| | PHASE 1: HANDICAPPED ACCESS AND ENTRY VESTIBULE WORK | | | | |
|---|---|---|---|---|---|
| | ITEM | UNITS | | COST/UNIT | COST |
| 1.1 | Rebuild north wall of ticket booth to accommodate lift. Wood studs 16" o.c. with 5/8" gypsum board both sides. | 93.00 | sf | 9.10 | 846.30 |
| 1.2 | Re-hang existing main doors and frames at main floor level. | | | Allow | 2,500.00 |
| 1.3 | Repair interior doors at main floor level, add metal plates to panels to create equivalent of 20 minute | | | Allow | 2,000.00 |
| 1.4 | Install HC lift. Includes shaft from 42" above main floor to basement. Two stops. | | | Allow | 18,000.00 |
| 1.5 | Remove existing stair and it's ceiling to basement. | | | Allow | 1200 |
| 1.6 | Install new basement stairs under existing stairs to balcony. Match existing handrail. | 18 | risers | 1000 | 18,000.00 |
| 1.7 | Lower concrete floor in former jail area 7". Install new concrete floor. | 280 | sf | 5.50 | 1,540.00 |
| 1.8 | New basement exterior doors and sidelights with hardware. (Glass doors in black anodized aluminum frame system) | 1 | pair | Allow | 4,000.00 |
| 1.9 | Doors at basement level to new public stairway. 20 minute fire doors with hardware and hold open device. | 1 | pair | Allow | 3,000.00 |
| 1.10 | Remove existing steam radiators in main hall | | | Allow | 800.00 |
| 1.11 | Remove existing toilets and sinks at stage level and related rooms. Patch floor and walls as required. | | | Allow | 500.00 |
| 1.12 | Build temporary ramp for use until basement floor level is raised in Phase 2. | | | Allow | 1,500.00 |
| 1.13 | Paint interior of vestibule, basement to balcony. | | | Allow | 3,000.00 |
| | | | | | |
| | **SUB TOTAL, PHASE 1** | | | | **55,686.30** |
| | Construction documents and management | *14%* | *subtotal* | | *7,796.08* |
| | | | | *SUBTOTAL* | *63,482.38* |
| | Vermont State Building Permit Fee | 4.50 | /$1000 | | 285.67 |
| | | | | *SUBTOTAL* | *63,768.05* |
| | Contengency | *15%* | *subtotal* | | *9,565.21* |
| | | | | | |
| | **ESTIMATED COST OF PHASE #1** | | | | **73,333.26** |

| | **PHASE 2: REMAINDER OF INTERIOR RESTORATION, INCLUDING PUBLIC RESTOOMS IN BASEMENT, NEW STAIRWAY AND LIFT TO STAGE(DOES NOT INCLUDE NEW HVAC)** | | | | |
|---|---|---|---|---|---|
| | ITEM | UNITS | | COST/UNIT | COST |
| 2.1 | Demolish basement partitions, ramps and restrooms | | | | 3,500.00 |
| 2.2 | New basement stud walls | 4690 | sf | 6.70 | 31,423.00 |
| 2.3 | Restore perimeter trench drain | | | Allow | 2,500.00 |
| 2.4 | Raise basement floor area 9" to new floor level except in boiler room. 5/8" plywood sub floor on 2x8 joists, 16" o.c. | 3638 | sf | 7.00 | 25,466.00 |
| 2.5 | Floor finish, basement level (Vermont Slate Floor tile in toilet rooms; hardwood flooring elsewhere, except in boiler room). | 3638 | sf | 6.00 | 21,828.00 |
| 2.6 | New restrooms with 5 toilets, 4 sinks each, accessories, plumbing, back stage toilet room fixtures, janitor sink, service sink in serving, hand sink in serving area. (Walls, toilet partitions and floors carried elsewhere in this estimate.) | 23 | fixtures | Budget number is from Vermont Mechanical | 42,000.00 |
| 2.7 | Toilet stall partitions (Plastic Laminate) | 9 | units | 700 | 6,300.00 |
| 2.8 | New basement interior single doors. | 7 | each | 850 | 5,950.00 |
| 2.9 | Adjust height of new exterior basement doors installed in Phase 1, before basement floor was raised. | | | Allow | 500.00 |
| 2.10 | Interior basement vestibule doors and sidelights with hardware. (Glass doors in black anodized aluminum frame system. | 1 | pair | Allow | 3,000.00 |
| 2.11 | Paint basement and main floor interiors, except vestibule. Assume 4 colors. | | | Allow | 54,000.00 |
| 2.12 | New basement lighting in PHASE 1 area, including exit signs and smoke detectors | 3961 | sf | 10.00 | 39,610.00 |
| 2.13 | New basement ceiling and insulation | 3961 | sf | 6.25 | 24,756.25 |
| 2.14 | Sidewalk to new handicapped side entrance. (Remainder of landscape work is in Phase 3) | | | Allow | 2,500.00 |
| 2.15 | New basement lighting, including exit signs and smoke detectors | 2088 | sf | 10.00 | 20,880.00 |
| 2.16 | New stairway between stage and basement, include 6R to stage,13 to new exit landing, 4 from basement to exit landing | 24 | risers | 800 | 19,200.00 |
| 2.17 | Install HC lift. Includes shaft from 42" above stage floor to basement. Three stops. | | | Allow | 20,000.00 |
| 2.18 | Sliding wall in basement between lobby and backstage area. | | | Allow | 3,000.00 |
| | **SUB TOTAL, PHASE 2** | | | | **326,413.25** |
| | Construction documents and management | *14%* | *subtotal* | | *45,697.86* |
| | | | | *SUBTOTAL* | *372,111.11* |
| | Vermont Building Permit Fee | 4.50 | /$1000 | | 1,674.50 |
| | | | | *SUBTOTAL* | *373,785.60* |
| | Contengency | *15%* | *subtotal* | | *56,067.84* |
| | | | | | |
| | **ESTIMATED COST OF PHASE 2** | | | | **429,853.45** |

| | | | | | |
|---|---|---|---|---|---|
| | **PHASE 3**<br>**EXTERIOR LANDSCAPING, NEW WALKS AND NEW PORTICO FLOOR** | | | | |
| | ITEM | UNITS | | COST/UNIT | COST |
| 3.1 | Lower grade on south side by 2 feet | | | Allow | 15,000.00 |
| 3.2 | Remove existing metal fire escape | | | Allow | 500.00 |
| 3.3 | New exit door to exterior to replace existing window | | | Allow | 2,500.00 |
| 3.4 | Replace basement windows on south side from single hung to double hung | 3 | windows | 1500 | 4,500.00 |
| 3.5 | Remove covering over steps, and wood steps | | | Allow | 2,000.00 |
| 3.6 | Replace exterior door at marble steps, south side. (Glass with aluminum) | | | Allow | 2,500.00 |
| 3.7 | Remaining exterior walks and landscaping. (NOTE: COSTS NEAR ROUTE 7 AND SEMINARY ROAD SHOULD BE PAID FOR BY STATE AND FEDERAL FUNDS; TOWN SHARE OF THIS IS 5%) | | | Allow | 35,000.00 |
| 3.8 | Add roof diverters on both sides of roof to drain water around access points to basement | 2 | each | 500 | 1,000.00 |
| | | | | | |
| | **SUB TOTAL, PHASE 3** | | | | **63,000.00** |
| | Construction documents and management | *14%* | *subtotal* | | *8,820.00* |
| | | | | *SUBTOTAL* | *71,820.00* |
| | Vermont Building Permit Fee | 4.50 | /$1000 | | 323.19 |
| | | | | *SUBTOTAL* | *72,143.19* |
| | Contengency | *15%* | *subtotal* | | *10,821.48* |
| | | | | | |
| | **ESTIMATED COST OF PHASE 3** | | | | **82.964.67** |
| | | | | | |
| | **PHASE 4:**<br>**NEW HEATING AND AIR CONDITIONING SYSTEM, INSULATION, WINDOW REPAIR** | | | | |
| | ITEM | UNITS | | COST/UNIT | COST |
| 4.1 | New HVAC system, all areas + controls | 8000 | sf | Budget number is from Vermont Mechanical | 184,500.00 |
| 4.2 | Blow in attic insulation | 4000 | sf | 3.70 | 14,800.00 |
| 4.3 | Repair windows to operate, main floor | 12 | ea | 1500 | 18,000.00 |
| 4.4 | Repair or replace windows, basement level | 5 | ea | 750 | 3,750.00 |
| | | | | | |
| | **SUB TOTAL, PHASE 4** | | | | **221,050.00** |
| | Construction documents and management | *14%* | *subtotal* | | *30,947.00* |
| | | | | *SUBTOTAL* | *251,997.00* |
| | Vermont Building Permit Fee | 4.50 | /$1000 | | 1,133.99 |
| | | | | *SUBTOTAL* | *253,130.99* |
| | Contengency | *15%* | *subtotal* | | *37,969.65* |
| | | | | | |
| | **ESTIMATED COST OF PHASE 4** | | | | **291,100.63** |

| | | | | | |
|---|---|---|---|---|---|
| | **PHASE 5: SPRINKLER SYSTEM** | | | | |
| | ITEM | UNITS | | COST/UNIT | COST |
| 5.1 | Horizontal runs and heads, basement, crawl space, main floor, attic, dry system | 12000 | sf | 4.00 | 48,000.00 |
| 5.2 | Risers. Pump | 3 | levels | Allow | 5,000.00 |
| | | | | | |
| | **SUB TOTAL, PHASE 4** | | | | **53,000.00** |
| | Construction documents and management | *14%* | *subtotal* | | *7,420.00* |
| | | | | *SUBTOTAL* | *60,420.00* |
| | Vermont Building Permit Fee | 4.50 | /$1000 | | 271.89 |
| | | | | *SUBTOTAL* | *60,691.89* |
| | Contengency | *15%* | *subtotal* | | *9,103.78* |
| | | | | | |
| | **ESTIMATED COST OF PHASE 5** | | | | **69,795.67** |
| | | | | | |
| **NOTE 1** | Estimated total project costs, all phases. | 8482 | SF | | *947,047.68* |
| | | | | | |
| **NOTE 2** | Estimated Project Cost per Square Foot | | | 111.65 | / sf |
| | | | | | |
| **NOTE 3** | Phases outlined above can be further divided into additional phases or combined as funds may allow. | | | | |

VERMONT MECHANICAL INCORPORATED

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January 19, 2006

Mr. Jay White, AIA
Robert Carl Williams Associates, Architects
Box 949
Upper Michigan Road
Pittsfield, VT 05762

RE: Brandon VT Town Hall Restoration

Dear Jay;

Please find below our budgetary scope description and a budget estimate for the project outlined in your report "Restoration Plan and Recommendations". Our findings are based upon this document as well as your conceptual plans recently made available. Vermont Mechanical is pleased to present this package which is based upon our experience in projects with similar requirements and historical significance.

HVAC Description

The Brandon Town Hall heating, ventilating and air conditioning (HVAC) system will be completely replaced and updated in this scope of work. The existing systems are not satisfactory for the proposed uses and are in an aged condition. The following program requirements are stated in the architect's report:

1. Separate temperature control zones for basement and main levels.
2. No water in upstairs to reduce freeze potential
3. Meet ventilation code requirements.
4. Fuel oil or LP gas fuel supply

Two separate forced hot air systems are recommended to satisfy heating and ventilation requirements in the zones.

1. AHU-1: Basement General Area & Public Restroom
2. AHU-2: Theater Hall

Each restroom in the basement will require exhaust air flow at a rate of 70 cfm per flushing fixture or more. The public restroom, with 11 fixtures, should probably use a scheduled exhaust fan (800 cfm) to ensure flow during events and occasional exhaust at other times. Its use might be interlocked to the upstairs system. The fresh air makeup

rate to offset the exhaust at the restroom should be provided through the basement system AHU-1. Its normal supply air flow rate of 2000 - 2400 cfm will switch to about 40% outside air when the public restroom fan is in use. Normal outside air flow rate in the basement AHU-1 will be about 200 cfm. This should be calibrated during commissioning.

A new duct system will serve all basement areas with heated (and possibly cooled) air. The system should be about 2000 cfm for heating (heat load about 96,000 btuh) and about 3000 cfm for cooling ( about 7.5 tons). At the outside air flow rate of 800 cfm, the heating load increases by about 80,000 Btuh to 170,000 Btuh.

A review of the new raised floor structure indicates that insufficient space will be created under the new floor for air distribution by conventional means. We suggest that overhead rectangular ductwork be used for air distribution. The main trunk ducts (closest to the air handlers) can be limited to about 24" W x 12" H, gradually decreasing in size further away from the equipment.

The main Theater level will be served by a dedicated air handler located in the basement. No hydronic heating radiation is allowable to avoid risking frozen pipes upstairs. If used for heating only, the system would be sized at about 5,000 cfm, and about 200,000 Btuh. For cooling, allowing for summer conditions and an audience of 450 – 500 people, the system should be sized to 7-8,000 cfm or about 15-20 tons of cooling. The main supply and return trunk ducts for this size application are going to be about 36"W x 18"H. Various configurations can be arranged to split these trunks into two main runs and reduce sizes.

In a large space with such a high ceiling heat will rise so it is advisable to consider de-stratification of air in the winter with ceiling fans. The architect suggests using floor registers to supply air to the main level. Low wall return grilles are also advisable to draw the colder air at floor level back to the air handler. This same arrangement can be used for cooling as well, although ceiling fans should be switched off if air conditioning is used.

The fresh air requirement for the audience should be carefully calculated under new ASHRAE Std 62 guidelines. Comparable projects use about 4000 cfm of outside air during public events. This will add about 10 tons to the cooling load, bringing it to a total of 25 -30 tons. The increase in heating load will be about 400,000 Btuh, bringing the total upstairs heat load to about 600,000 Btuh.

Examination of the range of heating loads described above shows it to be quite a broad range and dependent upon the ventilation configuration. Most notably, the heating loads for the theater system are large enough that typical light commercial furnace equipment cannot be used. Oil fired furnaces are discouraged due to longevity issues and the lack of products on the market. Gas fired hot air furnaces in the size range for the theater are relatively expensive and require sophisticated controls for capacity control. Eventually heat exchangers fail and the combustion fumes can be introduced into occupied spaces.

Therefore, we suggest that a boiler system be installed to allow more flexible equipment choices. This also allows using hot water coils in the air handler instead of combustion furnaces that would have safety concerns over time. The boiler approach should provide longer life and relatively straightforward maintenance.

The boiler plant should probably be two boilers, for reliability and load matching, of 300-350,000 Btuh apiece. Boiler sizing is largely a result of the ventilation requirements. If the project is done in phases, perhaps the first boiler is installed in phase 1 (basement) and a second boiler is added for the theater level. Hot water pumps will accompany the boiler. Each air handler will have a hot water coil for heat transfer. If fuel oil is selected for the boilers, then a conventional 82-83% efficient cast iron boiler with a power burner is suggested. A fuel oil tank is required, probably below grade outdoors. If LP Gas is selected, we recommend a high efficiency modulating boiler such as the Weil-Mclain Ultra series. This boiler provides excellent turndown ratio to match lighter loads. Outdoor LP gas tank(s) are required as well.

The system will be operated using automatic temperature controls. The boiler system should be equipped with a hot water reset package that senses outdoor temperature and adjusts the boiler operation accordingly. Each air handler will be operated by its own thermostat. The basement area is probably best served by a programmable thermostat with 7 days capability. The selection of the thermostat for the upper level depends upon the expected use. If intermittent use is expected, following a non-uniform schedule, then a manual thermostat will suffice and is simpler to use than a programmable thermostat.

If air conditioning is selected, then the larger ductwork should be installed at the outset. If smaller ductwork is used, properly sized for heating only, the system will never provide fully effective cooling on summer days and evenings. The space may start off comfortable but, after 20-30 minutes with a full house, the temperatures would quickly rise.

There are several architectural impacts of the proposed systems.

First, the mechanical utility space should be 400 +/- SF for a boiler plant and the proposed air handlers. The current plans indicate about 150 SF which is not adequate.

Second, ventilation louvers will be needed in two locations, each about 15-20 SF. A 4'x4' or 4'x5' louver for air intakes, and one of nearly equal size for exhausting stale air from the building. Wider, lower louvers are also possible. Fresh air intakes are to be located 10 feet from building vents and should be at least that far away from the exhaust air louver. Each louver will have large ductwork as well.

The boiler, or a gas furnace for that matter, will require combustion air and fume venting. Gas fired direct vent appliances can be used which will allow venting without the use of a chimney; the vents can be made at the basement level ceiling, or a few feet above grade. Oil fired appliances are best vented through a chimney (which is not include in our budget).

The final architectural consideration at this time is the head room impact of the duct system. As stated above, the basement will need 12" deep ducts and the theater ducts will be 18" deep.

Plumbing Description

The plumbing scope is consistent with the architect's report. Essentially all of the existing plumbing is to be demolished and disposed. During the first construction phase, the new public restrooms and the other fixtures shown will be installed. The drainage lines for the new fixtures should be installed within the cavity created by the new raised floor. Fixture supply and vent lines will be run overhead and feed down to the fixtures. Our budgeting is based upon typical commercial grade fixtures.

We have assumed that there is adequate water pressure at the water entrance for the use of flush valve fixtures. We have included floor drains for each room with bathroom area to collect possible overflow from flush valve fixtures. A floor drain should be installed in the mechanical room as well.

Due to the intermittent hot water use, this may be an excellent application of an instantaneous type or point of use water heater installation which has low standby losses. Otherwise we would suggest using an indirect fired water heater on the boiler plant.

The plumbing scope of work will begin within 5 feet of the building exterior for sewer main and it will begin inside the building just before the water meter at the service entrance.

The fixtures we have included are:

| | |
|---|---|
| Water Closet (FV) | 8 |
| Urinal (FV) | 3 |
| Lavatory, wall hung | 9 |
| Kitchen Sink | 2 |
| Mop Sink | 1 |
| Outdoor Hose Bibb | 2 |
| Floor Drains | 5 |
| Water heater | 1 |

Project Budget:

These figures are based upon costs anticipated for 2006. If the project is delayed into future years, an appropriate inflation amount should be considered. These amounts should be considered as an estimate of likely project costs associated with the scope listed above. We have not included contingency amounts. These figures will require further precision as the project scope is refined.

PLUMBING

| | |
|---|---|
| Plumbing Fixtures | $12,000 |
| Plumbing Installation | $30,000 |

HVAC

| | |
|---|---|
| Boiler System with 2 zone pumps, etc. (LP Gas, high efficiency) | $40,000 |
| Bathroom Exhaust | $ 4,500 |
| AHU-1 (heat & vent only) | $18,000 |
| AHU-2 (heat & vent only) | $60,000 |
| AHU-1 (7.5 ton cooling upgrade) | $12,000 |
| AHU-2 (30 ton cooling upgrade) | $50,000 |
| Total | $226,500 |

Please do not hesitate to contact me at (802) 862-5900 for further discussions.

Sincerely,

VERMONT MECHANICAL, Inc.

Thomas Whitney, PE
Engineering Manager