

STATE FACILITIES QUARTERLY

"Provide and protect public assets"

Official Newsletter of the National Association of State Facilities Administrators
An organization of planning, development, operations and maintenance officials

Nevada's Sick Building Syndrome

Source: *Las Vegas Sun*, October 27, 1998

Unhealthy indoor air quality (IAQ) has caused states many problems in recent years. It can often lead to sick building syndrome, a legitimate illness with symptoms such as a feeling of tiredness, headache, itchy eyes and a cough. The World Health Organization reported in the mid-1980s that as many as 30 percent of new and remodeled buildings worldwide had IAQ problems.

The state of Nevada knows these facts all too well. The Grant Sawyer State Office Building in Las Vegas is a recent example of a structure becoming defective. The toxic fungi *stachybotrys chartarum* is suspected of causing office workers to become sick. This greenish-black fungus tends to multiply on drywall, ceiling tiles and around leaky faucets.

The building has been investigated since 1996, when employees from 14 state agencies on several floors noted they were regularly ill. The fungus was found growing on ceiling tiles and leaky hot water valves. Replacing the tiles and sealing the valves solved the problem for a while. A year later, however, employees began getting sick again. The growth of the fungus is triggered by moisture, and investigators have identified three spots where it may be entering the building: near the expansion joints, through exterior caulking and through grout on the outside tiles.

The Grant Sawyer Building is not the only commercial structure in Las Vegas to be plagued with problems. The former Employment Security Office was so infected that it was torn down. It was demolished in July 1998 after several of the 60 employees began complaining of respiratory problems.

Water was draining from the roof into the building, and plumbing on the second floor was leaking badly. Mold was growing on ceilings and down several walls. The repairs would have been too costly, so employees were moved to another Las Vegas office. Fungus was also found on that building's inside walls, but was repairable.

Much of the problem is that the Las Vegas Valley has older buildings built with flat roofs. Water ponds and seeps down through the walls. When it rains in southern Nevada, it usually floods, leaving buildings to experience leaking under doors, which can lead to carpets and walls becoming saturated. An ideal condition for fungal growth is then created.

Environmental health and safety consultants suggest that such leaks be stopped immediately, within 24 hours, if possible, and no more than 48. Soiled carpets should also be cleaned within 24 hours or replaced if badly damaged. Interior insulation and wallboards should be repaired if water damage occurs. Ceiling tiles that show *stachybotrys* growth should be changed. Dirty ventilation ducts are a breeding ground for fungi and should be professionally cleaned.

Fungus cannot be blamed entirely for indoor air quality problems. The Desert Research Institute building, also in Las Vegas, was found to be "negatively pressurized." Exhaust fans were pushing too much air out of the building, creating a vacuum effect inside the building. This resulted in large amounts of dust being drawn in and making people sick. The problem was solved by turning off some of the fans and re-balancing the building's air pressure.

The problem with indoor air quality may also be traced to more energy-efficient buildings. According to the federal Environmental Protection Agency, in the first half of the century, about 15 cubic feet per minute of outside air was pumped into each building for each occupant. After the 1973 oil embargo, that number was reduced to 5 cubic feet per minute per occupant. EPA experts believe that a lack of fresh air and the re-circulating of indoor air has contributed to the sick-building phenomenon.

For more information on IAQ issues contact Ted Ice, environmental project coordinator, Nevada Public Works Board, at (702) 687-4870.

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This issue's Focus Section:
Restoring America's Symbols insert



PRESIDENT'S LETTER

Symbols surround us. They unite us with common meaning and understanding. We pass our symbols and their meanings down from generation to generation. For example, the American flag means so much more than mere red, white and blue fabric. It is a symbol of the history of this nation and its government. We convey this heritage each day as we display it proudly throughout our streets and buildings. The state capitols that dot this nation are symbols as well.

As old-fashioned and simplistic as it may seem, these capitols are celebrations and symbols of democracy, a gift from one generation to many others. The days in which most capitols were constructed have long past. They were the days in which the American experiment with democracy was still unique in the world, where immigrants retained vivid memories of the shortcomings of other types of government. State capitols were to embody the promise of democracy with beauty, grace and pride, rising above most other buildings because of their significance. In most areas they were intended to be the single most important public structure in the state. Why else would so many have sacrificed to construct grand monuments to house state governments when simply new buildings would have sufficed?

Many of us say that our capitol buildings are a tribute to the greatness of the people who constructed them, but we should take this statement even further by concluding that our capitol buildings are a tribute to a form of government, built by great people. So, if indeed these buildings symbolize the democracy

we enjoy, what is our responsibility to them? Certainly the functions of government could take place more conveniently and less expensively in high rise office buildings.

Our responsibility and the commitment that we must make is to maintain these important public buildings properly so that they can continue to be enjoyed throughout the years and will remain symbolic for future generations. Utah's capitol is a fairly new one, completed in 1916. It is only one generation old, but already requires substantial renovation. Last year a Capitol Preservation Board was established to ensure that the capitol receives adequate resources for proper maintenance. Other states have successfully pursued the goal of renovating their capitols through other means. Their attention to this important responsibility is worthy of praise.

Regardless of the method, funds need to be devoted to the maintenance of capitol buildings. Proper maintenance of capitols benefits us today and those who will look to them in the future to see our commitment to our states and our common heritage. By doing so we join our efforts with those long ago to continue building monuments to democracy.

A handwritten signature in blue ink, appearing to read 'Jack Quintana'.

Jack Quintana (UT)
NASFA President

STATE NEWS

Western Regional Conference Held In Nevada

By Vicki Pearson

The National Association of State Facilities Administrators' (NASFA) Western Regional Conference was held October 29-30, 1998 in Carson City, Nevada. With approximately 70 administrators in attendance representing ten states, the two-day conference covered roofing, performance based procurement, indoor air quality, the Year 2000, security concerns and energy conservation in state buildings. Joint and concurrent sessions were held on architectural and engineering and maintenance and operations issues. These sessions were discussed in the round-table format, which have continued to be a favorite choice among attendees. The two days ended with a debriefing, overview of the sessions and follow-up survey.

The 1999 Western Regional Conference will be hosted by the beautiful state of Utah. The list of attendees, all business cards and results of the follow-up survey from Nevada will be forwarded to Utah. Copies will also be made and sent to each of the attendees.

For more information on the 1998 conference contact Vicki Pearson, Nevada Public Works Board, at (775) 684-4141.

For more information about the 1999 conference contact Jack Quintana, director of Utah Facilities Management Programs, at (801) 538-3300, or e-mail at <fcmmain.jquintan@email.state.ut.us>.

"New" Offices for Kansas DFM

Source: News & Views, Kansas, December 1998

Kansas' Division of Facilities Management's (DFM) central office has been in a state of disruption. DFM has gone through a six-month long remodeling process of the central offices. The project came in response to several years' accumulation of internal reorganization of the staff as the division's role in the department of administration has matured.

Initial planning for the remodeling began nearly a year ago. Division managers were asked to provide their ideas of what needed improvement in the physical office environment. This



Committee Chair's Corner

By Bob MacKenzie, plant operations manager, Division of A&E Services, Washington

You should have by now received the two installments of the new *NASFA E-xtra*, a monthly electronic newsletter intended to keep members apprised of facilities-related happenings around the nation. The NASFA staff deserves high praise for coming up with the idea. The material you see can be easily accessed off of state, federal and other web pages. If you know of press releases or other current material recently placed on a government or associated web page, let us know about it, and we'll share it with the membership.

It's not too early to confirm your reservation for NASFA's 1999 Conference and Trade Show in Jackson Hole, Wyoming, and to publicize the event to members and non-traditional audiences in your states. We can enhance conference benefits by diversifying and increasing our state contingents. Representatives from natural resources and wildlife agencies,

military, transportation departments, court systems and educational arenas would benefit from attending and could share common facility challenges in a progressive atmosphere.

The focus section in this winter's issue is "Restoring America's Symbols," which highlights capitol and governor's mansion restoration and preservation efforts. The articles provided by members should prove illuminating and useful, especially if your organizations are about to launch similar efforts. Hopefully, the material we have provided will enable us to learn from each other and avoid pitfalls. These projects are certainly highly visible and can be quite disrupting to the operating tempo of state governments.

The spring issue's focus section will be on electronic bidding procedures, policies and usage experiences. This promises to be highly relevant and will highlight trendsetting programs that directly affect how we do business. We welcome and actively solicit member input, so please begin your articles today.



Kansas DFM (cont.)

included evaluation of customer service activities, office circulation, physical appearance and upgrade requirements for the building codes

The solution relayed a need to rearrange most of the workstations and offices. It was decided to completely move out portions of the division in a phased process. This total move allowed new work to be completed without having to work over people at their desks. Construction work included carpet removal and installation, reconfiguring of demountable partitions, walls repainting, ceiling tile, new fire alarm wiring and detectors, rerouting of heating and cooling ducts and moving of light fixtures. Half of the staff was temporarily moved to the north end of the building. The first group moved back to their remodeled area in early November. The remaining staff, including the director's office, then moved to the temporary offices. They moved back to their area in mid-December.

The plan allowed the in-house planning and construction staffs to work closely together to accomplish the major remodeling project. The completed layout allowed agencies who use DFM services to see the quality of the work done by the DFM carpenters, painters, electricians, HVAC mechanics and plumbers. The "new" offices were ready just in time for the 1998 holidays.

NASFA CALENDAR OF EVENTS

(Visit the association's web site at
www.csg.org/nasfa.html for more information.)

CSG Spring Committee Meetings

April 15-18, 1999
Marriott Griffin Gate Resort
Lexington, Kentucky
Contact: Wanda Hines, (606) 244-8103

NASFA 12th Annual Conference & Trade Show

June 12-16, 1999
Snow King Resort
Jackson Hole, Wyoming
Contact: Marcia Stone, (606) 244-8181

NASFA 13th Annual Conference & Trade Show

June 24-28, 2000
Radisson Hotel Burlington
Burlington, Vermont
Contact: Marcia Stone, (606) 244-8181

Great Plains Regional Conference

September 19-21, 1999
Drury Inn at Union Station
St. Louis, Missouri
Contact: Michael Berendzen, (573) 751-2898

1998-1999 NASFA EXECUTIVE COMMITTEE

President	Jack Quintana (UT)
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Special Projects	Jack Quintana (UT), Chair
Site Selection	Henry G. Shirley, P.E. (VA), Chair
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Nominating	Luther C. Lewis (GA), Chair
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State Facilities Quarterly

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Bob MacKenzie, NASFA Newsletter Chair
Marcia Stone, Association Director
Lisa Anderson, Editor
Pam Johnson, Design & Layout

The objective of the State Facilities Quarterly newsletter is to provide a broad perspective on issues affecting all aspects of state facilities management. Your ideas and topic suggestions are welcome at all times and will be invaluable to other state facilities managers. Please send information about studies, new projects, legislation, etc. to:

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The National Association of State Facilities Administrators is an organization which brings together state officials involved in the planning, development, operations and maintenance of state facilities. The association was formed in 1987 to provide a forum for sharing information on effective facility administration, as well as for the sharing of problems and solutions with peers on a national level.

Any state is eligible for membership in NASFA. Annual dues entitles your state to select the individuals you want to be involved with the association. All facility administration personnel can access the information network, receive the newsletter and other mailings, and attend the association's annual meeting. Many states have elected to divide the membership fee among several departments interested in active membership.

If you are interested in obtaining more information about NASFA, contact NASFA Staff, The Council of State Governments, 2760 Research Park Drive, P.O. Box 11910, Lexington, KY 40578-1910, (606) 244-8181

Attention States!!

Share your good ideas with your colleagues in the spring issue of *State Facilities Quarterly*.

The deadline is April 16, 1999.

Contact Lisa Anderson at (606) 244-8179 or e-mail her at landerson@csg.org for more details.

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RESTORING AMERICA'S SYMBOLS

FOCUS SECTION

Winter 1999

Washington Capitol Gets TLC

By Angela Mapp

The Washington state capitol building was completed in 1928. The only significant renovation since then was undertaken in 1987 to prepare for events marking the state's centennial celebration.

As the structure enters its eighth decade, the Department of General Administration (GA) is coming to grips with the building's aging process. Its exterior is made of highly porous sandstone. Combined with the infamously wet climate of the Pacific Northwest, the sandstone is a perfect host for all types of moss, lichens and mold. In the summer and fall of 1998, the building's exterior was cleaned of the mold and fungus and treated with a biocide agent to slow any further growth. The gutter at the base of the dome, where water seepage was the worst, was repaired with new caulking and flashing.

Since 1959, the legislative building has been cleaned only every ten years. The ultimate goal is to develop and implement an ongoing maintenance plan to include all sandstone buildings on the capitol campus. Additional phases will be determined by legislative funding.

The interior of the capitol was in no better condition than its exterior. In June 1997 an extensive condition analysis of the building's infrastructure was completed due to its deteriorated condition, age, inability to meet current demands and life safety code issues.

GA received funding for the 1997-1999 biennium to plan a future renovation of the building's infrastructure. In the planning process it became increasingly clear that the infrastructure problems were only part of the picture. The building is seriously overloaded. During legislative sessions the building houses more than three times the number of people for which it was built. Many office spaces do not meet fire and other safety code requirements, and the surrounding site poses significant barriers for persons with disabilities.

A three-pronged planning effort in the summer and fall of 1998 analyzed space needs, infrastructure upgrades and site improvements.

"The building has been studied to death, and the problems behind the walls are becoming increasingly more visible," said Marygrace Jennings, community relations coordinator for the project.

A pre-design study including proposed solutions was completed in December 1998 and will be presented to the legislature during the 1999 session for direction and funding. Options include an underground addition to the building and possibly remodeling a nearby building currently used for the state library. If approved, the project will move into design in July 1999, with construction planned for May 2001.

For more information contact Angela Mapp, Washington Division of Capitol Facilities, at (360) 753-5686 or e-mail at <amapp@ga.wa.gov>.

Virginia Renovates Historic Executive Mansion

By Henry Shirley

Virginia's Executive Mansion serves as the center of hospitality for the commonwealth. The mansion, located in Richmond's Capitol Square, was completed in 1813 and bears the distinction of being the oldest continuously occupied governor's residence in the United States.

The proposed work encompasses a comprehensive renovation and restoration of approximately 15,000 gross square feet in the mansion and in two smaller adjacent buildings. At the northeast corner of the mansion, a small 870 square foot addition will be added to accommodate a new elevator. The addition will match the southeast side addition constructed in 1958 and restore the symmetry of the mansion that is characteristic of the Federal style of architecture. The total project budget is \$5 million, and work will be accomplished using an at risk construction management contract.

Foundation repairs will be required beneath portions of the north and west foundation walls to correct water intrusion into the basement and to accommodate a uniform floor elevation throughout the area. Interior work on the mansion includes renovation of interior finishes and repair or replacement of all major building utility systems. This effort represents the majority of the work of the project.

Plumbing work involves a complete replacement of all supply and waste water piping and all plumbing fixtures. Accessible toilets for use during public functions on the first floor will be included in the northeast addition.

Natural gas service will be provided for new gas appliances in the renovated kitchen and gas logs in the fireplaces. The existing elevator will be replaced with a new accessible three stop elevator in the northeast addition. This improvement will provide accessibility throughout the mansion and easy entry of the disabled.

Governor Gilmore and his family will vacate the mansion in April 1999 and work will begin in earnest on the renovations. The mansion restoration will be completed in time for the family to reoccupy the mansion on November 1, 1999. The construction manager anticipates that multiple shifts will be required during this compressed construction schedule to meet the required completion date of October 30, 1999.

The mansion's renovation will be featured in a 13-part series of the television program, *Bob Vila's Home Again*, and will begin production in March 1999. The episodes will air from late fall 1999 through early spring 2000. The project will also be displayed on Bob Vila's website at <<http://www.BobVila.com>>.

For more information contact Henry Shirley, Virginia Bureau of Capital Outlay Management, at (804) 786-3367 or e-mail at <hshirley@dgs.state.va.us>.

Utah's Capitol Preservation Board

By Lisa Bohman

When the Utah State Capitol was dedicated in 1916, the building, with its exterior of Utah granite and its elaborate interior, was a source of great pride throughout the state. Designed in the Roman classic revival architectural style, the building continues to remind Utah's citizens of their proud heritage. However, the years have taken a toll on the building, and antiquated engineering practices have required significant restoration efforts.

In 1998 the legislature sought to ensure that the state capitol campus would retain its original beauty by creating the Capitol Preservation Board. In the past the responsibility for caring for the capitol complex has been shared by several entities. Last year's legislation gave the board control of the buildings and grounds on the complex, including responsibility for space allocation, long range planning and day-to-day management.

The board is comprised of the governor, representatives from the legislature, several state administrators and appointed citizens with experience in construction, architecture or engineering. A search is presently underway for an executive director. The projects that will be undertaken by the board are funded through capital improvement funds.

Currently the board, which had its first meeting in August 1998, has formed subcommittees to address specific policies and directions for use and planning. The Division of Facilities Construction and Management is supporting the board by compiling all the different types of studies that have been completed for the campus. This information will assist the board in identifying future projects. Initial efforts will most likely focus on improving mechanical systems, as well as seismic upgrades.

One step many of the board members have taken is to begin visiting similar buildings. Several members recently toured the San Francisco City Hall, which has many similar features. The preservation board members will continue to look at other facilities to determine the most appropriate ways to continue restoration and preservation efforts.

One significant project that is approaching completion is the restoration of the grand stairs. The stairs, a focal point leading to the entrances of the building, were built on fill, which eventually led to settling problems. The east and south stairs were completed in 1998, and the west stairs will be completed in March 1999. The completion of this project is a large step towards providing necessary renovations to this beautiful structure.

For more information contact Lisa Bohman, Utah Division of Facilities Construction and Management, at (801) 538-9784 or e-mail at <lbohman@email.state.ut.us>.

The South Carolina State Capitol Renovation Project, 1995-1998

By William J. Clement

South Carolina has always taken great pride in the building that has been the seat of its state government. The state house is the product of two phases of construction and one extensive alteration effort prior to the latest renovation. The first

(1855-1863) provided the exterior walls and a portion of the ground floor. During the second period (1883-1902), the interior was finished, and the dome and porticos were added. The last major alteration to the building occurred between 1959-1969, when renovations effectively altered the original design work.

The state house committee retained Stevens & Wilkinson, Architects and Engineers, in the early 1990's to evaluate the building and provide design recommendations. Committed to preserving the structure's historical integrity, the architects identified major problems, including fire and life safety, mechanical and electrical systems, indoor air quality and compliance with the Americans with Disabilities Act.

The renovation project, which began in mid-1995, was conducted under the auspices of the state house committee with staff support being provided by the Budget and Control Board's Office of General Services. The general contractor, Caddell Construction Company, Inc. was faced with the challenge of renovating a building without the original blueprints and adapting to unforeseen conditions.

Major work in the state house included installing an earthquake protection system, opening up first-floor corridors, replacing the slate roof and copper on the exterior dome and restoring the glass panes of the interior dome. Carpet was removed and marble floors were restored. New heating, air conditioning, electrical and plumbing systems were installed. Original fireplaces and skylights were exposed. Walls and ceilings were restored to their original brick and arched design. An auditorium was also added. Stairs, elevators and passageways were also improved to accommodate fire and life safety code requirements.

The utility improvements were made with the intent of making the building capable of evolving without the need to add further conduit and wiring. A fiber-optic network supports both computer local area networks and A/V systems throughout the building. The mechanical systems and some of the building's lighting systems are controlled through a series of computer systems, which maximize energy efficiency as well as user comfort and convenience.

The extensive renovation was completed in August 1998 at a cost of \$63 million. The state house now reflects the style associated with the early 1900's complete with modern safety and technological advances.

For more information contact William J. Clement, South Carolina Office of General Services, or e-mail at <Bclement@GSI.state.sc.us>.

North Carolina Continues Restoration Project

By Ronald J. Little

The North Carolina state capitol is one of the finest and best preserved major civic buildings in the Greek Revival style. Despite the renovations the capitol has endured, as little as possible has been changed. Functionally and symbolically the capitol has been the center of state government since its completion in 1840.

The most recent restoration project began in September 1993. Phase I included patching and painting surfaces of the dome with an original palette of snow white for the ceilings and powder blue for the walls. In addition to being historically accurate, the new color scheme seems to accent the wonderful

geometry of the chamber by enhancing the play of light and shadow. Repairs were made to dome skylights, and some window panes were replaced with rippled glass. This phase was completed in July 1995 at a cost of approximately \$150,000 over the cost of in-house work done by state staff.

Phase II of the interior finishes restoration began in May 1996. In addition to the house chamber, this phase included restoration of the upper part of one of the two stairwells and the library and geologist's rooms, both which included two-story spaces with balconies. The sprinkler and fire alarm systems were then brought up to date, requiring considerable ingenuity and dedication. Several offices were also restored during this phase.

Phase III, which began in November 1998 and will continue through 1999, includes the interior finishes restoration of the lower part of the east stairwell, all of the west stairwell, several offices and decorative painting throughout. There will be a great deal of granitizing, the process of painting plaster to simulate granite, primarily on wall and baseboard surfaces. There are three different types of painted wood grain finishes which will be done on a number of door faces and trim, baseboards, shelving and other surfaces throughout the building. The cost of Phase III is estimated at \$800,000.

An additional project of upgrading the electrical service and distribution system of the entire building will run concurrently with the restoration of the interior finishes. One part of that project involves the replacement of an existing two-story elevator in the same shaft.

The state capitol is still regarded in many ways as the seat of government in North Carolina. It is used continuously, either hosting special sessions of the legislature or special ceremonies, and draws 150,000 visitors annually. Restoration and care of this beautiful building is a civic duty and a labor of love for the individuals involved.

For more information contact Ronald J. Little, North Carolina State Construction Office, at (919) 733-7962.

Restoration of New Jersey State House Dome

Source: <http://www.state.nj.us/events/dome/overview.html>

New Jersey Governor Christine Todd Whitman announced plans for the restoration of the state house dome in October 1996. She called for a public-private partnership to repair the dome, and her husband, John Whitman, agreed to chair the private fundraising campaign.

Essential repairs and structural work will be completed with savings from other state capital projects, while the interior restoration of the rotunda has been funded by private sources. The gold leafing on the dome will be funded by money that New Jersey school children raised through the "Dimes for the Dome" program, making the gold dome a lasting tribute to the state's young people.

Much repair has been done in preparation for the installation of new and restored materials to be put back on the dome. The structural steel framework that supports the dome was cleaned and repainted with two coats of an epoxy paint.

All of the existing copper was stripped off of the dome. The pine boards under the copper that form the curve of the dome were found to be in fairly good shape. Some repairs were done and all of the boards were refastened using stainless steel

screws. The boards were then given a coat of water repellent treatment.

The masonry walls at the bottom of the dome were found to be in worse shape than anticipated. The walls had to be taken down brick by brick and rebuilt. This process was slow and tedious, but is now complete.

The area above the third floor windows also had extensive repair work done. In several places, the plaster had pulled away from the wood lath that holds it in place. More than 2,400 tiny wood blocks were glued in place to hold the framing and lath together. Then a consolidant (fancy glue) was injected into spaces between the lath and plaster to fill the voids and hold those two materials together. The masonry work and the plaster cove repair had to be completed before the cast iron pieces could be put back. Once the lower cast iron pieces were put on, these areas became inaccessible.

The 18 stained glass windows have been removed so that they can be repaired offsite. In their place, temporary plywood and Plexiglas panels have been installed to keep the weather out.

New Jersey's multi-faceted approach to the dome's repair has enabled citizens young and old to become a part of the project to restore a vital New Jersey landmark. Governor Whitman believes that once restored, the state house will be a fitting symbol for the historic events that led to a nation established "with liberty and justice for all."

The State House repair progress can be followed by checking the website <<http://www.state.nj.us/events/dome/>> for updates, or send e-mail with questions and comments at <dome@capitol.statehouse.state.nj.us>.

Restoration in the Bluegrass State

By David Clinkenbeard and Terry Parker

With the coming of the twenty-first century, Kentucky legislators and government officials saw the need for additional space to handle the ever-growing needs of the commonwealth. The 1830 statehouse has had numerous repair campaigns with the most prominent one being an extensive terrace and dome renovation in 1941.

In 1995, officials from the Division of Historic Properties discovered seedlings growing out of open mortar joints of the dome's terra cotta. Findings revealed that a number of the terra cotta pieces were beyond repair and many would have to be replaced. The lantern was now torqued, out of square and severely deteriorated. Water had been infiltrating for a number of years and the integrity of the structural steel of the lantern was now in question. The 1996 General Assembly appropriated \$1.8 million for the project. However, the final estimate proved more than that, and in 1998, an additional \$700,000 was added to the project.

The dome has 1,631 terra cotta tiles. The project calls for replacing approximately 712 of the handmade pieces. Ibstock Hathernware Limited, a firm in England, was chosen for its long history of producing terra cotta, and its success at producing pieces that have a double curvature. The lantern will also be replaced.

A new waterproof membrane will be installed over the interior dome structure. Each salvaged piece of terra cotta scheduled for reuse will be cleaned and have a fungicide

applied. The entire structure will be cleaned and the windows around the dome will be scraped and painted.

On July 29, 1998 a contract for construction was awarded to Mid-Continental Restoration of Fort Scott, Kansas, for \$1,753,000. Officials from the state's Division of Engineering are considering taking advantage of the scaffolding around the dome to have the entire dome area tuck pointed, since the bid came in slightly under budget. With completion scheduled for late October 1999, the dome of the Kentucky State Capitol will once again regain its prominence on the capital city skyline.

For more information contact David Clinkenbeard, administrator, Kentucky Historic Preservation Program, at (502) 564-3000 ext. 231 or Terry Parker, Kentucky Division of Engineering, at (502) 564-3155 ext. 237.

Restoration Underway in Georgia Capitol

By Elise White

Change is underway at the Georgia State Capitol. In addition to restoring historic features to the building, the state is making its capitol a more efficient, safer and more accessible place for its citizens. Originally built for \$1 million, the capitol has been in constant use since its completion in 1889 and has endured a number of renovations.

The most recent project was complicated by the need for state-of-the-art telecommunications systems, Americans with Disabilities Act (ADA) compliance and up-to-date fire protection systems. Georgia and the Atlanta-based architecture firm, Lord, Aeck & Sargent realized that the structure and aesthetics of some aspects of the capitol made ADA compliance challenging. For example, the front door to the capitol is located at the top of an imposing 20-riser stairway, and the double doors throughout the capitol were basically unalterable. However, fully accessible restrooms were designed and installed as were ADA-compliant levers on all doors throughout the building.

The project also focused on returning many features of the capitol to their original appearance. This required not only the restoration of historic aspects of the structure but also required the removal of previous, incongruous modifications, which concealed such features as barrel vaults, cast-iron columns, fireplaces, decorative plaster work and arched doorways. Coffered and vaulted ceilings had been lowered and covered with acoustical tile. Fine wood wainscoting was hidden behind paneling, and delicate plaster painting had been concealed. To further complicate the project, double-stacked offices had been added between some of the taller floors, creating new and cleverly placed fire hazards.

State-of-the-art voting, microphone and speaker systems will be installed in the house and senate chambers, as will robotic cameras to allow Georgia Public Television to provide gavel-to-gavel coverage. The restored original desks will be returned and modified to accept the new voting, laptop, speaker and microphone systems.

Projects scheduled for the chambers in 1999 include the completion of the decorative ceiling painting and the installation of decorative lighting fixtures to replicate the original gas fixtures. Decorative wall painting, the refinishing of woodwork, installation of shutters and restoration of fireplaces will be completed. New carpets designed to replicate the originals will be installed. Chairs will be restored and reupholstered, and new

and compatible seating will be installed in the galleries. New furnishings, which allow connections to the new speaker system, will be designed and installed in the press area.

1999 proves to be a busy year at the Georgia capitol, where restoration and rehabilitation are well underway. Previous renovations have proved to be unkind to the historic building, and everything is being done so that history does not repeat itself.

For more information contact Elise White, architect, Lord, Aeck & Sargent, at (404) 253-1414 or e-mail at <ewhite@lasarchitect.com>.

Lone Star State's Restoration Project

By Charlynn Doering

The Texas Capitol Restoration Project began in response to a number of significant concerns. The capitol was unsafe, overcrowded and at risk architecturally. A fire in 1983 came dangerously close to destroying the building when fire traveled out of control above the ceiling. The State Preservation Board was created in 1983 to "preserve, maintain and restore the capitol, the general land office building, and their contents and grounds." In 1988, a joint venture of Texas architects was hired to produce plans for the restoration of the capitol, and an interim master plan was presented to the legislature in April 1989.

The master plan recommended that current and projected space requirements be met through new construction to supplement space available in the capitol. Work on the capitol extension, an underground building on the north side of the capitol, began in May 1990 and was completed on schedule in January 1993. The extension includes 615,000 square feet of space on four levels. The building contains office space for 99 of 150 house members and 11 of 31 senate members. It also contains committee hearing rooms, an auditorium, the capitol dining room, press area, bookstore, loading dock and additional mechanical space. The lower two levels provide 670 parking spaces. Tunnels connect the capitol extension to the capitol and to four adjacent state office buildings.

The exterior of the capitol was in desperate need of restoration when the Capitol Exterior Preservation Project began in June 1991. The entire exterior of the capitol was scaffold to repair and preserve the metal dome and roof, clean the granite and replace the mortar in the joints, repair and preserve the windows, return lost architectural detailing, and repaint and stabilize the entire exterior of the building. The exterior work was completed in 1994.

The Capitol Interior Preservation Project began in August 1992. All non-original walls, mezzanines and lowered ceilings were demolished. Asbestos and lead paint were removed, and original openings and finishes were restored. Entirely new mechanical, plumbing, electrical, data and fire protection systems were installed. The entire capitol was open and ready for use on January 10, 1995, when the legislative session began.

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