THE REPORT OF A SPECIAL MEETING THE ARCHITECTURAL COMMITTEE OF THE

PHILADELPHIA HISTORICAL COMMISSION

Arlene Matzkin, Chairperson
Commission Conference Room
Suite 1301, 1401 Arch Street

10 April 1994

Present

Arlene Matzkin, AIA, Chairperson
Penelope H. Batcheler, Historical Architect
J. William Cornell, J.S. Cornell & Sons, Inc.
David Hollenberg, Historical Architect, National Park Service
Herbert Levy, AIA, Geddes Brecher Qualls Cunningham
Don Stevenson, Sheward & Associates

Randal Baron, Historic Preservation Planner
Lori Plavin Salganicoff, Historic Preservation Specialist

Also

George Skarmeas, Vitetta Group
Hyman Myers, Partner in Charge, Vitetta Group
Ken Jacobs, Vitetta Group
Jim Collins, Vitetta Group
D. G. Cornelius, Vitetta Group
Joe Sorrentino, Vitetta Group
William Korenicki, Vitetta Group
Bill Weber, Vitetta Group
Mary Dempsey Lowe, Vitetta Group
Suzanne Pentz, Keast and Hood
Nick Gianopulos, Keast and Hood
Henry Pinto
Bill Carnegie
Martha B. Aikens, Superintendent, Independence Hall National Historic Park (INDE)
Tom McGimsey, INDE
Doris Fanelli, INDE
Eleonora Balibar, National Park Service
Dennis McGinnis, National Park Service
John Ingle, National Park Service Mid-Atlantic Regional Office
Keith Everett, National Park Service Mid-Atlantic Regional Office
Kate Stevenson, National Park Service Mid-Atlantic Regional Office
Cliff Northrop, National Park Service Denver Service Center
Carol Cook, Philadelphia Planning Commission
Tom Hine, Philadelphia Inquirer

INDEPENDENCE HALL, CONGRESS HALL, OLD CITY HALL AND EAST AND WEST WINGS
The Vitetta Group, Inc.
PROPOSAL: Changes to Electrical, Lighting, Fire Protection, Security and Mechanical Systems

As decided at its 29 March meeting, the Architectural Committee convened at 10am on Sunday, 10 April at Congress Hall for a tour of the five buildings followed by a detailed presentation by the Vitetta Group. During this tour, the Vitetta Group and their consultants, aided by Penny Batchelor and Independence National Historic Park (INDE) personnel, indicated the locations and nature of existing and proposed systems within original, later historic, and non-historic fabric. The following paragraphs briefly summarize the proposed system changes:

PROPOSED ELECTRICAL SYSTEM -- All Buildings

The Applicant proposes to retain functioning electrical systems and replace damaged ones. Provisions will be made for portable generators to be hooked up in case of emergency to run the air handling systems. New National Park Service-supplied dry transformers will be installed in the current transformers' locations, but will be raised off of the ground.

PROPOSED LIGHTING SYSTEM -- All Buildings

Under this proposal, new lighting will be installed, and is to be of 18th C. color, quality, and light level. Sources will be minimized. Inappropriate lighting, such as the track lighting in the second floor of Old City Hall, shall be removed.

INDE will be shown a sample installation of the new lighting system in approximately 10 days. Upon the Park's approval of the system, the Vitetta Group will request another site visit by the Architectural Committee for its review.

PROPOSED FIRE PROTECTION SYSTEM -- All Buildings

The buildings are now only partially sprinklered. The Applicant proposes to sprinkler thoroughly all buildings with a new dry system. Heat detectors, spaced forty feet apart, will protrude 1" from 2-1/16" grometted holes in ceilings. When activated, the dry sprinkler pipes fill with water in less than a minute. The water is then held in the pipes unless sensors instruct the system to release the water through sprinkler heads, or the water is manually drained. Sprinkler pipes will be run on top of floor joists, within cornices, and in joist pockets. This system also features circular plate-covered sprinkler heads, color-matched to and flush against the ceilings, that drop an inch or so when activated by heat or smoke detectors to release the sprinkler heads.

The sprinkler piping in Old City Hall will be located predominantly in joist pockets, but some joist cuts will be made. Penny Batchelor suggested that the sprinkler heads in the Congress Hall Senate room should be placed adjacent to shoring holes.

PROPOSED SECURITY SYSTEM -- All Buildings

The current security system only covers intrusion. The proposed system will cover intrusion, vandalism, and theft through the installation of 2" long mini-camera/motion-detectors of 3/4" diameter into ceilings and cornices that will be static and "event activated." These cameras can be placed flush against surfaces and concealed by a piece of fabric, silkscreened to be the same color as its surrounding. Door contacts will be of a 3/8" diameter, with wires to be run behind baseboards to the basement.

PROPOSED MECHANICAL SYSTEMS -- Overview

The Applicant proposes to change the mechanical systems by replacing the existing air handling units and adding additional ones, increasing the amount of ductwork, and cutting openings for additional registers and returns throughout the buildings to increase the air flow. The proposed mechanical systems are designed for slow changes to occur in interior temperature and relative humidity (RH) based on exterior conditions, within the constraints of 65-70° F and 20-50% RH. The system would be controlled by a computer program with limited access to personnel. Wild swings over short periods of time would not be allowed by the program and, within these constraints, condensation would be expected to occur on window glass for only fifteen days per year. With the addition of new air handlers, the current duct chases offer sufficient room for new ductwork to **heat** the buildings and maintain an RH within these constraints. The need to **cool** the buildings in the summer to 70°, however, requires an increase in air handling and ductwork capacity.

Independence Hall
The Applicant presented two schemes for the mechanical systems of Independence Hall, the first with two new air handlers in the basement and tower. Ductwork from the tower unit will run through an original tower wall to the long gallery attic to provide for diffusers to the second floor. Existing duct chases and diffusers will be reused and new ones added. These air handlers will have isolators to dampen vibrations and, according to Ms. Pentz, the tower structure is sufficient to carry the load. Diffusers will be cut through the non-original flooring of the first floor. New large linear diffusers will be added to the second floor stairhall ceiling running near the east cornice, and in an uneven pattern in the ceiling along both sides of the Long Gallery's south wall.

The second scheme consists of new, larger air handlers in the basement, where the current handler is located, which significantly reduces the amount of newly cut openings needed for new diffusers throughout the building. The conditioned air would be ducted from the basement upward through the Assembly Room's northeast closet, and returned down through the Assembly Room's southeast closet. The southeast closet once served as a passageway to an internal committee room which no longer exists. Through this opening, George Washington fled to the Committee room upon his nomination as Commander in Chief of the Continental Army.

Under the assumed temperature and RH restrictions, using only basement air handlers would necessitate the use of a higher velocity of air, although not enough to take the system out of the "low velocity" category. Air distribution would also be somewhat less even. In order to service the stairhall and tower above, new duct chases would be run through Assembly Room closets, into one of which George Washington once fled, and within the ceiling of the first floor. Horizontal cuts for diffusers will also be made around the 1960s restoration stairhall ceiling medallion.

Congress Hall
The two air handling units serving the building reside in the basement and attic, with ductwork running through the 1912 south wall of the stairhall and the north wall of the Senate chamber -- an original wall that contains 1960s structural and mechanical alterations. The Vitetta Group proposes to have one air handling unit in the basement and two in the attic, using current duct chases but also adding more ducts and pipes into these walls. Several additional diffuser openings will also be cut, including several in the Senate Chamber Gallery. This gallery wall is not visible or open to the public. Original rubble foundation walls in the basement will have openings cut to allow for the

increased ductwork. Fresh air intakes through the windows of the basement are covered by louvers of different sizes and character, highly visible from the exterior. More basement window are to be louvered for expanded intake capacity, although their design has not yet been proposed.

Old City Hall
The Applicant proposes to replace the basement air handler and ducts without touching the 18th C. basement wall. The duct chases of the 1920s north stairhall wall will be reused and one added; existing first floor registers in floors and sills will also be retained. New sidewall registers will be added to the south side of this wall for the Mayor's Court balcony. In second floor rooms, existing non-strip diffusers will be replaced with strip diffusers whose installation will necessitate the cutting of joists. The ducts in the attic are to be replaced, but will drop to the same location.

East and West Wings
The 1956 West Wing basement bathrooms will be removed in order to install a new air handling system. The East Wing's chiller, located in its basement, is to be retained, although louvers will be placed on basement windows for increased fresh air intake. Some new openings will be created for ductwork in original basement walls.

OTHER ALTERATIONS

The connection of the octagonal bell tower to the square portion of the tower below is in need of additional support, owing to a substantial amount of concealed wood decay found; Keast and Hood propose an internal "socket" of new steel bracing to solve this problem. Minor use of epoxy injection into wood members will also be used.

The west stairway landing of Independence Hall's grand stairhall is currently being reinforced with tube steel. Original paneling removed to uncover this cantilever structure will be replaced after the work. Also, to determine the degree to which the Independence Hall north entrance corridor ceiling is detaching from its supports, the Park has investigated using a fiber-optic camera. This is the earliest remaining ceiling in the building.

The 1960s Old City Hall basement bathrooms, lockers and shower rooms required by the National Park Service for employees will be removed and replaced with more modern facilities in the same location. The entire East Wing has asbestos in its 1960s plasterwork; all woodwork will be removed and stored during the eventual abatement of the asbestos plaster. The basement of the East Wing has experienced termite infestation into wood that will be replaced. The West Wing bookstore will be removed for exhibition space and the restoration of the 1956 first floor vestibule to mimic that on the second floor. The basement ceilings of all five buildings will be removed in order to make floor joists more visible for inspection.

All buildings' resistance to typical seismic activity was also analyzed, and all but the tower were found to be less than satisfactory. The floors of these unreinforced masonry buildings do not act as diaphragms, so the buildings would not act as whole structures. Congress Hall would be the worst affected, as it was extended to the south in 1787 without a sufficient connection of the two parts.

SUMMARY OF COMMITTEE DISCUSSION

Committee members were satisfied with the Applicant's solutions to the electrical, fire, and security systems. Information provided about the proposed lighting system was not sufficient to discuss beyond the agreement to revisit the site once a sample is installed.

As anticipated, the bulk of the discussion and tour focused on mechanical systems. Committee members and Mr. Ortega applauded the flexibility of the system, but questioned the temperature and relative humidity boundaries within which the system was designed. Although it was originally stated that the purpose of the new system was to reduce the likelihood of damaging condensation, questioning revealed that the system also took tourist comfort into consideration. The Applicant was unable to substantiate the claim that an interior heat of greater than 70° and/or an interior RH of greater than 50% would be detrimental to the building. This is important, for the greater the need for cooling, the greater the amount of destructive new ductwork chases and diffuser openings must be made. Ms. Matzkin noted that it is not obvious that optimal conditions should be maintained for 100% of the year at the expense of so much fabric and wondered whether less consistently optimal condition criteria would substantially impact the design. Ms. Batcheler stated that the sheer amount of ductwork proposed for attic spaces will make future inspection of original structural fabric extremely difficult, which could in turn lead to undetected water damage.

INDEPENDENCE HALL -- Members strongly objected to the amount of intervention proposed under the first Independence Hall proposal agreeing that the second proposal was by far the better of the two. All objected to ductwork penetrating the original 1750s tower wall and to intruding on the historic caretaker's apartment in the tower, elements of both proposals. Agreeing that the second proposal is better, Ms. Batcheler nevertheless questioned the assumption that the tower must be serviced with air handling and objected to the use of the southeast "George Washington's" closet in the Assembly Room. Ms. Batcheler also suggested that there should be no diffusers in the stairhall at all. The Applicant responded that they would investigate eliminating the system in the tower and, if that system was found to be necessary, changing the placement of this ductwork to the Tower floor.

CONGRESS HALL -- Ms. Batcheler asked whether, instead of putting two air handlers in the attic, the present attic air handler could be replaced with one of larger capacity. Suggestions for distributing air in the Senate Chamber included: 1) utilizing now-covered 19th C. ventilator openings in the Chamber, and 2) running a duct on the Chamber balcony to allow air to come through or above the balcony's front panel railing. Although the suggestion to replace the current air handler with one of larger capacity rather than two was supported, neither suggestion for Senate Chamber air distribution found consensus with Committee members.

Mr. Ortega inquired about the degree to which the computer-determined settings may be changed by Park personnel. Mr. Myers responded that very few people would have access to the system, and regular monthly printouts of interior temperature and relative humidity information will be forwarded to Commission staff at Mr. Tyler's request.

Committee members voted to recommend approval of the electrical, fire, and security systems. Vote on the lighting system was deferred pending a presentation by the Applicant of a sample installation.

Committee members voted to recommend that the Applicant be required to investigate further the following options, based on higher summer temperature and RH boundaries, and winter RH boundaries based on minimizing condensation on original sash:

1. *Install state of the art air handling and controls using solely existing duct chases.*
2. *Install a system with new controls and air handlers, utilizing existing chases as well as creating new ones where such intervention is of no consequence to historic fabric.*
3. *Develop the currently proposed system with the new boundaries described above.*

Committee members also voted to recommend requiring a detail of the design for proposed air intake louvers be presented. The Applicant agreed to present these alternatives to another special Committee meeting in approximately ten days.

There being no further business, the Committee adjourned at 4:30 pm.

Respectfully submitted,

Lori Plavin Salganicoff