

Studies / Building Evaluation for the Lexington Fire Headquarters

Presentation to: Town of Lexington, MA

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GROUP**

Infrastructure for the real world





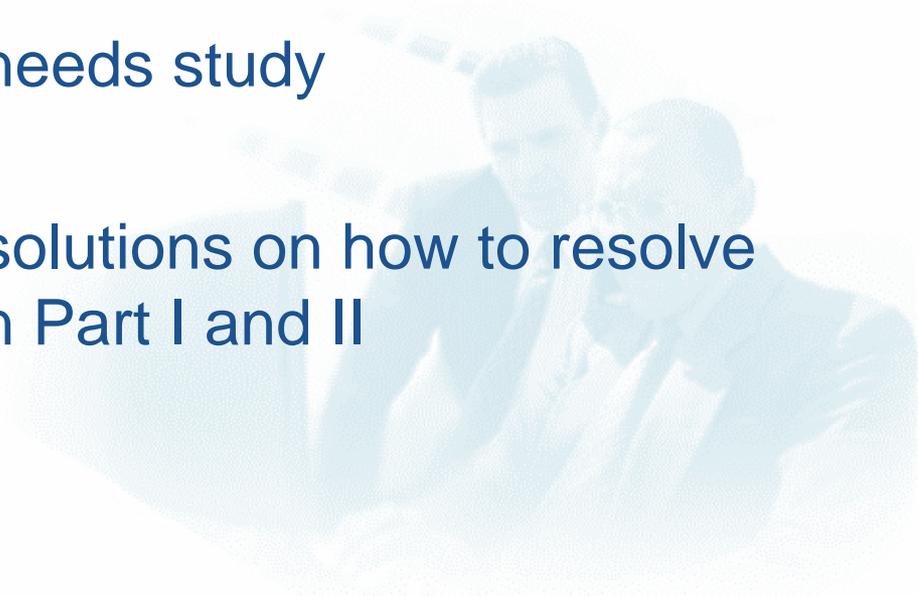
- Founded in 1938
- Has grown to include 11 offices in 7 states plus USVI with +210 employees
- Specialize in Public Safety Facilities
- Nearly 90% repeat business
- Award-winning services

Lexington FD Feasibility Study

Architects/Engineers/Planners

Maguire Group was commissioned to perform a comprehensive building evaluation of the Lexington Fire Headquarters

- Part I - Evaluate the condition of the existing facility
- Part II - Perform a space needs study
- Part III - Provide possible solutions on how to resolve issues identified in Part I and II



Existing Conditions -

- Civil
- Architectural
 - Life Safety and Code Compliance
 - Building Accessibility
 - Waterproofing Systems
 - Integrity of Doors, Windows and Exterior Walls
 - Interior Finishes
- Structural
- Mechanical
- Plumbing/Fire Protection
- Electrical
- Hazardous Materials



Part I – Building Assessment Civil

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Part I – Building Assessment Architectural

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Part I – Building Assessment Structural

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Part I – Building Assessment Mechanical

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Part I – Building Assessment Plumbing

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Part I – Building Assessment Electrical

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Part I – Building Assessment Hazardous Materials

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Part II – Space Needs Study

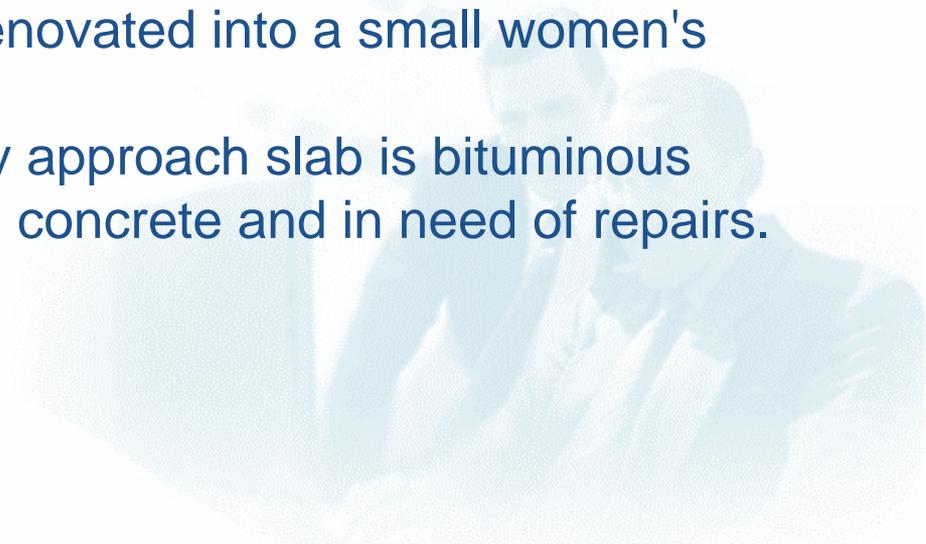
Architects/Engineers/Planners

- The overhead apparatus bay doors are too narrow and low.
- The width and depth of the apparatus bay are too narrow and shallow for today's larger vehicles.
- The apparatus bay cannot accommodate all of the stations vehicles.
- The Administrative area is insufficiently sized.
- The current stations circulation is convoluted.
- Due to lack of dedicated storage spaces, a lot of the apparatus bay is being utilized by storage of equipment or fitness equipment.
- Gear storage is occupying valuable apparatus space.
- Only one diminutive toilet room is located within the apparatus bay.
- There are no public toilet rooms.
- Breathing air tanks are currently filled within the apparatus bay.
- The facility does not have a decontamination area.

Part II – Space Needs Study

Architects/Engineers/Planners

- There is no oil/sand interceptor for the apparatus bay.
- There is no dedicated laundry area, and no washer extractor for gear washing.
- Fire fighters living quarters, dormitories, kitchen... are all undersized.
- The existing second floor male toilet room is the original construction and in need of upgrade.
- There is no janitors closet on the second floor. The original janitor's closet has been renovated into a small women's room.
- The existing apparatus bay approach slab is bituminous concrete and not structural concrete and in need of repairs.



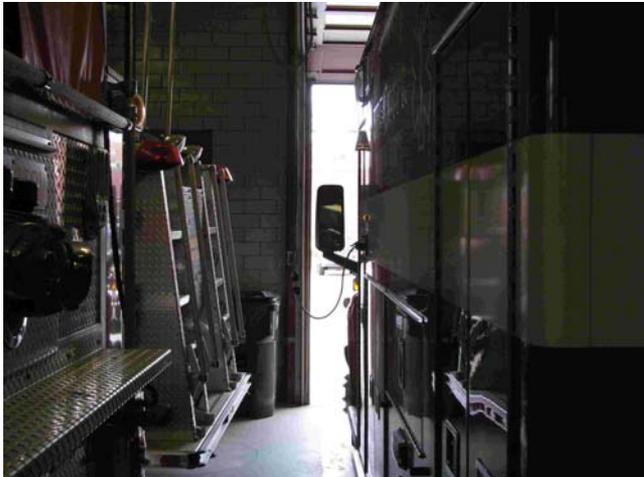
Part II – Space Needs Study

Architects/Engineers/Planners

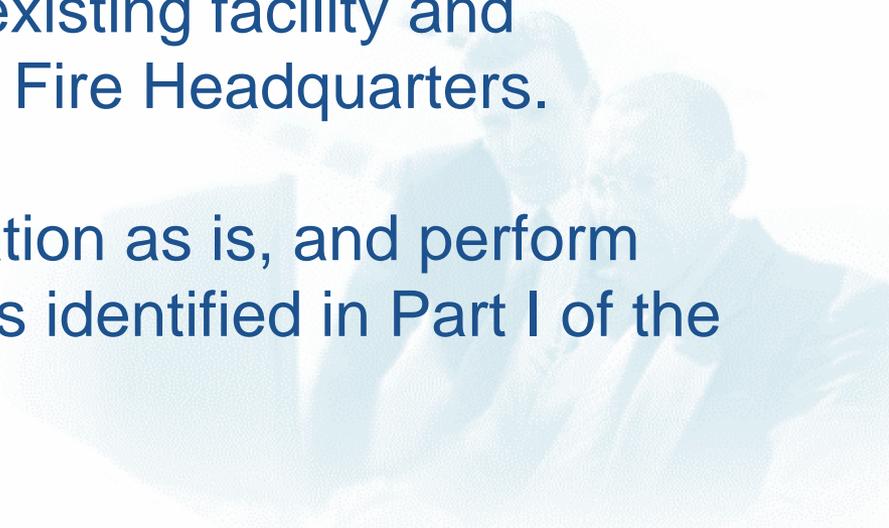


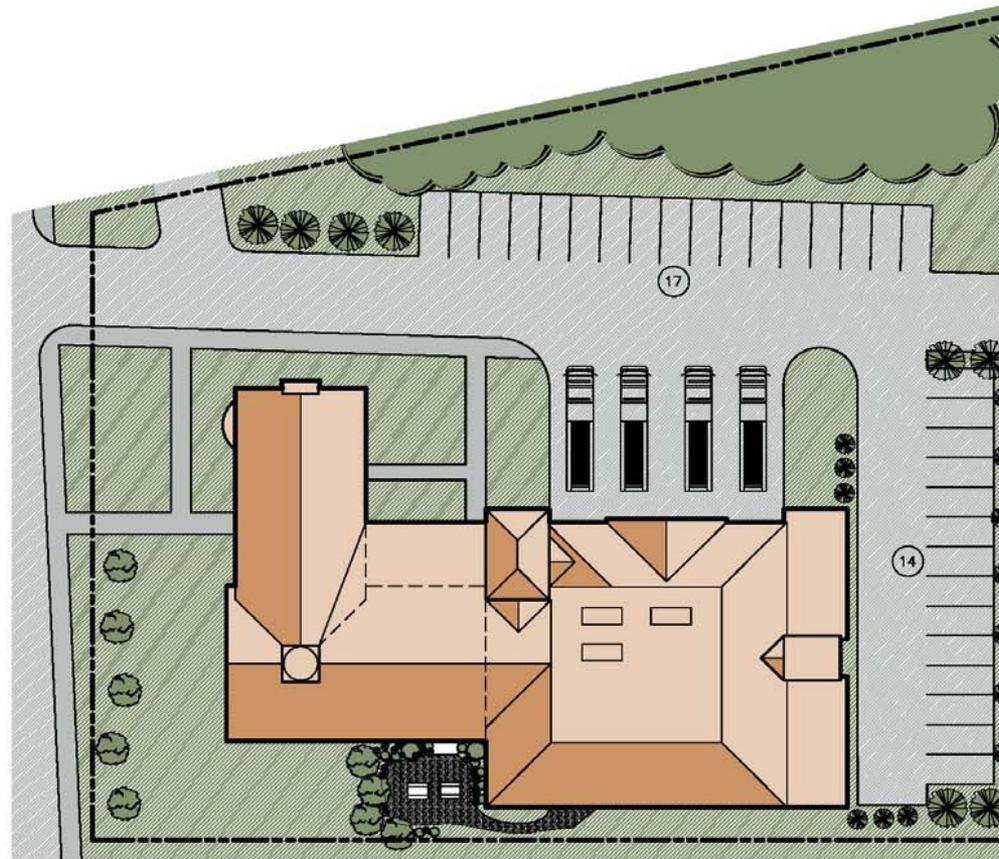
Part II – Space Needs Study

Architects/Engineers/Planners



Based on the evaluation the options available to the Town of Lexington are:

- Option A – Construct an apparatus addition to the rear of the existing facility.
 - Option B – Tear down the existing facility and construct a new Fire Headquarters.
 - Option C – Maintain the station as is, and perform the modifications identified in Part I of the report.
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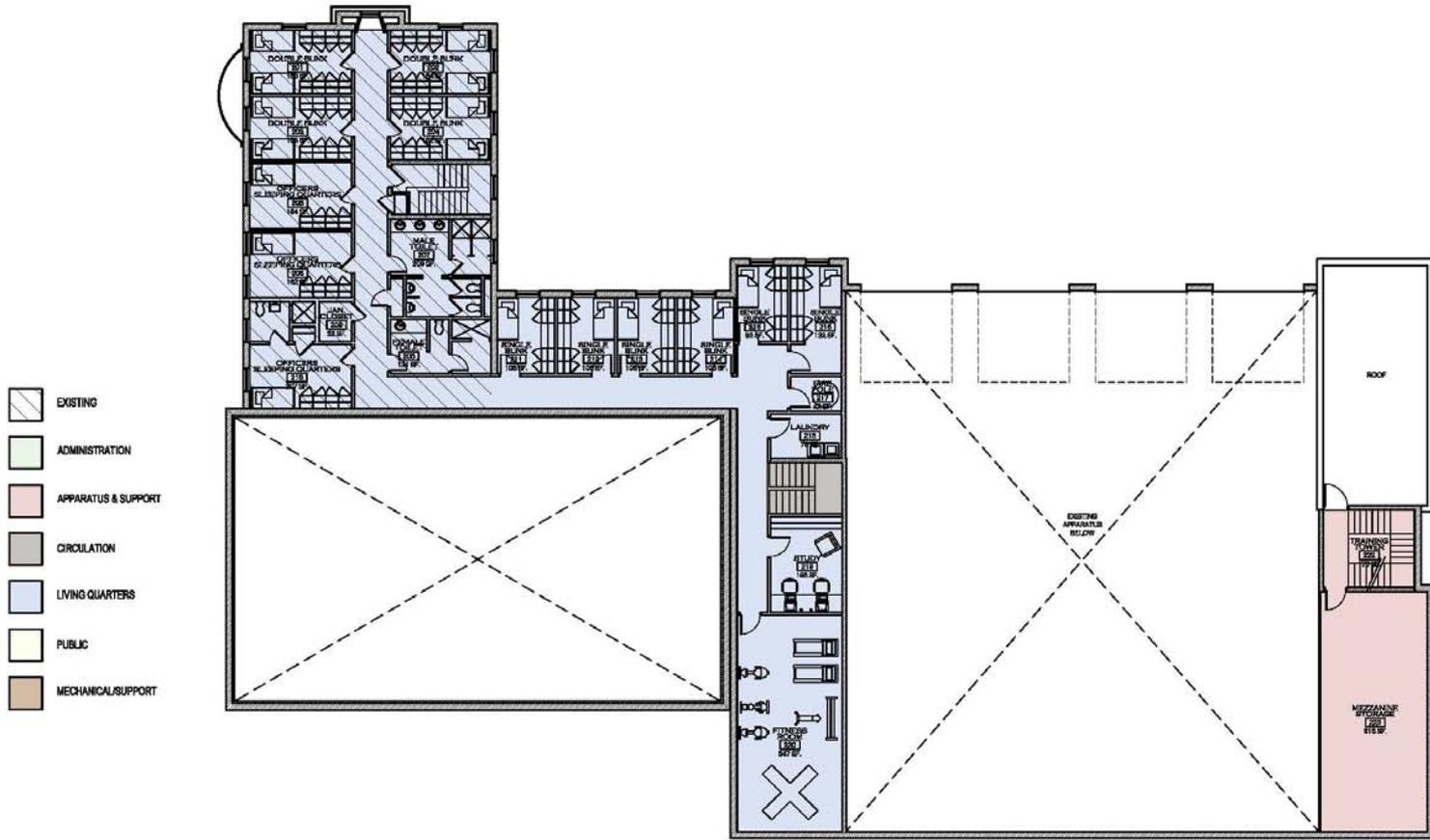
SITE PLAN
1/32" = 1'-0"

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LEXINGTON
FIRE AND RESCUE DEPARTMENT
DECEMBER 2006

SITE PLAN - OPTION A



UPPER LEVEL PLAN
1/16" = 1'-0"

UPPER LEVEL - OPTION A

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FIRE AND RESCUE DEPARTMENT
DECEMBER 2008



EXISTING WEST ELEVATION
1/16" = 1'-0"



PROPOSED WEST ELEVATION - OPTION A
1/16" = 1'-0"



WEST ELEVATION

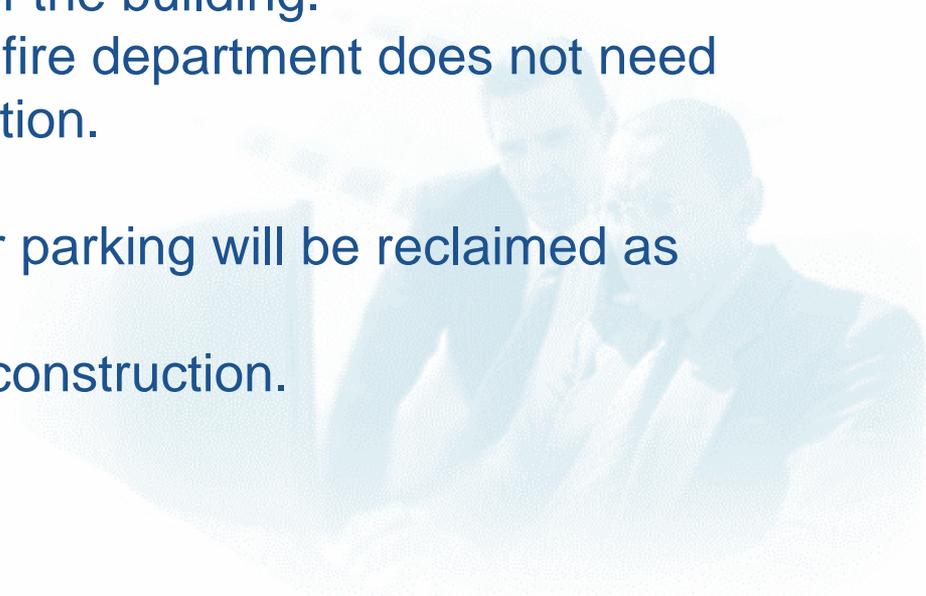
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LEXINGTON
FIRE AND RESCUE DEPARTMENT
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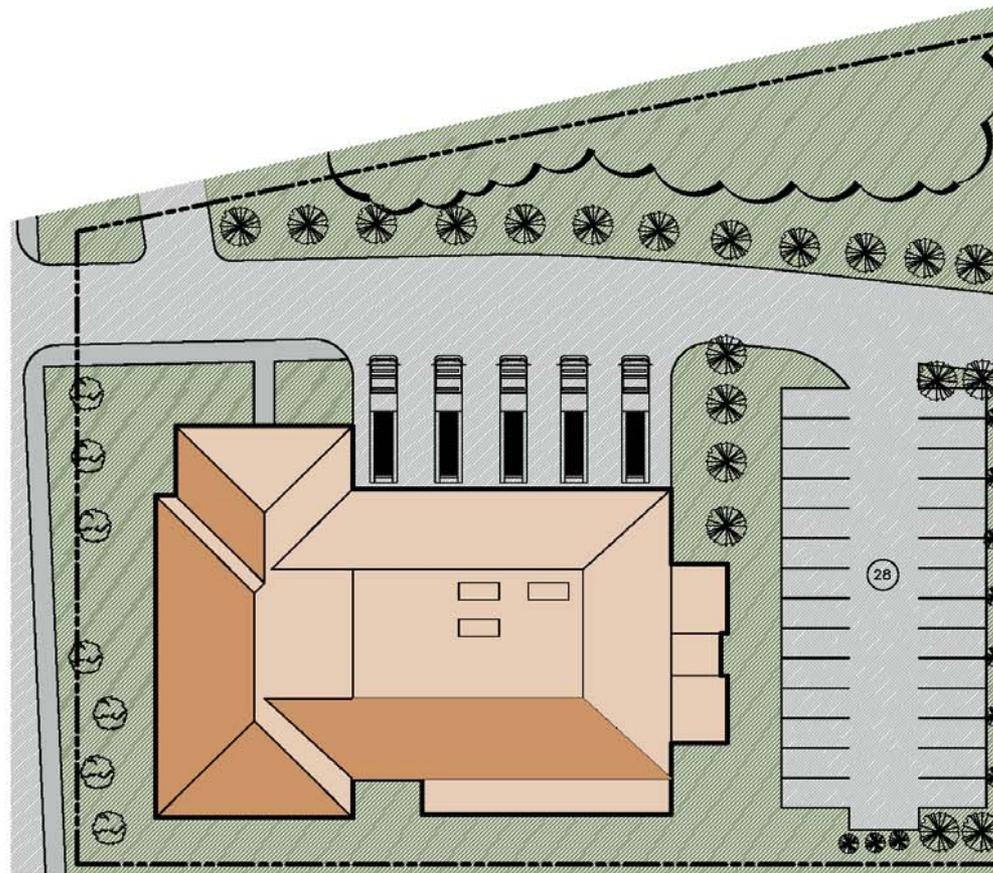
Option A – Advantages

- The existing station is salvaged.
- The apparatus bay structural issues are no longer an issue.
- The “historic” facade of the facility is unchanged.
- The addition is at the rear of the facility and it will minimally impact the rest of the building.
- Phased construction – the fire department does not need to relocate during construction.
- Very little demolition.
- Front apron and some rear parking will be reclaimed as landscape area.
- Less expensive than new construction.



Option A – Disadvantages

- Due to the site restrictions and placement of the existing building, not all of the programmed spaces will be accommodated.
 - Phased construction, will require additional time to construct.
 - Some of the existing inherited building elements will dictate the layout of the new plan
 - The fire department will need to co-exist with the construction through the station renovation.
- 



SITE PLAN
1/8" = 1'-0"

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SITE PLAN - OPTION B

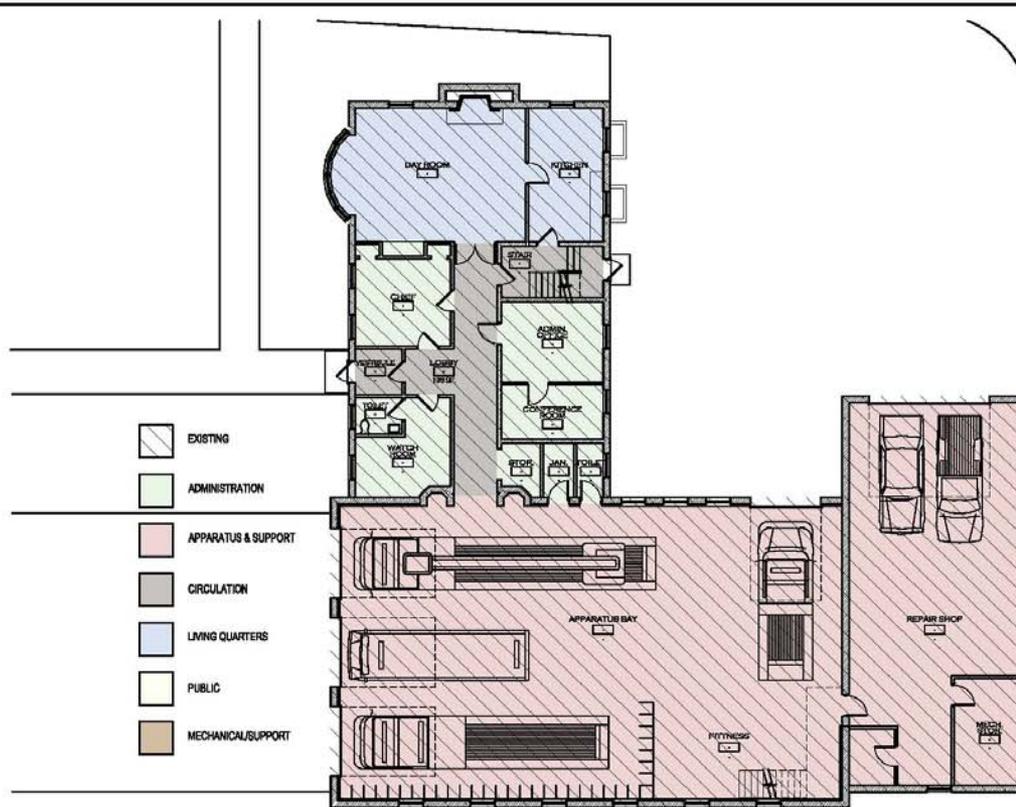
Option B – Advantages

- Fulfills all of the programmatic needs.
- Construction is not phased.
- Layout is operational efficient.
- Space is allocated for future expansion.

Option B – Disadvantages

- Demolition of the existing station.
- Fire Department needs to relocate during the construction.
- More expensive than new renovation/expansion.
- Will require the realignment of Camellia Place.





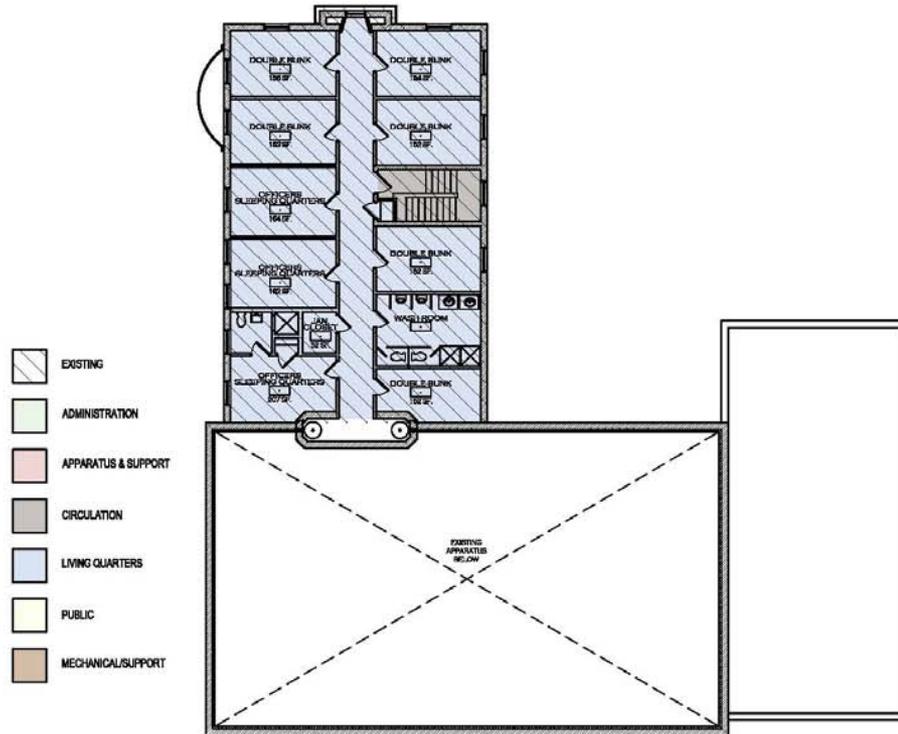
GROUND LEVEL PLAN
1/8" = 1'-0"

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LEXINGTON
 FIRE AND RESCUE DEPARTMENT
 DECEMBER 2008

GROUND LEVEL - OPTION C



UPPER LEVEL PLAN
1/8" = 1'-0"

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LEXINGTON
FIRE AND RESCUE DEPARTMENT
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UPPER LEVEL - OPTION C

Option C – Advantages

- Construction cost.
- Solves the Fire Departments immediate needs for structural repairs to the apparatus bay.

Option C – Disadvantages.

- Does not resolve the Departments long term issues, or the immediate need for additional administrative spaces and apparatus storage space.
- Station programmatic needs are not addressed.
- Will require the Fire Department to relocate during the construction.
- Second floor means of egress are not addressed.
- Construction costs. Delay in construction will eventually increase the construction costs.

Part III – Estimate

Lexington Fire Department	Variables	Option A	Option B	Option C
		Addition/Renovation	New Construction	Renovation
Building Square Footage				
New Construction s.f.		12,272	22,206	0
Existing Building Renovation s.f.		8,299	0	11,665
Existing Apparatus Bay s.f.				5,270
Total Square Footage		20,571	22,206	0
Existing building demolition (Existing Station)		0	11,665	0
Existing building selective demolition (Existing Fire Station Bay)		1,680		
Construction Costs				
New Building Construction Costs	\$ 300.00	\$ 3,681,600	\$ 6,661,800	\$ -
Existing Building Renovation Costs	\$ 180.00	\$ 1,493,820	\$ -	\$ 1,151,100
Demolition Costs	\$ 20.00	\$ -	\$ 233,300	\$ -
Asbestos Abatement		\$ 78,000	\$ 78,000	\$ 78,000
Selective Demolition	\$ 30.00	\$ 50,400	\$ -	\$ -
Sesmic Upgrades to Existing Building	\$ 10.00	\$ 82,990	\$ -	\$ -
Structural Apparatus Bay Removal and Replacement				\$ 850,000
Sub-Total		\$ 5,386,810	\$ 6,973,100	\$ 2,079,100
Phasing Premium	6%	\$ 323,209	\$ -	\$ -
Station Relocation Costs (allowance)		\$ 100,000	\$ 300,000	\$ 300,000
Sub-Total		\$ 5,810,019	\$ 7,273,100	\$ 2,379,100
Construction Contingencies	10%	\$ 581,002	\$ 727,310	\$ 237,910
Sub-Total		\$ 6,391,020	\$ 8,000,410	\$ 2,617,010
Design Engineering Fees	8%	\$ 464,801	\$ 581,848	\$ 190,328
Owners Project Manager	4%	\$ 255,641	\$ 320,016	\$ 104,680
Furniture And Equipment Allowance		\$ 60,000	\$ 60,000	\$ 60,000
Communication Technologies Allowance		\$ 25,000	\$ 25,000	\$ 25,000
Additional Project Costs (testing, survey, geotech, etc.)	4.0%	\$ 255,641	\$ 320,016	\$ 104,680
Bond Costs	0.4%	\$ 25,564	\$ 32,002	\$ 10,468
Site Environmental Issues		TBD	TBD	TBD
Sub-Total		\$ 7,477,668	\$ 9,339,292	\$ 3,112,167
Construction Escalation to end of 2009	10%	\$ 747,767	\$ 933,929	\$ 311,217
GRAND TOTAL		\$ 8,225,434	\$ 10,273,222	\$ 3,423,384
Yearly Utility Costs		\$ 11,745	\$ 8,759	\$ 6,609



Questions?

