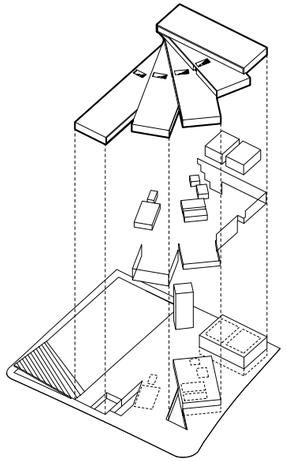
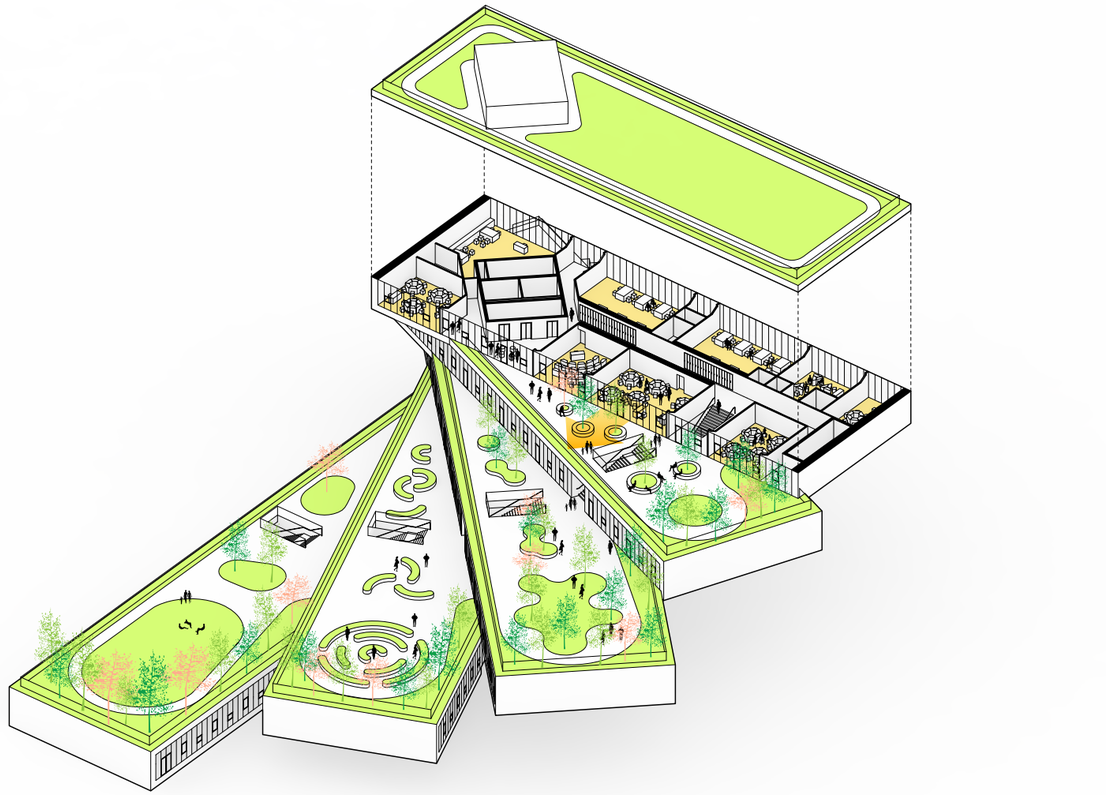
MASSING / MATERIAL

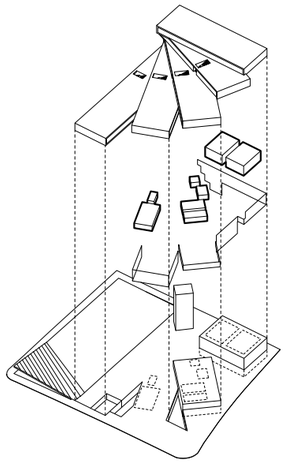
A simple material palette is used to emphasize the overall organization of the building and to identify the volumetric spaces and communal rooms throughout the building.

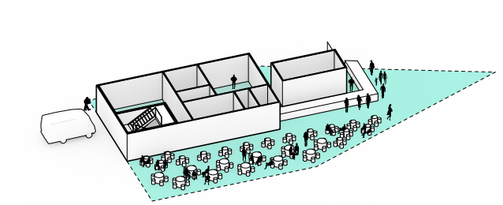




CLASSROOM BARS

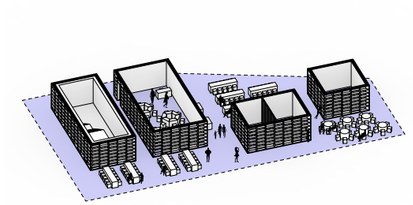
The classroom bar is the basic organizational unit of the school. It consists of a central corridor with classrooms on either side. The interior construction will be made of lightweight partitions which can be easily removed in the future to allow for adaptive modifications. Informal learning and small gathering spaces are located directly off the main corridor. Each classroom bar has direct access to an outdoor terrace, providing opportunities for outdoor instructional space for individuals, groups, or entire classes. Each terrace will provide a unique landscape and vantage point.





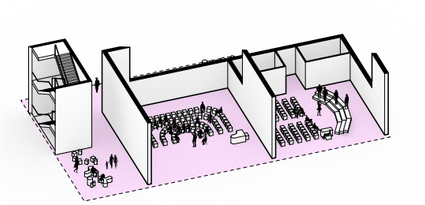
CAFETERIA

The cafeteria is organized around an open plan for the dining area and enclosed spaces for the kitchen and food preparation areas. The dining room receives plenty of daylight and views to the exterior and is easily accessed from the first floor lobby. The kitchen has direct access to the main service entrance for deliveries and waste disposal.



LIBRARY

The library will have a variety of open spaces for study and quiet gatherings, as well as enclosed rooms that will house offices and flexible classrooms. Each of the enclosed rooms will be surrounded by book shelving.

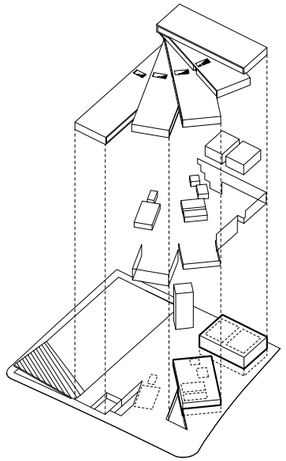


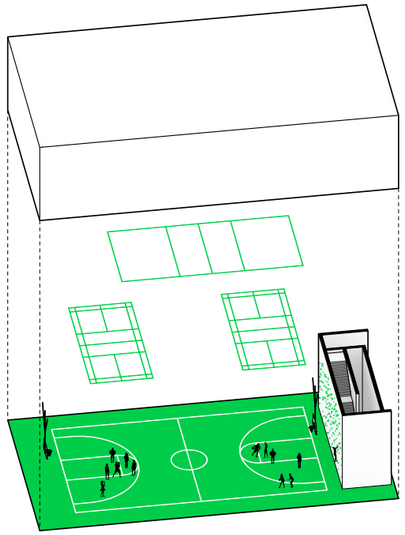
MUSIC REHEARSAL ROOMS

The instrumental and choir rehearsal rooms will be partially double-height spaces to accommodate the acoustic needs of these programs. Both rooms have an exterior glass wall which will bring in plenty of daylight and views out from these spaces.

MASSING

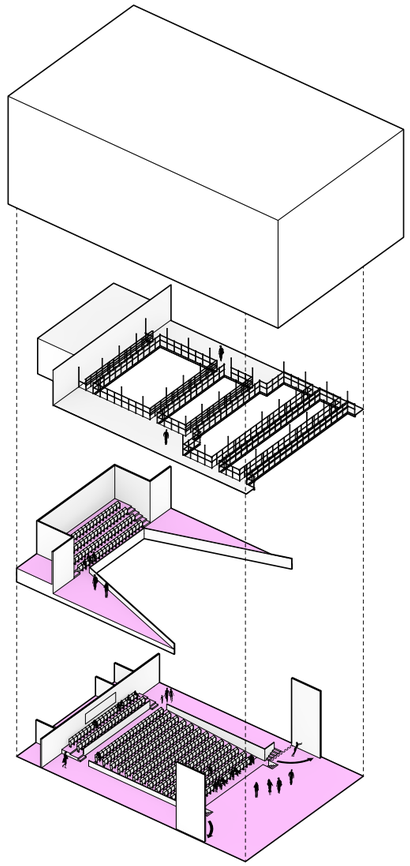
BIG BOXES





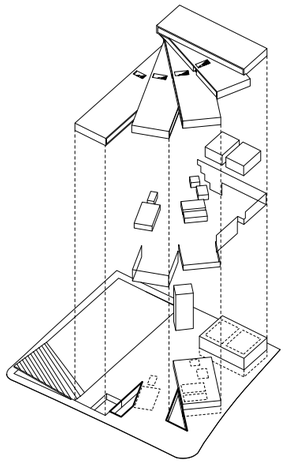
GYM BOX

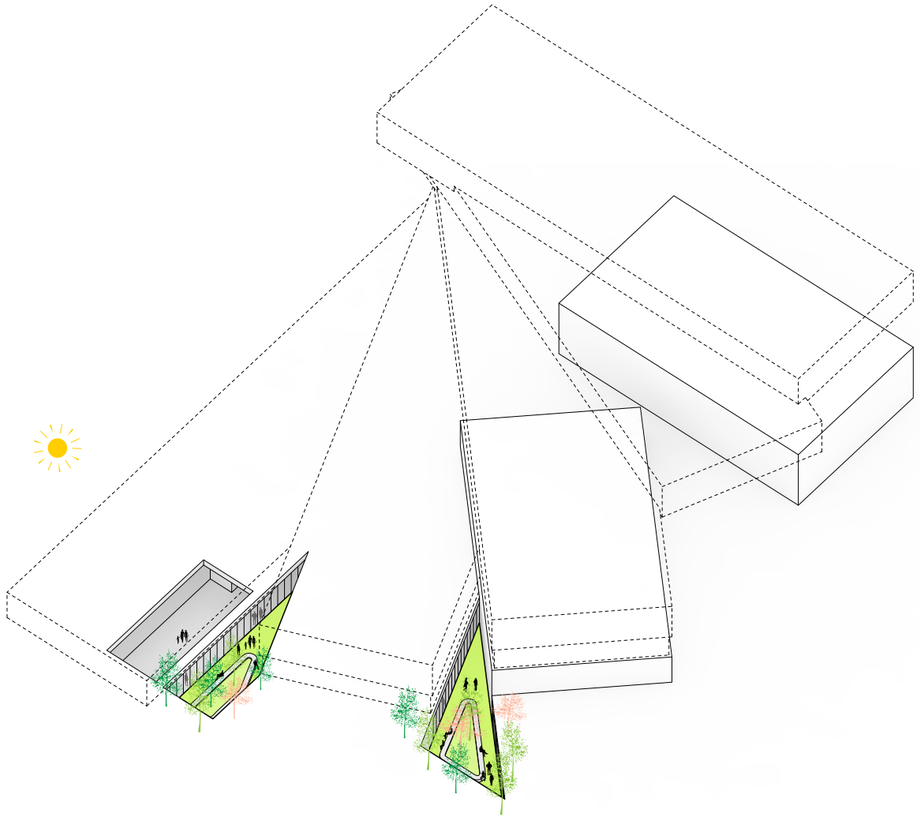
The gymnasium is a double height space with a large clerestory glass block wall surrounding it to bring in lots of natural daylight. The gym will accommodate a variety of activities and can be divided into two zones for separate instruction / activity. The gym will contain a main basketball court and 4 side practice basketball hoops and has access to one of the courtyards for outdoor physical activities.



THEATER BOX

The theater volume is enclosed in translucent glass block and has seating for 400 in a courtyard configuration. The balcony level branches out to create a greater sense of intimacy between audience and performers on stage. The theater is designed to accommodate both musical and theatrical productions with a hinged proscenium wall that can open up the stage to the full width of the space. A catwalk level provides flexibility for lighting, speaker, and acoustic configurations.





COURTYARDS

Two courtyards are created at the ground level and are accessed from the auxiliary gym and the main gymnasium. They bring natural daylight into these spaces and to adjacent classrooms that face onto them and provide protected outdoor space for students to play.

PERSPECTIVE
SOUTH ELEVATION FROM WILSON BLVD.

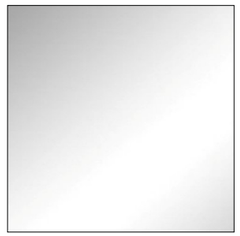

WHITE GLAZED BRICK


LANDSCAPE


PLYWOOD


TIMBER MULLION


PRECAST PAVING


REFLECTIVE METAL


ALUMINUM MULLION


GLASS BLOCK


LANDSCAPE


PRECAST PAVING

CLASSROOM BARS

The opaque exterior cladding of the classroom bars is white glazed brick. Transparent areas are defined by large areas of glass supported on timber framing, creating a warm and bright learning environment.

The exterior terraces are paved with 12”x48” linear precast concrete planks and large areas of native vegetation, including 12’-15’ high trees sit on top of the ends of the classroom bars. Small shrubs, resilient grasses, and flowers populate smaller planters at the terraces.

IN-BETWEEN SPACE

Each of the enclosed volumes in these areas is defined by a simple material palette. Simple plywood cladding will enclose the double-height music rehearsal rooms and warm up the interior of the school while plywood shelving wraps the enclosed rooms in the library. Polished stainless steel clads the enclosed areas of the cafeteria.

An aluminum and glass curtain wall system surround the transparent exteriors of each of these spaces.

BIG BOXES

Each of these volumes will be clad in a rectangular glass block module in a running bond pattern. The gymnasium is enclosed with transparent glass block to increase the daylight coming into the space. The theater is enclosed with translucent glass block, which will allow it to provide a diffuse glow at night.

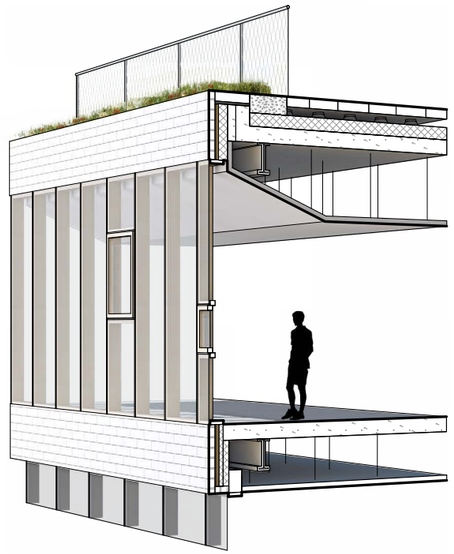
COURTYARDS

Courtyards will have a similar material palette to the terraces, but scaled down to accommodate the functionality of these outdoor areas.

CLASSROOM BAR AT TERRACE

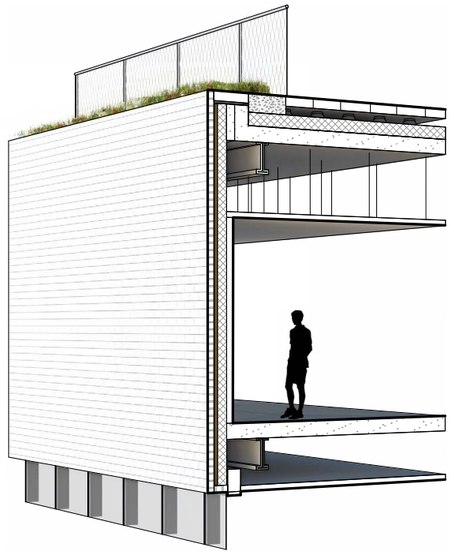
This facade is composed of a 3'-0" high glazed brick (BRK-1) band along the top of the facade with timber-framed storefront glazing (SF-1) along the classroom facade. The 9'-0" classroom ceiling height will be typical throughout these areas and will taper up at the perimeter to meet the top of the storefront glazing to allow the maximum daylight into the classrooms. Operable windows (WDW-1 & 2) will be located within the storefront as well.

At this facade, the structural slab drops down to accommodate the depth of the precast paver assembly, insulation, and waterproofing, and is supported by a deeper structural steel transfer girder.



CLASSROOM BAR

Similar to the facade condition at the terrace in most respects, this facade also has a 3'-0" high band of glazed brick at the top and below the timber-framed storefront.

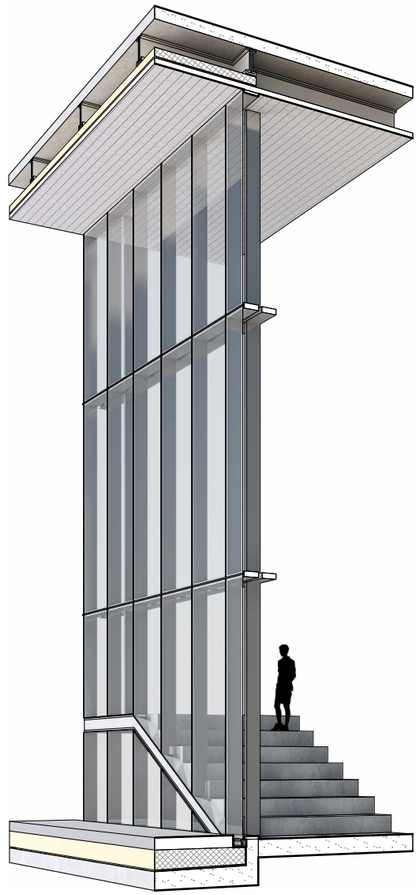


CLASSROOM BAR ENDS

At the end of the classroom bars, the full width of the facade is glazed brick. High-performance thermal insulation is located behind the brick cladding for increased energy efficiency. The roof terrace assembly sits on top of this bar and the interior ceiling height remains at least 9'-0" high.

BIG BOXES

At the theater and gym volumes, glass block forms the enclosure of the space at either single- or double-story heights. The module size (4-1/2" x 9") is slightly larger than a typical brick module and will be laid in a running bond pattern. At the gym enclosure (shown above), the glass block will be transparent, letting abundant daylight into the space. There will be vertical steel support bracing behind the facade at the gym.



IN-BETWEEN SPACE

Large expanses of curtain wall glazing will bridge between the upper classroom bars and the big box volumes and the lobby area. The glass will provide plenty of daylight for these public and social spaces and reduce the need for artificial lighting. At single- and double-story heights, the mullions will provide support for the glass. At 3- and 4-story locations, the curtain wall will have intermediate structural supports to reduce the mullions to an economical size.

COMMITTEE CHAIR LETTERS

May 24, 2016

Dr. Patrick Murphy
Superintendent
Arlington Public Schools
1426 26th Street, North
Arlington, Virginia 22207

Dear Dr. Murphy,

I am pleased to report to you and the School Board on behalf of the Building Level Planning Committee (BLPC) for the new school building at the Wilson site which will house the Stratford and H-B Woodlawn Programs. Since December, our committee has continued our work to involve the school communities, Rosslyn-area neighbors, and other stakeholders in shaping a new school building, which will support an enriching learning environment for all students, as well as a welcome addition to the Rosslyn community.

The BLPC has been presented with information related to a number of building elements, expanding on the Fanning Bars concept design, and we endorse and support the following elements for this project:

1. Design and construction of diverse outdoor elements, both educational and recreational, and green space on the exterior terraces—with the lowest terrace available as a shared community amenity for public use;

2. Placement of the major larger spaces within the building, as outlined in the presentation, many of which will be available to the public during non-school times; these spaces include the cafeteria/food service area, main theater, black box theater, main gym, and auxiliary gym;

3. Drop off areas for school buses on 18th Street and one or more car drop off areas on Quinn; Student safety will likely require closing 18th Street for short periods of time during morning arrivals and afternoon departures; the BLPC supports APS working with County planners to create a workable transportation plan to minimize traffic disruption, while ensuring student safety;

4. Multiple entrances for the building including doors on on Wilson Boulevard, Quinn Street and from the bus drop-off areas on 18th Street; and

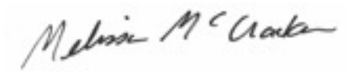
5. A parking deck under the playing field with at least 92 parking places for school use.

A few areas related to this project will require additional attention as the design process moves along. During the continuing design phase, the BLPC recommends that the school staff and architect team continue to fine-tune the layout for classrooms and others instructional and support spaces for both programs—to maximize instructional space and to meet optimal instructional needs for teachers and students.

Finally, the BLPC remains very concerned about the lack of adequate parking at the site and strongly recommends that continued attention be devoted to the issue. We recommend that APS commit to finding a solution that provides 50-60 additional parking spaces (leased or otherwise) near the school in addition to those in the onsite parking garage. Also, adequate free parking for visiting family members during the day, as well as additional parking opportunities for evening events, such as back-to-school night, music and theater performances, and other community activities, should continue to be a priority requirement.

My fellow BLPC committee members and I look forward to continuing our work during the final design phase of this project with a goal to complete the new school in Rosslyn for a fall 2019 opening.

Sincerely,



Melissa McCracken
Chair, Building Level Planning Committee
New School for H-B Woodlawn and Stratford Programs

PUBLIC FACILITIES REVIEW COMMITTEE
2100 Clarendon Boulevard, Suite 700, Arlington, VA 22201
TEL 703-228-3525 FAX 703-228-3543 www.arlingtonva.us

June 30, 2016

The Honorable Emma Violand-Sanchez, Chair
The Arlington County School Board
1426 N. Quincy St.
Arlington, Virginia 222071

RE: Schematic Design for Wilson School

On June 7, the PFRC met to discuss and review the final schematic design as related to the upcoming use permit application for the new Wilson School. The use permit is expected to come forward to the County Board in December 2016. The PFRC met six prior times in 2015 and 2016 to discuss the evolving design for the new school.

Arlington Public Schools (APS) design team, represented by its architect Bjarke Ingels Group (BIG) architects, Leo A. Daly architects and Toole Design Group, presented the schematic details for the project. Generally speaking, the details provided at schematic design phase for this project are scant in comparison to many other school projects. Generally, PFRC members felt that BIG and other team members offered a plan for superb architecture, but several details need to be addressed. The main points of discussion are detailed below:

18th Street
The project proposes limited vehicular access to 18th Street as an essential component for plans for bus operations and for arrival and dismissal of Stratford program students, which is inconsistent with the Rosslyn Sector Plan. Staff is suggesting that this restriction apply only in the case of the Stratford program being located at Wilson. PFRC members generally supported this proposal. Members raised questions about changes to the proposed grade of the street. Some members felt that the current grade is inadequate and would like to see improvements. Also, members raised questions about monitoring of bus operations for pollution.

Parks
There was discussion about whether use of the on-site recreation space should be a shared use or joint use between APS and the County. The Parks and Recreation Commission would like to see either joint use or an enhanced shared use agreement so that there are no barriers to use of the school after hours, especially since this area has virtually no park or open space. Details of a Memo of Understanding regarding use of the on-site amenities such as the gym, athletic field, and rooftop open space has not yet been developed.

The Parks and Recreation Commission ("Parks and Rec.") submitted a letter providing the background and expectations for open space and shared facilities use at this site as foreseen through the WRAPS planning process. The PFRC supports Parks and Rec. and would like to review the details of an agreement between APS and the County. Such details would include specifics about public use after hours, ingress and egress points for users, the plans for covered bicycle storage, and plans for programming the use of the first floor terrace.

Parking
There is still considerable uncertainty about how parking will be handled at the site. The uncertainty extends to the extent to which off-site parking will be provided in nearby parking garages or the proposed Penzance development.

Tree canopy
Committee members generally agreed that plans should include improving the tree canopy and maximizing opportunities for installation and maintenance of full-size trees both along the sidewalk and wherever possible on-site. A desire for a full tree canopy along 18th Street was specifically mentioned.

Stormwater Management
PFRC felt such plans were an important part of site design, but that details are not yet known. Members expect that planning specifics will be part of the Use Permit discussion.

Historic Preservation
PFRC members expressed a desire to incorporate the historic nature of Wilson school into the new design. While one member would like to see a part of the existing structure incorporated into the new school, other members preferred to incorporate creative use of materials into the site overall such as benches or a wall rather than the building itself. In general, the sense of the committee was that the current proposal of a model of the prior school, likely placed in the library, was inadequate and not in keeping with APS' commitment to historic preservation on the site.

In a straw poll at the end of discussion, PFRC members, by a vote of 12 to 1, supported the proposed schematic design and believe that the school will enhance the community.

Sincerely,

Stephen Sockwell, Chairman
Public Facilities Review Committee

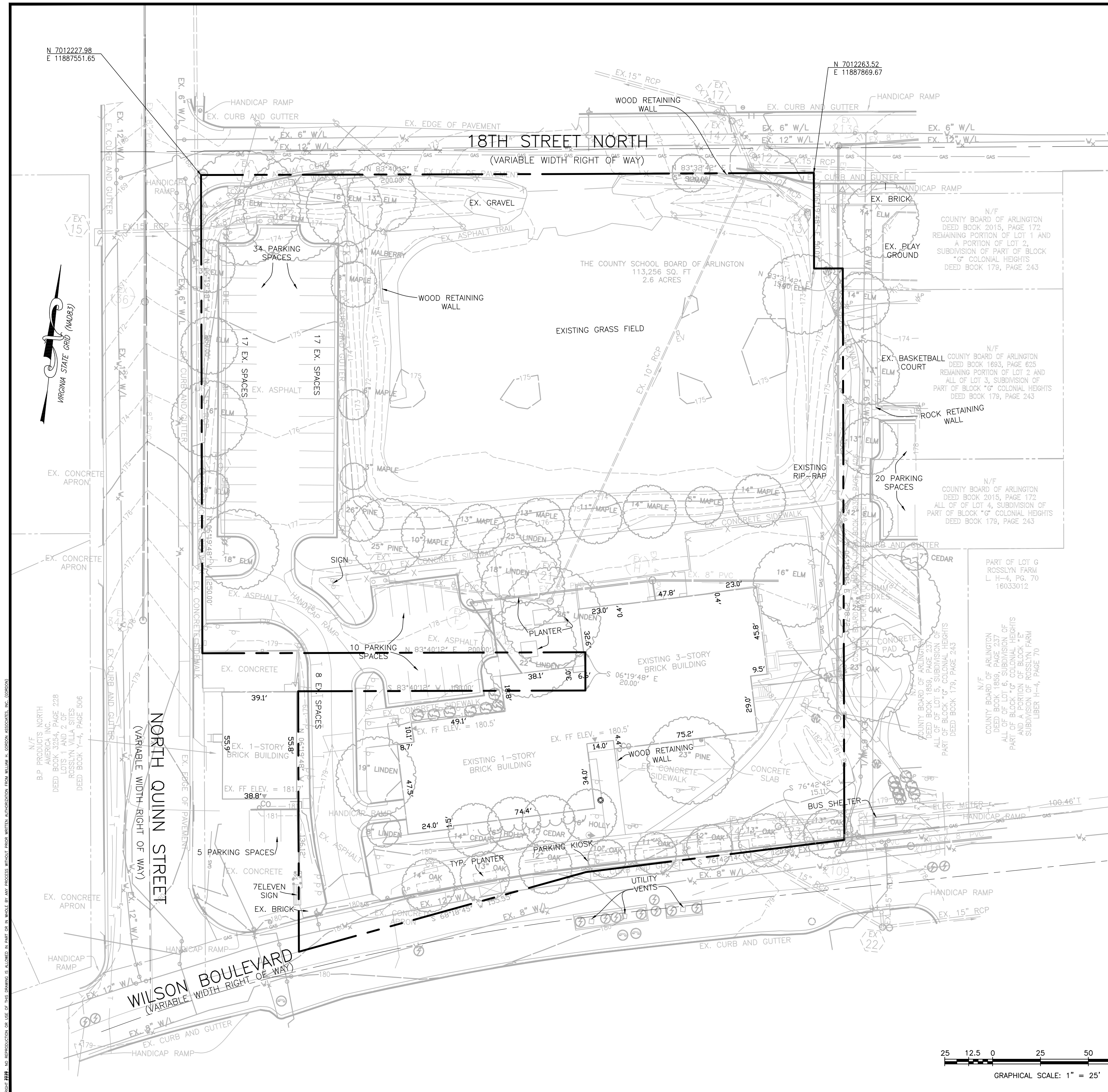
COST ESTIMATE

Project Cost ($ Millions)[1]		
Site Work and Demolition	$ 3.58	
Building	$ 71.73	
Parking	$ 5.00	
Subtotal Construction Costs		$ 80.31
Subtotal Owner Costs		$ 20.51
Total Project Cost[2]		**$ 100.82**
Adds beyond approved funding		
Add geothermal system		$ 0.63
Increase height of parking garage for community use		$ 0.76
18th Street Improvements (street and south side hardscape / landscape only		$ 0.51

Notes:
1. Based on two independent professional cost estimates.
2. Matches maximum approved by the School Board at Concept Design.

CONSULTANT NARRATIVES

This section summarizes information and analysis for specific engineering and consultant disciplines that was produced during Schematic Design.



EXISTING CONDITIONS NOTES:

1. THE PROPERTY DELINEATED ON THIS PLAT IS IDENTIFIED IN ARLINGTON COUNTY, VIRGINIA WITH THE REAL PROPERTY CODE NUMBER 16–032–001 AND IS ZONED S–3A.
2. THE PROPERTY SHOWN HEREON ARE NOW IN THE NAME OF THE COUNTY SCHOOL BOARD OF ARLINGTON AND WAS ACQUIRED FROM COLIN H. LIVINGSTON AND ANNA V. LIVINGSTON BY DEED DATED FEBRUARY 15, 1907 AND RECORDED IN DEED BOOK 115 AT PAGE 217 AND FROM THE SCHOOL BOARD OF ARLINGTON DISTRICT NO.2 BY DEED DATED AUGUST 30, 1922 AND RECORDED IN DEED BOOK 188 AT PAGE 485 AND FROM CAROLINE VAN H. BEAN BY DEED DATED NOVEMBER 29, 1924 AND RECORDED IN DEED BOOK 216 AT PAGE 391 AMONG THE LAND RECORDS OF ARLINGTON COUNTY, VIRGINIA.
3. NO TITLE REPORT FURNISHED. THEREFORE, NOT ALL EXISTING EASEMENTS MAY BE SHOWN ON THE PLAT.
4. THE HORIZONTAL DATUM IS REFERENCED TO VIRGINIA STATE PLANE COORDINATE SYSTEM (NAD83) ZONE NORTH.
5. THE VERTICAL DATUM IS REFERENCED TO NAVD 88.
6. THE CONTOUR INTERVAL EQUALS ONE FEET
7. THIS TOPOGRAPHIC MAPPING SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF, KEVIN D. NELSON FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION; THAT THE ORIGINAL DATA WAS OBTAINED ON JUNE 6, 2015 – JULY 22, 2015; AND THAT THIS PLAT, MAP, OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
8. ALL WATER, GAS, TELECOM, AND ELECTRIC LINES ARE DEPICTED ACCORDING TO UTILITY RECORDS.

LEGEND

AREA DRAIN	WATER VALVE
STORM SEWER MANHOLE	WATER METER
STORM SEWER GRATE	WATER MANHOLE
STORM SEWER CURB INLET	GAS VALVE
SANITARY SEWER MANHOLE	GAS METER
UTILITY CLEANOUT (CO)	BOLLARD
CULVERT	FLAG POLE
ELECTRIC MANHOLE	SIGN
ELECTRIC BOX	SHRUB
ELECTRIC VAULT (EV)	TREE
LIGHT POLE (LP)	TOP OF WALL (TW)
POWER POLE	SPOT ELEVATION (+311.8)
GUY WIRE	CHAIN LINK FENCE
COMMUNICATION MANHOLE	STORM SEWER PIPE
COMMUNICATION STRUCTURE	SANITARY SEWER PIPE
COMMUNICATION STRUCTURE	STORM SEWER STRUCTURE # (EX 10)
COMMUNICATION VAULT (CV)	SANITARY SEWER STRUCTURE # (EX A)
TRANSFORMER (TR)	
FIRE HYDRANT	WATER LINE

ARLINGTON, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

CERTIFIED SURVEY PLAT
Wilson School
1601 Wilson Blvd., Arlington, VA 22201

SCALE: HOR. AS NOTED VER. N/A	DESIGNED: L. ARANGO	CHECKED: A. VERDI	
SUBMITTED DATE: 05.04.2016	APPROVED DATE: CHIEF TRANSPORTATION PLANNING BUREAU	APPROVED DATE: CHIEF TRAFFIC ENGINEERING BUREAU	
APPROVED DATE: CHIEF WATER, SEWER & STREETS BUREAU	APPROVED DATE: CHIEF ENGINEERING BUREAU	APPROVED DATE: DIRECTOR OF ENVIRONMENTAL SERVICES	
DRAWING NAME: C-XP-101.DWG	PROJECT SHEET 03 27	CONTRACT SHEET C-XP-101 27	

Gordon
4501 Daly Drive
Chantilly, VA 20151
Phone: 703-263-1900
www.gordon.us.com

PROGRAMMING AND PLANNING
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
SURVEY AND MAPPING
SECURITY CONSULTING

REVISIONS		
NUMBER	DATE	DESCRIPTION

SUR: GORDON	DES: LA
DRW: LA	CHK: AV

SEAL:

CERTIFIED SURVEY PLAT
WILSON SCHOOL SCHEMATIC DESIGN SET
DISTRICT
ARLINGTON COUNTY, VIRGINIA

SCALE:	HORIZ: 1"=25 VERT:
DATE:	4/22/2016
PLAN:	SCHEMATIC DESIGN
JOB:	2922–0205
CADD:	C–XP–101.DWG
NCS:	C–XP–101
NUMBER:	03 OF 27

Gordon

GEOTECHNICAL ENGINEERING
GEOCONCEPTS

The geotechnical engineering report presents the results of the field investigation, soil laboratory testing, and engineering analysis of the geotechnical data. This report specifically addresses the following:
- An evaluation of subsurface conditions within the area of the proposed site development, including a seismic site classification per the International Building Code (IBC).
- Foundation recommendations for support of the proposed buildings and lower floor slabs on grade.
- Lateral earth pressures for use in basement and site retaining wall design.
- Sub-drainage recommendations for groundwater management during construction and final design.
- Assessment of subgrade conditions for flexible and rigid pavement support, including a recommended design California Bearing Ratio (CBR) value.
- Earthwork recommendations for construction of load-bearing fills, including an assessment of on-site soils to be excavated for re-use as fill.
- Excavation support recommendations, including areas that can be sloped instead of supported.
- Recommendations regarding the feasibility of stormwater management through infiltration.

CIVIL ENGINEERING
GORDON

The following description summarizes the Civil Engineering considerations and proposals for the new Wilson School and its associated site improvements for Schematic Design:

Demolition
The Wilson School development will result in the demolition of the existing school building and utilities within the site limits shown on the Site Demolition Plan.

Site Geometry and Features
Proposed school structure (Building Footprint Lot Coverage +/-48,000 SF)
Parking garage entrance (+/-450 SF)
Service Driveway (+/-1,300 SF)
Athletic Field (+/-30,000 SF)

Erosion Sediment Control
Assume typical Virginia Erosion Sediment Control requirements including temporary dewatering during construction and one to two construction entrances.

Maintenance of Traffic
The project should assume the costs associated with temporary pedestrian and vehicular traffic controls to maintain sidewalk and roadway circulation in the vicinity of the project. These may include, but are not limited to, temporary lane closure(s), covered walkway(s), etc.

Grading and Earthwork
Based on the proposed plan there will be excavation for the basement portion of the building and proposed underground parking structure. Additionally, we anticipate some excavation for the utility and storm water management installations. The project will not be a balanced earthwork site. The current dimensions of the underground portion of the building yield approximately 40,000 cubic yards of anticipated material haul-off.

Wet Utilities
Domestic water and fire water service will tie into the existing water main on Wilson Blvd. Sanitary sewer and storm sewer systems will be accommodated through connections on the east side of the site and along North Quinn Street.

Service Utilities
Electrical service, communications, and natural gas services will be provided off of Wilson Boulevard.

Storm Water Management
A conceptual storm water analysis has been performed, however both final engineering of storm water detention and storm water quality will still be required to comply with the new storm water management regulations for quantity and quality control on redevelopment projects such as this. The following has been considered to support the expansion with a 2.9 acre limits of disturbance:

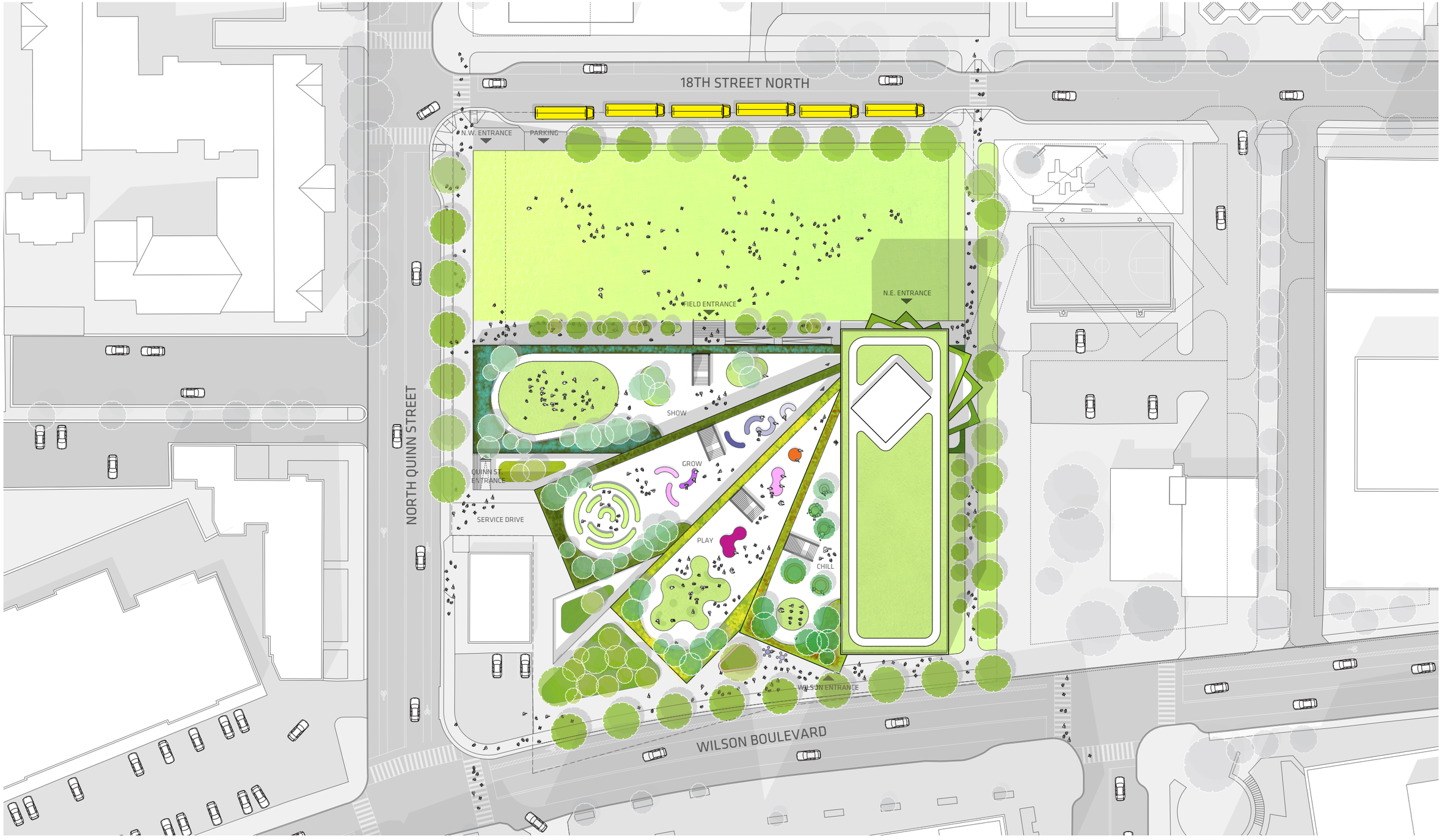
Water Quantity Facilities (Detention) - consisting of one underground concrete vault to capture drainage from only a portion of the limits of disturbance, the detained area is approximately 65% of the limit of disturbance, that includes the building roofs and artificial turf field.

Water Quality Facilities (BMP) –The new treatment standard is applied to the impervious area of approximately 1.35 acres, while the 20% reduction standard is applied to the remaining disturbed area on site (remaining 1.32 existing disturbed impervious acres and 0.22 existing disturbed turf acres). Water Quality facilities consist of several practices including vegetated roof, rainwater harvesting system, and an underground manufactured BMP.

Surrounding Road Work
Improvements are anticipated on all three street frontages: 18th Street North, North Quinn Street, and Wilson Boulevard.

PROPOSED SITE PLAN

PLANTING AND LANDSCAPE FEATURES



LANDSCAPE ARCHITECTURE

GORDON

The summary below describes the Schematic Design scope and extent of landscape architecture for the new Wilson School project.

Terraces
At levels 2-5, the outdoor terraces will contain a mix of paving systems, seat walls, extensive green roof and intensive green roof that will include small-to-medium sized trees in drip-irrigated raised planting beds with undulating planted berms. Loose outdoor seating will be provided, as well as fixed tables / benches, to allow for a variety of individual and group activities.

Lower Courtyards
The ground level outdoor courtyards will have a mix of paved areas and planted areas, including some trees requiring drip irrigation.

Front Entry Plaza / Pocket Park
The Wilson Blvd street frontage will contain a mix of paving surfaces and seat walls surrounding planted areas. Plantings will include a mix of groundcover, small shrubs, and both small and larger shade trees. Some bike racks will be provided for visitor use.

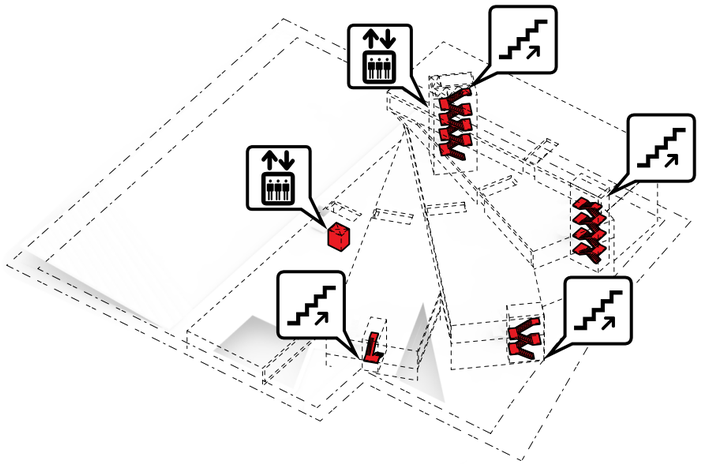
Athletic Field
The athletic field that covers the parking garage and covered entrance will be a synthetic turf play surface surrounded by a ball field fence and protective guardrail. The area will be accessible from adjacent Rosslyn Highlands Park and from stairs and ramps that connect to the first level of the school building. The northwest portion of the field will be sloped with tiers of elevated casual seating. Field lights will supply appropriate illumination levels for extended usage. The local community will have access to the field during after-school hours.

Streetscape / Public Space
The streetscape and public spaces surrounding the building will contain street trees and sidewalks which comply with Arlington County standards.

LIFE SAFETY

GHD

The design and construction of Wilson School will be in accordance with the 2012 Virginia Uniform Statewide Building Code (VUSBC) which amends the 2012 International Building Code (IBC). Wilson School will be classified as separated mixed use occupancy with Education Group E Occupancy and Storage Group S-2 Occupancy for the underground parking garage. Wilson will be Type IB construction and provided with an automatic sprinkler system throughout the building.



FIRE PROTECTION / FIRE ALARM / SECURITY

GHD

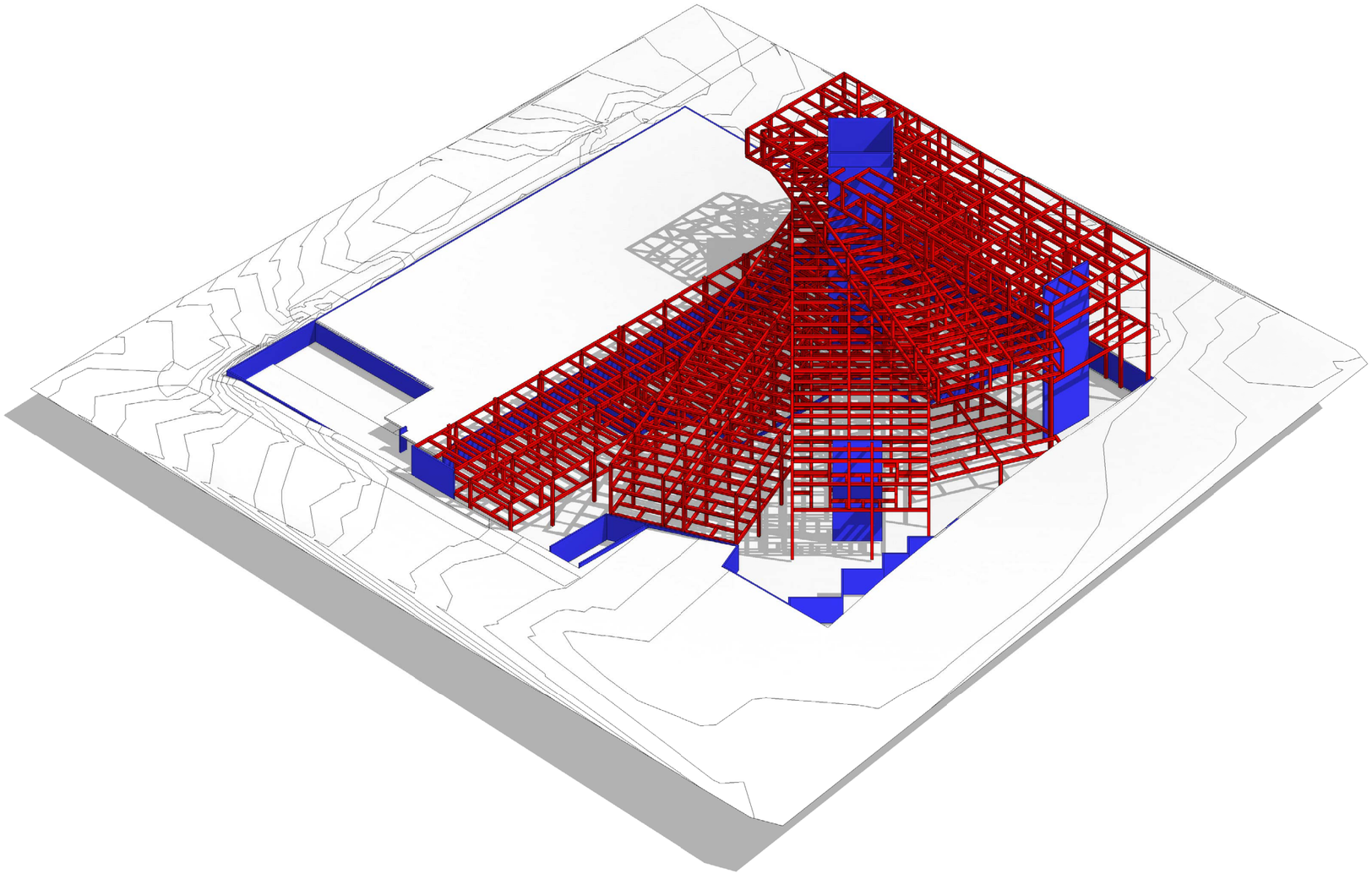
Fire Protection
Wilson School will be provided with an automatic sprinkler system throughout the building, with a manual Class I standpipe system. The sprinkler and standpipe systems will be supervised by the building's fire alarm system. Based on the current water supply and preliminary hydraulic calculations, it is anticipated that the building will be provided with a fire pump.

Fire Alarm / Detection
Wilson School will be provided with a fire alarm system. Per VUSBC, manual pull stations will not be provided throughout as Wilson is a Group E occupancy and will be fully sprinklered. One manual pull station will be provided at a normally occupied location within the building. The design team recommends installing an emergency voice/alarm communication system. If the lobby opening is determined to be an atrium and requires smoke control, in accordance with VUSBC, an emergency voice/alarm communication system would be required.

Security
The electronic security system for Wilson School will include access control, intrusion detection, and video surveillance. The systems will be an extension of the existing Arlington County School security system which utilizes a star topology architecture for the horizontal distribution system. The system will be networked with communications equipment located in the telecommunication closets on each floor and the head end equipment located in the main IT room in the basement. The systems will be recorded locally with the capability to monitor it locally as well as remotely.

STRUCTURAL FRAMING DIAGRAM

PRIMARY STEEL STRUCTURE AND LATERAL BRACING



STRUCTURE
SILMAN

The new Wilson School contains two primary structures – the building and the parking garage, with their own structural systems. The school building will be 5 stories above grade, and two stories below. The parking garage will be a single story.

School Building
The school building's primary structural design consists of a steel frame system with composite metal deck and concrete floor slabs. The design will account for several special conditions including stepped slab transitions at outdoor terraces (occupied roofs) and large span spaces below normally-framed classroom floors. The structure will resist lateral forces with a shear wall core located at the center of the overlaps of the 'fanning bar' geometry, along with shear walls at the ends of Bars 1, 3, and 5.

The terraces contain areas of extensive green roof that will require increased structural framing.

Parking Garage
The parking garage structure will be a 12" thick concrete flat slab supported on perimeter foundation wall and interior concrete columns with 6" deep dropped caps. The north-west corner of the slab will tilt up to form seating for viewing athletics. This section of slab will have terraced seating formed by the concrete.

ELEVATOR
LERCH BATES

All vertical transportation planning is based on providing "good" performance from an overall vertical transport system perspective. Two distinct criteria are used to measure the effectiveness of the vertical transport systems: average interval and handling capacity. All recommendations in this report are based on meeting these two criteria, as well as answering the functional needs of the proposed facility.

Recommendations
Based on the preliminary architectural drawings and the anticipated population, the design criteria assumed and the analysis performed by Lerch Bates, the following elevator configurations and groups are recommended for the proposed Wilson School Building:

One group of three (3) elevators, two (2) 4,000 pound capacity passenger elevators and one (1) 5,000 pound capacity service shaped elevator operating at 350 fpm; machine room less units serving levels B1, G and 1 through 5

One (1) single 5,000 pound capacity service shaped elevator operating at 200 fpm; machine room less unit; two stops; providing dedicated service between levels G and 1.

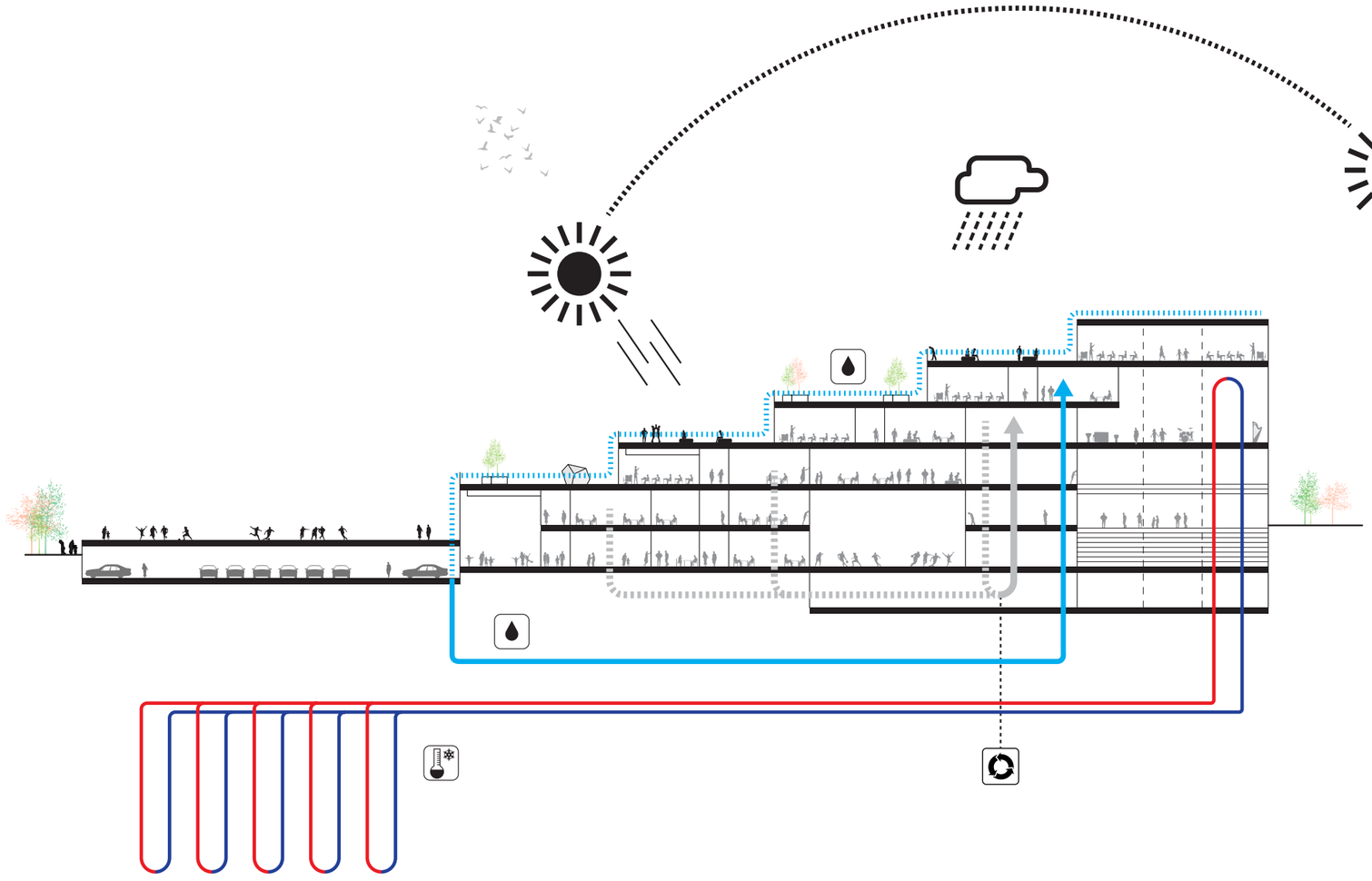
These systems in the configurations detailed will provide "Good" to "Excellent" service for staff and visitors to these buildings. Service is projected to have an average intervals of just over 30 seconds. Available handling capacity will support full occupancy. Elevator speeds required are common to the industry utilizing well-proven designs and technology.

High performance equipment with aggressive acceleration and deceleration rates and high speed door operation are required to provide "Good" to "Excellent" performance. If high performance equipment is not provided, doors cycle slower, floor-to-floor times are extended, and handling capacity is reduced.

FOOD SERVICE
HOPKINS FOOD SERVICE

The design area is consistent with the approved space program. The Schematic Design plan lists the programmed area and the actual area for each department. The kitchen is open for optimum sight lines. Consideration may be given to making the kitchen an exhibition kitchen by the use of glass walls- refer to the Architectural Program. A seating plan is being developed by the Architect.

SUSTAINABLE STRATEGIES
SECTION DIAGRAM



MECHANICAL / ELECTRICAL / PLUMBING
INTERFACE

Mechanical
The mechanical systems are designed with a focus on energy efficiency while providing adequate comfort cooling and heating. The mechanical systems will be designed and installed in accordance with the latest adopted versions of the Virginia Construction Codes (VCC) and are suitable for the expected usage in the facility.

The mechanical system will utilize geothermal wells as ground source heat rejection for the mechanical equipment. The geothermal system will serve water cooled variable refrigerant flow (VRF) condensing units and water cooled packaged direct expansion (DX) dedicated outside air units and air handling units located throughout the building.

Classrooms and administrative areas will utilize a variable refrigerant flow (VRF) system to provide both cooling and heating. VRF fan coil units will be used as the terminal system. Water cooled VRF heat recovery condensing units will be located in mechanical rooms on each floor to serve the VRF fan coil units. Ventilation air to the classroom and administration areas air will be provided by dedicated outside air water cooled direct expansion (DX) units with heat recovery wheel, hot gas reheat, and natural gas supplemental heat located in mechanical rooms on each floor.

The Gymnasium, Cafeteria, and Auditorium areas will be provided with ventilation air and heated and cooled by dedicated water cooled DX self-contained air conditioning units with heat recovery wheels. Heating shall be provided by direct fired natural gas located in each air handling unit.

Electrical
The electrical service will be provided through a new, Dominion owned, transformer located in an underground vault. The new service will terminate at a 2000A, 480/277V front access, service entrance rated switchboard located in the basement of the building. The switchboard will serve lighting and HVAC branch panels, the normal side of emergency transfer switches, and dry-type transformers that will serve the 208/120V power loads. The switchboard will also be PV ready and equipped with back-feed breaker to allow for direct connection to the PV system.

The emergency power to the building will be served by means of a 200kVA, 480/277V diesel generator. The generator will be equipped with a sub-base fuel tank that will allow for 8 hours of full load operations. The generator will serve all life-safety, legally required and standby loads.

The lighting design for the Wilson School will conform to or exceed the latest versions of Virginia Energy Conservation Code (VECC)-2012 and IESNA: The Lighting Handbook, Edition 10. The design will incorporate concepts and equipment that effectively and efficiently support the needs for each space. Efficient light sources and luminaires utilizing T5 and LED lamps will be used to reduce electrical loads. The control strategy will also exceed the requirements of VECC by utilizing occupancy sensors, dimming controls and automatic daylight controls.

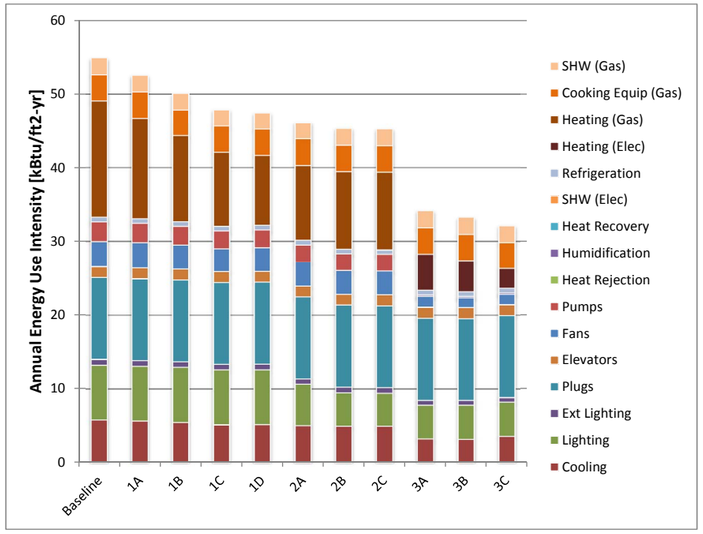
The new fire alarm system at Wilson school will be an automatic fully addressable system with voice evacuation that is complaint with the Virginia construction code, NFPA 72 and Americans with Disabilities Act (ADA). The system will be UL listed or FM Global approved for fire protection.

Plumbing
The plumbing systems are designed with a focus on water conservation and energy efficiency. The plumbing systems will be designed and installed in accordance with the latest adopted versions of the Virginia Construction Codes (VCC) and are suitable for the expected usage in the facility. Domestic water is to be provided by the municipal main in the street and boosted via Triplex Booster Pump. Domestic hot water is to be provided via solar hot water (note solar hot water is an add alternate) with a natural gas domestic water heater and storage tank backup located at the roof. Sanitary service will be provided via two gravity exits with the Ground Level and Basement served by a sewage ejector located in the basement. Storm water collection will be provided via interior drains and piping routed to a BMP Detention tank located in the garage and discharged to the municipal system by gravity. Storm water collected in the tank will be treated and reused within the building for flushing fixtures. Sub-slab drainage will be collected and routed to a sump pump located in the basement. Natural gas is to be provided by the municipal main in the street and will be utilized for domestic water heating, heating within mechanical ventilation units, and for kitchen equipment.

ENERGY ANALYSIS
INTERFACE

Wilson Secondary School is designed with a focus on substantial increases in energy efficiency and overall building performance. Many energy conservation measures are being implemented in order to reduce the energy footprint of the school including a geothermal heating and cooling system, enhanced building envelope with high performance glazing and enhanced roof and wall insulation, high performance LED lighting with daylight responsive and occupancy controls, all EnergyStar building equipment, and demand responsive ventilation with energy recovery.

In addition to energy efficiency, high performance design strategies for water use reduction are also a focus for the Wilson Secondary School. Strategies such as water efficient landscaping, low-flow plumbing fixtures, and on-site rainwater treatment and reuse for flushing fixtures and irrigation are being implemented.



Impact of Energy Conservation Measures

PROJECT SCORECARD

LEED FOR SCHOOLS

18	2	2	2	Sustainable Sites	Possible Points: 24
Y	?Y	?N	N		
Y				SSp1 - Construction Activity Pollution Prevention	0
Y				SSp2 - Environmental Site Assessment	0
1				SSc1 - Site Selection	1
4				SSc2 - Development Density & Community Connectivity	4
1				SSc3 - Brownfield Redevelopment	1
4				SSc4.1 - Alternative Transportation - Public Transportation Access	4
1				SSc4.2 - Alternative Transportation - Bicycle Storage & Changing Rooms	1
2				SSc4.3 - Alternative Transportation - Low Emitting & Fuel Efficient Vehicles	2
2				SSc4.4 - Alternative Transportation - Parking Capacity	2
			1	SSc5.1 - Site Development - Protect or Restore Habitat	1
1				SSc5.2 - Site Development - Maximize Open Space	1
	1			SSc6.1 - Stormwater Design - Quantity Control	1
	1			SSc6.2 - Stormwater Design - Quality Control	1
1				SSc7.1 - Heat Island Effect - Nonroof	1
		1		SSc7.2 - Heat Island Effect - Roof	1
		1		SSc8 - Light Pollution Reduction	1
			1	SSc9 - Site Master Plan	1
1				SSc10 - Joint Use of Facilities	1

4	5	2	0	Water Efficiency	Possible Points: 11
Y	?Y	?N	N		
Y				WEp1 - Water Use Reduction	0
4				WEc1 - Water Efficient Landscaping	4
	2			WEc2 - Innovative Wastewater Technologies	2
	2	2		WEc3 - Water Use Reduction	4
	1			WEc4 - Process Water Use Reduction	1

15	11	1	6	Energy & Atmosphere	Possible Points: 33
Y	?Y	?N	N		
Y				EAp1 - Fundamental Commissioning of the Building Energy Systems	0
Y				EAp2 - Minimum Energy Performance	0
Y				EAp3 - Fundamental Refrigerant Management	0
12	7			EAc1 - Optimize Energy Performance	19
		1	6	EAc2 - On-site Renewable Energy	7
2				EAc3 - Enhanced Commissioning	2
1				EAc4 - Enhanced Refrigerant Management	1
	2			EAc5 - Measurement & Verification	2
	2			EAc6 - Green Power	2

6	0	1	6	Materials & Resources	Possible Points: 13
Y	?Y	?N	N		
Y				MRp1 - Storage & Collection of Recyclables	0
			2	MRc1.1 - Building Reuse - Maintain Existing Walls, Floors & Roof	2
			1	MRc1.2 - Building Reuse - Maintain Interior Nonstructural Elements	1
2				MRc2 - Construction Waste Management	2
			2	MRc3 - Materials Reuse	2
2				MRc4 - Recycled Content	2
2				MRc5 - Regional Materials	2
			1	MRc6 - Rapidly Renewable Materials	1
		1		MRc7 - Certified Wood	1

10	8	0	1	Indoor Environmental Quality	Possible Points: 19
Y	?Y	?N	N		
Y				IEQp1 - Minimum Indoor Air Quality Performance	0
Y				IEQp2 - Environmental Tobacco Smoke (ETS) Control	0
Y				IEQp3 - Minimum Acoustical Performance	0
	1			IEQc1 - Outdoor Air Delivery Monitoring	1
			1	IEQc2 - Increased Ventilation	1
1				IEQc3.1 - Construction Indoor Air Quality Management Plan - During Construction	1
1				IEQc3.2 - Construction IAQ Management Plan - Before Occupancy	1
4				IEQc4 - Low-Emitting Materials	4
	1			IEQc5 - Indoor Chemical & Pollutant Source Control	1
	1			IEQc6.1 - Controllability of Systems - Lighting	1
	1			IEQc6.2 - Controllability of Systems - Thermal Comfort	1
1				IEQc7.1 - Thermal Comfort - Design	1
1				IEQc7.2 - Thermal Comfort - Verification	1
1	2			IEQc8.1 - Daylight & Views - Daylight	3
	1			IEQc8.2 - Daylight & Views - Views	1
1				IEQc9 - Enhanced Acoustical Performance	1
	1			IEQc10 - Mold Prevention	1

5	1	0	0	Innovation & Design	Possible Points: 6
Y	?Y	?N	N		
1				IDc1.1 - SSc4.1 EP	1
1				IDc1.2 - SSc7.1 EP	1
1				IDc1.3 - PC78 - Design for Active Occupant	1
1				IDc1.4 - Green Cleaning	1
1				IDc2 - LEED Accredited Professional	1
	1			IDc3 - The School as a Teaching Tool	1

0	1	1	0	Regional Priority Credits	Possible Points: 4
Y	?Y	?N	N		
	1			RPc1.1 - WEc2	1
				RPc1.2 - WEc3 (40%)	1
				RPc1.3 - EAc2 (1%)	1
		1		RPc1.4 - SSc5.1/ EAc1 (40%)/ MRc1.1 (75%)	1

58	28	7	15	Total	Possible Points: 110

Certified: 40-49, Silver: 50-59, Gold: 60-79, Platinum: 80-110

GREEN BUILDING GOALS
SUSTAINABLE DESIGN CONSULTING

Sustainable Design Consulting (SDC) set up a workshop in March 2016 to help the Project Team establish their Green Building Goals, which include some of the following highlights:

* LEED-S v2009 Gold
* Energy efficiency, focusing on passive systems and realistic controls
* Efficient water use
* Accessible stormwater controls
* Consistent team throughout design-construction-operations
* Quality of the Indoor Environment, especially related to noise and adaptability
* Systems should be easy to maintain.

GEOTHERMAL
HALEY & ALDRICH

The Wilson School will be a high energy efficiency school building. As part of the high-efficiency design, Interface Engineering, the mechanical consultant, has selected a ground source, water to water Variable Refrigerant Flow (VRF) system and DX air conditioning to provide both heating and cooling to the building. Haley & Aldrich, Inc. is designing the ground source heat exchanger (GSHE) which is the underground borehole and piping portion of the system. The GSHE will act as heat sink/source for the VRF and DX systems. The heating and cooling demand on the GSHE will be reduced by Energy Recovery Ventilators (ERV).

GSHE is sized to provide 100% of the heating and cooling loads defined by the building load profile used provided by Interface Engineering on August 7, 2015. The loads are summarized in Table 1.

Table 1 GSHE Design Load Summary

Month	Total Annual Heating (MBTU)	Total Annual Cooling (MBTU)	Peak Heating Rate (MBTU/Hr)	Peak Cooling Rate (MBTU/Hr)	Peak Cooling Rate (Tons)
Total	2,286,821	2,540,131			
Peak			5,762	4,245	354

The two options that are being considered for GSHE at this time differ by the borehole depth. The first option is drilled to a typical depth and will have 120 boreholes that are 500 feet deep arranged in twenty-four circuits of five boreholes each. The maximum number of boreholes that can fit under the parking garage is 120 boreholes. The second option is drilled to a deeper depth to reduce the number of boreholes and save area. The second option will consist of 75 boreholes that are 800 feet deep and arranged in fifteen circuits of five boreholes each. The borehole depth will be determined once the results of two test boreholes to be completed in May 2016 are available. Two different depths are being considered because if the ground conditions at depths below 500 ft are suitable for the GSHE, then there will be area available in the parking garage to install redundant capacity or expand GSHE in the future.

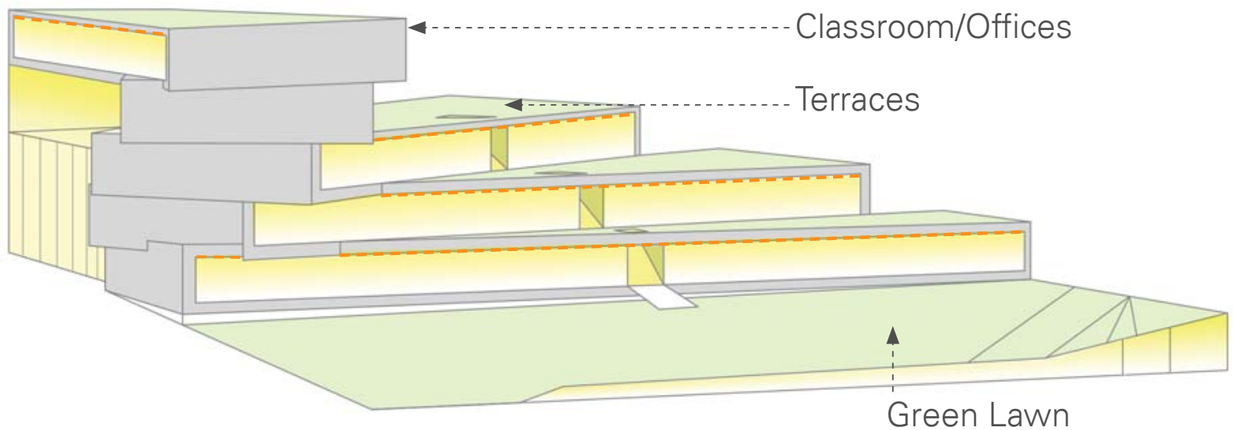
A summary of the GSHE is in Table 2 below.

Table 2. GSHE Design

Parameter	Option 1	Option 2
Active borehole length	500 ft	800 ft
Number of boreholes	120	75
Borehole spacing	20 ft	
Borehole radius	3 inches	
Ground thermal conductivity	Assumed to be 1.8 BTU/(Hr*ft*°F). Until test boreholes completed.	
Fluid type	20% Propylene Glycol / Water	
U-tube	Single Loop 1 ¼"	Single Loop 1 ½"
Grout	Bentonite based Thermal Conductivity of K =1.0 BTU/(Hr*ft*°F)	
Acceptable loop temp. range	45°F - 90°F	
Heat pump selected	Mitsubishi PRQY-P192TSHMU	

The GSHE will be located beneath the parking garage adjacent to the Wilson School building. Each borehole circuit is designed to meet approximately 5% of the building load. There is no redundancy in design currently, but there may be room for redundancy if boreholes can be 500 ft. deeper. The borehole circuits will routed above ground and connect GSHE supply and return headers at the east side of the parking garage. The GSHE supply and return headers will penetrate the garage wall in the southeast corner and enter the building basement.

Our geothermal design is based on the heating and cooling load profile described herein and the other assumptions noted above. If any of these assumptions change, the indicated design is no longer valid.



NORTHEAST VIEW

LIGHTING
TILLOTSON LIGHTING DESIGN

The lighting design is intended to maximize daylighting and make use of energy-efficient fixtures and controls. LED fixtures are used throughout the project as a way of reducing energy consumption and minimizing the amount of maintenance required over the life of the school.

Exterior Lighting

The plaza and roof terrace areas will integrate site lighting into landscape features such as site benches, railings, and tree planters to provide appropriate levels of illumination and accentuate the design of these outdoor spaces. The terraces will also receive illumination after dark from linear LED fixtures mounted on the interior of the classroom facade – minimizing the need for additional exterior fixtures.

The opaque/translucent glass facade at ground floor will be illuminated with in-grade LED wall washers to create a welcoming pedestrian scale experience. Downlights at the entrance canopy to provide bright illumination on the ground to emphasize the building entry. Large areas of clear glass will glow from the interior at night, and provide a warm and inviting surrounding.

Pedestrian paths and street lighting will be designed to meet Arlington County standards. Field lighting will be provided to extend the hours of community usage, and will be coordinated to integrate with the overall building illumination.

Interior Lighting

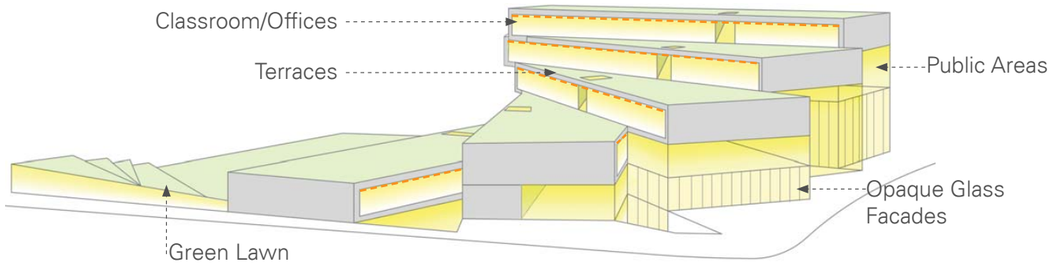
Lobby spaces will be illuminated by recessed LED downlights, with the gym and auditorium volumes illuminated with in-grade LED uplights.

Corridors will have large round LED fixtures to provide a welcoming glow and appropriate levels of illumination for circulation and gathering space.

The library and dining areas will have a grid of white globe pendants to accentuate seated and gathering areas that are inviting and playful.

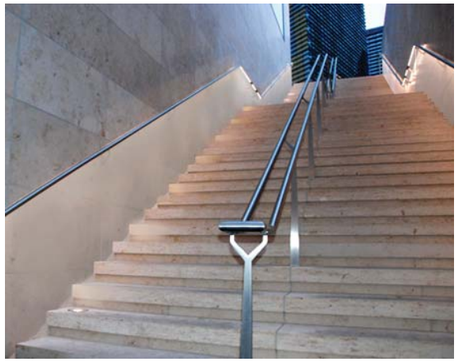
Classrooms and offices will have recessed linear fixtures that will provide uniform lighting to allow for flexible room configurations and a range of activities.

SOUTH ELEVATION



SOUTH WEST VIEW

TERRACES

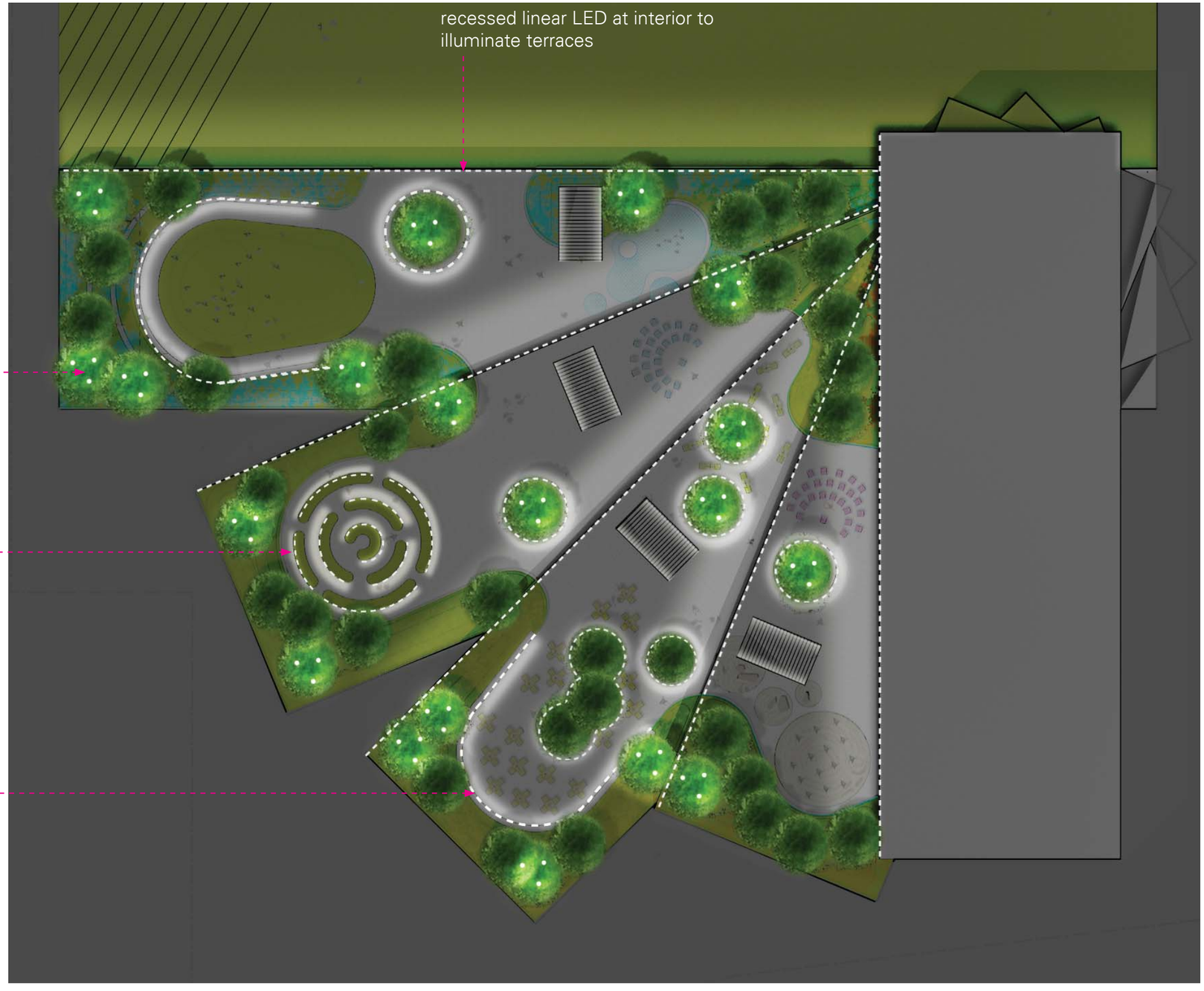


handrail lighting

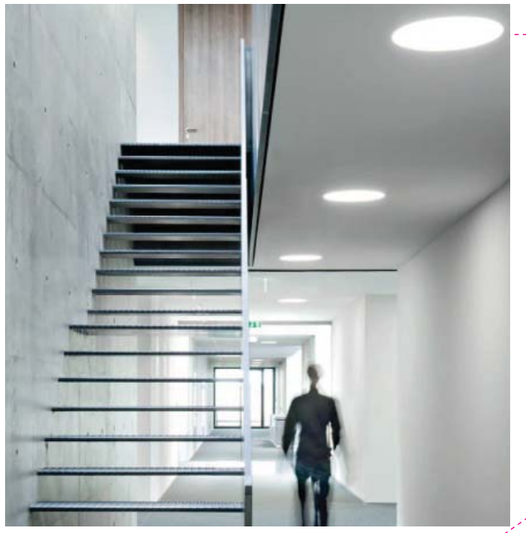
uplights at trees

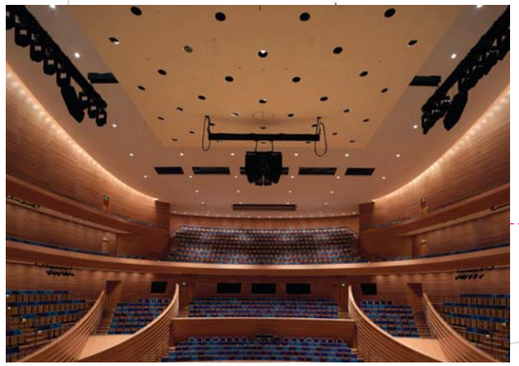
planter lighting

under bench lighting



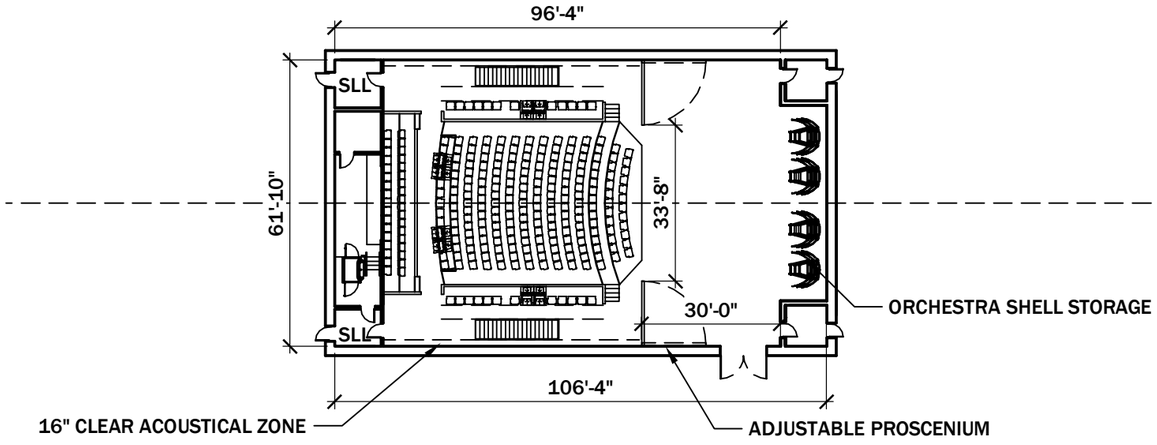
INTERIOR LIGHTING DIAGRAM - PLAN (2ND FLOOR)



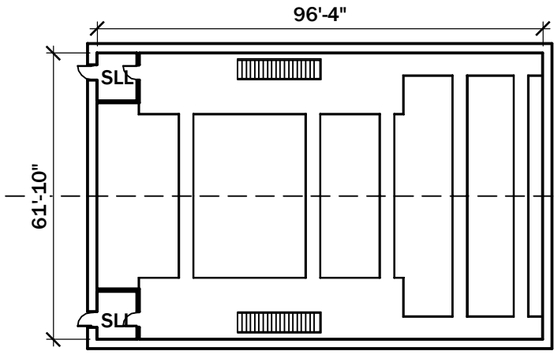


THEATER LAYOUT

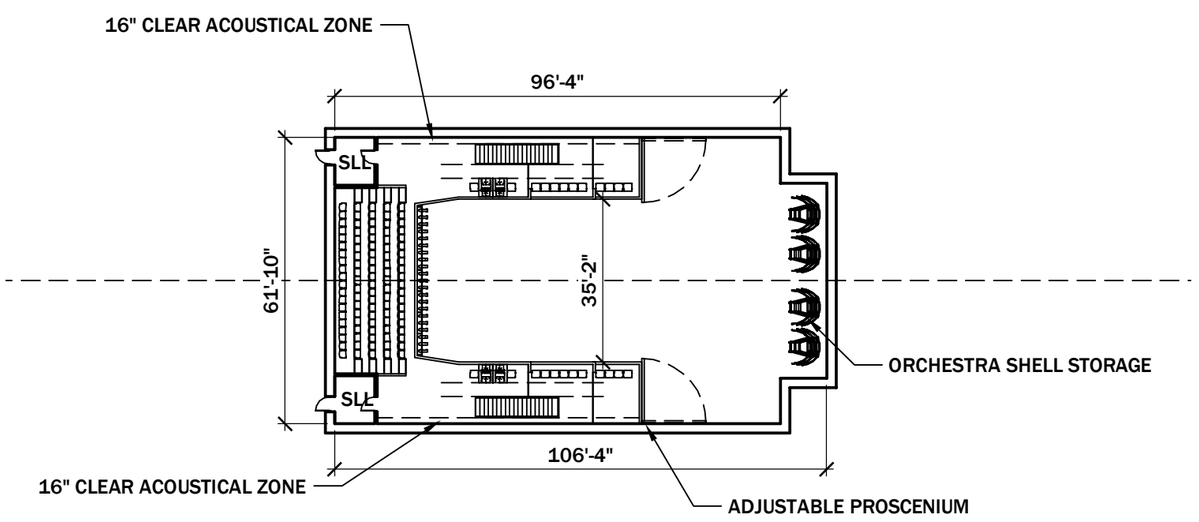
PLAN AND SECTION DIAGRAMS



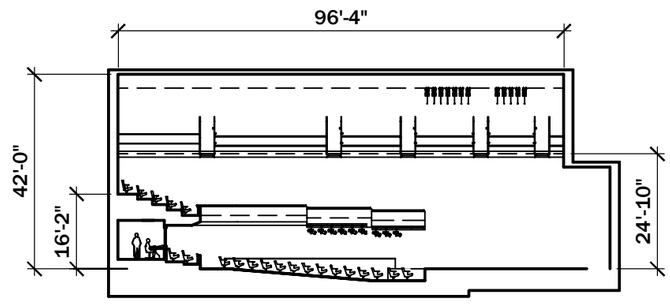
01 Orchestra Level Plan - 283 Seats
1/32"=1'-0"



03 Tech Level Plan
1/32"=1'-0"



02 Balcony Level Plan - 126 Seats
1/32"=1'-0"



04 Longitudinal Section
1/32"=1'-0"

PERFORMING ARTS
THEATRE PROJECTS

The new performing arts venues at the Wilson school are intended to fill a deep need for the program that the current spaces do not. In addition to providing students with spaces that are safe to work in, they will also deliver a level of technology and performance aesthetic that can be found in the real world; preparing students to go on to college.

The auditorium will be a flexible room that can accommodate everything from acoustic music to fully staged musicals. By simply "folding" the proscenium frame back the room opens up to behave more like a concert hall; one volume of space that is friendly to music usage. With the panels deployed, the separation between audience and performer, required to create theatrical magic is created. The relationship of the approximate 400 seat audience to performer, regardless of the art form is intended to be intimate and create a "community" within the room that embraces young artists. The auditorium will be outfitted with the latest in theatrical equipment to enable quick changeovers and expose students to the state of the art found in ever increasing numbers of performing arts venues.

The black box is for more scaled back performances of a more intimate nature. Small dramatic works, staged readings, one person shows and the like are intended to fill the use of this space. Seating about 100 people, the room is reconfigurable to achieve endstage, thrust and arena seating arrangements by reconfiguring seating platforms about the performance area. Similar to the auditorium, the black box will contain the latest in theatre technology that any student would find in the real world.

ACOUSTICS
JAFFE HOLDEN

Room Acoustics
The 400 seat Auditorium is the primary performance space in the school. Therefore, it should have a flexible acoustic environment that can accommodate performances ranging from theater to concert music. The key features to accommodate this flexibility include deployable acoustic drapery to vary the room's reverberation; hinged proscenium wall panels which deploy to create a proscenium opening for theater and store for a more concert hall-like environment; storage for deployable orchestra shell towers for various music ensembles. In addition, the room's volume and shaping/construction of wall and ceiling elements will be designed to create a diffuse and balanced sound field beneficial for all events.

The Black Box Theater will be provided with distributed absorptive surfaces for a fixed acoustic environment suitable for speech clarity of theater productions. The Band and Choral Rehearsal Rooms will be designed for musical rehearsal. A large room volume, distributed fixed absorption, and diffusively shaped walls and overhead reflectors all contribute to a diffuse sound field without causing overbearing sound levels during loud passages. In addition, deployable drapes along walls are recommended to vary the rooms' reverberation at the discretion of the instructor. Practice rooms will be provided with fixed absorption suitable for individual/small ensemble rehearsal.

Other spaces throughout the building will be provided with sound absorptive finishes, primarily in ceiling treatment, to reduce reverberation and sound build-up which can be detrimental to speech intelligibility. Reverberation in core learning spaces will comply with LEED for School v2009 prerequisite IEQp3 Minimum Acoustical Performance.

Sound Isolation
Isolation from exterior noise sources – primarily vehicular traffic and air traffic – will be driven by the composition of the exterior glazed assemblies. A construction consisting of insulated glazing with laminated glass has been recommended which is expected to meet or exceed the sound transmission class (STC) 35 requirement of LEED for schools credit IEQc9 for Enhanced Acoustical Performance. Thicker assemblies have been recommended at more noise critical spaces such as the Auditorium.

Room-to-room isolation throughout the building will comply with LEED credit IEQc9 standards. Typical wall/ceiling/floor assemblies have been provided to the design team which meet these standards. These requirements are summarized in the following table. Further sound isolation at acoustically sensitive spaces will be achieved with acoustically enhanced doors.
Table 1: Minimum STC ratings required for single or composite wall and floor-ceiling assemblies that separate a core learning space from an adjacent space

Space Adjacent to Core Learning Space	Minimum STC
Music Room	60
Gymnasium	60
Cafeteria	60
Mechanical Room	60
Common-use Toilet Rooms	53
Core Learning Space (Classrooms, Library)	50
Corridor or Staircase	45
Office or Conference Room	45

Building Systems Noise Control
HVAC, electrical, and plumbing systems will be designed to meet target background noise levels for good speech intelligibility in all spaces and enhanced listening environments for the performance and rehearsal spaces. These target background noise levels are based on compliance with LEED credit IEQc9 as well as our firm's experience with similar projects. The target background noise levels are summarized in the following table. These criteria are established in terms of Noise Criterion (NC) ratings as described in ASHRAE 2001 Fundamentals Handbook, Chapter 7 (Sound and Vibration).

Table 2: Background Noise Criteria

Space	NC Rating
Acoustically-sensitive Spaces	
Auditorium	25
Black Box Theater	25
Band Rehearsal	25
Choir Rehearsal	25
Control Rooms	30
Sound & Light Locks	30
Music Practice Rooms	30
Classrooms	30
Library	30
Acoustically Non-sensitive Spaces	
Gymnasium / Fitness	35
Offices	35
Lobbies / Circulation	40
Dining	40

AUDIOVISUAL / TELECOMMUNICATIONS
SEXTANT GROUP

The key features and goals of our design are listed below by discipline (Audiovisual, IT/Structured Cabling, and Smart Building System).

Audiovisual
From an audiovisual systems perspective, it is important at this stage of the project to envision how the programs' curriculum might evolve in the next five to ten years relative to emerging pedagogical models of instruction. This approach informs the design team in a way that causes the technology systems infrastructure to be developed to allow for evolution and growth. Audiovisual systems for all new building projects should adhere to basic principles of prudent planning: flexibility, adaptability, scalability, supportability and so forth. Programming discussions to date have included considerations for these systems with respect to space planning, and have included stakeholders from faculty, administration, and the school district.

Our project goals for the Schematic Design phase include obtaining an understanding of the current standards in place and what we are trying to accomplish with the audiovisual systems in the building based on space types. By gathering this information we are able to build a framework for the audiovisual program and provide an initial cost estimate for the systems. Some of these decisions are based on the experience of the design team, and some from the input of the stakeholders. Consideration has been made for systems simplicity, flexibility, accommodation of students' BYOD (bring your own device), and the specific programmatic requirements of teaching, fitness, and performing arts.

Information Technology / Structured Cabling
The Structured Cabling System provides an organized and logical distribution of low voltage communication signals within a building. These systems are specifically designed to be flexible and scalable, thereby providing value over an extended period of time as a distinct asset to the property in which they are installed. The overall goal of a Structured Cabling System is to support and provide for all building communications requirements within a 15-to-25 year life cycle. These systems consist of passive distribution components such as copper cable, fiber optic cable, patch panels, faceplates, jacks, and patch cords. They also include supporting infrastructure, such as distribution frames, conduits, junction boxes and cable raceways.

The Structured Cabling System will be designed, installed, tested, and documented in compliance with ANSI/EIA/TIA, and BICSI standards. Consideration is given to all aspects of the design such as data throughput performance, routing, adjacencies, terminations, administration, and identification. Compliance with the BICSI commercial installation requirements is especially pertinent by virtue of the fact that they provide a common frame of reference for both the electrical and telecommunications disciplines that must work together to establish a complete and effective implementation.

Smart Building System
The School will be equipped with "Smart Building" features in the interest of enhanced energy efficiency/cost savings, social responsibility, and future automation capabilities. In essence, these features are part of an overarching computerized system that has connections to the traditional building subsystems. Some of these subsystems are intended to be controlled, and some only to be monitored, with their data displayed. The level of integration between the systems will require further discussion, but at this phase of the project, many of the planned interconnections have been identified. In addition, some of the smart building concepts may be useful for the School to use to teach social/ecological awareness, for public relations, or for benchmarking building efficiency.

The Smart Building concepts have been arranged in several categories, according to when or if they might be implemented. As it is already planned to tie most of the subsystems onto the building IT network, some of the future cabling and its upgrade disruption will be avoided. In this way, there is a path from immediate installation to future integration. The goal during this phase is to determine an understanding of the systems that would be integrated on day one, the systems that would be integrated in the near future, and the systems that have potential for integration in the future.

PERFORMING ARTS AUDIOVISUAL / TELECOMMUNICATIONS

JAFFE HOLDEN

This document outlines the AV system criteria for the programmed spaces of the Wilson School for Arlington Public Schools. This report will offer a general overview of the AV systems included within each Performance venue of the facility. Project specific solutions and details will be developed in the coming phases as the design progresses.

The Wilson School contains the 400 seat Auditorium, and a 100 seat flexible Black-Box Theatre. This report outlines the AV systems for each of these performance venues, plus their respective and shared support facilities, including Back-of-House (BOH) and Front-of-House (FOH).

The AV systems have been designed from programming documentation and discussion with the end users, providing a highly flexible yet easy to use series of systems. These systems are designed to operate 24 hours a day, 7 days a week, and to facilitate continuous and simultaneous use of the two performance venues, be it for performance or rehearsal need.

The facility is designed as a comprehensive, multi-use arts space suitable for conceptually derived productions, or outside rentals. As such, the AV Systems are designed for flexibility and interconnectivity between the various performance spaces, allowing each to operate autonomously or together as one building should the need arise.

The Auditorium AV system is designed to fill multiple requirements – subtle voice lift for lectures and drama, moderately higher outputs for reinforced music, and controlled vocal imaging and sound effects for musical theater & opera. Types of equipment included are loudspeakers & amplifiers, digital signal processing & matrixing, AV connection panels, portable equipment (microphones, loudspeakers, cables), video projection equipment, and control systems.

The Black Box AV system has unique requirements due to the flexibility required for productions presented in different arrangements. As such, the loudspeakers and video projection equipment is loose and portable, allowing the artists to position and connect the equipment to suit the needs of that particular production. To facilitate this flexibility, AV facilities panels are located throughout the stage deck and catwalk areas, providing identical infrastructure to any arrangement required by the production. Types of equipment included are loudspeakers & amplifiers, digital signal processing & matrixing, AV connection panels, portable equipment (microphones, loudspeakers, cables), video projection equipment, and control systems.

Additional to the performance venue systems are support AV systems for front and back of house activities, including late-comer video and audio show relay, digital signage, back of house program and page capabilities, and interconnections to other rooms within the facility.

Lastly, all audio and video systems are powered by a separate Audio & Video Technical Power system (AVTP) to ensure noise-free operation. The AVTP system runs on a dedicated transformer and all associated outlets utilize dedicated isolated ground wires and hospital-grade outlets. The AVTP system is used only for audio and video equipment. The AVTP System also includes stage disconnects (company switches) in major performance spaces to facilitate outside events. Design of system and location of transformer (and if it is several) to be coordinated with the electrical engineer.


18TH STREET NORTH
N.W. ENTRANCE
PARKING
FIELD ENTRANCE
N.E. ENTRANCE
SHOW
GROW
PLAY
CHILL
QUINN ST ENTRANCE
SERVICE DRIVE
NORTH QUINN STREET
WILSON ENTRANCE
WILSON BOULEVARD
Arlington Public Schools
Gilbane
LEO A DALY
BIG