The Hermitage
HOME OF PRESIDENT ANDREW JACKSON

# 2013 ANNUAL REPORT

**to the**

# TENNESSEE STATE BUILDING COMMISSION


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This Annual Report describes preservation and significant maintenance and management work completed on historic and cultural resources at The Hermitage by the Ladies' Hermitage Association (LHA) in calendar year 2013 and proposed work for calendar year 2014. This annual report submission to the State Building Commission is required under Tennessee Code Annotated section 4.13.104. The following is a brief description of proposed property acquisition, construction, demolition, alteration, restoration, or preservation works in progress. Projects involving routine maintenance and minor repairs are not included. Projects are listed in order of priority.

## Hermitage Mansion

Hermitage Mansion Exterior Restoration Phase 2

The 2013-2014 Fiscal Year Budget for the State of Tennessee granted $660,000 through the General Services Department's Capital Budget for the LHA to complete Phase 2 of the Hermitage Mansion Exterior Restoration. Phase 2 will allow the LHA to complete all remaining known exterior restoration work on the Hermitage mansion and begin to address important building system and interior repairs. Funds for this project became available in August 2013.

Drainage, Foundation, and Pathways

The main concentration of the Hermitage Mansion Exterior Restoration Phase 2 is the prevention of water infiltration into the mansion's foundation and the installation of safe, but pervious, walkways around the mansion. To this end, the LHA retained Joseph K. Oppermann, Architect of Winston-Salem, N.C to design repairs. Oppermann's design and construction administration fee was $60,000. Oppermann, who originally identified the need for this work in 2008, designed these repairs in the fall of 2013.

Oppermann's design first and foremost provides for improved drainage around the Hermitage mansion. The mansion actually sits on a slope with drainage moving north toward its south elevation and past it east and west sides. To control this drainage flow, Oppermann's plan called for the installation of French drains on the mansion's south, east, and west sides to move subsurface water away from the building. During the installation of these drains Oppermann also specified the repointing of the mansion's foundation stones, column bases, and steps where deteriorated. Oppermann also called for the removal of caulk from foundation stones and joints as these products may actually retain moisture as they deteriorate. In addition, Oppermann specified the removal of all pathways that abut the mansion's foundation and their replacement with planting beds. These pathways and their associated concrete bases only served to trap water against the foundation, whereas the planting beds will allow water to percolate naturally and enter a French drain system.

The secondary focus of Oppermann's work is to provide new pathways that allow for more natural drainage and that are safe for visitors to the Hermitage. To accomplish this goal,

Oppermann specified the removal of the existing brick on concrete pad and asphalt pathways. These hardscape pathways will be replaced with brick pathways on sand and gravel beds that will allow for drainage through and around the path. Where the carriage drive crosses in front of the mansion, that portion of the drive will be replaced with pervious pavement, a type of concrete that allows water to flow through it and drain naturally. The aggregate for this pavement will be the same stone that currently covers the carriage drive and the concrete paste will be colored to match that stone as best as possible. The new pathway brick will be made with a sand release finish that will allow for more traction thus lessening the chance of slip and fall accidents. In addition to the brick, Oppermann specified new handrails and a new wheelchair ramp to improve visitor safety. Grounds and pathway lighting will also be discretely installed to improve visitor safety during evening events.

In November 2013, the LHA competitively bid this project to qualified preservation contractors. In December, the LHA awarded the contract for these improvements to Grau General Contracting of Williamsport, TN (please note that the contract with Grau was executed on January 2, 2014). Grau's contract is for $245,000. Grau is scheduled to complete all work by March 10, 2014, weather allowing.

The General Services Department approved contractor selection of the LHA for this project. The Office of the State Architect approved Oppermann's designs and approved the LHA's bid award decision and contract with Grau General Contracting. The LHA has also contracted with TRC, a cultural resources management consulting firm, to monitor all excavation work necessitated by the project for archaeological concerns. The Tennessee Division of Archaeology approved the LHA's selection of TRC for the archaeological monitoring contract.

*This photo shows the slope toward the mansions' south elevation. French drains south, east, and west of the Hermitage mansion will capture and divert water away the foundation.*

*This image shows brick and problematic caulk joints next to the mansion's foundation.*

*Planting beds like this one will surround the mansion wherever possible to allow for natural percolation. Each bed will have a French drain to move water away from the foundation.*

*These asphalt and brick on concrete pathways will be replaced with pervious pavement and brick on a sand and gravel base to allow for better drainage.*

*This image shows the deterioration of the mansion foundation joints.*

Interior Repairs

The second focus of work funded from the State of Tennessee grant is wear and tear repairs inside the Hermitage mansion and interior storm window repairs. Of the $660,000 in grant funds, $85,000 has been reserved for this work.

Annually, 200,000 people visit the Hermitage mansion. The last major repairs to the interior took place in 1995, which means that 3.6 million people have visited the home since that time. These interior repairs include the physical repair of nine entry doors which have deteriorated due to heavy use. These doors are a combination of originals and reproductions. Once physical repairs are complete, the mahogany grain painting on all doors will be repaired or stripped and completely re-grained depending on the amount of deterioration. Local contractors were hired by the LHA in December 2013 to conduct the door repairs. Total cost is projected to be $43,000 and is scheduled for completion by May 1, 2014

In addition to the door repairs, areas of the wood trim in the public hallways of the mansion required minor repairs to correct modern damage. Most of the damage is from wheelchairs, walkers, and other metal objects. After wood repairs are complete, all the wood trim in the public hallways will be repainted according to the historic paint record of the Hermitage mansion. Total cost is projected to be $14,500 and is scheduled for completion in February 2014.

The existing Hermitage mansion interior storm windows do not provide for a tight seal between the storm window and the original mansion windows. The resulting condensation that forms inside the space between the two windows during weather extremes has created mold issues and will eventually cause wood rot. The original impetus for the installation of these windows was filtering UV light so it would not damage the historic collections. These windows were not designed to be vapor barriers. The Hermitage has assembled a team of preservation architects, HVAC engineers, and conservators to study the window problem and devise a solution. The total cost of this analysis is projected to be $15,000 and it will be partly funded through a National Endowment for the Humanities Preservation Assistance Grant. Once a solution is devised, the Hermitage will assess if ample funds exist to proceed with manufacturing and installing a redesigned window.

*This image shows one of the reproduction grain painted doors. Exposure to weather and repeated use resulted in severe rot in the bottom of the door and deterioration of the graining*.

*Typical condition of door casings in public hallways.*

*Typical mold found on inside of windows, a result of condensation from leaky interior storm windows.*

Fire and Security System Analysis

The final area to be addressed through the State of Tennessee grant funds is the Hermitage mansion's fire and security systems. Of the $660,000 in funding $250,000 has been reserved for analyzing and repairing or upgrading the fire and security systems.

The existing 1988 Hermitage mansion fire detection system is an analog panel that monitors heat and smoke detectors. The fire suppression system is a dual action dry pipe sprinkler system installed in 1988. The Hermitage hired Landmark Facilities Group of Hartford, CT to investigate the condition of these systems. Landmark specializes in the design of HVAC and fire suppression and detection systems for historic buildings and museums. The total cost of Landmark's work was $11,000 and their analysis was completed in December 2013 (attached as Attachment A).

Landmark's investigation revealed several significant deficiencies with the existing fire detection and suppression systems in the Hermitage mansion. The detection system control panel is analog and replacement parts are no longer manufactured. The current system is zoned, so in the event of a fire the only information the system can provide is the location of one of 13 zones inside the nearly 13,000 square foot building. Landmark recommends complete replacement of the fire detection system with an addressable system that will provide more specific location information in the event of a fire. Landmark estimates that it will cost $75,000 to replace the fire detection system.

Landmark's analysis of the fire suppression system revealed multiple issues including: corroded pipes and pipe joints; aging and unsupervised valves; insufficient water pressure; and obstructed and incorrect sprinkler heads. Landmark recommends that the entire system be replaced with a new dual action dry pipe sprinkler system. They further recommend that the dry pipes be filled with nitrogen as opposed to compressed air to reduce corrosion and increase the longevity of the piping system. Landmark specifies the replacement of all sprinkler heads and the relocation or addition of new heads to compensate for obstructions. They also suggest that once new valves are installed that they be monitored by the fire detection system. Finally, Landmark recommends hydraulic flow tests be conducted to determine if a fire pump is necessary to increase water pressure. Landmark estimates the cost of the fire suppression system to be $475,000.

The LHA hired Ducibella, Venter, and Santore (DVS) of New York, NY to analyze the Hermitage security system. DVS specializes in museum security systems. As of December 31, 2013, DVS had verbally discussed with LHA staff several significant issues with the Hermitage mansion's security system, but they had not submitted their formal report. That report is expected in February 2014. DVS's fee for the analysis was $11,000.

Once DVS has submitted its report, the LHA will prioritize how to spend the remaining grant funds to upgrade the Hermitage mansion's security and fire systems. The most likely scenario is

that the LHA will move forward with the replacement of the fire detection and security systems with the remaining grant funds, while raising additional funds to complete the fire suppression upgrades.

*This image shows typical Hermitage mansion sprinkler pipe corrosion at a rolled joint.*

*Typical Hermitage mansion sprinkler pipe corrosion at threaded fittings.*

*Typical obstructed sprinkler head in the Hermitage mansion attic.*

*This image shows the 25 year-old deluge valve in the basement of the Hermitage mansion which LFG recommends be replaced.*

*1988 Fire Alarm Control Panel in the Hermitage Basement.*

## Tulip Grove

Legal Case

Over the past seven years, the LHA has been involved in litigation with the descendants of Jane Berry Buntin regarding compensation under the terms of the 99-year purchase agreement for Tulip Grove signed in 1964. The uncertainty of Tulip Grove's legal status has delayed any significant work at Tulip Grove except for emergency repairs and routine maintenance. In 2008, the Tennessee Circuit Court ruled in favor of the LHA regarding the plaintiffs request to invoke the reverter clause in the 1964 agreement. Since then, the Buntin descendants have exhausted all avenues of appeal on that decision. In April 2012, the LHA and plaintiffs went before the Tennessee Court of Appeals to present each party's position relative to the July 2011 Circuit Court's decision on other portions of the suit. The appellate court issued its judgment in December 2012, stating that the LHA was free to operate the Tulip Grove property in the way it felt best and reiterated past decisions that the LHA had in no way violated the terms of the 1964 agreement between the association and Mrs. Buntin. However, the court did rule that the LHA was to give to the plaintiffs 1/3 of the income from rentals of the Tulip Grove mansion for special events. Further details as to this ruling are yet to be worked out. At present, Tulip

Grove is open weekdays for tours and on weekends it is rented for special events, mainly weddings.

Tulip Grove's Condition

Tulip Grove requires significant repairs to ensure the integrity of the building's envelope. This includes completely re-pointing the walls and foundation, gutter and downspout redesign and replacement, repair of wood trim, and painting. The LHA does not currently have the funds in place to pursue this work in 2014. The LHA is actively seeking funds to complete an analysis of Tulip Grove's building shell problems by a qualified preservation architect that will include preparation of measured drawings, a condition report, and an historic structures report. Cost estimates for this work are $55,000. By taking these steps the LHA will have a firm foundation to possibly begin fundraising for repairs once the legal issues surrounding Tulip Grove are settled.

*A previous repointing effort at Tulip Grove was not installed deeply enough into the joint. That repointing mortar failed and took off the face of the historic lime sand mortar underneath it. Tulip Grove requires complete repointing on all elevations, May 2010.*

*Failed mitered corners in Tulip Grove's gutter system have resulted in wood deterioration underneath, May 2010.*

*Typical mortar joint deterioration over window jack arches.*

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## Jackson and Donelson Family Cemeteries

In general, the gravestones in the Jackson and Donelson Family Cemeteries are in fair condition. All require cleaning to remove pollution and biological deposits. The Jackson Family Cemetery requires significant soil backfill to correct soil subsidence likely caused by collapse of caskets and rotting tree roots. In addition, the shared gravestone of Andrew Jackson Jr. and his wife Sarah and the gravestone of Jackson family friend and portraitist Ralph E.W. Earl need immediate attention. Both gravestones are made of limestone and the limestone layers are delaminating. It is very likely that portions of both of these will require replacement. In the Donelson Family Cemetery, the vault style memorials for Captain John and Mary Purnell Donelson are unstable because of cracks in the stones.

The Hermitage staff and the LHA are actively seeking funding for these repairs. Hermitage staff estimates that the total cost for both of these cemeteries will be between $30,000 and 50,000.

*Overall image of the Jackson Family Cemetery showing darkening of stones from airborne pollutants and biological growth. The two gravestones in wood boxes are those of Sarah and Andrew Jackson, Jr. and Ralph E.W. Earl.*

*Overall view of the Donelson Family Cemetery with the Hermitage Church in the background.*

## Hermitage Church

Overall the Hermitage Church is in sound condition, but repairs are needed to maintain the building's exterior shell. First and foremost, the foundation requires repointing as soon as funds are available. The brick walls exhibit mortar deterioration, especially around windows and doors. The building's shingle roof exhibits significant deterioration and must be replaced within the next two years. The estimated cost of this work is $85,000. This project is not funded at this time. Hermitage staff is actively seeking grant opportunities and private donations to complete this work.

*This image shows failed mortar in the Hermitage Church foundation and walls, May 2010.*

*Typical condition of church roof shingles. Note split shingles and large gaps in coverage.*

**End of Report**

**Attachment A**

*The Hermitage Mansion Fire Protection Systems Assessment*
*Landmark Facilities Group*

# THE HERMITAGE MANSION
# FIRE PROTECTION SYSTEMS ASSESSMENT

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## INTRODUCTION

On October 9th and 10th, 2013 Landmark Facilities Group, Inc. conducted an on-site evaluation of the existing fire protection systems of the Mansion at the Hermitage in Nashville, TN. This report describes the existing condition of these systems and identifies any deficiencies. It then provides recommendations, that if implemented would improve the fire protection of the building.

## EXECUTIVE SUMMARY

There are presently two fire protection systems in the Hermitage Mansion; a fire suppression system, and a fire alarm system.

**Fire Suppression System:** The fire suppression system is a single interlock pre-action sprinkler system that consists of pipes routed throughout the building with sprinklers in each room. In a single interlock pre-action system the pipes are normally filled with air and will only fill with water if smoke or heat is detected by the fire alarm system. The sprinklers in each room are normally closed and are thermally actuated to open, allowing water to spray through them if exposed to the heat of a fire. Therefore, a signal from the fire alarm system and an open sprinkler is necessary to discharge water into a room. Since two actions are required to spray water, a pre-action system reduces the possibility of accidental water discharge. Pre-action systems are often used where the accidental discharge of water from the sprinkler system cannot be tolerated, such as museums.

The existing pre-action system was installed in 1988 and is still operational. It is recommended that a pre-action system continue to be used to provide protection against accidental water discharge. However, pre-action systems are prone to corrosion because they are filled with air, and it was observed during the evaluation that a number of pipe fittings are rusted. It is therefore recommended that all sprinkler pipe be replaced with new to provide the best assurance against accidental leakage. It is also recommended that the pre-action pipes be filled with nitrogen gas instead of air to slow the corrosion rate and provide longevity to the system.

There are also deficiencies that may prevent the existing system from adequately suppressing a fire if ever required, such as low city water pressure, obstructions to the spray patterns of sprinklers and unsupervised valves. Unsupervised valves can be accidentally left closed after maintenance, shutting off the water supply to the building without anyone's knowledge.

It is recommended that the design of a new sprinkler system incorporate corrections to these deficiencies and that a detailed hydraulic analysis be conducted to determine if a fire pump will be required to boost the water pressure. A fire pump can be installed if necessary.

**Fire Alarm System:** The fire alarm system was installed in 1988 and is a conventional system with the fire alarm panel located in the basement of the Mansion. The building is divided into 13 zones and each room has a smoke detector and a heat detector wired back to the panel. If heat or smoke is detected an alarm is sounded locally and reported to an offsite monitoring station through the security alarm panel. Since the alarm is reported offsite through the security panel, it is unknown which of the 13 zones is in alarm until someone enters the basement and reviews the fire alarm panel. The fire alarm panel is no longer manufactured or supported by the manufacturer; therefore, replacement components would have to be supplied by third party vendors.

It is recommended that the fire alarm panel be replaced with a new addressable panel and new smoke detectors that are compatible with the new panel be installed in each room. Each smoke detector and other devices in an addressable system is identified by an "address", so that it is known which device is in alarm. It is also recommended that the fire alarm system supervise the valves on the fire suppression system to ensure that they are open. The fire alarm system should also report directly to the offsite monitoring station rather than through the security panel so that the address of the device in alarm is known without having to enter the building. It is believed that the existing fire alarm wiring can be reused, but this will have to be verified by testing.

**Preliminary Construction Cost Estimates**

Preliminary construction cost estimates including design fees of approximately $475,000 for a new fire suppression system and $75,000 for a new fire alarm system were calculated. These estimates are based on typical square foot costs with an allowance for a fire pump, but exclude cutting and patching for the sprinkler pipe installation, or an electric service upgrade if needed for a fire pump installation. The installation of underground fire alarm cable to remote buildings and valves is not included as well as possible archeology. Architectural design and cost estimating fees are also not included.

**Proposed Construction Phasing**

It is recommended that both fire protection systems be upgraded as soon as possible. However, if funding is not available to upgrade both systems immediately, then a phased construction schedule can be implemented. It would be recommended to install a new fire alarm system first followed by a new sprinkler system when additional funding becomes available. The new fire alarm system will provide quicker detection and alarm than the existing system. It will also supervise the sprinkler system valves, which will improve the dependability of the existing sprinkler system.

Design drawings that are developed for the projects can be used as a basis for more comprehensive construction cost estimates.

## FIRE SUPPRESSION – EXISTING CONDITIONS

The existing fire suppression system is a single interlock pre-action system that was installed in 1988. The water for the entire grounds is supplied through a six inch water main with the water meter and backflow preventer located at the property line (Figure FS-1 and FS-2). The water into the building is supplied through a four inch service pipe that connects to the six inch main between hydrants No. 1 and No. 2 (Figure FS-3). Before the service pipe enters the building, it passes through a Post Indicator Valve (PIV) (Figure FS-4) and an OS&Y valve in an underground vault (Figure FS-5). The fire department connection (Figure FS-4) is also outside next to the PIV and connects to the service pipe in the underground vault.

Hydrant flow tests have been routinely conducted and are summarized below for the past three years. All tests were conducted at approximately 7:00 AM.

| HYDRANT NUMBER | DATE | STATIC PSI | FLOW GPM | RESIDUAL PSI |
|---|---|---|---|---|
| | | | | |
| 1 | 04-01-2013 | 70 | 915 | 30 |
| 2 | 04-01-2013 | 75 | 835 | 25 |
| 1 | 09-19-2013 | 70 | 915 | 30 |
| 2 | 09-19-2013 | 70 | 835 | 25 |
| 1 | 10-03-2012 | 90 | 915 | 30 |
| 2 | 10-03-2012 | 90 | 835 | 25 |
| 1 | 03-23-2012 | 70 | 750 | 20 |
| 2 | 03-23-2012 | 65 | 750 | 20 |
| 1 | 07-22-2011 | 60 | 835 | 25 |

**TABLE FS-1**

Inside the building the service pipe passes through a four inch double check valve (Figure FS-6), before entering the four inch deluge valve (Figure FS-7), which is a special type of valve used in a pre-action assembly (Figure FS-8). The deluge valve is a model D-5 manufactured by Viking, which is no longer offered but replacement parts are still available for maintenance. A pre-action system does not normally have water in the pipes like a wet pipe system, but instead it is filled with compressed air. An air compressor with storage tank is being used for this purpose. Upon detection of smoke or heat from the fire alarm system, the deluge valve is opened by a command from the fire alarm system and water then fills the pipes.

The sprinkler system provides fire suppression protection throughout most of the building from the basement through the attics. The piping consists of Schedule 10 pipe with rolled grooved fittings on sizes 2-½" and above and Schedule 40 pipe with threaded fittings on smaller sizes.

**FIRE SUPPRESSION – DISCUSSION**

A purpose for installing a pre-action system instead of a wet pipe system is that the possibility of an accidental discharge of water into a room is reduced because two actions are required to flow water through a sprinkler head. The first action is the detection of a fire through the fire alarm system, which then opens the deluge valve filling the pipes with water. The second action is the opening of a sprinkler head. Therefore, if a sprinkler head is broken by accident or a pipe rusts through, water will not flow because the fire alarm must sense fire to open the deluge valve.

A second reason for installing a pre-action system is to provide freeze protection for pipes in areas subject to freezing temperatures. In the Mansion, the areas that are most likely to experience freezing temperatures would be the attics; especially if there is a power failure and the heating system stops working.

A pre-action system is normally filled with compressed air which is used to monitor pipe integrity, as leaking pipes would cause a loss in air pressure that would be sensed by a pressure monitoring switch. A loss in air pressure would send an alarm through the fire alarm panel; however, the low pressure alarm switch has been disconnected (Figure FS-9). It has been reported by the Hermitage staff that the low pressure alarm switch has been repaired since the October 2013 survey.

A concern for owners of pre-action systems is premature failure of the pipes from corrosion. The compressed air used for monitoring introduces moisture into the system and there is always residual water in the pipes from previous flow tests. The compressed air provides a new supply of oxygen each time the compressor runs, which accelerates corrosion where water has accumulated; usually at low pockets and at rolled grooved fittings. Rusted fittings were observed at several locations in the basement and attic (Figure FS-10A & 10B and FS-11A & 11B).

NFPA 13-2007, “Standard for the Installation of Sprinkler Systems”, requires the piping for a pre-action system to be installed so that it can be drained. Pipe mains must be pitched at least ¼ inch per 10 feet and branch lines must be pitched at least ½ inch per 10 feet. Earlier editions of the code did not require the pipe to be pitched in areas not subject to freezing. It was observed that some of the piping in the attic was not sloped, which can allow puddles of water to develop inside the pipe, which accelerates corrosion. Water tends to collect at rolled grooved fittings and screwed fittings, especially if the pipe has not been reamed. Rusted fittings were observed at several locations in the attic which may be due to inadequate sloping and drainage of the piping system (Figure FS-11A & 11B). Additionally, rusted fittings were observed at the service entrance in the basement where the pipe is back sloped (Figure FS-10B).

A method that is used to slow the corrosion rate in pre-action systems is to use nitrogen instead of compressed air for monitoring the system. A number of companies are now manufacturing

nitrogen generators for use in dry pipe and pre-action fire suppression systems. A seven year testing program is being conducted by one manufacturer of nitrogen generating equipment where the corrosion rates of black steel and galvanized steel pipe half filled with water and nitrogen are being compared against pipe half filled with water and compressed air. At three years into the test the measured corrosion rates show the projected life of black steel pipe will be extended from 16.4 years with compressed air to 48 years with 98% nitrogen.

Recognizing that corrosion and other deposits can accumulate in a pre-action system that can clog sprinklers, the NFPA 13 requires pendant type sprinklers such as recessed ceiling sprinklers to be supplied through return bend piping (Figure FS-12). Supplying a pendant sprinkler off of the top of the supply pipe, as shown in the return bend reduces the possibility of deposits being carried to the sprinkler. Return bends have been used in the Mansion attics to supply recessed ceiling sprinklers on the second floor(Figure FS-13); however, it should be noted that the vertical drops to each sprinkler are filled with water from system tests and condensation from compressed air, which can freeze if heating is lost in the building. It is also a location where corrosion can develop at the air/water interface in the pipe. NFPA 25-2011, “Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems”, requires all auxiliary drains in pre-action systems to be operated after each system operation and before the beginning of each heating season. The only way to drain the drops to the pendant sprinklers is to remove the sprinklers.

A way to avoid return bend piping and the maintenance of draining the drops to pendant sprinklers is to install listed dry sprinklers (Figure FS-14). NFPA 13 allows listed dry sprinklers to be installed in pendant position without a return bend because the plug at the top of the sprinkler prevents water from entering the water tube unless the head is opened. And the water tube is normally dry, so they can be installed in locations subject to freezing. Dry sprinklers have been installed from the attic piping to the outdoor porches.

A number of sprinklers will have the water spray obstructed by a variety of objects including structural members, ductwork, hangers and insulation (Figure FS-15A to FS-15D). The code allows a few types of obstructions to sprinkler spray patterns in light hazard occupancies, but in most cases sprinklers are required to be installed in locations were the spray pattern can be fully developed. When this is not possible additional sprinklers must be installed.

Water supply valves on a sprinkler system are required by code to be supervised by either locking them in the correct position or through the fire alarm system. It is common practice to supervise valves through the fire alarm system when there is one in the building. This is so that it will be immediately reported when a valve is accidentally left closed after maintenance, or when a valve is intentionally closed to cause harm. It was noticed that all of the valves, both inside and outside of the building are unsupervised, which means that a closed valve will go unnoticed

(Figures FS-1, FS-2, FS-4, FS-5, FS-6). Data from the National Fire Incident Reporting System (NFIRS) indicates that two-thirds of all sprinkler system failures during a fire are because the sprinkler system was shut off. The importance of knowing the status of all valves cannot be overstated.

The hydrant flow tests summarized in Table FS-1 indicate that the available static pressure has varied from 60 psi to 90 psi, and the residual pressure from 20 psi to 30 psi. This residual pressure is fairly low and may result in the sprinkler system not providing adequate suppression during low water pressure periods. To determine whether the water supply is adequate, a hydraulic model of the system was created using the piping layout as depicted on the 1988 design drawings. While the design drawings do not reflect exact as-built conditions, they are reasonably accurate to identify the major locations where pressure drops will occur. Calculations were performed using the worst case hydrant flow test of 65 psi static and 20 psi residual recorded on 3/23/2012 at hydrant No. 2. The results indicate that the available pressure would be short by about 14 psi to suppress a design fire in the main attic. A fire pump will be necessary to boost the water pressure to the required amount.

## FIRE SUPPRESSION – RECOMENDATIONS

There are a number of items that were discussed above that could result in the existing fire suppression system to not adequately suppress a fire if one should occur, such as low water pressure, obstructed sprinkler spray patterns or closed unsupervised control valves. Additionally, there are some items that could result in damage to the building from water leaks such as rusted fittings and water filled pipe drops in the attics, which could freeze and break if the heating system stops working during the winter. Considering these findings, the system should be considered for upgrade or replacement as follows:

1. **Continue Use of Pre-Action System:** Since a pre-action system provides protection from accidental water discharge, it is recommended that a pre-action system continue to be used in the Mansion. The deluge valve is 25 years old and should be replaced as part of the next system upgrade to ensure longevity and long term component availability for future maintenance.
2. **Use Dry Sprinklers in Attics:** It is recommended that all return bend piping in the attics be replaced with dry sprinklers to eliminate the need for draining pendant sprinklers and avoiding the potential freezing pipe hazard.
3. **Correct Sprinklers with Obstructed Spray:** It is recommended that sprinklers with obstructed spray patterns be relocated or additional sprinklers be installed to ensure adequate coverage.
4. **Replace All Sprinkler Pipe:** It is recommended that the sprinkler piping be replaced throughout the building. The extent of the pipe corrosion is impossible to quantify by an

external inspection, and corrosion in a pre-action system is not uniform. This means that if a detailed corrosion investigation is performed at a number of locations, the results may not be representative of the entire piping system. Given the age of the system and the corrosion that was found at several fittings, a complete replacement will provide the best assurance against a pipe failure. It is also recommended that schedule 40 pipe be used throughout to extend the life of the system by providing thicker wall pipe.

5. **Use Nitrogen for Monitoring Gas:** It is recommended that nitrogen be used for the monitoring gas instead of air to slow the corrosion rate of the pipe.
6. **Conduct Hydraulic Analysis for Fire Pump:** Preliminary calculations indicate that a fire pump is necessary to ensure adequate pressure at all times, and this would be confirmed with additional calculations during design of the upgrades. A detailed hydraulic analysis of the final piping configuration and if necessary, the installation of a fire pump is therefore recommended.
7. **Supervise Sprinkler System through Fire Alarm System:** It is recommended that the fire alarm system supervise the monitoring gas pressure of the pre-action system and supervise all of the interior and exterior control valves to ensure that the system is not disabled by pipe leaks or closed valves.

## FIRE ALARM – EXISTING CONDITIONS

The existing fire alarm system in the Mansion was installed in 1988 and is a conventional system consisting of 13 zones. The Fire Alarm Control Panel (FACP) is located in the basement at the bulkhead entry and is a model Sensiscan 1000 manufactured by Fire Lite Alarms Inc. (Figure FA-1)

Based on the 10/24/2013 inspection test report provided by Superior Fire Protection and the directory written in the FACP, the zones and detectors that are monitored by the FACP are shown in Table FA-1.

| ZONE | FLOOR | ROOM / LOCATION | DEVICE TYPE AND NUMBER |
|---|---|---|---|
| | | | |
| 1 | First | Dining Room | 1 Smoke Detector and 1 Heat Detector |
| | | Butler's Pantry | 1 Smoke Detector and 1 Heat Detector |
| | | Rear Hall by Pantry | 1 Smoke Detector and 1 Heat Detector |
| | | Storage Pantry | 1 Smoke Detector and 1 Heat Detector |
| 2 | First | Front Parlor | 1 Smoke Detector and 1 Heat Detector |
| | | Rear Parlor | 1 Smoke Detector and 1 Heat Detector |
| 3 | First | 1st Floor Foyer | 1 Smoke Detector and 1 Heat Detector |
| 4 | First | General's Bedroom | 1 Smoke Detector and 1 Heat Detector |
| 5 | First | Farm Office | 1 Smoke Detector and 1 Heat Detector |
| 6 | First | General's Office/Library | 1 Smoke Detector and 1 Heat Detector |
| 7 | Second | Front Left Bedroom | 1 Smoke Detector and 1 Heat Detector |
| | | Rear Left Bedroom | 1 Smoke Detector and 1 Heat Detector |
| 8 | Attic | Main Attic Entrance | 1 Smoke Detector and 1 Heat Detector |
| | | Main Attic Rear | 1 Heat Detector |
| | | Main Attic Front Right | 1 Smoke Detector |
| | | Main Attic Front Left | 1 Smoke Detector |
| | | Main Attic Duct Detector | 1 Connected to FACP, 1 Not Connected |
| 9 | Second | Front Right Bedroom | 1 Smoke Detector and 1 Heat Detector |
| | | Rear Right Bedroom | 1 Smoke Detector and 1 Heat Detector |
| 10 | Basement | By FACP | 1 Smoke Detector and 1 Heat Detector |
| | | Storage | 1 Smoke Detector |
| | | AHU-1 | 1 Duct Detector |
| 11 | Second | 2nd Floor Foyer | 1 Smoke Detector and 1 Heat Detector |
| | First | Side Hall | 1 Smoke Detector and 1 Heat Detector |
| | First | Junior's Bedroom | 1 Smoke Detector and 1 Heat Detector |
| 12 | First | Kitchen | 1 Smoke Detector and 1 Heat Detector |
| 13 | Basement | Sprinkler Service | 1 Flow Switch |

**TABLE FA-1**

The devices in each zone are connected using the Class B style of wiring. The identification printed on the visible wire near the FACP states “Power Limited Fire Protective Signaling Circuit Cable 22 AWG 300Volts 105C (UL) E66267 for Cable Tray Use”. (Figure FA-2)

The FACP annunciates alarms both locally and to an offsite monitoring company. The local alarms are a bell next to the FACP (Figure FA-3) and a horn/strobe in a docent’s closet on the First Floor. (Figure FA-4) The remote alarm communicates through the security alarm panel, which transmits to an offsite monitoring company via copper telephone lines.

In addition to fire detection and alarm, the FACP also functions as the releasing panel for the pre-action fire suppression system. The FACP does not supervise sprinkler control valves or air pressure as further described in the fire suppression section of this report.

There are no manual pull stations in the building to allow manual activation of the fire alarm system.

**FIRE ALARM – DISCUSSION**

The Sensiscan 1000 FACP is a conventional zoned panel with 13 active zones, which are also called Indicating Device Circuits (IDC). When it was installed in 1988, zoned panels were commonly used; however, with the advances in microprocessors since that time, addressable FACPs have become common. While a zoned system can report the general area where a fire is occurring by zone, addressable fire alarm systems can closely report the location of a fire because each input device such as a smoke detector has an “address” that individually reports its status.

The Sensiscan 1000 FACP is no longer manufactured or supported by Fire Lite since 2006. Therefore, if it should become necessary to repair this panel, remanufactured parts from third party vendors would have to be used. A panel of this age that is no longer supported by the manufacturer should be considered for replacement with either another conventional zoned panel or an addressable panel.

Most conventional zoned fire alarm panels manufactured today are designed for small buildings and have a maximum of ten zones. Zoned systems are still used in small buildings where the zones are small and the accuracy to pinpoint the location of a fire approaches the capability of an addressable system. Some manufacturers also have conventional zoned panels that are designed to replace existing large zoned panels and can be expanded with the addition of expansion modules. Since there is a pre-action fire suppression system in the Mansion that relies on a signal from the FACP to operate, the FACP must have a UL approval for use as a releasing device.

The existing E66267 cable is a relatively small wire gauge being only 22 AWG. This cable appears to be no longer manufactured, but a typical resistance for 22 AWG wire is 17 ohms per 1000 feet. A number of available panels have an allowable maximum of 50 ohms per IDC. Therefore, existing IDCs must be a maximum of about 1500 feet long to be compatible with a new conventional FACP.

Table FA-1 shows the devices in each room and in each zone. It can be seen that each room has a heat detector and a smoke detector, which is an unusual arrangement of devices. Heat detectors are commonly used where dust and smoke normally occur such as boiler rooms, which would cause false alarms if a smoke detector is used. Since most of the rooms do not meet the dusty, smoky space criteria, it is unknown why heat detectors were designed and installed in each room. Smoke detectors are the preferred detection method over heat detectors because they provide an earlier warning. A number of rooms are small enough where a single detector would provide adequate coverage; however, since each space already has two detectors, a future system could have two smoke detectors, which would provide slightly faster detection and redundancy if one detector should fail. Also, if two smoke detectors are used in each space, one detector could be an ionization type detector, which is responsive to flaming fires and the second could be a photoelectric detector, which is responsive to smoldering fires. In this way, a detection system that is responsive to different fire signatures can be installed.

There is no apparent advantage to using a heat detector in each room along with a smoke detector, even if the original intent was to provide a backup sensor for a failed smoke detector. Typical heat detectors will alarm when they reach 135F, which is only slightly faster than a typical sprinkler that will open when it reaches 155F. Smoke detectors will alarm before heat builds up in a room, and having two smoke detectors in each room will provide a redundant earlier warning system than a heat detector. Additionally, since the devices are monitored through the FACP, a trouble signal will be annunciated if a smoke detector fails.

Zone 11 covers a portion of the first and second floors and the areas are not contiguous. This zone is not well designed since an alarm in this zone would not immediately identify the location of a fire.

Manual pull stations are normally required by building code to be placed within five feet of each exit. It is apparent that they have been omitted to avoid the visual and damaging impact to the historic fabric. However, it would be beneficial to have a manual method to activate the fire alarm system.

The remote alarm annunciation through the security panel has the disadvantage that only a general fire alarm is communicated to the offsite monitoring station. Which one of the 13 zones that is in alarm is unknown until someone enters the basement and looks at the alarm lights on

the FACP. It would be advantageous to have the FACP communicate directly with the offsite monitoring station so that the zone that is in alarm is identified before anyone enters the building.

It is feasible to replace the existing conventional FACP with an addressable FACP. The main advantage of an addressable system is that each device can report its status individually to the FACP and therefore the location of a fire can be identified more accurately. Also, if the FACP reports directly to an offsite monitoring station, rather than through the security panel, the address of the device in alarm will be known without entering the building. An addressable panel must also be UL approved as a releasing device to actuate the pre-action system.

The wiring circuit that connects the devices to an addressable FACP is called the Signaling Line Circuit (SLC) and it contains both initiating devices such as smoke detectors and notification devices such as horns and strobes. Similar to an IDC connected to a conventional panel, the resistance in ohms of the wire used in an SLC must not exceed a certain limit. Again, 50 ohms is a typical maximum limit, but it can be less depending on the panel and the devices connected to it. Using an allowable resistance of 50 ohms the length of any of the existing zones of 22 AWG cannot exceed 1500 feet. An addressable panel appropriately sized for the Mansion would have one SLC; therefore, the existing 13 zones must be combined into a single SLC. This can be accomplished by “T-tapping” all zones near the panel and removing the end of line resistor from each zone. Many addressable panels do not require specialty cable such as shielded or twisted pair, so it may be possible to reuse the existing cable if desired.

Regardless of whether a new conventional panel or a new addressable panel is used, all detectors will have to be replaced with new detectors that are compatible with the new panel.

## FIRE ALARM - RECOMMENDATIONS

1. **Install New Addressable Fire Alarm Control Panel:** Since the existing FACP is 25 years old and is no longer supported by the manufacturer, it is recommended that it be replaced with a new panel. An addressable system has the advantage of narrowly identifying the location of a fire; therefore, it is the more preferable FACP to install over a conventional panel. The FACP must also be UL approved for use as a releasing device to activate the pre-action system.
2. **Measure Resistance of Wire Loops to Confirm Reuse is Feasible:** It is likely that the existing wiring can be reused; however, the resistance in ohms of each wire loop (zone) must be measured to ascertain that it is below the maximum resistance allowed by the FACP manufacturer.
3. **Replace all Detectors with Smoke Detectors:** All existing devices will have to be replaced with new ones that are compatible with the new FACP. Smoke detectors should

be used throughout except where smoke and dust may normally occur causing false alarms; in which case heat detectors should be used.

4. **Supervise Sprinkler System through Fire Alarm System:** New devices will have to be installed to supervise the sprinkler system as discussed in the fire suppression section of this report.
5. **Install Manual Pull Stations:** A pull station should be installed in the docent's closet on the First Floor to allow manual activation of the fire alarm system. A second pull station in a linen closet on the Second Floor accessible to the staff can also be installed. However, these locations should be approved by the local Authority Having Jurisdiction (AHJ) since these locations would not comply with building codes.
6. **Install Additional Horns:** Additional horns should be installed to ensure an alarm can be heard throughout the building from basement to attic. It should be possible to hide these in closets, although this should be approved by the AHJ since strobes would not be seen.
7. **FACP Report Directly to the Offsite Monitoring Station:** The FACP should report directly to the offsite monitoring station and not through the security panel so that the address of the device in alarm is known without anyone entering the building.
8. **Install Remote Annunciators:** A remote annunciator should be installed in the docent's closet on the First Floor that would provide the same information as accessing the panel directly. A second remote annunciator can be installed at the Ticket Office so that night security guards are notified of alarms before receiving a call from the offsite monitoring station; however, it may be necessary to install new communication cable between the Mansion and the Ticket Office.

**COST ESTIMATES**

Preliminary construction cost estimates have been prepared based on typical square foot costs. Using a total building area of 21,500 sq. ft., which includes attics and basement crawl spaces, the following preliminary construction cost estimates have been developed.

| | SPRINKLER @ $15/FT2 | FIRE ALARM @ $2.50/FT2 |
|---|---|---|
| | | |
| Base Cost | $322,500 | $53,750 |
| Fire Pump | $30,000 | |
| Contingency @ 15% | $52,875 | $8,065 |
| Mobilization @ 0.5% | $1,765 | $270 |
| Subtotal | $407,140 | $62,085 |
| Engineering Fees | | |
| As-Built/Removal Drawings | $8,420 | $4,860 |
| Schematic Design @ 5.25% | $21,375 | $3,260 |
| Construction Docs @ 5.25% | $21,375 | $3,260 |
| Construction Admin @ 4.5% | $18,320 | $2,795 |
| | | |
| Total | $476,630 | $76,260 |

These estimates exclude cutting and patching for the sprinkler pipe installation, or an electric service upgrade if needed for a fire pump installation. The installation of underground fire alarm cable to remote buildings and valves is not included as well as possible archeology. Architectural design and cost estimating fees are also not included.

## PROPOSED CONSTRUCTION PHASING

It is recommended that both fire protection systems be upgraded as soon as possible. However, if funding is not available to upgrade both systems immediately, then a phased construction schedule can be implemented. It would be recommended to install a new fire alarm system first followed by a new sprinkler system when additional funding becomes available. The new fire alarm system will provide quicker detection and alarm than the existing system. It will also supervise the sprinkler system valves, which will improve the dependability of the existing sprinkler system.

The following steps are proposed with the ultimate goal of installing new fire alarm and fire suppression systems throughout the Mansion.

### Fire Alarm System

1. Test fire alarm cable resistance as discussed in this report to determine suitability for reuse.
2. Develop As-Built drawings of existing fire alarm cable routing to determine best method of converting zoned system wiring into an addressable system wiring, minimizing impact in finished spaces.
3. Develop schematic level design drawings of new fire alarm system, which will identify if there is a need for architectural and archeological support. Schematic documents can also be used for a more comprehensive cost estimate.
4. Develop bid/construction documents of new fire alarm system.
5. Bid project, select contractor, install new fire alarm system.

### Fire Suppression System

1. Develop As-Built drawings of existing sprinkler pipe routing to be used as a basis for demolition drawings and future pipe routes. Develop As-Built drawings of electric distribution to determine location of available power for possible fire pump.
2. Develop schematic level drawings of new fire suppression system. Conduct hydraulic calculations to determine if a fire pump will be required. Drawings will identify if and where there is a need for architectural and archeological support. Schematic documents can also be used for a more comprehensive cost estimate.
3. Develop bid/construction documents of new sprinkler system.
4. Bid project, select contractor, install new sprinkler system.

# APPENDIX FS-1

# FIRE SUPPRESSION PHOTOGRAPHS

Figure FS-1: Water Meter with Shutoff Valve in Vault at Property Line

Figure FS-2: Aboveground Backflow Preventer with Shutoff Valves at Property Line

**Figure FS-3: Hydrant No. 2 in Foreground with Hydrant No. 1 in Background Indicates Location of 6-Inch Water Main**

**Figure FS-4: Post Indicator Valve on Left, Fire Department Connection in Center And Manhole Cover for Vault on Right**

Figure FS-5: Fire Service OS&Y Shutoff Valve in Vault with Fire Department Connection on Right

Figure FS-6: Double Check Valve with Two Control Valves on Fire Service into Building

Figure FS-7: Deluge Valve Used for Single Interlock Pre-Action System


Figure FS-8: Single Interlock Pre-Action Assembly


**Figure FS-9: Low Pressure Alarm Switch on Pre-Action System has Been Disconnected**

**Figure FS-10A: Rusted Rolled Fitting in Basement**


Figure FS-10B: Rusted Rolled Fitting in Basement

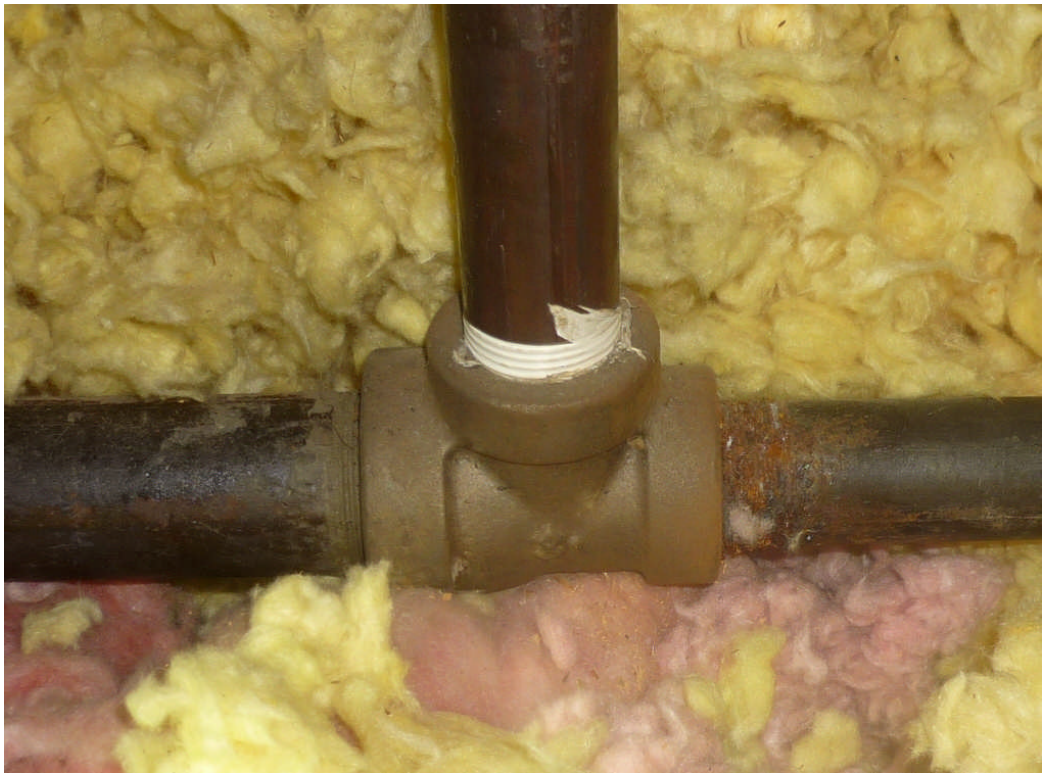

Figure FS-11A: Rusted Threaded Fitting in Attic

Figure FS-11B: Rusted Rolled Fitting in Attic

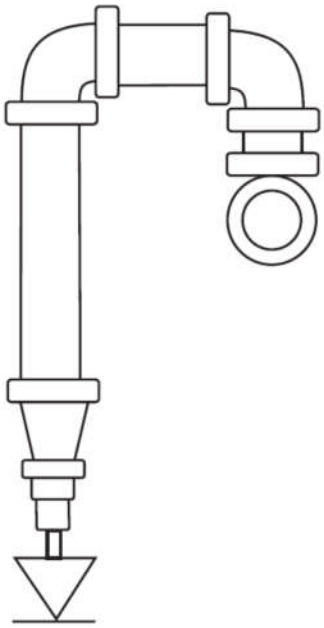

Figure FS-12: Return Bend Piping Arrangement Used for Pendant Sprinklers on Pre-Action System

Figure FS-13: Return Bend Piping used on Pendant Sprinkler

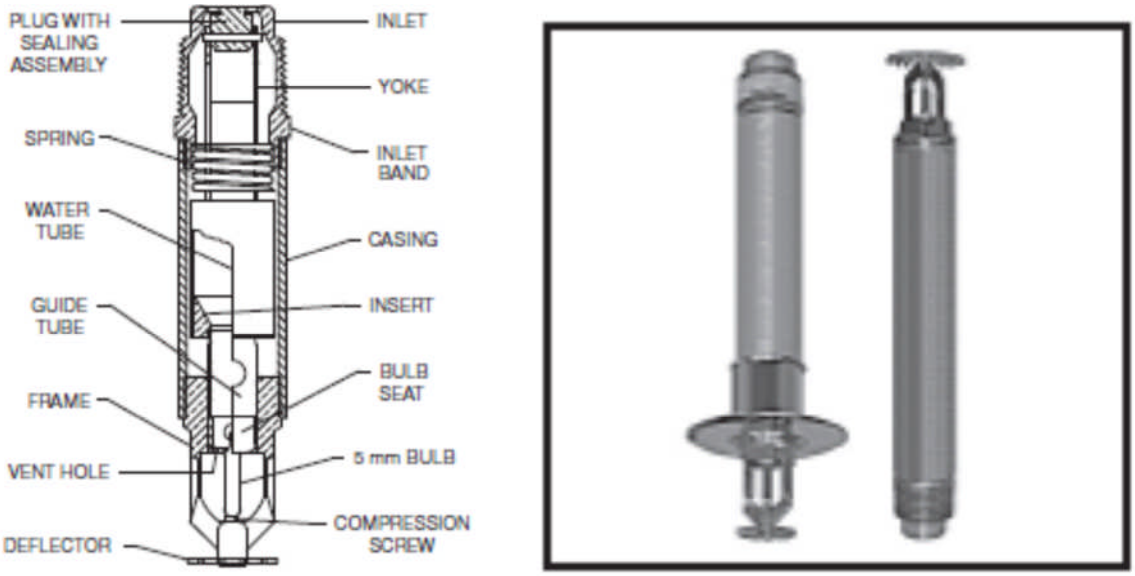


Figure FS-14: Dry Sprinkler Showing Plug Sealing Assembly that Keeps Water Tube Dry

Figure 15A: Sprinkler Spray Obstructed by Pipe Hanger in Basement

Figure 15B: Sprinkler Spray Obstructed by Duct in Basement

Figure 15C: Upright Sprinkler Spray Obstructed by Insulation in Attic

Figure 15D: Upright Sprinkler Spray Obstructed by Beam in Attic

# APPENDIX FA-1

# FIRE ALARM PHOTOGRAPHS


**Figure FA-1: Sensiscan 1000 FACP is 25 Years Old**


**Figure FA-2: Fire Alarm Cable**


**Figure FA-3: Bell in Basement Provides Local Alarm**


**Figure FA-4: Horn/Strobe in Docent's Closet Provides Local Alarm**

# Explanation of *Affidavit for Furtherance of Title* for The Hermitage Property To the Tennessee State Building Commission

**Prepared by:**
**Tony Guzzi, Vice-President, Preservation and Site Operations**
**The Hermitage, Home of President Andrew Jackson**
**4580 Rachel's Lane, Hermitage, TN 37076**
**615.889.2941 ext. 225 Fax 615.889.9289**
**tguzzi@thehermitage.com**

**February 13, 2014**

Explanation of *Affidavit for Furtherance of Title* for the Hermitage Property

In 1990, the Tennessee General Assembly revised the legislation that governs the trust relationship between the State of Tennessee and the Ladies Hermitage Association (LHA). That legislation clearly states that the LHA owns The Hermitage in trust for the State of Tennessee. Subsequent, Attorney General opinions have upheld that legislative intent. Unfortunately, this change in ownership status was never reported to the Davidson County Register of Deeds who listed the State of Tennessee as owner. Further complicating the matter, the LHA does not have a deed to document its ownership status, but rather just the legislation and the resulting code under T.C.A 4-13-101.

This confusion over ownership of the property with Davidson County often caused issues for the LHA. For example, the LHA was not notified of proposed zoning changes on surrounding parcels, which could affect historic Hermitage view sheds. Another example is that codes officers did not know which code to apply to the property or which inspectors were responsible for it, State or Davidson County.

The LHA along with its attorneys from Butler and Snow, worked with the Office of the State Architect, Real Estate officers in the Department of General Services, and the Davidson County Register of Deeds to devise an affidavit that clarified the relationship between the LHA and the State of Tennessee. The resulting *Affidavit for Furtherance of Title* was approved by all parties and registered with the Davidson County Register of Deeds in August 2014. A signed copy of the affidavit is attached below along with the supporting documentation that was submitted with the affidavit.

THIS INSTRUMENT PREPARED BY:
Sarah Lodge Tally
Butler, Snow, O'Mara, Stevens & Cannada, PLLC
150 Third Avenue South, Suite 1600
Nashville, TN 37201

**AFFIDAVIT FOR FURTHERANCE OF TITLE**

STATE OF TENNESSEE )
COUNTY OF DAVIDSON )

I, Tony Guzzi, being duly sworn, make oath that these foregoing statements are true and correct to the best of my knowledge, information and belief.

1. That I am the Vice-President of Preservation & Site Operations of The Hermitage, Home of President Andrew Jackson (the "Hermitage") and am familiar with the history of the properties making up the Hermitage.

2. This affidavit is being given for the purpose of clarifying the beneficial ownership of the property known as the Hermitage Farm further described below.

3. The Hermitage currently consists of approximately 656.66 acres according to the tax maps of the Metropolitan Government of Nashville and Davidson County, Tennessee. Of the 656.66 acres, approximately 500 acres (the "Hermitage Farm") was purchased by the State of Tennessee in March 1856 evidenced by the deed in Book 3, page 33, Register's Office for Davidson County, Tennessee. Since that time the State of Tennessee has sold three small parcels totaling approximately 10.19 acres and divided the Hermitage Farm into ten (10) parcels due to the construction of roadways and reserving portions of the land as public rights-of-way. The original 500 acres has been reduced to the 475.33 acres shown in blue on the tax map attached hereto as Exhibit "A" and further described as follows:

| **Tax Map 75** | **Acres** |
|---|---|
| Parcel 001.00 | 116.89 |
| Parcel 003.00 | 9.01 |
| Parcel 004.00 | 48.05 |
| Parcel 025.00 | 120.90 |
| Parcel 026.00 | 142.69 |
| Parcel 058.00 | 26.03 |
| Parcel 129.00 | 1.89 |
| Parcel 130.00 | 2.59 |
| Parcel 131.00 | 4.18 |
| Parcel 132.00 | 3.07 |

4. The remaining 181.34 acres of the 656.66 acres were purchased by The Ladies Hermitage Association (the "LHA") from various parties and are shown in pink on the tax map attached hereto as Exhibit "A" and further described as follows:

| **Tax Map 75** | **Acres** |
|---|---|
| Parcel 059.01 | 26.33 |
| Parcel 081.00 | 3.5 |
| Parcel 091.00 | 25.77 |
| | |
| **Tax Map 64** | |
| Parcel 023.01 | 125.74 |

5. The Ladies Hermitage Association is a Tennessee not-for-profit corporation doing business as The Hermitage, Home of President Andrew Jackson.

6. Subsequent to the Hermitage Farm being conveyed to the State of Tennessee in 1856, the property was conveyed in trust to the Board of Trustees for the Ladies' Hermitage Association. 1889 Pub. Acts. Chs 180, 239, and T.C.A. §4-13-101 to 108. The creation of the trust gave the State of Tennessee the right to revoke the trust at will. Tennessee Public Acts 1990 Chapter 893, codified in T.C.A. §4-13-101 *et seq.* established that the Hermitage Farm and "Tulip Grove" was conveyed in trust to the Ladies Hermitage Association. According to Attorney General Opinion No. 91-16 dated February 15, 1991, attached hereto as Exhibit "B", the Legislature expressly and unequivocally provided that the Hermitage Farm and the Tulip Grove properties,

> .... shall not be deemed to be state property or property owned by the State and, except as otherwise provided in this part, shall not be subject to controls applicable to state property until the effective date of any revocation of this trust conveyance.

7. In order to comply with the 1990 statutes, the LHA conveyed the four parcels making up the 181.34 acres it had purchased from various parties to the Ladies Hermitage Association, its successors and assigns, in trust for the people of the State of Tennessee, by Quitclaim Deed recorded December 17, 1990 of record in Book 8258, page 802, Register's Office for Davidson County, Tennessee. The records of the Davidson County Assessor of Property and Metropolitan Planning Department (the "Records") were changed to reflect this conveyance and currently show the owners of the four parcels as "The Ladies Hermitage Association, Trustees."

8. The Records incorrectly show the "owner" of the 475.33 acres making up the Hermitage Farm, more particularly described in paragraph 3., as the State of Tennessee. The Records for the ten parcels making up the Hermitage Farm should be corrected to show the owner as "The Ladies Hermitage Association, as Trustees" and the owner's address changed to 4580 Rachel's Lane, Hermitage, TN 37076.

Dated this 26th day of July, 2013.

THE HERMITAGE, HOME OF PRESIDENT ANDREW JACKSON

BY: Tony Guzzi
Tony Guzzi, Vice President

STATE OF TENNESSEE )
COUNTY OF DAVIDSON )

Before me Debbie Bourne, a Notary Public in and for said County and State, duly commissioned and qualified, personally appeared TONY GUZZI, with whom I am personally acquainted, or proved to me on the basis of satisfactory evidence, and who, upon oath, acknowledged himself to be a Vice-President of The Hermitage, Home of President Andrew Jackson, a non-profit corporation, the within named bargainor, and that he as such Vice-President, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by himself as such Vice-President.

WITNESS my hand and seal at office this 26 day of July, 2013.

DEBBIE BOURNE
STATE OF TENNESSEE NOTARY PUBLIC
DAVIDSON COUNTY

Debbie Bourne
Notary Public
My Commission Expires: 3/3/15

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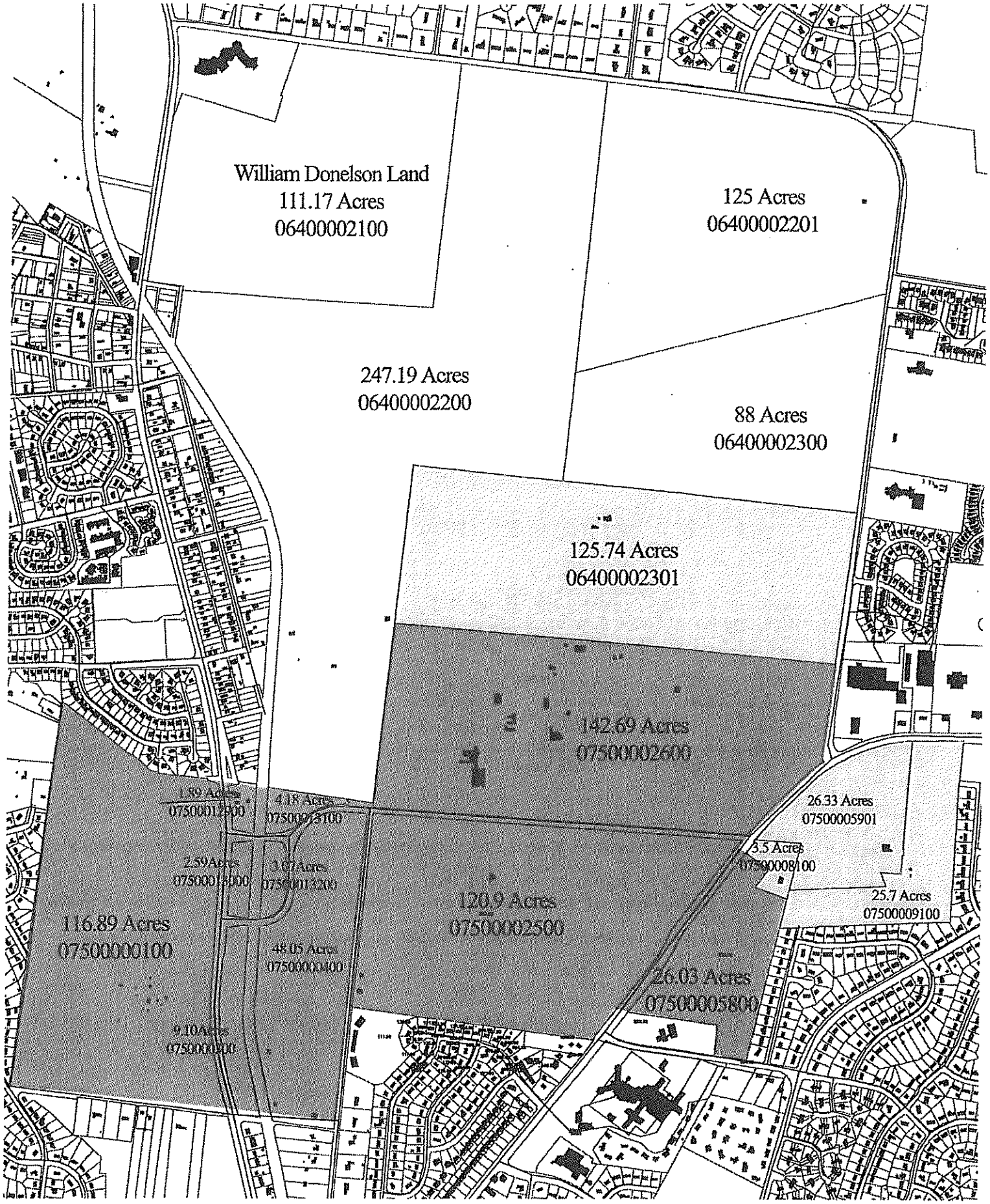
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125 Acres
06400002201
247.19 Acres
06400002200
88 Acres
06400002300
125.74 Acres
06400002301
142.69 Acres
07500002600
1.89 Acres
07500012900
4.18 Acres
07500013100
2.59Acres
07500018000
3.07Acres
07500013200
116.89 Acres
07500000100
48.05 Acres
07500000400
9.10Acres
07500000300
120.9 Acres
07500002500
26.33 Acres
07500005901
3.5 Acres
07500008100
25.7 Acres
07500009100
26.03 Acres
07500005800

**EXHIBIT A**

STATE OF TENNESSEE

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MICHAEL G. PEARIGEN
JENNIFER H. SMALL
JERRY L. SMITH
GORDON W. SMITH
JIMMY D. CREECY
CHIEF SPECIAL COUNSEL


February 15, 1991

Dr. Robert E. Corlew, Chairman
Tennessee Historical Commission
701 Broadway
Department of Conservation
Nashville, Tennessee 37243-0442

Dear Dr. Corlew:

In response to your request, attached is opinion number 91-16. If you have further questions or comments, please contact this office.

Sincerely,

Charles W. Burson

CHARLES W. BURSON
Attorney General and Reporter

EXHIBIT B

STATE OF TENNESSEE
OFFICE OF THE
ATTORNEY GENERAL
450 JAMES ROBERTSON PARKWAY
NASHVILLE, TENNESSEE 37219

February 15, 1991

OPINION NO. 91-16

Tennessee Historical Commission's Authority Over Certain Historical Properties

## QUESTIONS

Whether the Tennessee Historical Commission has statutory authority to manage and control the following historical properties: (a) Belle Meade Mansion; (b) Crag Font; (c) the Hermitage; and (d) the Sam Davis Home.

## OPINIONS

The Tennessee Historical Commission does have statutory authority to manage and control the Crag Font historical property, but has contracted with the Sumner County Chapter of the Association for the Preservation of Tennessee Antiquities to manage the property. The Tennessee Historical Commission does not have statutory authority to manage or control the Belle Meade Mansion, the Hermitage, or the Sam Davis Home. These historical properties are not owned by the State at present.

## ANALYSIS

Your inquiry concerns whether the Commission has statutory authority to manage and control several historical properties including the Belle Meade Mansion, Crag Font, the Hermitage, and the Sam Davis Home. The Commission was originally created in 1921. 1921 Pub. Acts, Ch. 74. At that time, the Commission had authority to ". . . see to the proper marking and preservation of battlefields, houses and other places celebrated in the history of the State." T.C.A. § 4-1106, repealed. In 1969, the Legislature amended the statutes creating the Commission and

granted it additional duties and authority. 1969 Pub. Acts, Ch. 98. The current statutory provisions outlining the authority of the Commission are consistent with the 1969 legislation.

T.C.A. § 4-11-108(a)(1) provides that:

> [t]he historical properties owned by the state shall be placed under the authority of the commission which may in its discretion make a contract with any county, municipality, or agency within the state or with any nonprofit corporation or organization or with any private individual, partnership, corporation or association for the administration, development, or operation of such property, which contract shall be subject to periodic review.

T.C.A. § 4-11-108(a)(3) provides that:

> the commission shall determine criteria for the approval of such properties for state aid; and shall make reasonable rules for the regulation of use by the public of such historical properties under its charge, including the establishment of admission fees to be charged to the public.

The Commission is authorized to "administer funds made available from public sources for historical purposes . . .", T.C.A. § 4-11-103(b), and is required to exercise administrative supervision over all funds so appropriated. In fact, no allotment of funds can be made without the review of the commission. T.C.A. § 4-11-103(c).

Whether the specific Tennessee historic properties in question are subject to the authority and control of the Commission depends primarily upon whether the property in question is owned by the State of Tennessee, or by some other entity. The Belle Meade Mansion was initially purchased by the State of Tennessee in 1953. The purchase of the property was authorized by the Legislature that same year. 1953 Pub. Acts, Ch. 46. In accordance with the same statutory provision, the property was then deeded in trust to the Association for the Preservation of Tennessee Antiquities. The deed was recorded at Deed Book 4367, Page 876 of the Register's Office for Davidson County, Tennessee.

Former President Andrew Jackson's home, the Hermitage, was apparently acquired by the State of Tennessee in 1856. 1856

Pub. Acts, Ch. 96. In 1889, the property was conveyed in trust to the Board of Trustees for the Ladies' Hermitage Association. 1889 Pub. Acts, Chs. 180, 239. This statutory scheme was codified at T.C.A. §§ 4-13-101 to -108. The creation of the trust for the Hermitage gave the State of Tennessee the right to revoke the trust at will. T.C.A. § 4-13-108. In addition, the State of Tennessee was specifically granted a possibility of reverter should the Ladies Hermitage Association fail to comply with the purposes of the trust's creation. See T.C.A. §§ 4-13-102 and -107 (1985).

In 1990, the "Hermitage farm" was expressly conveyed in trust to the Ladies' Hermitage Association. 1990 Pub. Acts, Ch. 893, § 12, codified as T.C.A. § 4-13-101 (Supp. 1990). The Legislature expressly and unequivocally provided that the "Hermitage farm" and the "Tulip Grove" properties,

> . . . shall not be deemed to be state property or property owned by the State and, except as otherwise provided in this part, shall not be subject to controls applicable to state property until the effective date of any revocation of this trust conveyance.

T.C.A. § 4-13-109 (Supp. 1990). There is no provision in the 1990 statutes that even remotely suggests that the "Hermitage farm" or the "Tulip Grove" properties are subject to the authority of the Commission. To the contrary, the statutory provisions now provide that the Ladies' Hermitage Association is required to furnish certain enumerated reports only to the Commissioner of Finance and Administration, the Comptroller of the Treasury, the State Building Commission and the State architect. See T.C.A. § 4-13-104 (Supp. 1990).

The Sam Davis Home was purchased by the Sam Davis Commission in the name of the State of Tennessee from Mr. O. M. Davis, Jr., in 1927. In 1932, the Legislature created the Sam Davis Memorial Association and conveyed title to the Association in trust. 1931 Pub. Acts, Ch. 92. The statutory scheme was later codified at T.C.A. §§ 4-13-301 to -307. The Legislature specifically provided that the State could revoke the trust at will. T.C.A. § 4-13-307. This Office has previously advised the Commission, by letter of October 8, 1976, that it did not have legal responsibility for the management of the Sam Davis Home. A copy of our letter is attached to this Opinion.

In 1957, the Legislature authorized the Commission to purchase the Crag Font property for a sum not to exceed $30,000.00. 1957 Pub. Act., Ch. 268, § 2. This statute was later codified as T.C.A. §§ 4-13-401 to -406. The Legislature authorized the Commission to convey the property in trust to the

Association for the Preservation of Tennessee Antiquities. T.C.A. § 4-13-404. The Legislature also provided that actual custody and control of the property should belong to the Sumner County Chapter of the APTA. Id. It is our understanding that the Commission has elected not to convey the Crag Font property, but rather, to contract with the Sumner County Chapter of the APTA to manage the property in question. Apparently, title to the Crag Font property is still held by the Commission.

Consistent with our letter of October 8, 1976, the Belle Meade Mansion, the Hermitage, and the Sam Davis Home are not "historical properties owned by the state" within the meaning of T.C.A. § 4-11-108. As such, these properties are not placed under the authority of the Tennessee Historical Commission and are not subject to the control or management of the Commission. Thus, it is the opinion of this Office that the Tennessee Historical Commission has no legal authority to control or manage these historical properties. By contrast, the Crag Font property is apparently owned by the State of Tennessee within the meaning of T.C.A. § 4-11-108. As such, it is subject to the control and management of the Tennessee Historical Commission; however, the management of this property has been contracted by the Commission to the Sumner County Chapter of the Association for the Preservation of Tennessee Antiquities pursuant to T.C.A. § 4-11-108(a). Thus, it is also the opinion of this Office that the Tennessee Historical Commission does presently have legal responsibility and authority for the management and control of the Crag Font property.

If you have any further questions concerning this matter, please let us know.

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