Chapter One

EXECUTIVE SUMMARY

New York architect George B. Post (1837-1913) was at the top of his profession and the height of his architectural proficiency in 1906 when his firm, George B. Post & Sons, secured the project of designing a new state capitol for Wisconsin. Although this is the only capitol Post designed, he was eminently qualified for such a project through his extensive experience with the design and construction of large, steel-framed buildings. Post brought skill and maturity to the project, in combination with a keenly developed architectural vocabulary. Throughout his long career, Post maintained an eclectic approach to architectural form and sought to give expression to a number of stylistic trends current in late 19th century American taste. By the early 1890s, the architect had given himself over to the stylistic tenets of the French Ecole des Beaux-Arts, which promulgated a brand of classicism that stressed a “proper” use of classical elements, which were inspired by the architects of the Italian Renaissance. This style found application primarily in urban settings, especially in buildings of commerce and government. It was the opinion of Post and his peers, the upper crust of the East Coast architectural establishment, that Beaux-Arts principles could be successfully applied to broader urban planning situations as well.

Post and his colleagues demonstrated the unifying effect of the consistent application of classically derived form in planning world's fairs and expositions, the most important being the 1893 World's Columbian Exposition held in Chicago. Although intended only for temporary service, the exhibition buildings inspired the popular imagination by demonstrating the orderliness and cohesion a building group or building elements can attain when an underlying stylistic organization is in place. Post's Beaux-Arts sensibilities were expressed in his later work, such as his Manufactures and Liberal Arts Building (1893), which was the largest building at the Columbian Exposition, placed prominently on the central lagoon. The New York Stock Exchange (1903) and the Wisconsin State Capitol both represent examples of Post's mature design in this idiom; the Capitol was his last large building. Begun in 1906, its completion in 1917 came after the architect's death in 1913.

In the design of the Wisconsin State Capitol, Post was fortunate to have been presented with a site of unparalleled prominence, pivotal within a radiating street plan that had established the pattern of the city's development. The setting also had Arcadian qualities and ample opportunities for sight lines from the building that would carry to the pair of lakes that define the isthmus, which has the Capitol at its center. The Capitol was built in phases, by wings; the East Wing was the second wing to be constructed. The seat of the executive and judicial branches of state government, the occupancy of the East Wing has differed from the other wings. At the time the Capitol was designed, it was intended to house all of state government, including the various departments and commissions supported by the state. The East Wing provided quarters for the governor, the attorney general, the Supreme Court and the State Law Library. This has resulted in greater occupant stability than in other areas of the building and a greater number of more highly finished office spaces. Although ornate meeting chambers were afforded both houses of the legislature, private offices were not provided for the legislators. In the East Wing, however, private offices were provided for the governor, the attorney general and the
Supreme Court justices, as well as for members of their staffs.

The chapters in this volume have been prepared with a great sense of appreciation for the work of George Post and his integrity as a designer. In the East Wing and throughout the building, Post's design sensibilities as applied to the Wisconsin State Capitol, even as we consider them today, remain consistent and correct. The general intent of this volume will be to explore and disseminate the ideas behind the design of the spaces, to provide an assessment of conditions in the wing as they were found in 1998 and to describe the effects of the architectural intervention that followed. While this approach to a Historic Structure Report is unusual, it provides an excellent opportunity to document both a work completed and a work in progress.

Methodology

In undertaking the East Wing Restoration and Rehabilitation, the last phase of the larger Capitol project, a seasoned project team established a rigorous approach to the work and implemented expediencies that would not have been possible in earlier phases. By 1998, when work on the East Wing began, the restoration process had been underway ten years, providing the opportunity for all involved to have cultivated specialized skills relative to the execution of their respective tasks within a familiar context. An innovative project methodology facilitated the success of the project, which was completed within the aggressive three-and-a-half year time frame established for it. From the inception of the East Wing project, the importance of efficiency has been stressed. Large-scale preservation projects typically require thorough planning as a key component to their successful realization. From a design and construction standpoint, the quality of the information gathered about historical and physical conditions in the building will stand in direct correlation to the quality achieved. The pre-design methodology implemented in the East Wing is thoroughly explored in this chapter and the deliverables relative to the design process enumerated. A brief overview of the construction methodology is also provided.

Some of the innovations put into practice included the shift of all coordination responsibilities from the Architectural and Engineering team to the General Contractor, J. P. Cullen & Sons, Inc. of Janesville, Wisconsin. With a thorough understanding of the steps required to effectively complete the Restoration and Rehabilitation from a construction point of view, they were highly successful in maintaining the project schedule and keeping the flow of necessary information moving. Cullen coordinated the work of the various trade and artisan groups along with their own staff of over thirty-five, who occupied the East Wing for over nineteen months. Cullen insured the proper phasing of the work to make certain that events were properly sequenced. Critical to the process was that project phases occurred with a measure of overlap. For instance Selective Removal, a phase that involves the orderly removal of elements from the wing, coincided with New Construction both in the preparation of drawings and specifications and in actual accomplishment of the project.

The utilization of an on-site workspace in the Capitol, which was shared by the construction and design teams, represented another significant improvement over earlier projects. This arrangement was specified in the contractual agreements established between the Division of Facilities Development of the State of Wisconsin with its prime contractors; it was extended to many of the subcontractors, as well. The proximity team members enjoyed with one another and with the building occupants markedly heightened project efficiency, especially in the pre-design and design phases. A linked computer network shared by those engaged in the project facilitated the collection and refinement of data and increased the accessibility of construction documents and internal memoranda.
The narratives provided in the counterparts to this chapter prepared for the South Wing and Central Portion Historic Structure Reports describe the architectural and historic pre-design research involved in completing the volume. As this document is being assembled while the Restoration and Rehabilitation of the East Wing is underway, the opportunity existed to present a narrative that is more comprehensive in describing general project methodology. Instead of a discussion focused simply on research methodology, this chapter explores the processes by which the work was planned, designed and completed. Because the intent of this chapter, and in fact the entire volume, is not that it offer information to guide design processes, it has been condensed in size and increased in scope.

**Historical Overview**

The East Wing was constructed between March 1908 and the fall of 1910 when the occupants moved in. It fell almost a year behind schedule because of late materials, insufficient work force and labor problems, a fire at the woodworking contractor’s planing mill, cold and snowy weather, misunderstandings concerning the intentions of drawings and occasional dissatisfactions on the part of the client, especially the Supreme Court. The carving by Italian artisans of the sculpture group in the tympanum of the pediment facing King Street was accomplished on schedule between July 1909 and January 1910, the first of the exterior sculptures created. Karl Bitter, the sculptor, dedicated the group to the theme of justice in recognition of the wing housing the Supreme Court. Design, creation and installation of the mural paintings trailed completion of the interior construction by several years—until 1913 in the Executive Chamber and 1915 in the Supreme Court Hearing Room. Replacement of damaged marble occurred in 1916, only a year before the entire building was completed, even though the East Wing was the second component of the Capitol erected. The wing also incorporated the latest development in ventilating fan technology, suggestive of a trait of the architect, George B. Post, who was known for adopting technology when it first appeared. (He had been among the first to use passenger elevators in constructing the forerunners of skyscrapers.) Original figural drinking fountains on the ground and first floors (dolphins and lions’ heads, respectively) were removed in 1912 because they employed common drinking cups, which the legislature was on the verge of banning.

The Northeast Pavilion was erected as part of the North Wing between 1914 and 1917. Its construction affected the East Wing because the circular rooms on the second and third floor of the pavilion had to be integrated into office suites that shared the wing and pavilion. The creation of these suites led to early revision of toilet rooms and corridors in the East Wing.

Post based the first floor Executive Chamber—the most elaborately decorated smaller room in the entire building—on a council room designed in 1574 for the Doge’s Palace in Venice, which was an important landmark of Venetian Renaissance design. The chamber has wood-paneled walls of carved cherry and an elaborate plaster ceiling. Mural paintings of both historical and allegorical subjects by Hugo Ballin of Saugatuck, Connecticut decorate the walls and ceiling. Those on the walls were the subject of controversy from their installation in early 1913 until the Capitol was completed. Ballin repainted sections of some of them in November 1913, but critics continued to express dissatisfaction, and the situation was left unresolved when the building was finished. Elmer E. Garnsey of White Plains, New York painted and gilded the wooden walls, composition ornament and plaster ceiling.

George Post worked out the design of the second floor Supreme Court Hearing Room in early 1908 with the aid of a member of the Capitol Commission, William F. Vilas of Madison. It began as a round room with marble walls, then was changed to a nearly perfect square, also with marble walls. The marbles are some of the most rare and carefully selected in the Capitol, especially the book-matched wainscot panels of Formosa marble from Germany found on three walls of the room and the Benou marble columns from France located behind the justices’ bench. The justices requested a much

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*13 La Follette in Executive Chamber, 1924
Robert M. LaFollette, Sr., candidate in the 1924 presidential race in the Executive Chamber together with his two sons, his daughter-in-law and Governor and his wife, Mabel, was influential in the movement to build a new capitol.*
larger and higher bench than originally designed, called for portraits of past justices to be hung in the spaces reserved for murals, altered the design of their conference room by substituting bookshelves for wainscoting, added a pneumatic tube system to connect their chambers with the State Law Library and changed the private elevators in their area from lever-operated to push-button. The discussion over the portraits began in 1909 and ended in 1912 when the justices agreed that the portraits could be hung in the lobby and mural paintings could be created for the hearing room. The justices helped select the historical subjects for the murals and critiqued the artist’s sketches for them. The first choice for muralist, Francis Millet, drowned on the Titanic in 1912; the second choice, Barry Faulkner, withdrew because of scheduling. It was Albert Herter of New York who finished the four paintings in 1915. The mural subjects include the signing of the American Constitution, the signing of the Magna Carta, an episode from the history of Roman law, and the trial of Chief Oshkosh as an example from Wisconsin’s judicial past. The plaster surfaces in the hearing room were decorated by the New York firm of Mack, Jenney and Tyler, the firm responsible for decoration of the entire wing.

Besides the governor and the Supreme Court, the wing housed the attorney general, the State Law Library (on the third and fourth floors), the lieutenant governor (after 1971), the adjutant general (until 1958), the administrative offices of the agricultural department (until 1964) and the kitchen for the restaurant that operated under the Rotunda from 1917 until 1927 or 1928. Biographies of some of the wing’s most prominent occupants conclude the chapter.

**Structural Systems**

The chapter on structural systems provides a description of the foundation, steel superstructure, masonry walls and roof of the East Wing. The description is divided chronologically: original condition; modifications and existing conditions prior to 1998, and modifications made during the 1998-2001 Restoration and Rehabilitation. Conclusions about the original condition of the wing are drawn from a review of period correspondence, drawings, construction contracts, photos and newspaper articles. The balance of the chapter is based on the contemporary observations of Graef, Anhalt, Schloemer and Associates, Inc. (GAS) as well as a review of records of Division of Facilities Development engineers. The Madison office of GAS surveyed existing conditions in 1998 and designed the structural component of Restoration and Rehabilitation.

The foundation of the East Wing, completed in just over two months in 1908, consists of concrete tunnels and trenches, stepped wall footings and more than fifty spread column footings carrying the weight of the floors. The footings are constructed with “I”-beams encased in concrete and are reinforced with square steel bars. The concrete of the foundation walls was poured to an elevation three feet below ground level so the granite cladding could extend to grade elevation. The foundation walls are stepped at the bases to form footings on the hardpan soil.

Steel for the superstructure of the wing was provided by the Modern Steel Structural Co. of Waukesha, Wisconsin. Steel from several manufacturers was used, but more than half the steel by weight was from the Bethlehem Steel Corporation of Bethlehem, Pennsylvania. Bethlehem began to manufacture a new, wide-flange beam in 1908 that had less mass and weight than standard shapes and was therefore more economical. Original structural plans were drawn in January 1908 with notations for standard “I” shapes, but on revised plans the standard notations were crossed out and “Beth” (an abbreviation for Bethlehem) was written in.

The exterior walls are constructed of brick masonry, granite cladding and steel lintels. Interior walls are non-load bearing clay tiles or, occasionally, load bearing brick. The interior steel columns are latticed steel channels riveted to steel straps. Clay tiles encase the columns and provide fire protection. Typical floors are made of steel beams with flat clay tile arches.
spanning the spaces between beams, and a poured concrete topping. The gable roof structure consists of steel trusses spanning 45 feet down the center of the wing supported by a steel frame. The lower roof is constructed of brick arches over concrete and is framed with steel beams.

There had been few substantial modifications to the East Wing structural systems since the wing was completed. One significant project, the 1989 Primary Electric Renovation, required lowering the perimeter of the basement floor by two feet to accommodate new electrical substations and future development of electric, plumbing, HVAC and steam systems.

Modifications made during 1998-2001 Restoration and Rehabilitation included new mechanical tunnels in the basement, which were incorporated between existing footings. Two bays of existing framing were removed to accommodate a new stair between the ground and first floors. A limited use, limited access elevator (LULA) was installed between the third and fourth floors. A stair running from third to fourth floors was abandoned. The stair was left intact and the fourth floor space over the stair was covered with structural framing to create usable floor space. A portion of the new floor on each side of the wing consists of glass blocks positioned beneath an existing skylight. This device had been used by Post in his original design to allow natural light to penetrate the interior spaces of the building. A new equipment frame was added to the existing fan room on the fourth floor. New openings for mechanical equipment were made in the original framing on first, second, third and the fourth floors.

GAS’s survey of the wing concluded that the building was generally in excellent condition except for two areas. Slightly sloping floors were observed at the east end of each level due to foundation settlement of approximately 1 1/2 inches. GAS found no structural damage due to the settlement and concluded that no remedial action would be necessary. The second problem involved movement in the floor of the former Law Library area on the fourth floor. This shift occurred either prior to or very soon after initial occupancy of the wing, and could have been caused by the weight of heavy metal bookshelves that were substituted for the lighter-weight wood shelving originally specified for the library. GAS found that the beams and connections had not failed, and no modification was necessary. For programming reasons, the Law Library has been relocated from the building.

**Exterior**

George B. Post & Sons of New York designed the Capitol in the Beaux-Arts style, which is characterized by many elements found in the East Wing and Northeast Pavilion: symmetrical plans and elevations, arched masonry (as in the ground floor pavilions), rusticated rather than flat stonework on the ground story, a massive façade, classical columns, decorative brackets and keystones, monumental flights of stairs, balustraded and pedimented windows, symmetrically placed rectangular windows and more.

The entire structure is faced with white granite from Bethel, Vermont. A cruciform building, the Capitol as a whole is symmetrical. In addition each element of the composition also is symmetrical, especially with respect to the columns, entrances and window placement. The east façade has three sets of doors with ornamental keystones centered between two sets of windows on the ground floor; five pedimented and bracketed rectangular windows on the first floor; five arched windows with embellished stonework on the second, and five pairs of windows on the third. On the side walls, the ground floor has six exposed windows with ornamental keystones (two more windows without keystones are within the pavilion). The first, second and third floors each have seven windows on the façade and an eighth within the pavilion. The seven are designed with the same elements as the windows on the east façade, but the sizes differ somewhat. The East Wing is the only one of the wings having pedimented, bracketed windows on the first floor end.
façade. The pediments accommodate the interior ceiling height of the Governor’s Conference Room (originally called the Executive Chamber), a space illuminated by these windows. The classical order of the east façade is Corinthian, surmounted by a traditional entablature and richly sculpted pediment. The order of the pavilion is Ionic. The decorative treatment for doors and windows in the pavilion is similar, but not identical, to that used on the east façade. The Northeast Pavilion has a grand ceremonial staircase with balustrade. The space under the staircase served as tool storage, and a substantial iron or steel eyebolt was affixed in the porte cochere to assist in unloading freight.

Over the years, the ground floor of the Northeast Pavilion became the Capitol’s service entrance and underwent more changes than any other portion of the building’s exterior. A hydraulic service elevator between the outside entrance to the basement and the heating tunnel below was installed on the entrance deck at an unknown date between the building’s completion and the elevator’s replacement in 1963, by which time it was dated and in poor condition. In 1967, a loading dock and wheelchair ramp were built. In 1970, the inner window on the East Wing side of the pavilion was reconfigured as a doorway entrance to the dock office. A major rebuild of the monumental stairs for the pavilion occurred in 1984, and the exterior elements were largely restored as a part of Restoration and Rehabilitation.

The wing itself underwent few changes compared to the Northeast Pavilion. Along with the rest of the Capitol, the wing’s exterior masonry was repointed in the early 1960s, then was cleaned with a weak hydrofluoric acid solution in 1965. Roofs were replaced in 1982 and some skylights were closed or replaced in 1973 and in 1982.

Prior to 1988-2001 Restoration and Rehabilitation, the engineering firm of Wiss, Janney, Elstner Associates of Chicago and Northbrook, Illinois surveyed and analyzed the masonry of the Dome, West Wing and Northwest Pavilion in 1994. That report served as a basis for the specifications and plans for restoring the masonry elements of the exterior of the entire building, written by Wiss, Janney, Elstner in April 2000. The firm also wrote plans and specifications for replacing the waterproofing on the Northeast Pavilion in August 2000. Wiss, Janney, Elstner received the contract for overseeing the conservation of the exterior, which J. P. Cullen & Sons and their subcontractors undertook during 2000 and 2001 in the closing phases of Restoration and Rehabilitation. As part of the conservation process Wiss, Janney, Elstner noted the condition of every stone on the building’s exterior, supervised the implementation of repairs using several standard techniques, oversaw the replacement of all mortared joints either with new mortar or sealant and supervised the cleaning of the entire building with sponge particles applied under pressure.

**Interior**

The intent of this chapter is to describe how the East Wing interior was originally conceived and built, to consider the changes and modifications that occurred over time and, finally, to report on the results of Restoration and Rehabilitation.

**Historic Description**

An important element of Post’s design intent for the Capitol was expressed in his emphatic distinction between the public and private spaces of the building. Within this context, Post then imposed a hierarchy of space through his use of design elements and finishes. The more ornate, public spaces were those areas available to any building visitor and were typically distinguished by a complex variety of design elements. Private spaces were considered to be those for the use of a specific individual or group of occupants. Within the East Wing, public spaces included the ground through third floor main corridors and stair galleries, as well as the first floor Executive Chamber and the second floor Supreme Court Hearing Room. Somewhat blurring the distinction between public and private spaces in the East Wing was the State Law Library housed on the third and fourth floors. Post’s design also differentiates between the public and private
nature of the principal and secondary, or minor, corridors. Principal corridors are considered public spaces, large in scale, typically ornate and aligned with the building's primary axes. Secondary corridors connect offices to lobbies and to the secondary stairs located near the pavilions in each wing and were used primarily by building occupants.

Post combined the classical elements and formal symmetry of Beaux-Arts design with opulent materials in the ceremonial and public spaces of the building. In private areas, his design was more intimate and preference was given to less extravagant materials. With uncanny foresight, Post envisioned the need for the eventual reconfiguration of space as a condition of building functioning as a working seat of government and designed the Capitol accordingly. His use of a clay tile and plaster non-load bearing interior partition wall system provided an adaptable, easily modified type of construction that could be altered to suit the needs of building occupants and to conform to changes in space requirements as they emerged over the years.

The historic interior of the East Wing included several unique features. As originally designed, a kitchen occupied a substantial portion of the basement; it serviced a restaurant that operated in the adjacent circular area beneath the Rotunda. In designing the first floor Executive Chamber, Post envisioned a paneled and gilded reception room designed in the Venetian Renaissance style. The spaces designed for the Supreme Court included an imposing Hearing Room with a wide variety of marbles and four substantial murals, a highly decorated Consultation Room on the second floor and the stacks and offices of the State Law Library on the third and fourth floors. Other spaces in the wing, including offices, vaults, storage spaces and toilet rooms, were designed to be consistent in treatment with those found throughout the Capitol. However, the first floor private office suites for the governor and attorney general and second floor justices' chambers were more highly finished than other office spaces in the wing.

Modifications to the East Wing

Although fully occupied throughout the twentieth century, modifications to the original fabric and spatial organization of the East Wing were surprisingly limited. As the principal occupants of the wing did not change significantly, a great deal of remodeling was not needed over the years. This type of activity was limited to the lower levels of the wing. In one early modification, the kitchen was removed from the basement in the late 1920s. Minor spatial rearrangements occurred on the ground floor, where offices were reconfigured and vaults subdivided and converted to use as office space. As with the rest of the building, modernization came to the East Wing in the 1960s. During these efforts, many plaster ceilings were damaged and obscured with the installation of acoustical tile ceilings in suspended grids. A significant number of original light fixtures were removed and fluorescent fixtures installed, especially on ground and second floors. Where ceilings were left intact, fluorescent fixtures often were placed with surface-mounted conduit affixed directly to the plaster, as occurred on the third and fourth floors in particular.

In the 1960s, a controversial alteration involved painting the walls of the Executive Chamber, or Reception Room, off-white and installing pale carpeting over the parquet floor. (The painting of the Rotunda an off-white color occurred at nearly the same time.) Although this change was primarily cosmetic, it drastically altered the appearance of the room and constituted a dramatic departure from original design intent. Following these modifications, the name of the space was changed, as well. Having been referred to previously as the Executive Chamber or Reception Room, following the alterations in the 1960s it became known as the Governor's Conference Room. By this time, the single table that originally furnished the room had been supplemented by several large tables and seating for dozens. In other moves toward modernization, carpeting was installed over marble in the Supreme Court corridors on the second floor, irrevocably damaging the marble tile beneath. Throughout the 1970s and 1980s, demands for increased electrical and communications capability resulted in surface-mounted telephone, data and electrical cable being run through holes in floors and stapled along the wood base in numerous offices. Little change took place in the wing in the 1990s, while Restoration and Rehabilitation was underway in the other wings and Central Portion of the building.

1998-2001 Restoration and Rehabilitation

The objective of balancing the needs of an operational seat of state government with those of a National Historic Landmark was key in undertaking Restoration and Rehabilitation of the East Wing. The most notable modifications were made in those areas considered to retain the least architectural and historical significance. The effect of the architectural intervention on the interior of the East Wing is summarized in this chapter; a brief synopsis is provided here.

The basement of the wing was lowered to accommodate new and expanded building systems and provide more office space. The spaces were divided between mechanical systems, maintenance operations, a food service area in the location of the original kitchen and offices for executive department staff. On the ground floor, original vault spaces were not restored; instead, office and work spaces were created as dictated by programming. These spaces were finished in a manner consistent with original offices. The lieutenant governor remained in the suite of offices on the south side of the wing first occupied by that office in 1971. Members of the governor's staff occupy the remainder of south side space, and Supreme Court staff occupies the entire north side of the ground floor. The main corridor, connecting the entrance with the Rotunda, has been restored to its original state, including marble floors, yellowish-toned Kasota stone walls, marble columns, gilded ornamentation, ornate original light fixtures and decoratively painted plaster ceilings.

The first floor offices of the executive department and attorney general have been restored to their original appearances, including the use of historically correct paint colors and decorative finishes. Vault spaces have been rehabilitated as office, storage, meeting and workrooms. A new internal stair near the location of an original vault stair connects the first floor executive department with the ground floor and basement areas of that department. The historic condition of the main corridor and main stair galleries, as well as the second story and stair galleries, has been preserved. The Governor's Conference Room has been restored to its original appearance; the walls have been painted a color that approximates the historic and re-gilded, and the decorative parquet floor has been refinished. Antique rugs were purchased to replace the original rugs originally selected for the room. The use of the space, however, remains in service to the governor as a conference room instead of as a reception room, as originally conceived. The furnishings are consistent with the current application.

The second floor was almost entirely restored to its original appearance: new marble floor tiles in the secondary corridors replace the ruined original stone, and the ceiling of the Supreme Court Conference Room (originally called the Supreme Court Consultation Room) has been restored. Although the justices' chambers have been finished with a level of detail that is more complex than the original scheme, the higher level of finish is in keeping with the original proposal provided by Mack, Jenney and Tyler, the firm that applied decorative finishes to the wing historically. The decorative painting has been restored in the opulent Supreme Court Hearing Room, as well as in the main stair galleries. The preservation of the second floor grand stair and stair galleries, impressive in scale and design, has been completed. Various marbles and stone, iron grillwork, decorative painting and gilding characterize this imposing space, which is open to the fourth floor barrel vault above.

As part of the 1998-2001 project, the State Law Library was relocated from the Capitol. The vacated space on the third and fourth floors was altered to provide several two-room suites for the assembly and offices and meeting space for the Joint Committee on Finance. A large hearing room, designed with videoconferencing capabilities using the latest technology available, was installed on the fourth floor. Although George Post could not have envisioned this use of

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space, it remains true to his design intent. The clay tile and plaster wall system originally used for its fire-resistance and flexibility has been used again in creating the interior walls that define the new spaces. Post likely would have appreciated the installation of technologically up-to-date equipment as his own career was characterized by the use of then-innovative systems.

The difference in treatment between the videoconferencing room on the fourth floor and the third floor groin vaults, just one level below, reflects a juxtaposition of the sympathetic processes of architectural preservation and rehabilitation. An important project goal has been the integration of contemporary technology within spaces that continue to convey the aesthetic intent of George Post. The interior spaces of the East Wing have been sensitively modified to this end during Restoration and Rehabilitation.

**Building Surveys**

The comprehensive survey of the architectural and decorative features was an important step in Restoration and Rehabilitation of the East Wing and Northeast Pavilion. A survey was necessary prior to intervention, in order to document the existence and location of both historic and non-historic components, their condition and, in the case of historic architectural components, the possibility of their continued use. The survey began in May 1998 and included items such as grilles, doors and casings, door hardware, windows and casings, artwork and decorative finishes, light fixtures and furniture.

Separate from their work as General Contractor for the East Wing project, J. P. Cullen & Sons, Inc. was awarded a contract to manage the survey portion of the work. Most portions of the survey work were competitively bid, and in some cases survey work (used to derive the project budget) was performed by different subcontractors than those who actually performed the subsequent work. Custom Metals, Incorporated of Madison surveyed the metal grilles, LaForce Hardware and Manufacturing of Madison and Lange Bros. Woodwork Company of Milwaukee surveyed the doors and frames, and Custom Metals and LaForce surveyed the door hardware. Monona Masonry, also of Madison, undertook two marble surveys, one focused on marble components throughout the building and the other concerned only with the condition of marble in the Supreme Court Hearing Room. Garland Guild, Inc. of Indianapolis, Indiana conducted the decorative finishes survey while Constance S. Silver, Preservar, Inc. of New York, examined the murals in the Governor’s Conference Room and the Supreme Court Hearing Room. Cunningham-Adams Fine Arts Painting Conservation of Sandy Hook, Connecticut completed a second survey of the Governor’s Conference Room murals in late 1999. Diane Al Shibli of Historic Restoration, Inc. and James Dieter Antiques, Decorative Art and Design analyzed the furniture in the wing and pavilion. No formal survey was conducted for the East Wing windows, window casings and light fixtures. Surveys of these items were prepared with Restoration and Rehabilitation of previous wings, and due to their similarity, the objects were handled according to steps previously taken.

Specific forms created for each survey team were intended to organize the collected data and make the surveying a careful and methodical procedure. However, the process was adapted slightly by each team of surveyors to fit their needs and the items surveyed. Some survey teams took advantage of data management software, such as Microsoft Access, to store and easily manipulate raw data. The furniture, decorative finishes and artwork surveys produced detailed reports with color images.

Whether the survey data was entered into a database, distilled into a report or merely compiled in binders, the information was essential for use throughout the Restoration and Rehabilitation. Identifying numbers given during the survey...
to even the smallest items, such as individual door hardware components, allowed for their disassembly and reuse, either in the original or new combinations. This process also provided effective tracking of existing building components. Whenever possible, historic items were reused in either the original location or in another appropriate place. Some historic building components were removed for repair and refinishing; others were simply protected and left in place during subsequent construction.

A comprehensive survey of the East Wing and Northeast Pavilion was an integral part of Restoration and Rehabilitation. The use of subcontractors to conduct surveys in their respective areas allowed those who ultimately performed the work to have direct access to the information they needed early in the process. Experience from previous restoration in the other areas of the Capitol combined with the streamlined procedures made possible a thorough understanding of the historic and non-historic components of the East Wing and allowed an efficient Restoration and Rehabilitation team to proceed swiftly and smoothly through the New Construction phase.

**Building Systems**

The mechanical and electrical systems of the East Wing include heating, ventilation and air conditioning, plumbing, fire protection, electrical, communications, lighting, elevators and an internal vacuum cleaner. This chapter describes original conditions, modifications since completion and modifications made during Restoration and Rehabilitation for each system. Conclusions are based on original construction drawings, photos and correspondence, as well as past project specifications and field surveys by the Madison office of Affiliated Engineers, Inc. (AEI).

The original mechanical ventilation system in combination with traditional perimeter room radiator heating was state-of-the-art when construction of the East Wing began in 1908. The ventilation system was a constant-volume air system that drew outside air from the Observation Deck, then filtered, heated and humidified the air and distributed it throughout the wing via a manifold duct system. Two single intake centrifugal fans supplied tempered air to the wing, while a double-inlet fan in the attic exhausted building air and a single intake fan exhausted air from the kitchen in the basement. The East Wing was heated by steam transported through a tunnel from the Capitol Heat and Power Plant at 624 East Main Street. Post had incorporated a "cooling system" in which outside air was routed through the basement tunnels, where it was naturally cooled and humidified. The air was drawn up into the Capitol, both by the fans through the duct system and through the natural tendency for warm air to rise into the high reaches of the Rotunda where it was exhausted through operable window openings in that space. This natural gravity exhaust system kept the building comfortable on all but the hottest and most humid days. During Restoration and Rehabilitation, new air-handling equipment was installed in the basement, replacing the original Sturtevant fans. New reheat coils were installed in the basement supply air ductwork. Air conditioning was installed. A digital control system managed by Capitol maintenance staff now monitors and regulates all elements of the heating, ventilating and air conditioning system.

The original plumbing system included domestic hot and cold water, sanitary and rainwater drainage, fire suppression and drinking water. Original plumbing specifications were detailed, specifying the types of pipe used for different functions, such as wrought iron for mains and risers, cast iron for below-ground sanitary piping and nickel-plated brass for exposed piping. A major renovation of the plumbing systems in 1968 replaced original iron piping with copper, provided new fixtures and faucets, and replaced the water heater, softener and chiller. In the course of Restoration and Rehabilitation all domestic, waste and vent piping was replaced with new copper piping featuring lead-free joints.

The original fire protection system was installed as part of the plumbing contract. The plumbing contractor installed

1.8 Sturtevant fans, 1992

Post's specification of ventilation fans provided by the B. F. Sturtevant Company of Boston, Massachusetts typified his insistence on the use of the most recent technology available. The design for this fan was so new that the patent was under dispute at the time of East Wing construction. These fans remained in operation until the 1998-2001 Restoration and Rehabilitation, when they were replaced.
decorative “badger” hose racks on each floor of the wing, provided by the interior iron contractor. These were equipped with linen fire hoses, and each rack was placed near one of the four standpipes positioned for fire protection on each floor. The 1968 plumbing renovation resulted in replacement of the fire hose racks with bronze cabinets, black steel replaced iron fire lines. Partial automatic sprinkler systems were installed in the basement at the same time. All existing basement sprinklers and fire mains were replaced during Restoration and Rehabilitation. A complete fire alarm system was installed, including smoke detectors, horns and strobe lights. New valves were installed in the existing bronze hose cabinets, and the hoses were removed.

The original electrical contract included a power distribution system, circuits for lighting, drop lights in offices, switchboard, branch wiring, panelboards, connections to heating and ventilation equipment and communications systems. The nearby Capitol Heat and Power Plant was the source of direct current for the building when it was originally constructed. Subsequent changes to the electrical system included the conversion from direct to alternating current (1958-63), the installation of a new power feeder in 1985 and the renovation of the primary and emergency secondary distribution system in 1989. All electrical risers and receptacles were replaced during Restoration and Rehabilitation. An underfloor duct system was installed in private offices to provide power and communications. A speaker system was installed so occupants can monitor legislative proceedings.

Original communications systems, installed as part of the electrical contract, included telephone, telegraph, messenger call, call bell, master/secondary clock, watchman’s clock and key stations and the Supreme Court pneumatic tube message system. All original systems had been removed or replaced prior to 1998. New telephone, high-speed data and video systems were installed during Restoration and Rehabilitation.

Of all the building systems, lighting has retained the largest number of original components. Mitchell-Vance of New York City provided most of the original fixtures for the East Wing; the majority were the same as those in the West Wing, except for special fixtures designed for areas such as the Executive Chamber and the Supreme Court. Most fixtures in public spaces have remained in use since their original installation; they were altered to accept alternating current during the 1958-63 conversion and were rewired and refurbished in Restoration and Rehabilitation. New compact fluorescent pendant fixtures were installed in offices and justices’ chambers. These fixtures were designed to adapt to future lamp technologies in order to enable replacement of the lamp or ballast rather than the entire fixture. All historic special fixtures were still in use in 1998, but lamps had been changed to brighter filaments. During Restoration and Rehabilitation, these fixtures were rewired and refurbished.

Four elevators were originally installed in the East Wing: two public passenger elevators and two private elevators serving the attorney general, the Law Library and the Supreme Court. All four were gearless traction electric elevators, a technology first introduced only five years prior to installation in the wing. One of the passenger elevators was also used for freight and had a higher weight capacity. The passenger elevator cars, doors and machinery were all replaced in the 1960s, and the motors were converted from direct to alternating current. The northeast elevator was converted to freight-only at that time. The attorney general’s elevator was replaced in 1966, and the court’s elevator was abandoned at that time. Some time prior to 1960 a hydraulic freight elevator was installed in the Northeast Pavilion, operating between the ground and basement levels; this elevator was replaced in 1963. As part of Restoration and Rehabilitation, the interior of the passenger elevator was remodeled and the machinery upgraded. Both private elevators and the hydraulic freight elevator were removed.

A central vacuum cleaning system made by the Palm Vacuum Cleaner Company of Detroit was installed in the wing...
during construction. Connecting the system was part of the plumbing contract. The vacuum system was abandoned prior to Restoration and Rehabilitation. Original brass inlet covers were left in place.

**Code Analysis**

The design and construction of the State Capitol began at a time when there were no governing building codes in Wisconsin. Rather, the architect was responsible for the safety and function of his buildings. George Post was highly qualified to assume responsibility for safety in design as his firm, George B. Post & Sons, maintained a position at the forefront of architectural technology at the turn of the century, incorporating accepted standards of design and construction with the latest in building systems and fire-resistant materials. Without Wisconsin building codes in place it is likely that Post relied on early New York City code in the design and specification of materials for the Capitol. The Wisconsin Capitol Commission, having recently experienced the devastating 1904 fire that destroyed much of the previous building, insisted that fire-resistance be a characteristic of the new building. Post satisfied this requirement in his selection of materials, which included structural steel encased within floors of poured concrete over clay tile arches and walls of plaster over clay tile. The architect’s use of clay tile and plaster provided a strong yet lightweight interior wall system that was inherently fire-resistant. The exterior granite-clad brick walls were also fire-resistant.

In 1987 the Joint Committee on Legislative Organization issued the *Capitol Master Plan*. Working within the guidelines established by the *Master Plan*, the state began developing an approach to work in the North Wing when a conflict emerged between the preservation of historic building fabric and compliance with life safety issues. A resolution was forced when the Wisconsin Division of Facilities Management submitted North Wing plans to the Department of Industry, Labor and Human Relations for approval. The decision came in the form of a legislative bill, adopted in 1989, that created an exemption for the Capitol from all Wisconsin building codes, although federal rules and regulations would remain in force. This legislation allowed planners to use innovative means and new technologies to provide life safety. Rather than standard exiting procedures, equivalents could be employed that allowed for retention of historic building fabric and appearance. Ultimately, this legislation shifted the burden of oversight of life safety from the Division of Safety and Buildings to the Division of Facilities Development (DFD).

Following Restoration and Rehabilitation of the North and West Wings, a code compliance study was completed in advance of work in the South Wing. The material compiled and the decisions that resulted were so comprehensive they were determined applicable to the East Wing project. This offered a tremendous efficiency to contractors and architects in accomplishing their work. The greatest number of design issues as related to building code had to do with compliance with the Americans with Disabilities Act (ADA) of 26 January 1992. ADA is a Federal Civil Rights Act that guarantees building access to persons of all physical abilities. The scope of the work undertaken at the Capitol required that the building fall under section 4.1.7 “Accessible Buildings: Historic Preservation.” This section requires that the building be in compliance with requirements for accessible routes, ramps, entrances and toilets, except in situations where compliance would threaten or destroy historic fabric or significance. In practical terms, spaces were to be in compliance with ADA guidelines as fully as possible. When this was not possible, as in the case of historic marble drinking fountains that could not be made compliant, alternatives were added, in this case new accessible drinking fountains adjacent to the historic ones.

The 1998-2001 Restoration and Rehabilitation of the East Wing has offered project designers opportunities for creatively incorporating contemporary safety requirements within the context of a comprehensive restoration of a National Historic Landmark. The results have included the implementation of numerous state-of-the-art building and systems technologies, successfully enclosed within the grand historic spaces of the East Wing.
Preservation Recommendations

Writing this chapter has involved a circumstance that is unusual in the preparation of a Historic Structure Report. Typically the findings of an HSR, particularly its “recommendations,” will help inform decisions on the part of the design team relative to the architectural treatments to be implemented. Frequently, it is used as a tool to establish priorities for the work. Because this report is being prepared as the project draws to a close, these more typical applications are not in place. Given an opportunity for hindsight, it is appropriate to look again at the preservation recommendations that were established in 1998 and consider the extent to which they were implemented in completing Restoration and Rehabilitation of the East Wing.

In establishing a proposal for the appropriate preservation treatment for each area of the wing, the team recognized that its conclusions would be subject to compromise with the programmatic needs of the building occupants. Other factors with potential impact on the recommendations put forth in the Preservation Plan included the requirements necessitated by the intended upgrade of mechanical, electrical and communication systems and, to some extent, the personal tastes and preferences of the occupant groups.

The establishment of preservation recommendations is intended to be as objective an exercise as possible. It is imperative that building survey and research have progressed to a degree that sufficient information is available to provide a clear understanding of the locations of existing historic fabric, where historically significant events occurred and the modifications that have been implemented in the intervening years. The spaces were evaluated based upon criteria that included architectural significance, which is conveyed by the degree a space is distinctive or not, and historical significance, which considers the association of important individuals or events with a space. Architectural integrity, the extent to which historic fabric remains in place, and architectural context, or the significance a space holds relative to its original setting, were also established as criteria. Each area in the wing was assessed, leading to the establishment of what would be, in ideal circumstances, the preferred preservation treatment. The 16 October 1998 Preservation Plan, issued by East Wing Architects, proposed varied levels of restoration for areas within the wing.

Using definitions supplied by the National Park Service, a recommendation for “preservation” implies the stabilization and repair of historic architectural elements within the context for which they were designed. The “restoration” of a space assumes that the architectural features may require some repair or that incongruous elements may need to be removed to return it to an appearance consistent with a specific period in time. “Rehabilitation” is the process of establishing a contemporary use of a historic space through repair and alteration while retaining those portions that convey the cultural, historical or architectural value. “Renovation” is the least preservation oriented of the treatments mentioned. It typically involves the removal of historic or existing elements and advocates their replacement with new fabric and materials that are contemporary in nature.

In this chapter, a summary of the treatments prescribed for the East Wing is presented along with the plans that informed and summarized the recommendations for the wing. The process by which the recommendations were established is fully explored and the extent to which they have been implemented in the 1998-2001 project is summarized.