

*NH State Office Park South  
Redevelopment Plan*



**Public Works Project #80112**

*Lavallee/Brensinger Architects  
Vanasse Hangen Brustlin, Inc.*

September 21, 2004

# NH State Office Park South Redevelopment Plan



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*Thank you!*

# NH State Office Park South Redevelopment Plan



## *Acknowledgments*

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We wish to offer our sincere thanks to the many persons who assisted in the development of this report. Their commitment, enthusiasm and thoughtful insights provided invaluable support for the planning team.

### **Project Advisory Committee**

Rep. Bill Leber, House of Representatives  
Rep. Jim Rausch, House of Representatives  
Senator Sylvia Larsen, Senate  
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Leon Calawa Jr., Member of the Public  
Kevin Connor, Health & Human Services  
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Rep. Edwin Smith  
Rep. Kevin Waterhouse  
Mike Ablowich, State Treasurer  
Matt Moore, Bureau of Public Works

Each of these individuals has committed many hours and much energy into shepherding the many issues addressed by this report. We thank them wholeheartedly for their assistance.

Many other individuals from the City of Concord and the State of NH, too numerous to name, contributed valuable information and ideas, and we thank them also for their efforts.

## *The Design Team*

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Industrial Hygienists and Hazardous Materials Consultants: The Scott Lawson Group

*Lavallee/Brensinger Architects*  
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# *NH State Office Park South Redevelopment Plan*



## *Introduction*

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In 1994, under the leadership of Leon Calawa, Jr, the State of NH commissioned a masterplan report for the NH Hospital Campus. This comprehensive, 383 page report, prepared by Scheerr & McCrystal Architects of New London, NH, investigated the history, landscape, infrastructure and buildings in extensive detail and formulated a number of recommendations for the rehabilitation and adaptive reuse of the campus.

In 2001 a two-day design charrette was held, further investigating the potential for comprehensive redevelopment of the NH Hospital Campus. The NH AIA, the Office of State Planning, and the NH Department of Administrative Services jointly sponsored the charrette. Over fifty design professionals, business leaders, and interested State and City employees participated in the event, and again, an array of recommendations was formulated for legislative action.

Out of these two efforts two major campus facilities, the Brown Building and the Walker Building, have been renovated and now provide high quality office space for the State. In addition, as part of the Brown Building project, a 482 car-parking garage was constructed, providing needed support for the enhanced use of these facilities.

This report does not intend to duplicate or rethink these important earlier studies. On the contrary, it builds upon their data and analysis, and updates many of their recommendations, adding new ideas and approaches to maximize the value of this important State asset.

We refer you to these earlier studies, available from the Department of Administrative Services and the Bureau of Public Works, for additional data and background supporting many of the recommendations of this report.

Finally, this report is purposefully prepared to be direct and concise. It is intended to recommend a specific plan of action, and to remain a user-friendly guidebook for future parties as they work to implement its recommendations and restore the NH Hospital Campus to the status of a productive asset for the State of NH.

Please note that hereafter the NH Hospital Campus will be referred to by its current designation, NH State Office Park South (NHSOPS).

# *NH State Office Park South Redevelopment Plan*



## *Executive Summary*

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Administrative Services' records indicate that the State of NH currently occupies 1,900,000 gsf of office space in the City of Concord. Of that total, 325,891 gsf is leased from private owners. While these dollars are being paid to private commercial property owners, over 118,000 gsf of potential office space lie empty and deteriorating at NHSOPS. An additional 250,500 gsf is poorly utilized and needs to be renovated to accommodate State needs. A study titled "State of NH-Concord Office Space Needs 2001-2002" by Norton Asset Management, Inc. in 2001 identified that the State needs an average office space increase of 25,000 sf +/- each year to accommodate growth. The actual State Lease Space requirements are summarized in Appendix "Table 1" and "Table 2".

This Redevelopment Plan seeks to clearly define the means and methods to reclaim this important and valuable real estate, and to do so in a sustainable manner that will result in an efficient, effective and quality office campus. The following summaries describe the more detailed findings of this report.

### *General Requirements:*

The campus and its buildings are a significant part of NH history that cannot be replaced if lost.

Immediate funding should be sought to effect the necessary improvements to several buildings that are rapidly deteriorating due to neglect.

An historic documentation effort should be undertaken to capture the remaining historic elements of the campus and its buildings before these features are lost to demolition or renovation.

The campus is an integral and valuable part of the central Concord neighborhoods. All future campus improvements should be mindful of this value and seek to enhance not only the State asset, but the community's as well.

The evolutionary changes in occupancy at the campus have resulted in a complex and cumbersome management structure. Administrative Services, Health and Human Services, and the State Hospital each have portions of the campus to manage and maintain. This results in the unnecessary duplication of many functions and hinders efforts to streamline operations and budgets. Discussions should begin immediately to revise the management structure for the campus.

# *NH State Office Park South Redevelopment Plan*



## *Off-site Improvements:*

Enhanced use of the NHSOPS will result in additional employees and additional traffic on both Pleasant St. and Fruit St. Major entrances to the campus should be limited to one entrance on each of these two streets. These entrances should be improved with signage, widenings, turning lanes, and/or signalization.

Pedestrian paths in both the north/south and the east/west direction should be developed and connected to the adjoining City neighborhoods.

## *Roads and Parking:*

Current campus roads, parking, and sidewalks are a disorganized web that are confusing to navigate, unnecessarily costly to maintain, and dangerous.

A new two-way primary roadway is proposed to connect the main entrances at Pleasant and Fruit Streets. Traffic calming “roundabouts” are included to aid wayfinding and to discourage use of this road as a neighborhood shortcut. (See Roundabout: Figure 1 in Appendix.)

Secondary roads branch from this primary road to access individual buildings and parking areas.

Safe and well defined walkways are provided to connect all facilities and to allow secure pedestrian travel within and across the campus.

Parking is reorganized to directly serve the various building areas on campus. Sufficient surface parking is located near buildings to serve visitors and allow handicap access. Employee parking is reorganized into perimeter parking areas freeing up green space in critical areas adjacent to buildings. An additional 300 space parking garage and two parking decks are proposed to further reduce the impact of surface parking on the campus green spaces.

# *NH State Office Park South Redevelopment Plan*



## *Utilities:*

The current primary utilities are aged and deteriorating. Many underground water and sewer lines are suspected to be original 19<sup>th</sup> century systems.

Primary water, sewer, gas, electric power, and tel/data are proposed to be routed adjacent to the primary roadway, concurrent with its phased installation. Connections to these primary trunk lines are then incorporated into each building's renovation project.

The original campus was heated by a central steam system and most buildings continue to be fed from the Concord Steam plant on-site. This system is highly deteriorated and unreliable. In addition, the pricing of steam on campus is significantly more expensive than more modern gas fired systems. Both Brown and Walker buildings, when renovated, came off this system and included individual gas fired heating and cooling systems. It is recommended that all future projects similarly disconnect from the steam system.

Consistent site lighting should be provided for all walkways, drives and parking areas. These new lighting systems will be more energy efficient, less intrusive on neighbors, and provide for a safer environment.

## *Landscape:*

As noted above, the campus is an historic place, valued for its oak groves, streams, ponds, rolling lawns and meadows. Much of this beauty has been lost over time, but much can be preserved and reclaimed. The many mature oaks, some over 200 years old, are planned to receive stabilization procedures to maximize their useful lives. A plan to replant similar species will ensure the campus character is preserved into the future.

This plan organizes the campus into four "neighborhoods" based upon the historic campus plan and the proposed use of the buildings. Each of these areas will be enhanced to maximize green space and to provide a distinct and unique character to the area.

The "State Office Quadrangle" creates a formal campus quadrangle connecting Thayer, Spaulding, Londergan, and Johnson Buildings. The "Historic Oak Grove" reclaims the original grand lawn at the main entrance on Pleasant St. The "Spring House" neighborhood includes all of the areas around the Main Building and restores the beautiful glade surrounding the Spring House. The "Bow Brook Corridor" will be developed to provide a park like setting both improving the environmental characteristics of the watershed and creating a neighborhood amenity for walking, jogging, and enjoying the natural beauty of the landscape.

# *NH State Office Park South Redevelopment Plan*



## *Buildings:*

This report provides an update to previous studies regarding demolition, use, and rehabilitation of the NHSOPS building stock. Our findings largely agree with previous studies, but some new ideas are presented.

Slated for demolition are several components of the Main Building. The Marking Room, Kent Annex, the Kitchen, the Bakery, and the industrial shops are scheduled for removal due either to severely deteriorated conditions or difficulty in adapting the facility for contemporary use.

The maintenance yard is proposed to be consolidated in the southwest corner of campus. This consolidation requires the demolition of three deteriorating wood structures and the relocation of two existing steel frame structures; the maintenance garage and the transportation building.

The Acute Psychiatric Services Hospital is planning an addition which will include a laundry more suitably sized for the current need. This will allow the future demolition of the current laundry building.

The Steam Plant's future is uncertain. The generation equipment has not been upgraded and the facility is deteriorating. Concord Steam Corporation's lease with the State expires in 2007. At that time the masterplan should be updated to address the status of the Steam Plant.

For purposes of this report, it is assumed that the plant will be removed in the final phase of the campus redevelopment.

All other buildings on the campus are determined to be suitable for renovation and reuse. The Brown and Walker buildings are prime examples of the potential for high quality office environments these buildings possess. This report focused particular analysis on Medical/Surgical, Thayer, Johnson and Tobey buildings. These facilities represent over 246,554 gsf of potential prime office space.

# *NH State Office Park South Redevelopment Plan*



## *Phasing and Implementation:*

The scope of this project, encompassing the 106 acre campus, is significant. To allow reasonable biennial budgets and to mitigate construction impact on ongoing activities, the overall project is divided into four phases. These phases generally encompass the four “neighborhoods” described earlier.

More detailed descriptions of each of the phase components are presented later in this report. Each phase has four primary components:

- Roads & Parking
- Utility Infrastructure
- Landscape
- Buildings

This report proposes that the phases be commenced in two year increments. This not only coincides with the State budget cycle, but also allows completion of the current construction phase prior to commencement of construction for the ensuing phase.

Although much thought has been given to the efficacy of the scope of each phase, certainly some variance is possible in the final planning of the project. Several components are dependent upon the completion of earlier phase work, but others can be flexibly planned to work in any phase. For instance, there may be some cost benefit in constructing the entire Maintenance Yard work in one phase, although this report spreads this work over two phases. An example of dependent work is the Laundry building, which cannot be demolished until the addition to the Psychiatric Hospital is complete.

Careful consideration must be given to parking and utilities during the final development of the project, to ensure that the demands of the increased numbers of employees are met in each phase.

*NH State Office Park South  
Redevelopment Plan*



*Estimates of Probable Cost:*

Probable Development Costs for each of the Phases are as follows:

• Phase I: State Office Quadrangle	\$ 18,455,830
• Phase II: Historic Oak Grove	\$ 23,645,335
• Phase III: Spring House	\$ 29,780,363
• Phase IV: Bow Brook Corridor	\$ 12,882,037
<b>Total:</b>	<b>\$ 84,763,565</b>

*Estimates of Lease Savings Offset:*

The Probable Lease Savings for each Phase are as follows:

• Phase I: State Office Quadrangle	\$ 21,875,000
• Phase II: Historic Oak Grove	\$ 20,757,500
• Phase III: Spring House	\$ 28,244,375
• Phase IV: Bow Brook Corridor	\$ 20,768,750
<b>Total:</b>	<b>\$ 91,645,625</b>
• Lease Savings Offset of:	\$ 6,882,060

# *NH State Office Park South Redevelopment Plan*



## *Phasing and Implementation:*

One of the fundamental requirements of this report is to provide an implementation plan; a roadmap for accomplishing a comprehensive redevelopment of the NHSOPS campus. This is obviously a project of substantial scope and the implementation, therefore, must be done in phases to be both affordable and constructible.

We propose that the project be divided into four phases. Each of these phases provides road/parking/utility infrastructure, building renovation, and landscape reclamation. We have carefully considered the content of each phase from multiple perspectives. Cost, economies of scale, impact on existing occupancies, and construction sequencing have all been considered.

Please refer to the following descriptions of work for each phase. We also include a spreadsheet entitled "Occupancy and Parking Analysis", illustrating the changes in occupancy and parking in each phase.

# NH State Office Park South Redevelopment Plan



View to Medical Surgical



Pleasant Street

South Fruit Street

Clinton Street



View to Londergan

## Phase One: State Office Quadrangle

### Proposed Phase One:

1. Relocate/Upgrade Pond Place  
Demolish Burbank
2. Medical Surgical Building  
Renovation and Addition
3. Department of Revenue Administration
4. Reconfigure Surface Parking
5. Create Office Quadrangle
6. Relocate Grounds Shop  
Demolish Two Wood Garages
6. Complete Primary Road Construction  
Off-Site Improvements

### Proposed Occupancy and Parking Analysis

	GSF	Occupancy	Parking
Johnson Hall	27,840	93	79
Dolloff Building	36,888	123	105
Londergan Hall	50,766	159	135
Medical Surgical Building	55,090	184	156
Medical Surgical Building Infill	15,000	50	43
Spaulding Hall	25,000	89	76
<b>Phase 1 Sub-total:</b>	<b>210,584</b>	<b>697</b>	<b>593</b>

- Proposed Surface Parking Spaces to be 598 +/-.
- Surface Lot Acceptable at Future Garage.
- Reclamation and Creation of Quadrangle.

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## Phase I: State Office Quadrangle

### **General:**

This phase commences the redevelopment and primarily impacts the “quadrangle” formed by Thayer, Londergan, Spaulding, and Johnson buildings.

### **Roadways:**

The primary roadway will be constructed including entrance improvements at both Pleasant St. and Fruit St. The roadway will include pedestrian sidewalks and traffic-calming roundabouts.

### **Parking:**

Surface parking will be removed from the quadrangle area and reconstructed at five locations along the primary roadway. A temporary surface lot will be constructed in the pad area of the Phase II parking garage, just to the west of the existing NH Hospital.

### **Utilities:**

New primary utility runs for power, gas, sanitary sewer and tel/data will be run along the new primary roadway. These utilities will generally “loop” from Fruit St. to Pleasant St. and will have “stub-outs” provided for future connections to buildings.

Medical/Surgical building will be taken off steam service and connected to new utilities. The existing and relocated Maintenance facilities will also be reconnected to new utilities.

### **Buildings:**

Burbank is currently abandoned and will be demolished. The Pond Place residential facility will be relocated to the residential zone at the northeast corner of the campus.

Medical/Surgical Building will be renovated and expanded to house the Department of Revenue Administration.

Two small maintenance structures will be demolished. One steel frame maintenance structure will be relocated to the location of the new centralized maintenance facility.

### **Landscape:**

The perimeter of the new roadway will be landscaped and receive new lighting and signage. The office quadrangle will be created as the first reclaimed greenspace.

Stabilization of major existing trees in the work area will be performed.

# NH State Office Park South Redevelopment Plan



Pleasant Street



View of Bancroft



View of Thayer

South Fruit Street



## Phase Two: Historic Oak Grove

### Proposed Phase Two:

1. Construct Garage
2. Johnson Building – Swing Space
3. Thayer Building  
Renovation: Health and Human Services  
Addition: State Training Facility
4. Bancroft Renovation  
North Elevation: Improvements
5. Surface Parking Reconfiguration
6. Reclaim Historic Oak Grove

### Proposed Occupancy and Parking Analysis

	GSF	Occupancy	Parking
Bancroft	20,260	68	57
Thayer Building (97,164 plus 4,000 SF Addition)	101,164	337	287
<b>Phase 2 Sub-total:</b>	<b>121,424</b>	<b>405</b>	<b>344</b>

- Proposed Parking Spaces to be 345 +/-.
- Parking Garage Required for Thayer Renovation.
- Reclamation of Historic Oak Grove is Achievable.

## Phase II: Historic Oak Grove

### **General:**

This phase continues the Phase I work to the northeast completing building and landscape work along the majority of the eastern portion of the campus.

### **Roadways:**

A secondary access road will be constructed from the primary roadway to the Main Building. The existing westbound access from the Pleasant St. entry will be removed.

### **Parking:**

All surface parking in the original "Oak Grove" (lawn facing Pleasant St. entrance) will be removed. Surface parking at the east side of Main Building will be reconfigured.

To support full utilization of Thayer Building, a 330 space parking garage will be constructed.

### **Utilities:**

Thayer Building will be taken off steam and connected to all new utilities.

### **Buildings:**

Thayer Building will be renovated and will receive a 4000 gsf addition. Thayer will be fully occupied by Health and Human Services.

Johnson Building will have been vacated by Emergency Services, and will be used as swing space for dislodged Thayer occupants.

Bancroft Building will be renovated and occupied by Health and Human Services.

### **Landscape:**

The Historic Oak Grove will be reclaimed as greenspace.

Roads and walkways will receive new lighting and signage.

All impacted areas will be replanted and existing significant trees will be stabilized.

# NH State Office Park South Redevelopment Plan



Pleasant Street



View of Main Building



South Fruit Street

Clinton Street



View of Spring House

## Phase Three: Spring House

### Proposed Phase Three:

1. Main Building: Selective Demolition
2. Construct Main Building Parking Decks
3. Renovate Main Building
4. Reclaim Spring House Green Space
5. Johnson Hall Renovation

### Proposed Occupancy and Parking Analysis

	GSF	Occupancy	Parking
Main Building Center (95,507 less Kitchen 9,202, Marking Room 4,401, Lodge 4,092)	77,812	259	220
Main Building North (54,513 less Bakery 3,606 and Industrial Shop 3,432)	47,475	158	135
Main Building South (64,781 less Kent Annex 42,412)	22,369	75	63
Howard Auditorium/Gymnasium	34,795	22	26
Annex I	8,099	31	6
Twitchell	10,444	8	8
<b>Phase 3 Sub-total:</b>	<b>200,994</b>	<b>553</b>	<b>458</b>

- Proposed Parking for this Phase is 472 +/-.
- This includes Deck parking of 260 and Brown Building Garage Parking of 136, Remainder is Surface Parking.
- Reclamation of Historic Spring House is Achievable.

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### **Phase III: The Spring House**

#### **General:**

This third phase encompasses improvements to the Main Building, and also captures restoration of the glade surrounding the Spring House.

#### **Roadways:**

A secondary access road will be extended along the west side of the Main Building. A small secondary entrance will be included on Pleasant St.

#### **Parking:**

A parking deck will be constructed to the west side of the Main Building.

#### **Utilities:**

New utility connections will be made to the Main Building and to the Johnson Building, removing both from the steam system.

#### **Buildings:**

Significant demolition of the Main Building annexes will be performed. The Main Building and its remaining annexes will be renovated. Final occupants have not been identified at this time.

Johnson Building will be used as swing space during the Main Building renovation, and will then be fully renovated. Final occupants have not been identified at this time.

The Spring House will be renovated and adapted for outdoor pavilion use.

#### **Landscape:**

The glade surrounding the Spring House will be reconstructed as significant green space. This area is suitable for an outdoor assembly space if such program is warranted.

All impacted work areas will be landscaped.

All roads and walkways will receive new lighting and signage.

# NH State Office Park South Redevelopment Plan



View of Tobey



Pleasant Street

South Fruit Street

Clinton Street



View of Apple Orchard

## Phase Four: Bow Brook Corridor

### Proposed Phase Four:

1. Steam Plant Resolution
2. APS Hospital Addition
3. Phase To Be Determined Per Funding
3. Construct Tobey Parking Deck
4. Tobey Building Renovation
4. Laundry Demolition
5. Transportation Building Relocation
5. Maintenance Yard Consolidation
6. Complete Bow Brook Corridor's Pathway Network

### Proposed Occupancy and Parking Analysis

	GSF	Occupancy	Parking
Brown Building (Garage 482 and Surface 50)	110,000	466	396
Tobey	66,460	222	188
Warehouse	18,096	15	13
Walker Building	110,000	291	247
<b>Phase 4 Sub-totals:</b>	<b>304,556</b>	<b>994</b>	<b>845</b>

- Proposed Parking for this Phase is 848 +/-.
- Proposed Tobey Building Deck would be required.
- Reclamation of Bow Brook Corridor is Achievable.

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## Phase IV: Bow Brook Corridor

### **General:**

This final phase reclaims the most significant green space, the Bow Brook Corridor, and addresses the remaining facilities.

### **Roadways:**

A new secondary access road is constructed northward to access Tobey Building and Walker Building.

### **Parking:**

A new parking deck is constructed to the west of Tobey Building.

### **Utilities:**

Tobey Building and the remaining Maintenance Facilities are removed from the steam system and connected to new utilities.

### **Buildings:**

Tobey Building is renovated. Final occupants have not been identified at this time.

Resolution of the Steam plant is finalized. (See discussion in General Requirements)

APS Hospital Addition is completed. (Note that this project is not tracked within this study, but is anticipated to be complete prior to, or during this phase of campus work. It must be completed to allow demolition of the Laundry Facility.)

Demolition of the Laundry Facility

Relocation of the Transportation Facility to the Centralized Maintenance Yard, and finalization of Maintenance Yard work.

### **Landscape:**

The Bow Brook Corridor will be improved from Pleasant St. to Clinton St. to provide a continuous green space including walking and hiking trails.

All work areas will be landscaped.

All roads and walkways will receive new lighting and signage.

We believe the above phasing provides an efficient and effective model for campus development. Certainly many of the components can be moved to earlier or later phases, but some are contingent upon earlier phase work being completed. We recommend that this report be regularly consulted as final plans are formed for the redevelopment work.

# NH State Office Park South Redevelopment Plan



## Occupancy and Parking Analysis

Parking Areas and Related Buildings	Existing Sq. Ft.	Existing # of Bldg Occupants	Proposed # of Bldg Occupants (@ 300 SF/P)	Existing Parking Spaces	Proposed Parking Spaces (.85 ratio)
<b>Phase 1: State Office Quadrangle (Surface Parking)</b>					
Johnson Hall	27,840	68	93	74	79
Doloff Building	36,888	50	123	34	105
Londergan Hall	50,766	159	159	161	135
Medical Surgical Building	55,090	0	184	22	156
Medical Surgical Building Infill	15,000	0	50	0	43
Spaulding Hall	25,000	89	89	67	76
<b>Phase 1 Sub-total:</b>	<b>210,584</b>	<b>366</b>	<b>697</b>	<b>358</b>	<b>593</b>
<b>Phase 1 Parking and Green Space:</b>	Proposed Surface Parking Spaces to be 598 +/-. Surface Lot acceptable at Future Garage. Reclamation and Creation of Quadrangle is Achievable.				
<b>Phase 2: Historic Oak Grove (Garage and Surface Parking)</b>					
Bancroft	20,260	0	68	0	57
Thayer Building (97,164 plus 4,000 SF Addition)	101,164	74	337	45	287
<b>Phase 2 Sub-total:</b>	<b>121,424</b>	<b>74</b>	<b>405</b>	<b>45</b>	<b>344</b>
<b>Phase 2 Parking and Green Space:</b>	Proposed Parking Spaces to be 345 +/-. Parking Garage Required for Thayer Renovation. Reclamation of Historic Oak Grove is Achievable.				
<b>Phase 3: Spring House (Deck and Surface Parking)</b>					
Main Building Center (95,507 less Kitchen 9,202 and Marking Room 4,401 and 4,092 Lodge)	77,812	303	259	277	220
Main Building North (Unoccupied) (54,513 less Bakery 3,606 and Industrial Shop 3,432)	47,475	Inc Above	158	Incl Above	135
Main Building South(10k sq ft Occ.) (64,781 less Kent Annex 42,412)	22,369	Inc Above	75	Incl Above	63
Howard Auditorium/Gymnasium	34,795	22	22	26	26
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Twitchell	10,444	8	8	8	8
<b>Phase 3 Sub-total:</b>	<b>200,994</b>	<b>364</b>	<b>553</b>	<b>317</b>	<b>458</b>
<b>Phase 3 Parking and Green Space:</b>	Proposed Parking for this Phase is 472 +/-. This includes Deck parking of 260 and Brown Building Garage Parking of 136, remainder is surface parking. Reclamation of Historic Spring House is Achievable.				
<b>Phase 4: Bow Brook Corridor (Deck and Surface Parking)</b>					
Brown Building-Garage Parking (Parking-Garage 482 and Surface 50)	110,000	466	466	532	396
Tobey (Assumes entire 66,460 renovated)	66,460	111	222	58	188
Warehouse	18,096	15	15	24	13
Walker Building	110,000	291	291	424	247
<b>Phase 4 Sub-totals:</b>	<b>304,556</b>	<b>883</b>	<b>994</b>	<b>1,038</b>	<b>845</b>
<b>Phase 4 Parking and Green Space:</b>	Proposed Parking for this Phase is 848 +/-. Proposed Tobey Building Deck would be required. Reclamation of Bow Brook Corridor is Achievable.				
<b>NH SOPS North Campus Totals :</b>	<b>837,558</b>	<b>1,687</b>	<b>2,649</b>	<b>1,758</b>	<b>2,240</b>

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*Estimates of Probable Cost:*

Probable Development Costs for each of the Phases are as follows:

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*Estimates of Lease Savings Offset:*

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<b>Total:</b>	<b>\$ 91,645,625</b>
• Lease Savings Offset of:	\$ 6,882,060



# NH State Office Park South Redevelopment Plan

## Phase One: Cost Estimate

Item	Description	Units	Cost ***	Extension
<b>Site</b>				
Off-Site-Fruit Street	Fruit St. Widening & Signalization	Lump Sum		970,000
Off-Site-Pleasant Street	Widening - Left Turning Lane	Lump Sum		183,000
Roads/Walks	Entire Campus Thru Road	Lump Sum		1,100,000
Surface Parking	Remove and Reconstruct	Lump Sum		750,000
Utilities	Storm, Sewer, Gas, Water, Electric	Lump Sum		761,000
Landscape	Landscape and Quadrangle	Lump Sum		550,000
<b>Building</b>				
Medical/Surgical Building				
Abatement	ACM/LBP/PCB's/Misc.*	Allowance		2,190,000
Renovation	Arch/Struc/MEP/FP	55,000 GSF	110	6,050,000
Construction	Open Office Space Infill	15,000 GSF	150	2,250,000
Facilities				
Abatement	Presumed No HazMat Remediation			
Demolition	Two Deteriorated Wood Garages	Lump Sum		25,000
Relocation	Grounds Shop	5,500 GSF	20	110,000
APS Hospital Buildings				
Demolition	Burbank	Lump Sum		15,000
Relocation/Upgrade	Pond Place/Transitional Housing	8,640 GSF	65	561,600
Sub-Total Hard Cost	Site and Building			15,515,600
<b>Soft Costs</b>				
A/E Fees	Arch/Engineering/HazMat	Allowance		1,861,872
Testing/QC	Construction Testing	Allowance		75,000
Allowance	HABS/HAER**	Allowance		50,000
Allowance	Owner's Planning Allowance	5%		775,780
Misc. Costs	Reimbursable Allowance	Allowance		100,000
0.5% for the Arts	Required Arts Fund	0.5%		77,578
Sub-Total Soft Costs				\$2,940,230
<b>Total Probable Development Cost</b>				
				\$18,455,830

Annual Expense Credit Calculated at \$12.50/SF x 70,000 SF

\$875,000  
x 25 years  
-----  
\$21,875,000

\* Estimated Testing Costs to Confirm Abatement Required for Medical/Surgical is \$7,000.

\*\* Historic American Buildings Survey/Historic American Engineering Record

\*\*\* These are 2004 dollars. When this Phase is implemented, these numbers will need to be adjusted to reflect the current dollar amount at that time, relative to the 2004 dollar amounts noted above.

Lavallee/Brensinger Architects

Vanasse Hangen Brustlin, Inc.



# NH State Office Park South Redevelopment Plan

## Phase Two: Cost Estimate

Item	Description	Units	Cost	Extension
<b>Site</b>				
Roads	No Work Proposed			0
Surface Parking	Demo/Reconstruct	Lump Sum	110,000	110,000
Structured Parking	Three Level Parking Garage	330 Spaces	11,000	3,630,000
Utilities	No Work Proposed	Lump Sum		0
Landscape/Walks	Landscape/Walks/Restore Oak Grove	Lump Sum	450,000	450,000
<b>Building</b>				
Thayer				
Demolition	No Work Proposed			
Abatement	ACM/LBP/PCB's/Misc.*	Lump Sum	575,000	575,000
Renovation	Arch/Struc/MEP/FP	98,000 GSF	122	11,956,000
Construction	Addition on North Elevation	4,000 GSF	165	660,000
Bancroft				
Abatement	ACM/LBP/PCB's/Misc.	Allowance	120,000	120,000
Renovation	Arch/Struc/MEP/FP	20,260 GSF	120	2,431,200
Sub-Total Hard Cost	Site and Building			19,932,200
<b>Soft Costs</b>				
A/E Fees	Arch/Engineering/HazMat	Lump Sum		2,391,864
Testing/QC	Construction Testing	Lump Sum		75,000
Allowance	HABS/HAER**	Allowance		50,000
Allowance	Owner's Planning Allowance	5%		996,610
Misc. Costs	Reimbursable Allowance	Allowance		100,000
0.5% for the Arts	Required Arts Fund	0.5%		99,661
Sub-Total Soft Costs				\$3,713,135
<b>Total Probable Development Cost</b>				<b>\$23,645,335</b>

Annual Expense Credit Calculated at \$12.50/SF x 66,424 (42,164 + 20,260 + 4,000)

\* Estimated Testing Costs to Confirm Abatement Required for Thayer is \$4,500.

\*\* Historic American Buildings Survey/Historic American Engineering Record

\*\*\* These are 2004 dollars. When this Phase is implemented, these numbers will need to be adjusted to reflect the current dollar amount at that time, relative to the 2004 dollar amounts noted above.



# NH State Office Park South Redevelopment Plan

## Phase Three: Cost Estimate

Item	Description	Units	Cost	Extension
<b>Site</b>				
Roads/Walks	Perimeter of Main Building	Lump Sum		462,000
Surface Parking	East of Main Building	Lump Sum		510,000
Structured Parking	Deck West of Main Building	130 Spaces	6,500.00	845,000
Utilities	Storm, Sewer, Gas, Water, Electric	Lump Sum		755,000
Landscape	Restore Spring House Green	Lump Sum		450,000
<b>Building</b>				
Main Building				
Demolition	Main Building Selective Demolition	63,000 GSF	4.50	283,500
Egress Requirement	Additional Egress Stairs	Allowance		100,000
Abatement	Pre-Demo @ Main Building*	Allowance		600,000
Renovation	Arch/Struc/MEP/FP	147,000 GSF	118.00	17,346,000
Johnson Hall				
Abatement	ACM/LBP/PCBs/Misc.	Lump Sum		1,300,000
Renovation	Arch/Struc/MEP/FP	27,800 GSF	90.00	2,502,000
Sub-Total Hard Cost	Site and Building			25,153,500
<b>Soft Costs</b>				
A/E Fees	Arch/Engineering/HazMat	Allowance		3,018,420
Testing/QC	Construction Testing	Allowance		75,000
Allowance	HABS/HAER**	Allowance		50,000
Allowance	Owner's Planning Allowance	5%		1,257,675
Misc. Costs	Reimbursable Allowance	Allowance		100,000
0.5% for the Arts	Required Arts Fund	0.5%		125,768
Sub-Total Soft Costs				\$4,626,863
<b>Total Probable Development Cost</b>				<b>\$29,780,363</b>
Annual Expense Credit Calculated at \$12.50/SF x 90, 382 SF (27,800+48,213+14,369)				\$1,129,775
				x 25 years
				\$28,244,375

\* Estimated Testing Costs to Confirm Abatement Required for Johnson Hall is \$1,500.

\*\* Historic American Buildings Survey/Historic American Engineering Record

\*\*\* These are 2004 dollars. When this Phase is implemented, these numbers will need to be adjusted to reflect the current dollar amount at that time, relative to the 2004 dollar amounts noted above.



# NH State Office Park South Redevelopment Plan

## Phase Four: Cost Estimate

Item	Description	Units	Cost	Extension
<b>Site</b>				
Roads/Walks	Roads/Walks to Tobey	Lump Sum		240,000
Surface Parking	Parking for Tobey	Lump Sum		250,000
Structured Parking	Deck East of Tobey	46 Spaces	6,500.00	299,000
Utilities	Storm, Sewer, Gas, Water, Electric	Lump Sum		99,000
Landscape	Emerald Necklace / Bow Brook	Lump Sum		590,000
<b>Building</b>				
Steam Plant	Disposition Unknown			
APS Hospital Addition	Phase Unknown			
Laundry Building	Demolish	15,277 GSF	4.50	68,747
Transportation Building	Relocate to Maintenance Yard	Lump Sum		550,000
Maintenance Yard	Final Consolidation	Lump Sum		250,000
Tobey Building	None Proposed			0
Demolition	ACM/LBP/PCB's/Misc.*	Lump Sum		450,000
Abatement	Arch/Struc/MEP/FP	66,460 GSF	120.00	7,975,200
Renovation	Site and Building			10,771,947
Sub-Total Hard Cost				
<b>Soft Costs</b>				
A/E Fees	Arch/Engineering/HazMat	Allowance		1,292,634
Testing/QC	Construction Testing	Allowance		75,000
Allowance	HABS/HAER**	Allowance		50,000
Allowance	Owner's Planning Allowance	5%		538,597
Misc. Costs	Reimbursable Allowance	Allowance		100,000
0.5% for the Arts	Required Arts Fund	0.5%		53,860
Sub-Total Soft Costs				\$2,110,091
<b>Total Probable Development Cost</b>				<b>\$12,882,037</b>
Annual Expense Credit Calculated at \$12.50/SF x 66,460 SF				\$830,750
				x 25 years
				<u>\$20,768,750</u>

\* Estimated Testing Costs to Confirm Abatement Required for Tobey is \$3,000.  
 \*\* Historic American Buildings Survey/Historic American Engineering Record  
 \*\*\* These are 2004 dollars. When this Phase is implemented, these numbers will need to be adjusted to reflect the current dollar amount at that time, relative to the 2004 dollar amounts noted above.

# *NH State Office Park South Redevelopment Plan*



## *Process*

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As noted earlier, the process of developing a masterplan for the NHSOPS has been going on for many years. The process of preparing this report, however, began in March of 2004 when the Lavallee/Brensinger design team was selected from four candidates to assist the Legislative Committee in its preparation. The Committee and the design team met six times, once a month from March through August to review the progress of the report's development.

The following comprises the major tasks and resources utilized in the preparation of the report.

**Information Collection:** Extensive documentation was obtained from the Bureau of Public Works, Administrative Services, Health and Human Services, the State Hospital, and the Division of Historical Resources. These many drawings and reports provided valuable information used in the analysis and development of recommendations.

The drawings and reports for the four focus buildings, Medical/Surgical, Thayer, Johnson, and Tobey, were collated and redrafted in CADD, creating digital databases for these facilities.

**Tours:** On March 18th and 19th, the design team and representatives of the Committee, Administrative Services and the Bureau of Public Works toured the buildings with "guides" from the facilities' staff. The four focus buildings were viewed in detail including attics, basements and tunnels where they were accessible. The remainder of the facilities were toured briefly to observe their general condition and view highlights of their construction and design.

**Design Charrette:** Office space in the Brown Building was made available to the design team and a day long design session was held to explore planning concepts and define the fundamental design issues of the project. Several staff joined the design team from time to time throughout the day.

# *NH State Office Park South Redevelopment Plan*



**Technical Input:** Several meetings were held to review the masterplan and obtain specific comments and suggestions from experts.

City of Concord: The design team met with City Planners and Engineers to review the specifics of traffic, utilities, and coordination with other related City projects.

NH Psychiatric Hospital: A meeting was held with Chester Batchelder, Superintendent NH Hospital to review the plan relative to ongoing hospital operations and to discuss future plans for hospital expansion.

State Historian: James Garvin, State Architectural Historian, met with the Design Team to discuss the many historical aspects of the campus and its buildings. Jim provided much valuable information on preserving key historical components. This meeting also explored the importance of capturing the existing historical “picture” of the site before any more is lost to renovation or demolition.

**Public Input:** On June 3, 2004, a meeting was held with the Concord Planning Board. The meeting had been publicly announced and several neighborhood residents were in attendance. A presentation of the fundamentals of the plan were presented and questions by the Board and the public were answered and/or discussed.

**Legislative Committee Meetings:** Meetings with the Legislative Committee were held monthly throughout the duration of the project. At each meeting the Design Team reviewed the progress of planning and design and fielded questions and comments from committee members. Key issues were discussed in detail and often decided by the Chairman’s call for a vote. Committee input was integrated into the plan at each step of its development.

**Draft Plan Review:** Committee Members and key staff were given a draft copy of the final plan for review. Their comments were collected by Administrative Services, reviewed with the Design Team, and included in the final report.

# *NH State Office Park South Redevelopment Plan*



## *Guiding Principles*

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After the preliminary site tours were complete, the Design Team formulated a set of “Guiding Principles” to be used throughout the development of this report. These principles are used to test each component of the development plan, to assure that when taken as a whole, it represents the very best development plan possible. Without adherence to the following principles, it is easy to lose sight of the vision, and ultimately redevelop NHSOPS without achieving its maximum potential.

1. **Minimize Existing Building Demolition.**  
This principle speaks to the most basic tenet of sustainability; make maximum use of your existing assets. Many of the buildings are structurally sound, and with thoughtful planning and design, can be brought back to productive use for decades to come. The existing buildings have been carefully reexamined and only those portions which cannot reasonably be saved and restored are slated for removal.
2. **Incorporate Historic Landscape Features.**  
The NHSOPS site is blessed with many extraordinary natural features. As noted earlier in the report, these natural features were the very reason the site was chosen from among many competitors for the original NH Hospital. These landscape elements include grassy lawns, groves of trees, undulating hills and valleys, streams and ponds. Over the years these features have been ignored and allowed to deteriorate. This plan reincorporates them as critical components of the campus plan.
3. **Preserve Campus Character.**  
The NHSOPS has a unique character shaped by the landscape and its many buildings. Over many years of use and redevelopment much of this character has been lost to insensitive renovations and the relentless expansion of surface parking. This plan seeks to create four “neighborhoods”, each respecting and building upon its inherent personality.
4. **Green Space Reclamation.**  
Inherent in both “incorporating historic landscape features” and “preserving campus character” is the necessity of reclaiming green space lost to acres of surface parking. This plan reorganizes roadways and parking and creates additional parking by utilizing structured parking garages and decks. This reorganization allows for the reclamation of important green spaces throughout the campus.

# *NH State Office Park South Redevelopment Plan*



## 5. Simplify Traffic Circulation.

The existing system of roadways on campus has been developed over time as parking was added, but without the benefit of a masterplan. The result is a labyrinthine system of main and secondary roads that is confusing and dangerous to vehicles and, particularly, to pedestrians. Although the campus redevelopment must, out of necessity, be carried out in phases, the roads and parking must observe the recommended masterplan.

The Committee clearly understands the potential of the campus, and embraces adherence to these fundamental principles throughout the many steps required to achieve comprehensive redevelopment.

## *Existing Conditions*

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### *The Landscape:*

The original plan for the State Hospital Campus was developed over 120 years ago by noted landscape architect Jacob Weidenmann (1829-93). At the time, it was widely believed that a pleasant environment was an important part of the treatment of patients at the hospital. As a state-of-the-art hospital, the facility included recreational spaces and “pleasure gardens.” A simple system of walking and carriage paths provided an opportunity to tour the site, with mature trees framing views to the Main Building and to the countryside beyond. The northeastern portion of the property included a grove of “ancient oaks,” a primary factor in the selection of this site for the hospital. The southerly half of the hospital grounds was given over to agricultural fields and orchards to produce food for hospital patients. The Asylum Pond was a focus of recreational activities for the entire community of Concord.

Remnants of the original landscape remain. Near the Thayer Building stand several majestic oak trees, some over 200 years old. The simplicity of the shrub plantings near Main and Bancroft is a testament to the simple elegant original landscape setting for the major buildings. Although Asylum Pond was filled a number of years ago, Bow Brook still provides an important spine to the greenbelt that runs from north to south through the property. Century old apple trees provide a backdrop to the pond on Bow Brook in front of the new Acute Psychiatric Services Hospital.

Over time, the coherency of the original plan has been lost due to additions to the original buildings, construction of new buildings, ad-hoc addition of parking lots and driveways, and loss of shade trees due to age and poor maintenance. In addition, much of the detail of the original landscape has been lost because it is simply too costly to maintain large public spaces in the same way as we did at the end of the 19<sup>th</sup> century, with flower gardens and shrub borders.

# *NH State Office Park South Redevelopment Plan*



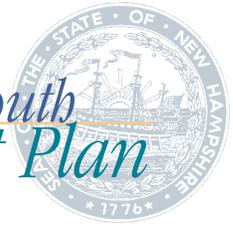
In the first half of the twentieth century, the hospital experienced significant growth. New buildings were constructed, at times taking the place of important open spaces and fragmenting the road system. As the automobile rose as the dominant form of transportation, parking and driveways were added, cluttering important views that were established in the original plan and diminishing the function of open spaces on the campus. Today, the visual impression of the campus is largely dominated by the effects of the automobile. Navigating through the campus has become confusing and dangerous to vehicles and pedestrians alike.

Like the buildings, many of the trees on the campus suffer from neglect and are in need of immediate intervention if they are to be saved. A professional arborist should be engaged to assess the condition of this important resource, and to develop a plan to stabilize and restore the health of the trees on the property.

## *Existing Conditions: The Buildings:*

The following pages generally describe the existing conditions of the buildings on the campus. First, there is an overall locus map with corresponding building legend. The buildings are generally numbered by neighborhood and phase of proposed construction. Construction dates and general information have been incorporated into each sheet. Overall square footages have been identified where possible. The four focus buildings, Medical/Surgical, Thayer, Johnson and Tobey are described in detail in Section 8, with plans, photos, and engineering reports (see Appendix for Engineering reports).

*NH State Office Park South  
Redevelopment Plan*



**State Office Quadrangle:**

- 1 Medical Surgical Building
- 2 Johnson
- 3 Londergan
- 4 Spaulding
- 5 Dolloff
- 6 Burbank
- 7 Pond Place
- 8 Paint and Carpentry Shops
- 9 Storage
- 10 Grounds Department
- 11 Storage

**Historic Oak Grove:**

- 12 Thayer
- 13 Grey House
- 14 Brick House
- 15 Yellow House
- 16 Storage/Garages
- 17 Superintendent's Cottage
- 18 Huntress
- 19 Koutras
- 20 Lodge
- A Bayberry - To be constructed

**Spring House/Main Building:**

- 21 Twitchell
- 22 Main Building - North Pavilion
- 23 Main Building - Peaslee Annex
- 24 Main Building - Peaslee Wing
- 25 Main Building - Chandler Wing
- 26 Main Building - Kimball Wing
- 27 Main Building - Administration Wing
- 28 Main Building - Fisk Wing

- 29 Main Building - Rumford Wing
- 30 Main Building - South Pavilion
- 31 Main Building - Kent Wing
- 32 Main Building - Kent Annex
- 33 Main Building - Marking Room
- 34 Main Building - Chapel
- 35 Main Building - Kitchen
- 36 Main Building - Industrial Shops
- 37 Main Building - Bakery
- 38 Annex 1
- 39 Bancroft
- 40 Howard Auditorium/Gymnasium
- 41 Liberty House
- 42 Warehouse
- 43 Steam Plant
- 44 Transportation Garage
- 45 Laundry
- 46 Spring House

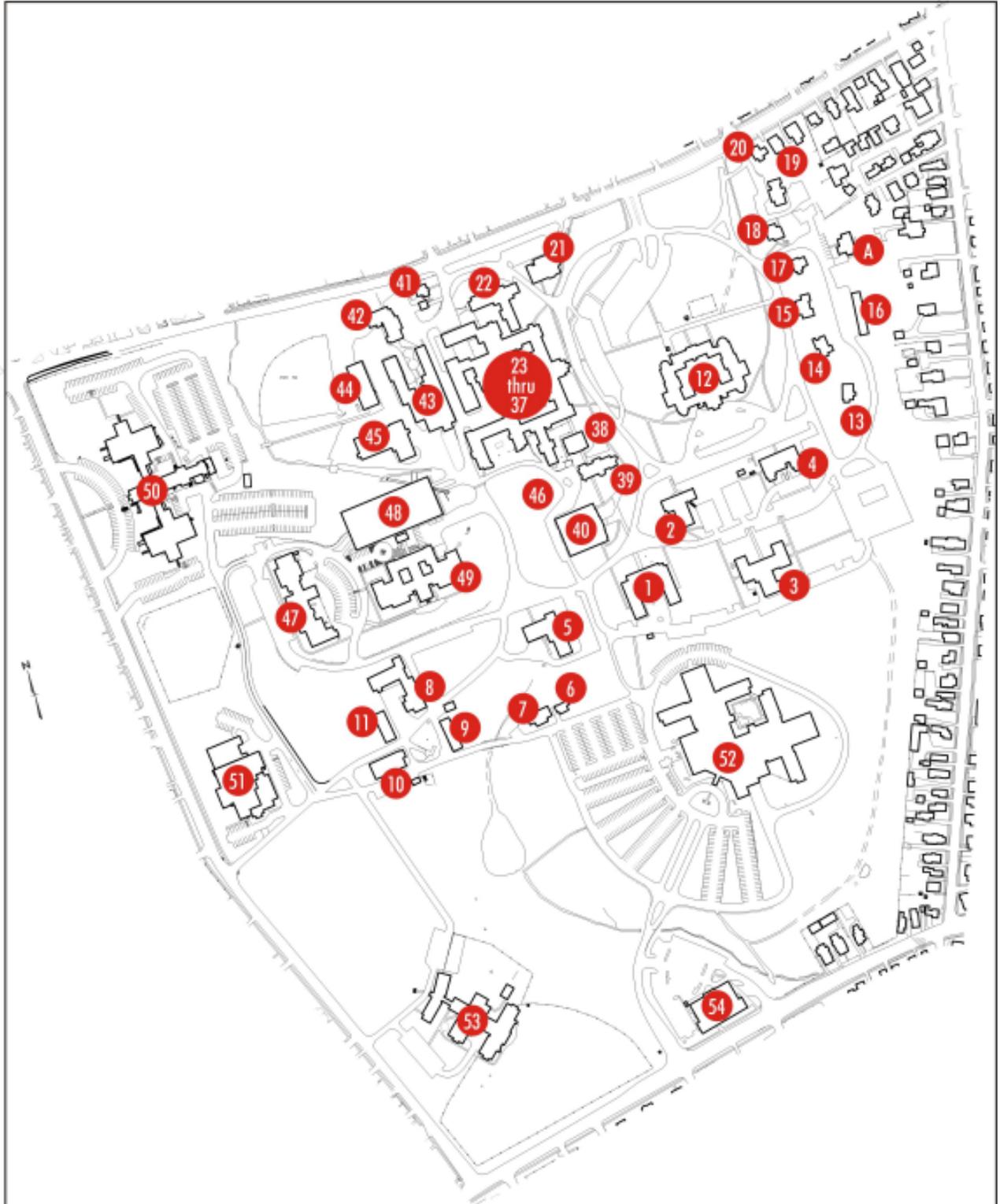
**Bow Brook Corridor/The Northwest Knoll:**

- 47 Tobey
- 48 Brown
- 49 Brown Garage
- 50 Walker
- 51 Archives

**Bow Brook Corridor/The Hospital:**

- 52 Acute Psychiatric Services Hospital
- 53 Philbrook Center
- 54 Concord District Court

# NH State Office Park South Redevelopment Plan



*Lavallee/Brensinger Architects  
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# NH State Office Park South Redevelopment Plan



## 1: Medical Surgical Building

## State Office Quadrangle



Date Constructed:	1941
Current Use:	Unused
Square Footage:	55,090 GSF
Number of Stories:	4 plus basement
Historic Significance:	Low
General Condition:	Proposed for Renovation
Comments:	"needs upgrade to modern office space"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



## 2: Johnson

## State Office Quadrangle



Date Constructed:	1928
Current Use:	Office
Square Footage:	27,840 GSF
Number of Stories:	4 plus basement
Historic Significance:	Average
General Condition:	Proposed for Renovation
Comments:	"acceptable office space"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



## 3: Londergan

## State Office Quadrangle



Date Constructed:	1950
Current Use:	Office
Square Footage:	50,766 GSF
Number of Stories:	4 plus basement
Historic Significance:	Low
General Condition:	No Proposed Changes
Comments:	"needs upgrade to modern office standards"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



## 4: Spaulding

## State Office Quadrangle



Date Constructed:	1933
Current Use:	Office
Square Footage:	25,000 GSF
Number of Stories:	4 plus basement
Historic Significance:	Average
General Condition:	Recently Renovated
Comments:	"nice office space"

# NH State Office Park South Redevelopment Plan



5: Dolloff

State Office Quadrangle



Date Constructed:	1951
Current Use:	Office
Square Footage:	36,888 GSF
Number of Stories:	4 plus basement
Historic Significance:	Low
General Condition:	No Proposed Changes
Comments:	"needs upgrade to modern office standards"

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# NH State Office Park South Redevelopment Plan



## 6: Burbank

## State Office Quadrangle



Date Constructed: 1901  
Current Use: Transitional Housing and Related Offices  
Square Footage: 2,160 GSF  
Number of Stories: 2 plus basement  
Historic Significance: Low  
General Condition: Proposed for Demolition  
Comments: "in disrepair"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*



# *NH State Office Park South Redevelopment Plan*

## *7: Pond Place*

## *State Office Quadrangle*



Date Constructed:	
Current Use:	Transitional Housing and Related Offices
Square Footage:	8,640 GSF
Number of Stories:	2 plus basement
Historic Significance:	Low
General Condition:	Proposed for Relocation
Comments:	“wrong location on campus”

*Lavallee/Brensinger Architects  
Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



## 8: Paint and Carpentry Shops

## State Office Quadrangle/Maintenance



Date Constructed:	1933
Current Use:	Facilities
Square Footage:	10,910 GSF
Number of Stories:	1 plus basement
Historic Significance:	Low
General Condition:	Proposed for Renovation
Comments:	"nice solid structure"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



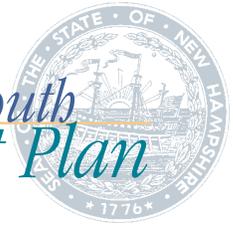
## 9: Storage

## State Office Quadrangle/Maintenance



Date Constructed:	1933
Current Use:	Unused/storage
Square Footage:	3,230
Number of Stories:	1
Historic Significance:	Low
General Condition:	Proposed for Demolition
Comments:	"Buildings are in disrepair"

# NH State Office Park South Redevelopment Plan



## 10: Grounds Department

## State Office Quadrangle/Maintenance



Date Constructed:	1933
Current Use:	Facilities
Square Footage:	5,528 GSF
Number of Stories:	1
Historic Significance:	Low
General Condition:	Proposed for Relocation
Comments:	"Pre-engineered building"

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# NH State Office Park South Redevelopment Plan



## 11: Storage

## State Office Quadrangle/Maintenance



Date Constructed:	1933
Current Use:	Facilities
Square Footage:	3,178 GSF
Number of Stories:	1
Historic Significance:	Low
General Condition:	Proposed for Demolition
Comments:	"In disrepair"

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# NH State Office Park South Redevelopment Plan



12: Thayer

Historic Oak Grove



Date Constructed: 1907/1954  
Current Use: Office/Day Care  
Square Footage: 97,164 GSF  
Number of Stories: 2 plus basement  
Historic Significance: Very High  
General Condition: Proposed for Renovation and Addition  
Comments: "wonderful site dominating the historic oak grove to be recreated"

Lavallee/Brensinger Architects  
Vanasse Hangen Brustlin, Inc.

# NH State Office Park South Redevelopment Plan



## 13: Grey House

## Historic Oak Grove



Date Constructed:	1956
Current Use:	Transitional Housing and Related Offices
Square Footage:	NA
Number of Stories:	2 plus basement
Historic Significance:	Low
General Condition:	No Proposed Changes
Comments:	'nicely scaled home'

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



## 14: Brick House

## Historic Oak Grove



Date Constructed:	1934
Current Use:	Transitional Housing and Related Offices
Square Footage:	NA
Number of Stories:	2 plus basement
Historic Significance:	Low
General Condition:	No Proposed Changes
Comments:	"nicely detailed home"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



## 15: Yellow House

## Historic Oak Grove



Date Constructed: 1920  
Current Use: Transitional Housing and Related Offices  
Square Footage: NA  
Number of Stories: 2 plus basement  
Historic Significance: Low  
General Condition: No Proposed Changes  
Comments: "charming home"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



## 16: Storage/Garages

## Historic Oak Grove



Date Constructed: 1930  
Current Use: Garages/Storage  
Square Footage: NA  
Number of Stories: 1  
Historic Significance: Low  
General Condition: No Proposed Changes  
Comments: "scheduled for maintenance"

Lavallee/Brensinger Architects  
Vanasse Hangen Brustlin, Inc.

# NH State Office Park South Redevelopment Plan



## 17: Superintendent's Cottage

## Historic Oak Grove



Date Constructed:	1931
Current Use:	Transitional Housing and Related Offices
Square Footage:	NA
Number of Stories:	2 plus basement
Historic Significance:	Low
General Condition:	No Proposed Changes
Comments:	"nice home along historic oak grove"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*



# NH State Office Park South Redevelopment Plan

18: *Huntress*

*Historic Oak Grove*



Date Constructed:	Post 1955
Current Use:	Transitional Housing and Related Offices
Square Footage:	NA
Number of Stories:	3 plus basement
Historic Significance:	Low
General Condition:	No Proposed Changes
Comments:	"not part of historic campus"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



19: Koutras

Historic Oak Grove



Date Constructed:	NA
Current Use:	Transitional Housing and Related Offices
Square Footage:	NA
Number of Stories:	3 plus basement
Historic Significance:	Low
General Condition:	No Proposed Changes
Comments:	"recent purchase - not part of the historic campus"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*



# NH State Office Park South Redevelopment Plan

20: Lodge

Historic Oak Grove



Date Constructed:	1898
Current Use:	Transitional Housing and Related Office
Square Footage:	NA
Number of Stories:	2 plus basement
Historic Significance:	Low
General Condition:	No Proposed Changes
Comments:	"house faces Pleasant Street"

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*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



*A: Bayberry*

*Historic Oak Grove*

NO PHOTO AVAILABLE



Date Constructed:	2005
Future Use:	Transitional Housing and Related Office
Square Footage:	NA
Number of Stories:	2 plus basement
Historic Significance:	Not Applicable
General Condition:	Future Building
Comments:	"will be modern day transitional housing facility"

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*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



21: Twitchell

Spring House



Date Constructed:	1895
Current Use:	Transitional Housing and Related Offices
Square Footage:	10,444 GSF
Number of Stories:	3 plus basement
Historic Significance:	High
General Condition:	No Changes Proposed
Comments:	"outstanding architectural character"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*



# *NH State Office Park South Redevelopment Plan*

## *22: North Pavilion*

## *Spring House/Main Building*



Date Constructed:	1903
Current Use:	Unused
Square Footage:	NA
Number of Stories:	2
Historic Significance:	High
General Condition:	Proposed for Renovation
Comments:	"future attractive office space along Pleasant Street"

# NH State Office Park South Redevelopment Plan



23: Peaslee Annex

Spring House/Main Building



Date Constructed:	1909
Current Use:	Unused
Square Footage:	NA
Number of Stories:	4
Historic Significance:	Average
General Condition:	Proposed for Renovation
Comments:	"massive structure"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



## 24: Peaslee Wing

## Spring House/Main Building



Date Constructed:	1855
Current Use:	Partial Use-Office/Patient Care
Square Footage:	NA
Number of Stories:	2
Historic Significance:	Very High
General Condition:	Proposed for Renovation
Comments:	"currently accessed through an historic patient courtyard"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



25: Chandler Wing

Spring House/Main Building



Date Constructed:	1850
Current Use:	Office/Patient Care
Square Footage:	NA
Number of Stories:	3
Historic Significance:	Very High
General Condition:	Proposed for Renovation
Comments:	"Some views over historic oak grove and to Pleasant Street"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



26: Kimball Wing

Spring House/Main Building



Date Constructed:	1842
Current Use:	Office/Patient Care
Square Footage:	NA
Number of Stories:	3
Historic Significance:	Very High
General Condition:	Proposed for Renovation
Comments:	"nice views over the soon to be recreated historic oak grove"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*



# NH State Office Park South Redevelopment Plan

27: Administration Center Wing

Spring House/Main Building



Date Constructed:	1842/1881
Current Use:	Office/Patient Care
Square Footage:	NA
Number of Stories:	5 plus basement
Historic Significance:	Very High
General Condition:	Proposed for Renovation
Comments:	"nice prominent view on top of knoll at campus entry"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



28: Fisk Wing

Spring House/Main Building



Date Constructed:	1842
Current Use:	Office/Patient Care
Square Footage:	NA
Number of Stories:	3 plus basement
Historic Significance:	Very High
General Condition:	Proposed for Renovation
Comments:	"nice views over the site to Thayer, the historic oak grove and the future state office quad"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



29: Rumford Wing



Spring House/Main Building



Date Constructed: 1857  
 Current Use: Office/Patient Care  
 Square Footage: NA  
 Number of Stories: 3 plus basement  
 Historic Significance: Very High  
 General Condition: Proposed for Renovation  
 Comments: "nice views to Thayer and future state office quad"

# NH State Office Park South Redevelopment Plan



30: South Pavilion

Spring House/Main Building



Date Constructed:	1903
Current Use:	Office/Unused
Square Footage:	NA
Number of Stories:	3
Historic Significance:	High
General Condition:	Proposed for Renovation
Comments:	"nice views over landscape dell with historic spring house"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



31: Kent Wing

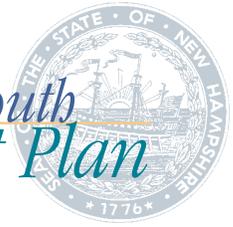
Spring House/Main Building



Date Constructed:	1868
Current Use:	Unused
Square Footage:	NA
Number of Stories:	3 plus basement
Historic Significance:	Very High
General Condition:	Proposed for Renovation
Comments:	"massive structure, historically significant patient care space"

Lavallee/Brensinger Architects  
Vanasse Hangen Brustlin, Inc.

# NH State Office Park South Redevelopment Plan



32: Kent Annex

Spring House/Main Building



Date Constructed:	1909
Current Use:	Unused
Square Footage:	NA
Number of Stories:	4
Historic Significance:	Average
General Condition:	Proposed for Demolition
Comments:	"this building is in disrepair and the removal would allow for the parking decks to be accessed easily without impeding the landscape views"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



## 33: Marking Room

## Spring House/Main Building



Date Constructed:	1910
Current Use:	Unused
Square Footage:	NA
Number of Stories:	2
Historic Significance:	Average
General Condition:	Proposed for Demolition
Comments:	“by demolishing this inner building, it would open up views from the remaining historic wings to a future courtyard”

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*



# NH State Office Park South Redevelopment Plan

## 34: Chapel

## Spring House/Main Building



Date Constructed: 1869  
Current Use: Office/Patient Care  
Square Footage: NA  
Number of Stories: 3  
Historic Significance: Very High  
General Condition: Partially Proposed for Demolition at Lodge and Remainder Proposed for Renovation  
Comments: "the Chapel space should be saved and renovated"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



35: Kitchen



Spring House/Main Building



Date Constructed:	1899
Current Use:	Unused/Storage
Square Footage:	NA
Number of Stories:	1
Historic Significance:	Average
General Condition:	Proposed for Demolition
Comments:	“by demolishing this inner building, it would open up views from the remaining historic wings to a future courtyard”

# NH State Office Park South Redevelopment Plan



## 36: Industrial Shops

## Spring House/Main Building



Date Constructed:	1872
Current Use:	Facilities
Square Footage:	NA
Number of Stories:	3
Historic Significance:	Average
General Condition:	Proposed for Demolition
Comments:	"Due to the location, this building needs to be demolished to open up space for parking"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



## 37: Bakery

## Spring House/Main Building



Date Constructed:	1878
Current Use:	Unused
Square Footage:	NA
Number of Stories:	1
Historic Significance:	Average
General Condition:	Proposed for Demolition
Comments:	"wonderful interior high ceiling, clerestory space, unfortunate in location needed for future parking"

# NH State Office Park South Redevelopment Plan



38: Annex 1

Spring House



Date Constructed:	1900
Current Use:	Patient Care
Square Footage:	8,099 GSF
Number of Stories:	2 plus basement
Historic Significance:	High
General Condition:	No Changes Proposed
Comments:	"outstanding architectural character"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



39: Bancroft

Spring House



Date Constructed:	1884
Current Use:	Unused
Square Footage:	20,260 GSF
Number of Stories:	4
Historic Significance:	Very High
General Condition:	Proposed for Renovation
Comments:	"architectural treasure of the campus"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



## 40: Howard Auditorium/Gymnasium Spring House



Date Constructed:	1955
Current Use:	Patient Care
Square Footage:	34,795 GSF
Number of Stories:	2
Historic Significance:	Post 1950
General Condition:	No Changes Proposed
Comments:	"entry stairs are crumbling, needs some maintenance"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



41: Liberty House



Spring House



Date Constructed:	1892
Current Use:	Transitional Housing and Related Offices
Square Footage:	NA
Number of Stories:	2 plus basement
Historic Significance:	Low
General Condition:	No Changes Proposed
Comments:	"nice house, but near current industrial area of the campus"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



42: Warehouse

Spring House



Date Constructed:	1951
Current Use:	Warehouse
Square Footage:	18,096 GSF
Number of Stories:	3
Historic Significance:	Post 1950
General Condition:	No Changes Proposed
Comments:	"very solidly built building"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



43: Steam Plant



Spring House



Date Constructed: 1911/1940  
 Current Use: Steam Plant/Facilities  
 Square Footage: NA  
 Number of Stories: NA  
 Historic Significance: Low  
 General Condition: Final Determination To Be Studied  
 Comments: "this industrial steam plant has been noted as being inefficient and in need of repair/reorganization"

# NH State Office Park South Redevelopment Plan



## 44: Transportation

## Spring House



Date Constructed:	1974
Current Use:	Facilities
Square Footage:	7,276 GSF
Number of Stories:	1
Historic Significance:	Post 1950
General Condition:	Proposed for Relocation
Comments:	"this building could be relocated to a more central maintenance yard"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



45: Laundry

Spring House



Date Constructed:	1937
Current Use:	Laundry
Square Footage:	15,277 GSF
Number of Stories:	1
Historic Significance:	Low
General Condition:	Proposed for Demolition
Comments:	"This laundry serves the APS Hospital across the campus and the function should be relocated near the APS Hospital"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*



# NH State Office Park South Redevelopment Plan

## 46: Spring House

## Spring House



Date Constructed:	1882
Current Use:	Unused
Square Footage:	Not Applicable
Number of Stories:	1
Historic Significance:	Average
General Condition:	Proposed for Stabilization
Comments:	"this brick structure should be preserved as an historical garden feature of the campus"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



47: Tobey

Bow Brook Corridor/The Northwest Knoll



Date Constructed:	1930/1936
Current Use:	Patient Care and Related Offices
Square Footage:	66,460 GSF
Number of Stories:	3 plus basement
Historic Significance:	Average
General Condition:	Proposed for Renovation
Comments:	"nice views on all four sides to surrounding campus vistas"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



48: Brown

Bow Brook Corridor/The Northwest Knoll



Date Constructed: 1924/1998  
Current Use: Office Space  
Square Footage: 110,000 GSF  
Number of Stories: 4  
Historic Significance: Average  
General Condition: Recently Renovated  
Comments: "wonderful modern day office space"

Lavallee/Brensinger Architects  
Vanasse Hangen Brustlin, Inc.

# NH State Office Park South Redevelopment Plan



## 49: Brown Garage

## Bow Brook Corridor/The Northwest Knoll



Date Constructed:	1998
Current Use:	Parking Garage
Square Footage:	NA
Number of Stories:	4
Historic Significance:	Post 1955
General Condition:	Recently Built
Comments:	"monumental scale, future office garages and decks proposed to be articulated with a scale similar to the campus architecture"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



50: Walker

Bow Brook Corridor/The Northwest Knoll



Date Constructed:	2004
Current Use:	Office
Square Footage:	110,000 GSF
Number of Stories:	3
Historic Significance:	Very High
General Condition:	Recently Renovated
Comments:	"wonderful modern office space"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*



# NH State Office Park South Redevelopment Plan

51: Archives

Bow Brook Corridor/The Northwest Knoll



Date Constructed: 1962/1975  
 Current Use: Archives  
 Square Footage: 22,000 GSF  
 Number of Stories: 1  
 Historic Significance: Post 1955  
 General Condition: Addition Underway  
 Comments: "nondescript but practical facility with future additions planned"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



52: Acute Psychiatric Services Hospital

Bow Brook Corridor/The Hospital



Date Constructed:	1989
Current Use:	Patient Care
Square Footage:	NA
Number of Stories:	2 plus basement
Historic Significance:	Post 1955
General Condition:	Recently Built
Comments:	"modern architectural language unlike the historic character of the campus"

Lavallee/Brensinger Architects  
Vanasse Hangen Brustlin, Inc.

# NH State Office Park South Redevelopment Plan



## 53: Philbrook Center

## Bow Brook Corridor/The Hospital



Date Constructed:	1969
Current Use:	Patient Care
Square Footage:	NA
Number of Stories:	2
Historic Significance:	Post 1955
General Condition:	No Proposed Changes
Comments:	"as patient needs dictate, this building may change use and/or need to be renovated in the future"

# NH State Office Park South Redevelopment Plan



54: Concord District Court

Bow Brook Corridor/The Hospital



Date Constructed:	1991
Current Use:	Courthouse
Square Footage:	NA
Number of Stories:	2 plus basement
Historic Significance:	Post 1955
General Condition:	Recently Built
Comments:	"building creates a nice edge to Clinton Street and blends with the more traditional buildings on the campus"

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*

# NH State Office Park South Redevelopment Plan



## *Development Plan:*

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### *General Requirements:*

There are a number of issues that are central to all aspects of this development plan. To some extent they relate to the “Guiding Principles” outlined earlier in the report, but they also come from an understanding of some misguided decisions that have been made in the past. We provide the following discussion of important general issues that should be crafted into all aspects of the final development plan for the campus.

#### 1. Historical Assets:

The campus, as has been noted repeatedly, has a rich history intertwined with the history of Concord and the State of NH. Unfortunately, much information, artifacts, and lore has been lost over the years. In 1985, the Division of Historical Resources commissioned a summer internship to research all available documentation on the campus and its buildings. The report listed 119 documents existing at that time. Unfortunately the internship did not include archiving these documents, so where these documents reside today is largely unknown.

Similarly, many historical references are a part of the buildings themselves, such as the patient artwork still visible on the peeling paint of the Peaslee Annex. As these buildings continue to deteriorate, the references slowly disappear.

We strongly recommend that as soon as possible, and certainly before any additional demolition or renovation is undertaken, a historical survey is undertaken to thoroughly document the remaining features of the campus.

Defining the exact nature of this study is beyond the scope of this report, but we understand that the Division of Historical Resources will take a leadership role in developing this important plan.

#### 2. Building Stabilization:

Upon touring the many buildings on campus, we were struck by the number of facilities that were unoccupied, unheated, and incurring significant damage from leaking roofs and missing windows. Buildings such as Medical/Surgical and Bancroft, that are prime candidates for renovation and productive reuse, are leaking badly and slowly deteriorating. This neglect is costing the State real dollars, as the cost of temporary repairs to stabilize these buildings is a fraction of the cost of repairing the damage currently being done through leaks and unheated conditions.

# *NH State Office Park South Redevelopment Plan*



We strongly recommend that an assessment of repairs necessary to stabilize all buildings scheduled to be renovated be done immediately, and funding be authorized to make these repairs before the onset of winter.

### 3. State/City Asset:

After presentation of the plan to the Concord Planning Board, one of the Board members commented that this was the most informed and proactive plan the State has ever presented to the City. Indeed, the Committee has stressed from the outset that Concord's interests need to be investigated and reasonably incorporated into the plan.

This property represents the largest contiguous green space in central Concord, and abuts four residential neighborhoods. In addition, it is situated such that pedestrian traffic to and from the High School and Memorial Fields most conveniently passes through the site.

This plan has responded to the City's interests, but it is important that the final development design and engineering documents continue to recognize that NHSOPS is not only a State asset, but a City one as well.

### 4. Consolidated Management:

In touring the facilities, it became evident that there are several redundant maintenance facilities on campus. Questioning this, we were informed that the responsibility for various facilities falls to three different agencies; Administrative Services, Health and Human Services, and the NH Hospital.

This management structure has apparently evolved over time, but is not efficient or effective in anyone's opinion. Again, recommendations regarding the most effective management structure are well outside of the scope of this report. We do, however, strongly recommend that discussions be started immediately to restructure campus management to a single authority. Understanding how facilities management and maintenance will be handled will be critical prior to commencing the first phase of construction.

### 5. Steam Plant Study:

A study should be funded to determine the future of the Steam Plant.

# *NH State Office Park South Redevelopment Plan*



## *Off-Site Improvements:*

The Main Drive intersection with South Fruit Street will be improved as the main access and egress to the site. Intersection improvements will include additional turning lanes and traffic signal control. On South Fruit Street, a southbound left turn lane and a northbound right turn lane will be provided. On the site, a two-lane approach will allow for separate left and right turn lanes. Due to the expected high volume of left turns from the site during the evening peak hour, traffic signal control is warranted.

Two Pleasant Street access points are planned: a full access and egress driveway on Pleasant Street in the historic location of the primary campus entrance at the eastern end of Main Drive, and a right-in access and right-out egress on Pleasant Street at the Industrial Drive intersection. At the Main Drive intersection with Pleasant Street, a westbound left turn lane will be constructed on Pleasant Street in anticipation of a significant number of left-turning vehicles entering the site. On the Main Drive a two lane approach will separate exiting vehicles turning left and right. In general, these roadway improvements would utilize State land from the campus.

With the described improvements in place, a balanced distribution of entering and exiting traffic among the site driveways is expected. Good overall intersection operation is expected at South Fruit Street. At Pleasant Street, all movements will operate at good levels of service with the exception of a relatively small number of left turns that choose this drive to exit during the evening peak hour.

# *NH State Office Park South Redevelopment Plan*



## *Roads and Parking:*

In order to improve circulation on the campus, provide adequate parking facilities and improve access to the property, changes to the roadways on and surrounding the campus are necessary. The following factors were key criteria for evaluation of existing traffic operations and the development of recommendations for improvement:

- Align the State Office Park roadways and pedestrian-ways to minimize conflict and enhance safety throughout the campus. The plan should accommodate vehicular access to and from parking, emergency vehicle access to all buildings, pedestrian and bicycle access to all buildings, as well as cross-campus pedestrian movements from the south to Concord High School and from the east to Memorial Park. Pedestrian and bicycle facilities should complement the City of Concord's bike and pedestrian plan.
- Dedicate width for roadways that will accommodate automobiles and bicycles within the pavement and provide sidewalks for access to parking facilities and as needed to complement the campus landscape.
- Encourage access and egress from South Fruit Street while also maintaining access on Pleasant Street to serve a significant demand from the north and east.
- Enhance safety in regard to vehicular conflicts and vehicle-pedestrian conflicts through effective layout of transportation facilities and use of traffic control measures, informational and warning signing, and pavement striping.
- Examine opportunities to provide traffic calming and enhanced directional way-finding on the campus.

Primary site driveways are located on South Fruit Street and Pleasant Street. The main entrance is located on South Fruit Street as are three other minor driveways to smaller parking areas on the South Fruit Street side of the Walker Building. On Pleasant Street, the existing major driveways at Industrial Drive and Main Drive will be retained and all other minor driveways will be eliminated.

# *NH State Office Park South Redevelopment Plan*



The principal site roadway, Main Drive, will extend from South Fruit Street to Pleasant Street, creating a single major circulation route through the campus. This roadway will be routed south of and east of the quadrangle that includes Londergan Hall, the Johnson Building, the Thayer Building, and the Spaulding Building. The typical roadway cross-section for all circulation roadways on site will include two 11-foot lanes and a 4-foot paved shoulder to accommodate bicycles. A sidewalk will be provided along the entire length of Main Drive.

Other circulation roadways on site include Walker Drive, Industrial Drive, and the Main Building Loop. Walker Drive enables vehicle access to parking on the east side of the Walker Building, to the parking structure adjacent to the Brown Building, and to parking around the Tobey Building. Industrial Drive provides access to the Brown Building, the Concord Steam Plant, and to the parking on the west side of the Main Building. Industrial Drive, in combination with the Main Building Loop, encircles the Main Building and enables access to a series of smaller parking areas east of the Main Building.

Where Walker Drive and Industrial Drive intersect Main Drive, roundabouts are planned. These roundabouts are effective in enhancing vehicle safety by effectively reducing all entering vehicle speeds and metering traffic flow. A roundabout influences the speed of all entering vehicles through the use of splitter islands on the approaches that force vehicles to the right and compel them to yield to vehicles approaching within the circular lane around a central island. The central island will have a diameter of 30-60 feet. It also initially forces vehicles to the right when entering the roundabout, and subsequently to the left around the central island prior to exiting the roundabout. Elimination of left turns and this sequence of low-speed, short turns minimize the risk and /or severity of collisions with other vehicles. It should also be noted that on the State Office Park site, the existing “cut-through” traffic flow unrelated to the office use would likely find the low speeds associated with the two roundabouts on Main Drive to be a deterrent to using Main Drive as a short cut between South Fruit Street and Pleasant Street.

As described, the site roadways are expected to operate without significant delay and with minimal risk of accidents. Additional turn storage lanes on the site roadways at the larger parking area entrances will not be necessary. Pedestrian crosswalks should be properly located with respect to visibility, well marked on the pavement and complemented by proper signing in order to provide safe pedestrian-crossing opportunities.

# *NH State Office Park South Redevelopment Plan*



## **Parking:**

As previously discussed, the present parking configuration relies on a large number of surface parking lots filling virtually all the space between Thayer and Londergan & Johnson, and intruding into the west lawn area adjacent to Pleasant Street. The large parking structure north of the Brown Building removed important vegetation, and was sited such that it looms far above the open area adjacent to Pleasant Street and Bow Brook.

The recommended alternative to continuing this approach is to provide additional structured parking adjacent to the Main Building and the Tobey Building that is comprised of a single deck of parking accessed at each of two levels. This is a relatively economical approach that has the benefit of dispersing parking throughout the campus and limiting the visual impact that a larger structure would likely have in these sensitive locations.

An additional large parking structure will be sited at the current location of the Pond Place transitional housing facility. This location is convenient to a number of buildings envisioned for more intensive use: Medical/Surgical, Thayer, Londergan, Johnson and Dolloff.

Relocation of surface parking lots to the periphery of the "Office Quadrangle" area allows convenient parking for campus users, while reclaiming open space as a pedestrian amenity for the campus.

Parking requirements were studied, and based on projected use of the campus, a parking ratio of 0.78 to 0.85 spaces per employee is recommended. The total number of spaces envisioned at full occupancy of the campus is 2,250. This yields a parking ratio of approximately 0.84 spaces per employee.

## **Signage:**

Signage and site way-finding should be upgraded as a part of the roadway redevelopment process. A 2001 signage master plan report made numerous recommendations for signage improvements to the campus. Signage should be incorporated into the new roadway system, with a focus on consistency in the signage used on campus and providing simple directional signage at major roadway intersections and roundabouts. While roadway upgrades are taking place, a palette of site furnishings should be developed to serve as a unifying element to the landscape setting on the campus. Site furnishing elements should include roadway and parking lot light fixtures, trash receptacles, benches, bike racks, bollards for traffic control, fencing for screening service areas, and any other appurtenances to the building renovations. A coherent overall design of these elements should be undertaken in the first redevelopment phase, with the intent of extending the decisions made in this phase through the life of the campus redevelopment.

# *NH State Office Park South Redevelopment Plan*



## *Utilities:*

The existing utility infrastructure on the State Office Park Campus is largely dated and in need of replacement. In addition to the typical wear and tear on systems, there is a need to bring the utility systems into the new century, with the addition of modern communication infrastructure. Water lines are fragile, and water quality is severely degraded as a result of corrosion in the pipes.

Water, gas, electric and telecommunications facilities should be replaced and improved in conjunction with the roadway improvements. Individual service to the buildings can be improved when building renovations occur. The City of Concord installed a new sewer interceptor through the property, and connections to the buildings have been upgraded as renovations have taken place.

Heat for the buildings is provided by the Concord Steam Corporation plant situated behind the Main Building. With the cost of steam rising, and the quality of the steam delivery system on the decline, the State has opted to include new heating and cooling plants in each building as it is renovated. This option has been found cost effective as modern, more energy efficient systems have been specified. Because Concord Steam provides heat to a number of buildings throughout the downtown area of Concord, it is anticipated that the steam generation plant will remain on the site for the foreseeable future. Noting that the condition of the plant is declining, with the requirement of major investment likely, it is possible that the steam plant will be modernized.

With more modern generation equipment, the plant could be reduced in size, and could potentially be relocated if another appropriate site in the City is located.

Stormwater management will be a continuing issue as the campus is redeveloped. While the amount of impervious surface on the site is not envisioned to increase significantly as a result of the development of the planned improvements, the Bow Brook corridor is currently taxed from both a peak flow and a water quality perspective. Efforts should be made to incorporate additional stormwater detention facilities as the property is renovated. Development of open space amenities adjacent to the Bow Brook should include reestablishment of floodplain storage areas allowing the brook to accommodate increased peak flows from the upstream watershed. In addition, construction of new roadways and parking facilities should include water quality enhancement devices for removal of suspended solids and non-point source pollutants from the drainage stream.

# *NH State Office Park South Redevelopment Plan*



## *Landscape:*

The landscape at the State Office Park South is important for a number of reasons:

- The overall plan and landscape design was developed by an important early landscape architectural practitioner, and is an excellent example of a mid-19<sup>th</sup> century institutional campus setting.
- The landscape creates a setting for architecturally significant buildings.
- Open space adjacent to Bow Brook and in the west lawn area in front of the Main Building is an important visual and recreational asset in the heart of Concord.
- Open space on the campus can create a fabric that ties the uses of the site to one another.
- Open space creates views for the office buildings, and is an important amenity for state workers at the site.

As discussed earlier, because of additions to the roadways and parking areas, and additional buildings on the property, the landscape of the campus has experienced change that serves to dilute the strength of the original plan. The trees that form the backbone of the landscape and that once defined grand spaces on the campus have been lost or injured through age, modification to growing conditions, and lack of proper maintenance. The landscape is in need of revitalization. As importantly, the organization of the campus that was evident in the original plan needs to be reestablished.

There are four central proposals related to this issue:

- Consolidation of parking facilities to reclaim open space on the site.
- Reestablish the West Lawn area along Pleasant Street as a front door to the campus.
- Establishment of a “green necklace” along the Bow Brook corridor that serves as an open space spine for the campus.
- Establishment of dedicated pedestrian facilities that tie the campus buildings to each other, to the open space spine, to the new parking facilities, and to the greater Concord neighborhood.

## **Open Space:**

Relocation of parking facilities that are scattered throughout the campus is key to reclaiming open space for campus users. The creation of a quadrangle in the area between Thayer, Londergan, Spaulding and Johnson will provide a significant amenity to this portion of the campus, while unifying and reinforcing the connection between these buildings.

# *NH State Office Park South Redevelopment Plan*



Relocating the parking now existing in the West Lawn area in front of Thayer and the Main Building will return this important open space both to the users of the campus and to the City as a whole. A program of tree pruning and maintenance, conducted by a qualified arborist, may extend the life of the important large trees in the area. In addition, a program of landscape enhancements should be undertaken, focused on planting additional trees to replace those lost over time, and to reinforce the spatial qualities of the historic Oak Grove.

## **Bow Brook:**

Restoration of Bow Brook and establishment of the Bow Brook corridor as an open space spine through the campus should be a priority in redevelopment of the property. Bow Brook has been degraded over time, and the northern portion of the brook is typical of neglected urban streams. Litter and weedy vegetation choke the brook and limit its value as an amenity. The view into the campus is impacted by the essentially industrial character of the buildings and facilities in this portion of the property. Priority should be given to planting significant screening vegetation between the Concord Steam facility, the warehouse building and the Brown Building parking structure and the field area adjacent to the brook. Additional tree plantings can define the space as an open, multi purpose field area, and pedestrian paths are needed to connect with Pleasant Street and the Spring House area. Grant funding should be explored to initiate an urban stream restoration program to return Bow Brook's functional and aesthetic qualities.

After the brook enters the culvert northeast of the parking structure, the open space continues to the small parklike area adjacent to the Spring House structure. While this structure has deteriorated, and currently poses a hazard, the area is at the heart of the campus and should be considered for improvement. The Spring House should be filled in and stabilized and considered for use as a meeting place, or outdoor amphitheater facility. The addition of pedestrian facilities to connect this area with the west lawn, the office quadrangle and the southern portion of the site completes the work needed in this area.

Pedestrian paths should be constructed along the Bow Brook corridor to connect the principal uses on the campus with Clinton Street and the South End. This section of stream forms a small pond that is an attractive amenity, but the stream itself is in need of additional plantings to establish a functioning riparian zone and to stabilize the stream's banks. This work could potentially be funded through grant funding.

# *NH State Office Park South Redevelopment Plan*



## **Pedestrian Facilities:**

The campus suffers from a lack of adequate pedestrian facilities. One can surmise that this is because the carriage roads that originally wound through the campus served as multipurpose paths, and dedicated sidewalks were not required. With the rise of the automobile, however, the site is increasingly dominated by cars and safe accommodations for pedestrians are of critical importance. The plan proposes the construction of sidewalks along the major roadways on the campus. Connections between the various neighborhoods on the site are also proposed, with safe, adequately marked crosswalks at points where road crossings are necessary.

There is also a need to provide adequate pedestrian access to the property from the adjacent areas of the city. This would allow state employees who live in the city to walk to work, and would also allow residents of the city to safely access the site, using it as a pleasant connection between adjacent neighborhoods and important civic facilities such as Memorial Field and Concord High School. Sidewalks should also be added to the entire frontage along Pleasant Street, to complement the sidewalk that runs along South Fruit Street.

# NH State Office Park South Redevelopment Plan



## *Buildings: Demolition:*

All campus facilities were briefly toured, and discussions of their strong and weak points were held with the staff responsible for their maintenance. From these tours and discussions, we identified the building stock that is unreasonably difficult or expensive to restore. We include a summary of buildings recommended for demolition. All remaining buildings are deemed to be suitable for renovation and reuse, and are included in the “Phasing and Implementation” plans.

Phase #	Buildings	Extg	#	Bldg
		Sq. Ft.	Stories	Status
<i>Phase 1: 14,096 SF Total</i>				
1	Burbank House (approx. 1,080 sf/flr)	2,160	2	Used
1	Storage Shop - East	3,230	1	Not Used
1	Storage Shop - West	3,178	1	Used
1	Grounds Department Shop	5,528	1	Used
<i>Phase 2: No Proposed Demolition</i>				
<i>Phase 3: 67,145 SF Total</i>				
3	Main Building:			
3	Bakery	3,606	1	Not Used
3	Industrial Shop	3,432	1	Used
3	Kent Annex (10,603 sf/flr)	42,412	4	Not Used
3	Kitchen	9,202	1	Not Used
3	Lodge (1,364 sf/flr approx.)	4,092	3	Used
3	Marking Room (4,401 sf/flr)	4,401	1	Not Used
<i>Phase 4: 43,058 SF Total</i>				
4	Steam Plant (16,025 sf + 4,480 sf)*	20,505	2	Used
4	Laundry	15,277	1	Used
4	Transportation Garage (approx. 50' x 140')	7,276	1	Used
<b>Total Square Footage to be Demolished:</b>		<b>124,299 SF</b>		
*Final Determination for Building Not Yet Complete.				

Proposed Demolition

# NH State Office Park South Redevelopment Plan



## *Buildings: Renovation:*

As noted earlier, this report focuses on four main buildings; Medical/Surgical, Thayer, Johnson, and Tobey. These facilities received a more detailed analysis of current conditions and highest and best future use. Floor plans, including proposed schematic additions where applicable, are included. Engineering reports and Hazardous Materials Assessment of these facilities are included in the Appendix.



Thayer



Tobey



Medical/Surgical



Johnson



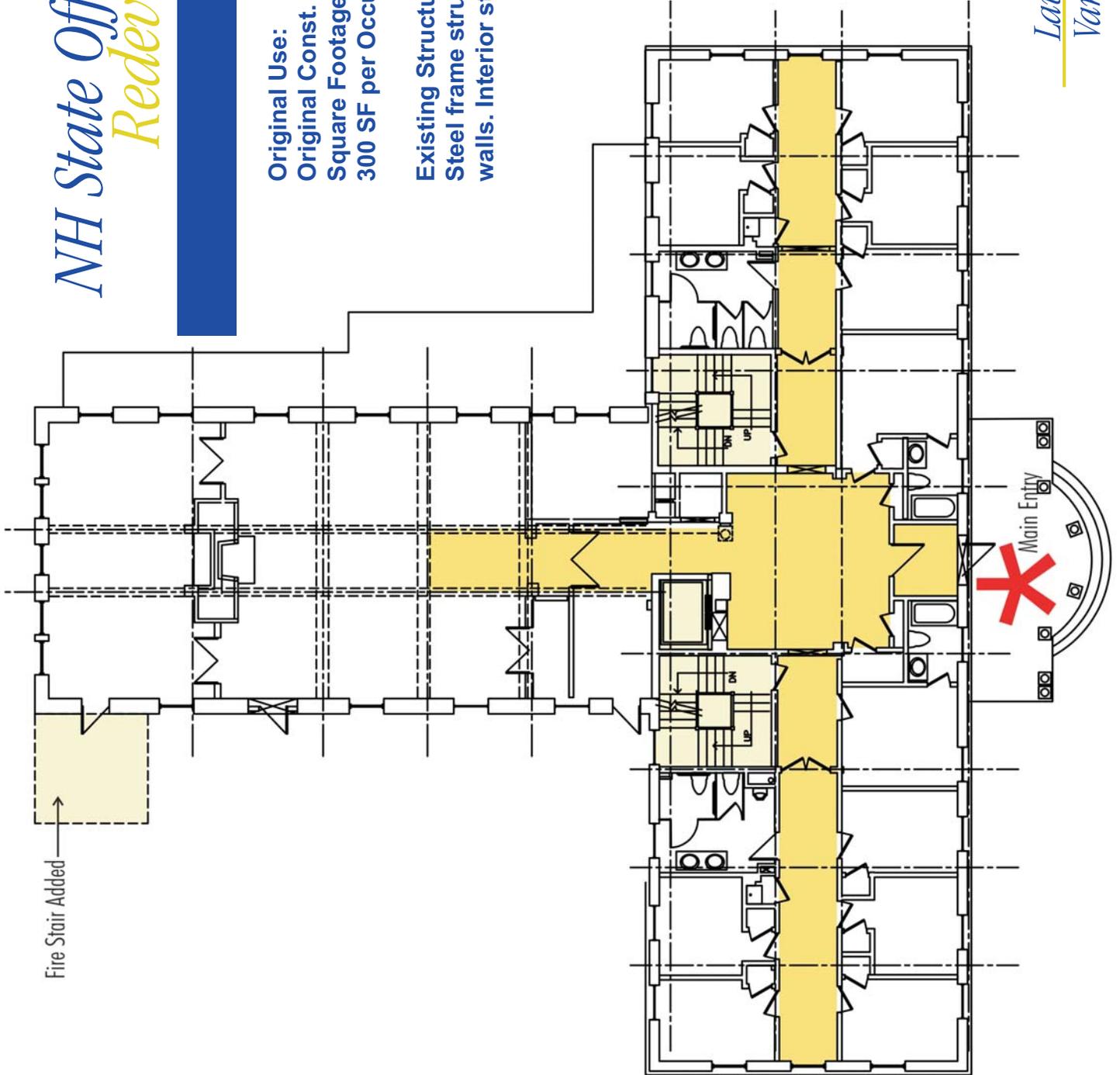
# NH State Office Park South Redevelopment Plan

## Johnson

Original Use: Nurse Dormitory  
 Original Const. Date: 1928  
 Square Footage: 27,840  
 300 SF per Occupant: 93 Proposed

### Existing Structural System:

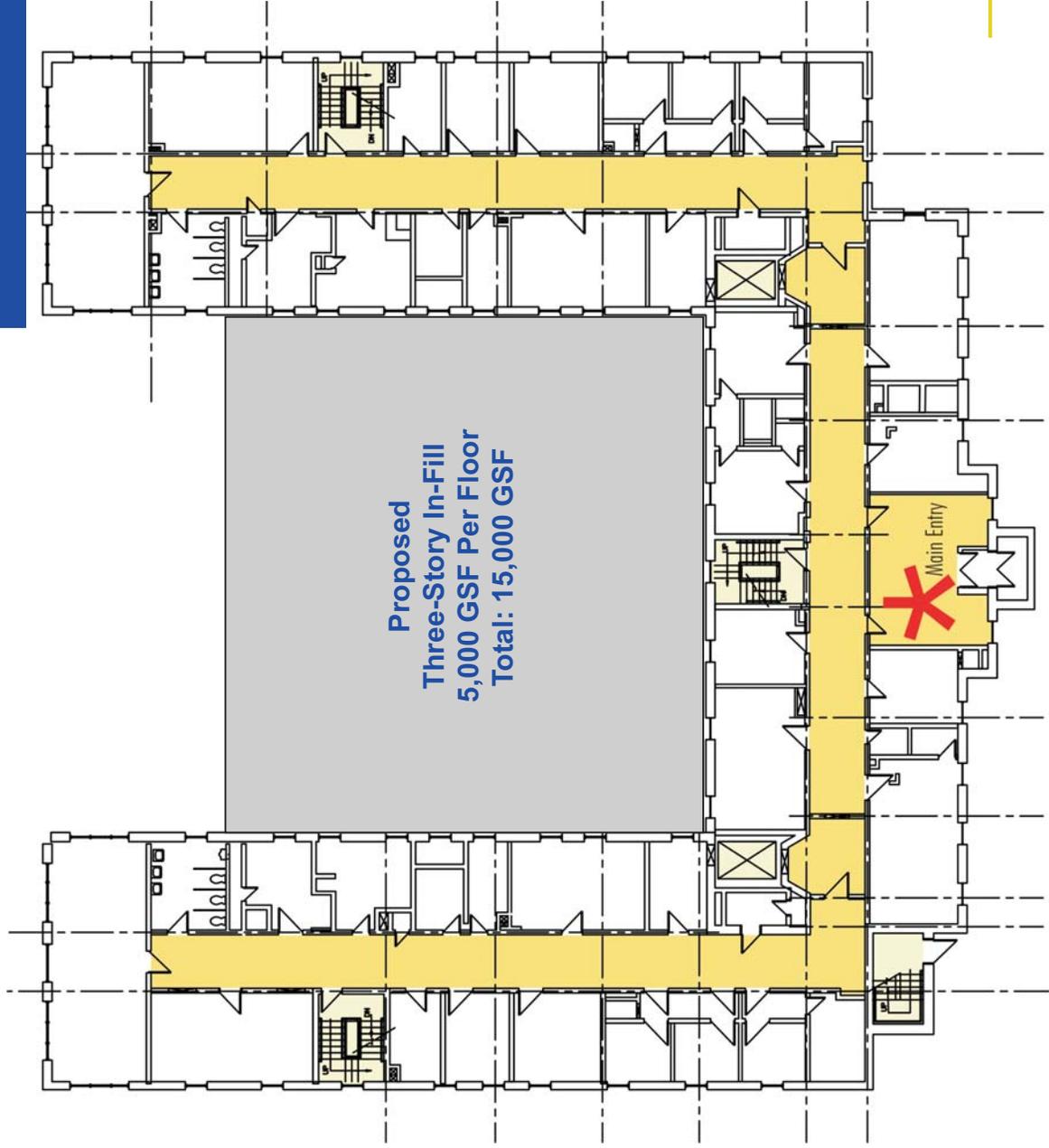
Steel frame structure with exterior brick bearing walls. Interior steel columns. Good condition.



# NH State Office Park South Redevelopment Plan



## Medical Surgical



Original Use: Campus Hospital  
 Original Const. Date: 1942  
 Square Footage: 70,090  
 Proposed 300 SF per Occupant: 234  
 Proposed

Existing Structural System:  
 Steel frame structure with exterior brick bearing walls. Interior steel columns. Fair condition.

*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*



# NH State Office Park South Redevelopment Plan

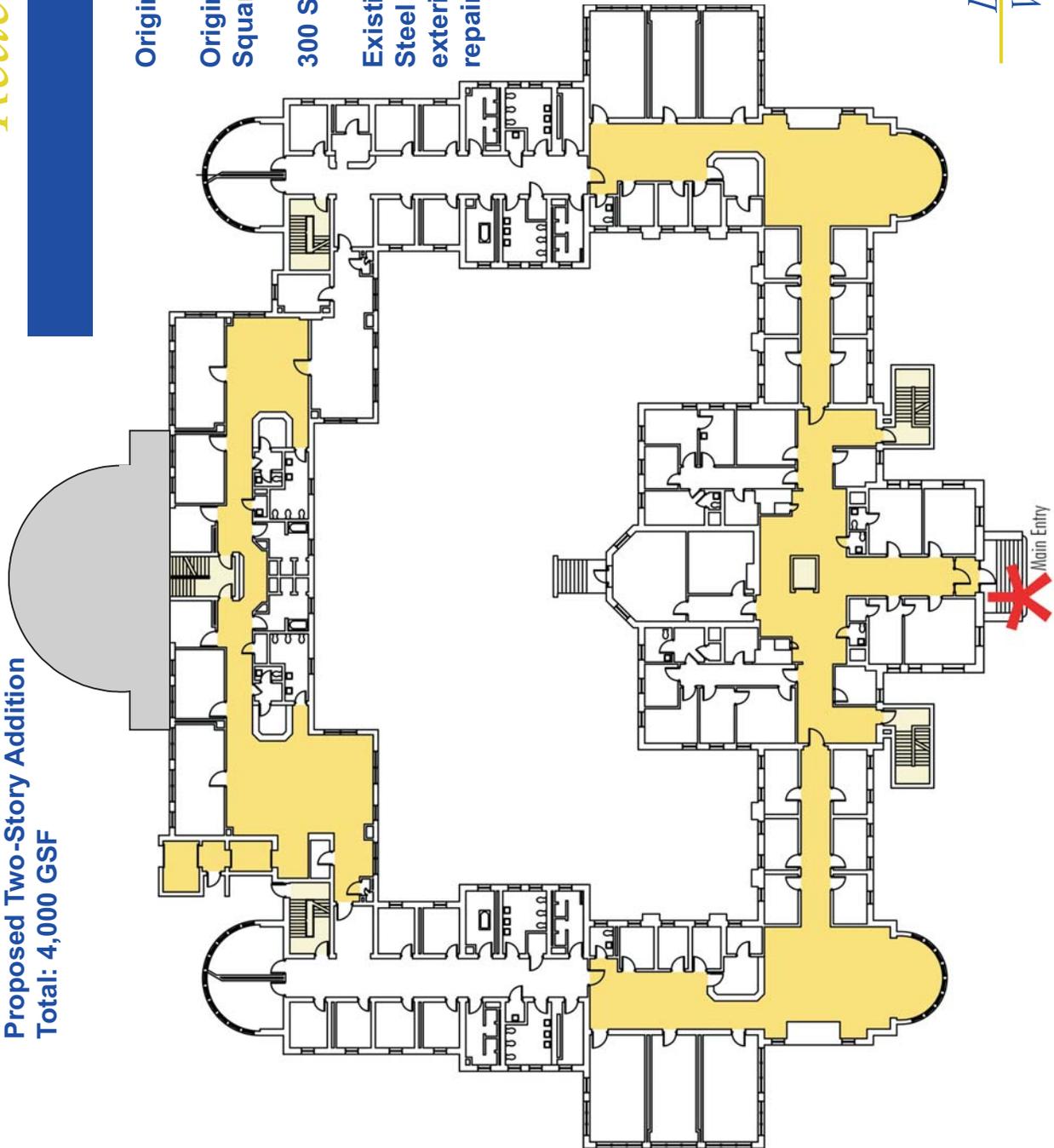
Proposed Two-Story Addition  
Total: 4,000 GSF

## Thayer

Original Use: First Campus Hospital  
 Original Const. Date: 1907  
 Square Footage: 101,164  
 300 SF per Occupant: 397 Proposed

**Existing Structural System:**

Steel and wood frame structure with exterior brick bearing walls. Fair, but repairable condition.



*Lavallee/Brensinger Architects*  
*Vanasse Hangen Brustlin, Inc.*



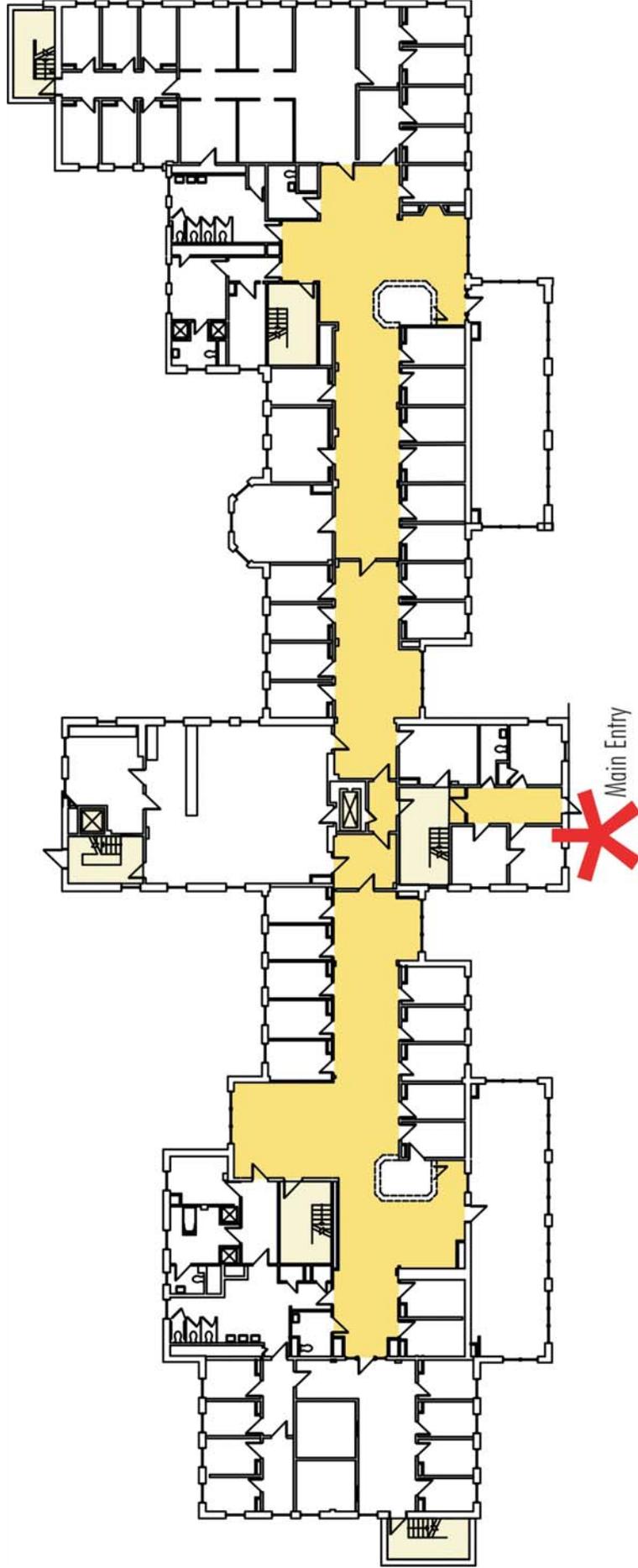
# NH State Office Park South Redevelopment Plan

Tobey

Original Use: Male Psychiatric Dormitory  
Original Const. Date: 1930  
Square Footage: 66,460 Proposed  
300 SF per Occupant: 222 Proposed

**Existing Structural System:**

Steel frame structure with exterior brick bearing walls.  
Interior steel columns. Good condition.



# *NH State Office Park South Redevelopment Plan*



## *Conclusion:*

The immense richness of this campus needs to be nurtured and maintained for future generations.

We have been honored to have been part of the team, working collaboratively to balance the history, the landscape, the architecture, and the programmatic needs of the campus-users, and to author this guide for the reclamation and preservation of this irreplaceable State treasure.

*with thanks,*

*The Design Team*



**NEW HAMPSHIRE  
STATE OFFICE PARK SOUTH  
REDEVELOPMENT PLAN  
CONCORD, NEW HAMPSHIRE**

**NARRATIVE**

**REPORT**

**Prepared by:**

**Rist-Frost-Shumway Engineering  
71 Water Street  
Laconia, NH 03246**

**August 6, 2004**

**RFS 04-4683**



# New Hampshire Office Park South Redevelopment Plan Narrative Report

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# New Hampshire Office Park South Redevelopment Plan Narrative Report

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## A. INTRODUCTION

Rist-Frost-Shumway Engineering, P.C. (RFS) was retained by Lavallee/Brensinger Architects (LBA) to provide engineering services for limited structural, mechanical, electrical, plumbing, and fire protection assessments of four (4) buildings located at the New Hampshire State Office Park South (SOPS) campus. Assessments were performed for the Tobey, Thayer, Medical/Surgical, and Johnson Hall buildings which may potentially be renovated for New Hampshire State offices. Information within the report is based on our limited visual observations and discussions during the building tours on March 18, 2004, follow-up analysis, and professional opinion.

## B. TOBEY BUILDING

### 1. *Structural Systems:*

#### a. Existing Description:

The Tobey Building is a steel framed structure with interior steel columns and unreinforced exterior brick masonry bearing walls supported by concrete foundation walls. The first floor structure consists of a reinforced concrete slab supported by steel beams and girders. Some areas of the first floor framing were visible from the basement and appeared to be in good condition. The remaining floor systems were not visible at this time due to existing finishes. It is assumed that these floors are constructed in a similar manner to the first floor and in generally the same condition. The roof structure was not readily accessible; however, it appears that it is constructed of a precast concrete slab system supported by steel beams and girders. In general, the structure appears to be sound.

#### b. Live Load Capacity:

The original use of the existing building is assumed to be a hospital or infirmary. Based on the year of construction (late 1920s) and original use, we believe the structure was designed for a live load of 80 PSF to 100 PSF. The current code required live load for an office building is 50 PSF plus a 20 PSF partition load allowance. Provided no additional distress is discovered we believe the floor can safely support a live load of 70 PSF.

The roof structure was probably designed for 30 PSF to 40 PSF. The current Code required snow load for the proposed building use in Concord, NH is 50 PSF. It is assumed that as part of any renovation, the building envelope will be improved. Based on this, we recommend that a more detailed analysis of the roof structure be performed. The primary reason for this is because older structures are poorly insulated. By increasing the thermal resistance of the roof, snow accumulation that once melted due to loss of heat will remain on the roof for a longer period of time and will likely increase in magnitude.



# New Hampshire Office Park South Redevelopment Plan Narrative Report

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## **c. Lateral Load Capacity:**

Based on design standards from the time of construction, the building was likely designed to resist wind loads. However, these design standards did not include provisions for seismic loads.

The intent of the 2000 International Building Code is to require seismic upgrading if the building is being changed to a building category with a higher seismic risk category, or Seismic Use Group. Again, assuming the original use of the building was a hospital or infirmary, the building is classified as Seismic Use Group 2. Based on the proposed use as an office building, Seismic Use Group 1, seismic upgrade is not required.

We believe the risk involved with not upgrading the structure for seismic loading should be discussed with the owner. A multi-story masonry structure has a high mass and thus high resulting forces during a seismic event. Unreinforced masonry buildings have historically performed very poor during a major seismic event. Upgrading a structure of this type can be costly. However, the most cost-effective time to do an upgrade is during a significant renovation when ceilings, walls, MEP systems, etc are removed as well as when the building is vacant. Therefore, if a major renovation of the building is proposed, it is recommended that upgrading the structure be evaluated in further detail.

## **2. Mechanical System:**

### **a. Heating, Ventilating, and Air Conditioning (HVAC):**

#### 1) Existing:

Energy for heating is provided by two (2) outside sources; steam is delivered from the central heating plant by Concord Steam and natural gas is delivered by Keyspan Energy. The heating system consists primarily of cast iron steam radiators located at the building perimeter. The steam system exhibits evidence of age and is estimated to be original to when the building was constructed. Central ventilation systems consist primarily of two (2) roof-mounted units equipped with gas-fired heat which were installed this past winter. The original vertical air shafts are utilized to distribute ventilation air throughout the building. It was reported that there are heating control problems throughout the building due to insufficient zone controls. Presently there are no central air conditioning systems. Window type air conditioning units are utilized during the summer period but use is limited by the configuration and capacity of the electrical power distribution system.

#### 2) Recommendations:

RFS recommends discontinuation of the steam service and construction of a hot water heating plant with three (3) gas-fired boilers each sized for 50% of the design heating load. It is estimated that a 40% cost savings in energy may be realized if the building



# New Hampshire Office Park South Redevelopment Plan Narrative Report

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is converted to natural gas using current utility rates and standard efficiency gas-fired boilers. The existing natural gas service is estimated to be of adequate capacity and may be extended to serve the new heating plant. RFS recommends replacement of all existing heating and ventilation systems due to age and configuration (Note: The gas-fired ventilation units may be salvaged by the Owner and utilized for applications not requiring air conditioning). Proposed replacement systems shall include hydronic heat, full air conditioning, and ventilation capability meeting current codes and consistent with a state of the art office facility.

## **b. Plumbing and Fire Protection:**

### 1) Existing:

Presently there are two (2) independent water services which enter the building and serve the domestic and fire protection systems (4- to 6-inch size). The fire service bifurcates at the point of building entry to feed two (2) dry-pipe, pre-action valves. The automatic sprinkler system consists of exposed branch piping with old style fusible, upright heads. The water services and majority of the plumbing and fire protection systems exhibit evidence of age and are estimated to be original to when the building was constructed.

### 2) Recommendations:

It has been reported that other SOPS campus buildings of this vintage have required water service upgrades due to recent failures and replacement services are proposed. The services are to be equipped with proper backflow prevention devices, metering, isolation valves, etc. RFS recommends replacement of all plumbing and fire protection systems under any long-term renovation project due to condition and estimated age. Fire protection systems to include full automatic wet-pipe coverage designed in accordance with current codes.

## **3. Electrical System:**

The electrical system components are primarily original with several new panels added throughout the building. The original panels are not UL labeled and do not have nameplates indicating the interrupting capacity of the equipment. Original wiring is concealed in walls with newer wiring installed in surface-mounted conduit.

Lighting is both T12 fluorescent and incandescent luminaries and has exceeded its useful life.

Exit signage does not conform to current codes.

A standby generator and transfer switch was installed in 2002 and should be salvaged and included in the electrical system design improvements.



# New Hampshire Office Park South Redevelopment Plan Narrative Report

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Although the fire alarm panel is of a newer the design, the fire alarm system overall is non-compliant, not meeting the building code, NFPA or ADAAG requirements.

Telephone system wiring is installed in corridors and surface mounted, including the punch down blocks. The wiring does not meet current standards of installation.

A new electrical service for the Tobey building would be sized at approximately 750 kVA or 1200 amps at 480 volt, three-phase.

## C. THAYER BUILDING

### 1. *Structural Systems:*

#### a. Existing Description:

The original Thayer Building is constructed with a combination of steel and wood framing supported by exterior brick masonry bearing walls. The first-floor structure consists of a wood plank floor supported by wood beams and girders and steel columns. There were several areas that exhibited structural distress such as shear failure and bearing failure of wood beams. The remaining floor systems were not visible at this time due to existing finishes. It is assumed that these floors are constructed in a similar manner to the first floor and are in generally the same condition. Based on our observations, miscellaneous repairs to the existing floor structures should be anticipated throughout the building.

The roof structure is constructed of wood rafters supported by wood purlins and wood trusses. The attic floor is supported from the roof, typical of this vintage of structure. Several areas of the roof construction appear questionable. Mechanical equipment with a very large concrete base isolation slab has been placed in each wing of the attic. No apparent upgrades to the structure were performed as part of the mechanical unit installation. Also, the flat roof area at the center of the main building has signs of overloading with several rafters exhibiting flexural cracks at midspan. Based on our observations, miscellaneous repairs to the existing roof structures should be anticipated throughout the building as well as upgrades as required to support mechanical equipment.

The north addition to the Thayer Building was not visible due to the existing finishes. However, based on the wall layout and apparent spans it appears the floor construction consists of a reinforced concrete slab supported by steel beams, spanning north to south, bearing on the exterior CMU walls.

#### b. Live Load Capacity:



# New Hampshire Office Park South Redevelopment Plan Narrative Report

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The original use of the existing building is assumed to be an infirmary or nursing home. Based on the year of construction (late 1920s) and original use, we believe the structure was designed for a live load of 60 PSF to 75 PSF. The current code required live load for an office building is 50 PSF plus a 20 PSF partition load allowance. Provided no additional distress is discovered, we believe the floor can safely support a live load of 70 PSF.

The roof structure was probably designed for 30 PSF to 40 PSF. The current Code required snow load for the proposed building use in Concord, NH is 50 PSF. It is assumed that as part of any renovation, the building envelope will be improved. Based on the improved building envelope and the items we observed, we recommend that a more detailed analysis of the roof structure be performed. The primary reason for this is because older structures are poorly insulated. By increasing the thermal resistance of the roof, snow accumulation that once melted due to loss of heat will remain on the roof for a longer period of time and will likely increase in magnitude. Also, attics constructed in this manner were never intended for use as storage spaces or heavy loads. The live load capacity of attic spaces of this vintage is typically in the 20 PSF range.

## **c. Lateral Load Capacity:**

Based on design standards from the time of construction, the building was likely designed to resist wind loads. However, these design standards did not include provisions for seismic loads.

The intent of the 2000 International Building Code is to require seismic upgrading if the building is being changed to a building category with a higher seismic risk category, or Seismic Use Group. Again, assuming the original use of the building was an infirmary, the building is classified as Seismic Use Group 2. Based on the proposed use as an office building and daycare, Seismic Use Group 1, seismic upgrade is not required, provided the daycare has a capacity of less than 250.

We believe the risk involved with not upgrading the structure for seismic loading should be discussed with the owner. A multi-story masonry structure has a high mass and thus high resulting forces during a seismic event. Unreinforced masonry buildings have historically performed very poor during a major seismic event. Upgrading a structure of this type can be costly. However, the most cost-effective time to do an upgrade is during a significant renovation when ceilings, walls, MEP systems, etc are removed as well as when the building is vacant. Therefore, if a major renovation of the building is proposed, it is recommended that upgrading the structure be evaluated in further detail.

## **2. Mechanical System:**

### **a. Heating, Ventilating, and Air Conditioning (HVAC):**

- 1) Existing:



# New Hampshire Office Park South Redevelopment Plan Narrative Report

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Energy for heating is provided by steam which is delivered from the central heating plant by Concord Steam. The heating system consists primarily of cast iron steam radiators located at the building perimeter. The steam system exhibits evidence of age and is estimated to be original to when the building was constructed. Central ventilation systems consist of two (2) air handling units located in the attic and equipped with an energy recovery wheel and steam coil. Presently these units are not utilized due to facility personnel concerns regarding potential contaminants within the system. Presently there are no central air conditioning systems. Window type air conditioning units are utilized during the summer period.

## 2) Recommendations:

RFS recommends discontinuation of the steam service and construction of a hot water heating plant with three (3) gas-fired boilers each sized for 50% of the design heating load. It is estimated that a 40% cost savings in energy may be realized if the building is converted to natural gas using current utility rates and standard efficiency gas-fired boilers. A new natural gas service shall be required to be extended from the existing campus main. Keyspan Energy has indicated the ability to absorb all or part of the installation cost. RFS recommends replacement of all existing heating and ventilation systems due to age and configuration. Proposed replacement systems shall include hydronic heat, full air conditioning, and ventilation capability meeting current codes and consistent with a state of the art office facility.

## **b. Plumbing and Fire Protection:**

### 1) Existing:

Presently there are two (2) independent water services which enter the building and serve the domestic and fire protection systems. The fire service (6 to 8-inch size) trifurcates at the point of building entry and feeds three (3) wet-pipe, sprinkler system zones. The automatic sprinkler system consists of exposed branch piping with upright heads. Sprinkler system control valves and heads have been recently replaced. The water services and majority of the plumbing and fire protection system piping exhibit evidence of age and are estimated to be original to when the building was constructed.

### 2) Recommendations:

It has been reported that other SOPS campus buildings of this vintage have required water service upgrades due to recent failures and replacement services are proposed. The services are to be equipped with proper backflow prevention devices, metering, isolation valves, etc. RFS recommends replacement of all plumbing and fire protection systems under any long-term renovation project due to condition and estimated age. Fire protection systems to include full automatic wet-pipe coverage designed in accordance with current codes.



# New Hampshire Office Park South Redevelopment Plan Narrative Report

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## **3. *Electrical System:***

The electrical system components are primarily original with several new panels added throughout the building. The original panels are not UL labeled and do not have nameplates indicating the interrupting capacity of the equipment. All original electrical equipment in the building has exceeded its useful life.

Original wiring is concealed in walls with newer wiring installed in surface mounted conduit.

Lighting is both T12 fluorescent and incandescent and has exceeded its useful life.

Exit signage does not conform to current codes.

Emergency lighting is non-compliant.

The fire alarm system is non-compliant, not meeting the building code, NFPA or ADAAG requirements.

Telephone system wiring is installed in corridors and surface mounted, including some of the punch down blocks. The wiring does not meet current standards of installation.

A new electrical service for the Thayer building would be sized at approximately 1000 kVA or 1600 amps at 480 volt, three-phase.

## **D. MEDICAL/SURGICAL BUILDING**

### **1. *Structural Systems:***

#### **a. Existing Description:**

The Medical/Surgical S Building is a steel framed structure with interior steel columns and exterior brick masonry bearing walls supported by concrete foundation walls. The floor structure consists of a reinforced concrete slab supported by steel beams in line with the corridor walls and the exterior bearing walls. The basement has numerous steam trenches that have undermined the concrete slab resulting in numerous slab failures. In general the elevated floor structures appear to be sound. The basement slab will require extensive repair.

The roof structure is constructed of a precast concrete slab system supported by steel beam rafters, purlins and girders. The roof structure appears to be well constructed and sound.

#### **b. Live Load Capacity:**

The original use of the existing building is assumed to be a surgical hospital. Based on the year of construction and original use, we believe the structure was designed for a live load



# New Hampshire Office Park South Redevelopment Plan Narrative Report

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of 80 PSF to 100 PSF. The current code required live load for an office building is 50 PSF plus a 20 PSF partition load allowance. Provided no additional distress is discovered, we believe the floor can safely support a live load of 70 PSF.

The roof structure was probably designed for 30 PSF to 40 PSF. The current Code required snow load for the proposed building use in Concord, NH is 50 PSF. It is assumed that as part of any renovation, the building envelope will be improved. Based on this, we recommend that a more detailed analysis of the roof structure be performed. The primary reason for this is because older structures are poorly insulated. By increasing the thermal resistance of the roof, snow accumulation that once melted due to loss of heat will remain on the roof for a longer period of time and will likely increase in magnitude.

## **c. Lateral Load Capacity:**

Based on design standards from the time of construction, the building was likely designed to resist wind loads. However, these design standards did not include provisions for seismic loads.

The intent of the 2000 International Building Code is to require seismic upgrading if the building is being changed to a building category with a higher seismic risk category, or Seismic Use Group. Again, assuming the original use of the building was a surgical hospital, the building is classified as Seismic Use Group 3. Based on the proposed use as an office building, Seismic Use Group 1, seismic upgrade is not required.

We believe the risk involved with not upgrading the structure for seismic loading should be discussed with the owner. A multi-story masonry structure has a high mass and thus high resulting forces during a seismic event. Unreinforced masonry buildings have historically performed very poor during a major seismic event. Upgrading a structure of this type can be costly. However, the most cost-effective time to do an upgrade is during a significant renovation when ceilings, walls, MEP systems, etc are removed as well as when the building is vacant. Therefore, if a major renovation of the building is proposed, it is recommended that upgrading the structure be evaluated in further detail.

## **2. Mechanical System:**

### **a. Heating, Ventilating, and Air Conditioning (HVAC):**

#### 1) Existing:

Energy for heating is provided by steam which is delivered from the central heating plant by Concord Steam. The heating system consists primarily of cast iron steam radiators located at the building perimeter. The steam system exhibits evidence of age and is estimated to be original to when the building was constructed. There were many locations at the basement level where sections of the concrete floor have been removed to gain access to repair steam piping which had failed. Central ventilation is



# New Hampshire Office Park South Redevelopment Plan Narrative Report

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limited to antiquated exhaust systems which appeared defunct. Presently there are no central air conditioning systems.

## 2) Recommendations:

RFS recommends discontinuation of the steam service and construction of a hot water heating plant with three (3) gas-fired boilers each sized for 50% of the design heating load. It is estimated that a 40% cost savings in energy may be realized if the building is converted to natural gas using current utility rates and standard efficiency gas-fired boilers. A new natural gas service shall be required to be extended from the existing campus main. Keyspan Energy has indicated the ability to absorb all or part of the installation cost. RFS recommends replacement of all existing heating and ventilation systems due to age and configuration. Proposed replacement systems shall include hydronic heat, full air conditioning, and ventilation capability meeting current codes and consistent with a state of the art office facility.

## **b. Plumbing and Fire Protection:**

### 1) Existing:

Presently there are two (2) independent water services which enter the building and serve the domestic and fire protection systems (4- to 6-inch size). The fire service is equipped with a dry-pipe, pre-action valve located at the point of entry. The automatic sprinkler system consists of exposed branch piping with old style fusible, upright heads. The water services and majority of the plumbing and fire protection systems exhibit evidence of age and are estimated to be original to when the building was constructed.

### 2) Recommendations:

It has been reported that other SOPS campus buildings of this vintage have required water service upgrades due to recent failures and replacement services are proposed. The services are to be equipped with proper backflow prevention devices, metering, isolation valves, etc. RFS recommends replacement of all plumbing and fire protection systems under any long-term renovation project due to condition and estimated age. Fire protection systems to include full automatic wet-pipe coverage designed in accordance with current codes.

## **3. Electrical System:**

The electrical system components are primarily original. The panelboards are not UL labeled and do not have nameplates indicating the interrupting capacity of the equipment. All original electrical equipment in the building has exceeded its useful life.



# New Hampshire Office Park South Redevelopment Plan Narrative Report

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Liquid filled transformers in the basement, most likely, contain PCBs and will require disposal as hazardous waste.

Abandoned electrical equipment has not been removed.

Original wiring is concealed in walls with newer wiring installed in surface-mounted conduit.

Lighting is both T12 fluorescent and incandescent and has exceeded its useful life.

Exit signage does not conform to current codes.

Emergency lighting is non-compliant.

The fire alarm system is non-compliant, not meeting the building code, NFPA or ADAAG requirements.

A new electrical service for the Medical/surgical building would be sized at approximately 750 kVA or 1200 amps at 480 volt, three-phase.

## E. JOHNSON HALL

### 1. *Structural Systems:*

#### a. **Existing Description:**

Johnson Hall is steel-framed structure with interior steel columns and exterior brick masonry bearing walls supported by concrete foundation walls. The first-floor structure consists of a reinforced concrete slab supported by steel beams and girders. The remaining floor systems were not visible at this time due to existing finishes. It is assumed that these floors are constructed in a similar manner to the first floor. The roof structure is constructed of a wood plank deck and wood trusses supported by steel beams and the exterior bearing walls.

#### b. **Live Load Capacity:**

The original use of the existing building is assumed to be a nurse's dormitory. Based on the year of construction and original use, we believe the structure was designed for a live load of 40 PSF to 60 PSF. The current code required live load for an office building is 50 PSF plus a 20 PSF partition load allowance. Provided no additional distress is discovered and the current use of the building, we believe the floor can safely support a live load of 70 PSF.

The roof structure was probably designed for 30 PSF to 40 PSF. The current Code required snow load for the proposed building use in Concord, NH is 50 PSF. It is assumed that as part of any renovation, the building envelope will be improved. Based on



# New Hampshire Office Park South Redevelopment Plan Narrative Report

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this, we recommend that a more detailed analysis of the roof structure be performed. The primary reason for this is because older structures are poorly insulated. By increasing the thermal resistance of the roof, snow accumulation that once melted due to loss of heat will remain on the roof for a longer period of time and will likely increase in magnitude.

## **c. Lateral Load Capacity:**

Based on design standards from the time of construction, the building was likely designed to resist wind loads. However, these design standards did not include provisions for seismic loads.

The intent of the 2000 International Building Code is to require seismic upgrading if the building is being changed to a building category with a higher seismic risk category, or Seismic Use Group. Again, assuming the original use of the building was a dormitory, the building is classified as Seismic Use Group 1. Based on the proposed use as an office building, Seismic Use Group 1, seismic upgrade is not required.

We believe the risk involved with not upgrading the structure for seismic loading should be discussed with the owner. A multi-story masonry structure has a high mass and thus high resulting forces during a seismic event. Unreinforced masonry buildings have historically performed very poor during a major seismic event. Upgrading a structure of this type can be costly. However, the most cost-effective time to do an upgrade is during a significant renovation when ceilings, walls, MEP systems, etc are removed as well as when the building is vacant. Therefore, if a major renovation of the building is proposed, it is recommended that upgrading the structure be evaluated in further detail.

## **2. Mechanical System:**

### **a. Heating, Ventilating, and Air Conditioning (HVAC):**

#### 1) Existing:

Energy for heating is provided by steam which is delivered from the central heating plant by Concord Steam. The heating system consists primarily of cast iron steam radiators located at the building perimeter. The steam system exhibits evidence of age and is estimated to be original to when the building was constructed. The building was renovated in the early 1990s and equipped with four (4) heat pump systems to serve the Emergency Operations Center located at the basement level. The heat pumps are water cooled utilizing a cooling tower located outside at grade. Presently there are no mechanical ventilation or central air conditioning systems serving the upper four (4) floors. Window type air conditioning units are utilized during the summer period.

#### 2) Recommendations:



# New Hampshire Office Park South Redevelopment Plan Narrative Report

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RFS recommends discontinuation of the steam service and construction of a hot water heating plant with three (3) gas-fired boilers each sized for 50% of the design heating load. It is estimated that a 40% cost savings in energy may be realized if the building is converted to natural gas using current utility rates and standard efficiency gas-fired boilers. A new natural gas service shall be required to be extended from the existing campus main. Keyspan energy has indicated the ability to absorb all or part of the installation cost. RFS recommends replacement of all existing heating and ventilation systems due to age and configuration. Proposed replacement systems shall include hydronic heat, full air conditioning, and ventilation capability meeting current codes and consistent with a state of the art office facility.

## **b. Plumbing and Fire Protection:**

### 1) Existing:

Presently there are two (2) independent water services which enter the building and serve the domestic and fire protection systems (4- to 6-inch size). The fire service feeds a single wet-pipe, sprinkler system zone. The automatic sprinkler system consists of exposed branch piping with old style fusible, upright heads. The fire service and associated sprinkler system exhibits evidence of age and is estimated to be original to when the building was constructed. The domestic water service appears in good condition and appears to have been upgraded during the 1990 building renovation. In addition, the toilet fixtures appear in good condition and the associated piping systems are assumed to have been upgraded during renovations.

### 2) Recommendations:

It has been reported that other SOPS campus buildings of this vintage have required water service upgrades due to recent failures and a replacement fire service is proposed. The service shall be equipped with proper backflow prevention device, appurtenances, etc. RFS recommends replacement of all fire protection systems under any long-term renovation project due to condition and estimated age. Fire protection systems to include full automatic wet-pipe coverage designed in accordance with current codes. The exact condition of plumbing system piping needs to be further investigated but these systems are estimated to have been replaced as part of the 1990 renovation project.

## **3. Electrical System:**

The electrical system is generally in good condition with some system improvements made in the 1990s.

The electrical system includes a standby generator and transfer switches and new main switchboard.



# **New Hampshire Office Park South Redevelopment Plan Narrative Report**

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Consideration should be given to selective electrical demolition in this building to re-use newer equipment and make improvements where needed.

Lighting system includes T8 and T12 fluorescent luminaries.

The fire alarm system is non-compliant, not meeting the building code, NFPA or ADAAG requirements.

A new data closet was constructed in the basement and appears in excellent condition.

The telephone punch down is located in a mechanical space and does not meet current standards of installation.

A new electrical service for the Johnson Hall building would be sized at approximately 300 kVA or 450 amps at 480 volt, three-phase.



The Scott Lawson Group, Ltd.  
Environmental, Health & Safety Consultants

July 30, 2004

Ms. Leslie J. Thomas, AIA  
Lavallee/Brensinger Architects  
155 Dow Street  
Manchester, New Hampshire 03104

Re: Limited Hazardous Materials Survey Report  
Thayer, Tobey, Medical Surgical and Johnson Hall, Buildings  
SLGL File Number 13983

Dear Ms. Thomas:

In accordance with our Quotation Number 13983 dated May 27, 2004, the following is our Hazardous Material Survey Report for several buildings at the former New Hampshire Hospital Grounds, now referred to as State Office Park South (SOPS) in Concord, New Hampshire. The information in this report was obtained through site observations and a review of previous hazardous material surveys performed by *The Scott Lawson Group, LTD (SLGL)*, and others of the subject facilities. No testing of building materials, liquid or/solid waste streams or other suspect hazardous materials were performed under this Scope-of-Work (SOW).

**A. INTRODUCTION**

On various dates in June 2004, *The Scott Lawson Group, Ltd. (SLGL)* was on-site at the SOPS site located on Pleasant Street in Concord, New Hampshire. *SLGL* contracted with Lavallee/Brensinger Architects to provide the following services at the Thayer, Tobey, Medical Surgical, and Johnson Hall Buildings:

- Perform cursory visual inspection and assess the existing quantities of Asbestos, Lead paint, bird guano, and miscellaneous regulated materials such as mercury lamps/switches and PCB ballasts contained within the buildings. It was not the intention of this SOW to perform an in-depth investigation into all hazardous materials but to provide a preliminary survey for budgetary purposes.
- Derive opinions of costs for remediating contaminants of concern.

The Utility Tunnels attached to the various buildings were not included in this survey.

Asbestos-Containing Building Materials (ACBM), Lead-Based Paints (LBP), and other hazardous materials exist throughout each facility. Observations of the building included the use of floor plans provided by Lavallee/Bresinger to obtain the room layout and dimensions. In many cases the drawings provided were different from existing room layouts and dimensions. Suspect materials were quantified by both visual estimation and record drawings.

Visual inspections were performed of suspect interior ACBM that were accessible to *SLGL*. ACBM should be anticipated to be encountered within inaccessible areas of the buildings, such as wall and ceiling plenums, under flooring materials, electrical components. Limited inspections of building exteriors were performed.

During this survey *SLGL* did not inspect rooftops, however, previous abatement work performed by *SLGL* at SOPS have included the following exterior building materials that were found to contain Asbestos: window caulking and glazing materials; roof sealants; and built-up roofing felts. These materials and/or other suspect materials that may be discovered during renovation/demolition activities are regulated under State of New Hampshire and Federal regulations and should be assumed to contain Asbestos until tested.

Bird guano is limited to areas where window and/or ventilation openings are in disrepair allowing for continued bird guano deposition. Techniques for remediating bird wastes are similar to removing Asbestos (such as specially trained workers and regulated work areas) therefore *SLGL* recommends that these two (2) activities be combined whenever possible.

It should be assumed that LBP or Lead-containing paints are present throughout the buildings on the majority of building surfaces, piping, conduit, radiators, painted flooring surfaces, and architectural components.

All the facilities had lighting fixtures with assumed Mercury-containing fluorescent lamps and light ballasts that may contain polychlorinated biphenyls (PCBs) and mercury rich phosphor powder; with the exception of Johnson Hall, which had recently been part of an energy conservation project that included the upgrade of lighting fixtures. In 1979, the use of PCBs for all fluorescent light fixtures was banned. Manufacturers of fluorescent light fixtures turned to di 2-ethylhexyl phthalate (DEPH) as a replacement. DEPH however, has since been classified as a hazardous material.

The fire detection systems within each building also contain components with mercury.

Mercury, PCBs, and DEPH are regulated by the United States Environmental Protection Agency (U.S. EPA), Occupational Safety and Health Administration (OSHA), Food and Drug Administration (FDA), and New Hampshire Department of Environmental Services (NHDES). Under the Resource Conservation and Recovery Act (RCRA) these materials must be handled, analyzed for toxicity (e.g., Toxicity Characterization Leaching Process), and disposed of properly based on results of analysis. In addition, the NHDES preferred method for the handling of fluorescent light fixture wastes is to recycle the components.

The following Observations section is broken down by type of material, approximate quantity of material, location, and assessment of condition (as required).

## **B. OBSERVATIONS ASBESTOS-CONTAINING MATERIALS**

Asbestos-Containing Materials either presumed or identified previously via testing, included friable and non-friable ACM. Friable ACM included thermal system insulation (TSI) on pipes and tanks. Non-friable ACM included Asbestos-cement panels, plaster, flooring materials, chalkboards, window glazing, and roofing materials.

The buildings are assumed to have Asbestos-containing waterproofing on the inside surfaces of the brick exteriors. No abatement cost estimates were included with this report, as this material would be minimally impacted by renovations.

The cost estimates provided for Asbestos abatement in this report assume complete removal and disposal of the listed ACM. *SLGL* considered variables such as condition and location of the materials and incorporated unit rates from previously conducted abatement projects of similar type to obtain the cost estimates. In addition, it was assumed that abatement activities would take place in the same time frame utilizing a pre-qualified list of Abatement Contractors. Costs are also only for the abatement of the ACM and do not include removal of building components.

### **1. Asbestos-Containing Materials - Tobey Building, 45 South Fruit Street**

The Tobey Building is currently utilized by the State of New Hampshire for the Division of Juvenile Justice Services. The building includes dormitories, school facilities, food services, and support staff offices. Because of its status as a school, the Tobey Building is required to comply with the U.S. EPA Asbestos Hazard Emergency Response Act (AHERA). AHERA covers the management of ACM in school buildings (public and private, K-12). In addition to on-site observations, a recent AHERA Inspection report performed for Tobey School was provided to *SLGL* and utilized to develop the following table. According to building managers at Tobey School accessible Asbestos-containing pipe insulation had been previously removed. See Table I for additional ACM data at Tobey School and abatement cost estimates.

**Table I-Tobey Building**

<b>Presumed and/or Identified ACM</b>	<b>Location</b>	<b>Approximate Quantity</b>	<b>General Condition</b>	<b>Abatement Cost Estimate</b>
Asbestos-Cement Board	Behind Radiators	1,000 sq. ft*	Fair	\$10,000.
White Insulating Board	Behind misc. Radiators (e.g., Room. 257)	5 sq. ft.	Poor	\$500.
Chalkboards	Misc. Classrooms and Conference Rooms	175 sq. ft.	Good	\$500.
Flooring Materials and associated Mastics	Throughout	22,400 sq. ft.	Fair	\$67,200.
Pipe Fitting Insulation	Basement Floor, Accessible	12 lin. ft.	Fair/Poor	\$1,200.
Pipe Fitting Insulation	In Wall & Ceiling Plenums, Pipe Trenches, etc.	3,800 lin. ft.*	Fair/Poor	\$57,000.
Countertop Adhesive	Basement Floor	175 sq. ft.	Good	\$1,750.
Ceiling Plaster-Basecoat	Throughout	17,100 sq. ft.	Fair/Good	\$256,500.
Ceiling Tile Glue Daubs	Basement Floor	1,850 sq. ft.	Good	\$4,700.
Window Glazing	Throughout exterior	275 ea.	Fair	\$27,500.
Waterproofing	Interior surfaces of bricks, etc.	(Assumed)*	-	-

Note: \* = Estimate of assumed materials as the area was inaccessible to *SLGL* during survey.  
 Sq. ft. = Square feet  
 Lin. Ft = Linear feet.  
 Ea. = Each

2. Asbestos-Containing Materials - Thayer Building, 97 Pleasant Street

The building has a daycare center in the West Wing of the First Floor and rental tenants in other miscellaneous areas. The leased spaces were not accessible to *SLGL* during the inspection and are assumed to be constructed with similar building materials found in the remainder of the building. Limited inspections have been conducted for ACBM and LBP in order for building renovations to be safely performed. Flooring materials, plaster walls, and plaster ceilings were the primary building materials previously tested in these limited surveys. No Asbestos was detected in these ceiling and/or wall plasters, however a spray-on Asbestos-containing coating has been noted on ceilings in several areas.

The 12" x 12" floor tiles observed during the current survey are of similar colors (e.g., browns/tans) with flooring that previously tested positive for Asbestos, and some non-detected for Asbestos. Due to the similarity of floor tile colors and that the associated mastics previously tested were also positive for Asbestos, all similar flooring materials were assumed to be Asbestos-containing in this building. See Table II for additional ACM data at Thayer Building and abatement cost estimates.

**Table II-Thayer Building**

<b>Presumed and/or Identified ACM</b>	<b>Location</b>	<b>Approximate Quantity</b>	<b>General Condition</b>	<b>Abatement Cost Est.</b>
Flooring Materials	Throughout	45,600 sq. ft.	Fair	\$137,000.
Pipe & Fitting Insulation	Throughout (Accessible)	4,600 lin. ft.	Fair/Poor	\$55,200.
Pipe/Fitting Insulation	Throughout in Wall & Ceiling Plenums, Pipe Trenches, etc.	4,000 lin. ft.*	Fair/Poor	\$60,000.
Spray-on ceiling Insulation	Basement and Second Floor	9,200 sq. ft.	Fair/Poor	\$110,500.
Window Glazing	Throughout Exterior	275 ea.	Fair	\$27,500.
Roofing Materials	Exterior Flat Roofs	16,500 sq. ft	Fair	\$132,600.
Waterproofing	Interior surfaces of bricks etc.	(Assumed)*	-	-

Note: \* = Estimate of assumed materials as the area was inaccessible to *SLGL* during survey.  
 Sq. ft. = Square feet, Lin. Ft = Linear feet., Ea. = Each

3. Asbestos-Containing Materials – Medical Surgical Building, 109 Pleasant Street

The Medical Surgical building is vacant except for use by various groups as dry storage. No data from previous inspections for ACBM and/or LBP was available to *SLGL*. Brown linoleum utilized throughout the facility was presumed to be Asbestos-containing in lieu of analytical data to prove otherwise.

**Table III-Medical Surgical Building**

<b>Presumed and/or Identified ACM</b>	<b>Location</b>	<b>Approximate Quantity</b>	<b>General Condition</b>	<b>Abatement Cost Est.</b>
Brown Linoleum	Throughout	26,000 sq. ft.	Fair/Poor	\$65,000.
Floor Tiles and Associated Mastic	Throughout	5,500 sq. ft.	Fair/Poor	\$16,500.
Cove Base and Associated Mastic	Misc. Rooms	500 sq. ft.	Fair	\$4,000.
Ceiling Tiles	Throughout	17,000 sq. ft.	Fair/Poor	\$68,000.
Electrical Boards	Misc. Rooms	50 sq. ft.	Fair	\$500.
Wall and Ceiling Plaster	Throughout	151,000 sq. ft.	Fair/Poor	\$1,812,000.
Pipe & Fitting Insulation	Throughout (Accessible)	700 lin. ft.	Fair/Poor	\$7,000.
Pipe & Fitting Insulation	Throughout in Wall & Ceiling Plenums, Pipe Trenches, etc.	2,000 lin. ft.*	Fair/Poor	\$30,000.
Chalkboards	Misc. Classrooms and Conference Rooms	125 sq. ft.	Good	\$500.
Window Glazing	Throughout (exterior)	200 ea.	Fair	\$20,000.
Roofing Materials	Flat roofs (exterior)	8,200 sq. ft.	Fair	\$65,600.
Waterproofing	Interior surfaces of bricks etc.	(Assumed)*	-	-

Note: \* = Estimate of assumed materials as the area was inaccessible to *SLGL* during survey.  
Sq. ft. = Square feet, Lin. Ft = Linear feet, Ea. = Each

4. Asbestos-Containing Materials – Johnson Hall, 107 Pleasant Street

Johnson Hall facility houses several State of NH agencies, and is occupied on all floors of the building. As with the Medical Surgical Building, Johnson Hall has the brown linoleum utilized throughout the facility, which was presumed to be Asbestos-containing in lieu of testing data. Johnson Hall has had many recent renovations with new building materials being installed, which will require documentation that non-ACM were utilized.

**Table IV-Johnson Hall**

<b>Presumed and/or Identified ACM</b>	<b>Location</b>	<b>Approximate Quantity</b>	<b>General Condition</b>	<b>AHERA Assessment</b>
Brown Linoleum	Throughout	7,800 sq. ft.	Fair	\$27,300.
Floor Tiles and Associated Mastic	Throughout	1,000 sq. ft.	Fair	\$3,000.
Pipe & Fitting Insulation	Throughout	1,200 lin. ft.	Fair/Poor	\$17,500.
Wall and Ceiling Plaster	Throughout	98,000 sq. ft.	Fair/Poor	\$1,200,000.
Ceiling Tiles	Throughout	13,000 sq. ft.	Good	\$52,000.
Waterproofing	Interior surfaces of bricks etc.	(Assumed)*	-	-

Note: \* = Estimate of assumed materials as the area was inaccessible to *SLGL* during survey.  
 Sq. ft. = Square feet, Lin. Ft = Linear feet, Ea. = Each

### C. OBSERVATIONS LEAD CONTAINING PAINTS

Most surfaces inspected had multiple coats of paint applied over time. The implications of Lead-containing and/or Lead-Based Paints (LCP/LBP) existing in a non-residential building are related to the future use of each facility and the need to impact these surfaces during renovation/demolition process. It should be anticipated that LCP/LBP would be encountered in each facility based upon date of construction and previous lab analysis results for Lead at SOPS.

Based upon a review of the existing sampling data, interior and exterior painted building components coated with LCP/LBP include but are not limited to the following:

- Window/Door components;
- Plaster ceilings and walls;
- Painted floor surfaces;
- Stairwell components;
- Architectural trim;
- Electrical Conduit; and
- Plumbing/heating components.

It is anticipated that during Asbestos abatement procedures LCP/LBP will be impacted and abatement of these surfaces should be performed in conjunction with Asbestos abatement, especially with paints in poor condition (i.e., peeling from their substrate). Waste disposal is a key consideration for the removal, handling, and renovation of materials coated with Lead. This would allow for significant cost savings, as it is unlikely that the mixed waste stream would be classified as a hazardous waste because of the presence of Lead-containing paints. For the areas where Asbestos abatement is not performed it will require addressing potential worker exposure and waste disposal.

The level of effort required for Lead abatement will depend on the end function of building (e.g., demolished or renovated). It is assumed that these facilities will be renovated, therefore it is recommended that surfaces with loose and peeling paints be remediated then sealed or covered in place followed by the proper cleaning of LCP dust and debris. The associated costs for each facility for rendering loose and flaking LCP intact is as follows:

1. Tobey Building - \$8,000.00;
2. Thayer Building - \$35,000.00;
3. Medical Surgical Building - \$75,000.00; and
4. Johnson Hall - \$3,000.00

#### **D. OBSERVATIONS for PCBs and MERCURY**

PCBs and Mercury are assumed to be present in fluorescent lights in each facility except for Johnson Hall. Prior to disposal, the light ballasts would need to be individually examined, and any stamped “Non-PCB” could be disposed of as regular construction waste with the remainder treated as hazardous waste. Environmental regulations require that this type of light bulb be properly disposed of due to the potential residual Mercury (and other metals) content in many of the bulbs. The bulbs are traditionally packaged into manageable bundles and sent out to a recycling center. The following cost estimates assume that the work will be performed in conjunction with other remediation activities. Cost estimates for removal and disposal and/or recycling of PCB ballasts and fluorescent lamps are:

1. Tobey Building
  - a. PCB Ballasts - \$6,000.00
  - b. Fluorescent lamps-\$5,000.00
  
2. Thayer Building
  - a. PCB Ballasts -\$3,200.00
  - b. Fluorescent lamps-\$3,200.00
  
3. Medical Surgical Building
  - a. PCB Ballasts - \$4,000.00
  - b. Fluorescent lamps -\$3,200.00
  
4. Johnson Hall
  - a. PCB Ballasts-\$0.00
  - b. Fluorescent lamps -\$0.00

The fire sensors located throughout these facilities have Mercury-containing components and would require testing prior to disposal. Other miscellaneous Mercury-containing devices such as, high intensity discharge (HID) lamps, thermostats, switches, and relays should be accumulated and disposed of at the same. Minimal costs would be incurred if removal and disposal of the Mercury-containing components occurred with other remediation activities. *SLGL* recommends that an allowance of \$5,000.00 per facility be carried to handle disposal of miscellaneous Mercury-containing devices.

**E. OBSERVATIONS for MISCELLANEOUS HAZARDOUS MATERIALS**

Based on previous occupant use, there are additional materials within the buildings that may be classified as hazardous. These materials will require special handling and disposal consideration. Additional hazardous materials include: Biohazards (Bird/Bat Guano, Medical Waste); Incinerator Ash; Radioactive materials and Lead walls (X-ray area and machine); Refrigerants (Mortuary vaults, Refrigerators, and Freezers); Elevators; Tin Ceiling; and Compressors.

The bird guano located on the fourth floor of Medical Surgical, according to facility managers, is scheduled for remediation in the near future. Cost estimates for the bird guano remediation are not included with this survey report. *SLGL* recommends that the other miscellaneous potentially hazardous materials referenced above be disposed of with similar waste streams generated in other state facilities. If opted to be handled and disposed of separately the following allowances could be applied:

1. Tobey Building - \$3,500.00;
2. Thayer Building - \$4,500.00;
3. Medical Surgical Building - \$10,000.00; and
4. Johnson Hall - \$1,500.00

**F. CONCLUSION AND RECOMMENDATIONS**

Hazardous Materials in the form of Asbestos, Lead Paint, assumed PCBs, Biohazards; and other miscellaneous hazardous materials were identified throughout the following buildings located at State Office Park South in Concord, New Hampshire: Johnson Hall, Medical Surgical, Thayer, and Tobey Buildings.

*SLGL* recommends that comprehensive testing of each facility be performed to reduce the types and number of ACBM. Testing would greatly reduce the estimated Asbestos abatement costs, for example by testing the brown linoleum and plaster materials in the Medical Surgical Building and Johnson Hall, an estimated cost reduction of \$3,104,300.00 would be realized if the results determine the tested materials are non-detected for Asbestos.

Estimated associated costs for the recommended testing (AHERA-based) to reduce Asbestos Abatement costs are as follows:

1. Tobey Building - \$3,000.00;
2. Thayer Building - \$4,500.00;
3. Medical Surgical Building - \$7,000.00; and
4. Johnson Hall - \$1,500.00

**G. COST SUMMARY ESTMATE**

The cost estimates provided in this report are based on observed conditions and do not include contingency estimates for unanticipated situations. In addition, changes in building conditions would affect abatement costs and working conditions.

**Tobey Building**

<u>Hazardous Material</u>	<u>Estimated Cost</u>
ACM	\$426,850.00
LBP	\$8,000.00
PCBs	\$6,000.00
Fluorescent Bulbs	\$5,000.00
Allowance #1	\$5,000.00
Allowance #2	\$3,500.00
<i>Combined estimated cost</i>	<u><u>\$454,350.00</u></u>

**Thayer Building**

<u>Hazardous Material</u>	<u>Estimated Cost</u>
ACM	\$522,800.00
LBP	\$35,000.00
PCBs	\$3,200.00
Fluorescent Bulbs	\$3,200.00
Allowance #1	\$5,000.00
Allowance #2	\$4,500.00
<i>Combined estimated cost</i>	<u><u>\$573,700.00</u></u>

**Medical Surgical Building**

<u>Hazardous Material</u>	<u>Estimated Cost</u>
ACM	\$2,089,100.00
LBP	\$75,000.00
PCBs	\$4,000.00
Fluorescent Bulbs	\$3,200.00
Allowance #1	\$5,000.00
Allowance #2	\$10,000.00
<i>Combined estimated cost</i>	<u><u>\$2,186,300.00</u></u>

**Johnson Hall**

<u>Hazardous Material</u>	<u>Estimated Cost</u>
ACM	\$1,299,800.00
LBP	\$3,000.00
PCBs	\$0.00
Fluorescent Bulbs	\$0.00
Allowance #1	\$5,000.00
Allowance #2	\$1,500.00
<i>Combined estimated cost</i>	<u><u>\$1,309,800.00</u></u>

*Combined estimated cost for all buildings: \$4,524,150.00.*

We trust you will find everything in order; however, should you have any questions or comments regarding the contents of this report, or the analytical results, please contact either of us at your earliest convenience.

Sincerely,

*The Scott Lawson Group, Ltd.*

Melissa B. Bowler, CHWC  
Senior Project Manager

Stephen R. McPherson  
Senior Project Manager/  
Field Services Coordinator

Enclosure

Groups:Technical:2004 Jobs:Lavallee Brensinger:13983 State Office Pk. South:13983-Final Rpt.doc

**TABLE 1**

**DEPT. OF ADMINISTRATIVE SERVICES  
BUREAU OF PLANNING AND MANAGEMENT  
10 YEAR SYNOPSIS OF OPERATING LEASE ACTIVITY**

August 26, 2004

<b>FISCAL YEAR</b>	<b>TTL # LEASES</b>	<b>TTL SQUARE FEET</b>	<b>TTL COST</b>	<b>CONCORD # LEASES</b>	<b>CONCORD TTL SQUARE FEET</b>	<b>CONCORD TTL COST</b>
1994	119	572,144	\$5,049,151.79	52	291,018	\$2,329,068.84
1995	109	538,049	\$5,169,969.56	42	248,947	\$2,138,101.12
1996	107	data unavailable				
1997	100	539,886	\$5,603,944.00	42	data unavailable	data unavailable
1998	98	593,457	\$6,407,318.47	46	290,708	\$2,776,683.24
1999	105	552,181	\$6,006,133.72	45	299,012	\$2,966,273.79
2000	94	587,498	\$6,485,116.73	43	297,901	\$2,945,226.54
2001	94	609,181	\$6,911,559.88	43	306,784	\$3,090,320.44
2002	93	637,543	\$7,430,282.50	43	330,568	\$3,499,523.24
2003	94	649,785	\$7,937,130.53	46	345,213	\$3,800,458.04
2004	101	688,407	\$8,976,634.29	45	329,513	\$3,845,518.00

Information derived from Bureau of Planning & Management fiscal year annual reports of "Operating Leases" (contracts with a dollar value requiring G&C approval)

**TABLE 2**

**DEPT. OF ADMINISTRATIVE SERVICES  
BUREAU OF PLANNING AND MANAGEMENT  
10 YEAR SYNOPSIS OF OPERATING LEASE ACTIVITY**

with FY 2005 projection also included\*  
August 26, 2004

<b>FISCAL YEAR</b>	<b>TTL # LEASES</b>	<b>TTL SQUARE FEET</b>	<b>TTL COST</b>	<b>CONCORD # LEASES</b>	<b>CONCORD TTL SQUARE FEET</b>	<b>CONCORD TTL COST</b>
1994	119	572,144	\$5,049,151.79	52	291,018	\$2,329,068.84
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1997	100	539,886	\$5,603,944.00	42	data unavailable	data unavailable
1998	98	593,457	\$6,407,318.47	46	290,708	\$2,776,683.24
1999	105	552,181	\$6,006,133.72	45	299,012	\$2,966,273.79
2000	94	587,498	\$6,485,116.73	43	297,901	\$2,945,226.54
2001	94	609,181	\$6,911,559.88	43	306,784	\$3,090,320.44
2002	93	637,543	\$7,430,282.50	43	330,568	\$3,499,523.24
2003	94	649,785	\$7,937,130.53	46	345,213	\$3,800,458.04
2004	101	688,407	\$8,976,634.29	45	329,513	\$3,845,518.00
<b>*PROJECTED 2005</b>	92	619,495	\$8,263,414.56	36	260,601	\$3,132,298.27

\*Projected FY 2005 figures reflect 9 leases terminated, moved to State owned "Walker Building"

Information derived from Bureau of Planning & Management fiscal year annual reports of "Operating Leases" (contracts with a dollar value requiring G&C approval)



*Vanasse Hangen Brustlin, Inc.*

Kilton Road  
Six Bedford Farms, Suite 607  
Bedford, New Hampshire 03110-6532  
603 644-0888  
FAX 603 644-2385

**Memorandum**

To: Gordon Leedy VHB

Date: August 12, 2004

Project No.: 5157900

From: David DeBaie

Re: State Office Park  
Access and Circulation Plan  
Technical Data

---

This memorandum summarizes the technical analysis conducted in support of the access and circulation plan for the State Office Park in Concord. Technical information is provided for the following:

- **Recommended Improvements** for site access and on site circulation including roundabouts;
- Description and graphical depiction of a **Typical Roundabout**.
- Future State Office Park **Trip Generation** rates and estimated future peak hour vehicle trips;
- Future State Office Park **Trip Distribution** assumptions and calculation results;
- From limited existing count data, estimated **2009 AM and PM Traffic Volume Conditions** at the proposed site drives;
- Traffic **Operations Analysis Summaries** for the proposed signalized site drive intersection with South Fruit Street and the two unsignalized site drive intersections on Pleasant Street;

### **Recommended Improvements**

Site access and egress should continue to be provided from both South Fruit Street and Pleasant Street. Recommended improvements are appropriate at the intersections of these streets and the site drives as increased use of the state office park will result in an increase in generated vehicle trips during the peak hours. Site drive intersection improvements would complement the planned site circulation afforded by a planned main drive that will connect South Fruit Street and Pleasant Street. Site circulation is further improved by the incorporation of two single lane roundabouts along this main drive. The principal vehicle flows to and from parking areas via Walker Drive and Industrial Drive will be served by these roundabouts. Overall, the main drive, Walker Drive, and Industrial Drive will adequately serve the site circulation needs as two lane roadways. The following list of recommended improvements responds to the site's access and egress requirements.

#### South Fruit Street at Main Drive

1. Two-lane Main Drive approach providing 400 feet of left and right turn storage;
2. Fruit Street southbound left turn lane providing 200 feet of storage;
3. Fruit Street northbound right turn lane with 200 foot length;

4. Traffic signal control.

#### Pleasant Street at Main Drive

1. Two-lane Main Drive approach providing 100 feet of left and right turn storage;
2. Pleasant Street northbound left turn lane providing 200 feet of storage;
3. Stop sign control.

#### Pleasant Street at Industrial Drive

1. Single lane approaches;
2. No left turns (Industrial Drive-right in and right out);
3. Stop sign control.

#### **Typical Roundabout**

Roundabouts are circular intersections with lower speed movement of circulating traffic around a small central island and yield control on the approaches. Roundabouts are generally considered to be one of the safest types of intersection design as left turn conflicts are eliminated. Other key elements of roundabout design include a deflection island on the approach roadway that directs entering traffic to the right, slows it, and reinforces the yield control; if additional capacity is needed, a flared approach enables the addition of a lane at the yield line; and the circulating roadway can be designed with multiple lanes. Pedestrians cross single lanes of traffic at crosswalks that are setback one or two car lengths from the yield line. Pedestrians are accommodated on the leg of an intersection by a break in the deflection island, which serves as a refuge area between the entering and exiting traffic lanes. The central island is designed for automobile and truck traffic by including a traversable apron ring to meet truck-turning requirements. The central island also provides the opportunity for some landscaping. Figure 1 illustrates the geometric elements of a roundabout.

## Trip Generation

Increases in vehicle trips are expected to be generated by the planned use of the state office park. Peak hour estimates are based on rates compiled by ITE (Institute of Transportation Engineers) in the 7th Edition of Trip Generation and a future employee population.

### Trip Generation Rates

Trip Generation estimates are based on ITE LUC 710 General Office Building trip generation rates as shown in Table 1:

**Table 1**  
**ITE Trip Generation Rates (LUC 710 General Office Building)**

Peak Hour Period	Rate (trips per employee)	Entering Percentage	Entering Rate	Exiting Percentage	Exiting Rate
AM	0.48	88 %	0.42/ Emp.	12 %	0.06 / Emp.
PM	0.46	17 %	0.08/ Emp.	83 %	0.38 / Emp.

Note: During a June 6, 2004 observation between 4:00 PM and 5:30 PM indicates a peak hour volume of 553 vehicles (71 entering and 482 exiting) between 4:00 PM and 5:00 PM. Given a total of 1,424 existing employees (1,715- 291 not yet present at Walker Building), a PM peak hour trip generation rate of 0.39 trips per employee was exhibited. PM peak hour projections using the rate 0.46 trips per employee will yield a more conservative estimate of generated trips than the observed rate.

### Trip Generation Calculations

Estimates of future State Office Park generated trips as shown in Table 2 are based on expected 2,539 future employees:

**Table 2**  
**Future State Office Park Trip Generation (vehicle trips)**

Peak Hour Period	Enter	Exit	Total
AM	1,066	152	1,218
PM	203	965	1,168

## Trip Distribution

The increase in state office park vehicle trips is expected to generally follow existing site access and egress patterns with respect to trips arriving and departing on South Fruit Street and Pleasant Street. Some change from the existing pattern is expected due to changes to the surrounding offsite roadway network and on site due to the planned locations for parking. A tabulation of these percentages of total site trips on area roadways is presented in Table 3 and separate tables (Tables 4 and 5) illustrate the entering and exiting site trips on the adjacent roadways during both peak hours.

Trip Distribution Notes

1. The evening (PM) peak hour was observed at the site driveways on Pleasant Street and South Fruit Street. The morning (AM) peak hour distribution is assumed to be the reverse movement of that observed during the evening.
2. Future measures to deter cut-through traffic from the neighborhood north of Pleasant Street are assumed to reduce cut-through percentage of total office park trips from 30% to 15%.
3. Entrance/site roadway layout and parking structure locations expected to divert 10% of total office park trips from Pleasant Street to Clinton Street and South Fruit Street.
4. Trip distribution shown is generalized; actual distribution varies for each campus parking area and depends on the location on campus.
5. A small percentage of trips is expected to use Warren Street.

**Table 3**  
**Trip Distribution (Percentages of Total Site Trips)**

Street	Direction	<u>Observed</u>		<u>Estimated</u>	
		AM	PM	AM	PM
Pleasant Street	East of Merrimack Street	-	34	39	39
	West of South Fruit Street	-	13	13	13
Liberty Street, Pine St., and Merrimack St. and Warren Street			30	15	15
Clinton Street	East (vicinity of Spring Street)	-	6	16	16
	West (vicinity of I-89)	-	17	17	17
<b>Total</b>		-	100	100	100

**Table 4**  
**AM Peak Hour Future State Office Park Vehicle Trips**

Street	Direction	Enter	Exit	Total
Pleasant Street	East of Merrimack Street	433	62	495
	West of South Fruit Street	140	20	160
Liberty St, Pine Street and Merrimack St		123	24	147
Warren Street		37	-	37
Clinton Street	East (vicinity of Spring Street)	149	20	169
	West (vicinity of I-89)	184	26	210
<b>Total</b>		<b>1,066</b>	<b>152</b>	<b>1,218</b>

**Table 5**  
**PM Peak Hour Future State Office Park Vehicle Trips**

Street	Direction	Enter	Exit	Total
Pleasant Street	East of Merrimack Street	81	407	488
	West of South Fruit Street	26	126	152
Liberty St, Pine Street and Merrimack St		23	144	167
Warren Street		8	-	8
Clinton Street	East (vicinity of Spring Street)	31	123	154
	West (vicinity of I-89)	34	165	199
<b>Total</b>		<b>203</b>	<b>965</b>	<b>1,168</b>

**2009 AM and PM Build Volume Conditions**

Recommended improvements at the site driveways are based on the future employee population of the state office park and expected unrelated increases in adjacent street peak hour traffic conditions. Volume adjustment factors are listed below; site drive intersection volumes are shown in Tables 6, 7 and 8.

Traffic Volume Adjustment Factors

1. Evening peak hour observations on June 6, 2004 at three intersections:
  - Pleasant Street at Main Drive;
  - Pleasant Street at Industrial Drive;
  - South Fruit Street at Industrial Drive.
2. Morning peak hour conditions assumed to be reverse direction of evening counts.
3. No seasonal adjustment as June counts are typically above average and near peak per NHDOT Group 4 (Urban Highways) factors based on Year 2000 average monthly data.
4. Future year 2009 background condition based on 1.5 % annual growth rate referencing NHDOT Stations in Concord: Liberty Street south of Centre Street (099030), Clinton Street east of Iron Works Road (099052), and Clinton Street west of Silk Farm Road (099059).

**Table 6  
 Pleasant Street and Main Drive 2009 Peak Hour Volumes**

Peak Hour	<u>Pleasant Street Eastbound</u>		<u>Main Drive</u>		<u>Pleasant Street Westbound</u>	
	Through	Right	Left	Right	Left	Through
AM	361	18	3	26	556	350
PM	662	3	19	206	104	283

**Table 7  
 Pleasant Street at Industrial Drive 2009 Peak Hour Volumes**

Peak Hour	<u>Pleasant Street Eastbound</u>		<u>Industrial Drive</u>		<u>Pleasant Street Westbound</u>	
	Through	Right	-	Right	-	Through
AM	332	124		61		353
PM	314	30		345		296

**Table 8  
 Fruit Street at Main Drive (formerly Industrial Drive) 2009 Peak Hour Volumes**

Peak Hour	<u>South Fruit Street Northbound</u>		<u>Main Drive</u>		<u>South Fruit Street Southbound</u>	
	Through	Right	Left	Right	Left	Through
AM	600	333	47	17	34	475

PM	462	65	282	107	7	589
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### Operations Analysis

Results of the 2009 peak hour operation analysis are summarized in Tables 9 and 10. Analysis worksheets are attached for the signalized intersections based on the HCS2000 signalized intersection capacity analysis software and NHDOT queuing analysis spreadsheets for the recommended South Fruit Street at Main Drive intersection configuration. HCS2000 unsignalized intersection analysis software was used where full access is recommended at the Main Drive intersection with Pleasant Street and at the Industrial Drive intersection with Pleasant Street where Right-In and Right-Out operation is recommended.

**Table 9**  
**South Fruit Street at Main Drive – Signalized Intersection Analysis Summary**

Approach	Movement	2009 AM Peak Hour				2009 PM Peak Hour			
		V/C <sup>1</sup>	Delay (sec)	LOS <sup>2</sup>	Q <sup>3</sup> (veh)	V/C <sup>1</sup>	Delay (sec)	LOS <sup>2</sup>	Q <sup>3</sup> (veh)
South Fruit Street	Northbound Thru	0.85	23.4	C	10	0.66	19.2	B	10
	Northbound Right	0.29	3.9	A	7	0.06	2.9	A	3
	Southbound Thru	0.68	4.7	A	6	0.64	10.5	B	10
	Southbound Left	0.16	19.0	B	2	0.04	22.9	C	1
Main Drive	Westbound Right	0.08	18.4	B	2	0.32	19.6	B	5
	Westbound Left	0.19	19.7	B	3	0.76	31.1	C	9

<sup>1</sup>V/C – volume to capacity ratio; <sup>2</sup>LOS – Level of Service; <sup>3</sup>Q – 95th percentile Queue

**Table 10**  
**Pleasant Street / Site Drive Intersections (2) – Unsignalized Analysis Summary**

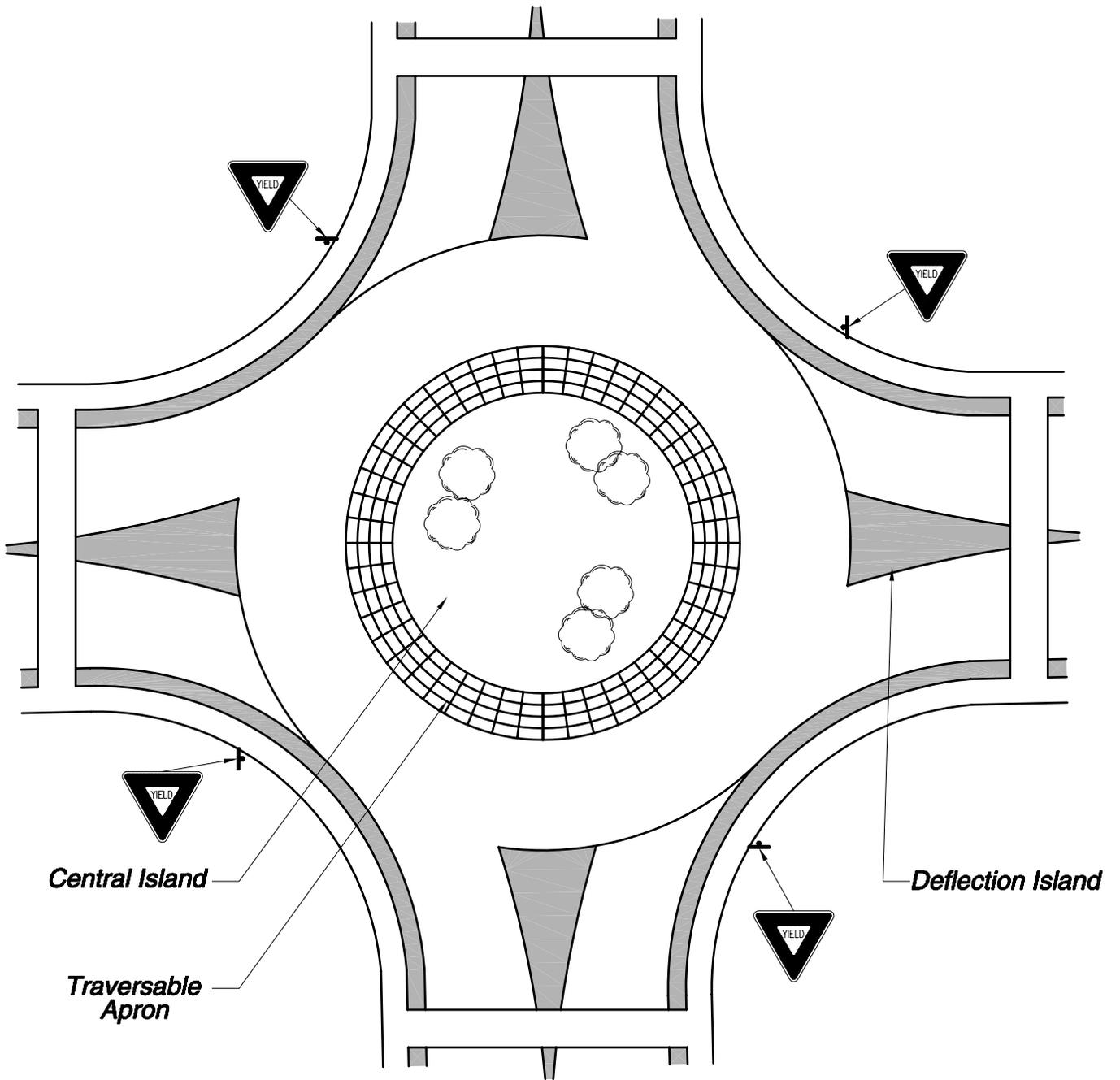
Location	Movement	2009 AM Peak Hour				2009 PM Peak Hour			
		Vol <sub>1</sub>	Delay (sec)	LOS <sub>2</sub>	Q <sub>3</sub> (veh)	Vol	Delay (sec)	LOS	Q (veh)
Main Drive	Pleasant Street Left into Site	556	12.6	B	4	104	10.1	B	1
	Main Drive Right	26	11.0	B	1	206	27.6	D	4
	Main Drive Left	3	193.0	F	1	19	33.5	D	1

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Industrial Drive	Industrial Drive Right	61	11.8	B	1	345	18.2	C	4
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<sup>1</sup>Vol – Demand Volume; <sup>2</sup> LOS – Level of Service; <sup>3</sup> Q – 95<sup>th</sup> Percentile Queue



<u>DEPT. OF ADMINISTRATIVE SERVICES</u>				
NH SOPS				
Existing Building List				
4/13/2004				
Buildings	Sq. Ft.	# of Bldg Occupants	Parking Spaces	Bldg Status
Brown Building	110,000	466	482*	Full Use
			50	
Medical Surgical Building	55,090	0	22	Vacant
Thayer Building	97,164	74**	45	Partial Use
Howard Auditorium/Gymnasium	34,795	22	26****	Full Use
Warehouse	18,096	15	24	Full Use
Laundry	15,277	20	20	Full Use
Steam Plant	N/A	?	10	Full Use
Main Building Center	95,507	303	277	Partial Use
Main Building North (Unoccupied)	54,513	Inc Above	Incl Above	Vacant
Main Building South(10k sq ft Occ.)	64,781	Inc Above	Incl Above	Partial Use
Annex	8,099	31	6	Full Use
Bancroft	20,260	0	0	Vacant
Twitchell	10,444	8	8	Partial Use
Tobey	66,460	111***	58	Full Use
Dolloff Building	36,888	50	34	Full Use
Londergan Hall	50,766	159	161	Full Use
Johnson Hall	27,840	68	74	Full Use
Spaulding Hall	25,000	89	67	Full Use
Records and Archives	22,000	8	23	Full Use
Walker Building	110,000	291	424	Vacant
<b>Totals</b>	<b>922,980</b>	<b>1,715</b>	<b>1,811</b>	
* Garage				
** Excludes OIT Testing and Day Care				
*** Includes staff for 24 hour 7 day coverage including part time staff				
**** Includes four parking spaces in front of M&S Building				
NHHRedevelopmentPlan				