York Street Jail
Adaptive Re-Use Study

Prepared for:
MassDevelopment

Prepared by:
Arrowstreet

1 June 2007

York Street Jail
Adaptive Re-Use Study

PREPARED FOR:

MASSDEVELOPMENT
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Office of Planning and Economic Development
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Springfield, MA 01104

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1 JUNE 2007

YORK STREET JAIL

ADAPTIVE RE-USE STUDY

25 May 2007

contents

SECTION I: INTRODUCTION

The existing York Street Jail complex was built in 1885-87 and consists of a series of buildings surrounding a central courtyard. The Jail complex served as the Hampden County House of Corrections until it was replaced in the 1990's. Since then, the property has generally been abandoned, although a portion of the complex, the former gymnasium, is currently used as a homeless shelter.

As documented in previous studies[1], the Jail complex is in poor condition. The property has been mothballed for more than 10 years without heat or maintenance and the buildings show signs of substantial deterioration. The existing buildings are no longer weather tight and there is significant leaking of the roofs, windows and walls. Building mechanical systems are no longer operational and there are signs of further damage from vandalism. In addition, there are hazardous materials – asbestos, lead paint, etc.- which require abatement.

To assist the City's planning process for the site, Arrowstreet has been retained to review the existing conditions of the buildings to determine the extent of work necessary for renovation and rehabilitation.

This Report summarizes the Study Team's effort and includes the following:

- A review of previous building studies and a site walk-thru with consulting structural engineers to understand the condition of the existing structures
- A diagrammatic plan of the existing structures and an evaluation of re-use potential.
- A diagrammatic plan of potential future redevelopment and a preliminary scope of work and outline specifications for the proposed work.

A preliminary budget estimate of the cost for the proposed renovations has been prepared and is included in this report. The budget estimate has been prepared in two parts. The base level of work necessary to rehabilitate the

[1] See also Historic Structures Report prepared for the Springfield Office of Economic Redevelopment by Museum Resource Consultants in 2001 and Existing Conditions Analysis, Code Compliance Requirements and Architectural Component prepared by Architects, Inc. in 2000.

building structures and provide base level MEP/FP services are identified as "Shell-and-Core" costs. Additional work necessary to prepare the buildings for specific re-use tenants, i.e. residential, office, etc, are identified as "Tenant Fit-up" costs. Given the level of information available about future re-use potentials, the "Shell-and-Core" work is presented in more detail in this Study.

CONCLUSIONS

The work to rehabilitate the Jail Complex for re-use is substantial. Significant work would be required to restore the existing buildings, including removal of hazardous materials; demolition of portions of the complex not scheduled for re-use; replacement of the existing roofs, doors and windows to create a weather-tight building shell; repair or replacement of deteriorated structural framing elements; and complete replacement of the interior finishes, building systems and utilities.

In addition, the interior spaces of the major buildings of the complex, the cell blocks and Reception Hall, do not readily lend themselves to efficient and economical re-use. The existing cells are approximately 6' x 8' wide with 9 foot floor-to-floor height and load-bearing masonry walls. These portions of the buildings will need to be removed to provide sufficient space for residential, office or other use. The Reception Hall has a dramatically tall space – approximately 30 to 40 feet tall – which may have some re-use potential, such as an office building lobby, but will limit the amount of usable space in the finished renovation.

A conceptual Redevelopment Plan for the Jail Complex has been prepared as part of this Study. The plan proposes to remove existing buildings 4, 5 and 6 due to the poor condition of the existing structures and to provide a view to the river and space for on-site parking. An outline scope of work and conceptual budget estimate for the construction cost was prepared for the renovations of the remaining buildings. In addition, a conceptual analysis of the total project cost was prepared for two of the re-use options, residential and office space, including 'soft' costs, financing, and development expenses to determine the market costs for the space. This analysis indicates the project costs are likely to exceed $500 per square foot for residential, hotel or office space.

Although these plans and cost analyses are conceptual, the analysis indicates that the renovations of the existing structures are likely to be less efficient and more expensive than comparable new construction. It has also been reported that these costs are likely to be significantly higher than the market in Springfield is willing to bear.

BUDGET SUMMARY COSTS

The following is a summary of comparative budget costs for the potential re-use options. See the attached detailed estimate for the Shell and Core portion of the work in the Appendix of this Report.

	BUDGET ESTIMATE without escalation June 2007	BUDGET ESTIMATE with 6.5% escalation to mid-2008
Shell and Core Construction (Including 10% construction contingency)	**$24,778,000**	**$26,389,000**
	($232/SF)	($247/SF)

Additional Tenant Fit-Up Costs
(Note: Fit-up costs based on Usable Area of 87,321 SF plus 10% contingency)

Residential at $94/SF	$9,029,000
Class B Office Space at $88/SF	$8,452,000
Limited Service Hotel at $94/SF	$9,029,000
Retail at $77/SF	$7,396,000

Shell & Core plus Tenant Fit-Out	BUDGET ESTIMATE without escalation June 2007	BUDGET ESTIMATE with 6.5% escalation to mid-2008
Residential	**$33,807,000**	**$36,004,000**
Class B Office Space	**$33,230,000**	**$35,390,000**
Limited Service Hotel	**$33,807,000**	**$36,004,000**
Retail	**$32,174,000**	**$34,265,000**

Connecticut River

Railway

West Courtyard #1a

Building #6
(Boiler Room)

Building #5
(Mechanical)

Building #4
(Guard's Quarters)

Bldg #1

Bldg #3

Bldg #2
(Sally Port)

Building #7
(Cafeteria
and Kitchen)

Main Center Yard

Bldg #11
(Storage)

Building #12
(Infirmary)

Building #13
(Women's Cell Block)

Meltzer St.

West York Street

Building #9
(Temporary Homeless Shelter)

Building #9a

Building #8

Building #10 (Men's Cell Block)

Building #14
(Reception Hall)

Building #16
(Sheriff's
Residence)

Bldg #15

Building #16a

West Columbus Avenue

Key

- Existing Buildings To Remain
- Existing Buildings Recommended To Be Removed
- Existing Green Space

N

0 25′ 50′ 100′

1/50″ = 1′-0″

MassDevelopment

Scale: 1/50″ = 1′-0″

1 June 2007

AST No: 07022

York Street Jail
Existing Conditions

ARROWSTREET
Architecture Urban Design Planning Graphics and Interiors
212 Elm Street Somerville, MA 617-623-5555 www.arrowstreet.com

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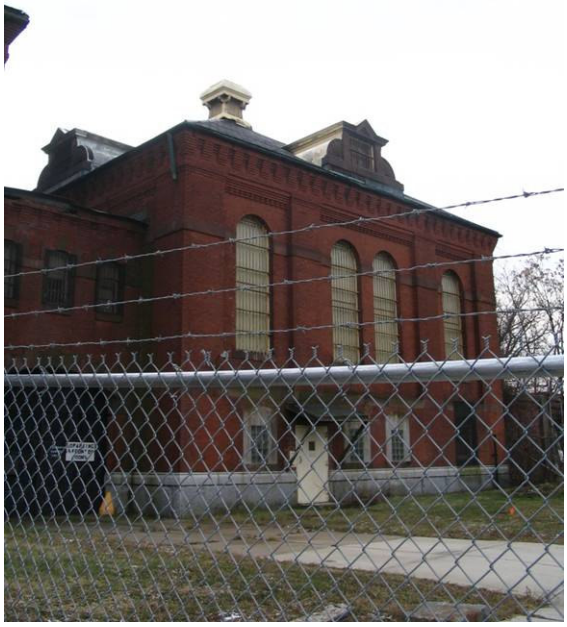
SECTION II: EXISTING BUILDINGS

The York Street Jail consists of 16 generally independent buildings surrounding a central courtyard. Buildings 10 and 13 contain the male and female cell blocks, respectively, and are connected by Building 14, the Reception Hall. Building 7 on the south side of the courtyard is the former kitchen and dining hall. Buildings 4, 5 and 6 along the west side of the courtyard provided support services for the Jail: Building 4 was the guard's quarters and Building 5 was the boiler room. Building 6, the machine shop, was locked during the site visit and was not reviewed.

The following represent summary opinions of current conditions and re-use potential.

Building 1 and 3

Building 1, the former women's work area/laundry has a large column-less space one half level above grade, with arched two story windows on the south and north elevations. Existing finishes are deteriorated; existing wood windows are rotted. Since the finished floor level is above grade, ramping or a lift would be required to meet current accessibility codes. New stairs would need to replace existing stairs, which are deteriorated and do not meet code. Insulation would be required at walls and roof to meet new energy codes. A full MEP system would need to be added. The masonry basement level, currently divided by bearing walls and columns, might be best cleaned up and retained as support for the upper floor use. Exterior window openings at that level are minimal. Despite the need for these renovation upgrades, the first floor space offers potential by virtue of its volume and light.



Building 1 – North Elevation

Building 3 is a small courtyard space on the rear of Building 1. The Building has limited re-use potential and should be removed to enhance the relationship between Building 1 and the existing courtyard.

Building 2

Building 1: Former Sallyport

Building 2, the former sally port, allowed secure entry to the courtyard to the west of the women's cellblock. complex. The building provides upper level access between Buildings 1 and 13, although there is a level change between the buildings which would need to be resolved to provide handicapped access. The building is generally in poor condition and requires substantial renovation. The building represents one of the character-defining elements of the jail complex and should be maintained if a re-use plan is feasible.

Buildings 4, 5 and 6

Building 4 formerly housed containment cells and support cells on the first floor and guards' sleeping quarters on the upper floor. Building 5 housed the boiler plant. The existing rusted and outdated equipment remains and is a half level below grade. Building 6 was the machine shop. It is boarded up and was not accessible during the site visits.

Buildings 4, 5 and 6: Former Support Buildings

Like the other buildings in the complex, these structures and finishes are substantially deteriorated. They also lack the large windows, significant building area, large volumes, and distinctive features that could make renovation desirable. Based on the level of deterioration and the uncertain nature of future re-use options, this Study has proposed removal of the buildings to open the courtyard toward the river and provide space for parking.

Building 7: Former Cafeteria and Kitchen

Building 7

This former kitchen / cafeteria has a column-less first floor with large windows that open out to the courtyard on the north and gymnasium building on the south. The basement has few windows and closely spaced brick columns. The attic level has dormers along its length. While several first floor windows are currently boarded up, existing windows are large and face north and south. This building has good renovation potential based on its location on the site, proportions, and large window openings. It will need roof and window replacement, accessibility upgrades, the addition of a full MEP/FP system, and refurbishment of existing finishes.

Building 8 and 9A

Building 8, a former shower building, is an undistinguished two story wood framed masonry building that likely served the main cell block. The original function of Building 9A is unclear. Both structures currently provide a passage between the gymnasium (Building 9) and men's cell block (Building 10). The structures and finishes are deteriorated. They also lack the large windows, significant building area, large volumes, and distinctive features that would likely make renovation desirable. For the purposes of this Study, it has been assumed that the buildings are not a part of any proposed re-use project.

Building 9

Building 9, a former gymnasium building built in 1987, is a relatively new structure and is currently occupied by a homeless shelter. It is a two story brick building with narrow slit windows on the east elevation, a concrete foundation, and a flat roof. The roof is framed by steel bar joists and metal deck which span the masonry exterior walls. The concrete floor slab is supported on steel framing to steel columns in the crawl space. The framing, interior finishes, and exterior building materials are in good condition. In potential building re-use scenarios, new window openings will likely be required. Depending on the construction of the existing masonry walls. The new windows will require additional steel framing of the new masonry openings and may also require seismic bracing to meet current code requirements.

Interior – Former Gymnasium

Buildings 10 and 13

The former men's cell block, Building 10, and the former women's cell block, Building 13, are substantial masonry structures housing four levels of jail cells. The 6' x 8' cells are separated by 12"-16" thick masonry walls and divided down the length of the building center by a masonry wall which acts as a mechanical chase and supports the roof structure. The cells are accessed by metal walkways which are in a state of disrepair from water leakage, most likely from the deteriorated roof above. The three–story, arched, single glazed exterior windows let in abundant light on both sides of the buildings. The existing wood windows are deteriorated. The attic level of Building 10 has a deteriorated, uninsulated metal roof deck. Access to the attic level of Building 13 was not available, but it is assumed to be similar. It has also been reported that the existing floor at the roof level contains asbestos fibers that will require abatement.

Building 10: Former Men's Cell Block

Renovation of the buildings will require substantial improvements including replacement of existing windows with new aluminum sash and thermo-pane glazing, repair or replacement of roofing, and insulation of walls and roof to meet the current energy code requirements. Depending on the proposed building use, some amount of acoustical treatment may be desirable on the highway side of Building 10. Because the cell blocks are a half level below the main entry building (Building 14), accessibility is an issue for any re-use. A full MEP/FP system would also need to be added.

The footprints, volume, and size of the glazed openings offer good potential for building re-use. New floor framing from the cell blocks out to the exterior walls would allow more usable square footage, zoned heating and cooling, and acoustical separation between users.

Buildings 11 and 12

Building 11, the former two story infirmary, and Building 12, a one story supply storage structure, are in a similar state of disrepair to the other buildings in the complex. They also lack the large windows, significant building area, large volumes, and distinctive features that could make renovation desirable. Their removal would open up Building 10 to the courtyard and provide a potential view of the river beyond. For the purpose of this study, it is assumed that the buildings will be removed under a potential re-use option.

Building 11: Former Infirmary

Building 14: North Elevation

Building 14

The former entry to the jail complex retains its grandeur despite the deterioration of the building. Functionally, it was the main entry to the cellblocks and Sheriff's residence. The main entry, while grand in original design and materials (granite), is now deteriorated. The existing interior walkways, which require replacement, reinforcement, and code upgrades , open onto commanding views of the two main cellblocks (Buildings 10 & 13) and the entry space itself.

An addition, likely functional at one time, was built over the entry vestibule. It detracts from the geometry and volume of the existing main space and should be removed. Three story windows, opening predominantly toward the east and south, are wood frame with single glazing and are substantially deteriorated. A full basement and fourth floor are accessible from internal stairways.

Building 14 is dramatic, both in volume and natural lighting. The decorative foursquare of columns at its center could be refurbished or embellished to become a dramatic entry space for a restored building complex. There are also existing exposed stairways and catwalks along both sides of the space that provide views into the existing cell bock buildings 10 and 13. The stairs and catwalks are deteriorated and do not meet code requirements for a re-use option.

Buildings 15 and 16

Building 15, formerly an administrative anteroom to the Sheriff's Residence, is currently a deteriorated passageway between Buildings 14 and 16. For the purpose of this report, it is assumed the passageway would be removed and the openings closed on either side.

Building 16, the former Sheriff's Residence, is a four story masonry building with remnants of its once carefully detailed interiors: oak paneling; inlaid paneling at fireplace surrounds and mantles, and turned stair balusters. It has large double hung windows on the east, south, and west facades. The building has suffered similar deterioration to the other structures in the complex. Additionally, there is evidence vandals are currently stripping the remaining interior detail.

Repair of the existing exterior envelope, re-roofing, window replacement, rebuilding the existing main stair entry, the addition of a new MEP system, and adding an elevator or lifts for accessibility are required to restore this building.

STABILIZATION MEASURES

The Jail Complex has been vacant for more than 10 years and the lack of continuous maintenance has taken a heavy toll on the structures. Roof failures were observed many areas, particularly in the transitions between buildings which are subject to increased snow and ice build-up during the winter. The windows and doors have also suffered damage and in many cases are open to the elements. Although the masonry construction is robust, continuous moisture penetration into the buildings will deteriorate timber framing members and floor structures. It was also noted that vandalism continues – signs of recent vandalism was observed in the former Sherriff's House.

As noted above and as documented elsewhere in this report, it is not economically feasible to re-use York Street Jail for office, residential, hotel or retail uses. Likewise, it will be very difficult and extremely costly to stabilize the building after more than 10 years of lack of repairs and preventative

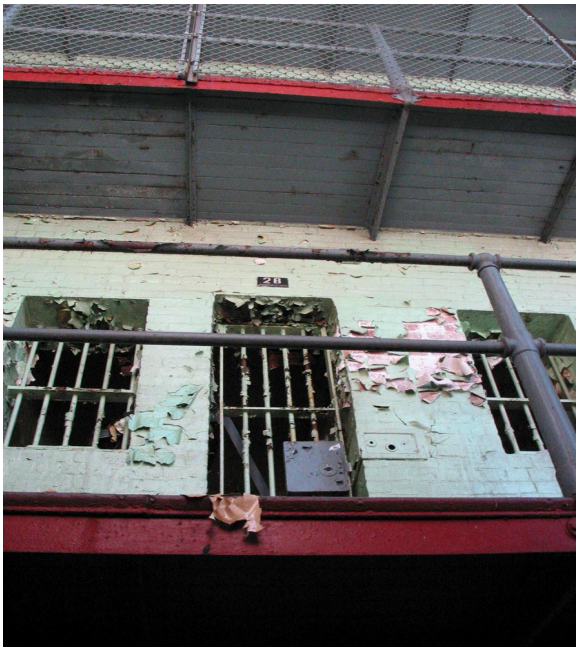
maintenance. To prevent further deterioration of the buildings, aggressive stabilization measures would be needed. This work should include patching or replacing areas of substantial roof failure, including damaged or missing slate shingles and flashings. Gutters and downspouts, where missing or damaged, should be repaired or replaced to help shed water away from the exterior masonry walls. Site drainage should also be reviewed to determine if there are areas of localized flooding that may be contributing to the deterioration of the foundations and/or exterior walls. Windows should be boarded up and sealed against moisture penetration. Interior framing members and floors should be temporarily shored to prevent collapse, where necessary.

A separate report has documented substantial hazardous materials in the existing structures, including asbestos containing roof felts under the slate shingles in many of the buildings. These materials would need to be abated prior to the start of any stabilization work.

SECTION III: PROPOSED ADAPTIVE RE-USE

The work required to restore the Jail Complex for re-use is substantial. The buildings are in poor condition and necessary improvements would include the following:

- Existing exterior masonry walls, windows and roofing require substantial reconstruction to create weather tight enclosures;
- The original building systems are completely deteriorated and require complete replacement;
- Existing utilities also require complete replacement and, depending on the re-use option, potentially upgrade in level of service as well;
- The existing buildings not to be preserved would need to be demolished and adjacent buildings and openings protected;
- Existing hazardous materials need to be identified and removed.
- Existing masonry walls and timber framing need to be tested to determine the extent of deterioration and/or replacement required.
- Removal of the existing cell block structures and provide new framed floors;
- Provide structural bracing of existing load-bearing masonry walls to meet current seismic code requirements; and,
- New elevator and stair cores to meet ADA requirements and provide appropriate egress.



Connecticut River

Railway

Remove Existing
Service Buildings

New Parking Access

New Egress
Stair &
Elevator

New Parking Lot
(71 cars)

New Parking Lot
(93 cars)

Building #1
(5,000 SF)

New Stair &
Elevator
(if required)

Bldg #2
(Sally Port)
(306 SF)

Alternate Building
Entrances

Building #7
(18,000 SF)

Remove Existing
Infirmary & Storage

New Egress Stair

Remove Existing
Cell Block Structure,
New Floor Structure

Building #13
(13,500 SF)

Building #9
(15,300 SF)

New Landscaped
Courtyard

New Egress
Stair and
Elevators

Renovated
Main Entry

Building #10
(44,000 SF)

Building #14
(10,800 SF)

New Egress Stair

Remove Existing
Building #8

Remove Existing
Cell Block Structure,
New Floor Structure

New
H.C. ramp

New Porte
Cochere / Drop-Off

Remove Existing
Building 16a Structure

Building #16
(10,125 SF)

Meltzer St.

West York Street

West Columbus Avenue

Key

- Existing Buildings To Remain
- Proposed Means of Egress
- Proposed Landscaping
- Proposed Paving

N

0 25′ 50′ 100′

1/50″ = 1′-0″

MassDevelopment

Scale: 1/50″ = 1′-0″
1 June 2007
AST No: 07022

York Street Jail
Proposed Redevelopment

ARROWSTREET
Architecture Urban Design Planning Graphics and Interiors
212 Elm Street Somerville, MA 617-623-5555 www.arrowstreet.com

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POTENTIAL RE-USE CONSIDERATIONS

The extents of re-use options for the complex are potentially limited by site constraints, the building types and structural considerations. In addition, there are market constraints which are addressed briefly by this report but may have more substantial impact on the re-use potential of the jail complex. The following is a brief summary of re-use potential for the project as a way to guide future thinking.

Aerial Photograph

SITE

Re-use options are subject to significant site constraints. The Jail is located along the banks of the Connecticut River approximately ½ mile from downtown Springfield and is bounded on the west by railroad tracks, on the east by West Columbus Avenue and the I-91 overpass. To the north of the site is a truck stop / gas station and to the south of the site is the former gymnasium – now used for a temporary homeless shelter.

These adjacent land uses may constrain the potential re-use options for the buildings and the site. Commercial uses, such as office or retail uses, may benefit from the central location and the proximity to the highway. However, it has been reported by the City and MassDevelopment that there is a surplus of vacant B office space in downtown Springfield that will limit the market for additional office space at this location. The Jail Complex is also not ideal for retail uses given the surrounding uses and the size and footprints of the existing buildings.

The site does not lend itself well to residential re-use. The site is cut-off from the residential neighborhoods to the east by the I-91 overpass and the commercial development along the east side of the highway. In addition, the combined traffic and noise along West Columbus Avenue and I-91 as well as the incompatible uses of the truck stop to the north and the railroad tracks to the west are detrimental to future residential redevelopment. Alternatively, residential-type options, such as a hotel or extended stay hotel, might benefit from the proximity to the highway and not be overwhelmed by the neighborhood.

PARKING

The site has limited parking – mostly along the peripheral roadways and there is a small lot for approximately 15 to 20 cars on the south end of the site.

To meet current zoning requirements for parking, the site would need to provide the following parking counts:

Residential	115 space/unit	128 spaces for 85 units
Office	1 space/500 SF	234 spaces
Retail	1 space/300 SF	390 spaces
Hotel	1 space/guestroom	170 spaces for 170 rooms

As shown on the Potential Redevelopment plan in Figure A2, the site will accommodate approximately 180 spaces on grade. Additional spaces, if required, would need to be provided either in structural garages or at a satellite location.

BUILDING TYPES

The Jail complex contains a variety of building types and footprints which vary in the degree to which the buildings lend themselves to adaptive re-use. The following is a summary re-use evaluation for the primary buildings in the complex.

Former Cell Block

Buildings 10 and 13: Former Cell Blocks

Buildings 10 and 13 represent the largest spaces in the complex and could be used for residential or business uses. Combined with the Building 14, the former Reception Hall, the cellblocks represent the heart of the jail complex and are the primary spaces available for adaptive re-use.

As shown on the Existing Conditions diagram and the photograph at left, the cells are divided by load bearing masonry walls that extend four levels to the attic space above and appear to support the roof trusses of the building. Cantilevered steel walkways provide access to the cells but as previously noted are in poor condition and will likely require removal or replacement. The exterior masonry walls extend four stories and appear to be supported by tie rods to the cell block structure. As noted in the Structural Report attached in the Appendix, it is likely that the exterior walls will need to be supported or otherwise braced to meet current seismic requirements.

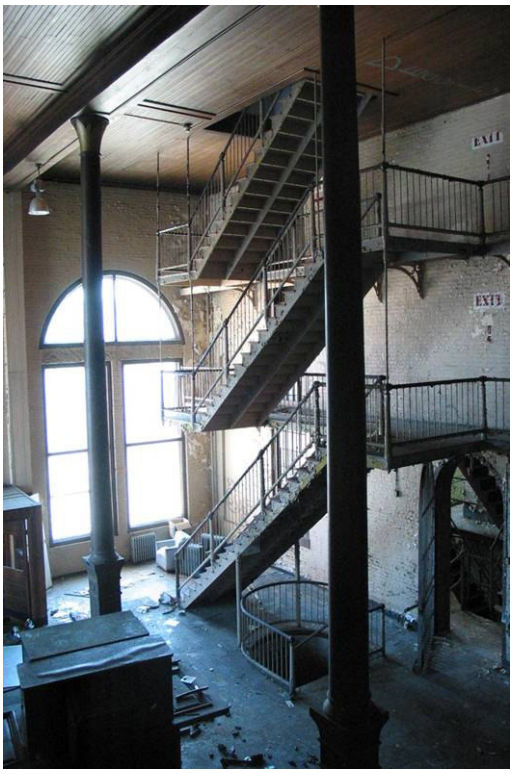
Re-use of buildings 10 and 13 will likely require removal of the entire cell bock structures to create efficient floor space for residential or office users. This will require that the cell blocks will be removed in their entirety and that a new structural framing system be installed to support the new floor levels and the existing exterior walls and roof. This will require temporary shoring of the existing roof and exterior walls while the cell blocks are removed and construction of new floors proceeds – essentially building a new structure within the existing building envelope. It is also likely the new structural system will require new foundations to support the new loads.

The alternative to this approach is to re-use portions or all of the existing cell blocks. It may be possible to create offices or residential uses which work within portions of the existing cell walls – for instance, by removing every other cell wall or pairs of cell walls. However this approach will still involve substantial rebuilding to both support the remaining masonry walls and to structure the new floors as required. It is likely that costs of this approach could

approach the costs for an entirely new floor system while creating an efficient office or dwelling units.

Building 14: Reception Hall

As previously noted, the Reception Hall is a ceremonial three-story space that is one of the primary elements that should be preserved if the Jail complex is to be re-used. The Reception Hall could provide an entry lobby for either business or residential uses. There is also a one-story space above the lobby which may be useable for office or living space.



Former Reception Hall

The extent of work required to renovate the space is likely to be substantial. The existing catwalks on either side of the hall will require replacement or repairs and the entire interior will need to be refinished with new MEP/FP systems provided. In addition, it is likely that the building will require structural upgrades to meet current Building Code requirements. Given the desire to preserve the character defining element of the space – decorative columns, wood paneled ceiling, floor finish, etc. – it is likely that this space will be costly to renovate properly.

Building 7: Former Cafeteria and Kitchen

The former Cafeteria and Kitchen Building contains a large open space with windows on both sides which would allow a variety of flexible re-use options; including office or residences. The building consists of the main cafeteria and kitchen level, a basement level space and an upper floor. The building will require substantial renovation but will help to frame the center courtyard and could remain an essential part of a future re-use project. Depending on the connection to Buildings 10, there is likely to be a need for a separate elevator and egress stair to serve the building.

Former Cafeteria

Building 9: Existing Homeless Shelter/ Former Gymnasium

The most economical re-use of Building 9 would be as an accessory use to the buildings proposed to remain. Should the building complex be fitted out for residents, Building 9 might become common space for the residential units, such as a health club or community building. A Class B office space building might reserve this structure for open offices, benefiting from its two-story volume. A limited service hotel could use Building 9 for its function rooms, such as ballrooms, meeting rooms, or dining (with a support kitchen). All of these re-use opportunities would require minor shell-and-core work (accessibility upgrades to the building entries) and tenant fit-up (public toilet facility upgrades, and finish updates being the major changes required). Depending on the re-use option, there may be a need for new window openings.

Currently there is a small mezzanine on the west end of the building. Depending on the re-use needs, there is also the option to add a second floor above the gymnasium space. This would require substantial structural modifications of the building. MEP/FP reconfigurations would also be needed with the addition of the second floor slab, as well as a second egress stair, an elevator, and new window openings at each level.

Interior – Former Gymnasium

Building 16: Former Sheriff's Residence

The former Sheriff's Residence is a highly visible component of the Jail complex and should be considered as part of a re-use option. It contains finely detailed interior finishes which are suffering severe damage by the elements and vandals. As shown on the Existing Conditions diagram, the house consists of a central entry hall with rooms on both sides and stairs at the south end of the building.

Interior – Former Sheriff's Residence

The house may be best suited for residential purposes, but it's proximity to the highway will decrease it's marketability. Office use may be limited by the small rooms and limited space, but it could be appealing to small office tenants. Consideration will also need to be given to the other uses of the property; for example, if the rest of the jail complex has converted to office space, it would not make sense to make the Sheriff's Residence into residential uses. Also, depending on the re-use option, it may be necessary to put a separate elevator into the building to meet access code requirements.

CONCEPTUAL REDEVELOPMENT PLAN

A Conceptual Redevelopment plan for the Jail Complex is shown in Figure 2. For the purposes of this Study, it has been assumed that Buildings 1, 3, 4, 5, 6, 8, 9a, 12 and 16 would be removed due to the existing condition of those structures and their limited re-use potential. Removing the buildings along the west side of the courtyard also opens the views towards the River and provides space for parking.

It has also been assumed that the existing cellblocks in buildings 10 and 13 would need to be removed to create sufficient space for residential or office uses. Depending on the proposed re-use, it is likely that the existing 9 foot floor-to-floor height would need to be increased to 12 feet to create sufficient clearance for new structural members, plumbing and mechanical systems. The proposed re-use areas of the buildings are shown in the table on the following page.

Preliminary outline specifications describing the scope of work for the renovations have been prepared. For the purposes of this analysis it has been assumed that an essential scope of work will be required to renovate the buildings regardless of what the future re-use option is. This work is described as the 'Shell and Core' renovations in this Study and includes general repairs to the existing building shells, replacement of existing roofing, walls, and doors, replacement of existing building systems, and other work necessary to create shell and core type space for a future tenant fit-up. An allowance for future tenant fit-up has also been included in the budget analysis.

Market Analysis

For comparative purposes, a preliminary project cost analysis has been prepared for both housing and office re-use options, as shown in detail on the following pages. This budget estimate is based on the combined 'shell-and-core' costs plus tenant fit-up costs. An allowance is also included for 'soft costs' and development costs, such as professional fees, legal and permitting costs, financing, and developer's overhead and profit.

Although this analysis is conceptual, it suggests that the project cost to renovate the buildings is likely to exceed $500 per SF of usable area.

York Street Jail Adaptive Re-Use Study | Springfield, Massachusetts

Buildings to Remain AST No. 07022

June 1, 2007

Building	*Floor*	*Existing Area (Gross SF)*	*Proposed Usable Area (Net SF)*	*Notes*
1	**Former Women's Work Area/Laundry**			**2-Story + Basement + Attic**
	1st Floor	2,500	2,500	Usable (22' height space)
	2nd Floor	2,500	2,500	Usable
	Basement	-	2,500	Usable
	Attic	-	-	
	Total SF	**5,000**	**7,500**	
2	**Sally Port**			**1-Story + Sally Port at Grade**
	1st Floor	-	-	Sally port
	2nd Floor	306	306	Connection between Building 1 and 13
	Total SF	**306**	**306**	
7	**Former Kitchen / Cafeteria**			**2-Story + Basement + Attic**
	1st Floor	6,000	6,000	Usable (12'-15' height space)
	2nd Floor/Attic	6,000	6,000	Usable
	Basement	6,000	6,000	Usable for MEP/FP and storage only
	Attic	-	-	
	Total SF	**18,000**	**18,000**	
9	**Former Gymnasium/Homeless Shelter**			**1-Story + Basement**
	1st Floor	7,840	7,840	Usable
	2nd Floor	2,615	2,615	Approximate 1/3 of the 1st floor area
	Basement	4,845	-	Usable for MEP/FP and storage only
	Total SF	**15,300**	**10,455**	
10	**Former Men's Cell Blocks**			**4-Story Cell Block + Attic**
	1st Floor	9,016	9,016	Usable
	2nd Floor	5,300	9,016	Usable
	3rd Floor	5,300	9,016	Usable
	4th Floor	5,300	-	(re-distribute to 3 floors to improve existing 9' floor-to-floor heights to 12')
	Attic	9,016	-	
	Total SF	**33,932**	**27,048**	Note: Existing area based on field measurements
13	**Former Women's Cell Blocks**			**4-Story Cell Block + Attic**
	1st Floor	3,435	3,435	Usable
	2nd Floor	2,210	3,435	Usable
	3rd Floor	2,210	3,435	Usable
	4th Floor	2,210	-	(re-distribute to 3 floors to improve existing 9' floor-to-floor heights to 12')
	Attic	3,435	-	
	Total SF	**13,500**	**10,305**	
14	**Former Reception Hall**			**2-Story + Basement + Attic**
	1st Floor	3,816	3,816	Usable (4-story atrium space)
	2nd Floor	3,816	3,816	Usable
	Basement	3,168	-	Usable for MEP/FP and storage only
	Attic	-	-	
	Total SF	**10,800**	**7,632**	
16	**Former Sheriff's Residence**			**3-Story + Basement + Attic**
	1st Floor	2,025	2,025	Usable
	2nd Floor	2,025	2,025	Usable
	3rd Floor	2,025	2,025	Usable
	Basement	2,025	-	Usable for MEP/FP and storage only
	Attic	2,025	-	
	Total SF	**10,125**	**6,075**	
		106,963	***87,321***	***Total Area (SF)***

Note: Building areas are approximate and are based on areas reported in the Existing Conditions Analysis prepared by Architects, Inc. except where noted.

York Street Jail Adaptive Re-Use Study | Springfield, Massachusetts
Feasibility Study for Residential / Hotel

AST No. 07022

June 1, 2007

Building Areas

	Existing Area		*Proposed Usable Area*	
Building 1	5,000	SF	7,500	SF
Building 2	306	SF	306	SF
Building 7	18,000	SF	18,000	SF
Building 9	15,300	SF	10,455	SF
Building 10	33,932	SF	27,048	SF
Building 13	13,500	SF	10,305	SF
Building 14	10,800	SF	7,632	SF
Building 16	10,125	SF	6,075	SF
Total Areas:	**106,963**	**Gross SF**	**87,321**	**Net SF**

Construction Budget:

	Gross SF	*Shell & Core Repairs*	*Cost per Building*	*Net SF*	*Residential / Hotel Fit-up*	*Cost per Building*	*Budget Construction Cost per GSF*	*Total*
Building 1	5,000	$211	$1,052,950	7,500	$94	$705,000	$352	$1,757,950
Building 2	306	$211	$64,441	306	$94	$28,764	$305	$93,205
Building 7	18,000	$211	$3,790,620	18,000	$94	$1,692,000	$305	$5,482,620
Building 9	15,300	$211	$3,222,027	10,455	$94	$982,770	$275	$4,204,797
Building 10	33,932	$211	$7,145,740	27,048	$94	$2,542,512	$286	$9,688,252
Building 13	13,500	$211	$2,842,965	10,305	$94	$968,670	$282	$3,811,635
Building 14	10,800	$211	$2,274,372	7,632	$94	$717,408	$277	$2,991,780
Building 16	10,125	$211	$2,132,224	6,075	$94	$571,050	$267	$2,703,274
Subtotal:	*106,963*		*$22,525,338*	*87,321*		*$8,208,174*	*$287*	*$30,733,512*
				Budget Contingency for Renovations:			10.0%	$3,073,351

Total Construction Budget: **$33,806,863**

Expenses Budget:

	Allowance	*Cost*
A/E Design	10.0%	$3,073,400
Civil, Survey, Testing	2.5%	$768,300
Legal, Permitting	11.5%	$3,534,400
Land Costs	0.0%	$0
Escalation	0.0%	$0
Total Project Expenses:	*24.0%*	*$7,376,100*

Total Construction and Project Expenses Budget: **$41,182,963**

Development Budget:

	Percentage	*Cost*
Financing	7.0%	$2,882,800
Developer's Overhead and Profit	10.0%	$4,118,300
Total Development Budget:	*17.0%*	*$7,001,100*

Total Project Budget: **$48,184,063**

Total Project Budget per SF: **$450**

Market Analysis:

	Areas (SF)
Common Space (assume 20% for elevator, stairs, corridor, service, etc.)	21,393
Net (Sellable) Area of Residential / Hotel	85,570

Projected Budget Cost per SF of Net (Sellable) Unit Area: **$563**

York Street Jail Adaptive Re-Use Study | Springfield, Massachusetts
Feasibility Study for Class B Office

AST No. 07022

June 1, 2007

Building Areas

	Existing Area		*Proposed Usable Area*	
Building 1	5,000	SF	7,500	SF
Building 2	306	SF	306	SF
Building 7	18,000	SF	18,000	SF
Building 9	15,300	SF	10,455	SF
Building 10	33,932	SF	27,048	SF
Building 13	13,500	SF	10,305	SF
Building 14	10,800	SF	7,632	SF
Building 16	10,125	SF	6,075	SF
Total Areas:	**106,963**	**Gross SF**	**87,321**	**Net SF**

Construction Budget:

	Gross SF	*Shell & Core Repairs*	*Cost per Building*	*Net SF*	*Office Fit-up*	*Cost per Building*	*Budget Construction Cost per GSF*	*Total*
Building 1	5,000	$211	$1,052,950	7,500	$88	$660,000	$343	$1,712,950
Building 2	306	$211	$64,441	306	$88	$26,928	$299	$91,369
Building 7	18,000	$211	$3,790,620	18,000	$88	$1,584,000	$299	$5,374,620
Building 9	15,300	$211	$3,222,027	10,455	$88	$920,040	$271	$4,142,067
Building 10	33,932	$211	$7,145,740	27,048	$88	$2,380,224	$281	$9,525,964
Building 13	13,500	$211	$2,842,965	10,305	$88	$906,840	$278	$3,749,805
Building 14	10,800	$211	$2,274,372	7,632	$88	$671,616	$273	$2,945,988
Building 16	10,125	$211	$2,132,224	6,075	$88	$534,600	$263	$2,666,824
Subtotal:	*106,963*		*$22,525,338*	*87,321*		*$7,684,248*	*$282*	*$30,209,586*
				Budget Contingency for Renovations:			10.0%	$3,020,959
							Total Construction Budget:	**$33,230,545**

Expenses Budget:

	Allowance	*Cost*
A/E Design	10.0%	$3,021,000
Civil, Survey, Testing	2.5%	$755,200
Legal, Permitting	11.5%	$3,474,100
Land Costs	0.0%	$0
Escalation	0.0%	$0
Total Project Expenses:	*24.0%*	*$7,250,300*
	Total Construction and Project Expenses Budget:	**$40,480,845**

Development Budget:

	Percentage	*Cost*
Financing	7.0%	$2,833,700
Developer's Overhead and Profit	10.0%	$4,048,100
Total Development Budget:	*17.0%*	*$6,881,800*
	Total Project Budget:	**$47,362,645**
	Total Project Budget per SF:	**$443**

Market Analysis:

	Areas (SF)
Common Space (assume 20% for elevators, stairs, corridors, service, etc.)	21,393
Net (Sellable) Area of Office	85,570
Projected Budget Cost per SF of Net (Sellable) Unit Area:	**$553**

SECTION IV: BUILDING RENOVATION REQUIREMENTS

INTRODUCTION

Until a specific re-use option is identified for the Jail complex, the work required to renovate the buildings can be broken down into the following two broad categories:

"Shell-and-Core" improvements include work necessary to rehabilitate the existing structures for general use. This work includes removal of buildings not intended for renovation, repair of the exterior building envelope (roof, walls, windows, etc.), structural upgrades required to meet code and provision of basic mechanical, electrical, plumbing and fire protection systems, including utility service.

"Tenant Fit-up" improvements include work necessary to support specific re-use functions, such as office tenants or residential units. This work generally includes interior partitions and finishes (floors, walls, and ceilings) as well as distribution of MEP/FP systems within the tenant spaces.

This Study has prepared a detailed outline of the work required to rehabilitate the buildings "Shell-and-Core" and prepared a more general understanding of the work required for "Tenant Fit-up".

SHELL AND CORE IMPROVEMENTS

The following general scope of work is necessary to complete the renovation of the building:

- Secure the site and provide temporary services during construction.
- Remove debris and abandoned equipment inside the buildings. Identify and remove possible hazardous materials, including asbestos, fluorescent light fixture ballasts, and other regulated materials.
- Demolish portions of the complex not scheduled for rehabilitation. Provide temporary shoring as required for remaining structures.
- Repair exterior brick masonry walls.
- Repair or replacement of the slate shingle roofing and flashings, including repairs to the roof decking as required. Replace existing built-up roofing system where applicable.
- Repair or replacement of the gutters, downspouts, and associated drainage structures around the buildings.
- Replace all existing windows and doors.
- Construct new egress stairs, interior ramps and elevator cores necessary to support future occupants.

- Provide all new mechanical, electrical, plumbing and fire protection systems.
- Provide new utility service

Associated with this work is an extensive investigative testing program to identify the extent of damage in the building, including hidden damage that may not be readily apparent. Because of the age and extent of water damage to the masonry walls a closer analysis using non-destructive evaluation techniques may identify areas of structural deficiency.

STRUCTURAL

Structural investigation and analysis is required to repair damage caused by water infiltration and environmental forces and to upgrade the structural components to current code requirements. Additional structural work will be required to accommodate improvements to the building such as new elevators; or to allow for the removal of existing structure for new openings or larger interior spaces.

An extensive testing program of existing materials needs to be completed. Without a testing program the minimum capacity of the existing materials can not be accurately determined. Stabilization or rehabilitation can proceed without testing using conservative assumptions, but at a penalty resulting in increased material and construction cost.

The work expected is as follows:

- Repair the existing roofs to support snow loads including drift to meet the minimum requirements of the Massachusetts State Building Code, (MSBC). A level of visual inspection by a professional familiar with the grading rules for wood will be required to determine the type and grade of existing wood plank and framing to remain.
- Clean and patch areas of spalled concrete and exposed reinforcement on interior and exterior portions of the concrete framing.
- Repair existing masonry walls. Provide new lateral bracing where bearing walls are to be removed.
- Provide seismic bracing for non-bearing masonry walls.
- Provide new framing for stairs and elevators.

Modifications to the buildings must comply with the requirements of Chapter 34 of the MSBC. As a minimum, remedial measures to connect the existing masonry walls to the floor construction will be required.

(See the Preliminary Existing Structural Conditions Survey Report by DMB in the Appendix.)

HVAC

For the purposes of developing a budget estimate for the renovations, this study has assumed a complete new HVAC system based on a water-source heat pump system for either residential, retail or commercial occupancies. The heat pump system would allow basic equipment and distribution system piping to be installed as shell-and-core elements, but also allow tenants to install their own heat pumps.

Cooling is produced by the heat pumps, with their heat-of-rejection piped to remote cooling towers, which are either generally located on the roof or at grade. Heating is provided by a combination of the heat pump system moving heat, through the water loop, from areas needing cooling to areas needing heating, and the use of water boilers to add heat to the loop, when there is a net need for heat in the building.

This system has the advantage that each tenant can be metered to pay for most of their own cooling energy and some of the heating energy, through their individual electric meter.

The system requires a central cooling tower(s) with a looped distribution piping system serving individual heat pumps provided in each tenant or residential space. The heat pumps would likely vary in size from one ton to five tons. Gas-fired hot water boilers would provide hot water for the condenser water loop for distribution out to the heat pump units.

PLUMBING

A complete new system of domestic water and sanitary waste will need to be provided. For the purposes of this study, it is assumed the plumbing would be provided as “Shell-and-Core” with a central system that tenants would tie into as part of the Tenant Fit-up.

A new domestic water entry point will be provided with meter and booster pump, if required. There will be a new cold water main in the basement or below grade with risers at each building wing, or section, to run up to the top floor of the respective section. For planning purposes, it is assumed that Individual electric water heaters will be provided locally for each tenant or resident, which they will own, operate and pay for.

Similarly, a system of sanitary sewer risers and horizontals will run up through and around the building as connection points for the tenants. The locations, sizes and quantities would be determined during the actual design phase of the project.

Gas would only be provided to the heating boilers and any commercial kitchen operations, if included. A high end residential development would include gas service to all unit kitchens, but for the purposes of this study, it is assumed the kitchens would operate with electric cooking.

FIRE PROTECTION AND LIFE SAFETY

Depending on the potential re-use of the Jail complex, it is likely that the Code will require a fire protection system. This will include standpipes in the stairwells and sprinklers throughout the building. There will be multiple sprinkler zones because of the size of the building: the number of zones will depend on the occupancies, tenancies and local fire department requirements. It is likely that attics or other unheated spaces will require dry pipe systems.

Each sprinkler zone valve can be fed from the exterior loop, as long as it is properly valved and identified. Similarly, each standpipe can be independently fed from the loop. Densities of sprinkler system design will be determined during design based on occupancies, hazard classification and construction materials.

ELECTRICAL SYSTEMS

The building will require complete replacement of the existing, abandoned electrical system. The type of service available in the area should be confirmed with the local utility, but it is assumed the complex will require pad mounted transformers, likely to be located on the west side of the building.

From this location, horizontal distribution will feed a series of stacked closets in each section of the complex with one closet on each floor. These closets would house tenant panels and meters. From here, distribution will serve 480/277V and 120/208V loads for tenants. Work beyond the tenant meters will be the responsibility of the tenants as they fit out their own space or is included as part of a residential fit-out.

Low voltage systems (telephone, data, CTV, security, etc.) will also require a series of distribution closets located in each section of the building. Limited and specific low voltage raceways will be provided to assure a safe routing

path for data cables. These closets and raceways would be provided under the ”Shell-and-Core” work.

A new code compliant, ADA approved fire alarm system will be required. The system should be fully addressable to allow for the expected continuous changes and expansion as tenants come and go. The main Fire Alarm Control Panel (FACP) would be centrally located at the front entrance, with sub-panels remotely located as required to serve the different portions of the building.

SECTION V: OUTLINE SPECIFICATIONS

The following outline specification describes the scope of work provided for the "Shell-and-Core" improvements for the Jail complex.

ARCHITECTURAL

General Conditions

- Provide temporary site office and utility services for construction work.
- Provide temporary fencing around construction site and staging area to secure the site during construction.
- Provide all necessary scaffolds, staging, shoring, trash dumpsters and equipment.
- Allow for structural testing and analysis of existing concrete masonry and wood structural components.
- Provide allowance for all permits, utility connection charges, and other associated costs for the construction activities.

Selective Demolition

- Remove portions of the structure not identified for rehabilitation, including Buildings 9, 8, 12, 11, 2, 3, 4, 5 and 6 as illustrated on the Existing Conditions Diagram. (Note: subsequent redevelopment proposals may identify alternate uses for these structures).
- Secure portions of the buildings to remain, including temporary weather protection and structural shoring as necessary to maintain the existing buildings.
- Remove existing vegetation growth throughout the buildings.
- Remove collapsed ceilings, roof members and other building hazards.
- Clean extensive debris from entire building. Remove all abandoned equipment, furnishings, and other debris.
- Provide allowance for removal of hazardous materials.

Site Work

- Remove debris from the exterior perimeter of the building. Verify that all storm water drains away from the building. Clean all site drains and eliminate any obstructions which allow water to pond near the building.
- Remove existing asphalt paving. Clear and grade new parking areas and access drive.

- Provide new utility service connections to the street, including water, sanitary sewer, storm sewer, electrical, and telecommunications. Coordinate work with local utilities and allow for all utility backcharges.
- Provide new asphalt paving on gravel for access drive and parking. Allow for storm drainage system as part of paving work.

Concrete

- Provide decorative concrete paving at building entrances and walkways. Allow for 6" paving on gravel bed.
- Allow for new exterior stairs at main building entries and egress doorways.
- Provide new handicapped accessible ramp at front entry, including foundation, ramp and railings.
- Provide new floor slabs where existing floors are to be replaced.
- Provide concrete for new elevator pits.
- Repair existing concrete structure and slabs where spalling has occurred or reinforcing is exposed.
- Provide allowance for new foundations in the existing cell block buildings and for new structural framing system.
- Allow for new concrete floors on metal decking for the cell block buildings.

Masonry

- Clean all existing exterior (masonry) walls.
- Repoint existing masonry walls. Allow for 50% of exterior masonry area.
- Repair collapsed or severely damaged sections of existing exterior walls. Allow for 5% of exterior wall area.
- Provide 8" reinforced CMU walls at new elevator hoistways and egress stairs. Masonry walls to provide seismic bracing for existing masonry structures.
- Provide masonry wall bracing (seismic clips) at non-bearing and exterior walls.
- Allow for loose lintels or other structural supports for openings or service routing through existing masonry walls.

Metal

- Provide new structural steel framing and steel deck for new floors.
- Provide framing and steel pans for new egress stairs.
- Provide new railings at all interior and exterior stairs and ramps.

Carpentry

- Replace missing or damaged roof decking. Allow 30% of roof area.
- Replace missing or damaged wood sub-flooring.
- Allow for new insulated stud wall with GWB finish around exterior perimeter of existing buildings. Interior partitions provided as part of "Tenant Fit-up" costs.

Roofing

- Allow for new structural system at existing cell block buildings, including interior columns and beams supporting both the new floors and existing exterior walls and roof.
- Remove existing slate roof and salvage existing slate for re-use. Repair or replace existing wood decking as required and provide new asphalt shingle roofing.
- Provide new flashing at building transitions, chimneys, dormers and all roof penetrations.

Thermal and Moisture Protection

- Caulk all windows and doors.
- Provide fiberglass batt insulation in attic areas (R-30).
- Provide new batt insulation (R-19) in metal stud walls along exterior masonry walls, as required by Code.

Doors and Windows

- Provide new aluminum entrance doors at front entry and parking entry. Allow for security system interlock with door hardware and HC operators.
- Provide new hollow metal exterior egress doors and service doors.
- Provide new fire-rated wood doors at egress stairs and corridors.
- Replace all windows with new aluminum framed windows with 1" insulating glass.
- Provide new louvers for mechanical equipment.

Finishes

- Finishes provided as part of the "Tenant Fit-up" costs.

Elevators

- Provide new holed hydraulic passenger elevators with 3,500-LB capacity.

Mechanical

- Provide new water source heat pump system. Provide boilers and cooling tower(s). Allow for distribution loop throughout complex with individual heat pump units provided as part of the tenant fit-up.
- Allow for ducted ventilation system for future toilet rooms, electrical closets and janitor closets.

Electrical

- Provide new electrical service. Allow for service entry to main electric room and distribution to tenant meter closets.
- Provide exterior lighting, including pole mounted streetlights along perimeter and in courtyard, security lighting at egress doors and service areas, and decorative lighting at main building entry.
- Allow for code required minimum lighting levels in tenant spaces. Future fixtures to be provided as part of the “Tenant Fit-up” costs.
- Provide new telephone / data raceways. Allow for service entry and distribution to tenant closets.
- Provide new fully addressable fire alarm system.
- Allow for security system with card readers at entry and egress doors, motion detectors at public corridors and entry halls, and window contacts at ground floor windows.
- Allow for new diesel powered emergency generator.

Plumbing

- Provide new domestic water, sanitary sewer and gas service systems. Allow for distribution to third points of each building or building section with final distribution as part of the “Tenant Fit-up” costs.

Fire Protection

- Provide new multi-zone sprinkler system. Provide new Siamese connections at near entry, standpipes at egress stairs, and code required minimum distribution throughout buildings.
- Allow for fire pump with connection to emergency generator.

SECTION X: APPENDICES

A. CHAPTER 34 BUILDING ANALYSIS:
DM BERG CONSULTANTS, PC

B. CONCEPTUAL ESTIMATE
DAEDALUS PROJECTS INC.

1.0 INTRODUCTION

DM Berg Consultants, P.C. has prepared this report in accordance with the requirements of 780 CMR 3402.1.1, 3402.1.2 and the structural requirements of 780 CMR 3408.0.

The objective of this report is to provide a preliminary opinion of the requirements of the Code based on the possible repairs, alterations, and change of use for this project. In addition, this report will outline the specific consequences of the actions related to this work and the structural modifications that may need to be accounted for in the Contract Documents to address these consequences and bring the total structure into compliance with 780 CMR, Sixth Edition (Code).

2.0 GENERAL DESCRIPTION OF THE EXISTING STRUCTURE

Former York Street jail was constructed in circa 1880 and consists of some sixteen buildings.

3.0 OBSERVATIONS

We did not notice any major cracking in the exterior walls. No sign of structural distress was observed inside the building. Most of the structure, however, was covered by finishes and could not be seen.

4.0 780 CMR 34 REQUIREMENTS

To complete any repairs, alterations and change of use for this project, 780 CMR 34 requirements must be satisfied. The applicable structural sections of 780 CMR 34 and a brief synopsis of each section follow.

The buildings are currently unoccupied (except the first floor of Building 9 which is used as a temporary homeless shelter). They were previously used as a correction facility, which is Institutional Use Group I-3. Table 3403 of the Code specifies a Hazard Index of 5 for Use Group I-3. The new use of the buildings will most probably be residential (Use Group R-2), Assisted Living (Use Group R-1 or R-2), Assembly (Use Group A-1, A-2, A-3, or A-4), or Business (Use Group B).

4.1 GENERAL REQUIREMENTS

- **(3400.3, #10) Structural Requirements:** *Structural requirements for additions, and for existing buildings subject to repair, alteration, and/or change of use, shall be in accordance with 780 CMR 3408.*

  The building is changing from an institutional use group to most probably a residential, assembly, or business use group.

- **(3408.1.2) Buildings Constructed prior to January 1, 1975:** *The structural system of existing buildings constructed under a building permit issued prior to January 1, 1975 shall conform to 780 CMR 3408.0 and the building code applicable at the time of the original building permit.*

- **(3408.2) Evaluation of Existing Buildings**

  A representative from our office visited the existing building on Thursday, March 1, 2007 to perform a non-destructive evaluation of the building structure. Additional investigations may be required as the architectural program is developed.

- **(3408.3.8) Deficient or Damaged Structural Members:** *Existing structural members that are found to be deficient or damaged shall be repaired, replaced, or reinforced so that their load capacities conform to the requirements of 3408.5.*

  Most finishes were in place and could be hiding areas of damage or deterioration. We also noticed areas of rusted roof decks in Buildings 10, 13 and 14.

- **(3408.6.4) Existing Unreinforced Masonry Walls:** *Where compliance with the Code for new construction is required by 780 CMR 3408.0, existing unreinforced masonry walls in sound condition may continue in service, providing:*

  1. *They are adequately tied to the structural elements providing their lateral support.*

  The existing exterior and interior masonry walls need to be tied to the floor framing with steel clip angles bolted to the masonry wall at a maximum spacing of four (4) feet, or with continuous light gauge angles. It will be easier to install the angles on top and hide them in the wall baseboard or furring.

  2. *The ratio of unbraced height or length to nominal thickness in at least one direction does not exceed twenty (20) for walls spanning laterally between two supports, nor four (4) for cantilever walls and/or parapets.*

  Existing unreinforced masonry walls should satisfy this requirement if they are properly connected as noted in #1 above. Some taller walls might need lateral support.

  3. *The wall is of sufficient strength to resist the required earthquake forces from 780 CMR 1612.7,* **Architectural…components and systems**.

  The existing exterior unreinforced masonry walls will generally be able to resist the wind and seismic lateral loads specified by Section 1612.7 of the Code without further modification. Tall walls spanning several floors without any lateral support might need intermediate lateral bracing. This bracing can be provided by new floor framing added next to these walls.

4.2 GRAVITY REQUIREMENTS

- **(3408.5.1) Floor Loads:** *The load capacity of all floors affected by alterations or changes of use shall be adequate to support the loads required by the Code for new construction.*

  The required live load capacity of penal institutions is 40 psf for the cell blocks and 100 psf for corridors. Depending on the new use of the buildings, the required live load capacity can vary between 40 psf for residential to 125 psf for light storage. In addition, the existing floors are either wood framing, or concrete poured on brick arches supported on steel beams that are in turn supported on steel columns or masonry walls. The available load carrying capacity of these floors needs to be determined by analysis and/or testing.
  If approved by the Building Official, some areas of the buildings can be posted for a maximum Live Load in accordance with 780 CMR 3408.5.2 (except in use groups industrial, institutional, or storage).

4.3 LATERAL FORCE REQUIREMENTS

This structure was designed and constructed prior to seismic design being required in the State Building code (1975). As such, there is no specific lateral system for the resistance of seismic forces. However, the masonry walls may be assumed to be the lateral load resisting system for

the buildings. This system is prohibited by the Code for new construction, but can be considered effective for the analysis of existing structures.

4.3.1 WIND REQUIREMENTS

(3408.5.3) Wind Loads: *The wind load capacity of the structure as a whole shall not be less than that required for Exposure A in 780 CMR 1611.00.*

It is our professional opinion that the existing masonry walls provide enough lateral resistance for Wind Exposure A.

4.3.2 SEISMIC REQUIREMENTS

The buildings are currently unoccupied. They were used as a correction facility, which is Institutional Use Group I-3. Table 3403 of the Code specifies a Hazard Index of 5 for Use Group I-3. The new use of the buildings will most probably be residential (Use Group R-2), Assisted Living (Use Group R-1 or R-2), Assembly (Use Group A-1, A-2, A-3, or A-4), or Business (Use Group B). The new hazard index for the above usages will be 2, between 4 and 7, or 2, respectively.

- **(3408.5.4.1) Seismic Hazard Category for Existing Buildings:** *Determine the Seismic Hazard Category from Table 3408.1.*

  It is assumed that the cost of alterations will exceed fifty percent (50%) of the assessed valuation of the building. The building is changing from a Use Group with a Hazard index of four (4) to one with a Hazard Index equal to 2, 4, 5, 6, or 7. As such, the Seismic Hazard Category is two (2). There is a very rare possibility of changing to seismic hazard exposure group III per Table 1612.2.5 (police station, fire station, Emergency preparedness center, etc). The seismic hazard category in that case will be three (3) and full compliance with 780 CMR 1612.0 is required with some exceptions mentioned in the Code. We do not anticipate this to be the case.

- **(3408.5.4.4) Seismic Hazard Category Two (2):** *Earthquake resistance shall comply with 780 CMR 3408.3.5 as outlined below and special hazards shall be mitigated as per 780 CMR 3408.6.3.*

- **(3408.3.5) Existing Lateral Load Capacity:** *Alterations shall not be made to elements or systems contributing to the lateral load resistance of a building which would reduce their capacity to resist lateral loads.*

  The existing lateral load resisting system appears to be interior and exterior, vertically unreinforced masonry walls in both directions. Any change in the lateral system will trigger conformance with the new code or to 780 CMR 3408 with no reduction in the lateral load capacity of the building as a whole.

- **(3408.6.3) Reduction of Earthquake Hazards:** … *the following measures shall be taken to reduce hazards from parapets, masonry walls…*

  1. **Parapets:** *All parapets not meeting the requirements of CMR 1612.0 shall be removed, or braced to meet the requirements.*

     Initial observations do not indicate the presence of any parapets.

  2. **Masonry Walls:** *All masonry walls shall be connected to floor or roof diaphragms.*

Walls will need to be tied to floor and roof diaphragms as outlined under General Requirements in Section 4.1, Sub-section *"(3408.6.4) Existing Unreinforced Masonry Walls*", Item 1.

4.4 GEOTECHNICAL REQUIREMENTS

- **(3408.2.4) Geotechnical Explorations:** *Geotechnical explorations shall be performed as necessary to:*
  1. determine subsoils, bearing capacity, and site coefficient, and
  2. type and condition of existing foundations for the lateral load analysis of foundations.

  Geotechnical exploration will not be required if no additions are intended for the project.

- **(3408.7, #2) Liquefaction Evaluation for Existing Buildings:** *Existing buildings with Seismic Hazard Category 2 shall comply with 780 CMR 1805.3.*

- **(1805.3) Liquefaction:**

  Liquefaction must be investigated by a Registered Geotechnical Engineer for at least one of the applicable cases of the five listed in this Section.

5.0 SYNOPSIS OF REQUIREMENTS

The following is a synopsis of the Code required remedial work.

5.1 GENERAL REMEDIAL WORK

1. Further investigate the condition of the existing framing. Provide repair and/or replacement details as required.
2. Repair the building envelope to prevent the water from getting into the building. We recommend replacing the damaged roof deck at Buildings 10, 13, and 14. We noticed the damaged deck above the attic of Buildings 10 and 13. Any other damaged roof, wall, or other building envelope element must be repaired.

5.2 780 CMR 34 REQUIREMENTS

1. (Ref: 3408.2.4) Undertake a Geotechnical Evaluation to ascertain the soil susceptibility to liquefaction and to determine the subsoil bearing capacities and site coefficient. This requirement may be waived by the Building Official based on the information provided in Section 4.4 of this report.

2. (Ref: 3408.3.5) Undertake further investigation of impacts to the lateral load resisting system after the architectural program is set. This includes the review of new or enlarged openings or the demolition of existing masonry walls. Provide a new lateral system as required. See Section 4.3 of this report for more information.

3. (Ref: 3408.3.8) Undertake additional investigations regarding cracks in existing masonry walls or damaged structural members. We do not anticipate a large number of problems in existing masonry walls or damaged structural members in the buildings that are probable to remain.

4. (Ref: 3408.5.1) Investigate and reinforce as required existing framing for locally high live loads associated with the Architectural program. Alternately, review said areas with the Building Official and post each area for the maximum allowed Live Load.

5. (Ref: 3408.6.4) Investigate connection between existing floor and roof diaphragms and masonry walls. See Section 4.1, Sub-Section 5 of this report for more information.

Ali R. Borojerdi, P.E.
Vice President

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DAEDALUS

York Street Jail
Renovation for Core and Shell space

Springfield, MA
Conceptual Estimate

April 26, 2007
Revised June 1, 2007

Cost Consultant
Daedalus Projects Inc.
112 South Street
Boston, MA 02111
(617) 451-2717

Architect
Arrowstreet, Inc
212 Elm Street
Somerville, MA
(617) 623-5555

INTRODUCTION

The following estimate is based on conceptual information from Arrowstreet dated March 2007

The following assumptions have been made.

- The project will be publicly bid under Chapter 149 requirements. We have assumed no less than three General Contractors submitting general bids bids, and no less than 3 filed bid sub-contractors

- Prices are based on current 2007 dollars.

The following items are not included in the estimate:

- Design fees and other soft costs.

- Construction of temporary facilities.

- Moving and storage expense.

Loose furniture and equipment

Handling and storage of owner's equipment and furniture

Markups:

- The General Conditions, Overhead and Profit has been included at 15.%.

- Design Contingency has been included at 10%.

- Escalation beyond April 2007 has been included at 6% per annum

- Construction Contingency has been included at 10%

Note
It is assumed that all of the buildings will be fully vacated during the construction period

SUMMARY

ELEMENT			COST	COST/SF
02-SITEWORK			$4,716,315	$44.09
03-CONCRETE			$1,063,000	$9.94
04-MASONRY			$2,053,072	$19.19
05-METALS			$1,898,565	$17.75
06-WOODS AND PLASTICS			$279,052	$2.61
07-THERMAL AND MOISTURE PROTECTION			$716,336	$6.70
08-DOORS AND WINDOWS			$1,589,207	$14.86
09-FINISHES			$590,169	$5.52
10-SPECIALTIES			$89,601	$0.84
12-FURNISHINGS			$115,763	$1.08
14-CONVEYING SYSTEM			$415,000	$3.88
15-FIRE PROTECTION			$484,924	$4.53
15-PLUMBING			$52,200	$0.49
15-HVAC			$1,606,000	$15.01
16-ELECTRICAL			$1,050,741	$9.82
Subtotal			$16,719,944	$156.32
Design Contingency	10.0%		$1,671,994	$15.63
Subtotal			$18,391,938	$171.95
General Conditions Overhead & Profit	15%		$2,758,791	$25.79
Construction Total, Apr 2007			**$21,150,729**	$197.74
escalation to June 2008	6.5%		$1,374,797	
Construction Total, June 2008			**$22,525,526**	**$210.59**
Construction Contingency	10%		$2,252,553	
Total construction cost, June 2008			**$24,778,079**	**$231.65**
Additional cost to fit out to residential standard	**106,963**	SF	$94.00	**$10,054,522**
Additional cost to fit out to "class B office space"	**106,963**	SF	$88.00	**$9,412,744**
Additional cost to fit out to "limited service hotel"	**106,963**	SF	$94.00	**$10,054,522**
Additional cost to fit out to retail	**106,963**	SF	$77.00	**$8,236,151**
Alternate - Building 9 new mezzanine floor				
New mezzanine floor in building 9	**7,500**	SF	$55.00	$412,500
Egress stairs	**2**	FLT	$10,500.00	$21,000
Elevator	**1**	LS	$150,000.00	$150,000
	Alternate total			**$583,500**

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
02-SITEWORK				
Site preparation and development				
Miscellaneous site clearance / debris removal	**1**	LS	$50,000.00	$50,000
New paving and other hardscape	**60,000**	SF	$4.00	$240,000
Remove existing utilities	**1**	LS	$25,000.00	$25,000
New storm system for the remaining building (assume existing system is beyond repair)	**1**	LS	$250,000	$250,000
New sewer system for the buildings (assume existing system is beyond repair)	**1**	LS	$200,000	$200,000
Landscaping and planting allowance	**1**	LS	$250,000	$250,000
New domestic water service allowance	**1**	LS	$150,000	$150,000
New fire service and hydrants allowance	**1**	LS	$150,000	$150,000
Site electrical; primary service ductbank allowance	**500**	LF	$80.00	$40,000
Secondary electrical service ductbank allowance	**300**	LF	$160.00	$48,000
Communications ductbank allowance	**500**	LF	$80.00	$40,000
Transformer pad and enclosure	**6**	EA	$4,000.00	$24,000
Site furniture allowance	**1**	LS	$50,000.00	$50,000
Site lighting fixtures; allowance	**60**	EA	$2,600.00	$156,000
Disabled access ramps and external staircases	**1**	LS	$25,000.00	$25,000
Environmental / wetlands measures allowance	**1**	LS	$80,000	$80,000
Landscaping and [lanting	**1**	LS	$75,000.00	$75,000
External demolition				
Demolish buildings complete				
Building 3				incl
Building 4	**68,900**	CF	$0.40	$27,560
Building 5	**28,600**	CF	$0.40	$11,440
Building 6	**32,500**	CF	$0.40	$13,000
Building 8	**39,000**	CF	$0.40	$15,600
Building 11	**76,050**	CF	$0.40	$30,420
Building 12	**8,450**	CF	$0.40	$3,380
Building 15	**6,500**	CF	$0.40	$2,600
Internal demolition				
Building 1	**5,000**	SF	$6.00	$30,000
Building 2	**306**	SF	$6.00	$1,836
Building 7	**18,000**	SF	$6.00	$108,000
Building 9	**15,300**	SF	$5.00	$76,500
Building 10, incl remove all uppwer floors	**33,932**	SF	$12.00	$407,184
Building 13, incl remove all upper floors	**13,500**	SF	$12.00	$162,000
Building 14	**10,800**	SF	$6.00	$64,800
Building 16	**10,125**	SF	$6.00	$60,750
Strip out plumbing HVAC and sprinkler	**106,963**	SF	$1.00	$106,963

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
Strip out Electrical installation	**106,963**	SF	$0.50	$53,482
Temporary shoring due to internal demolitions	**1**	LS	$80,000.00	$80,000
HAZMAT abatement allowance - estimate by Tighe & Bond	**1**	LS	$1,340,000	$1,340,000
Miscellaneous demolitions	**1**	LS	$50,000.00	$50,000
Excavation				
Backfill basements	**6,600**	CY	$28.00	$184,800
Excavate within buildings and remove	**500**	CY	$50.00	$25,000
Elevator pit excavation	**2**	EA	$4,000.00	$8,000
SITEWORK TOTAL				$4,716,315
03-CONCRETE				
Concrete foundations	**200**	CY	$450.00	$90,000
New slab on grade - cell blocks	**24,200**	SF	$8.00	$193,600
Loading dock, allowance	**40**	CY	$250.00	$10,000
Miscellaneous concrete in foundations	**20**	CY	$370.00	$7,400
Elevator pits	**2**	EA	$4,000.00	$8,000
Ramps and steps	**40**	CY	$600.00	$24,000
Concrete for new upper floors	**45,000**	SF	$14.00	$630,000
Cutting and patching / concrete repairs	**1**	LS	$100,000	$100,000
CONCRETE TOTAL				$1,063,000
04-MASONRY				
Interior				
CMU walls at elevator shafts 8" grout and rebar	**6,000**	SF	$18.00	$108,000
CMU walls other locations, allow	**10,000**	SF	$18.00	$180,000
CMU walls replacement allowance 8"	**10,000**	SF	$18.00	$180,000
Exterior				
Punch new openings, building 9	**10**	EA	$1,200.00	$12,000
Clean and seal façade	**69,146**	SF	$3.75	$259,298
Rake out and repoint 50% of façade	**34,573**	SF	$16.00	$553,168
Brickwork repairs allowance	**34,573**	SF	$22.00	$760,606
MASONRY TOTAL				$2,053,072

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
05-METALS				
Allow for structural steel for 15000 square feet of new roof structure to buildings 10 and 13	**75**	TONS	$4,000.00	$300,000
Allow for structural steel for 37000 square feet of new floor structure	**185**	TONS	$3,500.00	$647,500
Metal deck replacement for new floor	**45,000**	SF	$3.00	$135,000
Metal deck replacement beneath new roof	**15,000**	SF	$2.75	$41,250
Metal staircase flight with handrails	**20**	FLT	$9,250.00	$185,000
Seismic upgrade to all remaining buildings	**106,963**	SF	$5.00	$534,815
Other misc. metals	**1**	LS	$55,000.00	$55,000
METALS TOTAL				$1,898,565
06-WOODS AND PLASTICS				
Rough Carpentry				
Roof sheathing replacement @ 30%	**10,000**	SF	$3.50	$35,000
Floor repairs allowance	**2,500**	SF	$12.00	$30,000
Rough carpentry / blocking allowance	**106,963**	SF	$1.30	$139,052
Finish Carpentry				
Exterior carpentry repairs	**1**	LS	$25,000.00	$25,000
Finish carpentry; core areas only	**20,000**	SF	$2.50	$50,000
Security guard desk; allow 10ft	**1**	EA	$5,000.00	Tenant
Reception desks; allow 15ft each	**1**	EA	$7,500.00	Tenant
WOODS AND PLASTICS TOTAL				$279,052
07-THERMAL AND MOISTURE PROTECTION				
Insulation				
Allowance for batt insulation in attics	**32,000**	SF	$1.00	$32,000
Damproofing / waterproofing				
Waterproofing elevator pits	**2**	EA	$1,100.00	$2,200
Warerproofing work in existing basements	**1**	LS	$20,000.00	$20,000
Allow for caulking and sealants	**1**	LS	$60,000.00	$60,000
Roofing				
Strip all existing roofing , salvage slates and hand to Owner	**31,992**	SF	$3.75	$119,970
40 yr asphalt shingle roof incl nailable insulation	**31,992**	SF	$9.00	$287,928
Lead coated copper flashings	**31,992**	SF	$1.50	$47,988
Gutter and downspout	**1,600**	LF	$30.00	$48,000
Allowance for firestopping measures	**1**	LS	$15,000.00	$15,000
Spray-on fireproofing allowance for new steel	**45,000**	SF	$1.85	$83,250
THERMAL AND MOISTURE PROTECTION TOTAL				$716,336

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
08-DOORS AND WINDOWS				
Exterior doors, frames and hardware				
Metal egress door	**14**	EA	$1,150.00	$16,100
Interior doors (including frames, hardware & installation)				
Metal door frame and hardware , to replace damaged	**15**	EA	$1,000.00	$15,000
Solid core wood veneer door allowance	**45**	EA	$940.00	$42,300
Access doors	**1**	LS	$25,000.00	$25,000
Curtainwall systems				
Storefront vestibule walls allowance	**450**	SF	$45.00	$20,250
Storefront type doors with sidelights	**15**	PR	$5,500.00	$82,500
ADA electric door openers	**6**	EA	$2,700.00	$16,200
Windows				
Aluminum windows in existing openings;	**22,127**	SF	$62.00	$1,371,857
DOORS AND WINDOWS TOTAL				$1,589,207
09-FINISHES				
Elevator lobby finishes allowance	**4,000**	SF	$20.00	$80,000
Bathroom floor tile	**8,000**	SF	$9.50	Tenant
Bathroom wall tile to 8ft high	**7,000**	SF	$9.00	Tenant
Bathroom wall tile base	**875**	LF	$7.00	Tenant
Bathroom ceiling; moisture resistant ACT	**8,000**	SF	$2.50	Tenant
Remaining core areas, carpet finish	**8,000**	SF	$4.00	$32,000
Remaining core areas, ACT	**8,000**	SF	$2.10	$16,800
Remaining core areas, walls; prepare existing, and paint	**9,200**	SF	$1.25	$11,500
Non slip rubber tiles to stairs and landings	**6,000**	SF	$6.00	$36,000
Paint new doors and frames	**50**	EA	$110.00	$5,500
Shell areas				
Prepare and paint existing walls	**175,680**	SF	$1.25	$219,600
New ACT ceilings	**by tenants**	SF	$2.00	
New VCT floor coverings	**by tenants**	SF	$1.85	
All areas				
GWB lining incl insulation to external wall	**53,934**	SF	$3.50	$188,769
FINISHES TOTAL				$590,169

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
10-SPECIALTIES				
Louvre replacement; allow	**500**	SF	$40.00	$20,000
Allow for building code signage and directories	**106,963**	SF	$0.08	$8,557
Toilet room partitions	**20**	EA	$900.00	Tenant
Toilet room partitions; ADA	**8**	EA	$1,200.00	Tenant
Urinal screens	**12**	EA	$400.00	Tenant
Toilet room accessories	**12**	RMS	$1,800.00	Tenant
Janitor closet accessories	**15**	EA	$110.00	Tenant
Loading dock equipment ,incl dock leveller	**1**	LS	$25,000.00	$25,000
Trash compactor	**1**	LS	$20,000.00	$20,000
Misc specialties	**106,963**	SF	$0.15	$16,044
SPECIALTIES TOTAL				$89,601
11-EQUIPMENT				
No items in this section				
12-FURNISHINGS				
Pedigrid entrance mats	**400**	SF	$22.00	$8,800
Bathroom vanities; P-lam	**200**	LF	$120.00	Tenant
Window blinds	**N.I.C**	SF	$3.00	
Misc furnishings	**106,963**	SF	$1.00	$106,963
FURNISHINGS TOTAL				$115,763
14-CONVEYING SYSTEM				
Elevators; 5 stop hydraulic, 1 opening	**4**	EA	$100,000	$400,000
Wheelchair lift	**1**	LS	$15,000.00	$15,000
CONVEYING SYSTEM TOTAL				$415,000
15-FIRE PROTECTION				
Automatic sprinkler system	**106,963**	SF	$3.40	$363,674
Attic coverage; dry system	**25,000**	SF	$3.25	$81,250
Fire pump	**1**	LS	$40,000.00	$40,000
FIRE PROTECTION TOTAL				$484,924

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
15-PLUMBING				
Elevator Sump Pump	**2**	EA	$2,100.00	$4,200
Backflow Preventers	**4**	LOT	$1,500.00	$6,000
3" Water service w/ meter	**4**	EA	$5,500.00	$22,000
Booster pump	**1**	EA	$10,000.00	$10,000
Fixtures:				
Water closet	**28**	EA	$2,700.00	tenant
Urinal	**12**	EA	$2,700.00	tenant
Lavatory	**40**	EA	$2,700.00	tenant
Gas piping	**1**	LS	$40,000.00	tenant
Wall Hydrant	**20**	EA	$550.00	tenant
Hose Bibbs	**8**	EA	$450.00	tenant
Water fountains	**8**	EA	$2,900.00	tenant
Mop sinks	**8**	EA	$2,800.00	tenant
Floor drains:	**20**	EA	$650.00	tenant
Test and commission	**1**	LS	$10,000.00	tenant
Permits & Fee's	**1**	LS	$5,000.00	$5,000
Shop drawings	**1**	LS	$5,000.00	$5,000
PLUMBING TOTAL				$52,200
15-HVAC				
Boilers	**2**	EA	$45,000.00	$90,000
Expansion Tanks & Air Separators	**1**	LS	$25,000.00	$25,000
Cooling Towers 500 Ton	**1**	EA	$80,000.00	$80,000
Chiller 500 ton	**1**	EA	$225,000	$225,000
Pumps				
Heat pumps	**4**	EA	$40,000.00	$160,000
Exhaust Fans 50,000 CFM	**1**	LOT	$35,000.00	$35,000
Unit Heaters	**60**	EA	$2,200.00	$132,000
Misc. Duct Accessories	**1**	LOT	$25,000.00	$25,000
Fire Dampers	**1**	LOT	$7,500.00	$7,500
Volume Dampers	**1**	LOT	$16,500.00	$16,500
Condensate & Hot Water Piping	**1**	LOT	$250,000	$250,000
Condensate & Hot Water Insulation	**1**	LOT	$80,000.00	$80,000
Miscellaneous valves and specialties	**1**	LOT	$25,000.00	$25,000
VFD	**1**	LOT	$25,000.00	$25,000
Seismic Restraints	**1**	LOT	$25,000.00	$25,000
Galvanized steel ductwork	**15,000**	LB	$8.50	$127,500
Duct insulation	**5,000**	SF	$1.90	$9,500
Automatic temperature controls	**1**	LS	$220,000	$220,000
Test and balance	**1**	LS	$12,000.00	$12,000
Permits & Fee's	**1**	LS	$7,500.00	$7,500

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
Rigging	**1**	LS	$20,000.00	$20,000
Shop drawings	**1**	LS	$8,500.00	$8,500
HVAC TOTAL				$1,606,000
16-ELECTRICAL				
Demolition				
See demolition section				
Gear & Distribution				
Normal Power; Switchboard, panelboards and feeders core	**10,000**	SF	$2.75	$27,500
Normal Power;Switchboard, panelboards and feeders shell	**96,963**	SF	$1.00	$96,963
Emergency/Standby Power				
Emergency generator , ATS and feeders	**106,963**	SF	$1.00	$106,963
Equipment Wiring				
Mechanical equipment and feeders; core	**10,000**	SF	$0.65	$6,500
Water heaters electric	**1**	LS	$60,000.00	$60,000
Mechanical equipment and feeders; shell	**96,963**	SF	$0.35	$33,937
Lighting & Branch Power				
Lighting; core	**10,000**	SF	$4.50	$45,000
Lighting control; core	**40,000**	SF	$1.00	$40,000
Branch devices; core	**40,000**	SF	$1.00	$40,000
Lighting; shell	**96,963**	SF	$1.75	$169,685
Lighting control; shell	**96,963**	SF	$0.30	$29,089
Branch devices; shell	**96,963**	SF	$0.30	$29,089
Fire Alarm				
Allowance for fire alarm; core	**10,000**	SF	$1.40	$14,000
Allowance for fire alarm; shell	**96,963**	SF	$1.40	$135,748
Telephone/Data/CATV				
Telephone/data/catv rough-in inc cable tray; core	**10,000**	SF	$2.00	$20,000
Security System				
Security system; core	**10,000**	SF	$0.60	$6,000
Security system; shell	**96,963**	SF	$0.60	$58,178
Lightning Protection				
Lightning protection system	**106,963**	SF	$0.30	$32,089
Reimbursable				
Fees & Permits	**1**	LS	$30,000.00	$30,000
Commissioning	**1**	LS	$20,000.00	$20,000
Temp power & lights	**1**	LS	$50,000.00	$50,000
ELECTRICAL TOTAL				$1,050,741