PALLADIANA

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CENTER FOR PALLADIAN STUDIES IN AMERICA

In This Issue:

Letter from the President Bruce Boucher

DEAR CPSA MEMBERS,

Our Fall Newsletter is brimful of informative and thoughtful articles which you will enjoy. It also testifies to the variety of activities the CPSA offers in the coming months. First of all, we shall be celebrating our first joint project with our new partner, the Department of Architectural History at UVA, with the *Approaches to Architectural History* symposium on October 10th. The symposium, held at the School of Architecture's Campbell Hall, Room 153, includes a distinguished roster of speakers, including Associate Professor Cammy Brothers on *Drawing Ancient Rome* and the doyen of modern Palladian scholars, Howard Burns of the Scuola Normale Superiore in Pisa, Italy, speaking on Palladio and the use of drawings. In addition, Joseph Lasala will address Thomas Jefferson's architectural design methods while Travis McDonald will draw upon his years of studying Jefferson's gem, Poplar Forest, in a paper about authenticity and public history. Our own Vice-President Calder Loth brings his erudition to bear on Book IV of Palladio's *Quattro Libri* as a sourcebook for American architecture. In addition, there will be shorter talks featuring graduate students in architectural history as well as tours of the Lawn. The symposium is free and open to the public and begins with light refreshments at 8:15 a.m. (first session at 9 a.m.); for further information and registration, please consult the home page of the Department of Architectural History: *http://www.arch.virginia.edu/events/approaches-architectural-history-symposium*

Next spring and summer will see two excursions in the offing. The first will be a weekend tour of Clarke, Frederick, and Warren counties, Virginia with an overnight stay in Winchester. The tour will be led by our own Board Member K. Edward Lay, Professor Emeritus in the School of Architecture, and Maral Kalbian, co-author of *Buildings of Virginia: Valley, Piedmont, Southside, and Southwest*. Among sites to be visited are: Mt. Zion (ca. 1771), Erin (1848), Long Branch, an 1842 house by Latrobe, and the Tuleyries (ca. 1833). Reserve April 17th & 18th, 2016, and watch for more information in the Spring 2016 issue of *Palladianna.*

The second major tour will be of Scottish Palladian architecture, which we are mounting from June 20th to 28th. Entitled *The Georgians in Scotland*, the tour has been prepared for us by Martin Randall Travel, Ltd. of London, a firm that has specialized in fine art and cultural tours for over thirty years. The trip will provide an in-depth study of Palladian architecture and interiors as well as landscapes of some of the most beautiful parts of Scotland. We shall visit Edinburgh, the capital, and several houses not generally open to the public, including Arniston, Mellerstain, and Culzean Castle. The tour will be led by Dr. Gail Bent, a specialist in British architectural history. It is limited

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Plan now for 2016 Events:

Weekend Palladian Bus Tour:
Clarke, Frederick, and Warren Counties.
April 16th & 17th with optional Sat. night in Winchester

The Georgians in Scotland:
Architecture, interiors & landscape with Martin Randall Travel and CPSA; 9 days 20–28 June 2016

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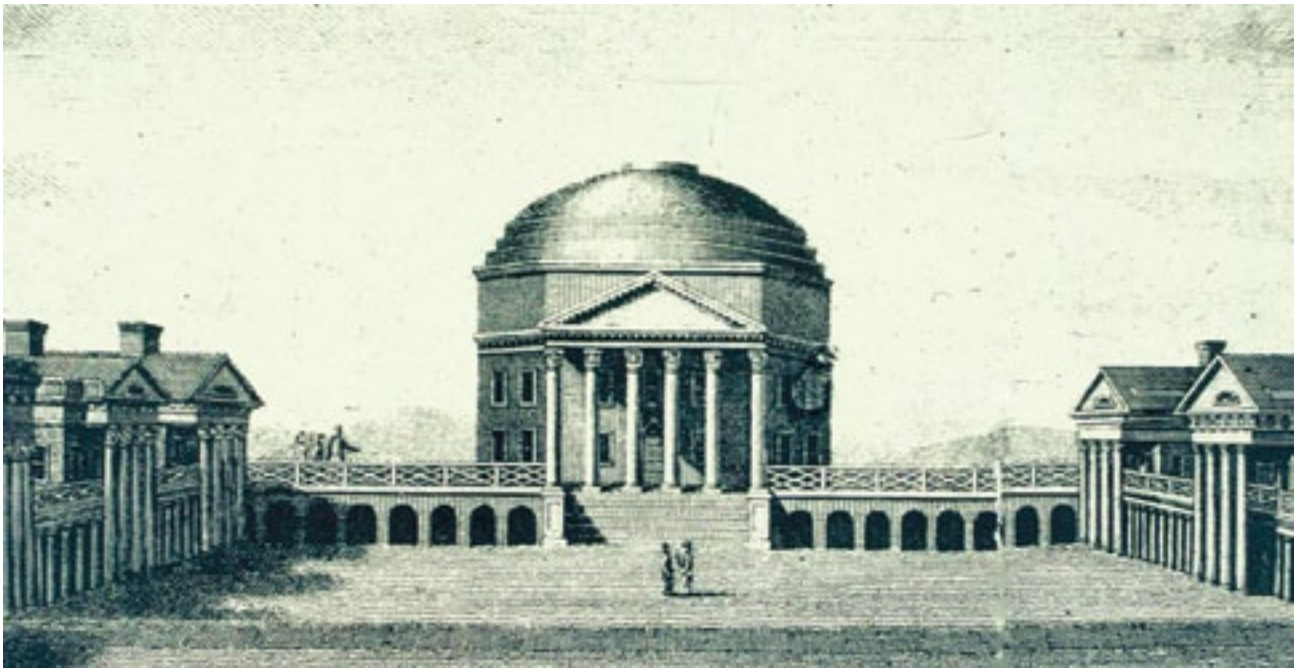
to 18 people, but there are still a few places vacant. For your convenience, the detailed itinerary is printed elsewhere in this paper. If you wish to book, please contact: *www.martinrandall.com* or *info@martinrandall.co.uk.*

Finally, there are two excellent articles on Thomas Jefferson's interpretation and synthesis of Palladio's architecture. James Zehmer treats us to a thoughtful analysis of the history of the capitals on Jefferson's Rotunda, something especially timely as the latest set of sixteen capitals is currently being installed on the north and south porticos. Finally, William Rieley weaves a fascinating tale around an unexecuted project for Monticello, in which Jefferson revealed once again his blend of classicism and practicality - not to mention visual humor in the design of his "pigeon-house" or dovecote.

Happy Reading,

Bruce Boucher

Bruce Boucher has divided his career between education, scholarship and museum administration. He directs the UVa Fralin Art Museum, has written three important books, including "Andrea Palladio: The Architect in His Time," and he lectures widely on Palladio and other Italian artists and architects.



Replicating the Corinthian Capitals of Thomas Jefferson's Rotunda

by James D.W. Zehmer, Restoration Project Supervisor, University of Virginia

James D.W. Zehmer is a restoration specialist and holds a degree in architectural history from the University of Virginia School of Architecture.

The Rotunda, centerpiece of Thomas Jefferson's Academical Village and symbol of the University of Virginia, has been subjected to intervals of construction, renovation, rebuilding, restoration and repair since the institution began offering classes on March 7, 1825. Interspersed through the periods of repair and maintenance are six major interventions. First, of course, was the original construction period (1823-27), resulting in Jefferson's vision of a half-scale interpretation of the Pantheon in Rome. The second is the Annex (1851-54), a large addition designed by Jefferson's disciple Robert Mills and attached to the Rotunda's north elevation. The third period came as a consequence of the fire of October 27, 1895 which destroyed the Annex and all but the walls of the Rotunda. Following the fire, the university hired the New York firm of McKim, Mead, & White to design the 1896-98 reconstruction of the Rotunda, during which a portico and monumental stairs were added to the north side and the interior was reconfigured into a grand Beaux-Arts style space. The fourth transformation, in 1938, entailed the library's removal to the newly constructed Alderman Library building, leaving the Rotunda without a dedicated use. The fifth major intervention coincided with the nation's Bicentennial, when the Rotunda interior was restored to Jefferson's floor plan and the dome reshaped to follow its original profile.

The sixth milestone in the Rotunda's history is defined by the current rehabilitation. In 2006, the university commissioned John G. Waite Associates, Architects, to produce *The Rotunda Historic Structure Report*, which included a conditions assessment and recommendations for repair. Phase I of the project,

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which involved replacing the dome's c. 1976 sheathing with copper, repairing the dome's masonry drum, and restoring windows, was completed in 2013. Phase II, the current phase, began in May 2014 and is scheduled for completion by the 2016 fall semester. This comprehensive rehabilitation project focuses on preserving the symbol of the university for another century by modernizing the infrastructure and by providing new classroom and study spaces so that the building once again will be a vital part of student life.

This article focuses on a unique part of the project, the recent replication and replacement of the column capitals on the south and north porticos. In his original design, Thomas Jefferson specified that the south portico capitals were *"...to be copied exactly from those of the Pantheon, as represented by Palladio. B.4. chap.20. pl. 60. Leoni's edition."* (Fig.1) It is important to note that Jefferson specifically referenced the Leoni edition of Palladio's *The Four Books*, as this was the 18th-century English translation that served as his primary reference for classical architecture. As we shall see, Jefferson did not get *exactly* what he wanted, a fact that played a crucial role in the replication effort and posed another interesting question. The original column capitals, made in Carrara, Italy by the Raggi family, were installed in 1826 and supported the south portico roof until the fire in 1895, when they were replaced under the direction of Stanford White, who served as the firm's architect for the 1896-98 reconstruction project.

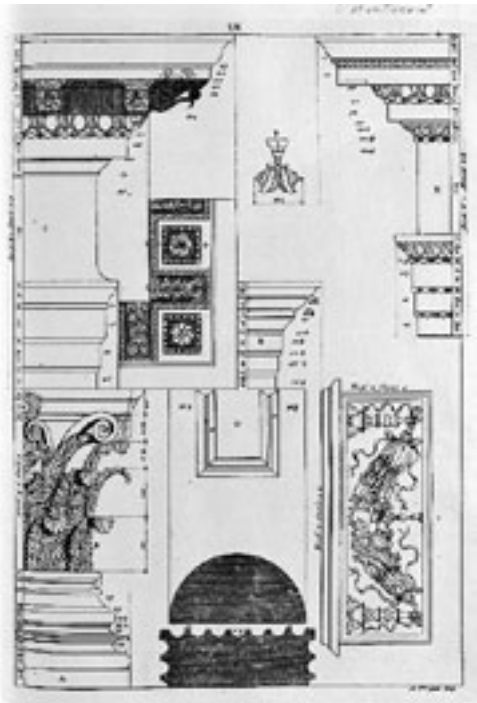

Fig. 1. Book 4, chapter 20, Plate 60, The Architecture of A. Palladio (Giacomo Leoni edition, 1715).

One autumn day in 2009, University Conservator Mark Kutney and I were walking along the Rotunda's southwest terrace when we noticed a white object about the size of a baseball lying on the paving amid a pool of fine white dust. Upon further inspection, we realized that it was a piece of marble, and that the white dust was easily produced by rubbing the stone's surface. Looking up at the column capitals, we realized that the piece had fallen from above, specifically from one of the south portico capitals. This gave us concern for the safety of anyone walking under the capitals as well as for the structural stability of the capitals themselves. Upon examining the northeasternmost capital with binoculars, we noted a large crack running diagonally through the capital's east face. As a precautionary measure, we had Wayne Mays, the university's lead historic mason, install ratchet straps around the capital to secure it until a more comprehensive investigation could be made.

The university then hired Milner+Carr Conservation along with Robert Silman Associates, structural engineers, to prepare a complete report including a condition assessment, testing, and treatment recommendations. Following scaffold installation and a preliminary investigation, the lead conservator, John Carr, called a meeting and site visit with officials from the Office of the University Architect, Facilities Management, and university Safety Officers. During the site visit, Carr displayed the seriously degraded condition of the capitals by breaking off an acanthus leaf with his bare hands. He explained that the capitals were suffering from disaggregation, or "sugaring" in layman's terms, meaning the marble had lost cohesiveness. (Fig. 2) Loose pieces were thus removed and all the capitals were wrapped with black netting to halt falling fragments until a permanent remedy could be found.

Fig.2. McKim, Mead & White-era capital during conditions assessment. Note the level of deterioration. (Zehmer)

Milner+Carr then undertook detailed investigation, including core sampling, material tests, and repair technique tests. Their findings defined multiple reasons for the failure and degradation of the McKim, Mead & White-era capitals. The first possible cause may have resulted from the capitals being carved in situ four years after completion of the project (and only after an alumnus donated the funds to have them carved). The awkward nature of having to carve the capitals from a scaffold must have reduced the level of carving quality. In addition, the proper carving of a Corinthian capital requires that some of the carving be done with the ornament upside-down, in order to obtain the correct relief, which also helps rainwater escape the many crevices inherent in the order. Another cause of failure most likely was the nature of the marble itself. While the original Jeffersonian capitals were Carrara marble, the marble of the later capitals came from a domestic source, probably Vermont, and have a much weaker petrographic makeup. Evidence of this comparison is evident in the intact original Carrara marble capitals on Pavilions II, III, V, and VIII, which remain in in near perfect condition. Other factors contributing to the degradation of the marble include freeze/thaw cycles, atmospheric pollutants, and an avian repellant called "hot foot" that was applied to the tops of the protruding ornaments to inhibit birds from nesting in the capitals. Chemicals from this application may have leached into the stone, causing further deterioration.

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The Conditions Assessment Report concluded that the complete replacement of the sixteen capitals of the north and south porticos was the only viable course of action. The capitals were too structurally and aesthetically compromised to warrant restoration. Nevertheless, the Rotunda's four pilaster capitals were deemed sufficiently stable to remain. Before making the difficult decision to replace the capitals, the university engaged with Conservation Solutions, Inc. for peer review services, which confirmed the findings in the Milner+Carr conditions assessment.

The question then became, which capital is the correct one to replicate, the Jeffersonian capital or the McKim, Mead, and White capital? Fortunately, researchers found an 1898 letter from the New York firm indicating that the new capitals were to be copies of the originals. The two capitals are similar stylistically, but the quality of the marble and the carving in the originals is clearly superior. Thus it was resolved to replicate the original Jeffersonian capitals; this posed the next challenge, as there are no fully-completed surviving original capitals. The largest section of an original capital is displayed in the forecourt of the university's Fralin Art Museum and has most of its details intact. Also remaining are some twenty additional fragments of varying sizes. Careful study of all these remnants indicated that an accurate replication of the capitals was feasible.

Among the fragments was half of an interior volute, but lacking was any piece of the large corner volutes and their supporting acanthus leaves. This detail is the most apparent stylistic difference between the original capitals and the Palladian plate of the Pantheon's Corinthian order. An 1892 heliotype photograph in the university's Special Collections Library proved to be the clearest image of the original capitals intact. High resolution scans of the photograph provided a close look at the capitals and especially their corner volutes. (Fig.3) One difference between the Jeffersonian capitals and the McKim, Mead & White capitals was that the original capitals had negative space, carved all the way through between the upper acanthus leaf and the volute, as well as negative space between the small returning volute that caps this detail and the abacus above. The later capitals lacked these negative spaces, thus depriving the composition of important shadow lines and light reflectivity. The photo graph showed light emanating from these openings, confirm ing this treatment.

Fig. 3. Detail of 1892 heliotype photograph. Courtesy of the Albert and Shirley Small Special Collections Library at the University of Virginia.

One area wherein the original and replacement capitals are similar is found in the detailing of the edges, or end grain of the volute -- the area between the downward turning faces of the curled edges that define the profile. Both the 1892 photograph and the Mckim, Mead & White capitals show this area carved in a scalloped pattern of overlapping curves. This detail is not present in the Leoni Palladio plate; rather, the end grain depicted in the publication has only a simple vertical groove between the curling faces. None of the pattern books owned by Jefferson shows Corinthian capitals with scalloped end grain on the volutes. Nevertheless, the fact that the scalloping is clearly shown in the 1892 photographs supported the decision to replicate this detail. This diversion from Jefferson's instructions for modeling the Rotunda's capitals causes us to wonder what precedent the Carrara craftsmen may have been using.

Once the correct detailing was defined, the Project Team engaged the Rugo Stone Company of Lorton, Virginia, who teamed with the Pedrini Studio in Carrara, Italy. The Pedrini Studio's resume included a letter of recommendation from Pope John Paul II praising a sculpture the studio provided the Vatican. The replication process began in November 2012, when Roberto Pedrini and Gianlucca Cacerelli arrived in Charlottesville to undertake a 3-D laser scan of the largest capital fragment as well as several of smaller ones. (Fig.4) Observing this procedure served as an educational exercise for university students in both the art and the architectural history departments.

Fig. 4. Gianlucca Ceccarelli scans the largest Jeffersonian capital fragment. (Zehmer)

Using the scans, artists affiliated with the Pedrini Studio produced a series of full-scale pencil drawings that were viewed and critiqued by the Project Team in the United States. This was the first of many steps in the review process before the production phase could begin. After several iterations of drawings and computer models, the first mock-up capital was created to enable assessment of proportions, depths, and the interrelationships between the capital's various parts. In addition, three original fragments were sent to Italy for physical examination

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of the texture, finish, and quality of the carving. I was delegated as one of the university's two Project Team members (along with others from the A/E and construction management company, Whiting-Turner) to travel to Carrara to review the three mock-up phases. The first mock-up was a full-scale model of one-quarter of the capital. Only this much was necessary, as the four faces repeat and each half mirrors the other. The lower portion of the capital was carved out of marble from Carrara's Campanili quarry, which proved to be the best match to the original marble. The upper portion of the capital was made of modelling clay, so that, during the week-long review, adjustments could be made quickly on the section of carving for

Fig. 5. Giancarlo Buratti makes adjustments to the clay model portion of mock-up #1 while Project Architect Clay Palazzo looks on. (Zehmer)

which we had no physical model. (Fig.5) The lower marble section was based on the laser scans of the original section, although it too required several adjustments before moving to the next phase.

Fig. 6. The second capital mock-up. (Zehmer)

The second mock-up was similar to the first in that it was a full-scale, one-quarter capital; however this version was made entirely out of marble. (Fig.6) This was required after all of the corrections and adjustments were completed on the first mock-up, which was then laser scanned with the data entered into the computer modeling program. A similar review and adjustment process on the second mockup led to a third mock-up, which was a full-scale, complete marble capital that would serve as a model for the artists making the remaining fifteen capitals for the Rotunda.

In order to understand the historic carving process, Roberto Pedrini showed the team his grandfather's carving drill, which had a wooden handle carved with a continuous groove much like the threads of a screw. A drill bit would have been inserted into the end, and the master carver would guide the drill while an apprentice worked a small rope in an up-and-down fashion through the grooves in the handle to provide the spinning mechanism. This method was used to rough out the shape of the object, which would then be refined with the use of cold chisels and rasps. Interestingly, this drilling method, which produces a small round hole, was used on the original Jeffersonian capitals to make linear details such as the veins of the acanthus leaves. These veins are in fact a long series of drilled holes with the top edges smoothed to provide a crisp edge defining either side of the line. Pedrini's explanation of this arduous and time-consuming process gave us a deep appreciation for the labor demanded for producing stone architectural features via historic methods.

Thankfully, the current carving process is more expeditious than the historic process. Once the computer model was completed, blocks of stone weighing as much as 10,000 pounds were hewn from the quarry and transported down treacherous, winding roads to the town of Carrara. (Fig.7) The blocks were

Fig. 7. Campanili Quarry, Carrara, Italy. (Zehmer)

then squared, and the carvers began laying out the rough shape of the capitals using a compass and calipers, drawing onto the stone with pencils much as the Raggi brothers would have done. These blocks were further roughed-out by carving away large pieces using water-cooled, diamond-tipped reciprocating and circular saws to form the capitals' general shape.

The roughed-out blocks were then placed upside-down on a pedestal to be carved by a six-axis robotic arm with a water-

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Fig. 8. Robotic carving machine. (Zehmer)

cooled, diamond-tipped bit. (Fig.8) The process carves the capital to within 1/4" of its finished surface, after which it is moved inside the studio for final carving. The finished carving was completed using pneumatic chisels along with hand-held rasps, detail chisels, and sandpaper. Two teams of four carvers were overseen by a master carver who would inspect and put the finishing touches upon each capital. (Fig.9) By having numerous people working on the capitals, the process ensured that each capital would have nuanced differences, as the originals did, rather than each one being exactly alike with a machine-made appearance.

Fig. 9. Master Carver Umberto Puccetti hand-finishing a complete capital. (Zehmer)

Brian Hogg, the University's Senior Preservation Planner, put it best when he said, "we want the capitals to be brothers, but not twins." The guiding principle of the project was to recreate the capitals actually installed on the Rotunda, not capitals matching Palladio's plate of the Corinthian order on the Pantheon, as Jefferson had instructed. By doing this, the slight differences between the plate and the physical and documentary evidence were important to reproduce, especially the scalloped end grain detail of the corner volutes. One additional difference between the Corinthian capitals of the Pantheon and the Rotunda capitals is that the fleurons (flowers) in the abacus of the Pantheon capitals have curly stamens projecting from their centers, while the Rotunda capitals lack this detail. Since the Raggi brothers were unlikely to have had access to a Leoni edition of Palladio's treatise, the question is, what source were they using? Did they simply provide a generic Corinthian capital of the size and dimensions specified for the project, regardless of detail? Did they use a different pattern book of the period? Or were they replicating a detail seen on another building?

Studying other pattern books has not produced any examples of this scalloped end-grain pattern from which inspiration could have been derived. The actual capitals on the Pantheon do not have this detail either. However, one place where a similar detail exits is the 16th-century Altare di Assunta (Altar of the Assumption of the Virgin Mary) in the Romanesque Carrara Cathedral. According to Lorenzo Pedrini, the altar was designed by local architect Andrea Pelliccia and carved by three artists: Andrea Di Tomeo, Francesco Bergamini, and Rinaldo Bonanni. The altar's Corinthian capitals incorporate a scalloped pattern on the end-grain of their corner volutes. The Raggi brothers likely would have been familiar with the altar and may well have drawn inspiration for this detail for the Rotunda capitals. While we may never document the exact source for their inspiration, the altar's capitals may provide a clue to this intriguing question.

The new capitals have been hoisted in place, where they not only will enhance the beauty and integrity of the Rotunda but will serve as teaching tools for classical architecture as originally intended. The architecture of the Academical Village as an educational resource is best expressed in a letter from Jefferson to Virginia statesman William Cabell Rives, where he stated *"these buildings being arranged around three sides of a square, the Lecturer in a circuit, attended by his school, could explain to them successively these samples of the several orders, their varieties, peculiarities, and accessory circumstances."* It was with this spirit that the Rotunda Rehabilitation Project Team pursued the best replication possible, in order to maintain the architectural and educational legacy of the University of Virginia. (Fig.10)

Fig. 10. A new capital is hoisted into place. (Zehmer)

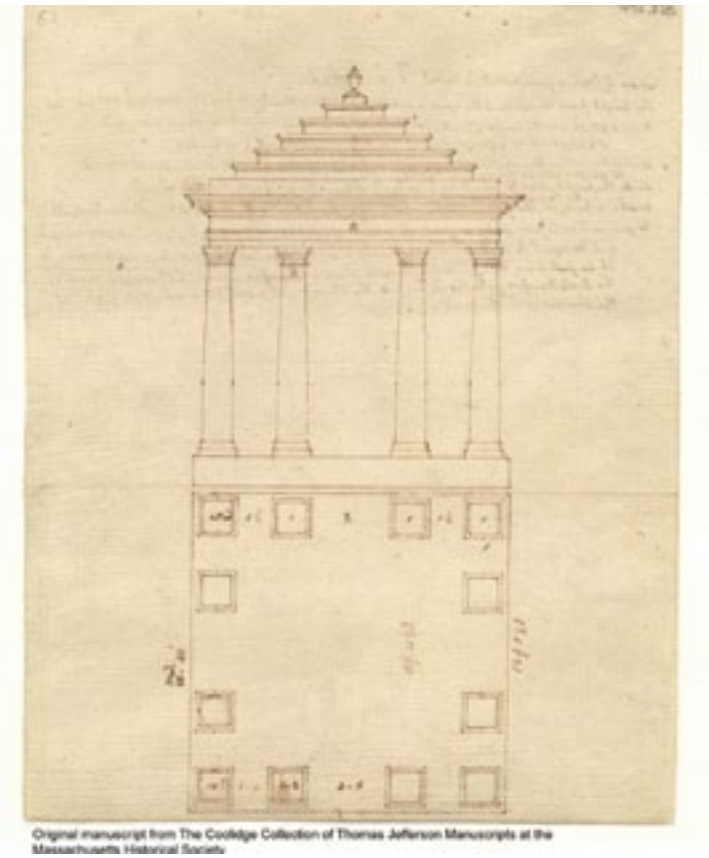

Fig. 1 The Temple/Pigeon-Loft, N92, K63, MHi

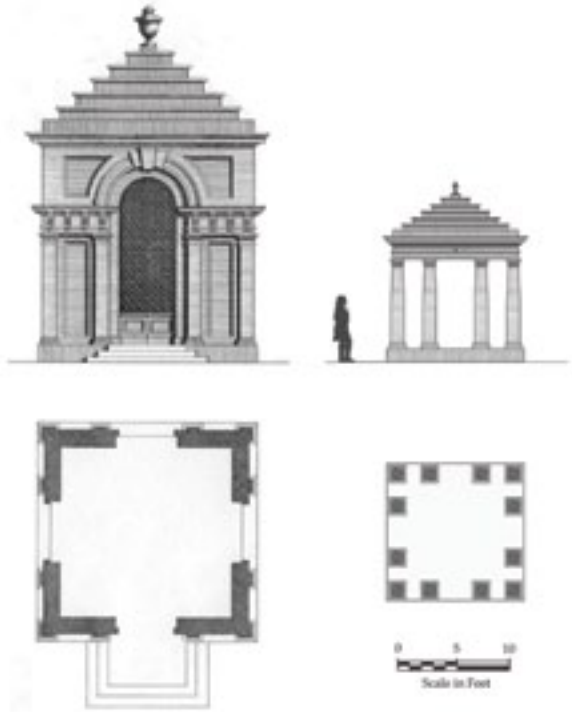

Fig 2 (L) Gibbs's Book of Architecture, 1728, Plate 77; (R) Thomas Jefferson's Temple/Pigeon House; Illustration: Rieley

Pigeons in the Temple: Thomas Jefferson's Pigeon-House Design

by William D. Rieley

Will Rieley is a practicing landscape architect, author, and educator, with offices in Charlottesville, and long-time CPSA member.

In the spring of 1779, in the midst of the American Revolution, Thomas Jefferson turned his attention to the design of two small buildings. Each was meticulously drawn on separate halves of the same piece of paper.[1] One was for the dramatic remodeling of the south pavilion (or outchamber, as Jefferson called it) at Monticello, based on William Kent's drawing of Lord Burlington's pavilion at Chiswick (presumably to be mirrored at a later date with the construction of the north pavilion.). The other was an equally crisp ink drawing of a small building with the dual role of garden temple and dovecote or pigeon-house. Jefferson dismissed the first of these two plans in favor of building such a structure elsewhere at Monticello (which he never did).[2]

The second drawing (Fig. 1) shows a plan and an elevation for an open structure supported by twelve columns, with a classical entablature and stepped roof crowned by a capped urn or vase. The frieze is punctuated at its midpoint by a hole for pigeons, revealing the building's practical use as a dovecote or pigeon-house. Pigeon-house (with or without a hyphen) was the most common term for such a facility in 18th-century Virginia, as it was in England at that time.[3] The synonymous term, "dovecote," came into wider usage after the 1920 publication of A. O. Cooke's A Book of Dovecotes,[4] though today we call the birds that occupy these facilities pigeons—not doves.

Jefferson did not refer to this building by any specific name; however, he identified another (probably earlier) planned accommodation for pigeons as simply a "pigeon house"—only one of the dizzying number of terms used over time for such a structure[5].

I found this design arresting in part because of its beautiful proportions, its elegant simplicity and its manageable scale (only about 12 ½ feet on a side); but I also found it intriguing because it had apparently (like its companion design) never been built. Of all of Jefferson's architectural drawings, this is one of the most precisely delineated. On its face, it was not a casual exercise on the part of its author. Brief notes on the verso of the drawing give several key dimensions. I was curious about what one could learn about its form—particularly its three-dimensional appearance -- and I determined to see what a close examination of the drawing and its corresponding notes would reveal. This examination led in fascinating and often surprising directions.

Jefferson designed this structure at a time when his conception of the house at Monticello was very different from its final form and before his travels to Europe exposed him to physical examples of architecture and landscape architecture that up until that time he had only seen on paper. Indeed, when this little building was conceived, there were few examples of classical architecture in Virginia on which to draw as models. So, as with all of his architectural projects, Jefferson's design for the temple/pigeon-house was inspired and informed by his books on architecture, which he began collecting as a young man. One of the earliest of these acquisitions, and over his lifetime certainly the most influential, was Giacomo Leoni's *The Architecture of A. Palladio; in Four Books (1742)*. Leoni's was an early English translation of the 16th-century Palladio work.

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Continued from page 7 **Jefferson's Temple/Pigeon House**
Jefferson collected numerous books on architecture over the years, but for most of his life, Leoni's version of Palladio's great work remained his *vade mecum*.

Leoni's Palladio notwithstanding, there are two other clear inspirations for the temple/pigeon-house. William Beiswanger has pointed out in his excellent exegesis on the landscape and garden structures at Monticello that one clear inspiration for this design is Plate 77 of James Gibbs's Book of Architecture.[6] Jefferson acquired this book in Williamsburg on December 2, 1778.[7] The similarity between the Gibbs design and the Jefferson one is apparent at a glance—the stepped roof being the most striking comparable element. Both are square in plan, their roofs have the same number of steps (seven, including the urn base and roof plinth), and each is crowned with a capped urn. The intercolumniation is similar, as both have a wider spacing at the central opening than the two flanking ones. These similarities noted, a side-by-side comparison at a consistent scale (Fig. 2) reveals dramatic differences as well. The Gibbs pavilion is substantially larger and more elaborate, yet the Jefferson pigeon-house is in many ways more sophisticated, or at least it contains more logically interrelated components; and it is, as Beiswanger pointed out, more consistent with pure classical forms.[8]

The second likely inspiration for this structure is a building known today as the Gümüşkesen at Milas, Turkey.[9] It was illustrated by Jacob Spon in his 1678 book, Voyage… Jefferson had certainly seen Spon's somewhat-modified view of the "little temple at Mylasa"[10] (later determined to be a tomb) because he cited Spon's book containing its illustration[11] on the verso of his drawing of the south outchamber before April 23, 1779 [12] (Figs. 3 and 4). Strangely, this little tomb is even closer in form to the Jefferson pigeon-house than Spon's illustration. In both the drawing and the structure itself, though, the stepped, pyramidal roof sits directly atop the entablature, which is in turn supported by twelve pillars or columns -- like the Jefferson design and unlike that of Gibbs. Since we know that Jefferson was examining the Spon book during the time he was designing the pigeon-house, and since it is in some elementary respects much closer to his design than is the Gibbs pavilion, I believe we should give the Gümüşkesen at least equal weight as an inspiration or model for Jefferson's temple/pigeon-house design.

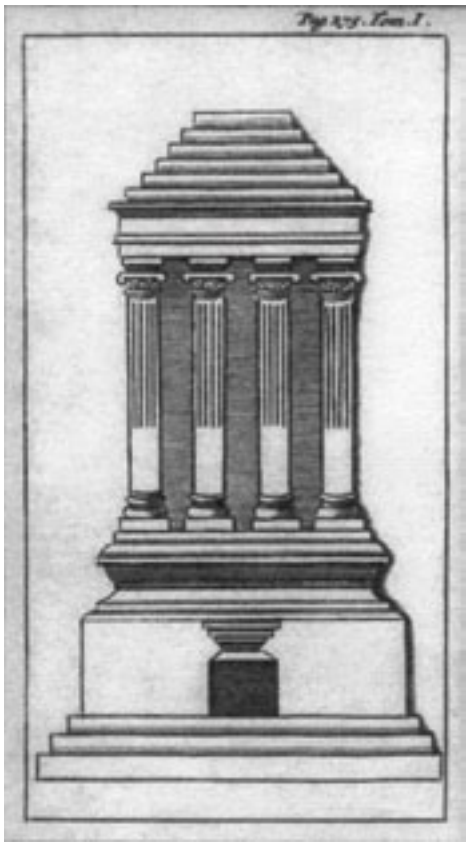

Fig. 3. Illustration from Jacob Spon's Voyage d'Italie, de Dalmatie, de Grece, et du Levant: fait aux années 1675 & 1676 (Amsterdam, 1678), 1:275

Fig. 4. Gümüşkesen at Mylasa (Milas)
Photograph: Yavuz Peker, 2008

Of course, the structure's use as a pigeon-house also influenced its form. The most obvious elements in this regard are the openings for the pigeons to enter and leave the structure—one on the north and one on the south side, as described in Jefferson's notes. The height of the living area for the pigeons above open columns marks an important transition in the evolution of dovecote design.

The origins of raising pigeons in constructed domiciles, taking advantage of the birds' strong homing instinct, dates to ancient Egypt [13] and possibly earlier. Homer, about 950 BCE, wrote of "Messe's[14] towers for silver doves renown'd.[15] " Both Greek and Roman writers described the reverence in which the Syrians held the dove or pigeon.[16] Not only was pigeon meat prized, but so were the feathers and manure. Pigeon dung, in fact, was considered superior to all other manures as fertilizer and does not have the disagreeable odor of most animal

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Continued from page 8 **Jefferson's Temple/Pigeon House**
manure.[17] John Moore, in his *Columbarium* (1735), states that "One Load of it is worth ten Load of other Dung."[18]

The basic cylindrical form favored by the Romans persisted through the Middle Ages, Renaissance, and well into the 19th century. It spread throughout much of Europe, although numerous variations on the basic form were developed in different locations and periods. In Medieval Europe, ownership of dovecotes was limited to the aristocracy and to monasteries. The restriction on general ownership of dovecotes was directly related to the fact that pigeons do not limit their range to their owner's property. It was one thing to have doves from the manor eat the grain in the commoners' fields, and quite another for commoners to keep animals that would feed on the crops of the gentry. A French Huguenot traveler to Virginia named Durant wrote in 1686 of the class associations of dovecotes, but he attributed the limitation of keeping pigeons more to penchant than to jurisprudence: "The domestic animals are in all respects similar to those of Europe… As for pigeons, I saw them only on the plantations of the gentlemen. The peasants despise such small game."[19]

An excellent and rare example of the cylindrical form in America is the little brick dovecote housing 96 nest-holes, at Shirley Plantation in Charles City County, Virginia (Fig. 5).[20] Jefferson married Martha Wayles Skelton at her nearby

Fig. 5 Brick dovecote at Shirley Plantation
Photograph from the Historic American Buildings Survey

family home, The Forest, so both Jeffersons were very likely familiar with this pigeon-house. [21] Notable variations on this theme—ones of which Jefferson was certainly aware—were four buildings illustrated in Leoni's edition of Palladio's work that integrate dovecotes into larger domestic buildings: the Villa Barbaro, the Villa Saraceno, the Villa Repeta and the Villa Emo, whose flanking wings were terminated with prominent dovecotes.[22]

A careful reading of Jefferson's plan and notes reveals an ingenious design. The elevation of the pigeon habitation into the upper portion of this open structure may have been a reaction to the appearance of the brown rat (*Rattus norvegicus*) in America in the mid-18th century. Jefferson's notes on the verso of the plan specify that the abacus of the column capitals be enlarged to "*prevent rats from going in.*" Because brown rats are not particularly facile climbers, this would have been a very effective way to discourage this very real threat to dovecote pigeons.

Jefferson dimensioned the plan in two systems. The top row of columns shows the dimensions in Palladian modules of one unit for the diameter of the lower or undiminished portion of the column (which Palladio further subdivided into 60 minutes). The bottom row shows the same features dimensioned in feet and inches. One module, then, equals 14 inches in this design, and therefore, 1 minute = .23333… inches (or 7/30"). This scale is consistent throughout Jefferson's notations and is the key to dimensioning the other elements.

The intercolumniation pattern of 1½ modules spacing between the outer columns and three modules for the central opening, with the columns themselves, totals exactly ten modules (11 feet, 8 inches) from outside of corner column to outside of its opposite corner column. This intercolumniation pattern cannot be found in Palladio or any of the other sources Jefferson had at the time. In addition, his notes state to:

divide the width of the plinth into 13 parts for the tread of each step. it will be 9D-45' ÷ 13 = 45' = 10.5 I.

By starting with a dimension of 10 diameters (outside of column to outside of column), then reducing this dimension by ¼ of a diameter (for diminution of the columns), then dividing this reduced dimension by 13 (for number of equal steps), we arrive at a tread width of 10.5", exactly the same as the breadth of the column at its reduced upper end. While calculable, this relationship is neither intuitive nor obvious, but it establishes a direct scalar connection between the roof steps and the columns—a relationship that is absent in the Gibbs pavilion. This is clearly a Jefferson conception, and a very intriguing one at that. It demonstrates his proficiency and apparent delight in these kinds of mathematical and spatial relationships.

While the external dimensioning of the structure left little to surmise, the internal arrangement of the nest boxes required conjecture. The most logical position for these banks of boxes would have been centered on the inside pairs of columns, where a beam under the boxes could be supported by these inset columns. This position would leave sufficient room between the banks of boxes for access, but would have been near enough to the center of the structure to take advantage of the height of the roof at that point. The central corridor would receive cross-ventilation from the north and south openings. Remarkably, as per the standards for such structures during Jefferson's lifetime, 116 nest-boxes would have fit in these two banks of boxes. (This is ten more than the number of nest-holes

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at the Shirley dovecote, where the entire building, not just the roof structure, was given over to pigeon habitation.) Fig. 6

Fig. 6. Cutaway conjectural view of pigeon nest boxes
Rieley

shows a cut-away of the roof revealing this array. One advantage of this arrangement is that rafters or stringers to support the stepped roof could be eliminated, as the boxes themselves would provide the requisite support for the stepped roof.

Having "built" this structure digitally (Fig. 7), I hoped that one day our landscape architectural office would have the opportunity to build it at full scale. That opportunity came in

Fig. 7. Scaled illustration
Rieley

2013. We had the good fortune to be working with John and Billings Cay on the restoration of the gardens and grounds of Rose Hill (formerly Gay Mont), in Caroline County, Virginia. John mentioned that he always liked the idea of having white pigeons flying over the garden and asked what I thought of adding a dovecote. I told him about the Jefferson design, and he was intrigued. We began the process of converting the illustrative designs to working drawings. We contacted Allan Pettit of Alexander Nicholson in Charlottesville, who assembled at team that included Gaston & Wyatt for millwork and Steve Chronister, restoration craftsman. While the Jefferson design was paramount in our thinking, we did make some small adjustments. A slight pitch was added to the roof sections to facilitate runoff. We increased the size of the openings for pigeons to enter and exit slightly based on current practice; and we increased the size and reduced the number of the interior nest boxes to reflect current standards. Finally, we used properly-sized, round Tuscan columns with entasis.

Under the care of property manager Brian Watson, this pigeon-house now houses Birmingham Rollers, and visitors to Rose Hill delight with the Cays in this charming edifice and its new inhabitants--conceived in the spring of 1779 and now finally a reality (Fig. 8).

Fig. 8. Rose Hill Temple/Pigeon-House
Photo: Rieley

Footnotes:

1. Gene Waddell, "The First Monticello," in *Journal of the Society of Architectural Historians*, XLVI:1, March 1987, 22.

2. N91, K62, verso, in the Coolidge Collection of Thomas Jefferson Manuscripts at the Massachusetts Historical Society (abbreviated "MHi" hereafter). In a note, dated April 23, 1779, on the back of the drawing, Jefferson abandoned the plan to remodel the pavilion (or outchamber) along these lines, and instead he determined to build "such a temple…on the point of land between the meadow & intended fish pond in the park [at the base of the mountain]; & let the Outchamber be on the old plan."

3 John Moore's 1735 book, *Columbarium*, uses the terms pigeon-house and -loft throughout; dovecote does not appear at all. (John Moore, *Columbarium: or, The Pigeon-House*…, [London: J. Wilford, 1735].) A later 18th century English work refers to *"a pigeon-house, or dovecote, as they are termed by the country people."* (Daniel Girton, The New and Complete Pigeon Fancyer…, [London: Alex Hogg, ca. 1780], 31.) Emphasis added.

4. John McCann *'An Historical Enquiry into the Design and Use of Dovecotes,'*, Transactions of the Ancient Monuments Society, London, , 1991, Volume 35, 152.

5. The terms *columbarium, peristeron, colombier, pigeonnier, doocot, culvery (or culver house), palomar, taubenhaus, dovehouse, pigeon-house, pigeon-loft, pigeon tower, pigeon-cote, and dovecote* all refer to constructed homes for domesticated pigeons.

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Continued from pg. 10 **Jefferson's Temple/Pigeon House**

Footnotes:

6 William L. Beiswanger, *"The Temple in the Garden: Thomas Jefferson's Vision of the Monticello Landscape,"* in, Maccubbin and Martin, eds., British and American Gardens of the 18th Century (Williamsburg: Colonial Williamsburg Foundation, 1984), 170.

7 Jefferson's Memorandum Book notes on December 2, 1778: "Pd. At Dixon's for Gibb's designs £10…" (MB, 1:473)

8 Beiswanger, "Temple in the Garden," 177.

9. Gümüşkesen is Turkish for "silver purse," possibly a reference to its cladding in white marble and its use as a tomb; it is pronounced gew-mewsh'-kə-sən.

10. So called by Spon's traveling companion, George Wheler, who published his own account of the trip in English in 1682. (George Wheler, Esq., A Journey into Greece, in Company of Dr. Spon of Lyon [London: William Cademan, Robert Kettlewell, Awnsham Churchill, 1682, Book III], 278.) Neither Spon nor Wheler identified the structure correctly as a tomb. I am indebted to Sarah Tolzmann for making the connection between the Spon illustration and the Gümüşkesen, and to William Beiswanger for showing me the Wheler account that confirmed it.

11 Jacob Spon, Voyage d'Italie, de Dalmatie, de Grece, et du Levant: fait aux années 1675 & 1676 (Amsterdam, 1678), 1:275.

12 N91, K62, MHi; and see notes 5 and 25.

13 Darwin, who studied domestic pigeons intensively, wrote that the Egyptians had raised pigeons since the Fifth Dynasty, about 3000 BCE. (Charles Darwin, The Origin of Species by Means of Natural Selection, New York: A. L. Burt Co., 1859, 24).

14 Messe was a city and harbor in Lakonia, south of Sparta, at the location of the modern town of Mézapos, Greece. (Samuel Thurber, Vocabulary to the First Six Books of Homer's Iliad [Boston and Chicago: Allyn and Bacon, 1890], 104.)

15 The Iliad of Homer, translated by Alexander Pope, Book II (London: H. Baldwin, 1796), 87.

16 Wendell Mitchell Levi, The Pigeon (Sumter, S.C.: Levi Publishing, 1963), 30.

17 Michel Conan, Middle East Garden Traditions: Unity and Diversity (Cambridge: Harvard University Press, 2007), 46.

18 Moore, Columbarium, 23.

19 Fairfax Harrison, A Frenchman in Virginia: Being the Memoirs of a Huguenot Refugee in 1686 (Richmond: Privately Printed, 1923), 116.

20 The construction date of the Shirley dovecote is unknown. One aspect of its design suggests that it was built later than the main house, which was constructed ca. 1738. (Main house date from: Calder Loth, Virginia Landmarks Register [Charlottesville: University Press of Virginia, 1999], 99.) The nest-boxes inside the dovecote extend from three feet above the floor level to near the roofline. This arrangement suggests that the dovecote was built in the mid-18th century or later—after the introduction of the brown rat into America.

21The Forest was only four miles from the Shirley house (and dovecote) by road, and three miles as the crow flies. The house at The Forest does not survive.

22 Leoni, A. Palladio in Four Books, Book II, Plates XXXVI, XLI, XLVI and XL. The Leoni illustration of the Villa Barbaro dovecotes differ from Palladio's original conception by showing them as cylindrical, rather than rectangular in plan, as Palladio illustrated them. A dovecote was also incorporated into Palladio's partly executed design for the Villa Trissino at Meledo di Sarego; and several other Palladio villa designs incorporate dovecotes.

CPSA Spring- Summer 2015 Bus Tour -- lead by Ed Lay and Calder Loth

Participants in the CPSA's June tour of Orange County landmarks pose on the rear portico of Rocklands, home of Mr. and Mrs. Bruce Gupton, who stand in the center.

CENTER FOR PALLADIAN STUDIES IN AMERICA

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THE CENTER FOR PALLADIAN STUDIES in America, Inc., is a non-profit national membership organization founded in 1979 to research and promote understanding of Renaissance architect Andrea Palladio and his influence in the United States.

In furtherance of its goals, the Center organizes symposia, lectures, and study tours on Palladian subjects, publishes books and periodicals, sponsors exhibitions, and makes grants to scholars and others.

Correction...

The article "James Gibbs Designs Influenced Iconic Colonial American Buildings" in *Palladiana* 9 (Fall 2014) 3-5, by error carried only the name of Virginia Commonwealth University graduate student Carley Elder as author. The article should also have borne the name of Ms. Elder's professor, Charles Brownell, as co-author. Dr. Brownell has collaborated with his graduate students on many Palladiana articles in order to advance their careers.

...and Apology

The correction above should have appeared in our Spring 2015 issue. We sincerely apologize for the omission-- we believe academic collaborations are a vital component of research, writing, and discovery, and giving credit and attribution are essential to scholarship.

Dr. Charles Brownell served on the CPSA Board for 15 years and contributed numerous ground-breaking articles to Palladianna, and just as many articles which he co-authored with his graduate students.

The CPSA Board congratulates Dr. Brownell on his retirement from VCU; he is currently presenting two lecture series in Richmond this fall: at the VMFA, *Arts and Crafts in Britain and America;* and at Maymont, *Great American Victorian Designers.* He plans to continue lecturing, researching and writing, and confesses to be thoroughly enjoying his well-earned retirement. Congratulations, Charles - the CPSA Board wishes you well !

PALLADIANNA is published twice each year and is mailed to all current CPSA members. Additional copies are available for purchase; please contact Heather McMahon.

We are interested in articles and research pertaining to Palladio and his Four Book's influence on American Architecture; new discoveries and new books on Palladio; and information on exhibitions and symposia on Palladio and his followers, in the US and overseas. Inquiries and/or articles and reviews (approx 1,500 words if possible) submissions may be made through our website: www.palladiancenter.org

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