

# *Executive Summary of Work to Date*

## **Before The John Greenwalt Lee Company Arrived at Menokin**

### **Foundation Establishment**

The Foundation was established in 1995 with the help of a core group of individuals from the area, including Martin King, Tayloe Murphy, and Calder Loth who had enjoyed Menokin as a place to explore with friends in their teens. Calder had been promoting the preservation of the house since the 1980s, writing in the APVA newsletter in 1986 *“Menokin holds all the ingredients necessary to support a long-term study of Virginia’s plantation civilization.”*

In October 1995 a symposium was held in conjunction with Mary Washington’s Center for Historic Preservation where everyone involved in preservation was invited to see the previously off-limits house and discuss how to proceed with its preservation. At the event Carter Hudgins envisioned Menokin as the *“centerpiece of a training program in architectural conservation that would be the best in the nation.”*

Initially beginning with the blessing of the entire preservation academic and professional community, the Foundation’s founder, Martin King, had a broad vision of linking the study of Menokin with other historic sites in the region. Speaking of the immediate links between Menokin, Mount Airy, Stratford and Washington DC’s Octagon, King said they were a *“conglomerate...connected by blood, by friendship, by marriage, architecturally, and by the men who worked on all of them. To me that is a very precious concept.... Taken together, I see them as a world historic site, not only because they are related in these ways, but also for the ideas that came out of this bunch of houses.”* When the house was featured in the National Trust’s “Historic Preservation” magazine in early 1996 in an article entitled Rubble with a Cause, King said, *“I’d like to look back fifty years from now and say that most of the preservationists alive in Virginia were at least partially trained at Menokin.”*

The Foundation began with \$100,000 from the Commonwealth of Virginia and has received about \$50,000/year since. U.S. Fish and Wildlife supported the concept of a Menokin Foundation even before the property was ceded by the Omohundro family. The Foundation has since given land preservation easements in 2005 (\$1.6M for 325 acres including the house) and 2008 (\$160,000 for the remaining 172 acres). As part of the Rappahannock River Wildlife Refuge, Menokin has received funding for their visitor’s guides, interpretative walking tour, and signage throughout the site. Also through Fish and Wildlife, Menokin received a Preserve America Grant in 2008 to develop an interdisciplinary History and Environmental Science curriculum for 5-7 graders and a summer teachers institute. APVA has paid for interior signage and exhibits.

The relationship with statewide colleges continued until a series of events in 2003.

- During excavation for the foundations of the Martin King Conservation and Visitors Center in 2003, Mount Vernon Archaeologist Dennis Pogue quit work on the site, protesting lack of prior archaeology. It was found that the original site for the new building intersected an early slave quarters. Pogue’s attack extended to the National Park Service, Virginia Department of Historic Resources, and the James River Institute for Archaeology.

- Camille Wells and others left Menokin in 2003 when portions of the West and South walls of the SW quadrant were dismantled after engineer's deemed it too unsafe to remain. (See conflicting engineering assessments from that period below)

Menokin's interior woodwork was removed from the house in 1965 by the Omohundro family with the help of local farmers and stored in a nearby vacant house for 20 years before being given to the Association for Preservation of Virginia Antiquities (APVA) at which time they were moved to Bacon's Castle. Three years later, the APVA loaned the woodwork from Menokin's dining room to the Virginia Historical Society in Richmond where it remains on display. In 2004, with completion of the King Center, APVA oversaw the return of the remainder of Menokin's woodwork to the Foundation, under the guidance of Matt Webster.

### Infrastructure

- October 2000, the \$200,000 over-structure/canopy/carport was installed to protect the house
- October 2002, Menokin received a \$366,000 Save America's Trust grant
- July 2003, construction begins on the Martin King Conservation Center  
(Prior to mid-2004 the Foundation was run part-time from a trailer by the house)
- September 2004, interior woodwork returns from Bacon's Castle
- February 28, 2004, Martin King dies unexpectedly after a fall at home
- April 2006, construction on the Conservation Storage Barn begins.

### Consultants and Contractors (that we know of and have some documentation from)

**December 5, 2002:** A follow-up site visit letter from Oak Grove Restoration Company warns:

- wooden elements under the canopy are continuing to get wet as the over-structure does not keep rain from blowing in,
- some new cracks are opening up rapidly on the facade,
- piles of plaster laying on wood floors are keeping the wood wet, and
- pallets of stone left sitting outside for years are deteriorating and losing their identifying markers.

Oak Grove had installed the temporary walkways at Menokin, although there was much related anger expressed by Menokin staff at the time of our arrival due to stone relocation from around the site to support temporary wood bracing at the East elevation.

**December 20, 2002:** Susan Buck delivered Cross-Section Microscopy Report of Paint Samples. This is excerpted online at [www.menokin.org/pdf/susanbuckconclusion.pdf](http://www.menokin.org/pdf/susanbuckconclusion.pdf)

**February 14, 2003:** Masonry Investigation of Historic Structure by MacDonald Masonry Consultants from Falls Church, VA urges clearance of debris from the basement to becoming a high priority and recommends bracing of the vertical split in the first floor hallway wall.

**March 4, 2003:** Conservation Assessment of Architectural Wood at Menokin by Carey Howlett. This is a general statement of the need to provide a dedicated storage area for the wooden elements and to carry out borate treatments to extracted and ground-contact

wood, and to attempt to relocate birds roosting at the site. He generally refers to the canopy providing *some* protection from the elements.

**March 25, 2003:** Quinn-Evans Architects letter with bracing plan by Engineer Dennis McMullan titled *Stabilization of the Menokin Structure*. In Architect Baird Smith's letter he states that he believes Quinn-Evans should debrief any new consultants because "we are afraid that a good deal of information that we developed could be lost if we don't have a good working session to brief you and others on our findings."

- Baird Smith notes past bracing was meant as a temporary support to the unstable walls and a means for physical access for further analysis, but "These braces were installed using instincts and experience, not empirical structural calculations. This was a collaborative effort of architect, structural engineer, contractor and Owner."
- He warns that only "authorized" persons should be allowed access and that there most certainly should not be students taking part in extraction. He continues "You happened to mention today your goal to begin the selective retrieval of artifacts from inside the ruins. We think this is quite premature until permanent structural bracing is placed, or the walls are further dismantled, so that the risks of collapse are reduced."
- Regarding the canopy that had designed, he states that especially due to the amount of wind-driven snow that covered portions of the ruin for an extended period the preceding winter, "we may need to consider installation of the side walls to the protective structure. The structure was designed so that walls could be added. Two options were considered: 1) corrugated steel sheets, or 2) hanging translucent plastic sheeting...It may be that adding the walls are the only way for the ruins to really dry out." (*This latter is in contradiction to our understanding of Baird's statement to Executive Director Sarah Pope when we began discussing sides for the canopy which were that the overstructure was never designed to carry sides and that Quinn-Evans would fight Menokin's attempts to enclose the structure.*)
- He refers to the crack gauges being two years old and showing no movement.
- He reattaches Dennis McMullan's 2001 plans for more permanent bracing, stating "We are not sure why installation of this bracing was not pursued."

The enclosed McMullan bracing designs are of two varieties:

- ◆ Two large new concrete footings placed next to the rear stair and out from the SW corner attached by struts to a steel frame bracketing the two walls of the SW corner.
- ◆ If footers are not desired, then a steel triangle was to be created inside the corner with steel struts and cables wrapping the corner to the West chimney.
- ◆ The SW corner plan also calls for the removal of a portion of the top of these SW walls. (*Only this latter item was eventually completed, but led to several board members quitting.*)

**May 15, 2003:** A Menokin RFP is issued for a not-to-exceed \$250,000 of SAT money for a pilot project to stabilize Menokin and document spaces and architectural elements, as well as extract fallen elements and conserve them in an appropriate environment on site. Rectified photography of the site was required. (*John Greenwalt Lee Company bid on this project but was not chosen. Our bid discussed the use of XYZ locating for each extracted element. Extraction that proceeded us, however, was done more randomly, complicating integration of that information into our database.*)

**Winter 2003** “Menokin Afield” covers startup of the John Milner Associates (JMA)-led extraction team with John Mott leading, Alfonso Narvaez leading the sitework with Oak Grove Restoration and Carey Howlett. (Our firm has not received any copies of reports from the Milner period, but did receive the Sillman Engineering report, a Quantapoint file, and the JMA database to extract what information we could from the elements they removed using a string line stretched over the SE quadrant.) Portions of this work were filmed and are shown on the video presented to all Menokin visitors.

- ◆ The article confirms digital laser scanning and base drawings of the ruin were performed by Quantapoint and that Robert Sillman is the consulting engineer. The article states that bracing and stabilization measures followed the engineer’s assessment before extraction began. (see below)
- ◆ Also quoted in the article is Mark Wenger, the architectural historian consulting from Mesick, Cohen, Wilson and Baker Architects, “In 24 years of looking at Chesapeake buildings, I’ve not encountered another roof structure like this one. The base of the roof – the second floor ceiling – was framed as two independent systems – one at each corner to support the hip, and another in the center to carry the roof posts. It is important to recreate this roof on paper before some further collapse deprives us of the information required to do it.”

**Winter 2003** also began the development of a three-dimensional computer model of the house and a portion of the interior by Earl Marks, Director of Computer Technologies at the University of Virginia School of Architecture, in conjunction with Craven & Gibson Architects, with help from a \$15,000 grant from the Alexandria Association. The 3-D model was then animated by the videography staff at Rappahannock Community College and integrated into the larger visitors’ video that also shows some of the JMA-led extraction underway. The 3-D work included some modeling of the Menokin topography. (Images from this 3D modeling are also included in the Photo Library on the menokin.org website).

**February 17, 2004:** Robert Silman Associates’ *Structural Stabilization and Assessment*, is a 16-page report prepared for John Milner Associates.

- ◆ The report notes these recommendations are based on a visit six months earlier on September 26, 2003 with the benefit of a boom lift and states the goal of the recommendations is to provide for stabilization and safety during the removal of debris and historic artifacts. Annotations are overlaid on laser-scanned images.
- ◆ Under “Structural Guidelines for Debris and Fabric Removal,” three items are to be shored in the SE quadrant: providing some timber shoring for the basement entrance to the SE quadrant from the interior; sandwiching of the cracked central hall wall between diagonal wood braces to the existing wood platform; and, if work were to stray into the NE quadrant, the east chimney should be re-analyzed.
- ◆ SouthWest Quadrant: “There are significant amounts of debris on the interior face of these walls, which are likely exerting outward forces on the walls. The west wall exhibits lateral displacement at its base, likely due to the debris pressures.” Regarding the space between the south wall of the wine cellar and the south exterior wall, the report states “This area is likely filled with debris and is a potential area where water and rotting material will collect and cause accelerated deterioration to the surrounding structure.” As for the barrel vault, “...closer evaluation will be required once the debris is removed and access to the wine cellar is gained.”

- ◆ SW Quad “Structural Guidelines for Debris and Fabric Removal”
  - For both the South and West walls, four sets of 6x6 post frames: 2x8/2x4 timber T-sections laid horizontally against the wall to be supported by a 6x6 pressed against them and set in a concrete footer and then all of this braced by another 6x6 angling from top of the wall down to another 12” concrete footer poured to 3’ deep. T-section over-wall framing to be secured to the observation platform.
  - Shoring within windows to support existing lintels on South wall.
  - Short 6x6 posts at West chimney to bear on sill plates with lateral tie-back.
  - Two new 4x4 posts at SW and NW corners of West chimney to support perimeter bracing and diagonal struts tying to second floor platform.
- ◆ NW Quad: “Some stones of the existing north and west foundation walls are apparently being partially retained by the mass of debris.”
  - Remove debris in concert with removal of loose and unstable stones of the north foundation wall.
  - Introduce West chimney bracing as described under SW Quad.
- ◆ NE Quad: “The exterior masonry of the northeast corner appears relatively stable, with isolated areas of apparent instability at the disassembled wall edges and at the basement and second floor window openings.”
  - Provide lateral bracing between existing posts which support NE hip beam and main rafter girder along N face of E chimney.
  - 2 new 4x4 posts to support 2 new 2x6 roof beams supporting rafter West of hip beam. New posts bearing on existing wood shoring beams. Provide diagonal bracing to stabilize tops of new posts.
  - Secure suspended studs at W wall. Provide additional hanging straps at each stud and provide support at base of studs with new spanning “sill-type” member or tie to existing member.
  - Shore existing lintels within basement window and second floor window on N.
  - Provide 4x4 post shores for corbelling stones at N side of E entrance. Bear one post on existing masonry wall and one on wood platform. Tie posts together with 2x4s and galvanized metal straps as x-bracing.
  - Introduce posts and diagonal bracing of chimney as in SE quad. *(JGL Note: this is not otherwise specified in writing, but is shown aerially as framing around chimneys with stainless tension rods)*
  - New x-bracing along the East side of central platform linking top and bottom levels between existing posts.

**June 2005:** “Menokin Interior Woodwork Transfer and Chimneypiece Reconstruction” by Matt Webster. (Copies not received by JGLCo.)

**2005-6:** Tom Snyder, Williamsburg Art Conservation Inc “Treatment Report: Best Chimneypiece” and Treatment Report: Front Door Frame” from 2006. (Copies not transferred to JGLCo.)

**January 2006:** Coates & Hodges' Geospatial Solutions developed a GIS database. Geometrics subcontracted to do a Lidar 3-D laser scan at the same time. (A copy of this scan was first received last week.)

## **The John Greenwalt Lee Company at Menokin**

John was part of the original group of preservation professionals brought in for the October 1995 Mary Washington-led retreat. From that time to today, he has been saying that Menokin provides opportunities for taking materials conservation to new levels. Beginning in 2003, the John Greenwalt Lee Company was sent RFPs. The 2003 extraction submission was significantly lower priced than the team chosen, but had already proposed 3D mapping of all fallen elements during extraction by recording the XYZ coordinates of the artifacts through multiple readings along the timbers.

Extraction stopped prematurely in the SE quadrant. As it was relayed to us by the Executive Director at the time, the reason was that the extraction team determined that the area was too unstable to continue excavating and all of the valuable artifacts (i.e. wooden artifacts, not stone) had already been removed anyway. There was considerable anger over this move and how the contract was rectified has never been clear to us. We did not receive copies of JMA reports and although their proprietary database was dropped by the Foundation, some of the information was able to be extracted for incorporation into our new database in 2005.

Again in January 2004, we wrote a letter explaining why we thought simple structural realignments to the masonry were possible and showing examples from other projects. As of January 2005, all work, including display of the best chimneypiece eluded us.

### Fall 2005 - John Greenwalt Lee Company begins work at site:

By Summer 2005, Menokin began coming to us curious if we thought the building was too dangerous for extraction to proceed and, in June, John Lee was asked to address the Trustees. Also in attendance were the final three candidates to replace Doris Lackey as Interim Executive Director. From this group Sarah Pope was chosen; starting her tenure on August 5.

By July, the Trustees had agreed to a not-to-exceed \$10,000 assessment and plan for how to proceed with stabilization and extraction. The resulting report "Preliminary Masonry Assessment of the Menokin Ruin with Proposed Approaches to Stabilization, Realignment of Displaced Masonry, and Excavation and Cataloguing of Debris" was completed on July 29. The report's cover includes a 1925 photograph of the walls of the SW quadrant with many of the same cracks and bulges as today.

#### Priorities for "Now" repair were:

- Begin realigning the South wall of the SW quadrant back over its center of gravity while removing the lateral loads from debris on the interior,
- Pulling back together the two halves of the interior partition wall off the temporary hall platform, after removing timbers that caused the breakage, and
- Rotating the first floor window jamb on the East wall of the NE quadrant back into alignment by installing temporary supports, removing debris, and grouting.

We also recommended continuing with the SE quadrant extraction.

Priority 2 or “Next 6 months” items:

- Grouting at the West chimney
- Installing supports for NE quadrant plaster
- Realigning some of the sagging wooden elements, and
- Drawing a framing plan.

Priority 3 or “Next Year” was:

- Realignment of the West wall of the SW quadrant.

Our assessment of JMAs database and extraction collection were limited to what could be derived from “breaking into” the database as there appeared to be no written descriptions of the extraction or field sheets for the various artifacts retrieved. We did our best to integrate their information into a new non-proprietary database in spite of the different recording methods (e.g. lack of XYZ locator information) and need to integrate new categories (e.g. adding stones, architectural function, building system). Additional refinements were made to the database during the two weeks of October 2005 and the three weeks of April-May 2006 extraction.

During those five weeks, the SW quadrant was cleared above the wine cellar and down several feet into the NW quadrant. Due to the size and weight of many of the roofing timbers and the sometimes precarious balancing act of moving within the debris pile, a crane was brought to the site for lifting out larger timbers and pallets of stone. The crane also afforded us a chance to rise up over the chimneys for some aerial photography of the extraction and over the canopy for some broader views of the Menokin site.

During extraction, artifacts are photographed in the pile and given at least two theodolite readings (e.g. uppermost and most buried or lowest portion of a timber) to gain XYZ coordinates for later integration into a 3D view of the house collapse. Once removed, the artifacts are again photographed, dimensions taken, and a sketch made. Wherever possible, Charles Phillips also records the function of the artifact and building system it is related to (i.e. a girder from the roof system). As soon as a tractor trailer can be filled, it heads off for fumigation before transferring to the Conservation Storage Barn.

In spite of input from us on the need to have heating and cooling options for the storage building, as well as shelving, it was constructed without these elements. Due to numerous delays, the building was not completed until spring 2006 extraction was underway. Permanent shelves were not completed before the floor and temporary 3-level racks we built were full.

In mid-November 2005, the Foundation suddenly had funds for plaster and stucco stabilization, but our options for repair were limited given the cold temperatures, however, we bought some time for the stucco on the front facade near the door and the plaster along the central platform by sealing the edges with lime grout to shed water.

## **2006**

### Spring 2006

At the Board meeting in January, we first presented the “Use It or Lose It” concept. In this document, we made the case for not just relegating the fallen artifacts to storage in drawers and the house to continuing (and accelerating) ruin status. This is the first time the “Glass House” concept was presented, giving examples of the Annapolis Courthouse glass roof connector and the Flag House in Baltimore as examples. Some Board members were very receptive to the idea of glass, a few initially were not.

Also at this meeting, Menokin was presented with the Building Research Institute concept as an approach to training preservation professionals in concert with the on-going preservation of the house and its parts, while also including course ideas for the general public. At the same time we promoted collaboration with other historic sites to increase visibility, presenting a Cultural Tourism fact sheet.

At the urging of board members, options for enclosing the sides of the carport with canvas were considered. An engineer was approached with designs for the structure who responded that this would be very difficult and quite expensive to do given the length of the legs in conjunction with the height of the structure with the extension of the above-ground concrete bases. His conclusion was that covering the sides would create sail areas that the current structural design was woefully unprepared to handle.

Throughout the winter and spring, we regularly documented conditions and collected photographs from around the house.

In February we went on record that the carport was not providing adequate protection for the house or its fallen wooden artifacts. Artifacts extracted in 2005 remained in tents requiring snow removal through the winter. We provided recommendations to Menokin for approaches to several funding sources, including Getty Conservation Grants.

March 5, 2006, Charles Phillips produces the first "Glass House" model at the John Greenwalt Lee Company's initiative and expense (six months before finding Tim Macfarlane).

March 7, 2006 in preparation for the March 9 board meeting, we produce the "Visible Building" document to further explain the pros of our "Glass House" vision. Also forwarded to Board members is a copy of the now ten-year-old Preservation Magazine article "Rubble with a Cause" wherein the founding members of the newly-organized Menokin Foundation articulate the idea of Menokin being 1) a training ground for all future Virginia preservationists, and 2) an anchor for this portion of the Northern Neck to be a World Heritage area. By the end of the meeting two days later, the Board is invigorated by the glass house concept, having come to recognize the building "as is" has become a non-starter both from a preservation standpoint and for inviting visitors.

Also at the March 9 Board meeting we express our concern that discussions of a workplan for 2006 still do not include documentation funding beyond the initial field retrieval forms for items extracted in the fall. Trustee Ed Chappell concurs this needs to be a priority for the Ruin Committee to address at their March 22 meeting which we are asked to attend. For that meeting, we produce the "Conservation As a Learning Process" document which explains documentation must be a priority from start to end, not just something one does for the sake of completing a checklist, but as a means to understand the artifacts.

When we returned for the March 22 meeting, just two weeks after we had been on site for the March 9 Trustees meeting, we found the cornerstone of the NE quadrant had shattered and the entire corner was rapidly moving outward. The problem was discussed at the March 22 meeting. By March 26, we had proposed a means of addressing this area in the immediately upcoming workplan. Also on March 26, we provided photographs and the description of simple, inexpensive, but very sturdy shelves that could be built on site by any carpenter and easily installed in the new storage facility nearing completion.

March 31, a \$63,800 workplan is approved that focuses more on stabilization of the NE quadrant and masonry foundations than extraction of wood, but still lacks funding for adequate documentation. The Board has also by this time agreed to pay \$3,100 for the first "Glass House" model which had been produced at our expense. (Time for attending Board and committee meetings and the documents produced for the Foundation has always been at our expense.)



April 3rd, we received the first draft of a 2006 contract. We began work seven days later. Reports are produced each of the three weeks of stabilization and extraction. The final week's report included stabilization recommendations for additional NE and SW quadrant repairs and stabilization measures overlaid on photographs. (Some of these stabilization items remain unfunded to date.) At the end of this extraction period, the storage barn was complete, but there were still no shelves and thus not enough space for storage of artifacts already extracted. The Trustees received a slideshow of the stabilization and extraction work at their Board meeting.

May 3rd, the John Greenwalt Lee Company receives a contract for extraction to continue May 14-26. Our "Proposed Next Stages" document from April which includes the case for temporary supports to at least save remaining first floor plaster in the NE quadrant from falling is included in the contract.

Also on May 3rd, all of the Stratford Hall Regents and newly-seated Executive Director Paul Reber visit. They heartily support the glass house idea and the concept of using the two houses as a core for a World Heritage area in the Northern Neck ... "Birthplace of Revolution." (After having read Martin King's words in the Rubble With A Cause article.)

### Summer 2006

May 20, APVA has a joint event with Menokin that highlights the stabilization work to date, and includes a focus on mortar analysis and replica mortar making, including an on-site oystershell firing, along with exhibition of timber core replacements. In conjunction with the event, the APVA's Program and Public Relations Manager Terry Graham and Advisor Richard Byrne meet with representatives from Menokin and the John Greenwalt Lee team to discuss further developing the educational opportunities at Menokin. Terry Graham follows up with a very nice email three days later appreciating the quality of our workshop, and making the case for the viability of a conservation and trades learning center that is rigorous (not for a remedial student body) and drawing on their findings from recent training program reviews they have been making for two other institutions.

By June 15, the workload is increasing as we are asked to produce a new workplan that includes Charles sorting and cataloguing the interior woodwork that lays in piles over every inch of the visitors center back room and asks for guidance in how to integrate GIS for the site with the CAD for the house (along with budgets) in preparation for a Board meeting in two weeks.

The June 29 Board meeting includes review of a proposed multi-year workplan, including \$106,000 for the NE quadrant, but we are still unprepared to put budgets on several items. By July 7, we have completed pricing for a \$481,900 workplan for 2007.

By July 9, we had presented a series of Field School plans to incorporate student involvement in documentation. Throughout July there are a flurry of emails regarding database revisions, including incorporation of 3D, correlation with GIS, and means of incorporating student documentarians, along with information about recent Getty funding for interns. We also highlighted field school programs at other historic sites. By July 19, Executive Director Sarah Pope is preparing a grant to fund our time to prepare and work with field school students, although Menokin is unwilling to advertise for a Field School until they receive the grant.

August 10, we provide the Executive Director with language for a Gwalthney grant to fund the "Glass House Feasibility Study." By August 17, we submitted a \$32,000 proposal for time to seek information about glass construction, locate the right glass and environmental conditioning engineers, and determine the range of options for humidity, temperature and solar glare control.

## Fall 2006

By September, Executive Director Sarah Pope has agreed to make a pitch to PBS' *History Detectives* to promote work at Menokin. The field school grant was unsuccessful, so documentation and talk of field schools is further deferred. The ruin committee has fully supported the "Glass House" concept and authorized us to apprise the full board on Sept 28 of a 2007 workplan that includes timber conservation and glass research toward that end.

Oct 7, John Greenwalt Lee Company team members meet Tim Macfarlane. Although there is no funding to conduct research toward the glass house, we have been working on it in our own time and all roads led to Tim. We arranged to meet him at Corning Museum's 45<sup>th</sup> Annual Seminar on Glass where he was the keynote speaker. Our breakfast meeting turned into a four hour interview. By the time of his talk, he dedicates the last five minutes to informing the audience of several hundred that Menokin is a project to keep their eyes on as he shows off our glass model.

October 13, GIS integration is underway by GeoMetrics and Lidar 3D scanning of the house is included. At the same time, we learn Menokin did not raise expected funds needed to continue with fall extraction so it is cancelled. Charles completes the second draft of the theoretical framing plan for Menokin the following week.

October 18, Menokin has received Roller-Bottimore funds to assist with some plaster stabilization, weatherization at NE window openings, supporting the bottom chord of a NE quad truss at the second floor girder near the temporary walk platforms, and removing a rapidly-failing girder. The team races to create a few three-day blocks of time to visit Menokin before the end of the year to address these items.

November 28, we receive a draft contract for \$7,320 and begin work two days later. Also during this time, John Lee is querying other conservators on alternate timber conservation methods to epoxy that might be available for strengthening deteriorated wood in a reversible manner. December 15 an additional \$1400 is billed for materials used in the two etched plexiglass front windows. This coincides with Tim Macfarlane's first visit to Menokin.

## **2007**

During the first two weeks of 2007, details of 3-day and two-week field school programs are being ironed out with Rappahannock Community College for listing in their course guide. This includes discussions with other conservators and historians to provide a broad course of study to facilitate the documentation work. Among our recommendations is to begin expanding archaeological study to include ethno-botany (and specifically Justine McKnight). We also recommend applying for the new Institute of Museum and Library Science/NEH Digital Humanities grants to help fund these documentary field schools. Simultaneously, Trustee Andy Williams decides to tackle design of a lab/documentation space in the end of the Visitors Center. Discussions with several conservators ensue to determine the right accouterments for the space from storage and table space to computers, dust collection and lighting.

In preparation for the month-end Board meeting, the Finance Committee authorizes proceeding with glass feasibility studies and begins planning for design through a capital campaign for construction. January 16, Menokin receives miscellaneous woodwork that has been in Rick Vogt's shop since 1998 when he received interior trim from APVA for the dining room re-assembly at the Virginia Historical Society.

January 19-22, Charles sorts all of the interior woodwork by room and reassembles most of the rooms completely within the visitors center.

At the January 25 meeting, the Board nixes the two-week field school concept for 2007, instead planning to get everything in place for 2008. They authorize a three-day workshop geared toward the general public. The Board also discusses their desire to have a lecture series in the fall through RCC's Institute for Lifelong Learning.

In February, stone from previous extractions is moved to the storage facility and shelving is installed up high in the visitors center back room.

In March, Tim starts contacting staff at Corning Museum to tell them more about Menokin. He receives a positive response from the curator. Charles applies to AIA Historic Resources Magazine for the article "A Reliquary for Menokin." Still without funding for research into alternate timber consolidants, John continued testing new materials in conjunction with other conservators whom we funded out of pocket.

### Spring 2007

April 5, Executive Director Sarah Pope informs the Design Team that the Board has agreed to move forward with preliminary glass design even before outside funding is procured, and they will at their upcoming retreat determine the next few years scheduling and funding for the "Glass House" project now dubbed "Preserving the Past with Glass" (from Calder Loth). Sarah also begins trying to locate previous CAD drawings of the site, while Charles is tasked with trying to get Tim up to speed with what is known about original structural framing.

May 30, we receive a draft contract to cover expenses to date for Charles' preparation of drawings and design work with Tim and to fund the glass house feasibility study for the rest of the year (\$30,000), plus \$8,600 for straightening and strengthening the second floor NE girder, and another for \$6,560 to organize, develop materials for and put on three-day workshop the following week. The Foundation's hope is that a preliminary glass report can be delivered at the June 28 Board meeting, which will include making arrangements to get an environmental engineer on board for initial thoughts on the range of possible approaches.

### Summer 2007

At the June 28 Trustees meeting, we presented a preliminary budget of \$9M to achieve the glass envelope. This budget comes with a preliminary glass design report from Dewhurst-Macfarlane and environmental conditions and options report from Atelier 10. This budget did not include pricing for necessary upgrades at Menokin that would be needed such as environmental conditioning, electrical improvements, and additional shelving in the Barn, or the need to assemble and integrate past reports, files, and photographs into a searchable database ... although it was again made clear these must be prioritized.

A series of recommendations for the design and funding of a system for moderating temperature and humidity conditions in the Storage Barn was also made, particularly with an eye to having some of this funded by the Dominion Foundation or a grantor such as the Energy Foundation that (at the time) was providing grants to non-profits for installing renewable energy generation.

At our own expense, a significant amount of time through the summer and fall of 2007 was spent on research, developing budgets, planning, and identifying grantmakers that would be a good fit and suggesting approaches to funders. Through the rest of the summer there are negotiations toward budgets for a schematic design phase in 2008. While the John Greenwalt Lee Company continues to coordinate the activities of the various engineering, archaeology, etc. entities, the firm allows them to contract directly with Menokin to limit Foundation costs.

## Fall 2007

By September 26, Executive Director Sarah Pope has drafted a three-year (2008-2010) budget that included moving forward on archaeology, masonry stabilization, continuing extraction, stabilization of the NE quadrant, engineering for both glass and environmental needs, and the stabilization of plaster and stucco. This plan was designed to have glass construction documents, conservation of the remaining in-situ fabric and the roof structure back in place, and the glass envelope installed by the end of 2010. As Executive Director Sarah Pope referred to it: "Three years to complete Phase I."

In November we made a submission to the Glass Art Society annual conference for a presentation on Menokin. By December 11, John has presented Tim with a "Carbon Fiber R&D Rationale" that was the culmination of months of reading, thinking, sketching and conducting preliminary carbon fiber layups with various cloths and combinations of weaves.

December 12, a Menokin contingent went with the the John Greenwalt Lee Company to look at glass facades in New York City, particularly the "Apple Cube" and TKTS Booth, meeting in the afternoon with Dewhurst-Macfarlane and environmental design firm Atelier 10. A presentation to the American Friends of the Georgian Group was also fit in, which resulted in an offer for a Menokin lecture to the entire Group in June.

## **2008**

The January 24, 2008 Board meeting focused in the morning on developing a Menokin Conservation Laboratory and Educational Program. John Lee asked Richard Wolbers from the Winterthur/University of Delaware Conservation Program to speak to the Trustees. One of the issues that came up in these discussions was the desire of some Trustees to make money from patenting ideas that came out of research and design for the "Glass House." Richard Wolber's response was that this would be only minimally profitable. As he saw it, the greater benefit to the Foundation would come from being recognized for leading-edge conservation and education (including by the big granting organizations that fund long-term projects).

In the afternoon, the Finance Committee discussed their 2008 fundraising approach and the idea of releasing mid-term endowment monies to move forward with design work before the funds were independently raised. At the meeting, Executive Director Sarah Pope also presented a 10-page synthesis of the results of the glass house feasibility study, combined with a history and philosophy statement for the Foundation to use during fundraising (Included: "*Menokin, protected through structural glass, is the anchor of the Foundation's educational center.*")

In preparation for that meeting we were asked over the preceding week to develop two additional courses for 2008, and to answer who we believed the laboratory and education programs would serve; the types of programs that would eventually be provided; the necessary infrastructure changes that would be required to make this possible; and who would teach and administer programs for at least the next three years.

At this meeting Richard Wolbers and the Design Team both noticed that the historic interiors on display in the visitor's center were showing recent signs of distress, particularly in the form of noticeable loss of original paint. Menokin was informed the next day of the need to immediately purchase a humidifier, stop turning the system off overnight, and get a temperature and humidity data logger installed to keep track of what was happening in the building.

January 25, 2008, the day after the Board meeting, Executive Director Sarah Pope confirmed they were making access to interim endowment monies available to ensure the goals they had set for themselves could proceed on schedule while they started their fundraising program in earnest.

*"I'm attaching our 2008 budget, which shows our operating and capital expenses (based on the figures you gave me in the fall) and where we project our income will come from this year. You guys sat-in on the Treasurer's report, so you know we have two short-term endowment investment accounts that are there if we need to use them for expenses this year. We hope to raise all the funds, though, through individual gifts, grants, etc. so the short term funds can be rolled over into our long-term endowment. The ultimate goal is to build up our long-term endowment so that the interest will cover our operating costs."*

The resulting approved 2008 budget for archaeology, extraction, stabilization and engineering was \$556,689.00.

At the February 7 Education Committee meeting, discussions continued on field schools, developing university connections, providing continuing education conservation courses, and incorporation of re-certification workshops for secondary education teachers that integrated ecology with political and social history, as well as the role Cissy Crowther and Rappahannock Community College (RCC) would provide, including continuing education credit options.

The result was that RCC was tasked with helping to find grant funding for these activities, to develop a program with higher education institutions, and to act as the field school manager of sorts until a staff person at Menokin could be hired. Members of the Menokin Board determined to visit Winterthur in March to further discuss internship possibilities and how to begin solidifying a relationship with WUDPAC (Winterthur/University of Delaware Program in Art Conservation), with the recognition that letters of intent outlining the goals of an internship must be submitted early in the year since students were placed before Christmas for internships the following year.

By March 3, a draft contract was sent to the John Greenwalt Lee Company to:

- address the bulge in the NE basement (\$18,640);
- perform plaster and stucco stabilization and some R&D to refine processes (\$32,800);
- conduct timber R&D in conjunction with Dewhurst Macfarlane [including determining load requirements on timbers and current condition, as well as carbon fiber research, toward beginning repair of the the key central structural timbers] (\$72,800), and
- four weeks of additional extraction with DATA Investigations working under the John Greenwalt Lee Company (\$95,200).
- Three courses were proposed in this draft contract, pending procurement of grants.

March 12, the AIA-Historic Resources Committee Spring Newsletter *Preservation Architect* is published with Charles Phillips' "Reliquary for Menokin."

An outcome of the March 28 visit to Winterthur by a contingent of Menokin staff and Trustees was a plan for developing a "Chemistry for Conservators" course in conjunction with Richard Wolbers. This would be a hybrid course of online instruction with some laboratory work at Menokin that would be run through RCC. "Sissy Crowther, President of RCC and Richard Wolbers will coordinate on the course outline, possible grant opportunities and credit structure."

## Spring and Summer 2008

April 7, John Lee visits with designers from Goetz Boats in Providence RI at his own expense to talk to the team that develops most of the America's Cup racers about weaves and layups, as well as epoxies, to achieve certain structural goals with carbon fiber, as most of the reading materials available on carbon fiber are not general enough to provide useful information for someone designing for alternative uses. (Our perception soon changes when we receive the book Extreme Textiles: Designing for High Performance by Textiles Director and Exhibitions Curator Matilda McQuaid discussing the Cooper-Hewitt's 2005 showcase of technical textiles.)

May 22, Menokin is provided with an expanded "Greening of Menokin" mission statement to synthesize ideas we had been presenting over the last year for incorporation of renewable energy technologies at the site with educational programs.

By June, the Design Team is finally able to clear some time in their schedules to begin carbon fiber testing. Dewhurst-Macfarlane (DMP) produces a first round carbon fiber testing regimen of mockups they want produced and John begins building and breaking them.

On June 6, as part of discussions with David McCullough regarding another project of JGLCo, Menokin is also presented and he is told of the Georgian Group presentation in nearby New York City for June 19<sup>th</sup>. June 24, the AIA-Virginia newsletter *Inform* comes out with the "Engineering a Ruin" article on Menokin. McCullough also receives a link to the article.

Throughout June and early July, we are again trying to get database work funded and making the case for basic environmental conditioning of the storage barn for the benefit both of the artifacts and ourselves (via installation of ground tubes that would also give us data necessary for the glass house). This simple system would eliminate the 100-degree summer and below-freezing winter indoor temperatures at the Barn. We also tried re-promoting the production of another model to explain all the intricacies of the "Glass House" design from incorporating original and composite elements along with glass fins to carry the roof and missing facade to the heating/cooling and shading technologies with renewable energy (RE) systems.

By month's end the team has sent Menokin information on a series of PV technologies that can be built into transparent glass and are presenting the idea of incorporating a means for exhibiting the construction lines of the original Georgian geometry across the West half of the front facade. One Board member, Hugh Fillingane, and his step-son (who teaches RE technologies through a National Science Foundation grant and knew many other grant-funded [e.g. free!] educators such as the USDA's traveling biodiesel rig) took an interest in the ground tubes and had recommendations for datalogger suppliers that would help with donations. We also produced a letter explaining the value of the low-tech RE technologies to sustainability of the foundation through low maintenance requirements and how the larger model would help us to physically test theories about how the climate in the "glass house" would function. As Executive Director Sarah Pope described the vision to a Board member: "What so appeals to me about this approach, is that "simpler is better."

In July, Menokin asked the archaeology team to provide a budget for more extraction in the fall. This coincided with a new contract with the John Greenwalt Lee Company to include a new glass house model and some documentation, while dropping all discussion of adding more courses or field schools.

On August 4, we followed up with an email to Executive Director Sarah Pope, Menokin's Education Coordinator Kerry Garrett, and Trustee Hugh Fillingane on an expanded vision for Menokin's role as an educator through its 500-acres of waterfront and farmlands that would make it relevant to science curricula at regional schools, and relevant to the local farming community, and a part of repairing the fragile watershed that feeds the Chesapeake Bay.

The attachments to this document included information on:

- The 2008 Farm Bill regarding wetlands conservation and farming, as well alternate biofuels;
- Information on the USDA's Mid-Atlantic Clean Water Initiative and Chesapeake Watershed Fund which would soon be sending considerable funds into education and advocacy as well as water conservation measures through work with farmers whose runoff was affecting the Chesapeake Bay;
- The Washington Suburban Sanitary Commission's production of 1/3 of its power for DC-area homes and businesses from wind power;
- The "Power Plants Live" exhibit at the National Arboretum that highlighted the full range of plant-based fuel options and processing required of each of several dozen plant compared to output; and
- The Kresge Foundation's new funding for green planning for non-profits (a follow on to the Energy Foundation's funding for non-profit RE installations to lower maintenance costs that we had highlighted several years before). Hugh responds with information about datalogger and questions about vertical turbine options for Menokin.

August 9, Calder Loth brought George Skarmeas to visit the site and talk with John Lee. Initially skeptical, after a half hour of questioning John, Mr. Skarmeas begins taking a new view of the glass and carbon fiber concepts. He begins talking through how to get the Trustees tasked to make it happen, including fundraising goals, requirements for contacting universities, and the like, to free the Design Team for full time work to bring it to fruition. He said he thought he might be able to help galvanize the Board and make them understand their role to raise funds and open doors. He also thought the Trustees needed to be supporting and funding the Design Team's presence at every international conference where Menokin could possibly be presented. And he felt he could personally open doors at several universities and with one of the large digital scanning companies to donate equipment and expertise. His resulting email: "*John: I am glad I met you! The trip was worth every bit. It is important that the Board understands the significance of the effort you are all putting into this project. It may be the next Independence Hall, i.e. the next generation of preservation architecture / conservation practice, and a model of how things can / should be done.*"

Hearing of this meeting, Executive Director Sarah Pope immediately invites George Skarmeas to speak to the Board's September 24 meeting and "energize" the Board with his enthusiasm. Mr. Skarmeas' response to Sarah: "*The work you all do at Menokin is indeed very interesting, and if properly structured, funded and organized, can help all of us in the field advance our work in ways that we can only imagine today.*"

Prior to the September 24 meeting, the idea of the 'Chemistry for Conservators' course that Richard Wolbers had offered to present through RCC resurfaces. He provided a syllabus for the meeting. We have not heard about further planning for this course.

## Fall 2008

At the September 24 meeting, we gave a preliminary presentation of the design and rationale for a "Glass Connector" linking the Visitors Center to the Storage Barn as a means to work out in fact (as an extension of the work on paper) all of the procedures for melding original fabric, composites of old and new, and glass with stone. This was to be a means of getting funders involved, while giving the Design and Construction Team "practice" on a mockup instead of testing on the building. This idea had developed out of the Dewhurst-Macfarlane/ Charles Phillips work to design through the full range of connection challenges and the sequence for integrating materials.

The Glass Connector was envisioned as a means to focus all of our design detailing into a single, integrated, functional, scale model for testing all the design parameters and theories in “real-time.” In the process, the Connector would provide an inspirational and educational representation that could inspire glass and PV benefactors to join the project. For those companies, the R&D possibilities of the glass connector for side-by-side comparisons of competing technology could be as appealing as the promotional benefit of being part of a one-of-a-kind international design project. For a relatively small budget, the Connector would provide visitors and funders a concrete way to understand the integration of old and new technologies planned for the house. At the same time, it would provide a dynamic space to initiate tours that provided panoramic views of the various on-site activities available to visitors.

On September 26, the Foundation selected a local contractor to construct an upper level of shelving/storage in the barn to provide much-needed additional warehousing and to enclose the shop end of the barn behind insulated doors with adequate lighting for us to work. This work was to be completed promptly to limit disruption to design work, particularly timber repair/R&D.

On October 16, we learned Menokin would be the focus of a 3-part talk (John discussing timber R&D, Ellen covering masonry conservation, and Tim presenting the protective glass envelope) for the Architectural Specialty Group session at the May 2009 American Institute for Conservation Conference in Los Angeles.

In November, the Foundation shared their fundraising matrix with us, showing the foundations they were approaching for which projects and amounts. By this time, Master Site Planning (“...that George mentioned is very much needed to get funding for the glass connector and the final glass project.”) and creation of a Study Institute with RCC were given equal fundraising importance to extraction and stabilization activities. We were still trying to arrange to get students in drafting programs at RCC involved at Menokin.

The November 11 Trustee meeting agenda included:

- Outlining 2009-2011 major initiatives (reworking the 2007-2009 strategic plan);
- Presentation by the Design Team of the Glass Connector;  
The accompanying “Glass Connector Rationale” document discussed how this building could ignite the imagination of the public and benefactors, while providing a space to initiate visitors to the range of activities and experiences to be had across the entire site.
- First Trustee discussion of a Master Plan;  
The John Greenwalt Lee Company brought the site plan they had produced for another project to help explain the value of and parts in a site plan development to the Trustees, some of whom were still skeptical about prioritizing yet another activity.
- Discussion of establishing an Advisory Council.

On November 18, Governor Tim Kaine, his press secretary, and Department of Historic Resources Director Kathleen Kilpatrick were present to celebrate Menokin’s easement of its remaining acreage, which helped the state achieve its 400,000-acre land preservation goal. During the event, Charles Phillips asks the Governor if he will help ensure at least half of the \$20M that will be raised for the site over the next ten years comes from Virginians, by helping to identify individuals the Foundation should contact. The Governor says he would be glad to help. His press secretary was particularly interested in the proposed alternative energy initiatives.

November 19, Tim Macfarlane is confirmed as the keynote speaker for the Glass Art Society conference at Corning the following June and will be highlighting Menokin. Board members are asked to sign up early and given lodging and conference information so they could make connections with Corning officials and wealthy attendees.



By December 8, the shelving additions and shop area improvements to the Storage Barn remain incomplete. This has already rendered the space unusable to the conservation team for three months with no end in sight. Carbon fiber research materials are transferred to Annapolis to restart work.

Members of the John Greenwalt Lee Company spend December 12th meeting with the Executive Director to discuss budgets, meetings with funders, and developing database/video/ brochure and educational materials for promoting the “Glass House” and site. JGLCo again requests ground tubes be allowed to go in the newly-plowed fields to gain winter data.

December 16, the Design Team meets with the Glass Subcommittee (Bill Kelso, Al Smith from Dominion Electric, and Calder Loth) to further review design progress and budgets. Our Glass Connector presentation was well received and we were told to proceed with all speed on design while the Foundation lay the groundwork for major fundraising to begin in June when the renderings should be complete. Charles suggests presenting the idea to the government of Barack Obama giving his (inevitable) Energy Independence Speech at Menokin.

## 2009

With depreciating investments and a worsening overall economy, all remaining work from the 2008 contract is cancelled.

In spite of the fact this means development and design work necessary to produce more concrete figures for “glass house” cannot be realized, it is determined the 2009 budget will only cover DMP design work to produce a digital rendering of the glass house for fundraising purposes (instead of the physical model planned in 2008) and to fund Charles’ time to locate and draw the key structural members that would be necessary to carry the roof.

Planning for the Advisory Board waxes and wanes through spring and summer, with invitation letters to potential Advisors coming from Chair George Skarmas who defines the project:

*“Menokin is embarking on an exciting, brave and ambitious journey to re-present this historic site and make it a learning laboratory of a wide range of issues associated with the protection, preservation and interpretation of a historic site....One of the most interesting things that they are embarking on is a new idea, never attempted before anywhere in the world to the best of my knowledge.*

*This idea is being developed by a small team of highly creative folks guided by the daring vision of John Lee, a very talented and skilled conservator from Annapolis. John’s vision is to create a glass structure that would have the form, dimensions and proportions of the original house. This glass structure would function as a framework that would protect the ruin and provide additional opportunities for fragments and pieces of the building to be presented in their proper context, etc. In other words, this transparent framework would allow the visitors to experience the scale, construction methods, materials etc. of the original house, by using existing historic fabric in the proper locations, connected to the glass structure. John is collaborating with Tim McFarlane, the internationally acclaimed structural engineer of the “Apple Cube fame”, i.e. one of the leading glass structure experts in the world.*

*After a few meetings, I realized that this can be an important chapter in the way we approach preservation projects. The project has multiple dimensions, from master planning, landscape architecture and horticulture to state-of-the-art conservation issues, sustainable forms of energy uses and down to details as to how this entire effort can and should be documented.*

*One of my recommendations to the Menokin Board was to create an Advisory Board of nationally recognized experts in several areas of preservation that would help in making this vision a reality. You are one of the individuals who has been identified to be part of this effort.”*

In April we are again asked to supply datasheets from 2005-6 excavation and we find that topographical information and GIS data that had been housed on the Monticello website was not available at Menokin and the link had since been discontinued, complicating attempts to build the rendering.

April 4, we arrange for a pro bono visit by a glass construction engineer that we have been eyeing to meet with the Board as part of their request to begin integrating a construction member early in the process, and to help value engineer some of the unique connection pieces.

May 21, the Design Team gives a 3-part talk on Menokin (timber, masonry, and glass) to the Architectural Specialty Group and Charles speaks to the Wooden Artifacts Group at the American Institute for Conservation (AIC) Conference in Los Angeles.

June 11, Charles and Ellen attend the GAS Conference at Corning with Tim - a good thing given the overwhelmingly positive response to his keynote address, as the three of them were mobbed afterwards. Corning Museum of Glass' Senior Director of Creative Services and Marketing Rob Cassetti was impressed and said several attendees he recognized could easily write \$5M checks and might well do so if the project remained prominent. He also expressed an interest in helping to make connections with glass technology suppliers.

The Glass Art Society Newsletter's review of Tim's presentation stated: *“The project at Menokin involves bonding non-glass structures such as beams onto acrylic supports, which are used to make a hole in the structure linear. Architectural glass is then used to seal the remaining hole. The overall appearance of this technique must be seen to be believed—the illusion of a crumbling structure but totally enclosed. By the end of the lecture you could feel the crackle of inspiration shooting like lightning through the audience.”*

Tim also got a good response from Tina Oldknow, Curator of Modern Glass at Corning Museum of Glass, who made initial introductions to other parts of Corning on Menokin's behalf. We do not know where Menokin is on following up these leads. In subsequent conversations with the Design Team, Rob Cassetti expressed an interest in joining the Advisory Council, likening what he has heard about Menokin with the exciting projects at Domaine de Boisbucet, where a Corning contingent attends annually.

Tim also got strong interest in the project when he presented it in Finland the following week at Glass Performance Days, the largest annual international glass conference. Executive Director Sarah Pope's response to updates about these presentations was to say that at the July 2 Board meeting, they would be planning for a Trustee/Design Team retreat for the fall to “put ideas into action steps for fundraising for this project.”

July 13, the Design Team produced an expanded Vision Statement for the Board to review for inclusion in the Advisory Council packages.

The July 24 response to the Vision Statement was positive and inclusion of the Vision in the Advisory Council packages was authorized. We learned the Trustees would have an October retreat with an outside facilitator to outline 10-20 year strategic plans, with the Design Team's Vision Statement provided the starting point for planning. (The Executive Director's statement was “I hope that one of the outcomes of the Retreat will be adoption of an updated Vision Statement based upon this draft.”) She said another goal of the retreat was to begin planning for a capitol campaign, with a feasibility study in 2010, and fundraising to run from 2012-14.

July 26, the Design Team is informed Menokin did not get a grant to fund fall extraction, so this will be postponed to 2010, and all work at Menokin would stop with Charles' completion of structural framing documentation "unless an unexpected funding source comes along."

August 26, Ed Lowe from the Dewhurst-Macfarlane London office promotes Menokin to St. Gobain's Communications Director who is working with them on a solar decathlon house. (St. Gobain is a leading international glass supplier.)

September 25-27, 2009: The Menokin Foundation holds its first Advisory Council meeting.