

STRATFORD MIDDLE SCHOOL RENOVATION AND ADDITION

ARLINGTON PUBLIC SCHOOLS

ENVIRONMENT AND ENERGY CONSERVATION COMMISSION
SEPTEMBER 26, 2016



QUINN EVANS
ARCHITECTS

PROJECT SCHEDULE | 1

PROJECT SCHEDULE

	2016	2017				2018				2019			
USE PERMIT	1/2017												
CERT. OF APPROP.	1/2017												
DESIGN DEV.													
CONST. DOCS.													
BUILDING PERMIT			9/2017										
CONSTRUCTION								TBD					
SCHOOL OPEN													

PROJECT MILESTONES

- **Concept Design approved November 2015**
- **Schematic Design approved June 2016**
- **Use Permit submitted: September 8, 2016**
 - **EA submitted: September 8, 2016**
 - **Water Quality Impact Assessment submitted: September 15, 2016**
 - **Certificate of Appropriateness submitted: September 22, 2016**
- **Presenting to Commissions: (Fall/Winter 2016)**
- **County Board (projected): January 2017**
- **Building Permit (projected): Fall 2017**

STAKEHOLDER INVOLVEMENT

- 23 BLPC meetings
- 13 PFRC meetings
- 5 HALRB/DRC meetings/work sessions
- 2 Gallery Walks / Open Houses
- Additional meetings with:
 - Community leaders
 - Department of Parks and Recreation
 - VDOT
 - Arlington County
 - School Board Members

SITE DESIGN | 2

SITE PLAN



SITE PLAN - TREES



SITE PLAN - TREES



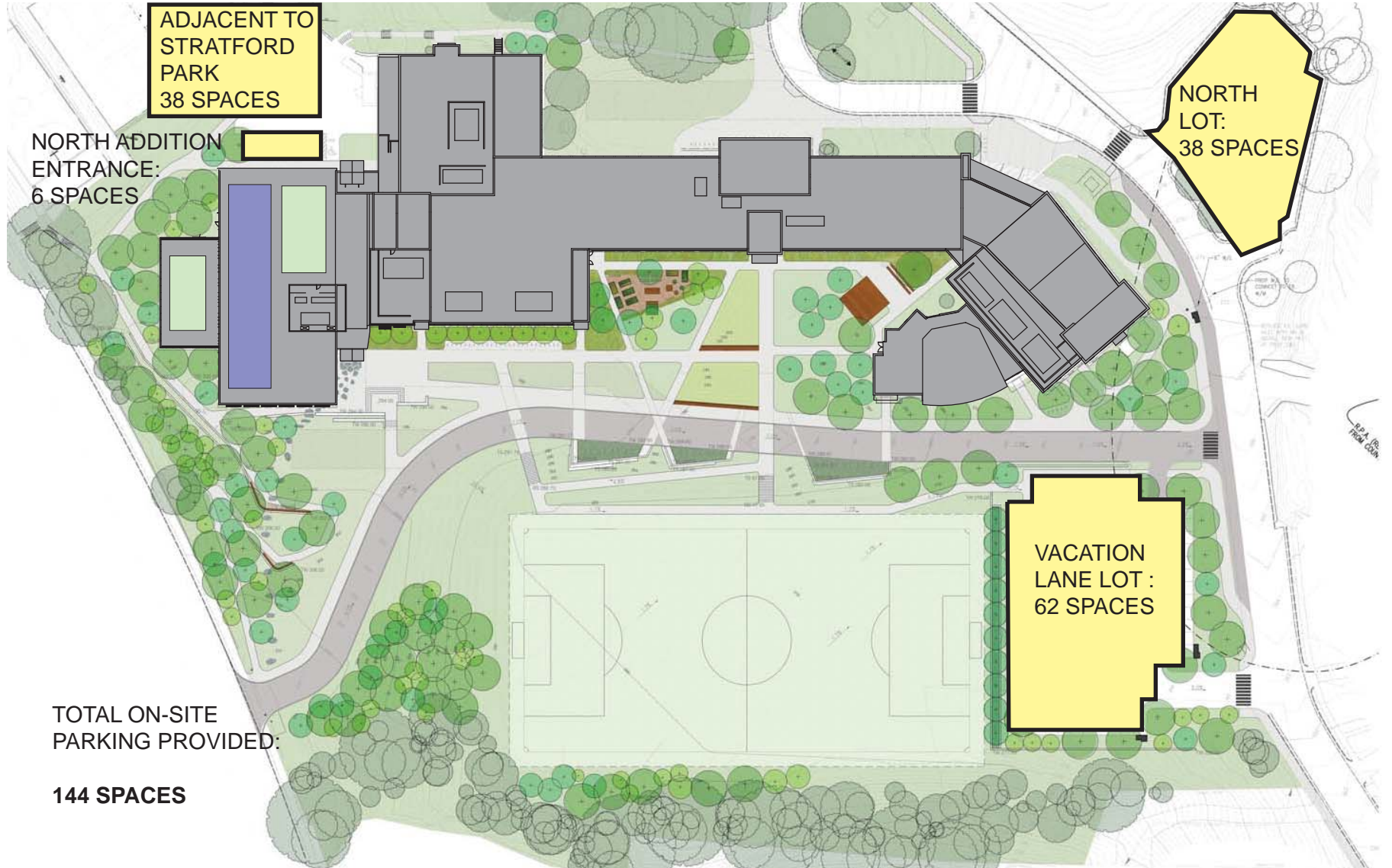
TREE SUMMARY

Tree Removal

	Category 1	Category 2	Category 3	Category 4	Total
TO BE REMOVE BY ARBORIST	1	6	12	23	42
TO BE REMOVED		50	58	16	124
TO REMAIN	7	145	85	22	259
Total	8	201	155	61	425

Total Tree Replacement required:	194
Total Tree Replacement provided:	196

PARKING



TOTAL ON-SITE
PARKING PROVIDED:

144 SPACES

BUILDING DESIGN | 3

VIEW FROM OLD DOMINION



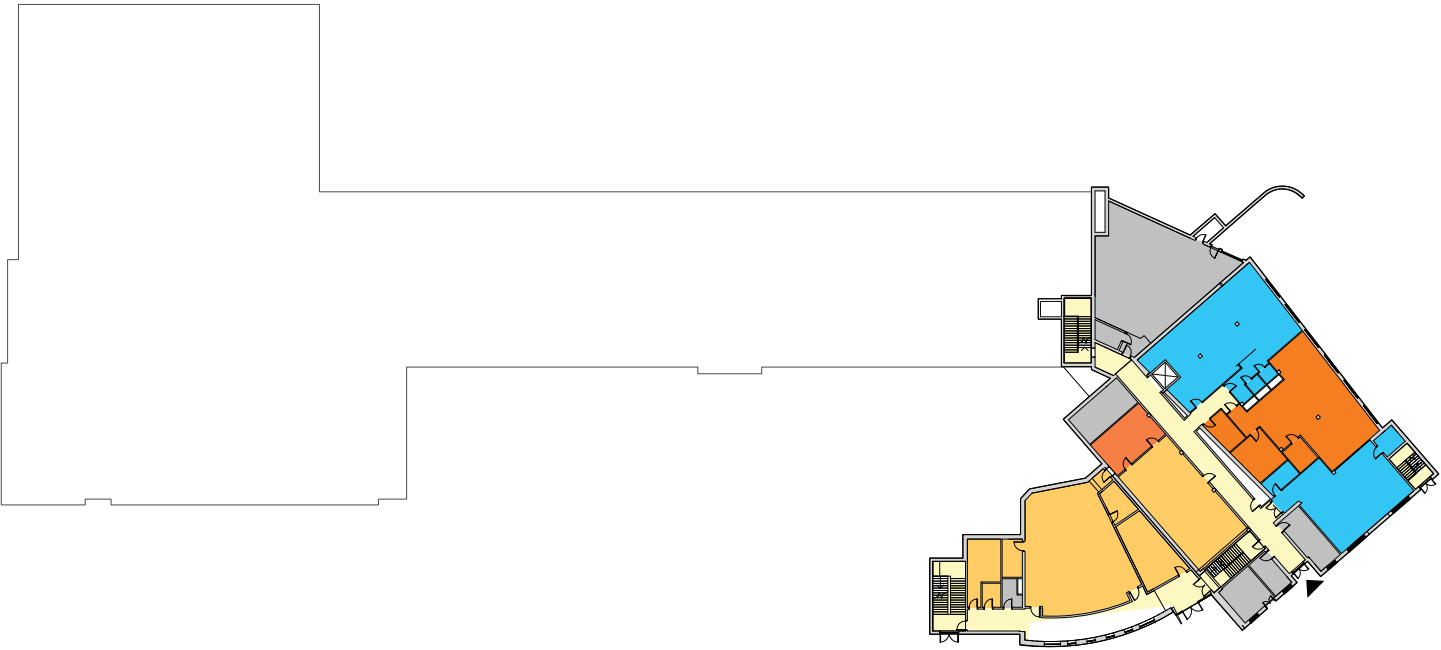
VIEW FROM EAST



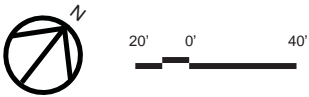
SOUTH ELEVATION



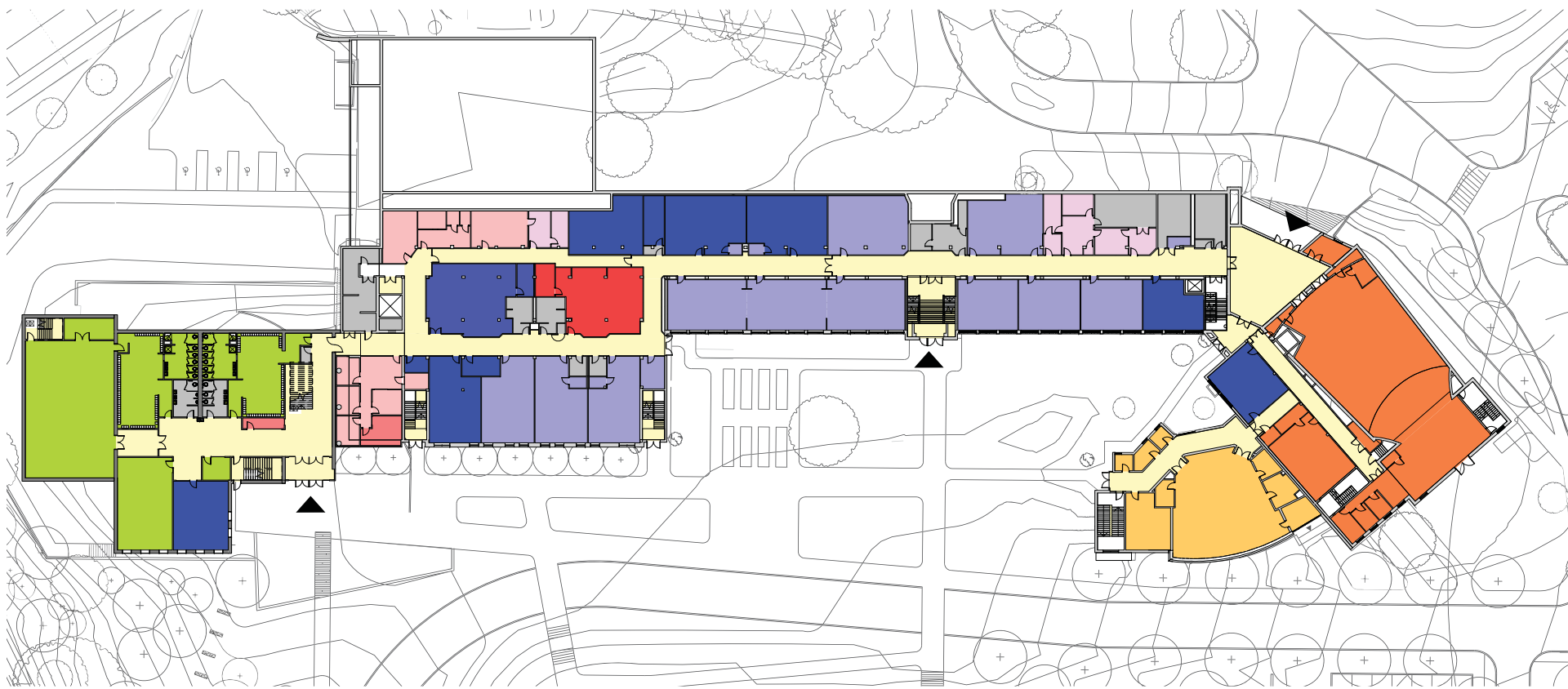
BASEMENT PLAN



















- LIBRARY
- FOOD SERVICE
- PHYSICAL EDUCATION
- THEATER/ARTS
- MUSIC
- TECHNOLOGY
- WORK & FAMILY STUDY
- BUILDING SUPPORT
- TEACHER & STORAGE
- ADMIN
- COUNSELING/CLINIC
- CORE CLASSROOMS
- SPECIAL EDUCATION
- ELECTIVE CLASSROOMS
- CIRCULATION
- ENTRANCE

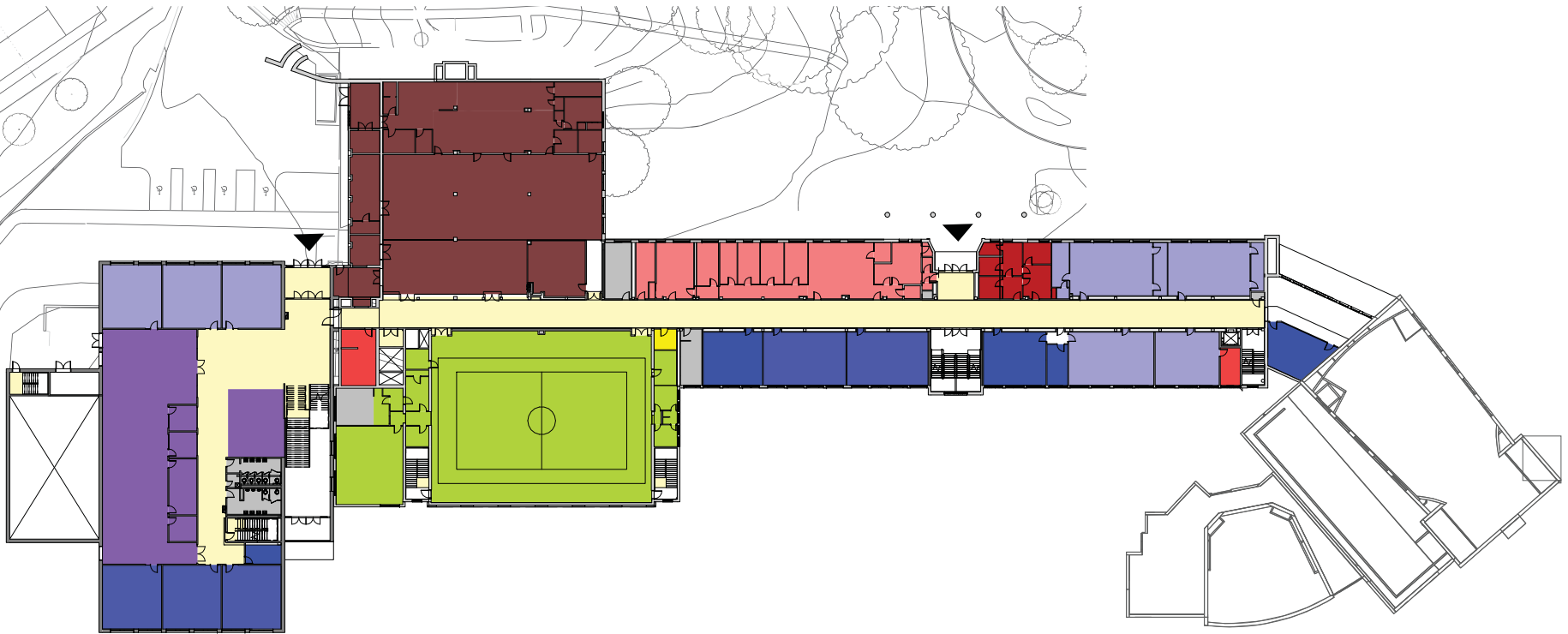


FIRST FLOOR PLAN



- | | | | |
|---|---------------------|---|---------------------|
|  | LIBRARY |  | TEACHER & STORAGE |
|  | FOOD SERVICE |  | ADMIN |
|  | PHYSICAL EDUCATION |  | COUNSELING/CLINIC |
|  | THEATER/ARTS |  | CORE CLASSROOMS |
|  | MUSIC |  | SPECIAL EDUCATION |
|  | TECHNOLOGY |  | ELECTIVE CLASSROOMS |
|  | WORK & FAMILY STUDY |  | CIRCULATION |
|  | BUILDING SUPPORT |  | ENTRANCE |

SECOND FLOOR PLAN



- | | |
|--|--|
| ■ LIBRARY | ■ TEACHER & STORAGE |
| ■ FOOD SERVICE | ■ ADMIN |
| ■ PHYSICAL EDUCATION | ■ CORE CLASSROOMS |
| ■ THEATER/ARTS | ■ SPECIAL EDUCATION |
| ■ MUSIC | ■ ELECTIVE CLASSROOMS |
| ■ TECHNOLOGY | ■ CIRCULATION |
| ■ WORK & FAMILY STUDY | ■ BUILDING SUPPORT |
| ■ BUILDING SUPPORT | ▲ ENTRANCE |



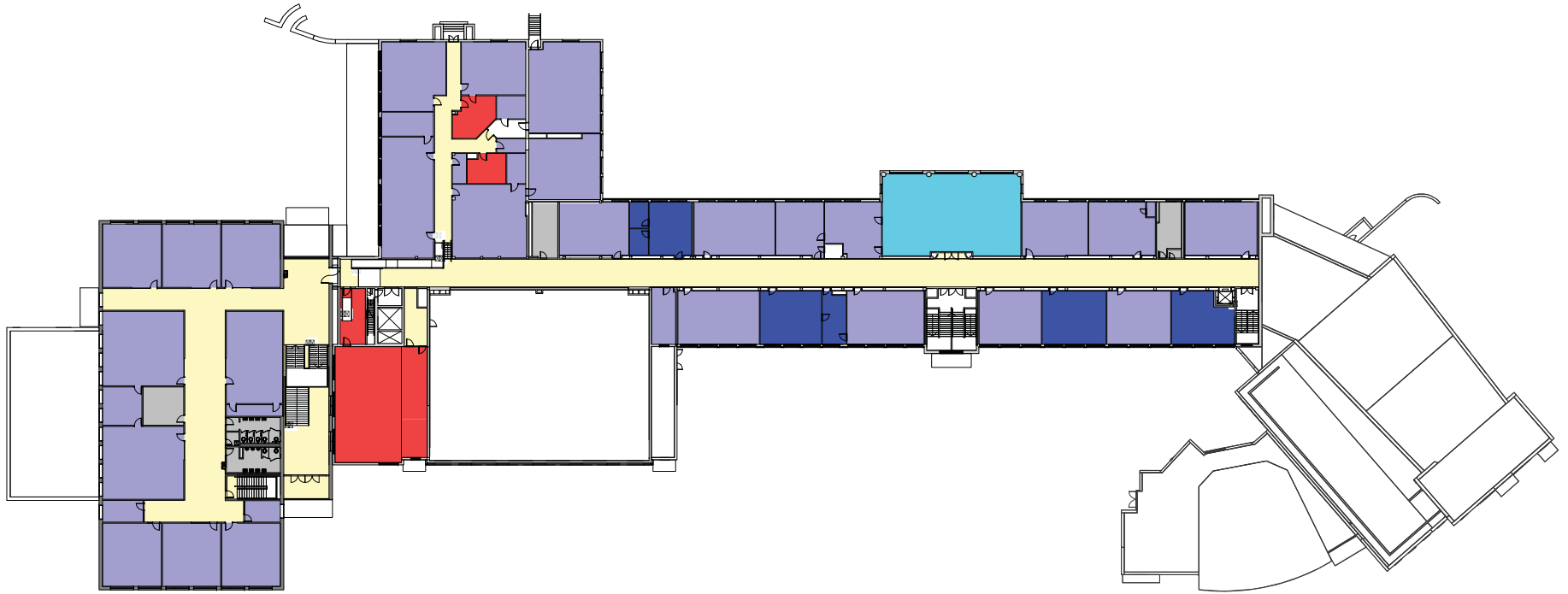
20' 0' 40'



QUINN EVANS ARCHITECTS

Arlington Public Schools
Stratford Middle School - 18

THIRD FLOOR PLAN



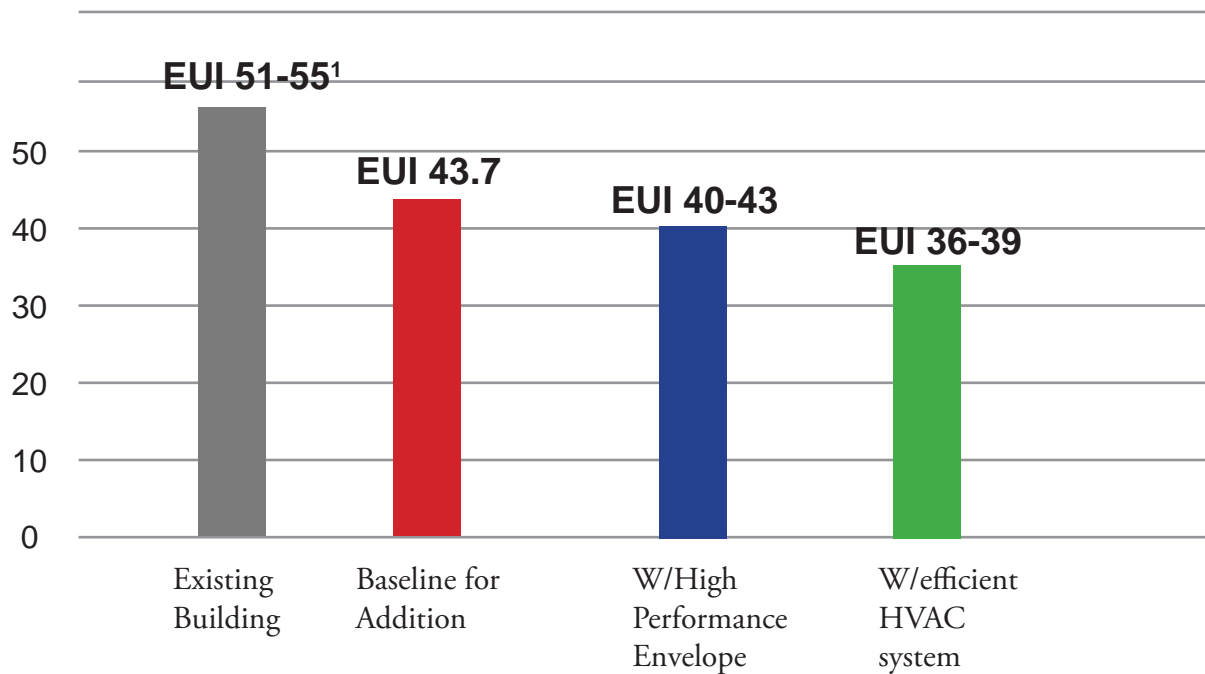
- | | |
|--|--|
| ■ LIBRARY | ■ TEACHER & STORAGE |
| ■ FOOD SERVICE | ■ ADMIN |
| ■ PHYSICAL EDUCATION | ■ COUNSELING/CLINIC |
| ■ THEATER/ARTS | ■ CORE CLASSROOMS |
| ■ MUSIC | ■ SPECIAL EDUCATION |
| ■ TECHNOLOGY | ■ ELECTIVE CLASSROOMS |
| ■ WORK & FAMILY STUDY | ■ CIRCULATION |
| ■ BUILDING SUPPORT | ▲ ENTRANCE |



20' 0' 40'

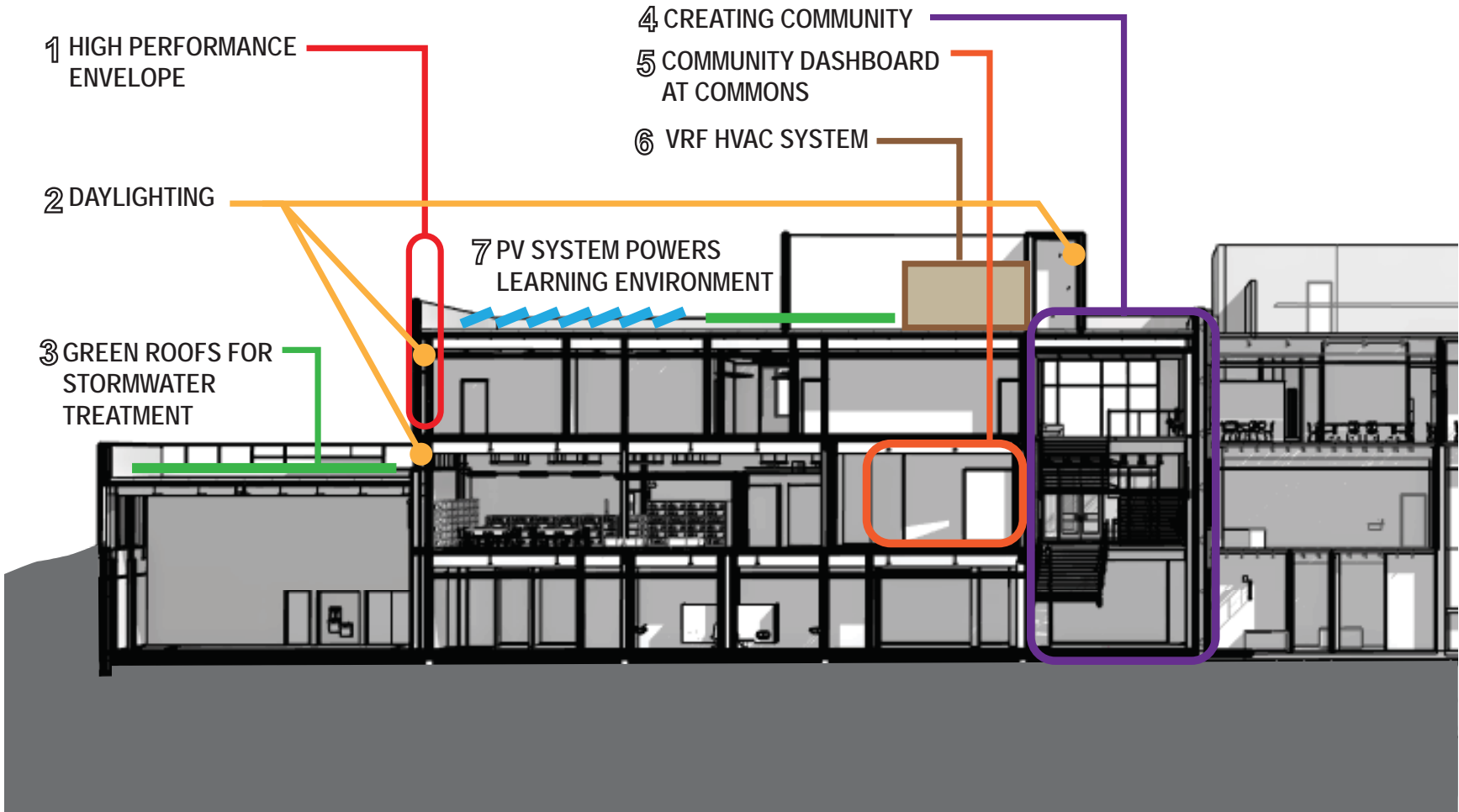
ENERGY TARGETS

- EUI (energy use intensity) = total energy consumed / total gross square footage
- Metric that expresses a building's energy use a function of size and other characteristics

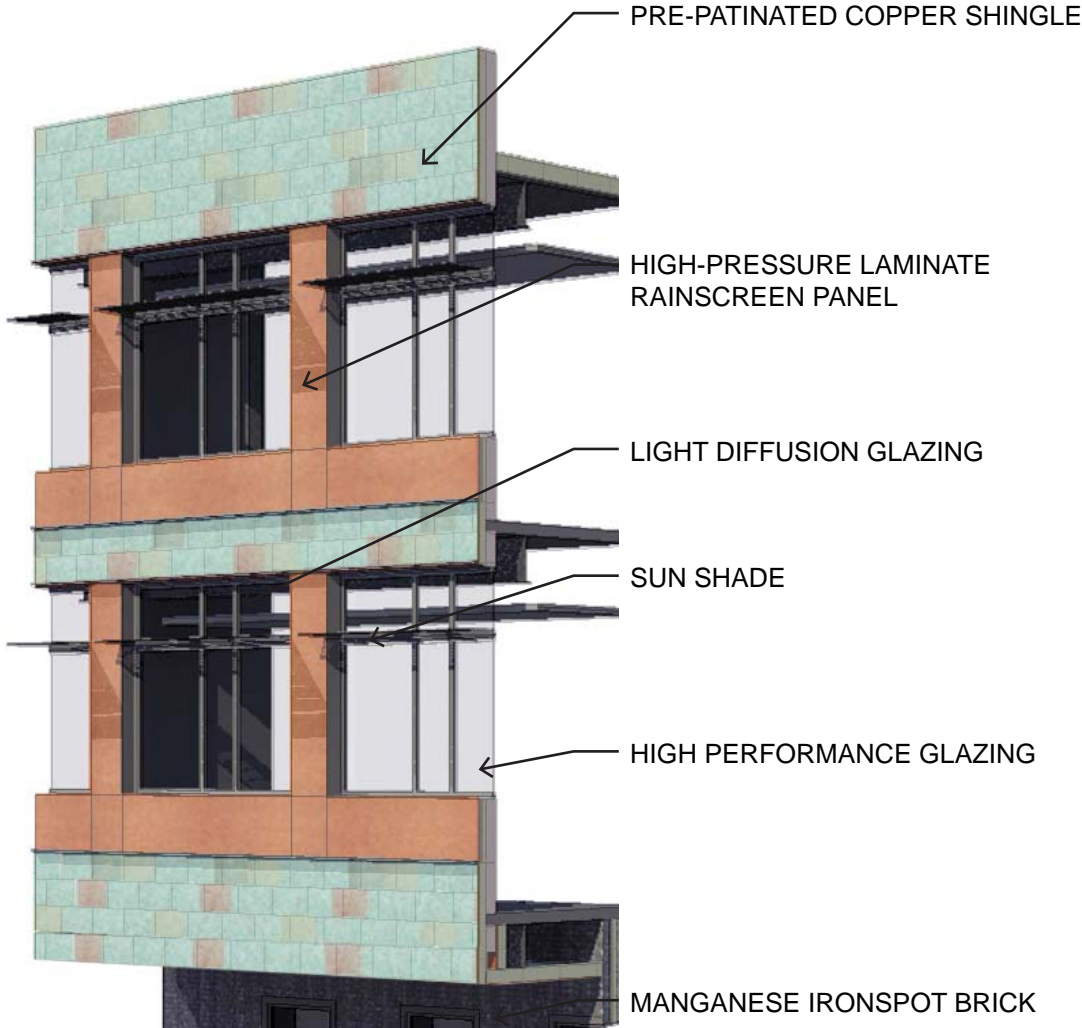


¹Existing metrics from APS Energy Report Cards 2013/2014/2015

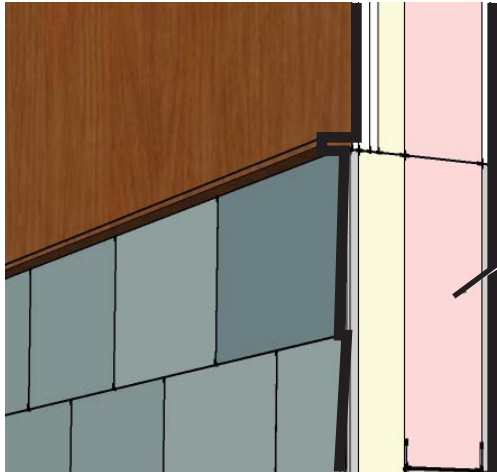
SUSTAINABLE OPPORTUNITIES



BUILDING ENVELOPE

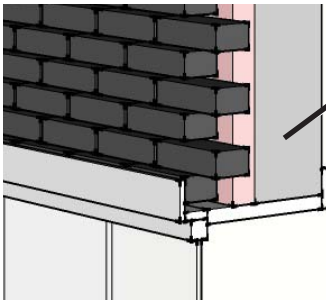


BUILDING ENVELOPE



HIGH R-VALUE ASSEMBLY (R-30+)

- METAL SHINGLE CLADDING
- WEATHER BARRIER
- NAILBASE INSULATION (WOOD SHEATHING AND 3.5" R-19 POLYISO)
- 6" STUD WALL WITH R-19 BATTS
- 1/2" GWB



FIRST FLOOR MASS WALLS (R-15+)

- BRICK VENEER
- SPRAY INSULATION (R-13+)
- CONCRETE WALL

LEED TARGET

- Registered with LEED 2009 (V3)
- Targeting LEED Silver certification for addition only
- Existing building will not be certified
- Possible upgrade to LEED V4

LEED SCORECARD



LEED 2009 for New Construction and Major Renovation

Project Checklist

STRATFORD MIDDLE SCHOOL

8/4/2016

15 1 7 Sustainable Sites Possible Points: 24

Y	N	?			
Y			Prereq 1	Construction Activity Pollution Prevention	
Y			Prereq 2	Environmental Activity Pollution Prevention	
		1	Credit 1	Site Selection	1
		4	Credit 2	Development Density and Community Connectivity	4
1			Credit 3	Brownfield Redevelopment	1
4			Credit 4.1	Alternative Transportation—Public Transportation Access	4
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
2			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	2
2			Credit 4.4	Alternative Transportation—Parking Capacity	2
		1	Credit 5.1	Site Development—Protect or Restore Habitat	1
1			Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
1			Credit 6.2	Stormwater Design—Quality Control	1
			Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
		1	Credit 8	Light Pollution Reduction	1
		1	Credit 9	Site Master Plan	1
1			Credit 10	Joint Use of Facilities	1

6 2 3 Water Efficiency Possible Points: 11

Y	N	?			
			Prereq 1	Water Use Reduction—20% Reduction	
4			Credit 1	Water Efficient Landscaping	2 to 4
		2	Credit 2	Innovative Wastewater Technologies	2
2		2	Credit 3	Water Use Reduction	2 to 4
		1	Credit 4	Process Water Use Reduction	1

10 23 Energy and Atmosphere Possible Points: 33

Y	N	?			
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
10		9	Credit 1	Optimize Energy Performance	1 to 19
		7	Credit 2	On-Site Renewable Energy	1 to 7
		2	Credit 3	Enhanced Commissioning	2
		1	Credit 4	Enhanced Refrigerant Management	1
		2	Credit 5	Measurement and Verification	2
		2	Credit 6	Green Power	2

6 3 4 Materials and Resources Possible Points: 13

Y	N	?			
Y			Prereq 1	Storage and Collection of Recyclables	
		2	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 2
		1	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1

Materials and Resources, Continued

Y	N	?			
2			Credit 2	Construction Waste Management	1 to 2
		2	Credit 3	Materials Reuse	1 to 2
2			Credit 4	Recycled Content	1 to 2
1		1	Credit 5	Regional Materials	1 to 2
		1	Credit 6	Rapidly Renewable Materials	1
1			Credit 7	Certified Wood	1

11 6 Indoor Environmental Quality Possible Points: 19

Y	N	?			
Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
Y			Prereq 3	Minimum Acoustical Performance	
		1	Credit 1	Outdoor Air Delivery Monitoring	1
		1	Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
1			Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
4			Credit 4	Low-Emitting Materials	1 to 4
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			Credit 7.1	Thermal Comfort—Design	1
1			Credit 7.2	Thermal Comfort—Verification	1
		1	Credit 8.1	Daylight and Views—Daylight	1 to 3
		1	Credit 8.2	Daylight and Views—Views	1
		1	Credit 9	Enhanced Acoustical Performance	1
		1	Credit 10	Mold Prevention	1

6 Innovation and Design Process Possible Points: 6

Y	N	?			
1			Credit 1.1	Innovation in Design: Green Power	1
1			Credit 1.2	Innovation in Design: Exemplary Perf. - Water Reduction	1
1			Credit 1.3	Innovation in Design: Green Cleaning	1
1			Credit 1.4	Innovation in Design: Low-Emitting Furniture	1
1			Credit 2	LEED Accredited Professional	1
1			Credit 3	The School as a Teaching Tool	1

3 1 Regional Priority Credits Possible Points: 4

Y	N	?			
1			Credit 1.1	Regional Priority: Water Use Reduction	1
1			Credit 1.2	Regional Priority: Stormwater Design - Quantity Control	1
1			Credit 1.3	Regional Priority: Construction Waste Management	1
		1	Credit 1.4	Regional Priority: Innovative Wastewater Technologies	1

57 6 44 Total Possible Points: 110

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

Contractor

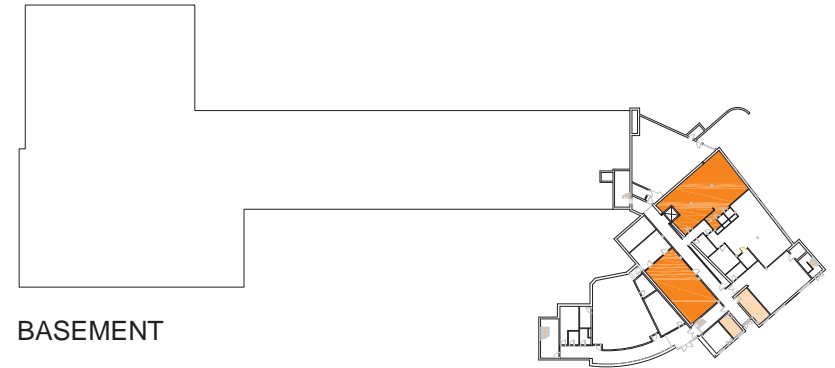
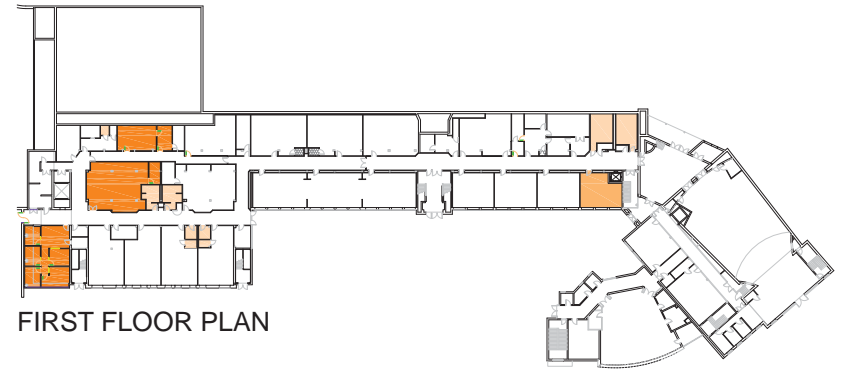
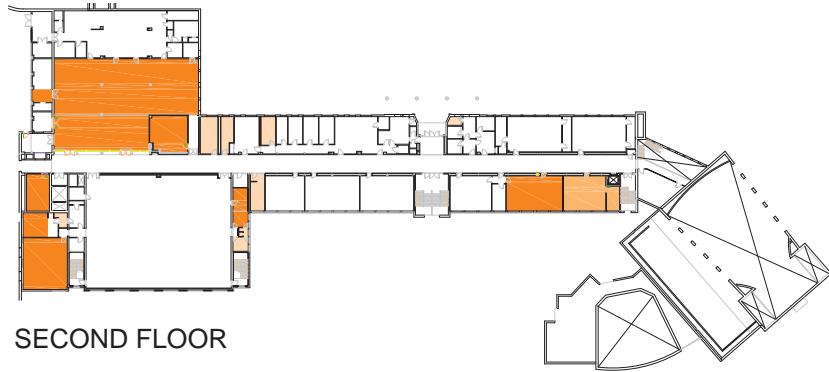
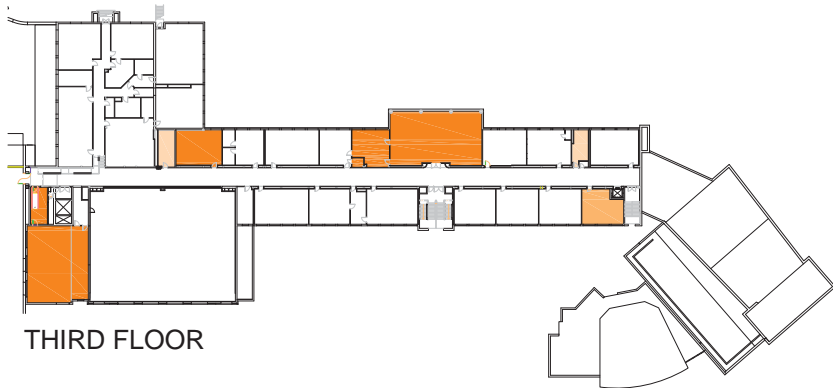
A/E Team

Owner

RENOVATION

- **New elevator at east end of building - increased accessibility**
- **Renovated cafeteria**
- **New teacher collaboration spaces**
- **Conversion of existing Library to Work and Family Life space**
- **Renovating select rooms to meet Neighborhood MS program needs**
- **Replacing ceiling and lighting (to LED) in core classroom as funding allows**
- **Moderate renovations to existing toilet rooms**

RENOVATION



 CHANGE OF PROGRAM

 NEW ELEVATOR

 TOILET RENOVATION

PARKING CALCULATIONS

ARLINGTON COUNTY ZONING

Q: *How many spaces are required?*

EMPLOYEES	134	1 staff parking space per 7.5 students
VISITORS	25	1 visitor parking space per 40 students
PARK USERS	10	Agreement with County Staff to use DPR feedback for park users
TOTAL	169	

Q: *Where are the spaces located?*

A: According to zoning, all parking to be provided on-site

PARKING CALCULATIONS

DATA-BASED TDM ASSUMPTIONS

Q: *How many spaces are required?*

EMPLOYEES	134	Total estimated employees = 153 (124 F/T + 29 P/T based on existing MS staffing levels Average MS staff drive rate from 2013 survey = 92% (141) Additional 5% reduction for TDM = 134
VISITORS	14	Based on maximum number of visitors recorded at Swanson MS at any hour during 2015 APS Neighborhood MS Visitor Survey. Swanson provided most reliable data set of the survey
PARK USERS	10	Based on feedback from DPR.

Q: *Where are the spaces located?*

OFF-SITE	14	To reduce parking on-site, TDG surveyed available on-street parking during school hours and recommended that 14 of total required spaces be accommodated through on-street parking on N. Vacation Lane and 23rd Street.
ON-SITE	144	Total to be provided on-site