Physician's Residence

Historic Structure Report

Design Options and Cost Estimates VI.

A. Introduction of Options and Criteria for Analysis

The following proposed design options are based on the architectural program considerations in the previous chapter. The options are intended to provide a range of treatment solutions for the building. In this way, a variety of potential tenants can begin to understand the opportunities and constraints of how they could occupy the building. It is expected that the options would need to be adjusted and further developed based on the actual requirements of any eventual tenant.

B. Criteria to Analyze Options

This section includes an explanation of various criteria that can be used to evaluate the proposed treatment options. The relative importance and interrelationship of these criteria may vary depending on circumstances not known at the time of this report.

1. **Overall Goals for Related Fairfax County Projects**

   The Physician's Residence is associated with the much larger historic district, which is being planned for redevelopment by Fairfax County. The proposed treatment options should, therefore, be considered in light of their larger context.

2. **Historical Significance of House and Site**

   Each of the treatment options should be judged according to how it impacts the character-defining historic features of the building and site.

3. **Current Condition of House and Site**

   The overall condition of the house is fair with the exception of the poor condition of the sunroom. Delays in implementation of the project will likely necessitate short-term maintenance funds be spent on the building to prevent it from further deterioration.

4. **Range of Possible Uses that Fit House and Site**

   Business office use is being assumed for the building, but no actual tenant has been identified. Once an actual building program is developed, the criteria for judging the options should be revisited to evaluate how well the program will fit given the constraints of the existing structure.

5. **County, State, and National Historic Preservation Standards and Policies**

   Prior to construction, the design for any treatment option will require architectural review and approval as specified in the Memorandum of Agreement (MOA) developed during the transfer of the property from the Federal Government to Fairfax County. *The Secretary of Interior's Standards*, which form the basis for this architectural review, can be found in Chapter IV, Section A of this report.

6. **Funding Amounts and Availability**

   Funding for this project must be sought alongside of other competing priorities, if financed by Fairfax County. Alternate methods of project delivery could include the participation of a private sector developer in conjunction with the adjacent development in the historic district. Available funding will be a key consideration in judging the various treatment options.

B. Criteria to Analyze Options, continued

7. Schedule Considerations

As noted in item 3 above, delays to this project could affect the condition of the building. Any decision on treatment options will need to take this and other schedule considerations into account.

8. Operational Responsibilities

Staffing, maintenance and other operational requirements are beyond the scope of this report but are realities that will need to be considered by whomever takes on the responsibility of running this facility.

C. Site Design Options

The Existing Conditions Site Plan below shows the constraints to inserting more parking on the site. Each of the proposed site options for parking are intended to accomplish the following:

- Avoid impact on front of house
- Avoid widening the driveway to retain residential scale
- Provide handicap accessible route into the rear of the building
- Avoid impact to significant site features
- Preserve access to the existing garage

Each Site Design Option has two alternates that show the impact of different parking counts. These options are labeled A and B, while the parking alternates are labeled 1 and 2. The 11-space parking count shown in Site Design Options A1 and B1 correspond to what is required by Building Design Option 1 (optimal use of building). The 18-space parking count in Site Design Options A2 and B2 corresponds to the requirements of Building Design Option 2 (increased use of building). Refer to Chapter VI, Section D for illustrations of Building Design Options.

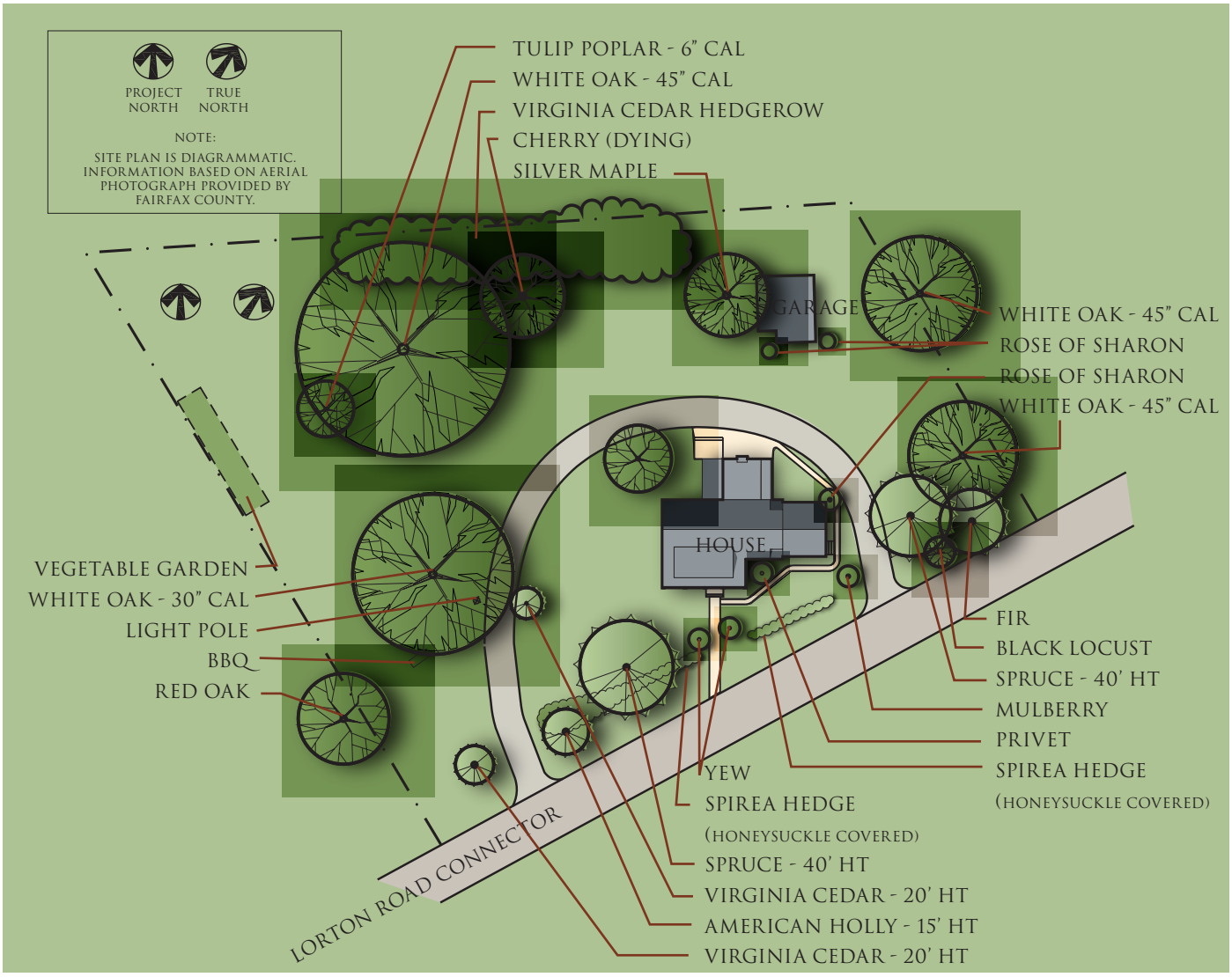

Figure 6.1 The Existing Conditions Site Plan for the Physician's Residence shows a number of mature site trees, other plantings, a loop driveway, walkways, and paved patio spaces.

C. Site Design Options, continued

1. Option A1 (11 Spaces)

- Angled parking along loop with breaks between spaces for planting
- Reduces visual impact of parking
- Requires backing into drive aisle
- Access to garage not impacted
- Located outside of drip line of large white oaks
- All parking located on outside edge of circular drive
- A1 has more space for plantings than A2 due to lower parking count

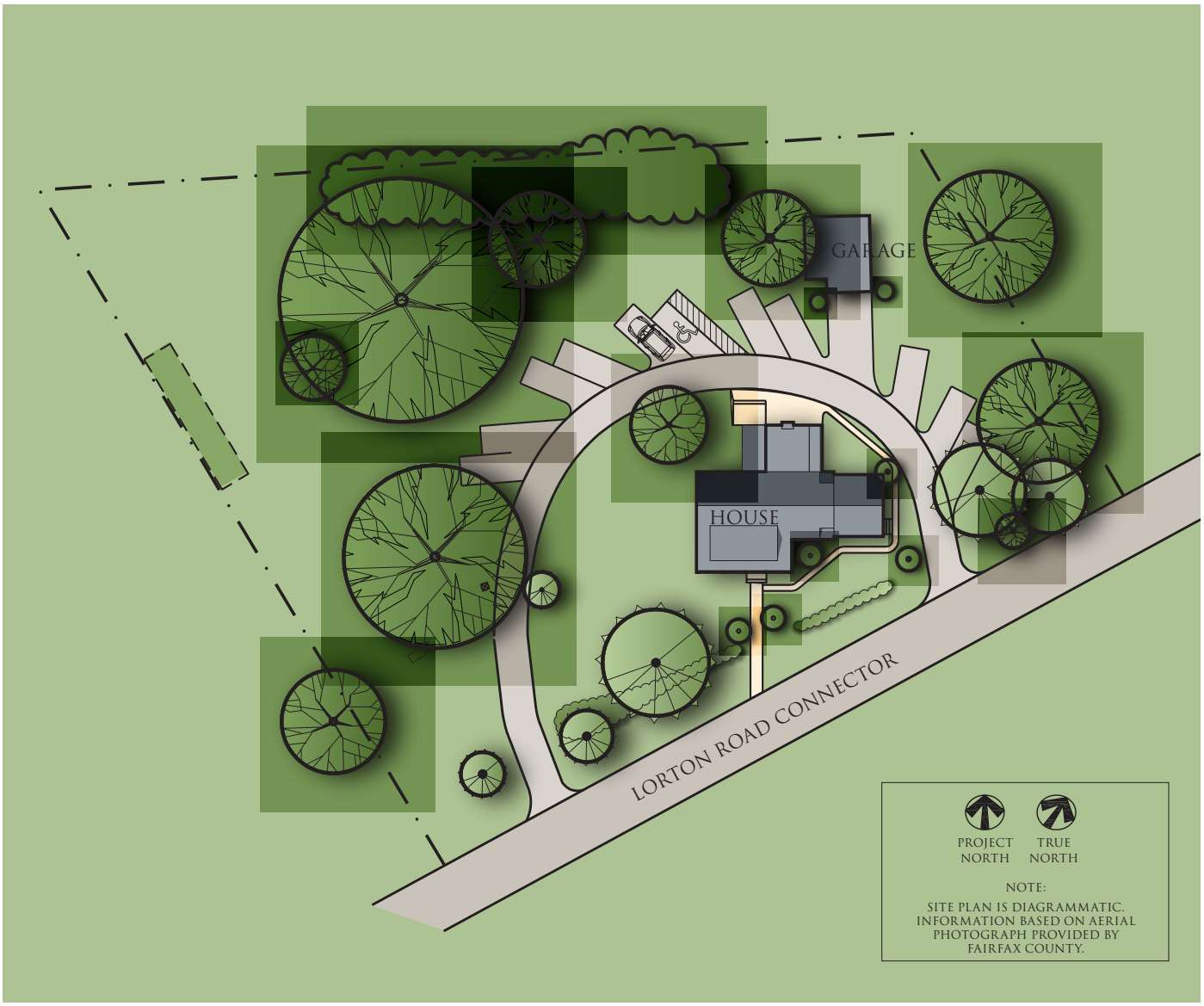

Figure 6.2 Option A1 provides 11 parking spaces located on the outside of the circular driveway. This arrangement provides ample space to screen and shade the parking spaces.

2. Option A2 (18 Spaces)

- Similar in design to Option A1
- Handicap access on house side of driveway eliminates crossing
- Higher parking count allows for more intense use of building

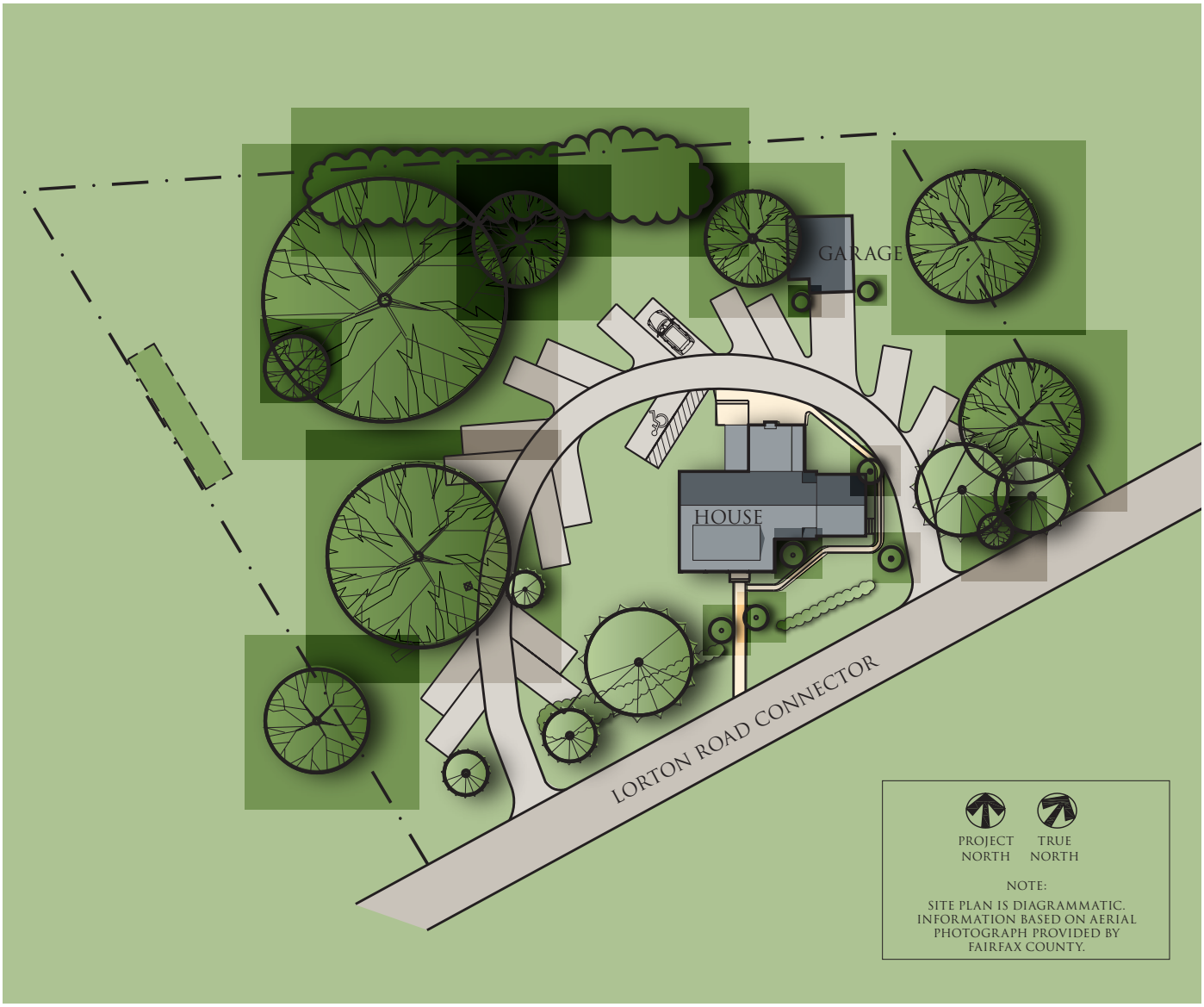

Figure 6.3 Option A2 shows a larger lot to accommodate 18 cars. The open space between spaces should be used to provide screening and shading of the parking area.

C. Site Design Options, continued

3. Option B1 (11 Spaces)

- Parking located to the rear of the house
- All parking located on outside edge of circular drive
- Located outside of drip line of large white oaks
- Large lot bisected by planting area educes visual impact of parking and could serve as bioretention planting area.
- B1 has more space for plantings than B2 due to lower parking count

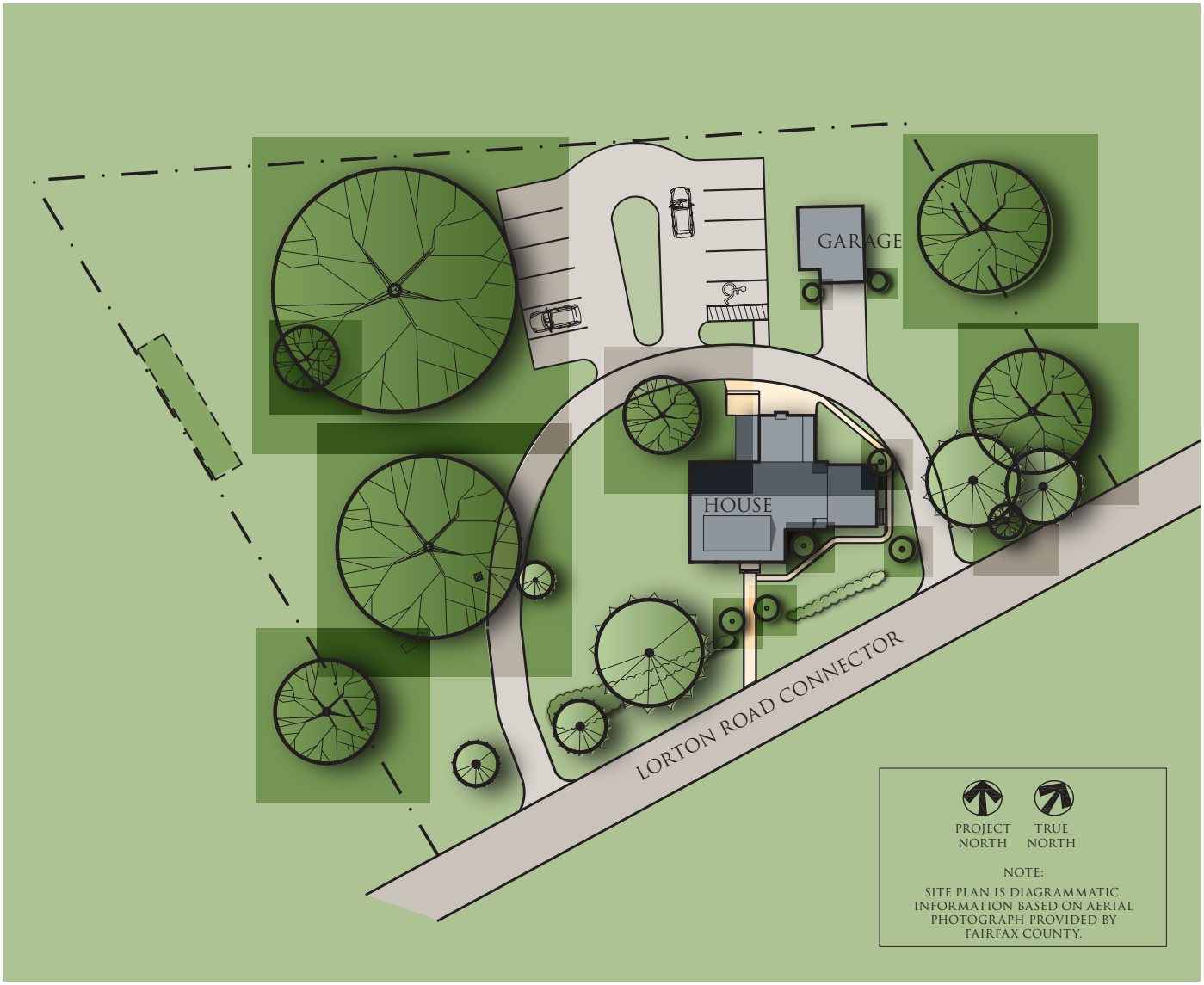

Figure 6.4 Option B1 provides parking for 11 cars. The median and lot edges should be screened to reduce the visual impact from the house and planted to help shade the parking area.

4. Option B2 (18 Spaces)

- Parking located to the rear of the house
- All parking located both within the circular drive (2 spaces - one handicap accessible) and outside of drive
- Located outside of drip line of large white oaks on the western portion of the property
- Garage driveway integrated into one of the parking areas
- Storage area for trucks or pieces of equipment used by tenants extends from parking area

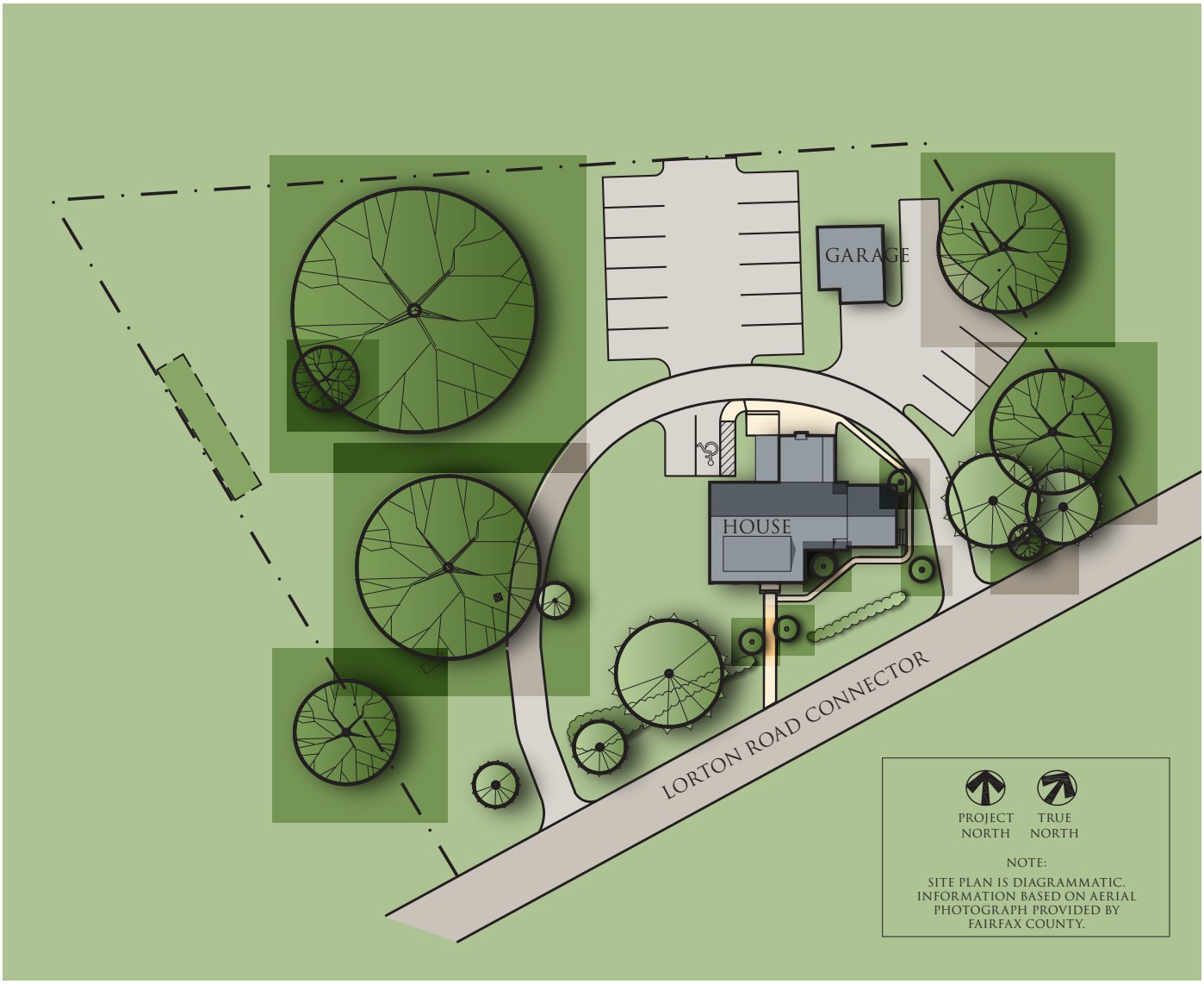

Figure 6.5 Option C2 provides two lots for 18 cars. The edges of both lots should be screened with plantings and the parking surface shaded.

D. Building Design Options

1. Option 1 (Optimal Use of Building)

This option limits the use of the building to the two more highly finished and more accessible levels. The less intensive use of the building translates into a smaller parking lot (as illustrated in Site Design Options in Chapter VI, Section C).

Basement

- Mechanical space only with no usable tenant space
- Locate building systems and run HVAC ducts for first floor

First Floor

- Interior vestibule
- Reduced kitchen size
- New corridor allows office traffic flow to bypass the shared conference room
- Two director-size offices can accommodate two tenants with accessible office needs
- Two large offices can be used as shared offices with four professional-size workstations
- First floor offices/workstations = 2/4

Second Floor

- Five professional-size offices
- Two large offices for directors or four workstations (Offices 6 & 7)
- One office suite with a reception area (Offices 4 & 5)
- Second floor offices/workstations = 7/9

Attic

- Not recommended for occupancy
- Ceiling height not adequate
- Would make good location for new HVAC for second floor

a. Basement Floor Plan – Option 1

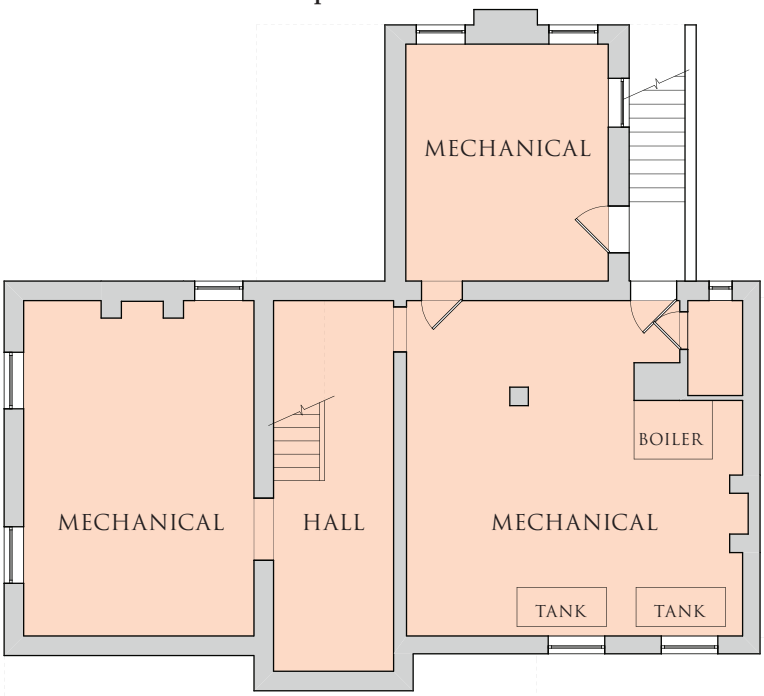

Figure 6.6 In Option 1, the Basement will be used as mechanical space.

b. First Floor Plan – Option 1

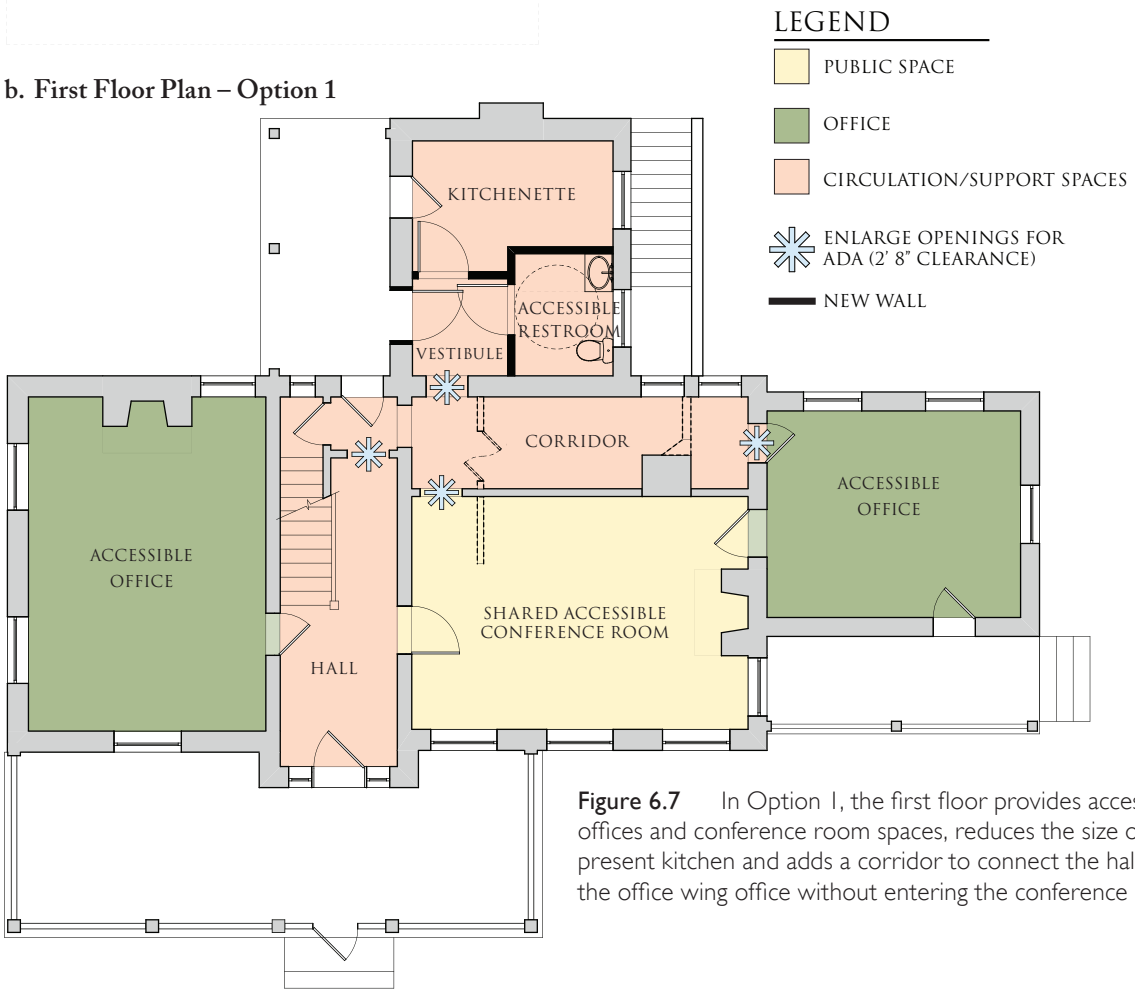

Figure 6.7 In Option 1, the first floor provides accessible offices and conference room spaces, reduces the size of the present kitchen and adds a corridor to connect the hall to the office wing office without entering the conference room.

D. Building Design Options

1. Option 1, continued

c. Second Floor Plan – Option 1

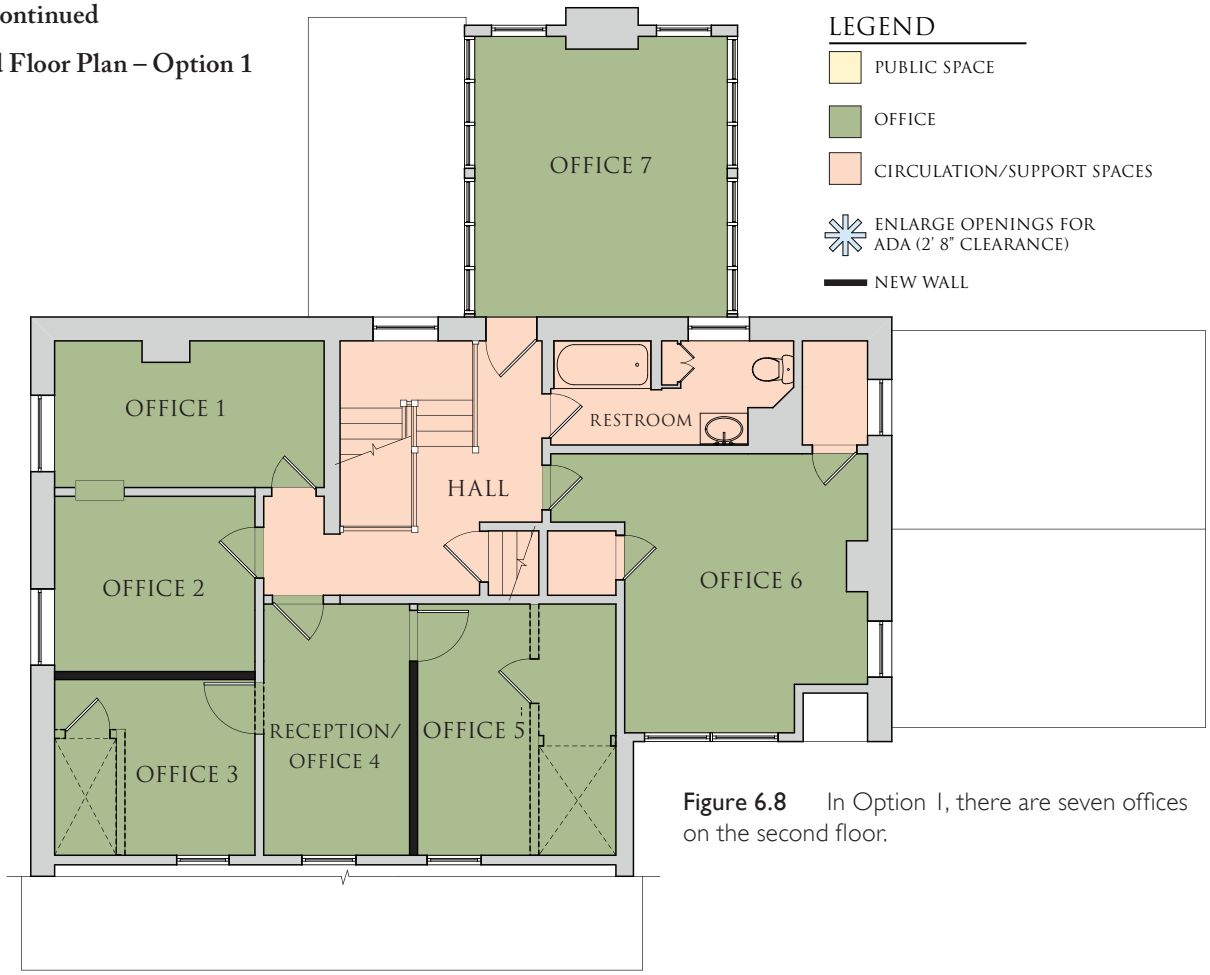

Figure 6.8 In Option 1, there are seven offices on the second floor.

d. Attic Floor Plan – Option 1

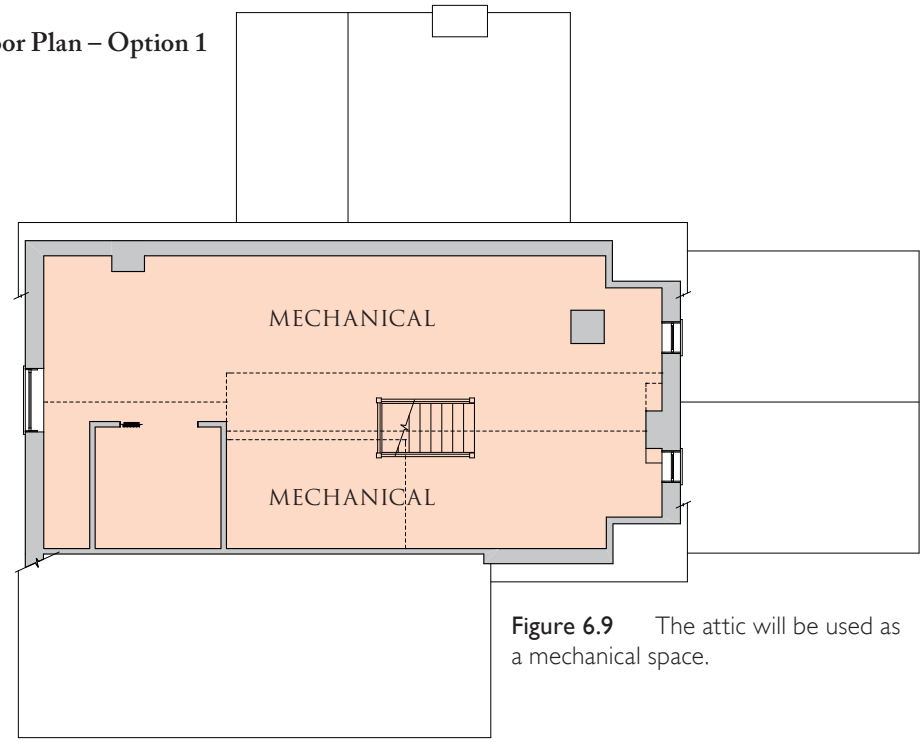

Figure 6.9 The attic will be used as a mechanical space.

e. South Elevation - Option 1

Figure 6.10 For all options, the south elevation is returned to its original appearance by the removal of screening from the front porch and replacement of the office door.

f. North Elevation - Option 1

Figure 6.11 In this north elevation view, the sunroom has been removed, the kitchen chimney reduced to its original height, and the living room chimney rebuilt.

g. West Elevation - Option 1

Figure 6.12 In this west elevation view, all chimneys are restored to their original height, the screening removed from the front porch and a lunette attic louvered vent installed.

D. Building Design Options

2. Option 2 (Increased Use of Building)

This option extends the use of the building into the more marginal areas of the attic and basement. The more intensive use of the building translates into a larger parking lot (as illustrated in Site Design Options in Chapter VI, Section C).

Basement

- Separate exterior entrances can help accommodate a separate tenant
- Limited ceiling height of 7'-0" to 7'-5"
- Uneven floors due to floor drains
- Two large offices for directors or five professional-size workstations
- Basement offices/workstations = 2/5

First Floor

- Exterior vestibule
- Kitchen maintains existing footprint
- Shared accessible reception area and shared accessible conference room
- One accessible office
- Reception area could also serve as shared copy room
- Office can be used for director or split into two professional offices
- First floor offices/workstations = 1/2

Second Floor - Option A (reflected in Cost Estimate)

- Sunroom removed
- Storage beneath gable roof in current sunroom area
- Two medium-size offices for professional staff
- Two large offices for directors or four workstations
- Second floor offices/workstations = 4/6

Second Floor - Option B (NOT reflected in Cost Estimate)

- Conference room in sunroom
- Shared copy room
- Three large offices for directors or six workstations
- Second floor offices/workstations = 3/6

Attic

While the ceiling height is below what is required by code (6'-10" at its high point), exit signs in the attic indicate that it was occupied in the past. Use of the space may be "grandfathered" since no change of use is proposed (dependent on the code official's interpretation).

Depending on the code official's interpretation, occupancy of the attic may require a second egress beyond the existing single stair. This could be provided in the form of a fire escape on the rear of the building, but would likely have a negative impact on the historic character of the building.

- Attic offices/workstations = 2/4

a. Basement Floor Plan – Option 2

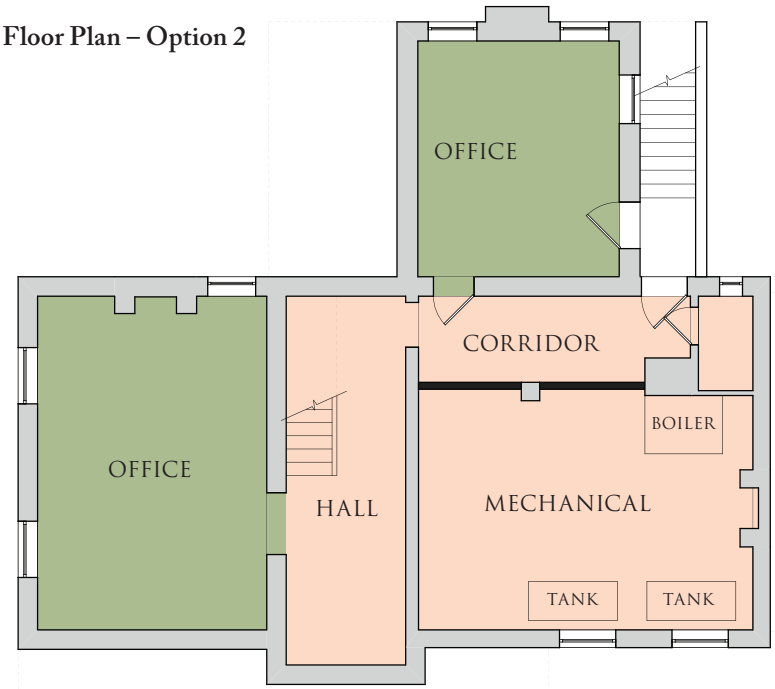

Figure 6.13 In Option 2, offices share the basement with mechanical space.

b. First Floor Plan – Option 2

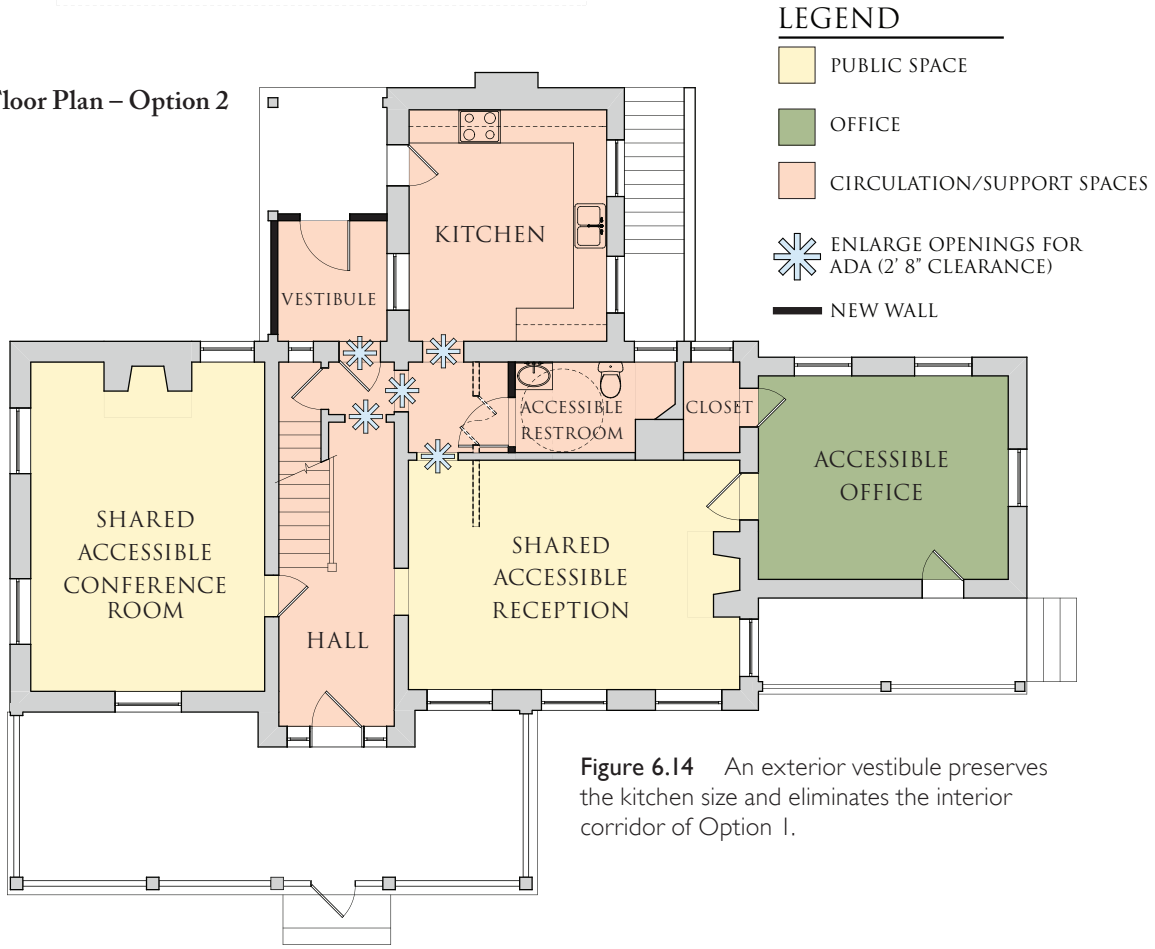

Figure 6.14 An exterior vestibule preserves the kitchen size and eliminates the interior corridor of Option 1.

D. Building Design Options

2. Option 2 (Increased Use of Building)

c. Second Floor Plan – Option 2A

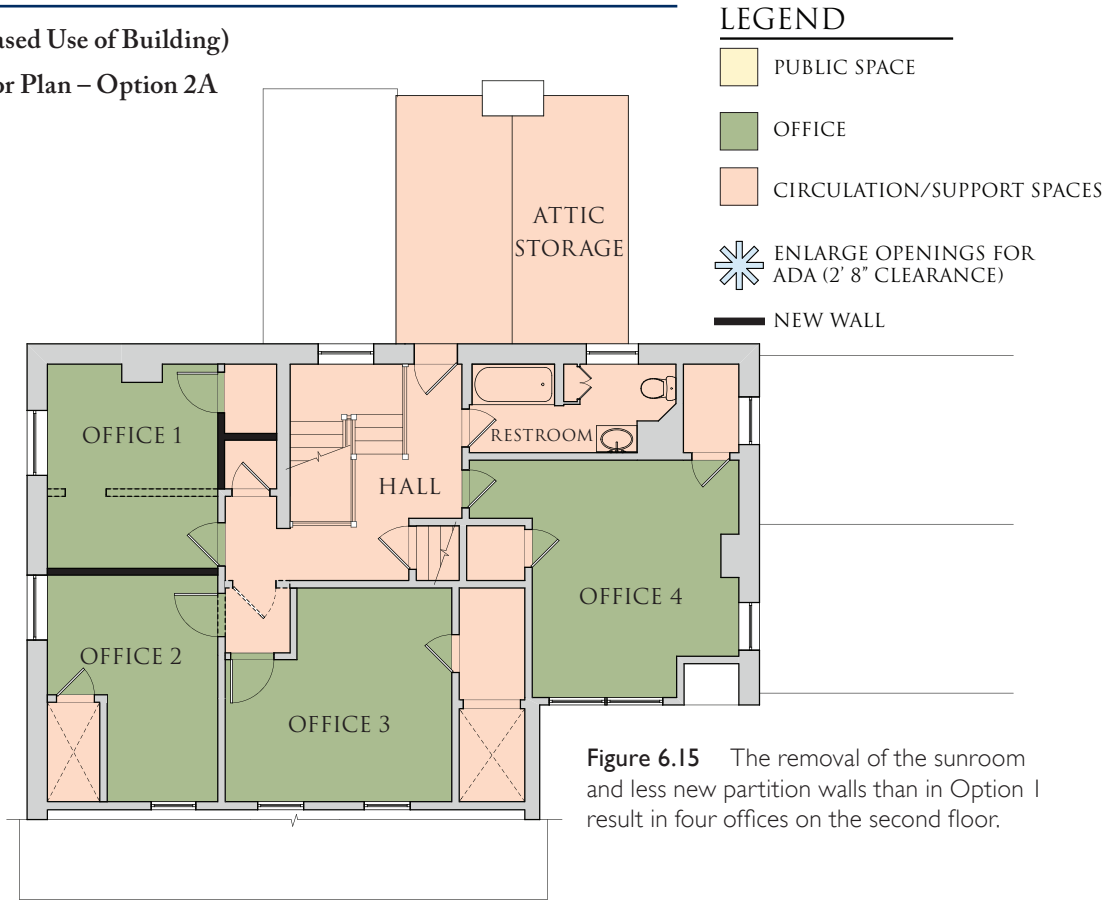

Figure 6.15 The removal of the sunroom and less new partition walls than in Option 1 result in four offices on the second floor.

d. Second Floor Plan – Option 2B

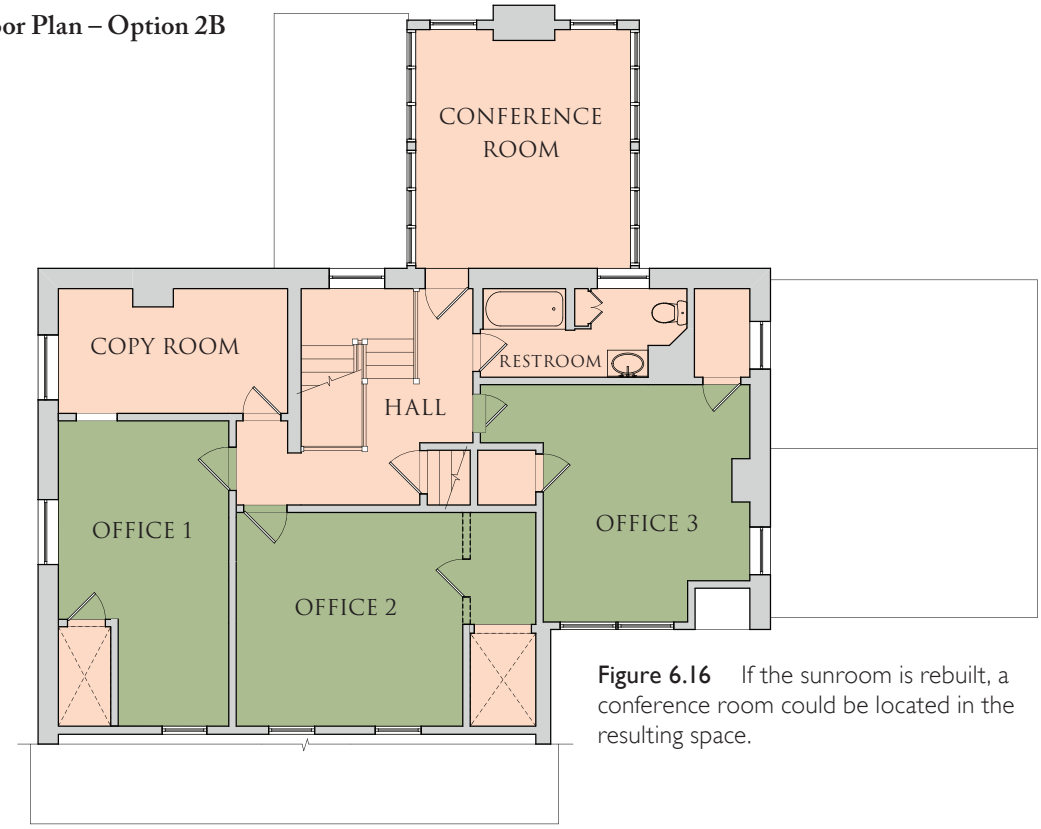

Figure 6.16 If the sunroom is rebuilt, a conference room could be located in the resulting space.

e. Attic Floor Plan – Option 2

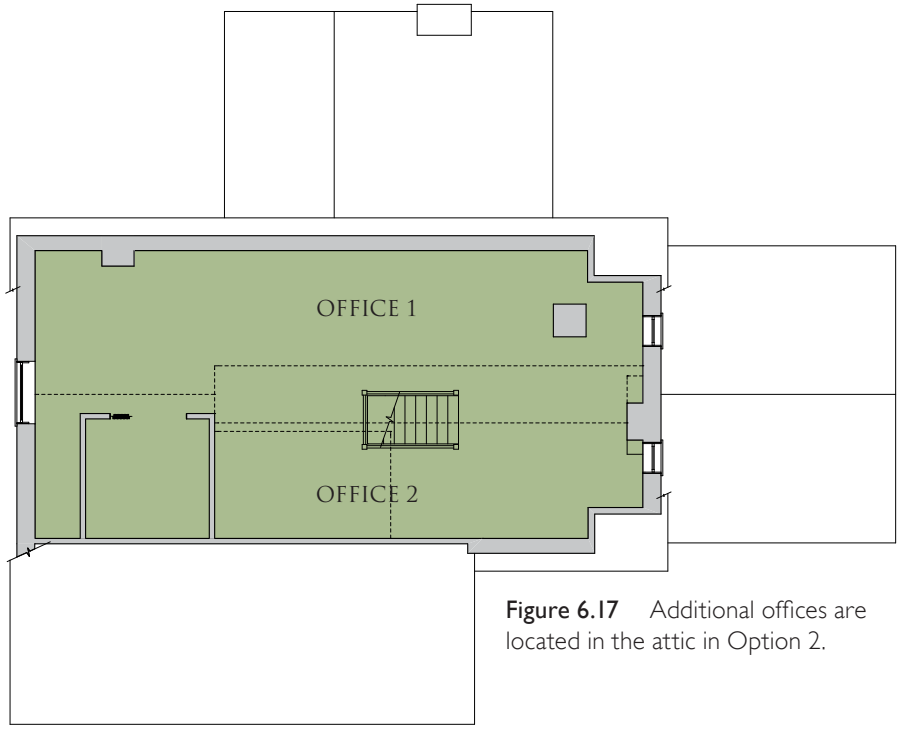

Figure 6.17 Additional offices are located in the attic in Option 2.

D. Building Design Options

2. Option 2, continued

f. South Elevation - Option 2A and 2B

Figure 6.18 For all options, the south elevation is returned to its original appearance by the removal of screening from the front porch and replacement of the office door.

g. North Elevation Exterior Vestibule - Option 2A

Figure 6.19 The elevation coordinates with plan in Figure 6.15. Note: this view shows the gable roof over the kitchen ell as it may have been constructed originally.

h. North Elevation Exterior Vestibule - Option 2B

Figure 6.20 This elevation coordinates with plan in Figure 6.16. Note: this view shows the reconstructed sunroom and details on the exterior vestibule that repeat those found on the sunroom walls.

i. West Elevation Exterior Vestibule - Option 2A

Figure 6.21 This elevation coordinates with plan in Figure 6-14. Note: this view shows Colonial Revival inspired paneled wainscot below the glazed area and the sunroom removed.

j. West Elevation Exterior Vestibule - Option 2B

Figure 6.22 Option 2B replaces the paneled wainscot with details shown in Figure 6.21 to coordinate the exterior vestibule with the sunroom.

D. Building Design Options

3. Building Options – Comparative Analysis

a. Option 1 (Optimal Use of Building)

- Pros: more manageable scope and cost; avoids attic and basement spaces which have low ceilings that greatly reduce their desirability; fewer parking spaces reduce impact on desirable characteristics of the site.
- Con: smaller usable space may limit the use of the building.
- Total number of offices/workstations = 9/13
- Number of parking spaces = 11

b. Option 2 (Increased Use of Building)

- Pros: may accommodate more uses into the building, lower square foot cost.
- Con: higher overall project cost, more impact on desirable characteristics of the site.
- Total number of offices/workstations = 9/17
- Number of parking spaces = 18

c. Space Utilization Summary – Office/Workstation Totals

- Uses director and professional-size offices only
- More offices possible with lower staff positions, occupancy permits more
- Maximizing number of offices/workstations requires mixing floor plans

E. Explanation of Cost Estimates

It is recognized that neither the Architect nor the Owner has control over the cost of labor, materials or equipment, over the Contractor's methods of determining bid prices, or over competitive bidding, market or negotiating conditions. Accordingly, the Architect cannot and does not warrant or represent that bids or negotiated prices will not vary from any estimate of Construction Cost or evaluation prepared or agreed to by the Architect.

- Unit prices, provided by suppliers, subcontractors, and past experience, reflect standard construction methods and materials. Prices include overhead and profit.
- This estimate is based on this report and drawings dated April 2009.
- These costs are based on a midpoint of construction of April 2011. Escalation estimates due to inflation and market conditions are speculative and unpredictable and should be re-evaluated on a quarterly basis, or more frequently in an unstable market. An escalation of 3.5% for two years is included in the estimates. If the time between the date of this report and the midpoint of construction is substantially more than two years, the estimate should be adjusted to reflect current market costs.
- A design and construction contingency of 15% is included in this estimate. A design contingency in the Schematic Design phase of a project allows for variations in the costs of details and design changes or scope increases.
- Similar rehabilitation projects typically have associated A/E fees of 15-20%. These fees include architecture, landscape architecture and typical engineering disciplines. For this project, the A/E cost could also include consultants in archaeology, materials conservation, hazardous materials testing, abatement design and monitoring, therefore, the high end of the range (20%) is used as the A/E cost in the treatment option cost estimates. This percentage does not include other soft costs such as project financing, legal fees or other administrative costs.
- Furthermore, Fairfax County's experience in undertaking similar projects has resulted in square foot costs even higher than these estimates for some similar projects due to the specialized nature of historic preservation and the shortage of qualified and experienced contractors in the area.
- Furnishings and non-fixed items are not included in this cost estimate.

F. Cost Estimates

1. OPTION 1 (Optimal Use of Building)

Item	Quantity	Unit	Unit Cost	Cost
DIVISION 1 - GENERAL CONDITIONS				
GENERAL CONDITIONS				$48,760
GENERAL CONTRACTOR FEE				$62,000
DIVISION 2 - SITE WORK/DEMO				
SELECTIVE DEMOLITION	2900.0	SF	4.00	$11,600
HAZARDOUS MAT. ALLOWANCE	1.0	LS	10000.00	$10,000
FOUNDATION EXCAVATION	100.0	CY	14.00	$1,400
NEW PARKING	3600.0	SF	7.00	$25,200
IMPROVEMENTS TO ENTRANCE DR.	1.0	LS	5000.00	$5,000
LANDSCAPING	1.0	LS	5500.00	$5,500
SIDEWALKS	1.0	LS	5000.00	$5,000
REPAIR BARBEQUE PIT	1.0	LS	2500.00	$2,500
DIVISION 3 - CONCRETE (NOT USED)				
DIVISION 4 -MASONRY				
MASONRY OPENINGS FOR ADA	1.0	LS	7500.00	$7,500
REBUILD CHIMNEYS	18.0	VLF	450.00	$8,100
CLEAN BUILDING EXTERIOR	2600.0	SF	1.50	$3,900
REPAIR WINDOW WELLS	6.0	EA	400.00	$2,400
DIVISION 5 - METALS (NOT USED)				
DIVISION 6 - CARPENTRY				
BASEMENT STAIRS	1.0	LS	2500.00	$2,500
STRUCT. REINFORCEMENT OF FLOORS	1.0	LS	10000.00	$10,000
REBUILD PORCHES	550.0	SF	125.00	$68,750
REBUILD SUNROOM	220.0	SF	225.00	$49,500
NEW KITCHENETTE	85.0	SF	100.00	$8,500
DIVISION 7 - THERMAL AND MOISTURE PROTECTION				
ARCHITECTURAL SHINGLE ROOF	1750.0	SF	2.50	$4,375
SIDING - SHED DORMER	150.0	SF	15.00	$2,250
INSULATION	1400.0	SF	1.50	$2,100
GUTTERS & DOWNSPOUTS	250.0	LF	15.00	$3,750
FOUNDATION DRAINAGE/WTRPRF	720.0	SF	7.00	$5,040
SUBTOTAL THIS SHEET				
				$355,625

Item	Quantity	Unit	Unit Cost	Cost
DIVISION 8 - DOORS AND WINDOWS				
DOOR FRAMES	4.0	EA	350.00	$1,400
HARDWARE	22.0	EA	400.00	$8,800
NEW DOORS	4.0	EA	800.00	$3,200
REPAIR EXIST DOORS	18.0	EA	250.00	$4,500
WINDOW REPAIR	27.0	EA	500.00	$13,500
STORM WINDOWS	27.0	EA	150.00	$4,050
DIVISION 9 - FINISHES				
NEW PARTITION	500.0	SF	8.00	$4,000
PAINT INTERIOR	2900.0	SF	4.50	$13,050
TRIM	1000.0	LF	12.00	$12,000
PAINT TRIM	1000.0	LF	4.50	$4,500
WOOD FLOOR - REFINISH	2650.0	SF	3.00	$7,950
WOOD FLOOR - REPAIR	100.0	SF	12.00	$1,200
REPAIR PLASTER CEILING	2900.0	SF	6.00	$17,400
REPAIR PLASTER WALL	2900.0	SF	8.00	$23,200
CERAMIC TILE	250.0	SF	12.00	$3,000
DIVISION 10 - SPECIALTIES				
INTERIOR SIGNAGE	20.00	EA	25.00	$500
FIRE EXTINGUISHERS	2.00	EA	150.00	$300
DIVISION 11 - EQUIPMENT (NOT USED)				
DIVISION 12 - FURNISHINGS (NOT USED)				
DIVISION 13 - SPECIAL CONSTRUCTION (NOT USED)				
DIVISION 14 - CONVEYING SYSTEMS (NOT USED)				
DIVISION 15 - MECHANICAL				
PLUMBING	2900.0	SF	5.00	$14,500
SEWER SYSTEM (ALLOWANCE)	1.0	LS	50,000.00	$50,000
WATER SERVICE (ALLOWANCE)	1.0	LS	5,000.00	$5,000
HVAC	2900.0	SF	18.00	$52,200
DIVISION 16 - ELECTRICAL				
SERVICE AND DISTR.	2900.0	SF	5.00	$14,500
LIGHTING/WIRING	2900.0	SF	11.00	$31,900
COMM/SECURITY	2900.0	SF	6.00	$17,400
CONSTRUCTION COST (SUBTOTAL)				***$663,675***
CONTINGENCY @ 15%				$99,551
CONSTRUCTION COST (SUBTOTAL)				***$763,226***
ESCALATION (2 YEARS - 7%)				$53,426
CONSTRUCTION COST (TOTAL)				**$816,652**
CONSTRUCTION COST/SF (2900 SF)				$282
A/E FEES (20%) *does not include financing, legal and administrative costs - see page 95*				$204,163
PROJECT (HARD + SOFT) COST				**$1,020,815**
PROJECT COST/SQUARE FOOT				$352

F. Cost Estimates

2. OPTION 2 (Increased Use of Building)

Item	Quantity	Unit	Unit Cost	Cost
DIVISION 1 - GENERAL CONDITIONS				
GENERAL CONDITIONS				$62,200
GENERAL CONTRACTOR FEE				$79,000
DIVISION 2 - SITE WORK/DEMO				
BUILDING DEMOLITION	220.0	SF	7.00	$1,540
SELECTIVE DEMOLITION	5000.0	SF	4.00	$20,000
HAZARDOUS MAT. ALLOWANCE	1.0	LS	10000.00	$10,000
FOUNDATION EXCAVATION	250.0	CY	14.00	$3,500
NEW PARKING	5500.0	SF	7.00	$38,500
IMPROVEMENTS TO ENTRANCE DR.	1.0	LS	5000.00	$5,000
LANDSCAPING	1.0	LS	5500.00	$5,500
SIDEWALKS	1.0	LS	5000.00	$5,000
REPAIR BARBEQUE PIT	1.0	LS	2500.00	$2,500
DIVISION 3 - CONCRETE (NOT USED)				
DIVISION 4 -MASONRY				
MASONRY OPENINGS FOR ADA	1.0	LS	7500.00	$7,500
REBUILD CHIMNEYS	18.0	VLF	450.00	$8,100
CLEAN BUILDING EXTERIOR	2600.0	SF	1.50	$3,900
REPAIR WINDOW WELLS	6.0	EA	400.00	$2,400
DIVISION 5 - METALS (NOT USED)				
DIVISION 6 - CARPENTRY				
BASEMENT STAIRS	1.0	LS	2500.00	$2,500
STRUCT. REINFORCEMENT OF FLOORS	1.0	LS	10000.00	$10,000
GABLE ROOF	220.0	SF	20.00	$4,400
REBUILD PORCHES	550.0	SF	125.00	$68,750
VESTIBULE	55.0	SF	225.00	$12,375
NEW KITCHEN	165.0	SF	100.00	$16,500
DIVISION 7 - THERMAL AND MOISTURE PROTECTION				
ARCHITECTURAL SHINGLE ROOF	1750.0	SF	2.50	$4,375
SIDING - SHED DORMER	150.0	SF	15.00	$2,250
INSULATION	1400.00	SF	1.50	$2,100
GUTTERS & DOWNSPOUTS	250.0	LF	15.00	$3,750
FOUNDATION DRAINAGE/WTRPRF	1640.0	SF	10.00	$16,400
SUBTOTAL THIS SHEET				**$398,040**

Item	Quantity	Unit	Unit Cost	Cost
DIVISION 8 - DOORS AND WINDOWS				
DOOR FRAMES	8.0	EA	350.00	$2,800
HARDWARE	26.0	EA	400.00	$10,400
NEW DOORS	8.0	EA	800.00	$6,400
REPAIR EXIST DOORS	18.0	EA	250.00	$4,500
WINDOW REPAIR	27.0	EA	500.00	$13,500
STORM WINDOWS	27.0	EA	150.00	$4,050
DIVISION 9 - FINISHES				
NEW PARTITION	1000.0	SF	8.00	$8,000
PAINT INTERIOR	5000.0	SF	4.50	$22,500
NEW TRIM	1500.0	LF	12.00	$18,000
PAINT NEW TRIM	1000.0	LF	4.50	$4,500
WOOD FLOOR - REFINISH	2650.0	SF	3.00	$7,950
WOOD FLOOR - REPAIR	100.0	SF	12.00	$1,200
BASEMENT AND ATTIC FLOOR FINISH	2100.0	SF	4.00	$8,400
REPAIR PLASTER CEILING	2900.0	SF	6.00	$17,400
GYPSUM BOARD CEILING	2100.0	SF	4.00	$8,400
REPAIR PLASTER WALL	2900.0	SF	8.00	$23,200
CERAMIC TILE	250.0	SF	12.00	$3,000
DIVISION 10 - SPECIALTIES				
INTERIOR SIGNAGE	20.00	EA	25.00	$500
FIRE EXTINGUISHERS	2.00	EA	150.00	$300
DIVISION 11 - EQUIPMENT (NOT USED)				
DIVISION 12 - FURNISHINGS (NOT USED)				
DIVISION 13 - SPECIAL CONSTRUCTION (NOT USED)				
DIVISION 14 - CONVEYING SYSTEMS (NOT USED)				
DIVISION 15 - MECHANICAL				
PLUMBING	2900.0	SF	5.00	$14,500
SEWER SYSTEM (ALLOWANCE)	1.00	LS	50,000.00	$50,000
WATER SERVICE (ALLOWANCE)	1.00	LS	5,000.00	$5,000
HVAC	5000.0	SF	18.00	$90,000
DIVISION 16 - ELECTRICAL				
SERVICE AND DISTR.	5000.0	SF	5.00	$25,000
LIGHTING/WIRING	5000.0	SF	11.00	$55,000
COMM/SECURITY	5000.0	SF	6.00	$30,000
CONSTRUCTION COST (SUBTOTAL)				***$832,540***
CONTINGENCY @ 15%				$124,881
CONSTRUCTION COST (SUBTOTAL)				***$957,421***
ESCALATION (2 YEARS - 7%)				$67,019
CONSTRUCTION COST (TOTAL)				**$1,024,440**
CONSTRUCTION COST/SF (5000 SF)				$205
A/E FEES (20%) *does not include financing, legal and administrative costs - see page 95*				$204,888
PROJECT (HARD + SOFT) COST				**$1,229,328**
PROJECT COST/SQUARE FOOT				$246