

The Most Beautiful Room in the World? Latrobe, Jefferson and the first Capitol

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Introduction

The United States Capitol in 1800 was the largest and most ambitious building program on the continent. The building also was America's first modern, international style building. The synergy of Benjamin Henry Latrobe's inventive design and President Thomas Jefferson's touchstone guidance brought about the Capitol's first manifestation spanning two decades. This building, in the minds of both Jefferson and Latrobe, would be not just the house of the United States' bicameral legislature, but also would be an architectural model for the country as it expanded and matured. It was a tall order. The Capitol would be destroyed by British troops in 1814. Latrobe's masterpiece within the building's South Wing, the Hall of Representatives, a room described only in superlatives in contemporary reports and yet never before seen, is the subject of my research and my digital recreation.

The First Decade of the U.S. Capitol

The cornerstone of the United States Capitol was laid by George Washington in September 1793. The building that he and his Secretary of State Thomas Jefferson envisioned, would serve the nation's philosophical and political mission as well as its architectural one. Philosophically, the Capitol had to symbolically represent America's legislative branch within the world's first modern democratic republic. Jefferson's romantic vision suggested that the building reflect the ancient monuments of Greece and Rome¹. Architecturally, the Capitol would be an international style building, a world-class peer of contemporary European architecture.

The plan was to have the Congress occupy the Capitol in 1800. As soon as the ambitious building program was underway however, the plan began to unravel. The man who had won the competition for the Capitol's design, Dr. William Thornton, relinquished control of the project at the outset due to his lack of real architectural knowledge and experience. The three architects who executed the work during the first decade were Frenchman Étienne Sulpice Hallet (later known as Stephen Hallet when he settled in the United States), Englishman George Hadfield, and Irishman James Hoban. The building's progress during these years, the Washington and Adams administrations, was marked by changes of plan, ill will among principals

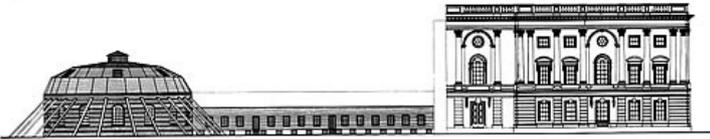
1. Jefferson letter to Latrobe, 10.10.1809: "*I think that the work (the Capitol) when finished will be a durable and honorable monument of our infant republic, and will bear favorable comparison with the remains of the same kind of the ancient republics of Greece & Rome*".

and city commissioners, difficult logistics in the newly laid out city, and shoddy workmanship.



Drawing of the North Wing of the Capitol by Thomas Birch (1801). Library of Congress.

By 1800 only the North Wing, the Senate side, was complete. In 1801, the House of Representatives met in the Library of Congress, and Jefferson took the oath of office in the Senate Chamber, the two available principal rooms. In May of 1801, Hoban was asked to build the House chamber, following the plan, as the South Wing's foundations began to rise. The elliptical footprint of this room was to become the final chamber, but as no exterior walls existed yet, it merely was a large, freestanding, elliptical brick room. This proto-chamber, called the "Oven," was connected to the North wing by a covered passage. So by 1801, early in his administration, the designing and fastidious Jefferson must have been frustrated by the chaotic construction site on the hill over the mudflats.



Reconstruction drawing of the "Oven" by Don Hawkins. AIA.

Jefferson knew of Latrobe and had been impressed with his designs for the Washington Navy Yard. In their brief acquaintance they held a great esteem

for each other as educated professionals, artists, and philosophers. Jefferson would solicit Latrobe's advice on many projects henceforth; Latrobe would call Jefferson the planter of arts in America². Their friendship lasted until Latrobe's death in 1820. Certainly, Jefferson imagined that this erudite, robust, European-trained architect, engineer and naturalist could raise the construction of the Capitol to its worthy level, and in 1803 he appointed Latrobe his Surveyor of Public Buildings.

Nevertheless, the following ten years would prove a brutal ordeal for Latrobe in his service to Jefferson (and later President Madison), akin to Michaelangelo's service to Julius II at the Sistine Chapel. The South Wing of the Capitol would rise where the Oven now stood, and the North Wing, in large part, would be rebuilt. So as the United States' inchoate constitutional form of government emerged as a political idea, it's physical and symbolic representation rose simultaneously from the promontory of Jenkin's Hill, truly an unusual moment in the course of any political history.³



Latrobe's International Style

Benjamin Latrobe was born in 1764 in Fulneck, England, of English, French and American ancestry. Latrobe was a product of his hometown's Moravian education system and, later, a Moravian school in Saxony. After his education, and becoming fluent in German, French, Greek and Latin, and touring the continent, he returned to England and began to practice architecture by about 1784. In 1791, he embarked on his own as a seasoned architect and engineer, with a developed aesthetic involving public works, engineering works, and large masonry structures.

American architecture by 1800 was largely based on traditional engineering and pattern book examples and drawings that could be cobbled together by craftsmen

2. Letter from Jefferson to Latrobe, 8.13.1807
3. An idea proposed in Young (1966).

and journeymen, not always with a unified vision. In fact, Thornton's winning design for the Capitol was largely based on ideas from William Chamber's *Treatise on Civil Architecture*, first published in 1759. Thornton's exteriors of the North and South wings, his principal contribution to the finished Capitol, have this distinct English Baroque flavor.

But coming to America in 1795, Latrobe embodied the international style of formal European advanced education, experience, and the continental tour that Jefferson found unique on western shores. The great strength of Latrobe's architecture innovation was his modern spatial arrangement, and his expression of structure, shape and volume within the play of a "determinate" or unified light source.

"As all the Architecture (in the Hall) is solid and projected, its whole effect will be lost by the destruction of *determinate shadows*, on which it depends."⁴

He reduced his surfaces and elements to simple, graceful forms, shunning superfluous ornament, even mocking churches of the "dark ages" ornamented with the "heads of monkies and cats and every possible distortion of the human body and countenance."

"Nothing is so easy as to *ornament* walls with foliage, with wreathes, festoons... especially if it be not required that these things should have the remotest relation to the purpose of the building upon which they are carved, or that they should contribute to the real or apparent strength or convenience of the structure... And on this account we find ornaments increase in proportion as art declines, or as ignorance abounds."⁵

He indicated explicitly to Jefferson that he chose an architectural solution based on its *function* rather than its *form*, presaging Louis Sullivan's modernist dogma by ninety years. In a letter to Jefferson, as their discourse became heated regarding the use of cupola to light the Hall of Representatives, Latrobe writes, "It is not the *ornament*, it is the *use* that I want."⁶

Latrobe also excelled as a technical architect. By vaulting his structures in brick and stone, he intended to make his structure fireproof. His detailed expositions of cutting-edge materials and products enriched his designs.

Although a modern architect, Latrobe had a deep respect for historical resources. "Antiquities of Athens," published in London in 1762, was a detailed and extensive archaeological record of Ancient Greek architecture by James Stuart and Nicholas Revett. A copy of "Antiquities" was in the collection of the Philadelphia Library Company at the time Latrobe lived in Philadelphia, and as a self-proclaimed "bigotted Greek," he borrowed from it. The ancient Greek buildings detailed in this tome are refreshingly simple and strong; Latrobe preferred this language because of its adaptability to invention. Greek elements appear in Latrobe's designs as graceful adaptations across time that met his particular aesthetic vision. Foremost in his use of Greek elements was his choice of the Choric Monument of Lysicrates capitals for the twenty-four principal support columns in the Hall.

Latrobe, like Jefferson, was curiously afoot in both the Romantic world of the nature and human imagination and the Classical world of reason. Latrobe's letters suggest a man who could swing from melancholic and desperate in the travails of his life, to powerfully optimistic and self-assured in his successes; he could be savagely satirical and wickedly funny, when describing situations and absurdities. He even speculated long before the Capitol burned that one day it would become a "magnificent ruin." But he was also intensely analytical. He could write extemporaneously on the sciences, such as geology, hydrology, and navigation and

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| 4. Letter from Latrobe to Jefferson, 10.29.1806. |
| 5. Latrobe Annual Report to Congress, 11.28.1806. |
| 6. Letter from Latrobe to Jefferson, 5.21.1807. |

how these scientific phenomena influenced the design of structures; he could also ruminate tirelessly on music, art, sociology and current events. Latrobe is credited for writing the first descriptions of jazz music which he heard in New Orleans very late in his life.

The Design of the South Wing

Latrobe's first task as Surveyor of Public Buildings was to build out the Capitol's South Wing as prescribed by the plan. In the early spring of 1803, the South Wing's foundation had risen to about ground level, and the large, elliptical, brick Oven built by Hoban in 1801 rested on the footprint of what was scheduled to become a great elliptical chamber. The proto-chamber, however, was woefully under-designed and within a year began to tilt and crack. Latrobe's initial report of design and construction, issued within months of taking office, found the South Wing to be so insufficient, that he recommended removing the foundations and the Oven and starting over.

Starting over gave Latrobe the chance he needed to bring his superior ideas to bear. In designing the chamber, Latrobe proposed to Jefferson to raise the level of the Hall of Representatives to the second story or the *piano nobile*⁷. He created a detailed program, designed offices to accommodate the program, devised an entry sequence and ensured that structural and mechanical systems were in place. He also understood the inefficiency and difficulty of building an elliptical room, and therefore re-designed the chamber as two half circles connected with a central span, effectively making a hippodrome. Latrobe, the polymath, knew that in the carving of an elliptical entablature, every stone comprising each quarter of the ellipse would have a slightly different curvature based on the ellipse's major and minor axes. As a hippodrome, all curved stones in the entablature would be of the same radius, thus streamlining the stone-carving process.

The rub with Jefferson was two-fold. First, Jefferson had liked the idea of the "house of the people" being on the entry level and not the second story. Second, he did not want to deviate from the plan by changing the room's approved shape from an ellipse to a hippodrome. After Latrobe's polite presentation and an ensuing debate, Jefferson conceded to the architect.

The exterior walls, three and a half feet thick and buttressed at the corners with giant masonry circulation elements, essentially *poché* for the figural space of the Hall⁸, were vaulted inward ten feet to meet the hippodrome-shaped roof support system consisting of entablature, twenty-four support columns and support wall. Another conflict arose between Latrobe and Jefferson, however. They disagreed on the architectural order for the main columns. Jefferson wanted to use a Roman Doric from the Theater of Marcellus; Latrobe wanted to use the Corinthian from the Temple of Lysicrates in Athens. Latrobe demonstrated to Jefferson in a drawing⁹ that a Doric order in the Hall would not work because of the inability to achieve square metopes at the current column spacing. Jefferson, the stickler for classical rules, again demurred to the architect. Latrobe achieved a tactful compromise and suggested using Jefferson's favorite entablature in a simplified version (from the Temple of Jupiter Stator in Rome, also known as the Three Columns in the Roman Forum) with Latrobe's own choice of column capitals from the Temple of Lysicrates¹⁰.

Latrobe now had a clear mandate: he could build the idea of the chamber in his own aesthetic vision with his own structural solution, and he could imprint the building

7. The Italian term *piano nobile*, literally meaning the "noble floor", is the level of the major public spaces within a building, and in classical architecture the *piano nobile* is usually referenced or projected into design elements on the façade.

8. *Poché* is a French term that literally means "pocket," but in architecture it refers to the structural material or the secondary spaces that shape figural rooms.

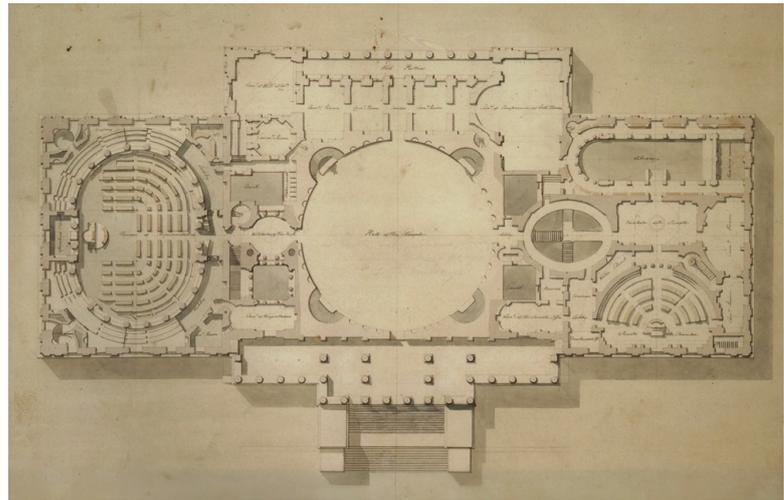
9. ADE 2462, Drawing 14, "North-South Section", Library of Congress.

10. Synopsis of this discussion from *History of the United States Capitol* by William C. Allen, U.S. Government Printing Office, 2001.

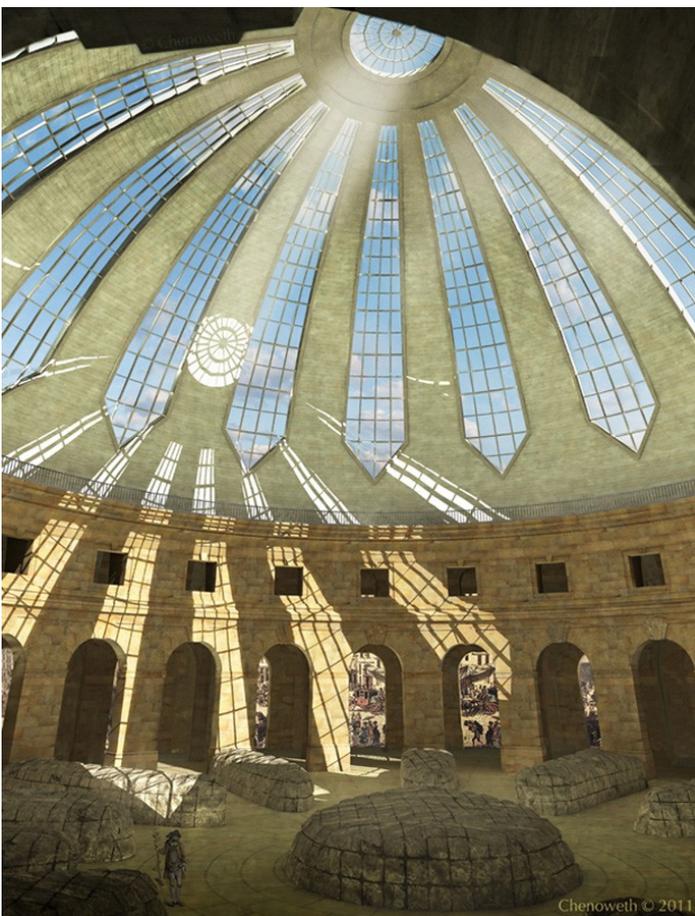
with his own program and circulation. Essentially it became an infill project for Latrobe, not unlike Sir John Soane's Bank of England project Latrobe had known back in London. All Latrobe had to do was maintain Thornton's design for the exterior elevations, which he disliked and thought laughingly old-fashioned.

The Halle aux blés

Now the South Wing's major parameters were established, and the brick and sandstone walls of the roughly 120' x 94' edifice rose, Jefferson and Latrobe turned their attention to the roof that would rise above the entablature inside the hippodrome. Here, one last design conflict would arise between the architect and the client. In 1804, Jefferson suggested to Latrobe that the Hall should have a skylit roof, similar to what he'd seen at the Paris Grain Market (*Halle aux blés*) in 1786, when he was Envoy to France. Jefferson had thought the Grain Market's roof the most dazzling display of light he's ever seen and he believed a similar roof on the Hall would make the room truly world class. Latrobe resisted the President's charge for a technical reason and a philosophical one. The technical reason was that the glass skylit roof would certainly leak; it also would condense water and drip. The



*Principal Plan
by Benjamin Henry Latrobe
(1806). Library of Congress.*



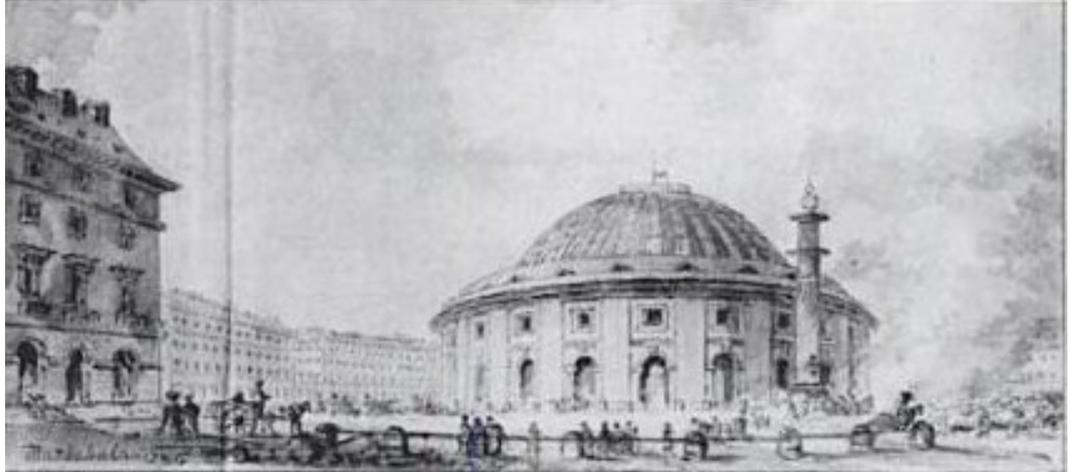
*Recreation drawing of the Halle aux blés
by Richard Chenoweth (2011).*

philosophical reason was that Latrobe thought the quality of direct light within this solemn legislative chamber would be entirely wrong. Again, the strong-willed architect and the President faced each other.

“So spangled a ceiling, giving an air of the highest gaiety, will I think destroy the solemnity that is appropriate to the object of the edifice.”¹¹

The Paris Grain Market was designed by Nicolas Le Camus de Mézières and was built on the site of the Hôtel de Soissons by 1767. Le Camus incorporated Catherine de Medici's Colonne de l'Horoscope in his open circular building. Jacques-Guillaume Legrand and Jacques

11. Letter from Latrobe to Jefferson, 10.29.1806.



*Drawing of Halle aux blés
by Maréchal (1786).*

Molinos designed the glazed roof which, completed by 1783, had so captured Thomas Jefferson's romantic imagination.

The Grain Market was so admired for its function, its circulation and its quality of light, that it quickly became regarded as one of the preeminent industrial buildings in Europe. In 1803 the Legrand-Molinos roof was destroyed by fire. An iron and glass roof replaced it in 1813. The site is now the *Bourse de commerce*.

Latrobe's alternate way of lighting the Hall was to construct a large cupola or lantern (lantern) in the center of the roof. The lantern's vertical glass would be far more resistant to leakage and breakage, and would deflect light *indirectly* into the room providing what he called "unity of light." Jefferson dismissed Latrobe's lantern design, as he claimed there was no classical precedent for it.

Jefferson was not seduced by Latrobe's arguments. In fact, this was their most verbose and most difficult disagreement regarding the design and construction of the Capitol. Finally, a frustrated Jefferson simply told Latrobe to do what he (Latrobe) thought best but made his own desire quite clear:

"I cannot express to you the regret I feel on the subject of renouncing the Halle au bless (sic) lights in the Capitol dome. That single circumstance was to constitute the distinguishing merit of the room, & would solely have made it the handsomest room in the world, without a single exception..."¹²

Latrobe blinked. He then proceeded to build the glazed roof as the President had wished, in the style of the Halle aux blés.

As late as November 1806, when the logistics of ordering glass for the roof became a topic of discussion, Latrobe still tried to persuade the

President of the suitability of a lantern scheme by providing him a beautiful watercolor perspective drawing of the Capitol's exterior from the Northeast, showing how minimal lanterns would appear on both the North and South wings.

But as Latrobe designed and built the domed roof to cover the eighty-five foot long hippodrome roof opening, he built into the framing plan support framing strong enough to hold... a lantern... in case the roof leaked so badly that the President



*Drawing of the Capitol by Benjamin Henry Latrobe
for Thomas Jefferson (1806). Library of Congress.*

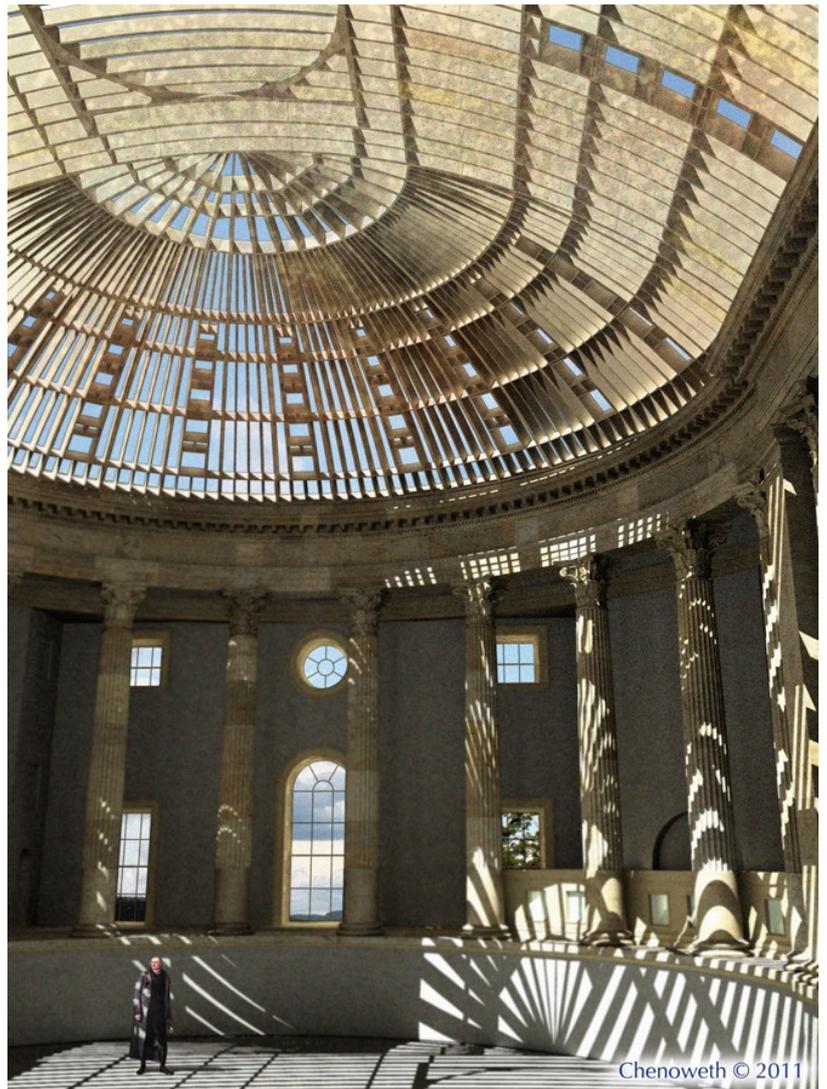
12. Letter from Jefferson to Latrobe, 9.8.1805.

might switch positions. The entire glazed dome containing 100 skylights in twenty vertical bands, would spring 12'– 6" from the top of the forty foot high entablature. Another a French architectural model was used for the roof framing. Latrobe reported to Washington's principal newspaper:

“This enormous roof is in thickness only 16 inches and is a very remarkable specimen of excellent carpenter's work. It is constructed on the plan of Philibert de l'Orme... and is pierced with square lights... in all 100.”¹³

He also stated in this report that the South Wing could be solidly vaulted if necessary. This built dome was covered with sheet iron on the exterior and plastered on the interior. The interior was faux-painted by George Bridport of Philadelphia in a simulation of coffered panels that alternated with the bands of skylights.

The completed chamber was ready for the House of Representatives by 1808. It was finished off with platforms, carpeting, simple mahogany desks and chairs, a Speaker's Throne, argand lamps, gilt railings and deep crimson baize curtains folded and draped between the majestic 26'– 8" tall columns that rested atop the seven foot hippodrome wall circumscribing the room. Six allegorical sculptures were positioned along the short axis of the room at its centerline.



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Drawing showing Jefferson inspecting the roof framing of Hall of Representatives

The Destruction

On August 24, 1814, the British Army, led by Admiral Cockburn and General Ross, marched into Washington in retaliation for the United States' destruction of York (now Toronto) in 1813. Both the Capitol and the White House were burned, among other public buildings. Cockburn's Lieutenant, ordered to burn the Capitol, is reported to have said as he stood at the entrance, "...it is a pity to burn anything so beautiful."

The Enigma

In Paris in the summer of 2001, having won the Gabriel Prize for drawing, I studied several of Thomas Jefferson's favorite buildings in an attempt to better understand his aesthetic and his design principles. My research led to the Halle aux blés, and then to the story of the construction of the Capitol and his confluence with Latrobe. I became transfixed by the enigma of the "most beautiful room in the world" and the fact that no topographical drawing or painting exists of this American

13. Letter from Latrobe to National Intelligencer, 11.22.1807.

architectural masterpiece. Jefferson had claimed in his 8 September 1805 letter that it would be the “handsomest” in the world. Latrobe himself stated in his 1806 report to Congress,

“That it will be a splendid room, – probably the most splendid Legislative Hall that has ever been erected, – is certain.”¹⁴

I thought this a perfect opportunity to explore an architectural history using the visual recreative power of the computer. Although the drama and the narrative of the major characters during this time period is an extraordinary and compelling piece of architectural and political history, oftentimes the description of “lost work” can be reduced to a recitation of attributes. My goal, then, was to bring the chamber back to its full glory and allow visitors to see the Hall of Representatives for themselves.

A Methodology for Recreation

My first step was to examine closely Latrobe’s existing construction documents. About three dozen of Latrobe’s original construction documents relating to this phase of construction are in the Library of Congress. They are not complete, the design varies greatly over the course of many years and many are at small scale. Following the course of the narrative of letters from about 1803 to 1815 (post-fire), it became clear I needed a careful timeline of decisions and changes, as the construction process was in a state of constant flux. Essential facts used to construct my computer model mostly came from these drawings, notes and my timeline. A computer model does not allow “fuzziness” so every element has to be defined. When determining a key dimension or architectural form, I might have had to rectify ten conflicting bits of information. An example of this is that all of the design drawings depicting the vault behind the entablature show it a certain way. Yet in detailed topographical drawings of the Capitol’s ruins (1815), essentially showing the “as built” condition, one by Latrobe himself and one by a chief stone carver, Giovanni Andrei, corroborate that the vault was actually built differently than designed. The record only appears after the fire. Another example is that a dimension noted on a drawing might be countermanded later in an informal letter, a decision may be referred to obliquely, or a design change may occur as two drawings jump in scale. In some cases I simply could not determine a detail or dimension, in which case I would design an element based on a similar example by Latrobe, maintaining the spirit of his intentions.

My actual synthesis began by creating a computer model of the architecture as pure geometry. Two things give these geometric pieces verisimilitude. One is the texture they have, and the other is the lighting of the computer scene. I created realistic textures using an imaging program and projected them onto the geometry. Projecting the image of a material onto geometry is called “texture mapping.” Texture mapping can make a simple gray cube of geometry look like a block of sandstone, for instance. Lighting is the crucial next step, as the lighting of large interior space with windows, skylights, deflected light and reflected light will be quite complex. When a final scene involving geometry, texture mapping and lighting is assembled, it can be viewed through a camera (within the computer program) that has all the attributes of a real camera. It can be a still camera or a moving picture camera. The scene is then “rendered” as a still image or as an animation, where all the data regarding geometry, material and light is synthesized based on a camera angle and lens opening. The rendering process is roughly equivalent to photographing the final scene.

14. Latrobe Annual Report to Congress, 11.28.1806.



Anything so beautiful... (recreation by Richard Chenoweth)

Conclusion

I believe the Hall's great beauty derived from its proportional excellence, its simplicity of materials and its overall restraint. Latrobe as well as others remarked that the streaming light from above through the skylit roof was striking and beautiful. Latrobe describes the work of his two chief stone carvers Giovanni Andrei (specializing in flora) and Giuseppe Franzoni (specializing in figures) as nothing less than brilliant. Certainly the room had flaws. It leaked; water condensed on the skylights; it had reverberation problems; it needed to be expanded before it was even complete. It is not known if Latrobe's lantern method of indirect lighting would have been a better method than what was built. Though this first version of the Hall of Representatives was acclaimed for its grandeur and beauty, it also was lauded for its *republican simplicity*. Latrobe was re-hired by Madison in 1815 to rebuild the burned Capitol; in this second design the chamber changed completely. Latrobe's second chamber, completed in 1819, was considered fancier and less republican.

When the first Hall of Representatives ultimately became a "monumental ruin" in August 1814, it passed from America's first world class building, America's first modern institution, into the dreamlike realm worthy of a Greek ruin.

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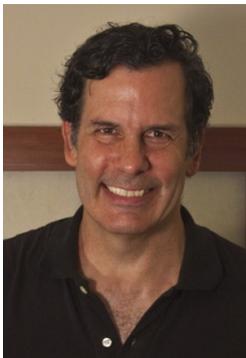
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Benjamin H. Latrobe Architectural Drawing Archive (original drawings), Washington D.C., The Library of Congress, Prints and Photographs Division, ADE (Architecture, Design, Engineering)-Unit 2462.

Benjamin H. Latrobe Collection (original letters), Baltimore (MD), Maryland Historical Society, M.S. 2009 ■



Richard Chenoweth a obtenu son diplôme d'architecte en 1989 à l'université de Virginie et s'est spécialisé dans la visualisation de l'architecture.

En 2001, il a reçu le prix Gabriel qui récompense un projet fait par un architecte américain en rapport avec l'architecture française. Le projet portait sur les édifices français dont l'influence se retrouve dans les constructions entreprises par Jefferson à son retour aux Etats-Unis.

Il a changé le visage du *District of Columbia* en remportant avec un collègue le concours pour les verrières qui recouvrent depuis quelques années vingt-huit bouches de métro à Washington.

À partir des archives de la bibliothèque du Congrès, il travaille actuellement à la reconstitution digitale en trois dimensions du Capitole tel qu'il a été construit entre 1803 et 1814 par Benjamin Latrobe, architecte anglais d'origine française choisi par Thomas Jefferson. Ses travaux ont été financés par la *U.S. Capitol Historical Society*.

Richard Chenoweth's website:
<http://www.chenarch.com/>



La canopée de L'Enfant Plaza, Washington DC (photo : R. Chenoweth)