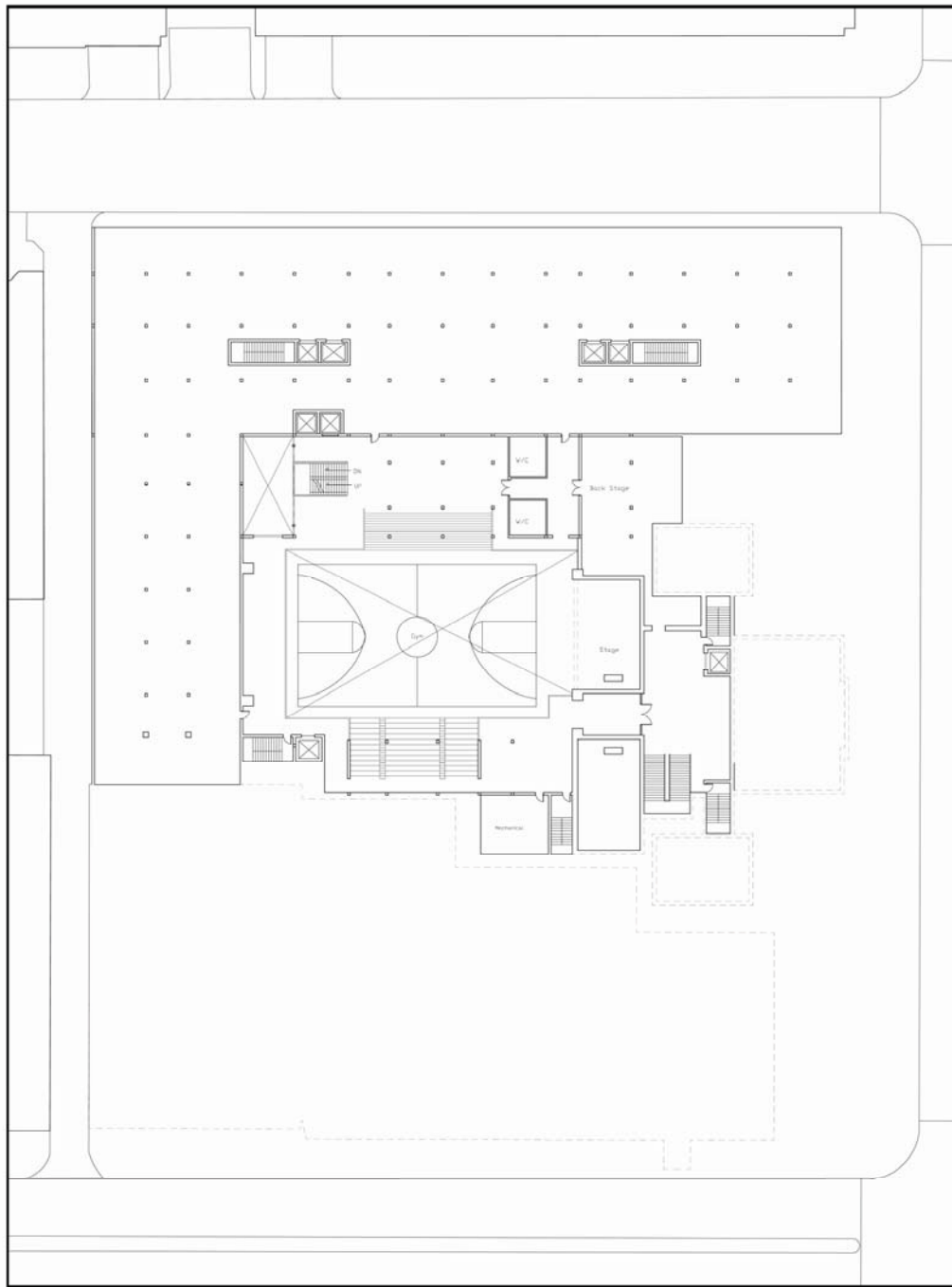
Figure 1415 – Fifth and Seventh Floor Plans



Sixth & Eighth Floors



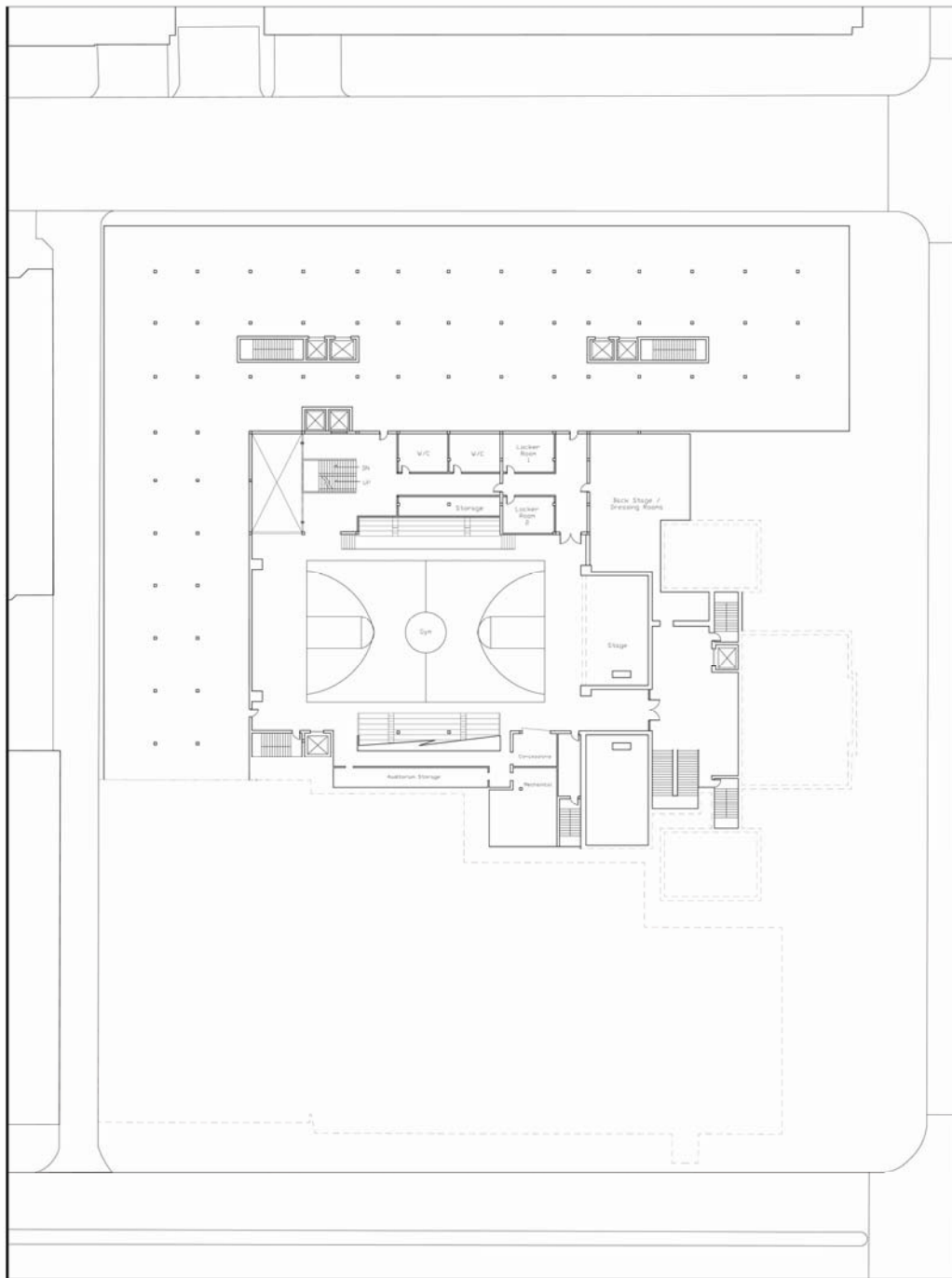
Figure 1516 – Sixth and Eighth Floor Plans



Lower Level (-1)



Figure 1617 – Lower Level Floor Plan



Gym Level (-2)



Figure 1718– Lowest Level Floor Plan

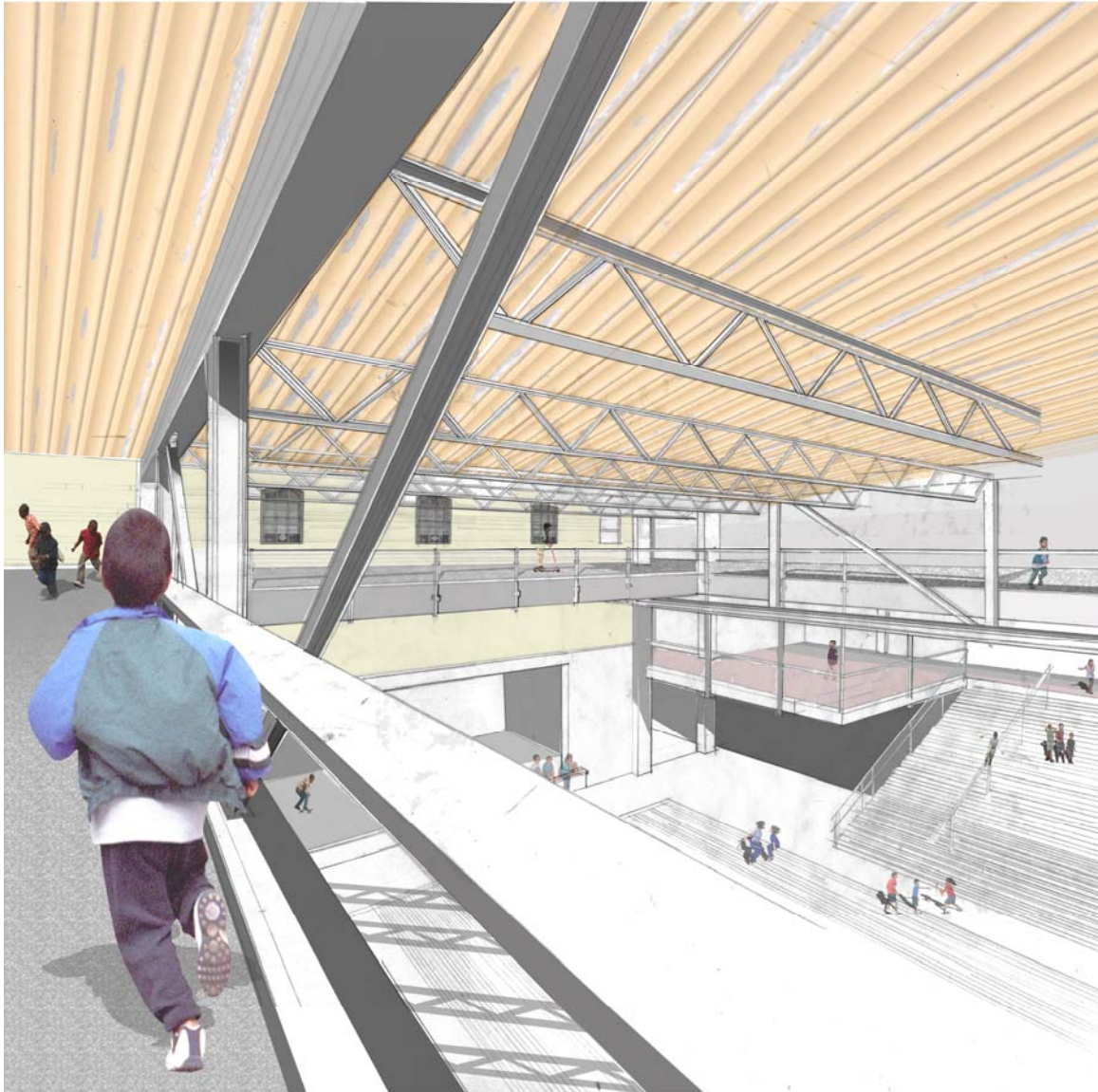


Figure 1819 – View from running track into the gymnasium.

A running track is located at ground level and can be seen from the community alley. Access to the gym is through the upper school or through the lobby atrium. The gymnasium contains a stage which could be used by a community theatre group or the school facility.

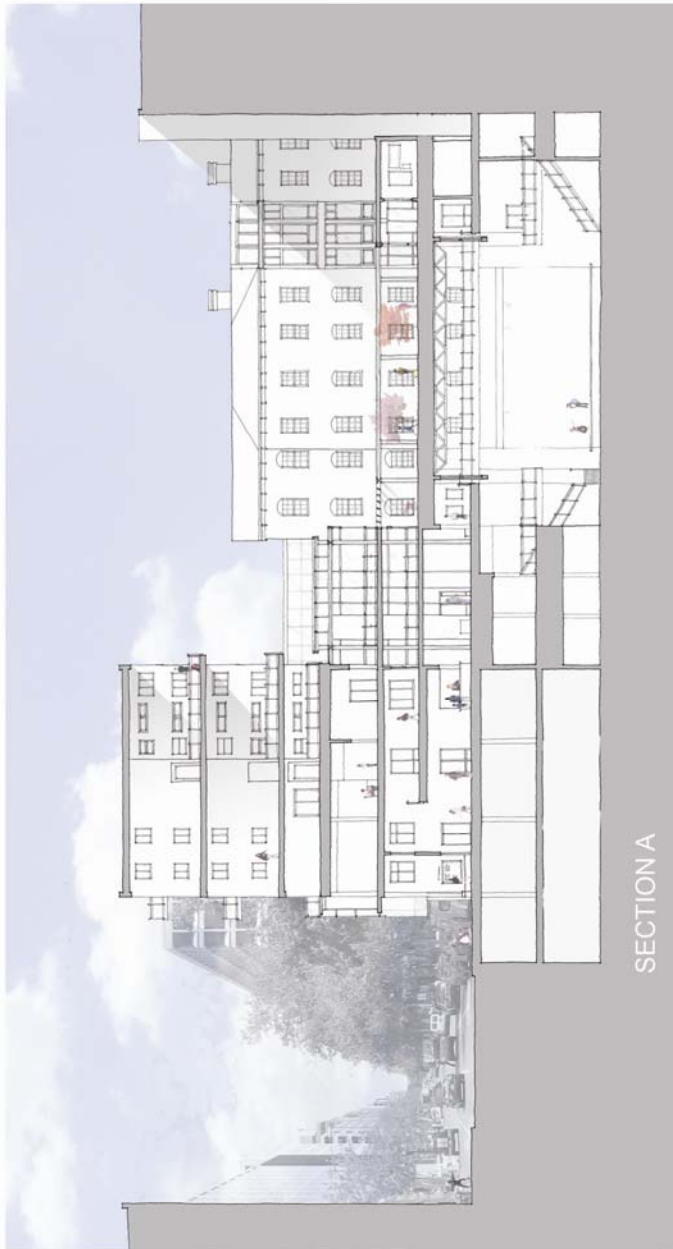


Figure 1920 – Section A

This section shows the view down L Street, the community center entrance, the connection between community center and courtyard through the lobby atrium, the stage in the gymnasium, and the porous nature of the housing shared terraces.



Figure 2021 – Perspective in the housing shared terrace

The housing shared terraces are shared by approximately six families. These slots between the housing allow for a space for children to feel free to roam by themselves. They can look out over the city and hear the city while still being in a safe atmosphere. Kitchens from the housing units look into the shared terrace allowing parents to supervise but not invade on children’s play time. Balconies poke into the space.



Figure 2122 – Section B

Section B shows the North/South relationships to the courtyard. The relationship between the two main open spaces on the site, the courtyard and the community alley is also visible in this section. Another important open space is the terrace for the housing units located off of a great room/party room. It looks out over the courtyard and the community alley. The elevation visible in this section is of the lobby atrium entrance and an activity room along the courtyard which is seen as an enclosed extension of the courtyard. A portico of metal frames anchors at one end into the community alley and on the other to the courtyard. They provide shading to the walkways around the courtyard.

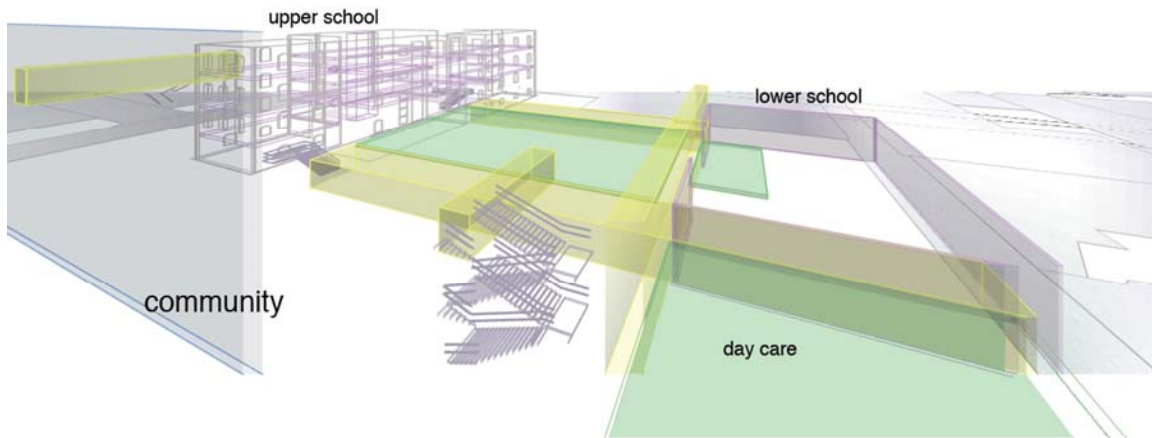


Figure 2223 – Diagram showing connection between community and school.

The yellow bars show the main pathways or streets that connect the main program pieces of the school and community center. These pathways frame the courtyard and bridge across the community alley. Green spaces show the connections of grass open spaces.

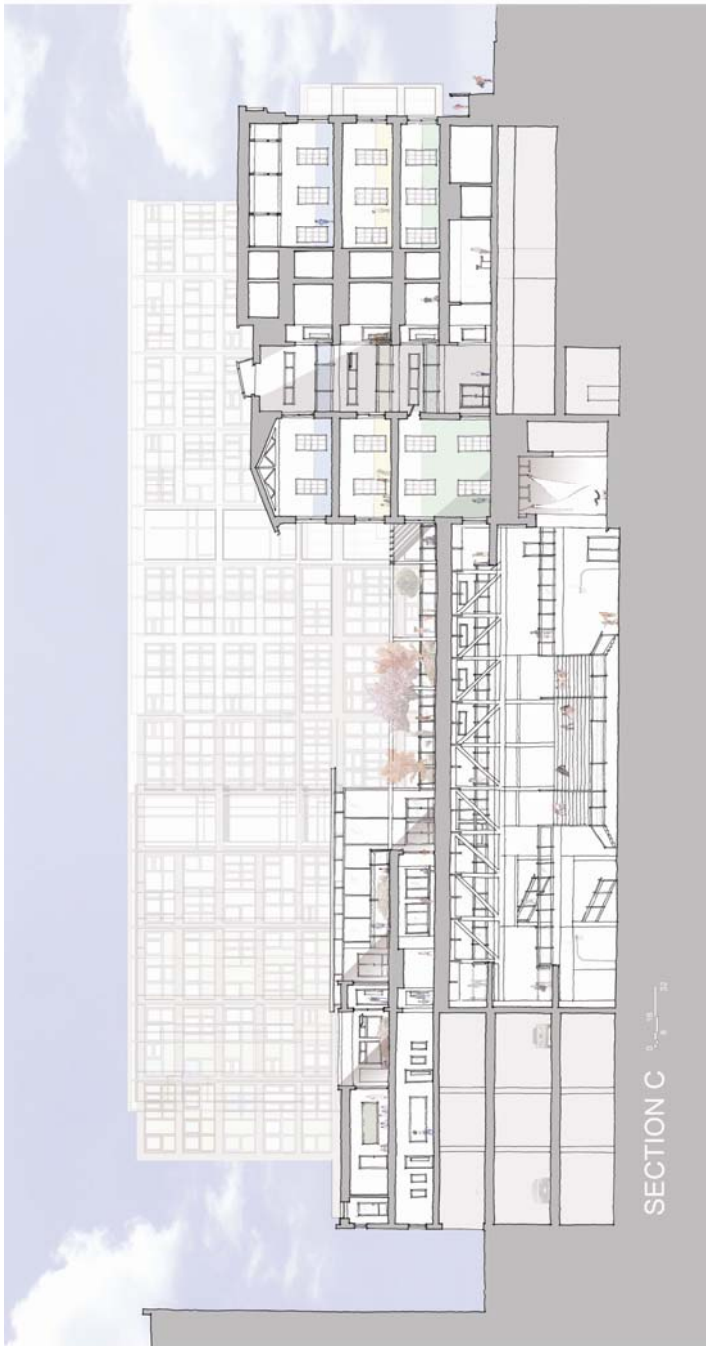


Figure 2324 – Section C

This section shows the rear façade of the community building. As this façade faces south, colorful balconies were added to the housing levels of this façade. The section shows the connection between three east-west courtyards. The main courtyard is located at the second floor and the third floor contains two small courtyards belonging primarily to the lower school. The inside of the school along with a new light well and a two story cafeteria are also visible in this section.

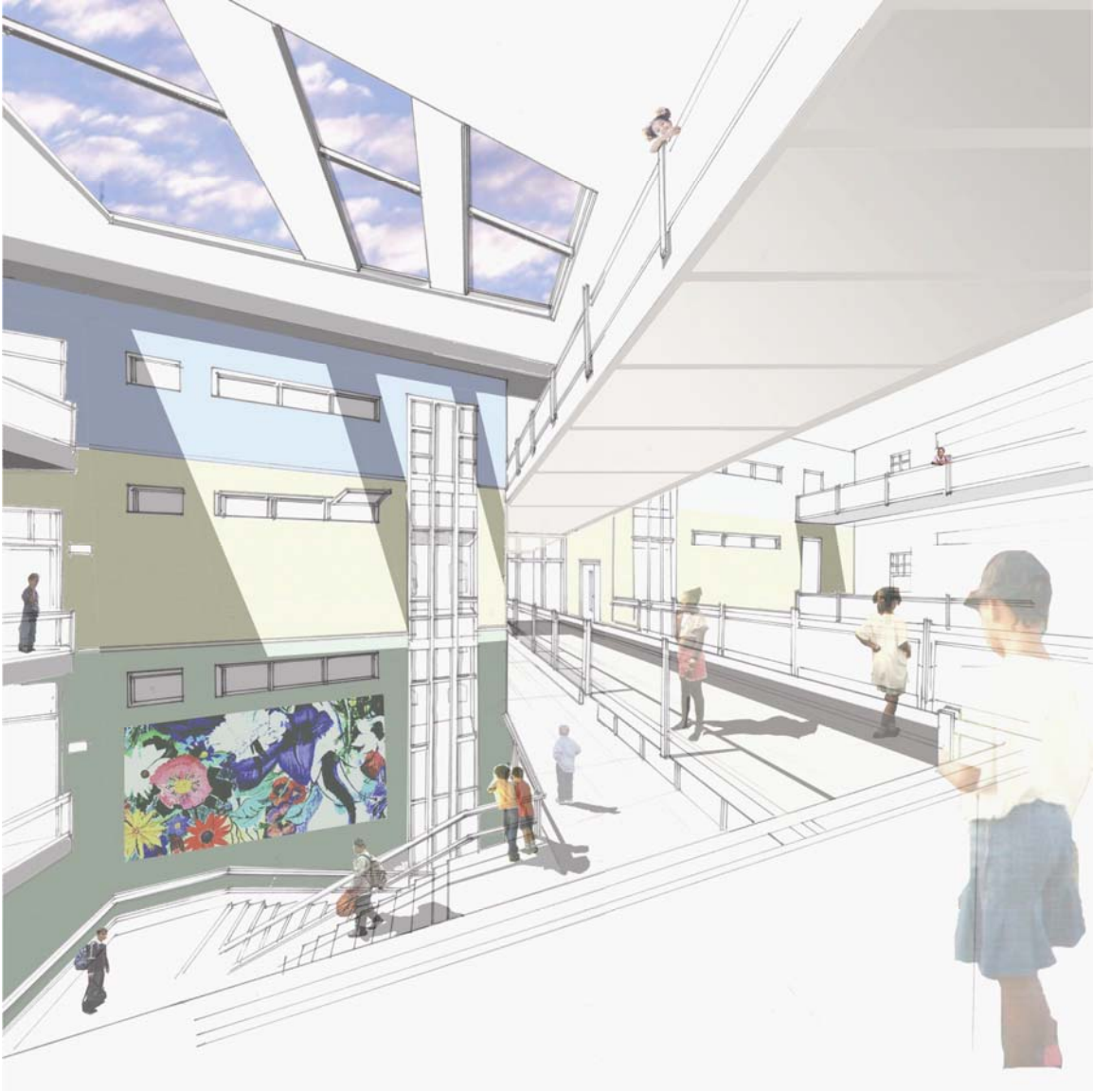


Figure 125 – Interior view of the upper school

The interior portion of the existing Stevens school building was removed in order to provide more light and air to the classrooms. Bridges serve as streets between classes. These bridges exist within a large open volume four stories high within the school. A stair from the entry leads to the second floor axial bridge out to the courtyard and an enclosed portico. This portico leads across to the lower school. An art room and music room are located along the portico and have views onto the courtyard.



Figure 126 – Section D

This section shows the main entry from 21st Street. The section through the community alley and the entry into the lobby atrium are also important features of this section. The stair that moves pedestrians and students up to the courtyard level is seen adjacent to the school. Movement from the community alley up stairs to the courtyard level and then further into the site toward the more private daycare and lower school courtyard is prominent in this section.



Figure 127 – View of community alley at night

The community alley is a multipurpose space to be used by school children, residents living on the property, the Boys and Girls Club, and anyone else that comes to visit the community center or the city. Gates at the end of the space would allow for security. Direct procession toward the lobby atrium provides access to the community center and gym below. This space would be paved with a durable material ideal for activities such as basketball, roller hockey, bike riding, and four square. During the weekends this space could be opened up as a market and at night small parties or gatherings sponsored by the community center would be held there.

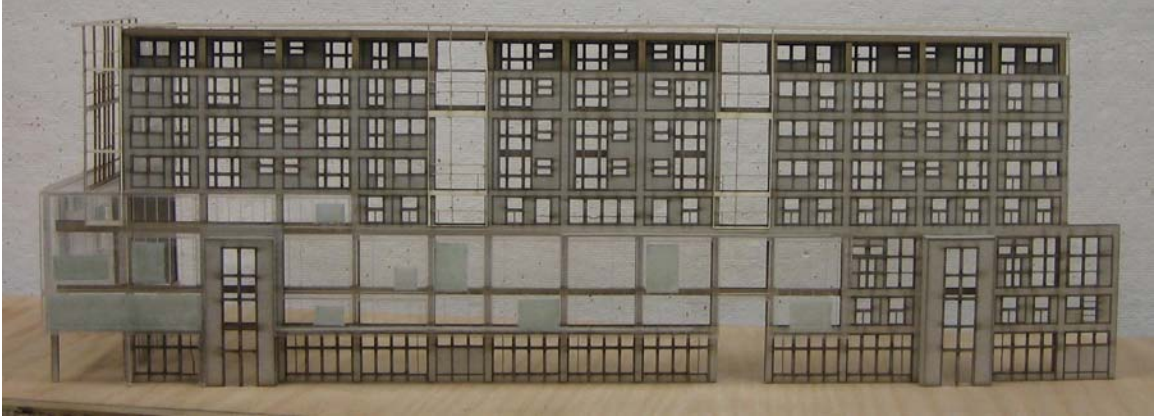


Figure 2428 – Façade model of L Street exterior

This façade is almost 300 feet long. Therefore it was important to break it up into more distinct parts. The two shared terraces are voids that break up upper floors of the façade. On the lower floors two residential entrances are marked by three story pieces at each end of the elevation. A glass protruded piece ties the façade together and contains the major program elements of the community center.



Figure 129 – Model aerial photo showing massing



Figure 130 – Perspective showing the daycare and lower school courtyard.

This image demonstrates many main ideas of the scheme. The daycare and lower school face together out to this small courtyard. The covered portico continues through the lobby atrium and marches along the large courtyard until it hits a stair that goes down to the community alley. The colorful balconies of the housing units are visible in this perspective.

Conclusion –

City schools will continue to be plagued by a lack of funds to improve their resources and a lack of open play space. Public/ Private partnerships, co-location of resources, and terraced open space may be the answer to these challenges. This project is successful in creating opportunities for growth and expansion on the Stevens Elementary site while maintaining the integrity of the existing structure.

It is important that the new buildings on the site be used to help support and enrich the life of the city community and the students. The school is renewed by a new gymnasium, playground, and additional classroom space. In addition, the role of the school and its property as a home base for children within the city is extended to off school hours by the addition of the Boys and Girls Club and other community center programs. Stevens Elementary School will now be able to stand as a historical marker among this new construction. Instead of being alone among office buildings, it will be the hearth of this new community center within the larger city.

The design was well received. Comments focused on the fact that this project could and should indeed be built. Children can exist in the city given the right environment of both architecture and community programs to help them grow and learn within the urban realm.

Bibliography

- Affordable Housing: Designing and American Asset. Washington D.C: Urban Land Institute, 2005.
- Beaumont, Constance E., Elizabeth G. Pianca, and Richard Moe. National Trust for Historic Preservation. Why Johnny Can't Walk to School: Historic Neighborhood Schools in the Age of Sprawl. Washington D.C.: National Trust for Historic Preservation, 2002. www.nationaltrust.org/issues/schoolsrpt.pdf
- "Bridge Over Troubled Water." The Architects Journal 27 (1972).
- "Community First: Build Schools that Reconnect." Managing School Business 8 (2003): 5-7.
- District of Columbia. Office of Planning. Government of the District of Columbia. Strategic Neighborhood Plans by Cluster. Summer 2002. 15 Nov. 2005
<<http://neighborhoodaction.dc.gov/neighborhoodaction/frames.asp?doc=/neighborhoodaction/lib/neighborhoodaction>
- Hendricks, Barbara E. Designing for Play. Burlington: Ashgate, 2001.
- Lawrence, Barbara K. "Back to the Agora: Workable Solutions for Small Urban School Facilities." ERIC Digest (2003). 14 Nov. 2004
<<http://www.archachieve.org/Resources2/articles/lawrence10.03.pdf>>.
- "Louis I Kahn, as told by Robert Venturi and Denise Scott Brown: Of course we have learned from Kahn, but we also influenced him," AT Architecture Magazine Sept. 1992, pp. 22-9.
- New Schools for New York. New York: Princeton Architectural Press, 1992. 37-93.
- Pollowy, Anne-Marie. The Urban Nest: Community Development Series. Dowden, Hutchinson & Ross, Inc, 1977. 176-177.
- "Press Release: Preservation of Historic Schools Gains International Prominence" Council of Educational Facility Planners, International. Historic Schools Day. Washington D.C. 18 Apr. 2005. 20 Nov. 2005
- "Replace or Modernize: The Future of the District of Columbia's Endangered Old and Historic Public Schools." Washington D.C.: 21st Century School Fund, 2001.
www.cefpi.org/pubs.html
- Romeo, Jim. "The ABC's of Mixed-Use Schools." Planning 29 July 2004: 4-9.

Rucker, Patrick. "Setting the Cornerstone." The Examiner 7 Nov. 2005, Business ed.: 20.

"Stevens on Stevens." Washington D.C.: Council of the District of Columbia, 1984.

Rypkema, Donovan D. National Trust for Historic Preservation. Historic Preservation and Affordable Housing: The Missed Connection. Washington D.C., 2002.
<http://www.preservationalliance.com/afford.pdf>

Von Eckardt, Wolf. "Showing off the Avenue." Washington Post 22 Mar. 1978, sec. D12.

Ward, Colin. The Child in the City. New York: Pantheon Books, 1978. 176-177.

Williams, Charles E., and Joe D. Howze. District of Columbia. Director of Facilities. Program Analysis and Evaluation Division. Facilities Re-Assessment Report. Washington D.C, 1997.

Websites

Design Advisor for Affordable Housing – www.designadvisor.org

DC Preservation League : <http://www.dcpreservation.org/endangered/2001/schools>

Twenty-First Century School Fund : <http://www.21csf.org>

D.C. Office of Planning : <http://www.dcoz.dcgov.org/main.shtm>

National Trust for Historic Preservation : <http://www.nationaltrust.org>

Project for Public Spaces (photographs) : <http://www.pps.org>

<http://www.asbj.com/lbd/2001/resources/102000vail.html>

<http://neighborhoodaction.dc.gov>